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Program - Project - Job: **SNS-FES MEBT, Beam Transport Systems**
Title: **Quadrupole Magnet Magnetic Measurements**

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1.0 OVERVIEW

This document describes the magnetic measurements performed on the SNS-FES Medium Energy Beam Transport (MEBT) Quadrupole magnets. The quadrupole field and its multipole components were measured with a rotating search coil. The polarity of the dipole field induced by the steering windings was verified. A test was performed to acess the repeatability of the results after installation in the beamline and a field clamping test was performed. A summary of the results is contained in the body of this document. The detailed results for each magnet are located in the appendix. All magnets were found to satisfy the specified requirements for field quality and effective length.

1.1 Quad Description

Measurements were made on sixteen MEBT quadrupole magnets. Nine magnets had an aperture diameter of 32 mm and seven of the magnets had an aperture diameter of 42 mm. Five of the 32-mm quads and three of the 42-mm quads included dipole steering windings on the back-legs of the cores. Tech. Note FE-PH-026 [1] specifies the required nominal gradient, aperture, and effective length for each magnet. The gradients range from approximately 16 to 36 T/m for 32 mm bore magnets and 12 to 26 T/m for 42 mm bore magnets. Tech. Note FE-PH-031 [2] specifies the required tuning range for the magnets over and above nominal operating gradients. Tech Note FE-ME-022 [3] describes the operating parameters for the quadrupole coils and Tech Note FE-ME-013 [4] describes the operating parameters for the dipole steering coils. LBNL Engineering Note M7861 [4] describes the mechanical design of the quadrupole magnets.

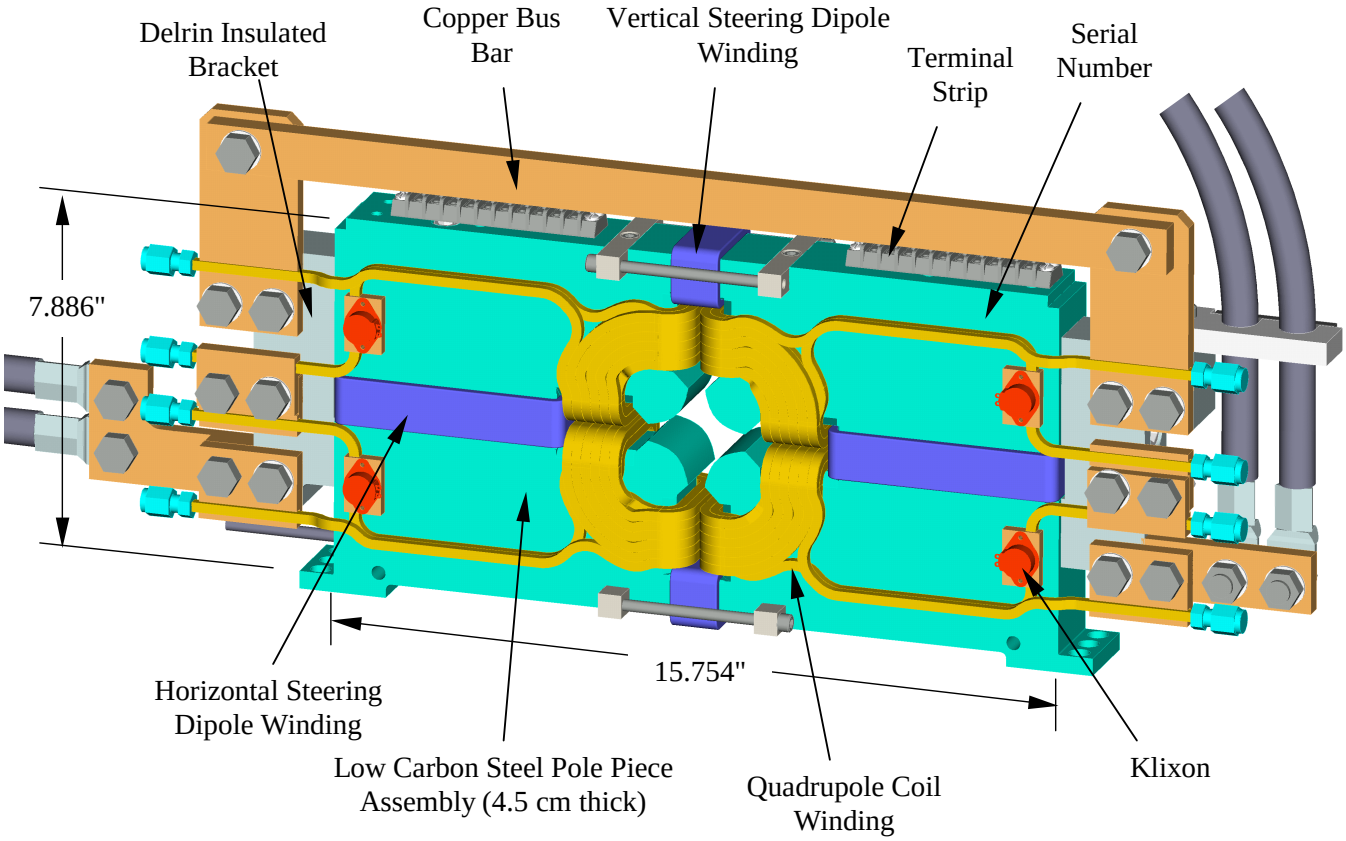


Figure 1: MEBT quadrupole magnet with steering coils.

The magnets were differentiated throughout the measurement process by bore size and a unique serial number. Sequential serial numbers were stamped into the steel yokes of the quads during fabrication. For example, the magnet labeled "Q42-2" in the measurement data has a 42-mm aperture and is stamped with the 42-mm yoke drawing number and sequential number, "25B1366B-2."

1.2 Measurement Setup

Measurements were made with a 2 cm diameter rotating search coil assembly (Hilac 4 Coil) in Building 25 at LBNL. The magnets were mounted on an aluminum baseplate with the rotating coil assembly suspended between two radial bearings. The rotating coil assembly contained both a search coil and a bucking coil. The bucking coil allowed the dipole field component resulting from the misalignment between the center of the search coil and the magnetic center of the quad to be canceled in the data collected.

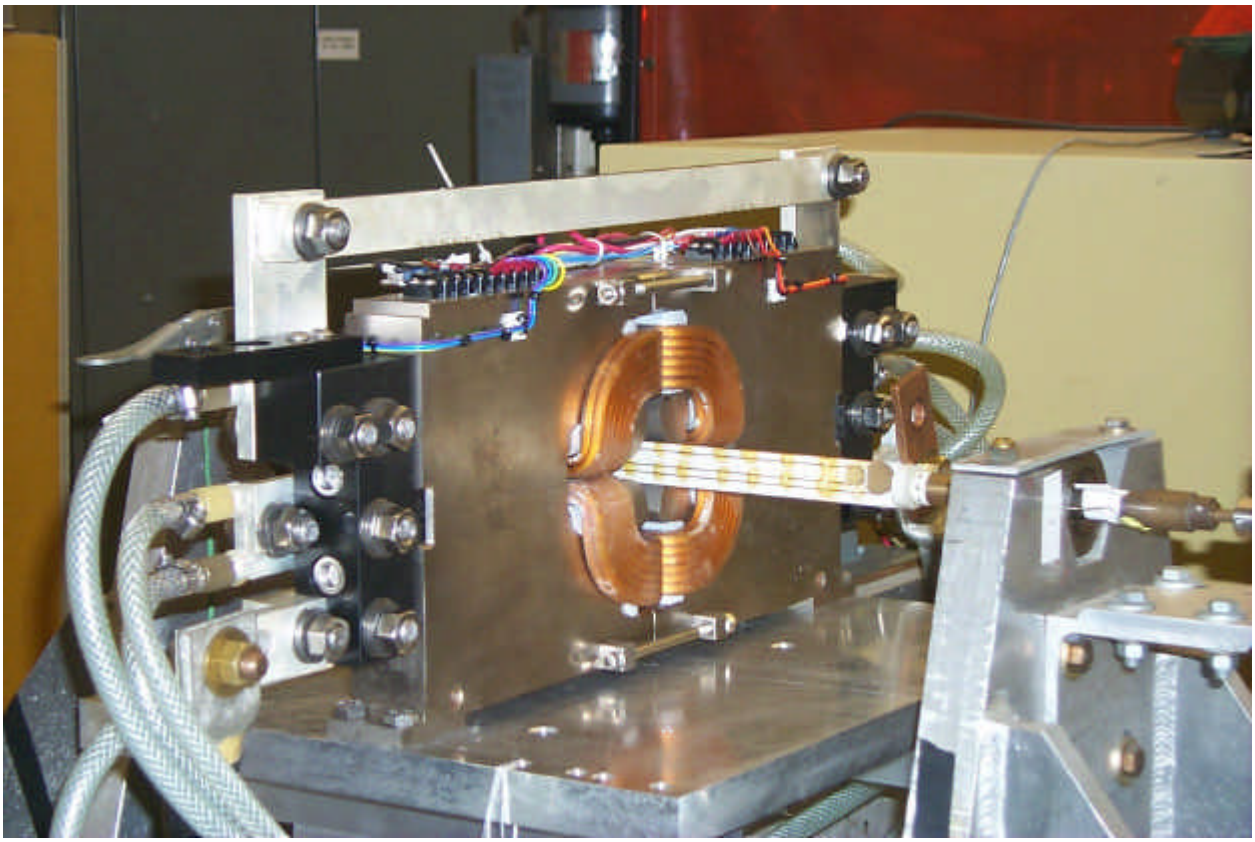


Figure 2: Magnet measurement setup.

The instrumentation interface was a PC-based data acquisition system. A stepper motor with a rotary encoder drove the search coil. A Metrolab dual channel integrator processed the coil voltage, and the encoder provided an angular reference. The Metrolab interfaced to the PC via a GPIB connection. Magnet power supply current was controlled via a D/A channel. Current monitoring was accomplished via a DCCT read through an A/D channel. The encoder output was read through an A/D channel.

1.3 Measurement Technique

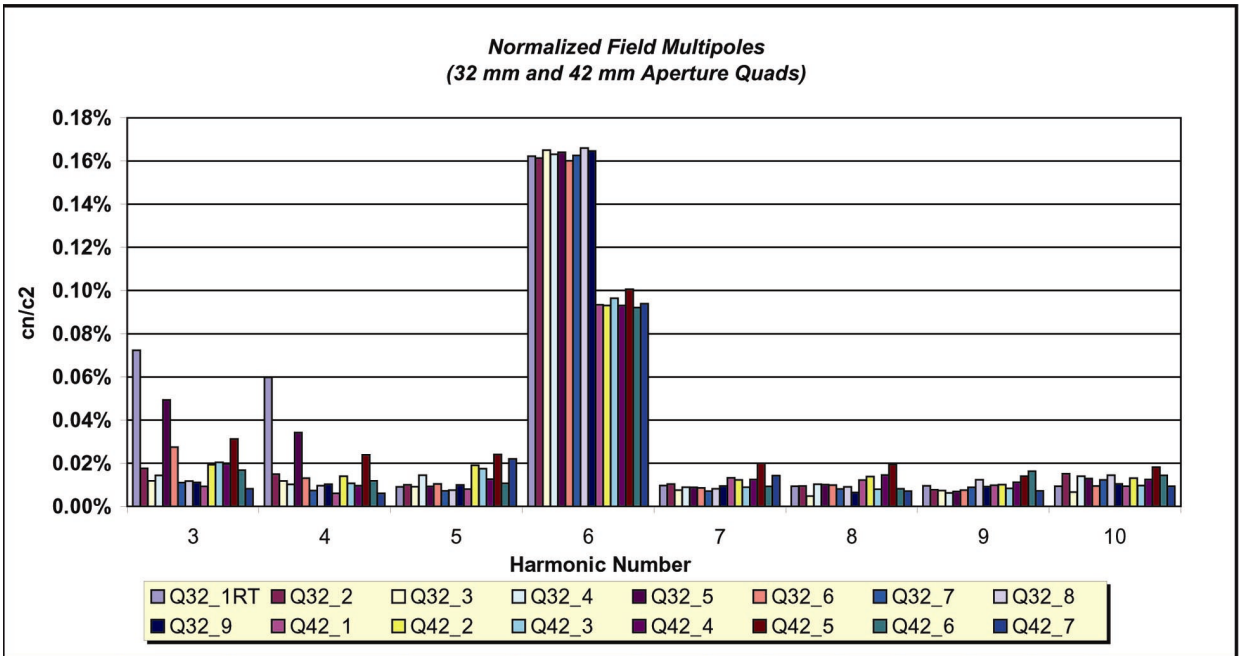
Quadrupole measurements were taken over an operating range of zero to 450 A. The current was set at 400 A for the first measurement. Data was then taken at 50-A intervals from zero to 450 A and then back

down to 50 A. Mutilpole data was taken for both clockwise and counterclockwise rotations at each current setting. The data collected during clockwise rotation of the search coil was found to be nearly identical to that collected during counterclockwise rotation. The counterclockwise data was arbitrarily selected for reduction in the summary table in this report.

Dipole steering coil measurements were taken with the quadrupole coils energized with 400 A. The horizontal and vertical coils were energized, separately at currents of 5,10,-5, and –10 A.

2.0 RESULTS AND DISCUSSION

The measurement results are summarized in the Figure 3 below. The Metrolab output data and the spreadsheets used to calculate the normalized multipoles are included in the appendix of this report.



Data Files (name)	DWG No. LBNL	Measurement Date (Date Time)	GL @ 400 A (T)	r=1cm n =	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	Steering Coils Checked
Q32_1RT	25B1346B-1	11/7/2000 10:40	2.706	ccw	0.07%	0.06%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	OK
Q32_2	25B1346B-2	11/30/2000 9:39	2.723	ccw	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	OK
Q32_3	25B1346B-3	11/21/2000 14:06	2.721	ccw	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	OK
Q32_4	25B1346B-4	11/30/2000 11:18	2.724	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	none
Q32_5	25B1346B-5	11/29/2000 11:02	2.718	ccw	0.05%	0.03%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	OK
Q32_6	25B1346B-6	11/22/2000 9:10	2.716	ccw	0.03%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	OK
Q32_7	25B1346B-7	11/29/2000 14:11	2.725	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	none
Q32_8	25B1346B-8	11/30/2000 14:07	2.724	ccw	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	none
Q32_9	25B1346B-9	11/21/2000 10:48	2.720	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	none
Q42_1	25B1366B-1	12/1/2000 10:42	1.778	ccw	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	OK
Q42_2	25B1366B-2	11/22/2000 11:16	1.773	ccw	0.02%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	OK
Q42_3	25B1366B-3	11/27/2000 14:27	1.773	ccw	0.02%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	OK
Q42_4	25B1366B-4	11/27/2000 11:03	1.772	ccw	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	none
Q42_5	25B1366B-5	11/13/2000 13:42	1.773	ccw	0.03%	0.02%	0.02%	0.10%	0.02%	0.02%	0.01%	0.02%	none
Q42_6	25B1366B-6	11/20/2000 14:41	1.772	ccw	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	none
Q42_7	25B1366B-7	11/16/2000 15:03	1.772	ccw	0.01%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	none

Figure 3: Magnet measurement results summary.

During some measurements, an amplifier on one of the channels inside the Metrolab was found to have malfunctioned yielding invalid multipole coefficient values for that particular current setting. This invalid data was reduced but eliminated from the final results for each magnet. This malfunction necessitated values for some current settings be omitted from the final results (note red bars through omitted current settings on some magnets).

All steering coils were found to be wired correctly and produced dipole fields of approximately the expected magnitude.

2.1 Multipole Components

All magnets were found to have acceptable field quality. For all magnets measured, the quadrupole multipole (n=2) was found to account for more than 99.6 percent of the overall field at the coil radius of 1-cm.

2.2 Focusing Power

Over the range of currents measured, the focusing power (GL product) of the 32-mm bore quads was approximately 99 percent of the predicted value and the focusing power of the 42-mm quads was 95 percent of the predicted value.

2.3 Field Clamping Test

A test was performed to determine the effective focusing power of the two quads on Raft 2 of the MEBT (QM6 and QM9). These quads will be installed in close proximity (10 cm center-to-center) to other magnets on both the upstream and downstream sides. The effect was measured by operating magnet 25B1346B-6 while it was between two other quads bolted on the mounted plate, as shown in Figure 4.

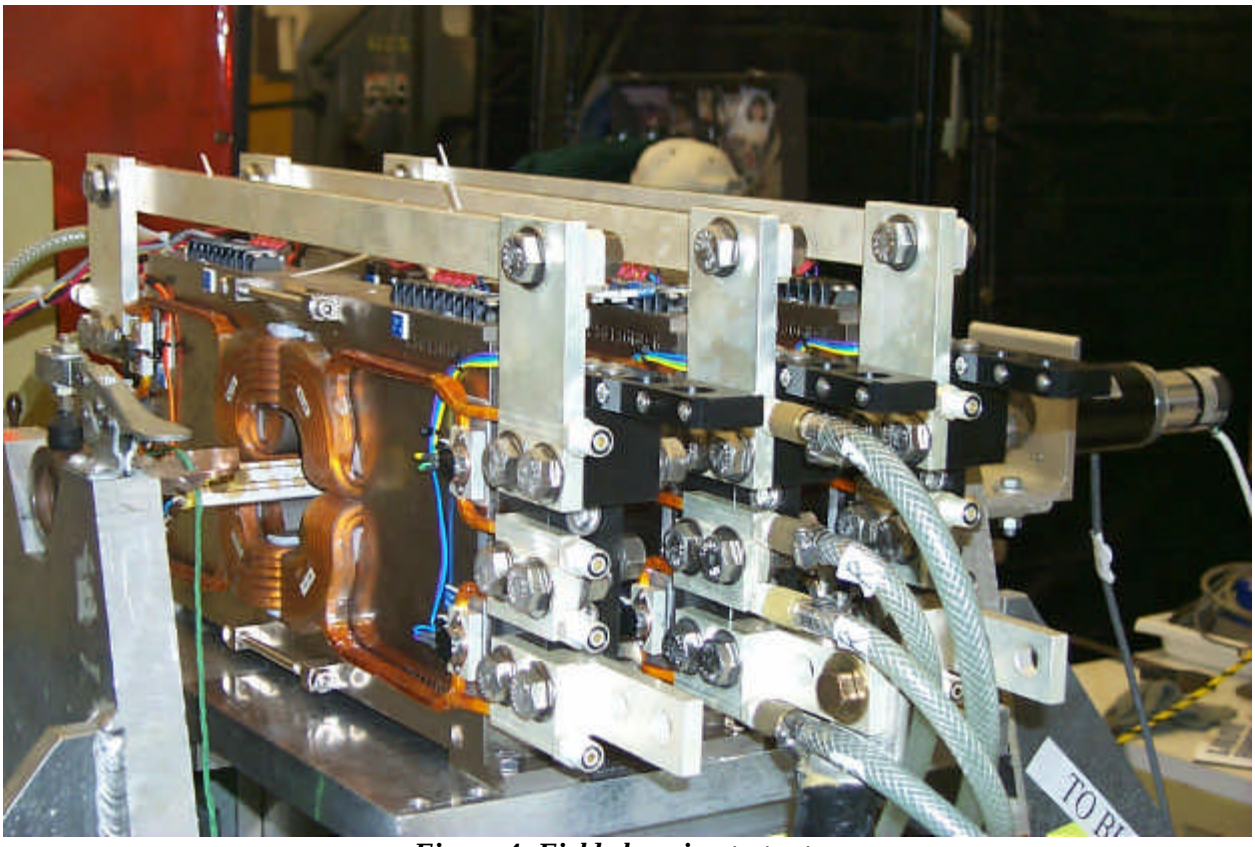


Figure 4: Field clamping test setup.

The field clamping caused by the close spacing of the steel quad cores was found to result in a one percent decrease in focusing power at currents up to 450 A.

2.4 Repeatability After Split Test

A test was performed to determine the repeatability of the mutipole components after the magnet was split about its vertical centerline. This operation is necessary to install the magnets around the MEBT beampipes and will be repeated throughout the lifetime of the machine whenever it is necessary to remove a MEBT beampipe. Two alignment pins position the two halves of each quad and four bolts hold them together. No multipole component was found to vary by no more than 0.003 percent before and after splitting.

3.0 CONCLUSION

The measurements demonstrated that all magnets were successfully fabricated and are suitable for operation in the MEBT. Up to an operating current of 450 A, the field quality and effective length were found to be adequate to satisfy the physics requirements and performance was acceptably uniform between magnets. The polarity of the dipole field induced by the steering windings was verified.

4.0 REFERENCES

[1] John Staples, 11-8-99, *MEBT Quadrupole Gradients*, SNS FE-PH-026.

[2] John Staples, 8-31-99, *MEBT Quad Tuning Range*, SNS FE-PH-031.

[3] Daryl Oshatz, 9-29-99, *MEBT Quadrupole Operating Parameters*, SNS FE-ME-022A.

[4] Daryl Oshatz, 8-27-99, *MEBT Quadrupole Steering Coils*, SNS FE-ME-013.

[5] John Staples, 9-3-99, *MEBT Emittance Growth Due to Quad Steering Correction*, SNS FE-PH-027.

[6] Daryl Oshatz, John Staples, 9-28-99, *MEBT Quadrupole Field Harmonics Study*, SNS FE-ME-021.

[7] Daryl Oshatz, Yoshy Minamihara, John Staples and Richard DiGennaro, 1-04-00, *MEBT Quadrupole Magnet Final Design Review November 17,1999*, SNS FE-ME-024.

[8] D. Barlow, 9-30-98, *Magnetic Measurements of Two Prototype Quads for the APT/LEDA CCDTL*, LANSCE-1:TNM-98-264 (LANL).

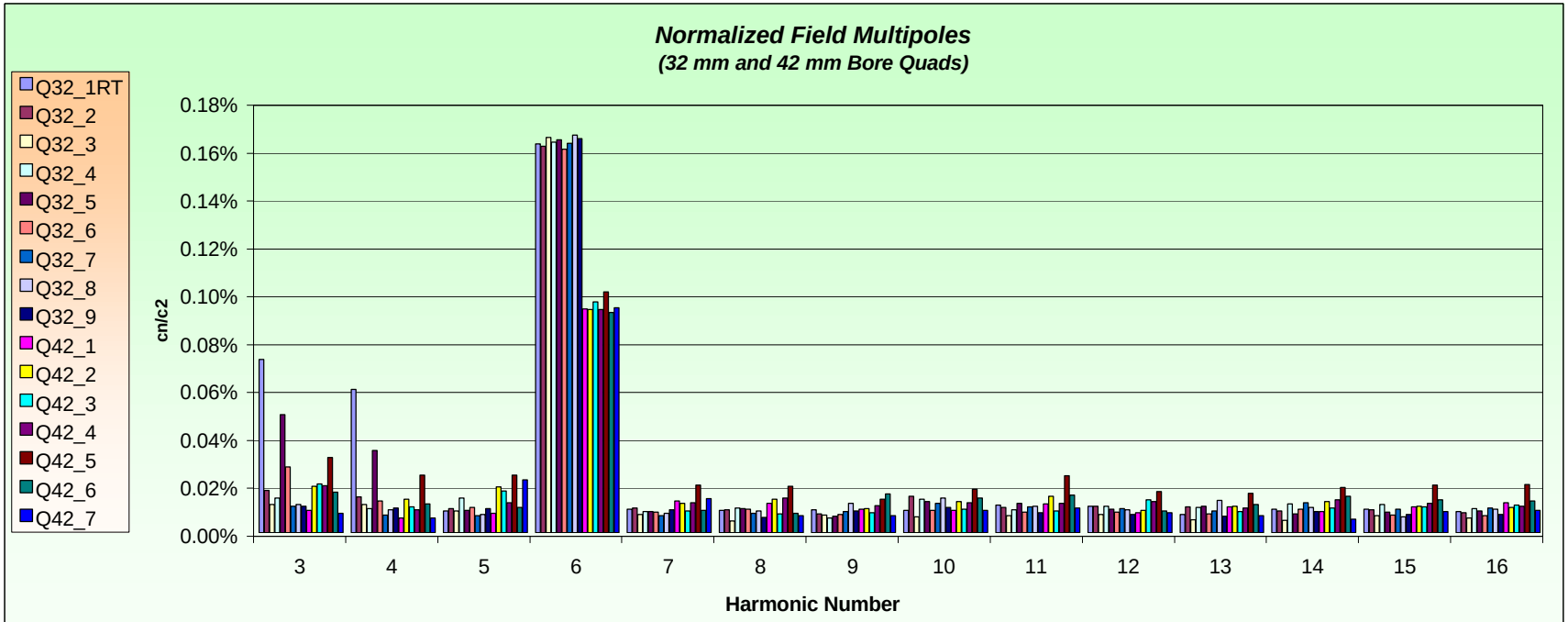
[9] D. Barlow, 3-22-99, *Magnetic Measurements of a Prototype APT CCL-1 Quad*, LANSCE-1:TNM-99-052 (LANL).

[10] D. Barlow, 4-22-99, *Magnetic Measurements of APT/LEDA CCDTL Quad Fabricated by MCT*, LANSCE-1:TNM-99-072 (LANL).

[11] D. Oshatz, A. DeMello, L. Doolittle, P. Luft, J. Staples, A. Zachoszcz, *Mechanical Design of the SNS MEBT*, PAC2001, Chicago, June 2001.

APPENDIX: MAGNETIC MEASUREMENT RESULTS

MEBT Quadrupole Measurement Results



Data Files (name)	DWG No. LBNL	Measurement Date (Date Time)	GL @ 400 A (T)	r=1cm n =	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	Steering Coils Checked
Q32_1RT	25B1346B-1	11/7/2000 10:40	2.706	ccw	0.07%	0.06%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q32_2	25B1346B-2	11/30/2000 9:39	2.723	ccw	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q32_3	25B1346B-3	11/21/2000 14:06	2.721	ccw	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q32_4	25B1346B-4	11/30/2000 11:18	2.724	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none
Q32_5	25B1346B-5	11/29/2000 11:02	2.718	ccw	0.05%	0.03%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q32_6	25B1346B-6	11/22/2000 9:10	2.716	ccw	0.03%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q32_7	25B1346B-7	11/29/2000 14:11	2.725	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none
Q32_8	25B1346B-8	11/30/2000 14:07	2.724	ccw	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none
Q32_9	25B1346B-9	11/21/2000 10:48	2.720	ccw	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none
Q42_1	25B1366B-1	12/1/2000 10:42	1.778	ccw	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q42_2	25B1366B-2	11/22/2000 11:16	1.773	ccw	0.02%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q42_3	25B1366B-3	11/27/2000 14:27	1.773	ccw	0.02%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	OK
Q42_4	25B1366B-4	11/27/2000 11:03	1.772	ccw	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none
Q42_5	25B1366B-5	11/13/2000 13:42	1.773	ccw	0.03%	0.02%	0.02%	0.10%	0.02%	0.02%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	none
Q42_6	25B1366B-6	11/20/2000 14:41	1.772	ccw	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	none
Q42_7	25B1366B-7	11/16/2000 15:03	1.772	ccw	0.01%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	none

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q1RT_1.da	Q1RT_2.da	Q1RT_3.da	Q1RT_4.da	Q1RT_5.da	Q1RT_6.da	Q1RT_7.da	Q1RT_8.da	Q1RT_9.da	Q1RT_10.d	Q1RT_11.d	Q1RT_12.d	Q1RT_13.d	Q1RT_14.d	Q1RT_15.d	Q1RT_16.d	Q1RT_17.dat	Q1RT_18.d	Q1RT_19.dat	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		6.15E-04	5.67E-05	5.20E-05	1.41E-04	2.16E-04	3.02E-04	3.95E-04	4.82E-04	5.62E-04	6.07E-04	6.07E-04	6.08E-04	5.39E-04	4.61E-04	3.60E-04	2.73E-04	1.95E-04	1.09E-04	3.90E-05	**1**
cn = 2		2.70E-02	8.17E-05	3.60E-03	7.19E-03	1.08E-02	1.43E-02	1.79E-02	2.13E-02	2.44E-02	2.70E-02	2.70E-02	2.71E-02	2.45E-02	2.15E-02	1.80E-02	1.45E-02	1.09E-02	7.31E-03	3.69E-03	**2**
cn = 3		2.55E-05	5.28E-06	3.27E-06	3.15E-06	8.36E-06	1.15E-05	1.87E-05	2.64E-05	2.33E-05	2.81E-05	2.81E-05	2.18E-05	2.00E-05	1.67E-05	1.28E-05	8.60E-06	2.09E-05	8.07E-07	1.86E-05	**3**
cn = 4		1.67E-05	1.38E-06	3.83E-06	3.94E-06	4.15E-06	8.39E-06	1.26E-05	2.35E-05	1.31E-05	2.48E-05	2.48E-05	1.65E-05	2.49E-05	1.26E-05	1.20E-05	8.26E-06	1.14E-05	5.60E-06	2.25E-05	**4**
cn = 5		2.77E-06	1.47E-06	8.70E-07	1.03E-06	1.23E-06	8.24E-07	8.70E-07	1.80E-05	1.73E-06	1.97E-05	1.97E-05	3.18E-06	1.90E-05	7.51E-07	1.05E-06	9.19E-07	5.01E-06	1.37E-06	2.17E-05	**5**
cn = 6		4.72E-05	3.37E-06	6.70E-06	1.03E-05	1.76E-05	2.36E-05	2.94E-05	3.41E-05	4.06E-05	4.44E-05	4.44E-05	4.62E-05	4.13E-05	3.56E-05	2.95E-05	2.28E-05	2.06E-05	1.10E-05	2.21E-05	**6**
cn = 7		2.11E-07	1.61E-06	4.68E-07	2.03E-06	1.59E-06	8.36E-07	3.97E-07	2.13E-05	8.95E-07	2.08E-05	2.08E-05	5.16E-07	2.30E-05	2.35E-06	1.41E-06	9.36E-07	4.28E-06	1.77E-06	2.14E-05	**7**
cn = 8		1.91E-07	1.73E-06	2.19E-06	2.16E-06	9.72E-07	3.10E-07	9.09E-07	2.11E-05	1.86E-06	2.04E-05	2.04E-05	1.84E-06	1.93E-05	4.49E-06	1.54E-06	9.72E-07	3.34E-06	3.64E-07	2.04E-05	**8**
cn = 9		1.59E-06	1.71E-06	9.00E-07	8.11E-07	1.93E-06	6.58E-07	2.73E-06	1.84E-05	1.75E-06	1.83E-05	1.83E-05	1.24E-06	1.94E-05	2.25E-06	1.44E-06	1.12E-06	5.13E-06	8.41E-07	2.09E-05	**9**
cn = 10		4.65E-07	2.71E-06	1.68E-06	1.68E-06	9.31E-07	9.31E-07	1.04E-06	1.91E-05	4.65E-07	1.82E-05	1.82E-05	1.92E-06	1.87E-05	3.98E-06	1.32E-06	1.92E-06	3.29E-06	6.58E-07	1.92E-05	**10**
cn = 11		5.49E-07	1.52E-06	9.99E-07	1.42E-06	1.93E-06	1.56E-06	8.12E-07	1.79E-05	2.30E-06	1.91E-05	1.91E-05	1.19E-06	1.65E-05	3.72E-06	1.26E-06	7.20E-07	2.00E-06	2.04E-06	1.94E-05	**11**
cn = 12		8.32E-07	1.64E-07	1.38E-06	2.40E-06	1.23E-06	9.02E-07	5.99E-08	1.76E-05	8.23E-07	1.69E-05	1.69E-05	1.17E-06	1.80E-05	3.37E-06	1.45E-06	3.25E-06	5.03E-06	9.93E-07	1.83E-05	**12**
cn = 13		1.29E-06	8.56E-07	9.35E-07	1.88E-06	1.01E-06	6.58E-08	1.40E-06	1.69E-05	3.98E-07	1.80E-05	1.80E-05	1.57E-07	1.76E-05	3.24E-06	7.58E-07	1.08E-06	2.29E-06	5.32E-07	1.71E-05	**13**
cn = 14		2.87E-06	5.04E-07	1.83E-06	4.86E-07	1.20E-06	1.84E-06	9.72E-07	1.56E-05	1.12E-06	1.62E-05	1.62E-05	1.56E-06	1.79E-05	2.22E-06	2.66E-06	1.92E-06	2.56E-06	8.42E-07	1.80E-05	**14**
cn = 15		3.35E-06	1.30E-06	6.68E-07	1.21E-06	9.44E-07	1.94E-06	6.68E-07	1.55E-05	9.58E-07	1.50E-05	1.50E-05	9.47E-07	1.79E-05	3.36E-06	1.53E-06	1.48E-06	2.73E-07	8.26E-07	1.69E-05	**15**
cn = 16		9.78E-07	8.47E-07	1.05E-06	1.51E-06	1.07E-06	6.04E-07	1.53E-06	1.57E-05	1.60E-06	1.36E-05	1.36E-05	2.16E-06	1.44E-05	2.55E-06	2.71E-07	1.07E-06	2.73E-06	1.15E-06	1.77E-05	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q1RT_1.dat	**400**	2.698E-02	2.70E+00	0.09%	0.06%	0.01%	0.18%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	**99.61%**		
Q1RT_2.dat	**0**	8.170E-05	8.17E-03	6.46%	1.69%	1.80%	4.13%	1.97%	2.11%	2.09%	3.32%	1.86%	0.20%	1.05%	0.62%	1.59%	1.04%	**70.07%**		
Q1RT_3.dat	**50**	3.597E-03	3.60E-01	0.09%	0.11%	0.02%	0.19%	0.01%	0.06%	0.03%	0.05%	0.03%	0.04%	0.03%	0.05%	0.02%	0.03%	**99.26%**		
Q1RT_4.dat	**100**	7.194E-03	7.19E-01	0.04%	0.05%	0.01%	0.14%	0.03%	0.03%	0.01%	0.02%	0.02%	0.03%	0.03%	0.01%	0.02%	0.02%	**99.53%**		
Q1RT_5.dat	**150**	1.077E-02	1.08E+00	0.08%	0.04%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.59%**		
Q1RT_6.dat	**200**	1.434E-02	1.43E+00	0.08%	0.06%	0.01%	0.16%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.62%**		
Q1RT_7.dat	**250**	1.785E-02	1.79E+00	0.10%	0.07%	0.00%	0.16%	0.00%	0.01%	0.02%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.60%**		
Q1RT_8.dat	**300**	2.129E-02	2.13E+00	0.12%	0.11%	0.08%	0.16%	0.10%	0.10%	0.09%	0.09%	0.08%	0.08%	0.08%	0.07%	0.07%	0.07%	**98.68%**		
Q1RT_9.dat	**350**	2.437E-02	2.44E+00	0.10%	0.05%	0.01%	0.17%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.63%**		
Q1RT_10.dat	**400**	2.697E-02	2.70E+00	0.10%	0.09%	0.07%	0.16%	0.08%	0.08%	0.07%	0.07%	0.07%	0.06%	0.07%	0.06%	0.06%	0.05%	**98.91%**		
Q1RT_11.dat	**450**	2.697E-02	2.70E+00	0.10%	0.09%	0.07%	0.16%	0.08%	0.08%	0.07%	0.07%	0.07%	0.06%	0.07%	0.06%	0.06%	0.05%	**98.91%**		
Q1RT_12.dat	**400**	2.706E-02	2.71E+00	0.08%	0.06%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	**99.63%**		
Q1RT_13.dat	**350**	2.450E-02	2.45E+00	0.08%	0.10%	0.08%	0.17%	0.09%	0.08%	0.08%	0.08%	0.07%	0.07%	0.07%	0.07%	0.07%	0.06%	**98.83%**		
Q1RT_14.dat	**300**	2.145E-02	2.15E+00	0.08%	0.06%	0.00%	0.17%	0.01%	0.02%	0.01%	0.02%	0.02%	0.02%	0.02%	0.01%	0.02%	0.01%	**99.55%**		
Q1RT_15.dat	**250**	1.799E-02	1.80E+00	0.07%	0.07%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.62%**		
Q1RT_16.dat	**200**	1.447E-02	1.45E+00	0.06%	0.06%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	**99.62%**		
Q1RT_17.dat	**150**	1.087E-02	1.09E+00	0.19%	0.10%	0.05%	0.19%	0.04%	0.03%	0.05%	0.03%	0.02%	0.05%	0.02%	0.02%	0.00%	0.03%	**99.18%**		
Q1RT_18.dat	**100**	7.314E-03	7.31E-01	0.01%	0.08%	0.02%	0.15%	0.02%	0.00%	0.01%	0.01%	0.03%	0.01%	0.01%	0.01%	0.01%	0.02%	**99.61%**		
Q1RT_19.dat	**50**	3.689E-03	3.69E-01	0.51%	0.61%	0.59%	0.60%	0.58%	0.55%	0.57%	0.52%	0.53%	0.50%	0.46%	0.49%	0.46%	0.48%	**92.57%**		
																	average =	**97.64%**		
			Average Da	0.44%	0.19%	0.15%	0.40%	0.16%	0.17%	0.16%	0.23%	0.15%	0.06%	0.10%	0.08%	0.13%	0.10%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q1RT_1.dat	400	2.698E-02	2.6980	0.09%	0.06%	0.01%	0.18%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	99.61%	0.00675	400
Q1RT_2.dat	0																			0
Q1RT_3.dat	50																			50
Q1RT_4.dat	100	7.194E-03	0.7194	0.04%	0.05%	0.01%	0.14%	0.03%	0.03%	0.01%	0.02%	0.02%	0.03%	0.03%	0.01%	0.02%	0.02%	99.53%	0.00719	100
Q1RT_5.dat	150	1.077E-02	1.0770	0.08%	0.04%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	99.59%	0.00718	150
Q1RT_6.dat	200	1.434E-02	1.4340	0.08%	0.06%	0.01%	0.16%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.62%	0.00717	200
Q1RT_7.dat	250	1.785E-02	1.7850	0.10%	0.07%	0.00%	0.16%	0.00%	0.01%	0.02%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	99.60%	0.00714	250
Q1RT_8.dat	300																			300
Q1RT_9.dat	350	2.437E-02	2.4370	0.10%	0.05%	0.01%	0.17%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	99.63%	0.00696	350
Q1RT_10.dat	400																			400
Q1RT_11.dat	450																			450
Q1RT_12.dat	400	2.706E-02	2.7060	0.08%	0.06%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	99.63%	0.00677	400
Q1RT_13.dat	350																			350
Q1RT_14.dat	300	2.145E-02	2.1450	0.08%	0.06%	0.00%	0.17%	0.01%	0.02%	0.01%	0.02%	0.02%	0.02%	0.02%	0.01%	0.02%	0.01%	99.55%	0.00715	300
Q1RT_15.dat	250	1.799E-02	1.7990	0.07%	0.07%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.62%	0.00720	250
Q1RT_16.dat	200	1.447E-02	1.4470	0.06%	0.06%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	99.62%	0.00724	200
Q1RT_17.dat	150																			150
Q1RT_18.dat	100	7.314E-03	0.7314	0.01%	0.08%	0.02%	0.15%	0.02%	0.00%	0.01%	0.01%	0.03%	0.01%	0.01%	0.01%	0.01%	0.02%	99.61%	0.00731	100
Q1RT_19.dat	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.60%
	Average Data:	**0.07%**	**0.06%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

data file	Q1RT_1.da	Q1RT_2.da	Q1RT_3.da	Q1RT_4.da	Q1RT_5.da	Q1RT_6.da	Q1RT_7.da	Q1RT_8.da	Q1RT_9.da	Q1RT_10.d	Q1RT_11.d	Q1RT_12.d	Q1RT_13.d	Q1RT_14.d	Q1RT_15.d	Q1RT_16.d	Q1RT_17.dat	Q1RT_18.d	Q1RT_19.dat	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	6.12E-04	5.78E-05	5.22E-05	1.36E-04	2.16E-04	3.05E-04	3.97E-04	4.83E-04	5.59E-04	6.06E-04	6.44E-04	6.05E-04	5.78E-05	4.57E-04	3.63E-04	2.71E-04	1.88E-04	1.12E-04	3.79E-05	**1**
cn = 2	2.70E-02	8.19E-05	3.60E-03	7.20E-03	1.08E-02	1.43E-02	1.79E-02	2.13E-02	2.44E-02	2.70E-02	2.91E-02	2.71E-02	8.19E-05	2.15E-02	1.80E-02	1.45E-02	1.09E-02	7.32E-03	3.70E-03	**2**
cn = 3	2.48E-05	5.23E-06	2.49E-06	1.85E-05	8.53E-06	1.17E-05	1.76E-05	1.79E-05	2.18E-05	2.52E-05	3.79E-05	2.37E-05	5.23E-06	3.91E-05	1.24E-05	1.14E-05	4.83E-06	1.95E-06	9.01E-07	**3**
cn = 4	1.59E-05	8.54E-07	2.16E-06	2.17E-05	4.86E-06	6.22E-06	1.18E-05	1.26E-05	1.34E-05	1.63E-05	4.05E-05	1.61E-05	8.54E-07	4.18E-05	1.07E-05	1.20E-05	1.21E-05	4.56E-06	2.44E-06	**4**
cn = 5	1.92E-06	3.85E-07	1.12E-06	2.17E-05	1.05E-06	5.67E-07	2.97E-06	2.94E-07	1.37E-06	1.90E-06	4.32E-05	1.99E-06	3.85E-07	4.27E-05	2.14E-06	3.22E-06	6.93E-06	1.12E-06	8.70E-07	**5**
cn = 6	4.49E-05	9.34E-07	8.20E-06	1.86E-05	1.82E-05	2.26E-05	3.17E-05	3.57E-05	4.11E-05	4.75E-05	4.67E-05	4.75E-05	9.34E-07	3.98E-05	3.06E-05	2.44E-05	1.85E-05	1.33E-05	5.60E-06	**6**
cn = 7	8.17E-07	2.57E-07	8.04E-07	1.97E-05	2.17E-06	1.82E-06	5.13E-07	6.34E-07	1.22E-06	7.92E-07	4.23E-05	1.16E-06	2.57E-07	4.25E-05	1.79E-06	1.34E-06	6.90E-06	9.62E-07	3.06E-07	**7**
cn = 8	1.08E-06	1.22E-06	1.25E-06	1.92E-05	1.03E-06	1.10E-06	1.46E-06	1.31E-06	7.82E-07	1.81E-06	4.10E-05	1.44E-06	1.22E-06	4.34E-05	7.18E-07	3.10E-07	3.98E-06	3.64E-07	8.11E-07	**8**
cn = 9	3.56E-07	7.90E-07	6.78E-07	1.89E-05	6.79E-07	5.11E-07	1.81E-06	6.93E-07	1.32E-06	6.82E-07	3.92E-05	9.91E-07	7.90E-07	4.04E-05	3.47E-07	7.08E-07	3.21E-06	1.22E-06	2.31E-06	**9**
cn = 10	1.04E-06	1.47E-06	1.92E-06	2.10E-05	9.31E-07	6.58E-07	2.08E-06	4.98E-19	2.37E-06	1.47E-06	3.87E-05	1.32E-06	1.47E-06	4.05E-05	2.51E-06	1.32E-06	2.83E-06	1.92E-06	1.04E-06	**10**
cn = 11	4.66E-07	1.30E-06	8.83E-07	1.77E-05	1.70E-06	4.24E-07	1.80E-06	9.39E-07	1.35E-06	1.68E-06	3.67E-05	6.18E-07	1.30E-06	3.76E-05	1.47E-06	1.27E-06	4.85E-06	4.50E-07	1.11E-06	**11**
cn = 12	7.37E-07	2.66E-07	7.80E-07	1.73E-05	6.28E-07	1.30E-06	1.00E-06	1.56E-06	1.21E-06	1.67E-06	3.39E-05	8.49E-07	2.66E-07	3.66E-05	6.83E-07	2.08E-07	5.40E-06	7.72E-07	1.02E-06	**12**
cn = 13	8.94E-07	1.33E-06	1.52E-06	1.63E-05	1.49E-06	9.97E-07	1.21E-06	1.54E-06	5.60E-07	1.08E-06	3.40E-05	1.19E-06	1.33E-06	3.49E-05	9.04E-07	1.02E-06	1.22E-06	6.88E-07	1.86E-06	**13**
cn = 14	1.46E-06	1.92E-06	1.57E-06	1.37E-05	9.86E-07	1.65E-06	6.83E-07	1.06E-06	1.07E-06	1.39E-06	3.29E-05	3.15E-06	1.92E-06	3.28E-05	2.78E-07	1.76E-06	2.29E-06	1.56E-06	5.70E-07	**14**
cn = 15	7.05E-07	7.12E-07	8.62E-07	1.50E-05	1.53E-06	1.99E-06	3.91E-07	1.32E-06	8.26E-07	9.25E-07	3.25E-05	8.04E-07	7.12E-07	3.21E-05	1.88E-06	1.02E-06	7.38E-07	8.62E-07	6.68E-07	**15**
cn = 16	5.76E-07	1.54E-06	4.96E-07	1.39E-05	2.00E-06	1.95E-06	2.00E-06	1.43E-07	1.77E-06	5.16E-07	3.02E-05	7.25E-07	1.54E-06	3.15E-05	1.67E-06	6.04E-07	8.29E-07	1.15E-06	2.31E-07	**16**

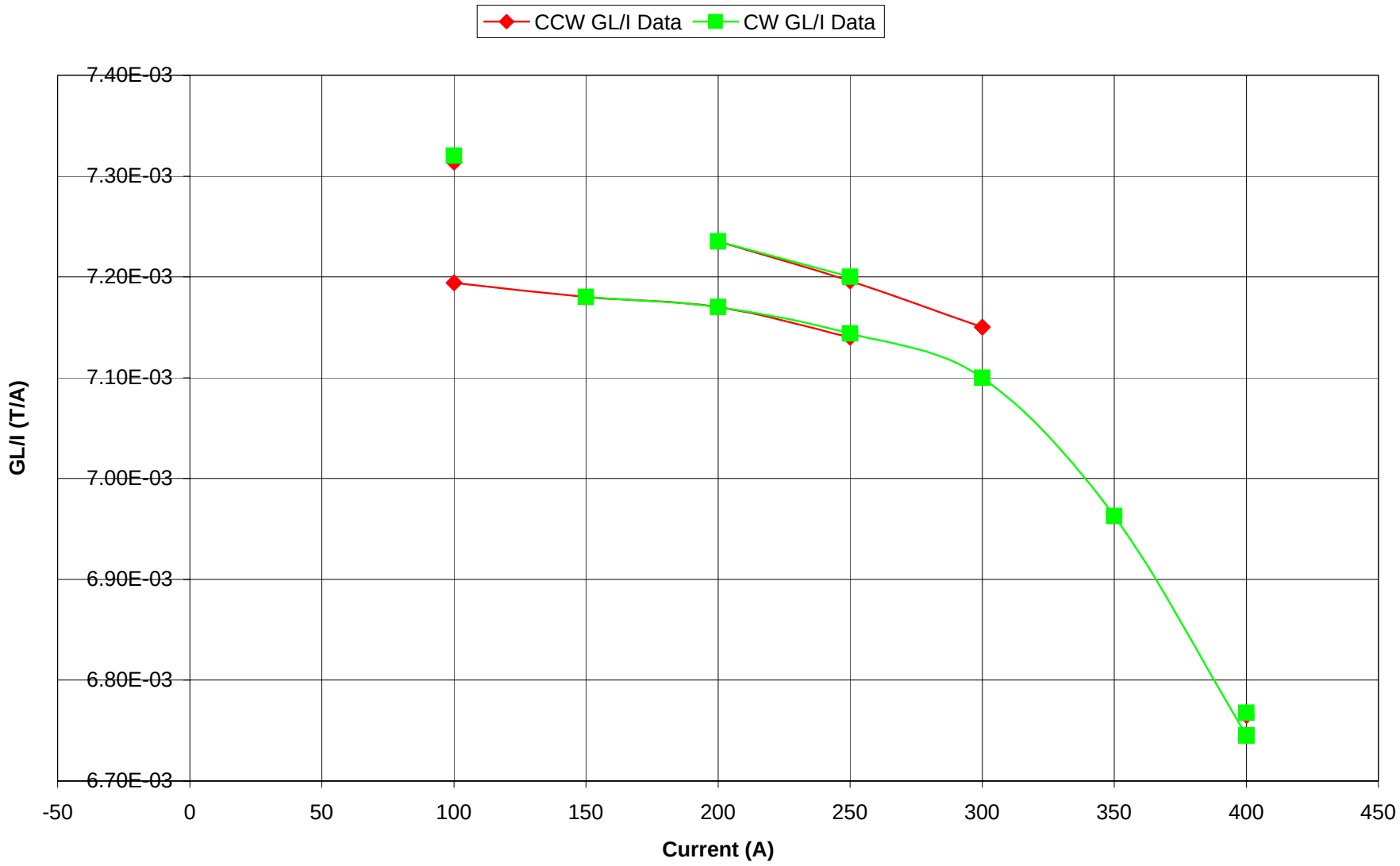
Normalized Data

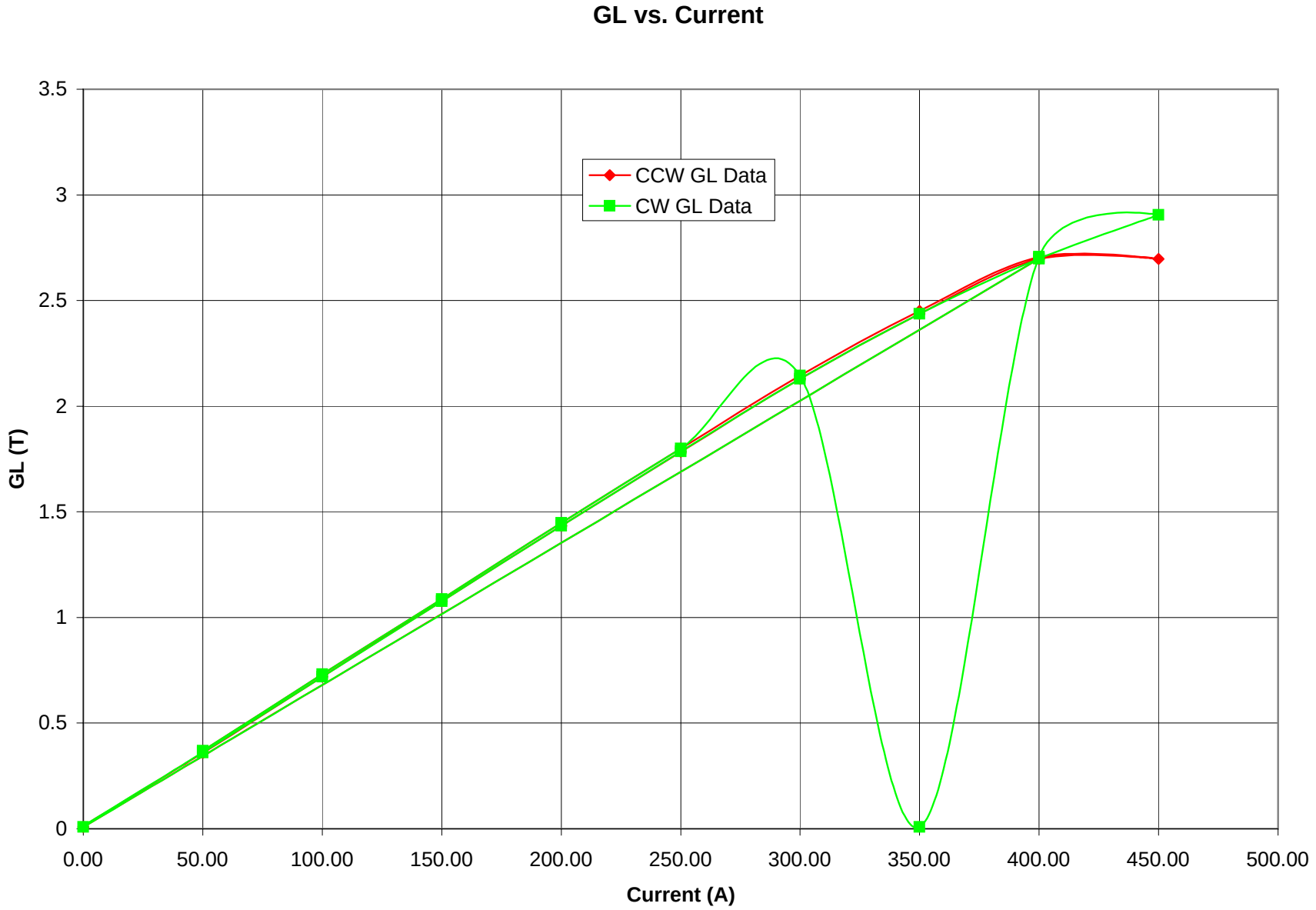
Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q1RT_1.dat	**400**	2.70E-02	2.70E+00	0.09%	0.06%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.65%**
Q1RT_2.dat	**0**	8.19E-05	8.19E-03	6.38%	1.04%	0.47%	1.14%	0.31%	1.49%	0.96%	1.80%	1.59%	0.32%	1.62%	2.34%	0.87%	1.88%	**77.77%**
Q1RT_3.dat	**50**	3.60E-03	3.60E-01	0.07%	0.06%	0.03%	0.23%	0.02%	0.03%	0.02%	0.05%	0.02%	0.02%	0.04%	0.04%	0.02%	0.01%	**99.31%**
Q1RT_4.dat	**100**	7.20E-03	7.20E-01	0.26%	0.30%	0.30%	0.26%	0.27%	0.27%	0.26%	0.29%	0.25%	0.24%	0.23%	0.19%	0.21%	0.19%	**96.48%**
Q1RT_5.dat	**150**	1.08E-02	1.08E+00	0.08%	0.05%	0.01%	0.17%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	**99.58%**
Q1RT_6.dat	**200**	1.43E-02	1.43E+00	0.08%	0.04%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.63%**
Q1RT_7.dat	**250**	1.79E-02	1.79E+00	0.10%	0.07%	0.02%	0.18%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.57%**
Q1RT_8.dat	**300**	2.13E-02	2.13E+00	0.08%	0.06%	0.00%	0.17%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.65%**
Q1RT_9.dat	**350**	2.44E-02	2.44E+00	0.09%	0.06%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.63%**
Q1RT_10.dat	**400**	2.70E-02	2.70E+00	0.09%	0.06%	0.01%	0.18%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.62%**
Q1RT_11.dat	**450**	2.91E-02	2.91E+00	0.13%	0.14%	0.15%	0.16%	0.15%	0.14%	0.13%	0.13%	0.13%	0.12%	0.12%	0.11%	0.11%	0.10%	**98.18%**
Q1RT_12.dat	**400**	2.71E-02	2.71E+00	0.09%	0.06%	0.01%	0.18%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.63%**
Q1RT_13.dat	**350**	8.19E-05	8.19E-03	6.38%	1.04%	0.47%	1.14%	0.31%	1.49%	0.96%	1.80%	1.59%	0.32%	1.62%	2.34%	0.87%	1.88%	**77.77%**
Q1RT_14.dat	**300**	2.15E-02	2.15E+00	0.18%	0.19%	0.20%	0.19%	0.20%	0.20%	0.19%	0.19%	0.18%	0.17%	0.16%	0.15%	0.15%	0.15%	**97.50%**
Q1RT_15.dat	**250**	1.80E-02	1.80E+00	0.07%	0.06%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.62%**
Q1RT_16.dat	**200**	1.45E-02	1.45E+00	0.08%	0.08%	0.02%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.58%**
Q1RT_17.dat	**150**	1.09E-02	1.09E+00	0.04%	0.11%	0.06%	0.17%	0.06%	0.04%	0.03%	0.03%	0.04%	0.05%	0.01%	0.02%	0.01%	0.01%	**99.31%**
Q1RT_18.dat	**100**	7.32E-03	7.32E-01	0.03%	0.06%	0.02%	0.18%	0.01%	0.00%	0.02%	0.03%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	**99.58%**
Q1RT_19.dat	**50**	3.70E-03	3.70E-01	0.02%	0.07%	0.02%	0.15%	0.01%	0.02%	0.06%	0.03%	0.03%	0.03%	0.05%	0.02%	0.02%	0.01%	**99.47%**
																	average =	**96.61%**
			Average Da	0.76%	0.19%	0.10%	0.28%	0.08%	0.20%	0.14%	0.23%	0.21%	0.07%	0.21%	0.28%	0.12%	0.23%	

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q1RT_1.dat	400	2.698E-02	2.70E+00	0.09%	0.06%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	99.65%	0.00675	400
Q1RT_2.dat	0																			
Q1RT_3.dat	50																			
Q1RT_4.dat	100																			
Q1RT_5.dat	150	1.077E-02	1.08E+00	0.08%	0.05%	0.01%	0.17%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	99.58%	0.00718	150
Q1RT_6.dat	200	1.434E-02	1.43E+00	0.08%	0.04%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	99.63%	0.00717	200
Q1RT_7.dat	250	1.786E-02	1.79E+00	0.10%	0.07%	0.02%	0.18%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.57%	0.00714	250
Q1RT_8.dat	300	2.130E-02	2.13E+00	0.08%	0.06%	0.00%	0.17%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	99.65%	0.00710	300
Q1RT_9.dat	350	2.437E-02	2.44E+00	0.09%	0.06%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	99.63%	0.00696	350
Q1RT_10.dat	400	2.698E-02	2.70E+00	0.09%	0.06%	0.01%	0.18%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.62%	0.00675	400
Q1RT_11.dat	450																			
Q1RT_12.dat	400	2.707E-02	2.71E+00	0.09%	0.06%	0.01%	0.18%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	99.63%	0.00677	400
Q1RT_13.dat	350																			
Q1RT_14.dat	300																			
Q1RT_15.dat	250	1.800E-02	1.80E+00	0.07%	0.06%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.62%	0.00720	250
Q1RT_16.dat	200	1.447E-02	1.45E+00	0.08%	0.08%	0.02%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	99.58%	0.00724	200
Q1RT_17.dat	150																			
Q1RT_18.dat	100	7.320E-03	7.32E-01	0.03%	0.06%	0.02%	0.18%	0.01%	0.00%	0.02%	0.03%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	99.58%	0.00732	100
Q1RT_19.dat	50																			

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.61%
n =															
Average Data	0.08%	0.06%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

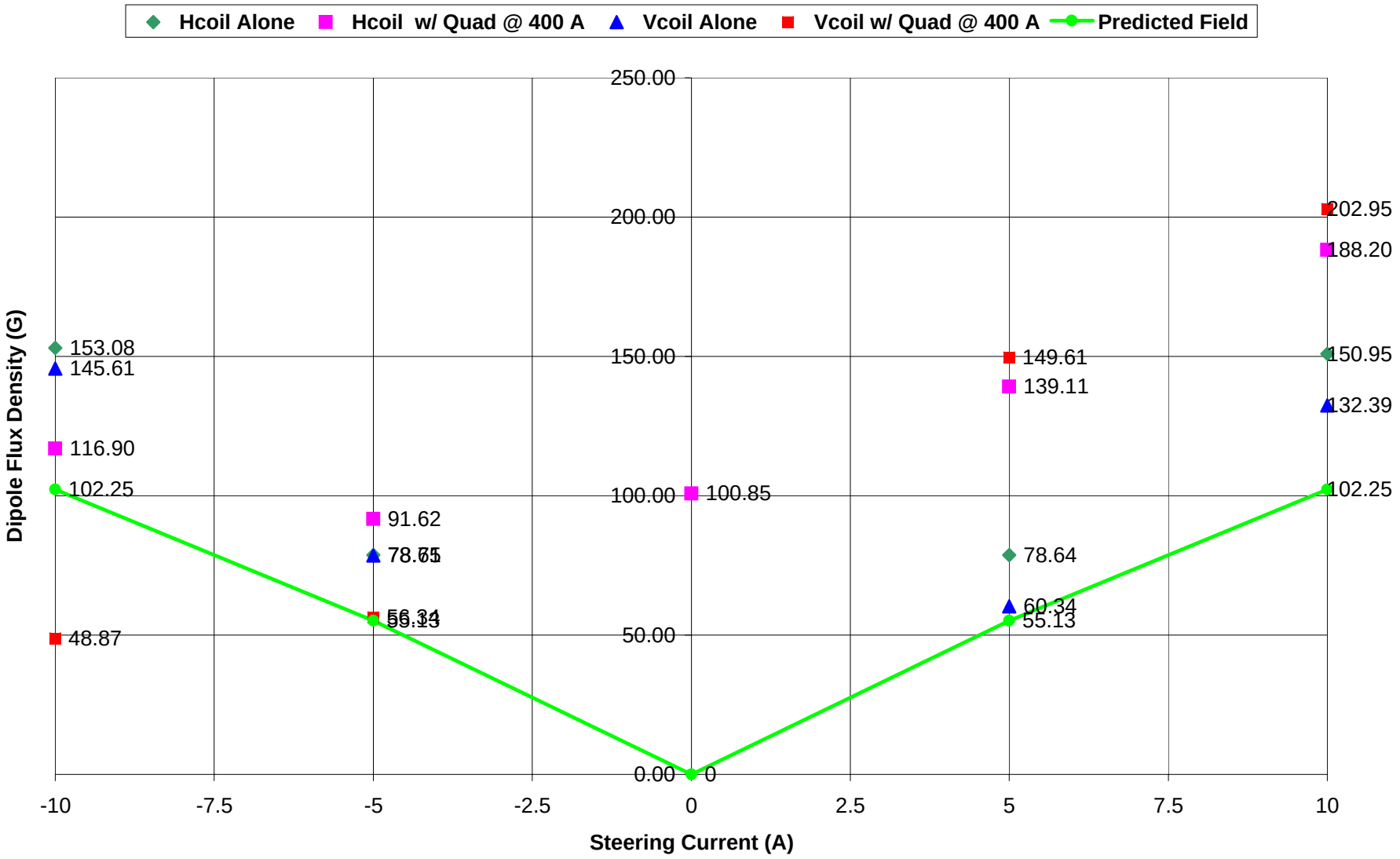

GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.40E-03
7.30E-03
7.20E-03
7.10E-03
7.00E-03
6.90E-03
6.80E-03
6.70E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
3.5
3
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.698	392.6644	0.981661	2.739075
0				
50				
100	0.7194	96.67693	0.966769	0.696458
150	1.077	148.1068	0.987379	1.070974
200	1.434	198.7338	0.993669	1.444964
250	1.785	246.6307	0.986523	1.794617
300				
350	2.437	342.5866	0.978819	2.446011
400				
450				
400	2.706	394.391	0.985978	2.7484
350				
300	2.145	296.6565	0.988855	2.145614
250	1.799	248.5275	0.99411	1.808253
200	1.447	200.5359	1.00268	1.45825
150				
100	0.7314	98.36947	0.983695	0.708594
50				
		average =	**98.638%**	

Dipole Field vs. Steering Current



The conditions for each c ase are following.
core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q1RT_HD1.dat	5	0	0	4.80E-04	78.64		8.68E-05
Q1RT_HD2.dat	10	0	0	9.21E-04	150.95		6.27E-05
Q1RT_HD3.dat	-5	0	0	4.80E-04	78.75		5.64E-05
Q1RT_HD4.dat	-10	0	0	9.34E-04	153.08		5.60E-05
Q1RT_VD1.dat	0	5	0	3.68E-04	60.34		8.15E-05
Q1RT_VD2.dat	0	10	0	8.08E-04	132.39		7.13E-05
Q1RT_VD3.dat	0	-5	0	4.80E-04	78.61		4.15E-05
Q1RT_VD4.dat	0	-10	0	8.88E-04	145.61		2.48E-05
Q1RT_HVD1.da	5	5	0	6.00E-04	98.43		6.50E-05
Q1RT_HVD2.da	10	10	0	1.22E-03	200.66		7.13E-05
Q1RT_21.dat	0	0	400	6.15E-04	100.85		2.70E-02
Q1RT_22.dat	5	0	400	8.49E-04	139.11	239.97	2.70E-02
Q1RT_23.dat	10	0	400	1.15E-03	188.20	289.05	2.70E-02
Q1RT_24.dat	-5	0	400	5.59E-04	91.62	-9.23	2.70E-02
Q1RT_25.dat	-10	0	400	7.13E-04	116.90	16.05	2.70E-02
Q1RT_26.dat	0	5	400	9.13E-04	149.61	48.75	2.70E-02
Q1RT_27.dat	0	10	400	1.24E-03	202.95	102.10	2.70E-02
Q1RT_28.dat	0	-5	400	3.44E-04	56.34	157.20	2.70E-02
Q1RT_29.dat	0	-10	400	2.98E-04	48.87	149.72	2.70E-02
Q1RT_30.dat	5	5	400	1.10E-03	179.84	280.69	2.70E-02
Q1RT_31.dat	10	10	400	1.58E-03	258.20	359.05	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	102.25	127.81
-5	55.13	76.14
0	0	0
5	55.13	76.14
10	102.25	127.81

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q13_1.mpl	Q13_2.mpl	Q13_3.mpl	Q13_4.mpl	Q13_5.mpl	Q13_6.mpl	Q13_7.mpl	Q13_8.mpl	Q13_9.mpl	Q13_10.mp	Q13_11.mp	Q13_12.mp	Q13_13.mp	Q13_14.mp	Q13_15.mp	Q13_16.mp	Q13_17.mpl	Q13_18.mp	Q13_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		1.11E-04	7.15E-07	1.74E-05	3.40E-05	4.69E-05	6.19E-05	7.35E-05	9.13E-05	1.02E-04	1.09E-04	1.20E-04	1.13E-04	9.93E-05	8.79E-05	7.37E-05	6.15E-05	4.42E-05	2.86E-05	1.47E-05	**1**
cn = 2		2.72E-02	6.27E-05	3.63E-03	7.25E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.32E-03	3.71E-03	**2**
cn = 3		5.52E-06	1.24E-06	1.11E-07	1.53E-06	3.86E-06	5.20E-06	2.74E-06	3.53E-06	3.73E-06	6.46E-06	4.50E-06	3.60E-06	3.33E-06	3.78E-06	2.07E-06	6.73E-07	1.89E-06	3.74E-07	1.20E-06	**3**
cn = 4		2.94E-06	7.57E-07	1.18E-06	9.36E-07	2.64E-06	1.48E-06	3.10E-06	1.70E-06	1.32E-06	2.47E-06	3.89E-06	1.88E-06	1.98E-06	2.36E-06	2.03E-06	3.29E-06	1.13E-06	1.71E-06	1.20E-06	**4**
cn = 5		2.10E-06	1.41E-06	6.66E-07	2.01E-06	1.12E-06	5.82E-07	2.12E-06	1.67E-06	1.67E-06	2.53E-06	1.87E-06	2.44E-06	1.51E-06	1.41E-06	1.01E-06	8.24E-07	1.67E-06	9.29E-07	3.85E-07	**5**
cn = 6		4.70E-05	9.79E-07	5.49E-06	1.17E-05	1.61E-05	2.23E-05	2.85E-05	3.55E-05	4.11E-05	4.52E-05	5.03E-05	4.68E-05	4.02E-05	3.35E-05	2.84E-05	2.45E-05	1.81E-05	1.10E-05	5.82E-06	**6**
cn = 7		6.08E-07	4.90E-07	5.03E-07	1.23E-06	2.41E-06	1.24E-06	1.41E-06	1.53E-06	1.20E-06	1.74E-06	1.02E-06	1.14E-06	2.94E-07	8.01E-07	1.24E-06	1.63E-06	1.06E-06	8.22E-07	1.69E-06	**7**
cn = 8		1.36E-06	1.44E-06	1.44E-06	1.66E-06	1.00E-06	1.57E-06	1.00E-06	2.54E-07	9.72E-07	8.89E-07	1.31E-06	6.92E-07	1.08E-06	6.65E-07	1.36E-06	6.65E-07	8.89E-07	1.00E-06	7.73E-07	**8**
cn = 9		4.14E-07	7.43E-07	7.91E-07	1.08E-06	1.49E-06	9.30E-07	1.42E-06	7.50E-07	1.11E-06	1.65E-06	3.07E-06	5.74E-07	1.06E-06	9.56E-08	4.16E-07	2.67E-07	7.61E-08	6.06E-07	1.11E-06	**9**
cn = 10		1.04E-06	4.65E-07	6.58E-07	2.08E-06	1.40E-06	2.83E-06	6.58E-07	4.65E-07	2.51E-06	3.26E-06	1.92E-06	1.04E-06	2.83E-06	2.51E-06	3.84E-06	9.31E-07	1.04E-06	2.71E-06	1.97E-06	**10**
cn = 11		1.95E-06	1.41E-06	2.77E-07	1.75E-06	1.85E-06	8.99E-07	1.30E-06	1.21E-06	9.71E-07	1.47E-06	1.23E-06	9.04E-07	1.82E-06	1.11E-06	1.44E-06	1.24E-06	1.52E-06	2.82E-06	6.23E-07	**11**
cn = 12		6.03E-07	1.92E-06	9.62E-07	1.35E-06	1.14E-06	1.88E-06	2.17E-06	1.53E-06	5.71E-07	1.67E-06	7.18E-07	1.39E-06	7.34E-07	6.17E-07	1.23E-06	7.59E-07	6.64E-07	5.32E-07	2.35E-06	**12**
cn = 13		7.18E-07	9.50E-07	9.47E-07	1.69E-06	1.05E-06	1.41E-06	4.14E-07	1.02E-06	1.63E-06	1.70E-06	1.08E-06	9.50E-07	9.06E-07	1.31E-06	8.26E-07	9.40E-07	1.87E-06	2.19E-06	9.74E-07	**13**
cn = 14		1.68E-06	9.61E-07	1.95E-06	7.42E-07	7.34E-08	8.25E-07	1.07E-06	1.31E-06	8.85E-07	1.09E-06	6.85E-07	1.07E-06	9.28E-07	1.03E-06	7.91E-07	6.24E-07	5.56E-07	6.72E-07	1.10E-06	**14**
cn = 15		2.77E-07	5.68E-07	1.23E-06	1.54E-06	8.62E-07	1.37E-06	1.98E-06	1.28E-06	1.28E-06	2.33E-06	1.10E-06	9.84E-07	1.16E-06	5.68E-07	7.71E-07	1.94E-06	1.28E-06	2.95E-07	7.12E-07	**15**
cn = 16		1.16E-06	7.25E-07	7.25E-07	1.76E-06	7.47E-07	6.62E-07	7.47E-07	2.44E-06	1.07E-06	1.17E-06	1.43E-07	1.35E-06	5.76E-07	9.33E-07	1.16E-06	9.33E-07	1.17E-06	7.47E-07	8.03E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q13_1.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.75%**	Q2_1.dat	400
Q13_2.mpl	**0**	6.27E-05	6.27E-03	1.98%	1.21%	2.24%	1.56%	0.78%	2.29%	1.18%	0.74%	2.25%	3.06%	1.51%	1.53%	0.91%	1.15%	**77.60%**	Q2_2.dat	0
Q13_3.mpl	**50**	3.63E-03	3.63E-01	0.00%	0.03%	0.02%	0.15%	0.01%	0.04%	0.02%	0.02%	0.01%	0.03%	0.03%	0.05%	0.03%	0.02%	**99.53%**	Q2_3.dat	50
Q13_4.mpl	**100**	7.25E-03	7.25E-01	0.02%	0.01%	0.03%	0.16%	0.02%	0.02%	0.01%	0.03%	0.02%	0.02%	0.02%	0.01%	0.02%	0.02%	**99.57%**	Q2_4.dat	100
Q13_5.mpl	**150**	1.09E-02	1.09E+00	0.04%	0.02%	0.01%	0.15%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.67%**	Q2_5.dat	150
Q13_6.mpl	**200**	1.44E-02	1.44E+00	0.04%	0.01%	0.00%	0.15%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.70%**	Q2_6.dat	200
Q13_7.mpl	**250**	1.80E-02	1.80E+00	0.02%	0.02%	0.01%	0.16%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.73%**	Q2_7.dat	250
Q13_8.mpl	**300**	2.15E-02	2.15E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.75%**	Q2_8.dat	300
Q13_9.mpl	**350**	2.46E-02	2.46E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	**99.76%**	Q2_9.dat	350
Q13_10.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.73%**	Q2_10.dat	400
Q13_11.mpl	**450**	2.92E-02	2.92E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.75%**	Q2_11.dat	450
Q13_12.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.76%**	Q2_12.dat	400
Q13_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.76%**	Q2_13.dat	350
Q13_14.mpl	**300**	2.16E-02	2.16E+00	0.02%	0.01%	0.01%	0.15%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.77%**	Q2_14.dat	300
Q13_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.74%**	Q2_15.dat	250
Q13_16.mpl	**200**	1.46E-02	1.46E+00	0.00%	0.02%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.73%**	Q2_16.dat	200
Q13_17.mpl	**150**	1.10E-02	1.10E+00	0.02%	0.01%	0.02%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	**99.70%**	Q2_17.dat	150
Q13_18.mpl	**100**	7.32E-03	7.32E-01	0.01%	0.02%	0.01%	0.15%	0.01%	0.01%	0.01%	0.04%	0.04%	0.01%	0.03%	0.01%	0.00%	0.01%	**99.64%**	Q2_18.dat	100
Q13_19.mpl	**50**	3.71E-03	3.71E-01	0.03%	0.03%	0.01%	0.16%	0.05%	0.02%	0.03%	0.05%	0.02%	0.06%	0.03%	0.03%	0.02%	0.02%	**99.44%**	Q2_19.dat	50
																	average =	**98.41%**		
			Average Da	0.12%	0.08%	0.13%	0.23%	0.05%	0.13%	0.07%	0.05%	0.13%	0.17%	0.09%	0.09%	0.06%	0.07%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q13_1.mpl	400	2.715E-02	2.7150	0.02%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	99.75%	0.00679	400
Q13_2.mpl	0																			0
Q13_3.mpl	50	3.630E-03	0.3630	0.00%	0.03%	0.02%	0.15%	0.01%	0.04%	0.02%	0.02%	0.01%	0.03%	0.03%	0.05%	0.03%	0.02%	99.53%	0.00726	50
Q13_4.mpl	100	7.247E-03	0.7247	0.02%	0.01%	0.03%	0.16%	0.02%	0.02%	0.01%	0.03%	0.02%	0.02%	0.02%	0.01%	0.02%	0.02%	99.57%	0.00725	100
Q13_5.mpl	150	1.085E-02	1.0850	0.04%	0.02%	0.01%	0.15%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	99.67%	0.00723	150
Q13_6.mpl	200	1.444E-02	1.4440	0.04%	0.01%	0.00%	0.15%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.70%	0.00722	200
Q13_7.mpl	250	1.799E-02	1.7990	0.02%	0.02%	0.01%	0.16%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.73%	0.00720	250
Q13_8.mpl	300	2.145E-02	2.1450	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	99.75%	0.00715	300
Q13_9.mpl	350	2.456E-02	2.4560	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	99.76%	0.00702	350
Q13_10.mpl	400	2.715E-02	2.7150	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	99.73%	0.00679	400
Q13_11.mpl	450	2.922E-02	2.9220	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.75%	0.00649	450
Q13_12.mpl	400	2.723E-02	2.7230	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	99.76%	0.00681	400
Q13_13.mpl	350	2.469E-02	2.4690	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	99.76%	0.00705	350
Q13_14.mpl	300	2.159E-02	2.1590	0.02%	0.01%	0.01%	0.15%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.77%	0.00720	300
Q13_15.mpl	250	1.813E-02	1.8130	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	99.74%	0.00725	250
Q13_16.mpl	200	1.456E-02	1.4560	0.00%	0.02%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	99.73%	0.00728	200
Q13_17.mpl	150	1.095E-02	1.0950	0.02%	0.01%	0.02%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	99.70%	0.00730	150
Q13_18.mpl	100	7.320E-03	0.7320	0.01%	0.02%	0.01%	0.15%	0.01%	0.01%	0.01%	0.04%	0.04%	0.01%	0.03%	0.01%	0.00%	0.01%	99.64%	0.00732	100
Q13_19.mpl	50	3.710E-03	0.3710	0.03%	0.03%	0.01%	0.16%	0.05%	0.02%	0.03%	0.05%	0.02%	0.06%	0.03%	0.03%	0.02%	0.02%	99.44%	0.00742	50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.71%
	Average Data:	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

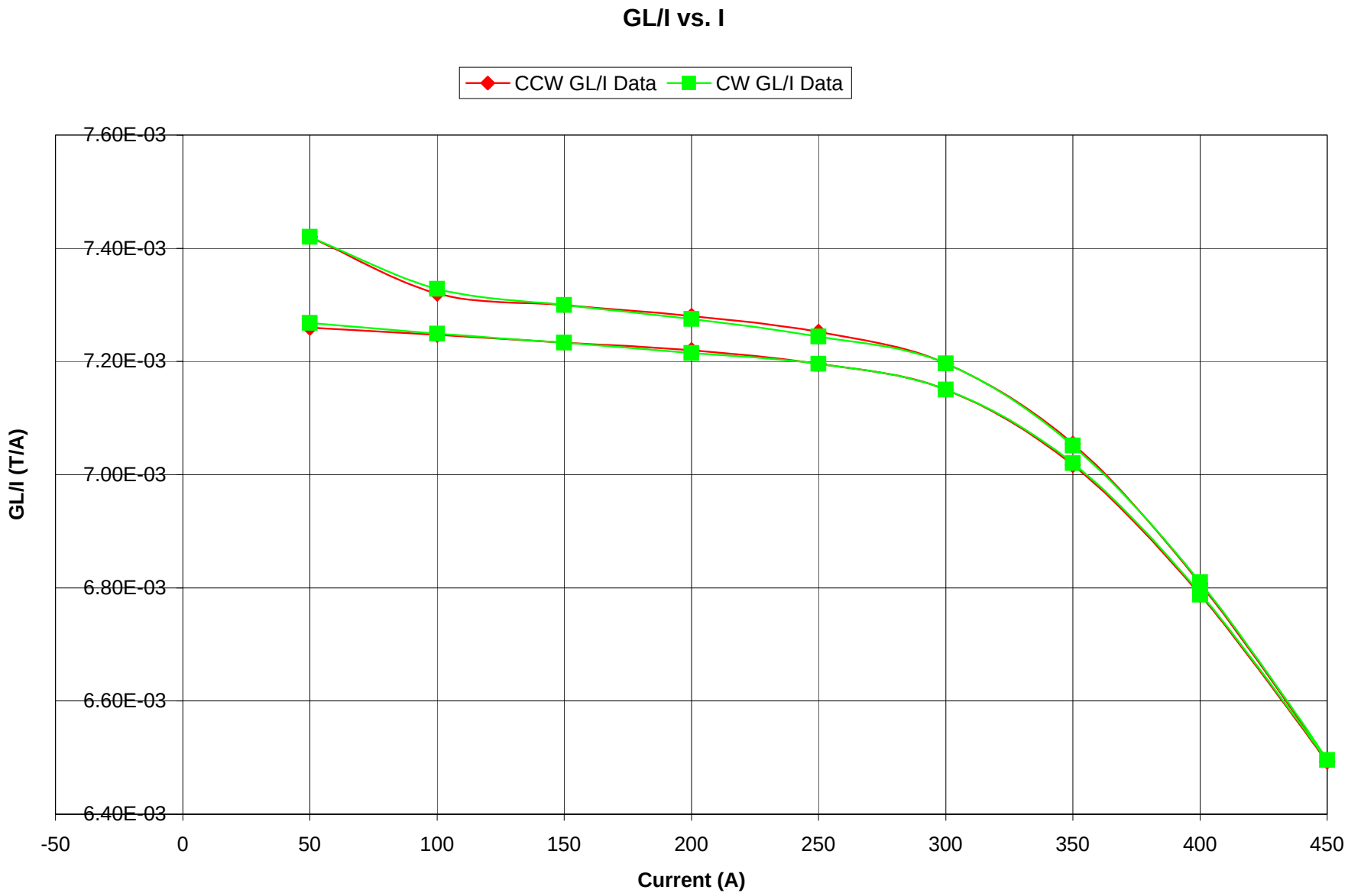
data file	Q13_1.mpl	Q13_2.mpl	Q13_3.mpl	Q13_4.mpl	Q13_5.mpl	Q13_6.mpl	Q13_7.mpl	Q13_8.mpl	Q13_9.mpl	Q13_10.mp	Q13_11.mp	Q13_12.mp	Q13_13.mp	Q13_14.mp	Q13_15.mp	Q13_16.mp	Q13_17.mpl	Q13_18.mp	Q13_19.mpl	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	1.08E-04	3.13E-06	1.30E-05	3.12E-05	4.60E-05	5.51E-05	7.51E-05	8.69E-05	9.53E-05	1.04E-04	1.17E-04	1.05E-04	9.20E-05	8.07E-05	6.60E-05	5.64E-05	4.10E-05	2.76E-05	1.32E-05	**1**
cn = 2	2.72E-02	6.49E-05	3.63E-03	7.25E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.33E-03	3.71E-03	**2**
cn = 3	5.05E-06	4.43E-07	4.20E-06	7.41E-07	1.46E-06	2.98E-06	4.21E-06	4.27E-06	5.19E-06	4.86E-06	4.00E-06	2.57E-06	4.93E-06	4.02E-06	3.14E-06	2.04E-06	9.93E-07	2.64E-06	6.16E-07	**3**
cn = 4	3.03E-06	5.28E-07	5.28E-07	8.86E-07	1.94E-06	3.26E-07	1.52E-06	2.25E-06	2.31E-06	4.58E-06	3.40E-06	3.26E-06	2.24E-06	4.34E-06	3.29E-06	8.15E-07	2.45E-06	1.00E-06	1.13E-06	**4**
cn = 5	1.41E-06	3.07E-07	7.11E-07	8.70E-07	7.41E-07	1.95E-06	2.33E-06	1.99E-06	1.87E-06	1.37E-06	2.48E-06	9.19E-07	2.22E-06	1.37E-06	1.95E-06	1.52E-06	2.08E-07	1.58E-06	1.51E-06	**5**
cn = 6	4.72E-05	3.71E-07	5.12E-06	1.06E-05	1.79E-05	2.46E-05	2.79E-05	3.58E-05	4.14E-05	4.58E-05	5.10E-05	4.56E-05	4.21E-05	3.44E-05	2.95E-05	2.43E-05	1.61E-05	1.22E-05	6.55E-06	**6**
cn = 7	8.34E-07	3.53E-07	3.51E-07	8.80E-07	1.41E-06	1.77E-06	1.80E-06	3.09E-07	2.14E-06	5.90E-07	8.86E-07	5.61E-07	9.82E-07	1.02E-06	1.18E-06	8.34E-07	1.43E-06	2.53E-07	1.14E-06	**7**
cn = 8	7.53E-07	1.50E-06	1.54E-06	1.44E-06	1.91E-07	1.08E-06	1.25E-06	7.73E-07	1.38E-06	4.78E-07	3.10E-07	6.01E-07	2.14E-06	9.72E-07	8.41E-07	1.91E-07	4.44E-07	1.78E-06	1.61E-06	**8**
cn = 9	1.70E-06	3.69E-07	6.31E-07	8.34E-07	4.22E-07	2.23E-06	8.36E-07	1.47E-06	1.37E-06	7.16E-07	1.87E-06	5.49E-07	8.07E-07	1.83E-06	1.22E-06	1.24E-06	6.31E-07	1.61E-06	1.77E-06	**9**
cn = 10	4.65E-07	2.51E-06	9.31E-07	4.65E-07	4.65E-07	2.33E-06	1.40E-06	2.95E-19	1.68E-06	6.58E-07	2.33E-06	1.40E-06	1.68E-06	1.47E-06	1.68E-06	1.86E-06	1.92E-06	1.04E-06	1.04E-06	**10**
cn = 11	9.63E-07	1.23E-06	5.99E-07	7.74E-07	1.73E-06	1.10E-06	7.31E-07	1.52E-06	1.32E-06	2.12E-06	9.98E-07	1.90E-06	8.12E-07	1.62E-06	6.19E-07	1.25E-06	8.27E-07	1.30E-06	6.07E-07	**11**
cn = 12	8.57E-07	4.30E-07	4.30E-07	2.16E-06	2.49E-06	6.96E-07	8.34E-07	2.14E-06	1.21E-06	5.45E-07	1.99E-06	1.29E-06	1.02E-07	2.91E-07	7.59E-07	9.24E-07	5.16E-07	5.06E-07	6.64E-07	**12**
cn = 13	2.60E-06	1.55E-06	4.95E-07	7.17E-07	1.24E-06	1.91E-07	9.72E-07	1.86E-06	2.18E-06	1.54E-06	1.97E-06	9.26E-07	1.25E-07	3.33E-07	5.62E-07	1.02E-06	1.71E-06	9.51E-07	1.25E-07	**13**
cn = 14	1.27E-06	1.67E-06	1.83E-06	1.71E-06	2.02E-06	4.30E-07	1.02E-06	1.75E-06	7.93E-07	9.43E-07	1.70E-06	2.06E-06	1.08E-06	2.59E-06	1.65E-06	1.13E-06	2.24E-06	6.95E-07	1.03E-06	**14**
cn = 15	5.68E-07	2.60E-06	5.45E-07	6.68E-07	1.08E-06	1.49E-06	8.19E-07	8.04E-07	1.10E-06	8.26E-07	5.01E-07	1.48E-06	6.11E-07	8.26E-07	1.49E-06	1.49E-06	9.31E-07	7.88E-07	1.16E-06	**15**
cn = 16	2.50E-06	1.12E-06	2.71E-07	7.25E-07	9.78E-07	5.76E-07	4.96E-07	8.03E-07	8.66E-07	1.30E-06	6.04E-07	1.73E-06	1.39E-06	1.07E-06	1.87E-06	9.78E-07	2.70E-06	1.20E-06	1.33E-06	**16**

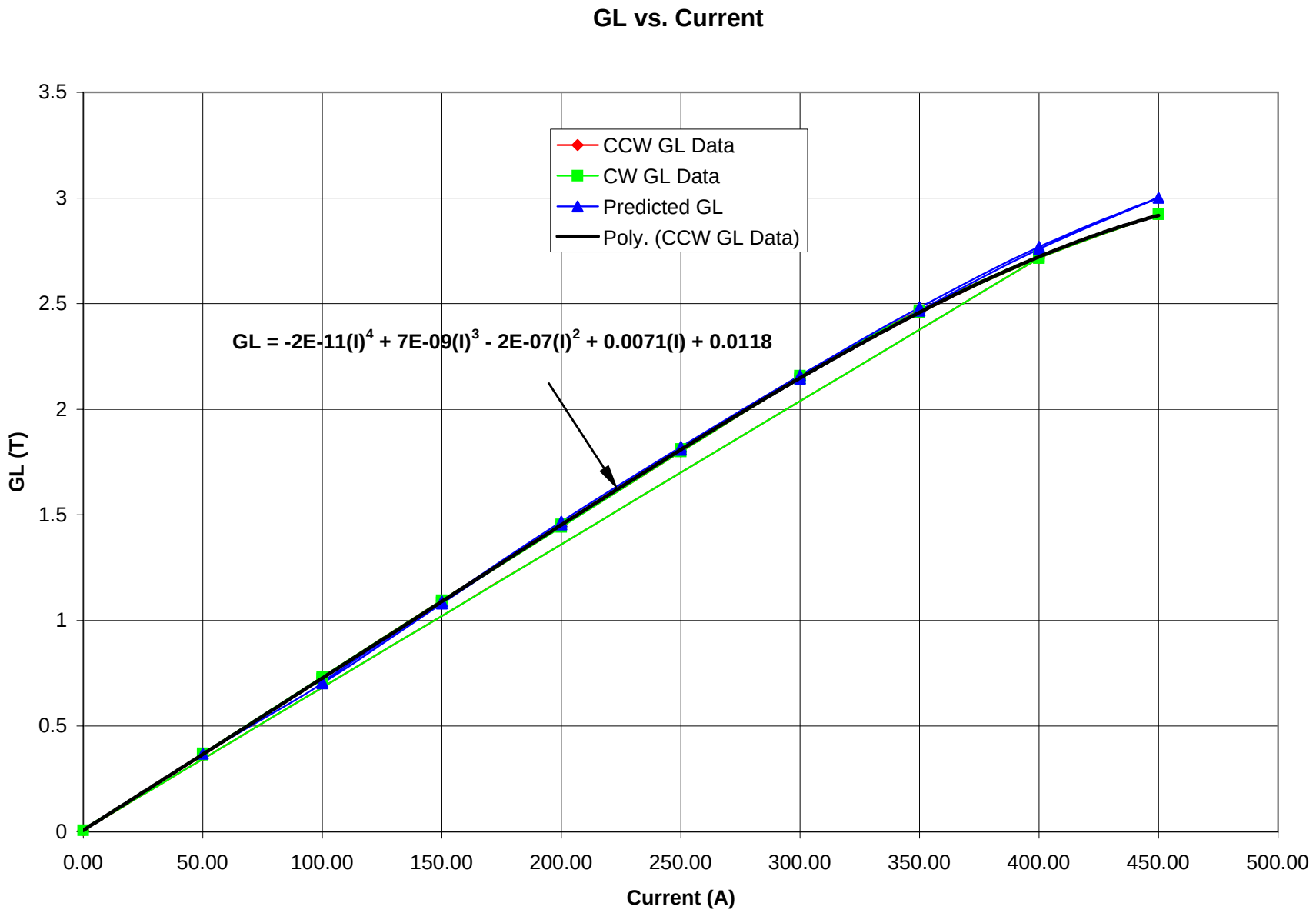
Normalized Data

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q13_1.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.75%**
Q13_2.mpl	**0**	6.49E-05	6.49E-03	0.68%	0.81%	0.47%	0.57%	0.54%	2.32%	0.57%	3.86%	1.89%	0.66%	2.38%	2.57%	4.01%	1.73%	**76.93%**
Q13_3.mpl	**50**	3.63E-03	3.63E-01	0.12%	0.01%	0.02%	0.14%	0.01%	0.04%	0.02%	0.03%	0.02%	0.01%	0.01%	0.05%	0.02%	0.01%	**99.50%**
Q13_4.mpl	**100**	7.25E-03	7.25E-01	0.01%	0.01%	0.01%	0.15%	0.01%	0.02%	0.01%	0.01%	0.01%	0.03%	0.01%	0.02%	0.01%	0.01%	**99.68%**
Q13_5.mpl	**150**	1.09E-02	1.09E+00	0.01%	0.02%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	**99.69%**
Q13_6.mpl	**200**	1.44E-02	1.44E+00	0.02%	0.00%	0.01%	0.17%	0.01%	0.01%	0.02%	0.02%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.71%**
Q13_7.mpl	**250**	1.80E-02	1.80E+00	0.02%	0.01%	0.01%	0.15%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	**99.74%**
Q13_8.mpl	**300**	2.15E-02	2.15E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.74%**
Q13_9.mpl	**350**	2.46E-02	2.46E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.74%**
Q13_10.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.02%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**
Q13_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.75%**
Q13_12.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.76%**
Q13_13.mpl	**350**	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.75%**
Q13_14.mpl	**300**	2.16E-02	2.16E+00	0.02%	0.02%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.74%**
Q13_15.mpl	**250**	1.81E-02	1.81E+00	0.02%	0.02%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.73%**
Q13_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.73%**
Q13_17.mpl	**150**	1.10E-02	1.10E+00	0.01%	0.02%	0.00%	0.15%	0.01%	0.00%	0.01%	0.02%	0.01%	0.00%	0.02%	0.02%	0.01%	0.02%	**99.70%**
Q13_18.mpl	**100**	7.33E-03	7.33E-01	0.04%	0.01%	0.02%	0.17%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	**99.62%**
Q13_19.mpl	**50**	3.71E-03	3.71E-01	0.02%	0.03%	0.04%	0.18%	0.03%	0.04%	0.05%	0.03%	0.02%	0.02%	0.00%	0.03%	0.03%	0.04%	**99.45%**
			Average Da	0.06%	0.06%	0.04%	0.19%	0.04%	0.13%	0.04%	0.21%	0.11%	0.04%	0.13%	0.15%	0.22%	0.10%	**average =** **98.37%**

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q13_1.mpl	400	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.75%	0.00679	400
Q13_2.mpl	0																			0
Q13_3.mpl	50	3.63E-03	3.63E-01	0.12%	0.01%	0.02%	0.14%	0.01%	0.04%	0.02%	0.03%	0.02%	0.01%	0.01%	0.05%	0.02%	0.01%	99.50%	0.00727	50
Q13_4.mpl	100	7.25E-03	7.25E-01	0.01%	0.01%	0.01%	0.15%	0.01%	0.02%	0.01%	0.01%	0.01%	0.03%	0.01%	0.02%	0.01%	0.01%	99.68%	0.00725	100
Q13_5.mpl	150	1.09E-02	1.09E+00	0.01%	0.02%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	99.69%	0.00723	150
Q13_6.mpl	200	1.44E-02	1.44E+00	0.02%	0.00%	0.01%	0.17%	0.01%	0.01%	0.02%	0.02%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.71%	0.00722	200
Q13_7.mpl	250	1.80E-02	1.80E+00	0.02%	0.01%	0.01%	0.15%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	99.74%	0.00720	250
Q13_8.mpl	300	2.15E-02	2.15E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	99.74%	0.00715	300
Q13_9.mpl	350	2.46E-02	2.46E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.74%	0.00702	350
Q13_10.mpl	400	2.72E-02	2.72E+00	0.02%	0.02%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00679	400
Q13_11.mpl	450	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	99.75%	0.00650	450
Q13_12.mpl	400	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	99.76%	0.00681	400
Q13_13.mpl	350	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	99.75%	0.00705	350
Q13_14.mpl	300	2.16E-02	2.16E+00	0.02%	0.02%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	99.74%	0.00720	300
Q13_15.mpl	250	1.81E-02	1.81E+00	0.02%	0.02%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	99.73%	0.00724	250
Q13_16.mpl	200	1.46E-02	1.46E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.73%	0.00728	200
Q13_17.mpl	150	1.10E-02	1.10E+00	0.01%	0.02%	0.00%	0.15%	0.01%	0.00%	0.01%	0.02%	0.01%	0.00%	0.02%	0.02%	0.01%	0.02%	99.70%	0.00730	150
Q13_18.mpl	100	7.33E-03	7.33E-01	0.04%	0.01%	0.02%	0.17%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	99.62%	0.00733	100
Q13_19.mpl	50	3.71E-03	3.71E-01	0.02%	0.03%	0.04%	0.18%	0.03%	0.04%	0.05%	0.03%	0.02%	0.02%	0.00%	0.03%	0.03%	0.04%	99.45%	0.00742	50
	n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.71%**				
	Average Data	**0.02%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**					

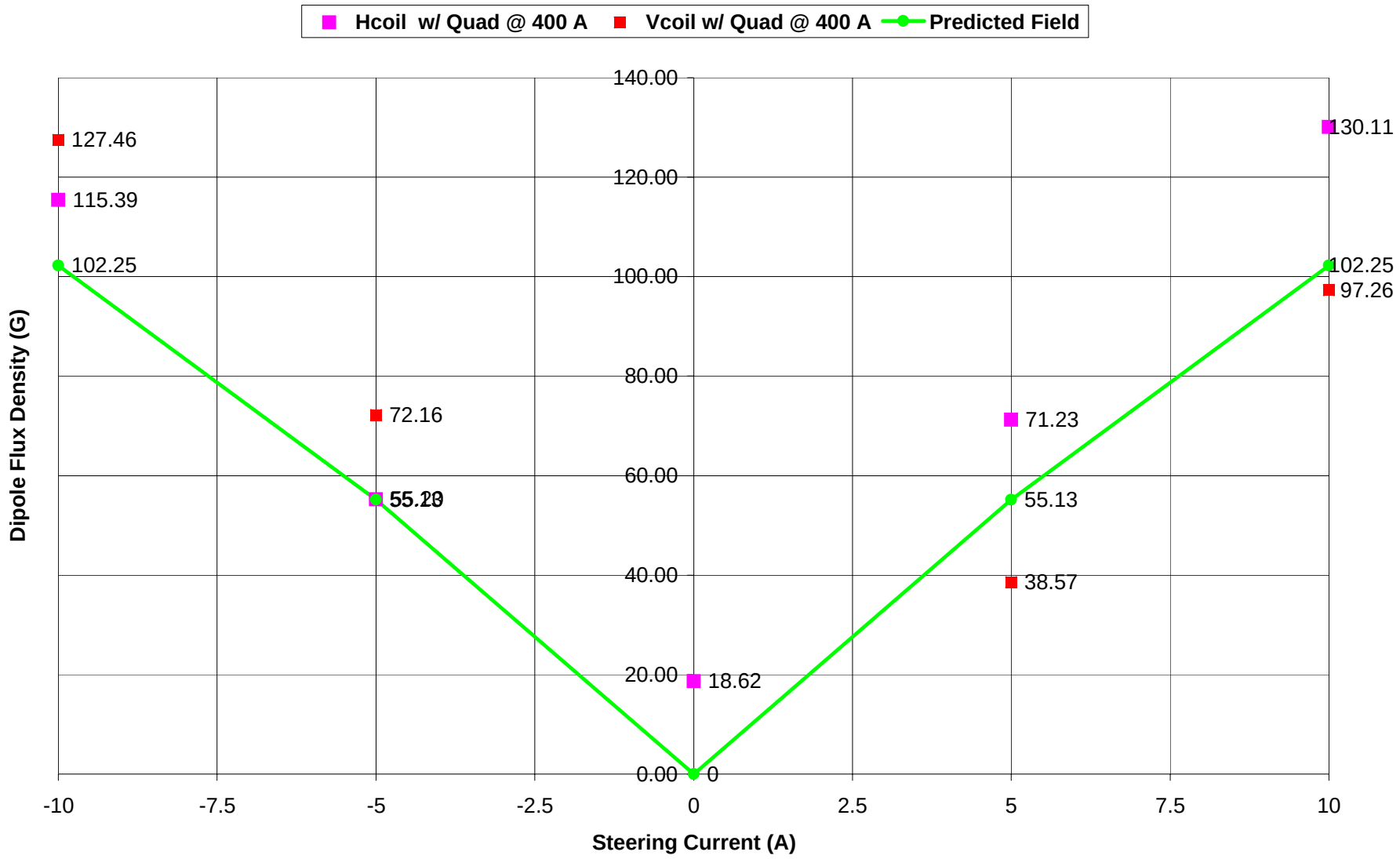

GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.60E-03
7.40E-03
7.20E-03
7.00E-03
6.80E-03
6.60E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.715	396.3493	0.990873	2.758908
0				
50	0.363	49.95299	0.99906	0.369104
100	0.7247	97.4239	0.974239	0.701812
150	1.085	149.2612	0.995074	1.07948
200	1.444	200.1203	1.000601	1.455187
250	1.799	248.5275	0.99411	1.808253
300	2.145	296.6565	0.988855	2.145614
350	2.456	345.8807	0.988231	2.466512
400	2.715	396.3493	0.990873	2.758908
450	2.922	446.615	0.992478	3.001179
400	2.723	398.1043	0.995261	2.768263
350	2.469	348.1619	0.994748	2.480616
300	2.159	298.7025	0.995675	2.15951
250	1.813	250.4254	1.001702	1.821877
200	1.456	201.7818	1.008909	1.467432
150	1.095	150.7033	1.004688	1.090109
100	0.732	98.45422	0.984542	0.709202
50	0.371	50.89248	1.01785	0.375518
		average =	**99.543%**	

Dipole Field vs. Steering Current



The conditions for each case are following.

core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q13_21.mpl	0	0	400	1.14E-04	18.62		2.70E-02
Q13_22.mpl	5	0	400	4.35E-04	71.23	89.85	2.70E-02
Q13_23.mpl	10	0	400	7.94E-04	130.11	148.74	2.70E-02
Q13_24.mpl	-5	0	400	3.37E-04	55.20	36.57	2.70E-02
Q13_25.mpl	-10	0	400	7.04E-04	115.39	96.77	2.70E-02
Q13_26.mpl	0	5	400	2.35E-04	38.57	19.95	2.70E-02
Q13_27.mpl	0	10	400	5.93E-04	97.26	78.64	2.70E-02
Q13_28.mpl	0	-5	400	4.40E-04	72.16	90.79	2.70E-02
Q13_29.mpl	0	-10	400	7.78E-04	127.46	146.08	2.70E-02
Q13_30.mpl	5	5	400	4.78E-04	78.36	96.98	2.70E-02
Q13_31.mpl	10	10	400	9.72E-04	159.36	177.98	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	102.25	127.81
-5	55.13	76.14
0	0	0
5	55.13	76.14
10	102.25	127.81

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q7_12.mpl	Q7_13.mpl	Q7_14.mpl	Q7_15.mpl	Q7_16.mpl	Q7_17.mpl	Q7_18.mpl	Q7_19.mpl	Q7_20.mpl	Q7_21.mpl	Q7_22.mpl	Q7_23.mpl	Q7_24.mpl	Q7_25.mpl	Q7_26.mpl	Q7_27.mpl	Q7_28.mpl	Q7_29.mpl	Q7_30.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		5.30E-05	7.14E-06	5.60E-06	1.91E-05	2.20E-05	3.63E-05	4.71E-05	5.09E-05	5.78E-05	6.10E-05	6.57E-05	6.07E-05	5.81E-05	5.07E-05	4.93E-05	3.59E-05	2.72E-05	1.93E-05	1.07E-05	**1**
cn = 2		2.71E-02	5.92E-05	3.62E-03	7.24E-03	1.08E-02	1.45E-02	1.80E-02	2.15E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.34E-03	3.72E-03	**2**
cn = 3		4.44E-06	3.68E-06	1.59E-06	2.03E-06	6.72E-06	2.02E-06	3.01E-06	1.81E-05	2.76E-06	5.65E-06	3.23E-06	1.96E-06	2.30E-06	1.45E-06	9.26E-06	2.02E-06	1.39E-06	1.74E-06	2.47E-06	**3**
cn = 4		2.16E-06	3.41E-06	5.03E-07	2.40E-06	4.71E-06	3.13E-06	9.86E-06	2.06E-05	1.51E-06	1.20E-06	4.26E-06	2.51E-06	1.43E-06	1.71E-06	1.47E-05	5.01E-06	2.37E-07	2.05E-06	1.25E-07	**4**
cn = 5		4.46E-07	1.23E-06	1.68E-06	1.41E-06	3.85E-06	6.53E-07	8.50E-06	1.93E-05	1.81E-06	2.79E-06	4.24E-06	2.03E-06	1.58E-06	1.15E-06	8.38E-06	3.50E-06	2.08E-07	2.10E-06	1.16E-06	**5**
cn = 6		4.61E-05	2.24E-06	4.20E-06	1.39E-05	1.68E-05	2.16E-05	2.57E-05	3.56E-05	3.93E-05	4.76E-05	5.20E-05	4.56E-05	4.27E-05	3.40E-05	2.83E-05	2.30E-05	1.82E-05	1.07E-05	9.41E-06	**6**
cn = 7		1.15E-06	8.85E-07	1.22E-06	2.25E-07	5.84E-06	1.00E-06	6.21E-06	2.25E-05	1.78E-06	3.10E-06	1.47E-06	1.05E-06	2.17E-06	9.96E-07	9.38E-06	2.14E-06	5.27E-07	3.47E-06	2.07E-06	**7**
cn = 8		1.25E-06	1.44E-06	9.53E-07	3.12E-06	5.05E-06	1.44E-06	4.86E-06	2.07E-05	3.10E-07	1.91E-07	5.28E-07	8.11E-07	1.44E-06	6.19E-07	1.08E-05	1.33E-06	9.60E-07	2.15E-06	6.65E-07	**8**
cn = 9		8.82E-07	1.66E-06	3.19E-07	7.82E-07	4.93E-06	2.03E-06	4.52E-06	2.00E-05	1.11E-06	1.52E-06	2.91E-06	1.14E-06	2.38E-06	1.37E-06	9.30E-06	2.79E-07	1.11E-06	1.72E-06	1.56E-06	**9**
cn = 10		1.97E-06	9.31E-07	1.92E-06	1.04E-06	3.72E-06	4.65E-07	5.14E-06	1.87E-05	1.04E-06	6.58E-07	2.98E-06	9.31E-07	1.92E-06	2.83E-06	1.07E-05	9.31E-07	1.04E-06	2.33E-06	1.68E-06	**10**
cn = 11		4.77E-07	7.30E-07	1.61E-06	1.38E-06	2.94E-06	1.30E-06	5.58E-06	1.78E-05	1.17E-06	6.82E-07	1.85E-06	1.70E-06	2.23E-06	1.35E-06	9.65E-06	1.70E-06	9.29E-07	1.66E-06	1.29E-06	**11**
cn = 12		7.80E-07	1.38E-06	1.50E-06	1.16E-06	4.58E-06	1.54E-06	5.15E-06	2.01E-05	1.66E-06	1.48E-06	1.13E-06	6.72E-07	1.96E-06	5.32E-07	9.81E-06	1.34E-06	2.14E-06	2.47E-06	1.82E-06	**12**
cn = 13		2.61E-07	1.31E-06	1.42E-06	1.14E-06	4.33E-06	7.90E-07	4.95E-06	1.72E-05	6.68E-07	1.28E-06	1.50E-06	7.34E-07	9.40E-07	1.76E-06	8.67E-06	1.48E-06	6.14E-07	1.35E-06	7.17E-07	**13**
cn = 14		1.29E-06	5.79E-07	2.17E-07	7.94E-07	3.62E-06	1.25E-06	3.11E-06	1.49E-05	6.70E-07	4.92E-07	1.32E-06	6.52E-07	2.17E-06	6.96E-07	6.15E-06	2.48E-07	1.25E-06	2.24E-06	1.61E-06	**14**
cn = 15		2.54E-06	9.44E-07	2.75E-06	5.68E-07	4.03E-06	1.90E-06	4.59E-06	1.76E-05	1.39E-06	8.85E-07	1.48E-06	2.03E-06	7.88E-07	2.58E-06	6.96E-06	7.08E-07	9.31E-07	2.77E-07	1.57E-06	**15**
cn = 16		4.96E-07	7.25E-07	4.39E-07	6.59E-07	3.80E-06	7.25E-07	2.85E-06	1.33E-05	6.04E-07	9.78E-07	2.27E-06	2.31E-07	7.25E-07	1.21E-06	6.32E-06	1.87E-06	1.64E-06	1.15E-06	9.33E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q7_12.mpl	**400**	2.71E-02	2.71E+00	0.02%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%		Q2_2.dat	0
Q7_13.mpl	**0**	5.92E-05	5.92E-03	6.21%	5.75%	2.08%	3.78%	1.49%	2.43%	2.80%	1.57%	1.23%	2.34%	2.21%	0.98%	1.60%	1.22%	**64.30%**	Q2_3.dat	50
Q7_14.mpl	**50**	3.62E-03	3.62E-01	0.04%	0.01%	0.05%	0.12%	0.03%	0.03%	0.01%	0.05%	0.04%	0.04%	0.04%	0.01%	0.08%	0.01%	**99.44%**	Q2_4.dat	100
Q7_15.mpl	**100**	7.24E-03	7.24E-01	0.03%	0.03%	0.02%	0.19%	0.00%	0.04%	0.01%	0.01%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%	**99.58%**	Q2_5.dat	150
Q7_16.mpl	**150**	1.08E-02	1.08E+00	0.06%	0.04%	0.04%	0.15%	0.05%	0.05%	0.05%	0.03%	0.03%	0.04%	0.04%	0.03%	0.04%	0.04%	**99.31%**	Q2_6.dat	200
Q7_17.mpl	**200**	1.45E-02	1.45E+00	0.01%	0.02%	0.00%	0.15%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.72%**	Q2_7.dat	250
Q7_18.mpl	**250**	1.80E-02	1.80E+00	0.02%	0.05%	0.05%	0.14%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%	0.03%	0.02%	**99.48%**	Q2_8.dat	300
Q7_19.mpl	**300**	2.15E-02	2.15E+00	0.08%	0.10%	0.09%	0.17%	0.11%	0.10%	0.09%	0.09%	0.08%	0.09%	0.08%	0.07%	0.08%	0.06%	**98.71%**	Q2_9.dat	350
Q7_20.mpl	**350**	2.45E-02	2.45E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	**99.77%**	Q2_10.dat	400
Q7_21.mpl	**400**	2.71E-02	2.71E+00	0.02%	0.00%	0.01%	0.18%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.75%**	Q2_11.dat	450
Q7_22.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.18%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.72%**	Q2_12.dat	400
Q7_23.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.77%**	Q2_13.dat	350
Q7_24.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.74%**	Q2_14.dat	300
Q7_25.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.76%**	Q2_15.dat	250
Q7_26.mpl	**250**	1.81E-02	1.81E+00	0.05%	0.08%	0.05%	0.16%	0.05%	0.06%	0.05%	0.06%	0.05%	0.05%	0.05%	0.03%	0.04%	0.03%	**99.18%**	Q2_16.dat	200
Q7_27.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.03%	0.02%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.69%**	Q2_17.dat	150
Q7_28.mpl	**150**	1.10E-02	1.10E+00	0.01%	0.00%	0.00%	0.17%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	**99.72%**	Q2_18.dat	100
Q7_29.mpl	**100**	7.34E-03	7.34E-01	0.02%	0.03%	0.03%	0.15%	0.05%	0.03%	0.02%	0.03%	0.02%	0.03%	0.02%	0.03%	0.00%	0.02%	**99.52%**	Q2_19.dat	50
Q7_30.mpl	**50**	3.72E-03	3.72E-01	0.07%	0.00%	0.03%	0.25%	0.06%	0.02%	0.04%	0.05%	0.03%	0.05%	0.02%	0.04%	0.04%	0.03%			
																	average =	**97.48%**		
			Average Da	0.35%	0.33%	0.13%	0.36%	0.10%	0.15%	0.17%	0.10%	0.08%	0.15%	0.13%	0.07%	0.10%	0.08%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q7_12.mpl	400																			400
Q7_13.mpl	0																			0
Q7_14.mpl	50																			50
Q7_15.mpl	100																			100
Q7_16.mpl	150																			150
Q7_17.mpl	200	1.445E-02	1.4450	0.01%	0.02%	0.00%	0.15%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00723	200
Q7_18.mpl	250																			250
Q7_19.mpl	300																			300
Q7_20.mpl	350	2.454E-02	2.4540	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	99.77%	0.00701	350
Q7_21.mpl	400	2.712E-02	2.7120	0.02%	0.00%	0.01%	0.18%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	99.75%	0.00678	400
Q7_22.mpl	450	2.917E-02	2.9170	0.01%	0.01%	0.01%	0.18%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.72%	0.00648	450
Q7_23.mpl	400	2.721E-02	2.7210	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.77%	0.00680	400
Q7_24.mpl	350	2.467E-02	2.4670	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.74%	0.00705	350
Q7_25.mpl	300	2.161E-02	2.1610	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.76%	0.00720	300
Q7_26.mpl	250																			250
Q7_27.mpl	200	1.456E-02	1.4560	0.01%	0.03%	0.02%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.69%	0.00728	200
Q7_28.mpl	150	1.095E-02	1.0950	0.01%	0.00%	0.00%	0.17%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00730	150
Q7_29.mpl	100																			100
Q7_30.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.74%
	Average Data:	**0.01%**	**0.01%**	**0.01%**	**0.17%**	**0.01%**	**0.00%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

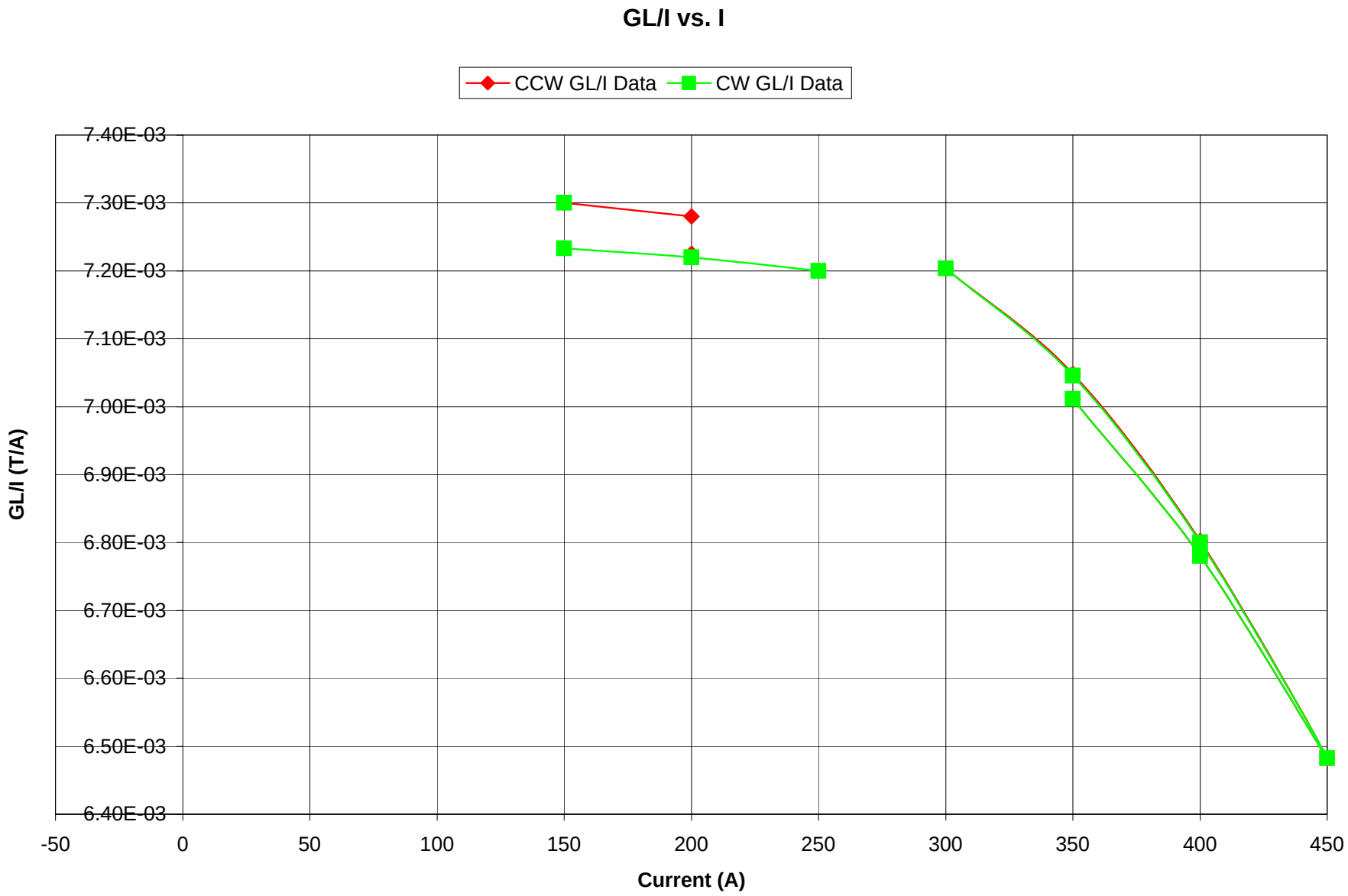
magnet 25B1346 B-1 **Rcoil = 0.01 m**

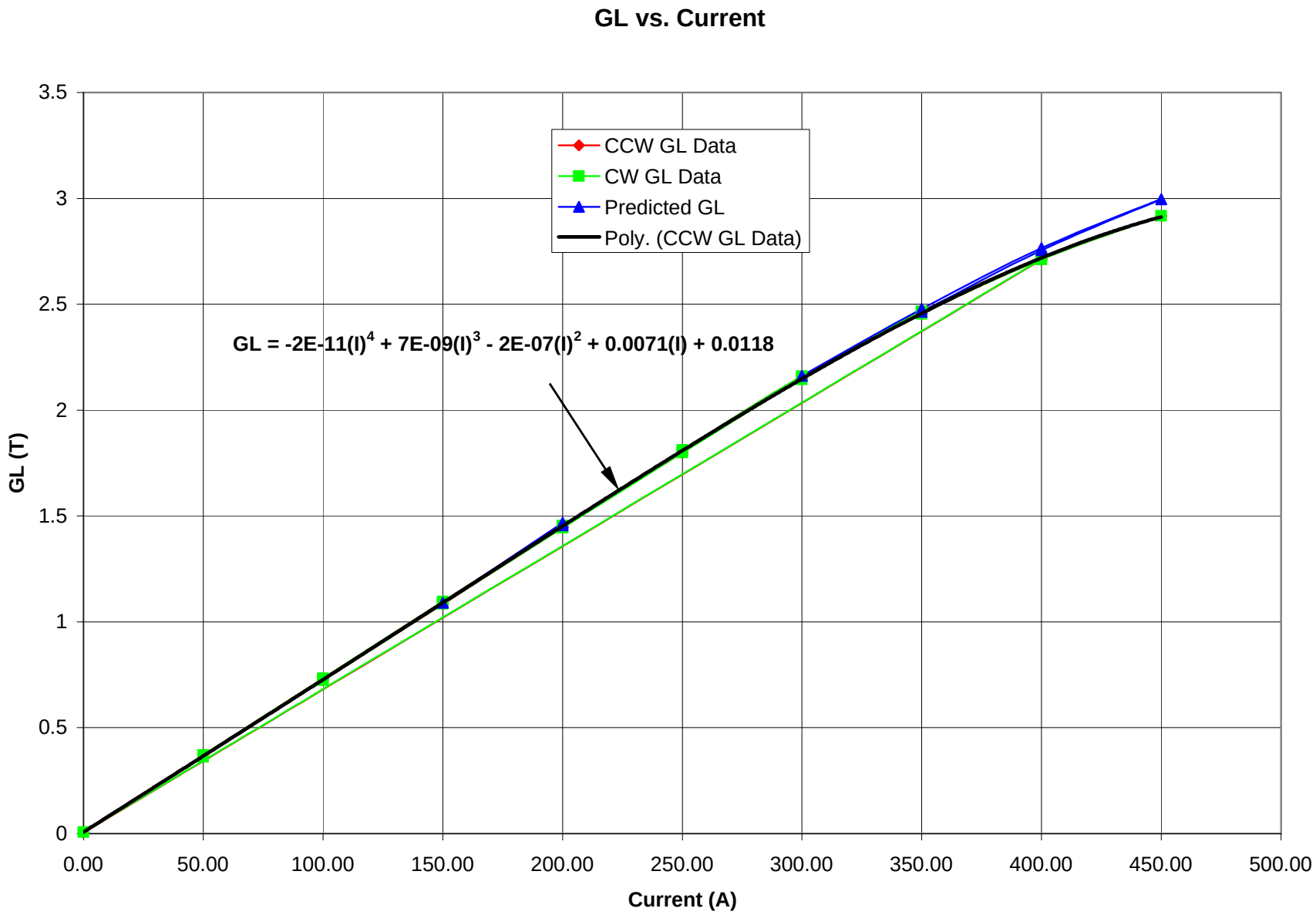
Raw CW Data	**data file**	**Q7_12.mpl**	**Q7_13.mpl**	**Q7_14.mpl**	**Q7_15.mpl**	**Q7_16.mpl**	**Q7_17.mpl**	**Q7_18.mpl**	**Q7_19.mpl**	**Q7_20.mpl**	**Q7_21.mpl**	**Q7_22.mpl**	**Q7_23.mpl**	**Q7_24.mpl**	**Q7_25.mpl**	**Q7_26.mpl**	**Q7_27.mpl**	**Q7_28.mpl**	**Q7_29.mpl**	**Q7_30.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		4.71E-05	7.13E-06	6.99E-06	1.59E-05	2.10E-05	3.20E-05	3.99E-05	4.33E-05	4.98E-05	5.25E-05	5.64E-05	5.08E-05	4.60E-05	4.52E-05	4.08E-05	3.17E-05	2.21E-05	1.58E-05	6.65E-06	**1**
cn = 2		2.71E-02	6.93E-05	3.63E-03	7.24E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.33E-03	3.71E-03	**2**
cn = 3		1.66E-05	1.75E-06	2.10E-07	1.64E-06	3.12E-06	1.01E-06	3.43E-06	1.88E-05	2.85E-06	2.30E-06	4.19E-06	1.97E-06	2.46E-06	2.86E-06	2.03E-05	9.27E-06	3.19E-06	5.95E-07	3.42E-06	**3**
cn = 4		1.86E-05	9.00E-07	7.01E-07	2.03E-06	1.53E-06	1.13E-06	2.32E-06	2.07E-05	2.75E-06	1.22E-06	1.06E-06	3.45E-06	4.16E-06	1.38E-06	2.16E-05	1.04E-05	1.02E-06	1.63E-06	7.69E-06	**4**
cn = 5		2.12E-05	2.97E-06	7.41E-07	1.95E-06	1.90E-06	1.12E-06	1.52E-06	2.27E-05	2.98E-06	1.59E-06	4.00E-06	1.75E-06	2.37E-06	8.70E-07	2.27E-05	1.02E-05	7.69E-07	1.32E-06	6.04E-06	**5**
cn = 6		3.93E-05	3.42E-06	5.96E-06	1.24E-05	1.71E-05	2.36E-05	3.04E-05	2.99E-05	3.94E-05	4.55E-05	5.08E-05	4.66E-05	3.97E-05	3.52E-05	2.44E-05	2.02E-05	1.57E-05	1.25E-05	5.07E-06	**6**
cn = 7		1.87E-05	2.56E-06	6.10E-07	5.63E-07	1.58E-06	3.22E-07	1.72E-06	2.10E-05	1.39E-06	1.57E-06	3.26E-06	1.74E-06	8.72E-07	2.57E-06	2.39E-05	9.96E-06	1.01E-06	7.74E-07	6.72E-06	**7**
cn = 8		2.01E-05	1.38E-06	9.72E-07	2.07E-06	2.44E-06	8.89E-07	4.78E-07	2.15E-05	1.72E-06	1.76E-06	2.72E-06	4.78E-07	3.50E-06	1.66E-06	2.29E-05	1.01E-05	7.18E-07	6.19E-07	6.39E-06	**8**
cn = 9		1.98E-05	5.92E-07	2.53E-07	2.39E-06	1.47E-06	3.61E-07	8.46E-08	2.10E-05	5.95E-07	1.87E-07	1.84E-06	1.16E-06	7.60E-07	4.96E-07	2.26E-05	9.34E-06	1.68E-06	1.27E-06	6.39E-06	**9**
cn = 10		1.86E-05	1.86E-06	1.04E-06	2.51E-06	6.58E-07	4.65E-07	9.31E-07	1.95E-05	1.04E-06	2.96E-19	2.51E-06	1.97E-06	1.97E-06	1.04E-06	2.11E-05	9.87E-06	1.32E-06	1.47E-06	5.60E-06	**10**
cn = 11		2.04E-05	1.37E-06	1.64E-06	9.29E-07	6.92E-07	1.67E-06	3.66E-06	1.89E-05	1.34E-06	8.47E-07	6.88E-07	8.49E-07	1.79E-06	3.13E-07	1.91E-05	9.48E-06	1.58E-06	1.27E-06	6.04E-06	**11**
cn = 12		1.65E-05	1.61E-06	1.07E-06	1.23E-06	2.30E-06	6.64E-07	8.24E-07	1.86E-05	9.44E-07	1.19E-06	8.60E-07	2.18E-07	1.41E-06	1.64E-07	1.83E-05	8.95E-06	1.23E-06	1.85E-06	4.21E-06	**12**
cn = 13		1.63E-05	1.44E-06	2.71E-06	3.78E-07	1.18E-06	9.37E-07	1.15E-06	1.52E-05	7.50E-07	1.01E-06	1.72E-06	1.36E-06	9.09E-07	1.40E-06	2.02E-05	7.37E-06	1.16E-06	1.88E-06	5.07E-06	**13**
cn = 14		1.59E-05	1.68E-06	5.93E-07	1.21E-06	7.12E-07	3.27E-06	1.28E-06	1.78E-05	1.07E-06	1.27E-06	3.21E-06	1.13E-06	1.29E-06	7.03E-07	1.80E-05	9.18E-06	2.29E-06	1.94E-06	6.88E-06	**14**
cn = 15		1.46E-05	3.91E-07	1.08E-06	1.49E-06	9.25E-07	8.62E-07	1.49E-06	1.51E-05	1.01E-06	1.22E-06	9.99E-07	2.18E-06	1.43E-06	6.68E-07	1.89E-05	8.37E-06	1.43E-06	1.77E-06	4.90E-06	**15**
cn = 16		1.29E-05	8.66E-07	1.07E-06	9.08E-07	1.73E-06	1.17E-06	1.30E-06	1.35E-05	1.51E-06	1.43E-06	2.32E-06	1.30E-06	9.34E-07	1.76E-06	1.62E-05	8.00E-06	1.67E-06	1.21E-06	3.90E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals	
Q7_12.mpl	**400**	2.71E-02	2.71E+00	0.06%	0.07%	0.08%	0.14%	0.07%	0.07%	0.07%	0.07%	0.08%	0.06%	0.06%	0.06%	0.05%	0.05%		
Q7_13.mpl	**0**	6.93E-05	6.93E-03	2.52%	1.30%	4.29%	4.94%	3.69%	2.00%	0.85%	2.69%	1.98%	2.33%	2.08%	2.42%	0.56%	1.25%	**67.10%**	
Q7_14.mpl	**50**	3.63E-03	3.63E-01	0.01%	0.02%	0.02%	0.16%	0.02%	0.03%	0.01%	0.03%	0.05%	0.03%	0.07%	0.02%	0.03%	0.03%	**99.49%**	
Q7_15.mpl	**100**	7.24E-03	7.24E-01	0.02%	0.03%	0.03%	0.17%	0.01%	0.03%	0.03%	0.03%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	**99.56%**	
Q7_16.mpl	**150**	1.09E-02	1.09E+00	0.03%	0.01%	0.02%	0.16%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	**99.66%**	
Q7_17.mpl	**200**	1.44E-02	1.44E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	**99.74%**	
Q7_18.mpl	**250**	1.80E-02	1.80E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.72%**	
Q7_19.mpl	**300**	2.15E-02	2.15E+00	0.09%	0.10%	0.11%	0.14%	0.10%	0.10%	0.10%	0.09%	0.09%	0.09%	0.07%	0.08%	0.07%	0.06%	**98.72%**	
Q7_20.mpl	**350**	2.45E-02	2.45E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.76%**	
Q7_21.mpl	**400**	2.71E-02	2.71E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.77%**	
Q7_22.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.73%**	
Q7_23.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.76%**	
Q7_24.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.02%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.74%**	
Q7_25.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.76%**	
Q7_26.mpl	**250**	1.81E-02	1.81E+00	0.11%	0.12%	0.13%	0.13%	0.13%	0.13%	0.12%	0.12%	0.11%	0.10%	0.11%	0.10%	0.10%	0.09%	**98.40%**	
Q7_27.mpl	**200**	1.46E-02	1.46E+00	0.06%	0.07%	0.07%	0.14%	0.07%	0.07%	0.06%	0.07%	0.07%	0.06%	0.05%	0.06%	0.06%	0.05%	**99.03%**	
Q7_28.mpl	**150**	1.10E-02	1.10E+00	0.03%	0.01%	0.01%	0.14%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	**99.68%**	
Q7_29.mpl	**100**	7.33E-03	7.33E-01	0.01%	0.02%	0.02%	0.17%	0.01%	0.01%	0.02%	0.02%	0.02%	0.03%	0.03%	0.03%	0.02%	0.02%	**99.59%**	
Q7_30.mpl	**50**	3.71E-03	3.71E-01	0.09%	0.21%	0.16%	0.14%	0.18%	0.17%	0.17%	0.15%	0.16%	0.11%	0.14%	0.19%	0.13%	0.11%		
			Average Da	0.16%	0.11%	0.26%	0.41%	0.23%	0.14%	0.08%	0.17%	0.14%	0.15%	0.14%	0.16%	0.06%	0.09%	**average =**	**97.60%**

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q7_12.mpl	400																			400
Q7_13.mpl	0																			0
Q7_14.mpl	50																			50
Q7_15.mpl	100																			100
Q7_16.mpl	150	1.09E-02	1.09E+00	0.03%	0.01%	0.02%	0.16%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	99.66%	0.00723	150
Q7_17.mpl	200	1.44E-02	1.44E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	99.74%	0.00722	200
Q7_18.mpl	250	1.80E-02	1.80E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00720	250
Q7_19.mpl	300																			300
Q7_20.mpl	350	2.45E-02	2.45E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	99.76%	0.00701	350
Q7_21.mpl	400	2.71E-02	2.71E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	99.77%	0.00678	400
Q7_22.mpl	450	2.92E-02	2.92E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	99.73%	0.00648	450
Q7_23.mpl	400	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	99.76%	0.00680	400
Q7_24.mpl	350	2.47E-02	2.47E+00	0.01%	0.02%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.74%	0.00705	350
Q7_25.mpl	300	2.16E-02	2.16E+00	0.01%	0.01%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.76%	0.00720	300
Q7_26.mpl	250																			250
Q7_27.mpl	200																			200
Q7_28.mpl	150	1.10E-02	1.10E+00	0.03%	0.01%	0.01%	0.14%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	99.68%	0.00730	150
Q7_29.mpl	100																			100
Q7_30.mpl	50																			50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.73%**
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

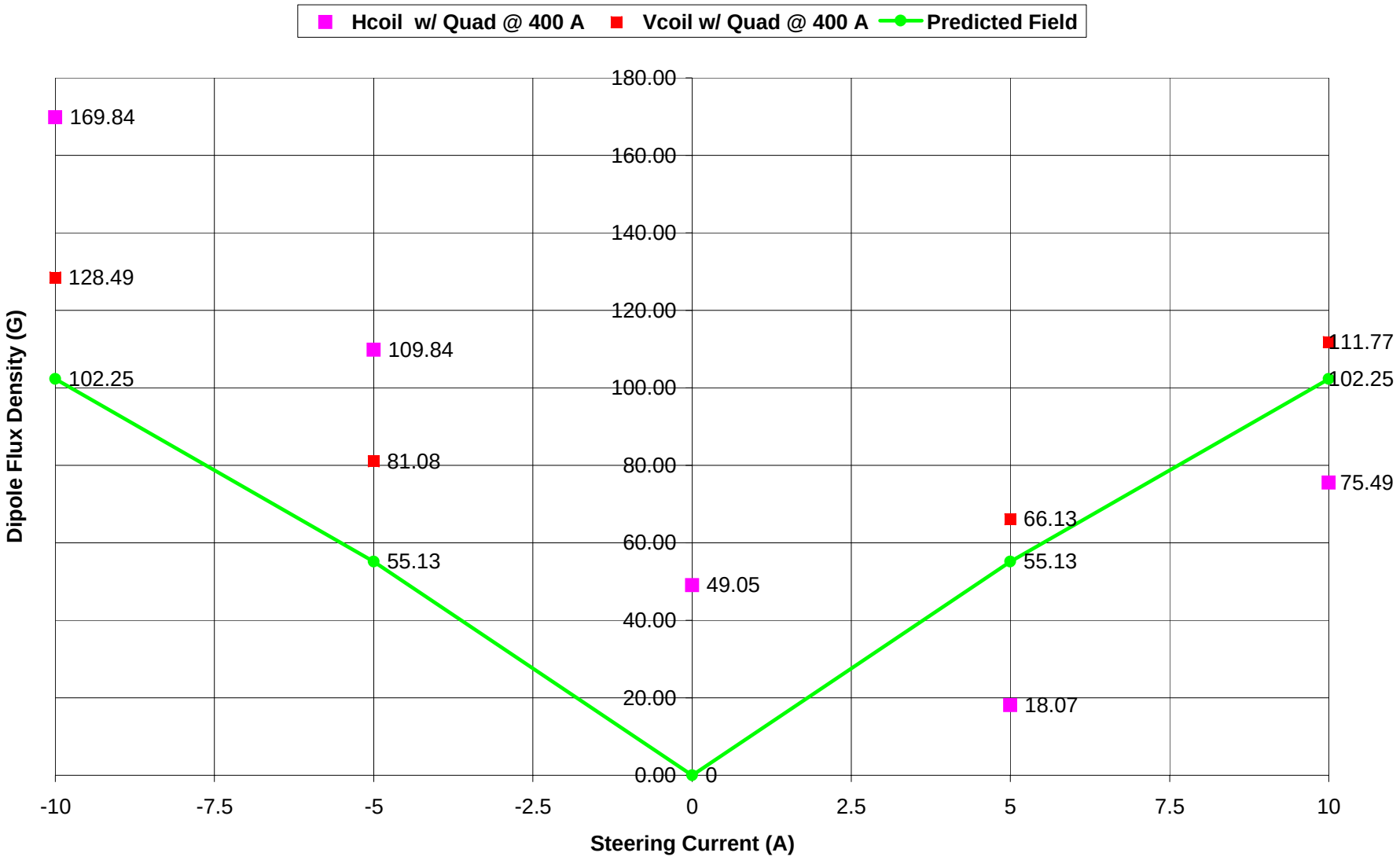

GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.40E-03
7.30E-03
7.20E-03
7.10E-03
7.00E-03
6.90E-03
6.80E-03
6.70E-03
6.60E-03
6.50E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400				
0				
50				
100				
150				
200	1.445	200.2588	1.001294	1.456208
250				
300				
350	2.454	345.5318	0.987234	2.464347
400	2.712	395.6946	0.989237	2.755404
450	2.917	445.2699	0.989489	2.99544
400	2.721	397.6643	0.994161	2.765923
350	2.467	347.8094	0.993741	2.478442
300	2.161	298.9958	0.996653	2.161498
250				
200	1.456	201.7818	1.008909	1.467432
150	1.095	150.7033	1.004688	1.090109
100				
50				
		average =	99.616%	

Dipole Field vs. Steering Current



The conditions for each case are following.

core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q7_1.mpl	0	0	400	2.99E-04	49.05		2.70E-02
Q7_2.mpl	5	0	400	1.10E-04	18.07	67.11	2.70E-02
Q7_3.mpl	10	0	400	4.61E-04	75.49	124.54	2.70E-02
Q7_4.mpl	-5	0	400	6.70E-04	109.84	60.79	2.70E-02
Q7_5.mpl	-10	0	400	1.04E-03	169.84	120.79	2.70E-02
Q7_6.mpl	0	5	400	4.03E-04	66.13	17.08	2.70E-02
Q7_7.mpl	0	10	400	6.82E-04	111.77	62.72	2.70E-02
Q7_8.mpl	0	-5	400	4.95E-04	81.08	130.13	2.70E-02
Q7_9.mpl	0	-10	400	7.84E-04	128.49	177.54	2.70E-02
Q7_10.mpl	5	5	400	2.80E-04	45.97	95.02	2.70E-02
Q7_11.mpl	10	10	400	7.56E-04	123.98	173.03	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	102.25	127.81
-5	55.13	76.14
0	0	0
5	55.13	76.14
10	102.25	127.81

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q14_1.mpl	Q14_2.mpl	Q14_3.mpl	Q14_4.mpl	Q14_5.mpl	Q14_6.mpl	Q14_7.mpl	Q14_8.mpl	Q14_9.mpl	Q14_10.mp	Q14_11.mp	Q14_12.mp	Q14_13.mp	Q14_14.mp	Q14_15.mp	Q14_16.mp	Q14_17.mpl	Q14_18.mp	Q14_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		4.56E-04	3.52E-06	5.56E-05	1.17E-04	1.80E-04	2.35E-04	2.99E-04	3.53E-04	4.06E-04	4.54E-04	4.83E-04	4.60E-04	4.14E-04	3.69E-04	3.00E-04	2.35E-04	1.80E-04	1.15E-04	5.65E-05	**1**
cn = 2		2.72E-02	5.81E-05	3.64E-03	7.24E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.33E-03	3.72E-03	**2**
cn = 3		1.70E-06	1.74E-06	2.01E-06	2.07E-06	7.16E-07	1.61E-06	1.28E-06	2.80E-06	1.92E-06	1.99E-06	1.49E-06	1.87E-06	2.21E-06	2.84E-06	1.50E-06	1.37E-06	1.75E-06	1.33E-06	1.11E-06	**3**
cn = 4		2.36E-06	1.20E-06	1.52E-06	2.02E-07	5.79E-07	6.20E-07	2.09E-06	2.25E-06	1.52E-06	2.18E-06	2.65E-06	1.94E-06	2.18E-06	1.90E-06	9.36E-07	1.00E-06	1.02E-06	6.20E-07	7.57E-07	**4**
cn = 5		3.88E-06	5.03E-07	8.24E-07	2.02E-06	2.44E-06	1.90E-06	2.63E-06	1.59E-06	3.51E-06	2.64E-06	4.30E-06	4.48E-06	2.80E-06	1.73E-06	1.70E-06	2.08E-06	1.21E-06	8.62E-08	1.03E-06	**5**
cn = 6		4.62E-05	6.65E-07	6.32E-06	9.06E-06	1.72E-05	2.26E-05	2.91E-05	3.47E-05	4.23E-05	4.54E-05	5.07E-05	4.68E-05	4.11E-05	3.38E-05	2.90E-05	2.29E-05	1.80E-05	1.21E-05	6.51E-06	**6**
cn = 7		1.26E-06	9.56E-07	1.76E-06	8.10E-07	4.51E-07	5.53E-07	3.94E-07	7.01E-07	4.52E-08	1.27E-06	4.73E-07	6.52E-07	1.56E-07	4.99E-07	1.62E-06	1.57E-06	1.23E-06	9.34E-07	1.02E-06	**7**
cn = 8		9.72E-07	1.85E-06	2.27E-06	1.38E-06	3.10E-07	8.89E-07	7.73E-07	1.25E-06	1.25E-06	4.11E-07	1.07E-06	5.01E-07	1.93E-06	4.11E-07	5.89E-07	1.87E-06	8.41E-07	1.61E-06	5.01E-07	**8**
cn = 9		1.98E-06	2.66E-07	5.37E-07	6.98E-07	9.56E-07	1.10E-06	1.17E-06	6.03E-07	2.38E-06	2.97E-07	9.16E-07	6.53E-07	8.46E-07	7.70E-07	6.71E-07	4.31E-07	1.24E-06	7.91E-07	9.86E-08	**9**
cn = 10		1.47E-06	1.04E-06	9.31E-07	1.04E-06	1.68E-06	2.71E-06	9.31E-07	2.08E-06	1.68E-06	1.04E-06	2.37E-06	2.83E-06	1.92E-06	2.33E-06	1.47E-06	1.32E-06	2.83E-06	1.04E-06	1.92E-06	**10**
cn = 11		4.41E-07	9.03E-07	1.11E-06	9.92E-07	6.71E-07	2.28E-06	1.60E-06	7.02E-07	5.67E-07	2.11E-06	7.49E-07	1.40E-06	1.76E-06	8.02E-07	4.89E-07	6.89E-07	7.14E-07	3.14E-07	1.68E-06	**11**
cn = 12		6.17E-07	1.48E-06	8.34E-07	1.13E-06	2.19E-06	8.18E-07	2.41E-06	1.60E-06	8.34E-07	1.05E-06	7.22E-07	9.15E-07	1.05E-06	2.11E-06	1.35E-06	5.06E-07	1.23E-06	8.18E-07	1.92E-06	**12**
cn = 13		1.23E-06	8.02E-07	1.90E-06	1.14E-06	1.08E-06	1.02E-06	7.31E-07	9.08E-07	1.89E-06	1.18E-06	2.46E-06	1.86E-07	1.39E-06	1.42E-06	1.06E-06	1.22E-06	5.98E-07	6.37E-07	1.08E-06	**13**
cn = 14		1.20E-06	7.92E-07	2.07E-06	1.73E-06	1.93E-06	1.58E-06	1.29E-06	8.28E-07	1.19E-06	1.24E-06	1.78E-06	1.02E-06	7.71E-07	1.29E-06	1.52E-06	6.48E-07	1.78E-06	1.17E-06	6.69E-07	**14**
cn = 15		2.12E-07	3.86E-07	1.94E-06	1.80E-06	9.84E-07	9.25E-07	8.35E-07	1.22E-06	1.17E-06	1.25E-06	6.27E-07	1.84E-06	6.52E-07	9.58E-07	1.13E-06	1.84E-06	1.60E-07	2.25E-06	1.21E-06	**15**
cn = 16		1.07E-06	2.02E-06	2.03E-06	8.66E-07	6.04E-07	1.17E-06	8.03E-07	4.96E-07	4.96E-07	1.51E-06	1.37E-06	3.73E-07	1.07E-06	1.51E-06	7.10E-07	2.45E-06	1.87E-06	1.33E-06	3.73E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q14_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.76%**	Q2_1.dat	400
Q14_2.mpl	**0**	5.81E-05	5.81E-03	2.99%	2.06%	0.86%	1.14%	1.65%	3.19%	0.46%	1.79%	1.55%	2.55%	1.38%	1.36%	0.66%	3.48%	**74.86%**	Q2_2.dat	0
Q14_3.mpl	**50**	3.64E-03	3.64E-01	0.06%	0.04%	0.02%	0.17%	0.05%	0.06%	0.01%	0.03%	0.03%	0.02%	0.05%	0.06%	0.05%	0.06%	**99.28%**	Q2_3.dat	50
Q14_4.mpl	**100**	7.24E-03	7.24E-01	0.03%	0.00%	0.03%	0.13%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.02%	0.02%	0.01%	**99.66%**	Q2_4.dat	100
Q14_5.mpl	**150**	1.09E-02	1.09E+00	0.01%	0.01%	0.02%	0.16%	0.00%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	**99.71%**	Q2_5.dat	150
Q14_6.mpl	**200**	1.44E-02	1.44E+00	0.01%	0.00%	0.01%	0.16%	0.00%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.72%**	Q2_6.dat	200
Q14_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.74%**	Q2_7.dat	250
Q14_8.mpl	**300**	2.15E-02	2.15E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	**99.76%**	Q2_8.dat	300
Q14_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.75%**	Q2_9.dat	350
Q14_10.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.77%**	Q2_10.dat	400
Q14_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	**99.75%**	Q2_11.dat	450
Q14_12.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.02%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.76%**	Q2_12.dat	400
Q14_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**	Q2_13.dat	350
Q14_14.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.76%**	Q2_14.dat	300
Q14_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.76%**	Q2_15.dat	250
Q14_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.02%	**99.73%**	Q2_16.dat	200
Q14_17.mpl	**150**	1.10E-02	1.10E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.03%	0.01%	0.01%	0.01%	0.02%	0.00%	0.02%	**99.69%**	Q2_17.dat	150
Q14_18.mpl	**100**	7.33E-03	7.33E-01	0.02%	0.01%	0.00%	0.16%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.03%	0.02%	**99.66%**	Q2_18.dat	100
Q14_19.mpl	**50**	3.72E-03	3.72E-01	0.03%	0.02%	0.03%	0.18%	0.03%	0.01%	0.00%	0.05%	0.05%	0.05%	0.03%	0.02%	0.03%	0.01%	**99.46%**	Q2_19.dat	50
																	average =	**98.24%**		
			Average Da	0.17%	0.12%	0.06%	0.21%	0.10%	0.18%	0.03%	0.11%	0.09%	0.14%	0.08%	0.08%	0.05%	0.19%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q14_1.mpl	400	2.716E-02	2.7160	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.76%	0.00679	400
Q14_2.mpl	0																			0
Q14_3.mpl	50	3.638E-03	0.3638	0.06%	0.04%	0.02%	0.17%	0.05%	0.06%	0.01%	0.03%	0.03%	0.02%	0.05%	0.06%	0.05%	0.06%	99.28%	0.00728	50
Q14_4.mpl	100	7.237E-03	0.7237	0.03%	0.00%	0.03%	0.13%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.02%	0.02%	0.01%	99.66%	0.00724	100
Q14_5.mpl	150	1.085E-02	1.0850	0.01%	0.01%	0.02%	0.16%	0.00%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	99.71%	0.00723	150
Q14_6.mpl	200	1.444E-02	1.4440	0.01%	0.00%	0.01%	0.16%	0.00%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00722	200
Q14_7.mpl	250	1.799E-02	1.7990	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.74%	0.00720	250
Q14_8.mpl	300	2.146E-02	2.1460	0.01%	0.01%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	99.76%	0.00715	300
Q14_9.mpl	350	2.456E-02	2.4560	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	99.75%	0.00702	350
Q14_10.mpl	400	2.716E-02	2.7160	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	99.77%	0.00679	400
Q14_11.mpl	450	2.923E-02	2.9230	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	99.75%	0.00650	450
Q14_12.mpl	400	2.724E-02	2.7240	0.01%	0.01%	0.02%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.76%	0.00681	400
Q14_13.mpl	350	2.468E-02	2.4680	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00705	350
Q14_14.mpl	300	2.161E-02	2.1610	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.76%	0.00720	300
Q14_15.mpl	250	1.813E-02	1.8130	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	99.76%	0.00725	250
Q14_16.mpl	200	1.455E-02	1.4550	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.02%	99.73%	0.00728	200
Q14_17.mpl	150	1.095E-02	1.0950	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.03%	0.01%	0.01%	0.01%	0.02%	0.00%	0.02%	99.69%	0.00730	150
Q14_18.mpl	100	7.331E-03	0.7331	0.02%	0.01%	0.00%	0.16%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.03%	0.02%	99.66%	0.00733	100
Q14_19.mpl	50	3.715E-03	0.3715	0.03%	0.02%	0.03%	0.18%	0.03%	0.01%	0.00%	0.05%	0.05%	0.05%	0.03%	0.02%	0.03%	0.01%	99.46%	0.00743	50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.70%**
Average Data:	**0.01%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

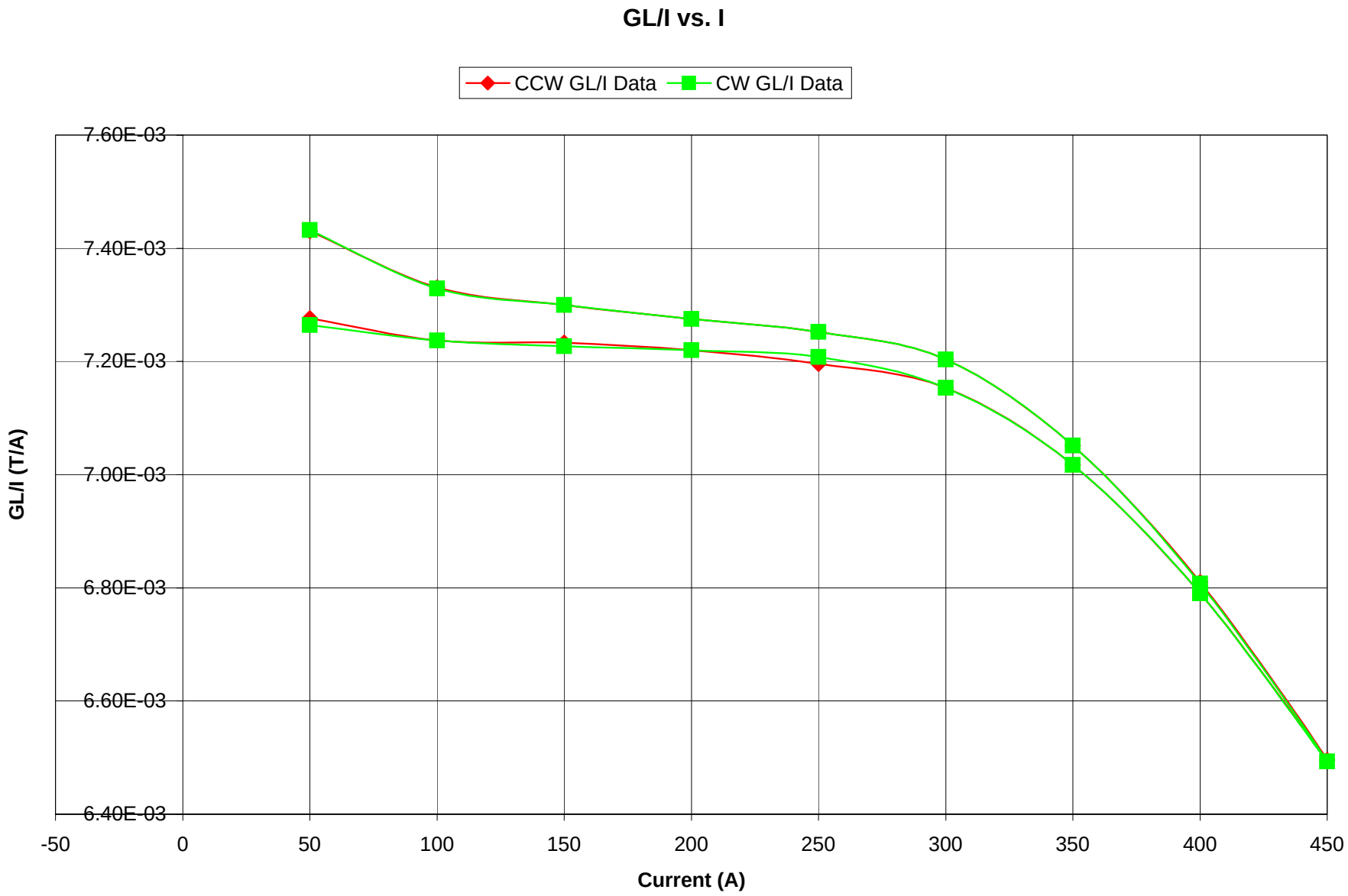
magnet 25B1346 B-1 **Rcoil = 0.01 m**

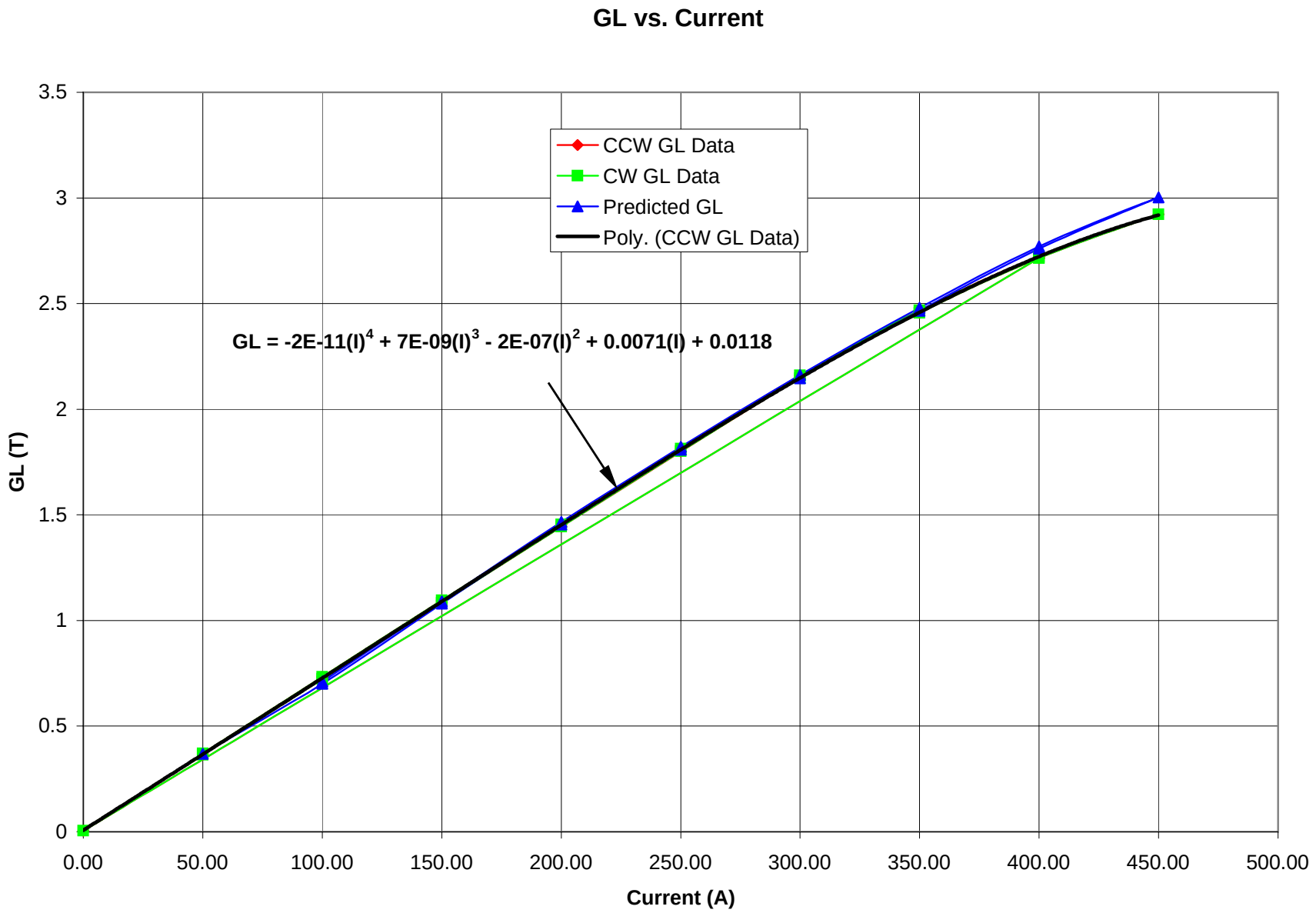
Raw CW Data	**data file**	**Q14_1.mpl**	**Q14_2.mpl**	**Q14_3.mpl**	**Q14_4.mpl**	**Q14_5.mpl**	**Q14_6.mpl**	**Q14_7.mpl**	**Q14_8.mpl**	**Q14_9.mpl**	**Q14_10.mp**	**Q14_11.mp**	**Q14_12.mp**	**Q14_13.mp**	**Q14_14.mp**	**Q14_15.mp**	**Q14_16.mp**	**Q14_17.mpl**	**Q14_18.mp**	**Q14_19.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		4.46E-04	8.70E-06	5.77E-05	1.12E-04	1.76E-04	2.36E-04	2.94E-04	3.55E-04	4.05E-04	4.46E-04	4.77E-04	4.54E-04	4.13E-04	3.64E-04	2.97E-04	2.34E-04	1.71E-04	1.14E-04	5.40E-05	**1**
cn = 2		2.72E-02	5.80E-05	3.63E-03	7.24E-03	1.08E-02	1.44E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.33E-03	3.72E-03	**2**
cn = 3		2.39E-06	1.49E-06	1.46E-06	1.25E-06	8.66E-07	1.14E-06	1.64E-06	2.48E-06	1.40E-06	1.02E-06	1.38E-06	8.95E-07	2.08E-06	2.18E-06	1.82E-06	1.23E-06	1.63E-06	1.47E-06	3.54E-06	**3**
cn = 4		2.44E-06	5.28E-07	1.75E-06	5.28E-07	2.13E-06	1.55E-06	1.33E-06	1.32E-06	1.75E-06	1.62E-06	2.01E-06	2.32E-06	1.43E-06	1.13E-06	1.98E-06	6.33E-07	1.91E-06	7.01E-07	1.96E-06	**4**
cn = 5		3.10E-06	2.26E-06	3.85E-07	4.16E-07	1.25E-06	1.42E-06	2.97E-06	2.58E-06	3.36E-06	2.43E-06	3.40E-06	1.95E-06	3.37E-06	2.79E-06	3.83E-06	8.70E-07	2.53E-06	1.21E-06	2.65E-06	**5**
cn = 6		4.51E-05	1.09E-06	4.02E-06	1.06E-05	1.78E-05	2.37E-05	2.88E-05	3.47E-05	4.03E-05	4.63E-05	5.19E-05	4.62E-05	4.06E-05	3.50E-05	2.94E-05	2.43E-05	1.79E-05	1.09E-05	4.07E-06	**6**
cn = 7		2.12E-06	1.71E-06	1.46E-06	9.23E-07	7.43E-07	1.29E-06	1.13E-06	3.42E-07	5.46E-07	1.88E-06	8.71E-07	8.35E-07	1.68E-06	1.30E-06	3.80E-07	1.88E-06	8.32E-07	5.28E-07	2.32E-06	**7**
cn = 8		1.16E-06	1.44E-06	1.25E-06	1.66E-06	1.93E-06	7.82E-07	2.19E-06	3.64E-07	6.65E-07	7.18E-07	6.19E-07	1.09E-06	1.74E-06	2.25E-07	9.60E-07	1.08E-06	1.38E-06	9.09E-07	7.18E-07	**8**
cn = 9		1.39E-06	1.73E-07	1.35E-06	6.57E-07	9.63E-07	3.22E-07	9.38E-07	2.92E-07	3.24E-07	2.05E-07	1.48E-06	1.23E-06	1.12E-06	1.88E-06	1.35E-06	1.01E-06	1.09E-06	9.80E-07	9.91E-07	**9**
cn = 10		1.92E-06	4.65E-07	1.47E-06	1.32E-06	4.65E-07	9.31E-07	1.32E-06	1.68E-06	1.40E-06	3.23E-19	1.68E-06	1.04E-06	1.04E-06	1.97E-06	1.47E-06	1.04E-06	9.31E-07	1.04E-06	1.47E-06	**10**
cn = 11		1.09E-06	1.03E-06	1.55E-06	3.26E-07	9.69E-07	1.26E-06	7.12E-07	5.56E-07	7.72E-07	3.21E-07	5.58E-07	1.74E-06	9.96E-07	1.09E-06	1.74E-06	1.28E-06	7.85E-07	8.23E-07	1.54E-06	**11**
cn = 12		1.02E-06	4.30E-07	1.43E-06	4.30E-07	3.53E-07	2.12E-06	1.26E-06	5.71E-07	1.43E-06	3.13E-07	1.01E-06	8.24E-07	1.33E-06	6.64E-07	7.34E-07	2.00E-06	5.94E-07	1.07E-06	1.84E-06	**12**
cn = 13		1.91E-06	1.55E-06	1.68E-06	1.65E-06	1.18E-06	2.32E-06	4.82E-07	1.09E-06	1.08E-06	1.47E-06	1.95E-06	8.27E-07	2.00E-06	1.49E-06	4.28E-07	1.37E-06	3.16E-07	2.24E-06	9.46E-07	**13**
cn = 14		4.95E-07	2.77E-07	1.89E-06	2.58E-06	8.44E-07	2.23E-07	1.69E-06	1.31E-06	1.49E-06	1.47E-06	1.43E-06	1.23E-06	1.52E-07	2.10E-06	1.18E-06	2.41E-06	5.64E-07	1.17E-06	1.56E-06	**14**
cn = 15		7.74E-07	1.96E-06	7.12E-07	1.86E-06	1.33E-06	1.09E-06	3.91E-07	7.40E-07	8.79E-07	3.19E-07	2.35E-07	1.49E-06	2.59E-06	8.85E-07	1.22E-06	6.68E-07	6.32E-07	1.60E-07	1.10E-06	**15**
cn = 16		1.03E-06	7.25E-07	4.96E-07	1.24E-06	1.07E-06	1.77E-06	1.05E-06	1.15E-06	9.33E-07	1.67E-06	1.21E-06	2.31E-06	3.56E-07	1.86E-06	1.64E-06	5.76E-07	8.66E-07	1.53E-06	1.67E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q14_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**
Q14_2.mpl	**0**	5.80E-05	5.80E-03	2.56%	0.91%	3.89%	1.88%	2.94%	2.48%	0.30%	0.80%	1.78%	0.74%	2.68%	0.48%	3.38%	1.25%	**73.94%**
Q14_3.mpl	**50**	3.63E-03	3.63E-01	0.04%	0.05%	0.01%	0.11%	0.04%	0.03%	0.04%	0.04%	0.04%	0.04%	0.05%	0.05%	0.02%	0.01%	**99.42%**
Q14_4.mpl	**100**	7.24E-03	7.24E-01	0.02%	0.01%	0.01%	0.15%	0.01%	0.02%	0.01%	0.02%	0.00%	0.01%	0.02%	0.04%	0.03%	0.02%	**99.65%**
Q14_5.mpl	**150**	1.08E-02	1.08E+00	0.01%	0.02%	0.01%	0.16%	0.01%	0.02%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.71%**
Q14_6.mpl	**200**	1.44E-02	1.44E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	**99.72%**
Q14_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.01%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	**99.75%**
Q14_8.mpl	**300**	2.15E-02	2.15E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.77%**
Q14_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.77%**
Q14_10.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.78%**
Q14_11.mpl	**450**	2.92E-02	2.92E+00	0.00%	0.01%	0.01%	0.18%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**
Q14_12.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.77%**
Q14_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.75%**
Q14_14.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.75%**
Q14_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.02%	0.16%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.73%**
Q14_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	0.00%	**99.72%**
Q14_17.mpl	**150**	1.10E-02	1.10E+00	0.01%	0.02%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.71%**
Q14_18.mpl	**100**	7.33E-03	7.33E-01	0.02%	0.01%	0.02%	0.15%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%	0.02%	0.00%	0.02%	**99.66%**
Q14_19.mpl	**50**	3.72E-03	3.72E-01	0.10%	0.05%	0.07%	0.11%	0.06%	0.02%	0.03%	0.04%	0.04%	0.04%	0.05%	0.03%	0.04%	0.03%	**99.29%**
																	average =	**98.20%**
			Average Da	0.15%	0.06%	0.22%	0.25%	0.17%	0.14%	0.02%	0.05%	0.10%	0.05%	0.15%	0.04%	0.19%	0.08%	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q14_1.mpl	400	2.72E-02	2.72E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00679	400
Q14_2.mpl	0																			0
Q14_3.mpl	50	3.63E-03	3.63E-01	0.04%	0.05%	0.01%	0.11%	0.04%	0.03%	0.04%	0.04%	0.04%	0.04%	0.05%	0.05%	0.02%	0.01%	99.42%	0.00726	50
Q14_4.mpl	100	7.24E-03	7.24E-01	0.02%	0.01%	0.01%	0.15%	0.01%	0.02%	0.01%	0.02%	0.00%	0.01%	0.02%	0.04%	0.03%	0.02%	99.65%	0.00724	100
Q14_5.mpl	150	1.08E-02	1.08E+00	0.01%	0.02%	0.01%	0.16%	0.01%	0.02%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.71%	0.00723	150
Q14_6.mpl	200	1.44E-02	1.44E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	99.72%	0.00722	200
Q14_7.mpl	250	1.80E-02	1.80E+00	0.01%	0.01%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	99.75%	0.00721	250
Q14_8.mpl	300	2.15E-02	2.15E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	99.77%	0.00715	300
Q14_9.mpl	350	2.46E-02	2.46E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	99.77%	0.00702	350
Q14_10.mpl	400	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	99.78%	0.00679	400
Q14_11.mpl	450	2.92E-02	2.92E+00	0.00%	0.01%	0.01%	0.18%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00649	450
Q14_12.mpl	400	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	99.77%	0.00681	400
Q14_13.mpl	350	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	99.75%	0.00705	350
Q14_14.mpl	300	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	99.75%	0.00720	300
Q14_15.mpl	250	1.81E-02	1.81E+00	0.01%	0.01%	0.02%	0.16%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	99.73%	0.00725	250
Q14_16.mpl	200	1.46E-02	1.46E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	0.00%	99.72%	0.00728	200
Q14_17.mpl	150	1.10E-02	1.10E+00	0.01%	0.02%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	99.71%	0.00730	150
Q14_18.mpl	100	7.33E-03	7.33E-01	0.02%	0.01%	0.02%	0.15%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%	0.02%	0.00%	0.02%	99.66%	0.00733	100
Q14_19.mpl	50	3.72E-03	3.72E-01	0.10%	0.05%	0.07%	0.11%	0.06%	0.02%	0.03%	0.04%	0.04%	0.04%	0.05%	0.03%	0.04%	0.04%	99.29%	0.00743	50

	n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.71%**
	Average Data	**0.02%**	**0.01%**	**0.02%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.60E-03
7.40E-03
7.20E-03
7.00E-03
6.80E-03
6.60E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.716	396.5679	0.99142	2.760077
0				
50	0.3638	50.04664	1.000933	0.369743
100	0.7237	97.28289	0.972829	0.700801
150	1.085	149.2612	0.995074	1.07948
200	1.444	200.1203	1.000601	1.455187
250	1.799	248.5275	0.99411	1.808253
300	2.146	296.8023	0.989341	2.146606
350	2.456	345.8807	0.988231	2.466512
400	2.716	396.5679	0.99142	2.760077
450	2.923	446.8849	0.993078	3.002325
400	2.724	398.3246	0.995812	2.769433
350	2.468	347.9856	0.994245	2.479528
300	2.161	298.9958	0.996653	2.161498
250	1.813	250.4254	1.001702	1.821877
200	1.455	201.6434	1.008217	1.466413
150	1.095	150.7033	1.004688	1.090109
100	0.7331	98.60962	0.986096	0.710317
50	0.3715	50.95142	1.019028	0.375921
		average =	**99.575%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q11_1.mpl	Q11_2.mpl	Q11_3.mpl	Q11_4.mpl	Q11_5.mpl	Q11_6.mpl	Q11_7.mpl	Q11_8.mpl	Q11_9.mpl	Q11_10.mp	Q11_11.mp	Q11_12.mp	Q11_13.mp	Q11_14.mp	Q11_15.mp	Q11_16.mp	Q11_17.mpl	Q11_18.mp	Q11_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		6.24E-04	8.44E-06	8.49E-05	1.70E-04	2.57E-04	3.44E-04	4.29E-04	5.05E-04	5.70E-04	6.22E-04	6.66E-04	6.24E-04	5.71E-04	5.05E-04	4.25E-04	3.42E-04	2.53E-04	1.64E-04	8.04E-05	**1**
cn = 2		2.71E-02	6.93E-05	3.61E-03	7.21E-03	1.08E-02	1.44E-02	1.80E-02	2.14E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.46E-02	2.16E-02	1.81E-02	1.45E-02	1.09E-02	7.30E-03	3.69E-03	**2**
cn = 3		1.14E-05	4.44E-07	1.66E-06	4.25E-06	5.29E-06	7.90E-06	9.10E-06	1.08E-05	1.15E-05	1.20E-05	1.24E-05	1.20E-05	1.06E-05	1.13E-05	8.30E-06	8.14E-06	5.93E-06	3.93E-06	2.00E-06	**3**
cn = 4		8.29E-06	4.33E-07	1.75E-06	2.16E-06	3.36E-06	4.74E-06	6.69E-06	7.87E-06	8.59E-06	1.01E-05	9.58E-06	9.41E-06	9.00E-06	6.41E-06	6.02E-06	4.51E-06	3.88E-06	2.36E-06	1.13E-06	**4**
cn = 5		2.43E-06	3.85E-07	3.85E-07	3.85E-07	1.05E-06	1.41E-06	7.41E-07	1.23E-06	5.03E-07	2.61E-06	3.08E-06	2.23E-06	2.28E-06	1.37E-06	2.08E-07	1.45E-06	8.60E-07	1.37E-06	1.08E-06	**5**
cn = 6		4.71E-05	9.47E-07	5.55E-06	1.23E-05	1.76E-05	2.27E-05	2.84E-05	3.51E-05	4.13E-05	4.61E-05	5.11E-05	4.74E-05	4.12E-05	3.53E-05	2.94E-05	2.29E-05	1.83E-05	1.16E-05	5.48E-06	**6**
cn = 7		2.41E-07	9.35E-07	8.42E-07	8.08E-07	9.34E-07	7.09E-08	9.25E-07	5.48E-07	2.67E-07	6.74E-07	1.40E-06	2.80E-07	9.66E-07	1.37E-06	1.01E-06	1.05E-06	3.04E-07	1.96E-06	1.70E-06	**7**
cn = 8		1.33E-06	1.43E-06	1.25E-06	1.63E-06	1.74E-06	1.37E-06	4.78E-07	7.18E-07	9.29E-07	6.65E-07	1.07E-06	1.84E-06	8.89E-07	1.62E-06	9.53E-07	1.66E-06	1.54E-06	6.19E-07	7.73E-07	**8**
cn = 9		3.71E-07	6.28E-07	7.64E-07	6.82E-07	1.31E-06	6.27E-07	1.72E-06	9.50E-07	3.67E-07	8.73E-07	2.77E-07	8.36E-07	1.24E-06	5.53E-07	4.79E-07	1.18E-06	1.53E-06	9.34E-07	3.16E-07	**9**
cn = 10		2.63E-06	6.58E-07	6.58E-07	1.47E-06	1.32E-06	1.04E-06	4.65E-07	2.08E-06	1.68E-06	3.12E-06	1.47E-06	9.31E-07	4.65E-07	2.37E-06	4.65E-07	2.63E-06	2.71E-06	1.97E-06	1.47E-06	**10**
cn = 11		1.36E-06	2.38E-07	2.85E-06	4.48E-07	1.69E-06	1.70E-06	7.98E-07	2.18E-06	1.74E-06	7.21E-07	5.21E-07	6.67E-07	1.03E-06	1.53E-06	2.06E-06	5.20E-07	1.25E-06	1.78E-06	4.43E-07	**11**
cn = 12		9.86E-07	1.74E-06	1.43E-06	7.80E-07	6.79E-07	6.62E-07	6.26E-07	1.19E-06	1.21E-06	1.37E-06	7.15E-07	1.15E-06	1.10E-06	9.07E-07	1.14E-06	1.66E-06	1.60E-06	1.92E-06	6.64E-07	**12**
cn = 13		1.51E-06	9.03E-07	8.72E-07	1.22E-06	1.70E-06	1.34E-06	7.76E-07	5.31E-07	1.48E-06	1.43E-06	6.13E-07	2.03E-06	6.08E-07	7.94E-07	2.66E-06	1.46E-06	4.43E-07	1.46E-06	1.65E-06	**13**
cn = 14		1.57E-06	2.78E-06	4.88E-07	7.89E-07	1.71E-06	5.48E-07	1.14E-06	4.21E-07	5.83E-07	1.44E-07	9.40E-07	1.19E-06	6.30E-07	9.39E-07	2.13E-06	7.64E-07	6.88E-07	6.11E-07	1.28E-06	**14**
cn = 15		3.19E-07	7.12E-07	7.12E-07	7.12E-07	1.53E-06	5.68E-07	1.08E-06	9.44E-07	3.86E-07	2.00E-06	9.79E-07	1.11E-06	1.18E-06	8.26E-07	9.31E-07	1.71E-06	1.59E-06	8.26E-07	1.05E-06	**15**
cn = 16		1.87E-06	1.44E-06	4.96E-07	1.65E-06	3.56E-07	2.52E-06	1.30E-06	1.67E-06	1.81E-06	9.33E-07	1.37E-06	2.16E-06	1.17E-06	4.62E-07	4.39E-07	1.24E-06	2.71E-07	1.21E-06	8.03E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q11_1.mpl	**400**	2.71E-02	2.71E+00	0.04%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%		Q2_2.dat	0
Q11_2.mpl	**0**	6.93E-05	6.93E-03	0.64%	0.63%	0.56%	1.37%	1.35%	2.06%	0.91%	0.95%	0.34%	2.51%	1.30%	4.02%	1.03%	2.08%	**80.26%**	Q2_3.dat	50
Q11_3.mpl	**50**	3.61E-03	3.61E-01	0.05%	0.05%	0.01%	0.15%	0.02%	0.03%	0.02%	0.02%	0.08%	0.04%	0.02%	0.01%	0.02%	0.01%	**99.45%**	Q2_4.dat	100
Q11_4.mpl	**100**	7.21E-03	7.21E-01	0.06%	0.03%	0.01%	0.17%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	**99.59%**	Q2_5.dat	150
Q11_5.mpl	**150**	1.08E-02	1.08E+00	0.05%	0.03%	0.01%	0.16%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.00%	**99.63%**	Q2_6.dat	200
Q11_6.mpl	**200**	1.44E-02	1.44E+00	0.05%	0.03%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.02%	**99.67%**	Q2_7.dat	250
Q11_7.mpl	**250**	1.80E-02	1.80E+00	0.05%	0.04%	0.00%	0.16%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.70%**	Q2_8.dat	300
Q11_8.mpl	**300**	2.14E-02	2.14E+00	0.05%	0.04%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.69%**	Q2_9.dat	350
Q11_9.mpl	**350**	2.45E-02	2.45E+00	0.05%	0.04%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.70%**	Q2_10.dat	400
Q11_10.mpl	**400**	2.71E-02	2.71E+00	0.04%	0.04%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.69%**	Q2_11.dat	450
Q11_11.mpl	**450**	2.92E-02	2.92E+00	0.04%	0.03%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.71%**	Q2_12.dat	400
Q11_12.mpl	**400**	2.72E-02	2.72E+00	0.04%	0.03%	0.01%	0.17%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.69%**	Q2_13.dat	350
Q11_13.mpl	**350**	2.46E-02	2.46E+00	0.04%	0.04%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.71%**	Q2_14.dat	300
Q11_14.mpl	**300**	2.16E-02	2.16E+00	0.05%	0.03%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.70%**	Q2_15.dat	250
Q11_15.mpl	**250**	1.81E-02	1.81E+00	0.05%	0.03%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.69%**	Q2_16.dat	200
Q11_16.mpl	**200**	1.45E-02	1.45E+00	0.06%	0.03%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.65%**	Q2_17.dat	150
Q11_17.mpl	**150**	1.09E-02	1.09E+00	0.05%	0.04%	0.01%	0.17%	0.00%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.63%**	Q2_18.dat	100
Q11_18.mpl	**100**	7.30E-03	7.30E-01	0.05%	0.03%	0.02%	0.16%	0.03%	0.01%	0.01%	0.03%	0.02%	0.03%	0.02%	0.01%	0.01%	0.02%	**99.56%**	Q2_19.dat	50
Q11_19.mpl	**50**	3.69E-03	3.69E-01	0.05%	0.03%	0.03%	0.15%	0.05%	0.02%	0.01%	0.04%	0.01%	0.02%	0.04%	0.03%	0.03%	0.02%			
																	average =	**98.51%**		
			Average Da	0.08%	0.07%	0.04%	0.23%	0.08%	0.12%	0.05%	0.06%	0.03%	0.14%	0.08%	0.22%	0.06%	0.12%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q11_1.mpl	400	2.712E-02	2.7120	0.04%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00678	400
Q11_2.mpl	0																			
Q11_3.mpl	50	3.614E-03	0.3614	0.05%	0.05%	0.01%	0.15%	0.02%	0.03%	0.02%	0.02%	0.08%	0.04%	0.02%	0.01%	0.02%	0.01%	99.45%	0.00723	50
Q11_4.mpl	100	7.213E-03	0.7213	0.06%	0.03%	0.01%	0.17%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	99.59%	0.00721	100
Q11_5.mpl	150	1.082E-02	1.0820	0.05%	0.03%	0.01%	0.16%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.00%	99.63%	0.00721	150
Q11_6.mpl	200	1.440E-02	1.4400	0.05%	0.03%	0.01%	0.16%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.02%	99.67%	0.00720	200
Q11_7.mpl	250	1.796E-02	1.7960	0.05%	0.04%	0.00%	0.16%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	99.70%	0.00718	250
Q11_8.mpl	300	2.141E-02	2.1410	0.05%	0.04%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	99.69%	0.00714	300
Q11_9.mpl	350	2.450E-02	2.4500	0.05%	0.04%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	99.70%	0.00700	350
Q11_10.mpl	400	2.710E-02	2.7100	0.04%	0.04%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	99.69%	0.00678	400
Q11_11.mpl	450	2.919E-02	2.9190	0.04%	0.03%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00649	450
Q11_12.mpl	400	2.718E-02	2.7180	0.04%	0.03%	0.01%	0.17%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.69%	0.00680	400
Q11_13.mpl	350	2.463E-02	2.4630	0.04%	0.04%	0.01%	0.17%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00704	350
Q11_14.mpl	300	2.156E-02	2.1560	0.05%	0.03%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	99.70%	0.00719	300
Q11_15.mpl	250	1.806E-02	1.8060	0.05%	0.03%	0.00%	0.16%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.69%	0.00722	250
Q11_16.mpl	200	1.450E-02	1.4500	0.06%	0.03%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	99.65%	0.00725	200
Q11_17.mpl	150	1.093E-02	1.0930	0.05%	0.04%	0.01%	0.17%	0.00%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.63%	0.00729	150
Q11_18.mpl	100	7.303E-03	0.7303	0.05%	0.03%	0.02%	0.16%	0.03%	0.01%	0.01%	0.03%	0.02%	0.03%	0.02%	0.01%	0.01%	0.02%	99.56%	0.00730	100
Q11_19.mpl	50	3.692E-03	0.3692	0.05%	0.03%	0.03%	0.15%	0.05%	0.02%	0.01%	0.04%	0.01%	0.02%	0.04%	0.03%	0.03%	0.02%	0.00%	0.00738	50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.65%**
Average Data:	**0.05%**	**0.03%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

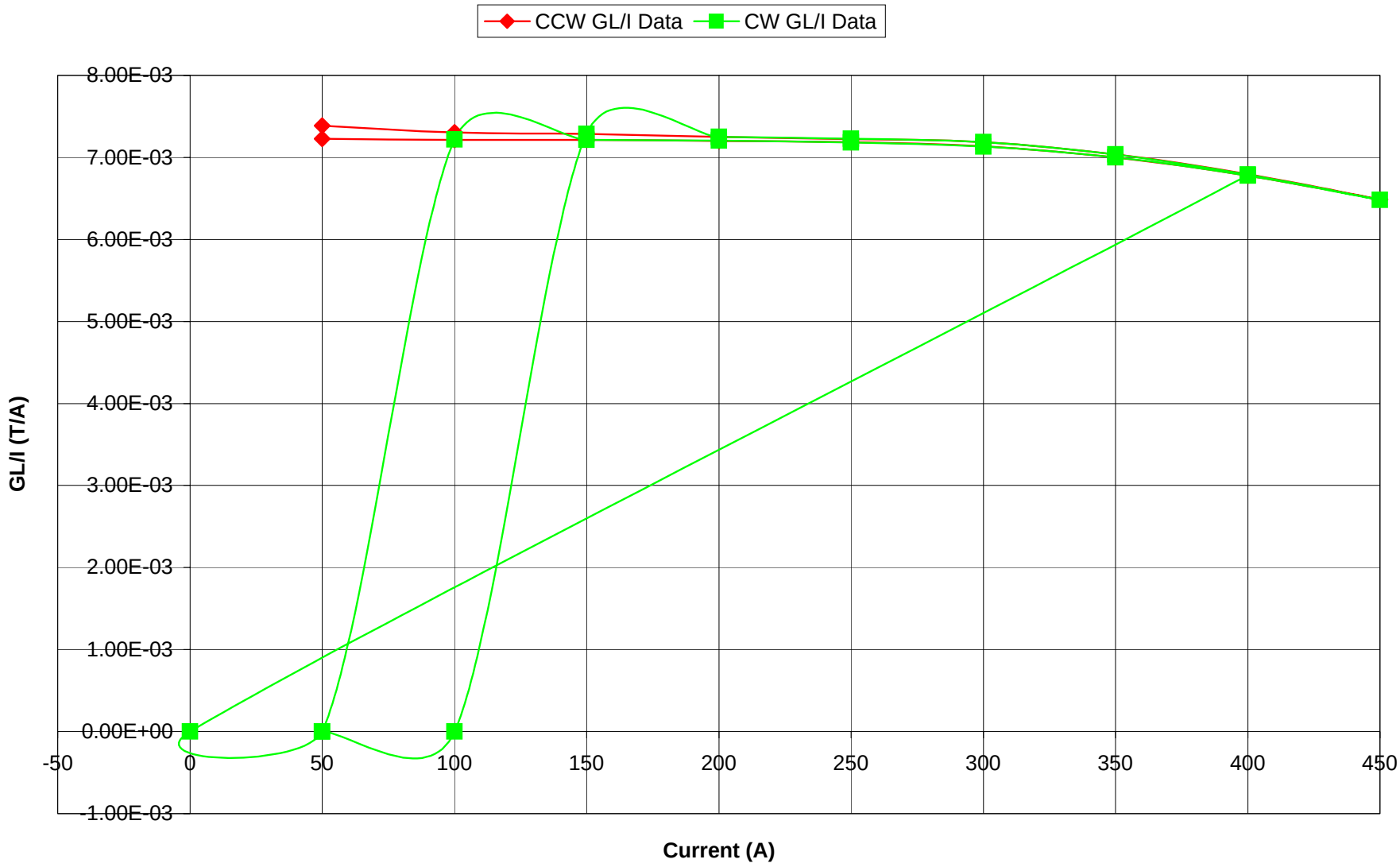
data file	Q11_1.mpl	Q11_2.mpl	Q11_3.mpl	Q11_4.mpl	Q11_5.mpl	Q11_6.mpl	Q11_7.mpl	Q11_8.mpl	Q11_9.mpl	Q11_10.mp	Q11_11.mp	Q11_12.mp	Q11_13.mp	Q11_14.mp	Q11_15.mp	Q11_16.mp	Q11_17.mpl	Q11_18.mp	Q11_19.mpl	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	6.27E-04	7.93E-06	7.91E-05	1.69E-04	2.56E-04	3.42E-04	4.25E-04	5.02E-04	5.67E-04	6.24E-04	6.61E-04	6.21E-04	5.66E-04	5.06E-04	4.21E-04	3.39E-04	2.55E-04	1.66E-04	7.86E-05	**1**
cn = 2	2.71E-02	6.65E-05	3.62E-03	7.22E-03	1.08E-02	1.44E-02	1.80E-02	2.14E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.46E-02	2.16E-02	1.81E-02	1.45E-02	1.09E-02	7.31E-03	3.69E-03	**2**
cn = 3	1.25E-05	3.35E-07	2.61E-06	4.33E-06	6.12E-06	7.27E-06	9.50E-06	1.06E-05	1.16E-05	1.20E-05	1.20E-05	1.09E-05	1.17E-05	9.22E-06	8.32E-06	6.65E-06	5.53E-06	4.07E-06	1.25E-06	**3**
cn = 4	9.21E-06	3.26E-07	5.03E-07	2.51E-06	2.93E-06	4.69E-06	6.45E-06	8.14E-06	8.03E-06	9.07E-06	9.67E-06	9.65E-06	7.94E-06	7.07E-06	5.78E-06	4.80E-06	4.14E-06	2.06E-06	1.32E-06	**4**
cn = 5	2.77E-06	2.08E-07	2.94E-07	1.01E-06	6.53E-07	1.01E-06	7.41E-07	8.70E-07	7.41E-07	1.90E-06	2.10E-06	2.19E-06	1.44E-06	2.24E-06	7.11E-07	3.61E-07	1.23E-06	1.74E-06	5.67E-07	**5**
cn = 6	4.57E-05	8.95E-07	6.02E-06	1.10E-05	1.81E-05	2.24E-05	2.95E-05	3.53E-05	4.13E-05	4.64E-05	5.20E-05	4.74E-05	4.10E-05	3.54E-05	3.02E-05	2.32E-05	1.73E-05	1.13E-05	8.20E-06	**6**
cn = 7	8.02E-07	4.67E-08	1.01E-06	8.86E-07	1.24E-06	9.27E-08	8.99E-07	5.28E-07	4.81E-07	8.02E-07	4.67E-07	1.59E-06	5.10E-07	6.81E-07	6.33E-07	6.68E-07	2.87E-07	1.24E-06	5.66E-07	**7**
cn = 8	4.78E-07	1.19E-06	4.11E-07	1.16E-06	7.73E-07	1.57E-06	8.11E-07	1.12E-06	1.36E-06	5.01E-07	4.78E-07	5.20E-07	1.14E-06	8.36E-07	1.53E-06	1.14E-06	1.85E-06	9.53E-07	7.18E-07	**8**
cn = 9	1.07E-06	3.31E-07	1.41E-06	2.39E-06	8.44E-07	8.28E-07	4.16E-07	5.97E-07	1.10E-06	1.72E-07	6.43E-07	7.45E-07	1.47E-06	6.56E-07	9.56E-07	5.25E-07	2.79E-07	9.14E-07	3.76E-07	**9**
cn = 10	4.65E-07	1.04E-06	5.04E-20	1.32E-06	1.92E-06	2.08E-06	1.04E-06	4.65E-07	4.65E-07	1.47E-06	1.68E-06	1.92E-06	1.68E-06	1.97E-06	1.32E-06	4.65E-07	9.31E-07	1.32E-06	6.58E-07	**10**
cn = 11	1.90E-06	5.87E-07	9.91E-07	1.63E-06	1.32E-06	2.19E-07	3.74E-07	2.05E-07	1.35E-06	8.57E-07	9.86E-07	1.55E-06	2.53E-06	2.09E-07	6.14E-07	1.67E-06	8.78E-07	1.82E-06	3.37E-07	**11**
cn = 12	6.89E-07	6.96E-07	1.50E-06	6.72E-07	1.07E-06	1.61E-06	8.42E-07	1.36E-06	1.02E-06	9.28E-07	1.15E-06	4.11E-07	3.27E-07	1.17E-06	1.22E-06	1.57E-07	1.01E-06	2.71E-06	5.71E-07	**12**
cn = 13	2.71E-06	7.90E-07	1.01E-06	1.81E-06	1.28E-06	5.67E-07	1.87E-06	3.06E-07	5.56E-07	1.10E-06	8.42E-07	1.02E-06	2.26E-06	9.98E-07	1.85E-06	1.22E-06	1.19E-06	1.71E-06	1.61E-06	**13**
cn = 14	2.59E-07	1.02E-06	5.95E-07	8.99E-07	2.23E-06	2.21E-06	3.21E-07	5.35E-07	6.16E-07	9.87E-07	1.38E-06	1.78E-06	8.48E-07	2.90E-06	7.89E-07	1.88E-06	1.72E-06	1.58E-06	4.00E-07	**14**
cn = 15	1.07E-06	9.31E-07	1.32E-06	7.71E-07	1.90E-06	7.71E-07	1.08E-06	6.68E-07	1.08E-06	9.25E-07	2.77E-07	1.68E-06	1.43E-06	1.22E-07	5.45E-07	1.61E-06	9.44E-07	1.34E-06	1.99E-06	**15**
cn = 16	1.30E-06	1.73E-06	1.51E-06	1.03E-06	8.03E-07	6.62E-07	2.31E-07	8.35E-07	1.16E-06	3.73E-07	1.30E-06	3.03E-06	1.29E-06	2.75E-06	1.78E-06	1.29E-06	1.26E-06	4.39E-07	1.67E-06	**16**

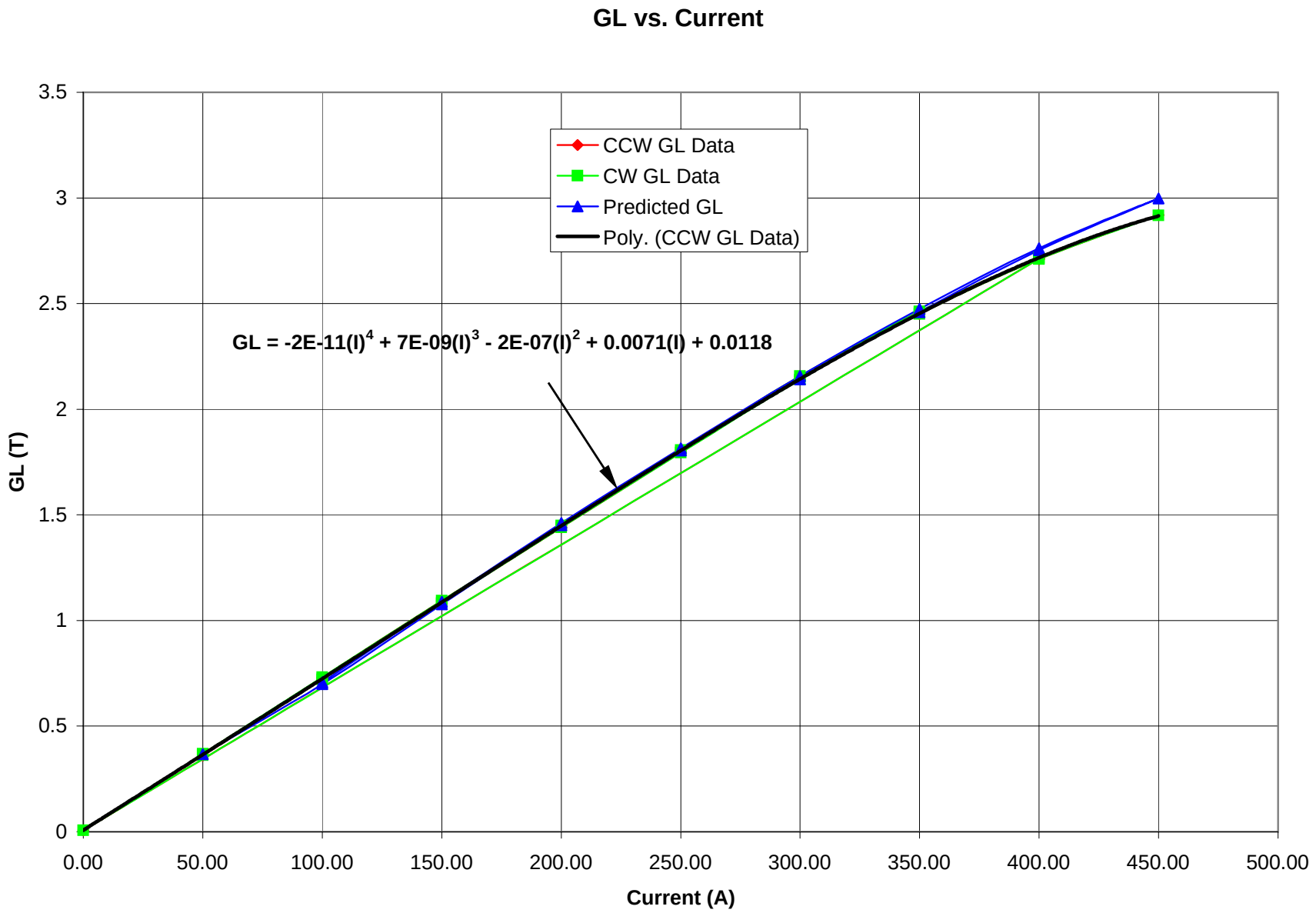
Normalized Data

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q11_1.mpl	**400**	2.71E-02	2.71E+00	0.05%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	
Q11_2.mpl	**0**	6.65E-05	6.65E-03	0.50%	0.49%	0.31%	1.35%	0.07%	1.80%	0.50%	1.57%	0.88%	1.05%	1.19%	1.53%	1.40%	2.60%	**84.77%**
Q11_3.mpl	**50**	3.62E-03	3.62E-01	0.07%	0.01%	0.01%	0.17%	0.03%	0.01%	0.04%	0.00%	0.03%	0.04%	0.03%	0.02%	0.04%	0.04%	**99.47%**
Q11_4.mpl	**100**	7.22E-03	7.22E-01	0.06%	0.03%	0.01%	0.15%	0.01%	0.02%	0.03%	0.02%	0.02%	0.01%	0.03%	0.01%	0.01%	0.01%	**99.56%**
Q11_5.mpl	**150**	1.08E-02	1.08E+00	0.06%	0.03%	0.01%	0.17%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	**99.62%**
Q11_6.mpl	**200**	1.44E-02	1.44E+00	0.05%	0.03%	0.01%	0.16%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.02%	0.01%	0.00%	**99.68%**
Q11_7.mpl	**250**	1.80E-02	1.80E+00	0.05%	0.04%	0.00%	0.16%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	**99.70%**
Q11_8.mpl	**300**	2.14E-02	2.14E+00	0.05%	0.04%	0.00%	0.16%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.71%**
Q11_9.mpl	**350**	2.45E-02	2.45E+00	0.05%	0.03%	0.00%	0.17%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.71%**
Q11_10.mpl	**400**	2.71E-02	2.71E+00	0.04%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.71%**
Q11_11.mpl	**450**	2.92E-02	2.92E+00	0.04%	0.03%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.71%**
Q11_12.mpl	**400**	2.72E-02	2.72E+00	0.04%	0.04%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.69%**
Q11_13.mpl	**350**	2.46E-02	2.46E+00	0.05%	0.03%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.69%**
Q11_14.mpl	**300**	2.16E-02	2.16E+00	0.04%	0.03%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	**99.69%**
Q11_15.mpl	**250**	1.81E-02	1.81E+00	0.05%	0.03%	0.00%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.69%**
Q11_16.mpl	**200**	1.45E-02	1.45E+00	0.05%	0.03%	0.00%	0.16%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.69%**
Q11_17.mpl	**150**	1.09E-02	1.09E+00	0.05%	0.04%	0.01%	0.16%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.65%**
Q11_18.mpl	**100**	7.31E-03	7.31E-01	0.06%	0.03%	0.02%	0.15%	0.02%	0.01%	0.01%	0.02%	0.02%	0.04%	0.02%	0.02%	0.02%	0.01%	**99.55%**
Q11_19.mpl	**50**	3.69E-03	3.69E-01	0.03%	0.04%	0.02%	0.22%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.04%	0.01%	0.05%	0.05%	
																	average =	**98.78%**
			Average Da	0.07%	0.06%	0.02%	0.23%	0.01%	0.10%	0.03%	0.09%	0.05%	0.06%	0.07%	0.09%	0.08%	0.15%	

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q11_1.mpl	400	2.71E-02	2.71E+00	0.05%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00678	400
Q11_2.mpl	0																		#DIV/0!	0
Q11_3.mpl	50																		0.00000	50
Q11_4.mpl	100	7.22E-03	7.22E-01	0.06%	0.03%	0.01%	0.15%	0.01%	0.02%	0.03%	0.02%	0.02%	0.01%	0.03%	0.01%	0.01%	0.01%	99.56%	0.00722	100
Q11_5.mpl	150	1.08E-02	1.08E+00	0.06%	0.03%	0.01%	0.17%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	99.62%	0.00721	150
Q11_6.mpl	200	1.44E-02	1.44E+00	0.05%	0.03%	0.01%	0.16%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.02%	0.01%	0.00%	99.68%	0.00721	200
Q11_7.mpl	250	1.80E-02	1.80E+00	0.05%	0.04%	0.00%	0.16%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	99.70%	0.00718	250
Q11_8.mpl	300	2.14E-02	2.14E+00	0.05%	0.04%	0.00%	0.16%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00713	300
Q11_9.mpl	350	2.45E-02	2.45E+00	0.05%	0.03%	0.00%	0.17%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00700	350
Q11_10.mpl	400	2.71E-02	2.71E+00	0.04%	0.03%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00678	400
Q11_11.mpl	450	2.92E-02	2.92E+00	0.04%	0.03%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.71%	0.00648	450
Q11_12.mpl	400	2.72E-02	2.72E+00	0.04%	0.04%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	99.69%	0.00679	400
Q11_13.mpl	350	2.46E-02	2.46E+00	0.05%	0.03%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.69%	0.00704	350
Q11_14.mpl	300	2.16E-02	2.16E+00	0.04%	0.03%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	99.69%	0.00719	300
Q11_15.mpl	250	1.81E-02	1.81E+00	0.05%	0.03%	0.00%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	99.69%	0.00723	250
Q11_16.mpl	200	1.45E-02	1.45E+00	0.05%	0.03%	0.00%	0.16%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.69%	0.00725	200
Q11_17.mpl	150	1.09E-02	1.09E+00	0.05%	0.04%	0.01%	0.16%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	99.65%	0.00729	150
Q11_18.mpl	100																		0.00000	100
Q11_19.mpl	50																		0.00000	50
	n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.68%**				
	Average Data	**0.05%**	**0.03%**	**0.01%**	**0.17%**	**0.00%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**					

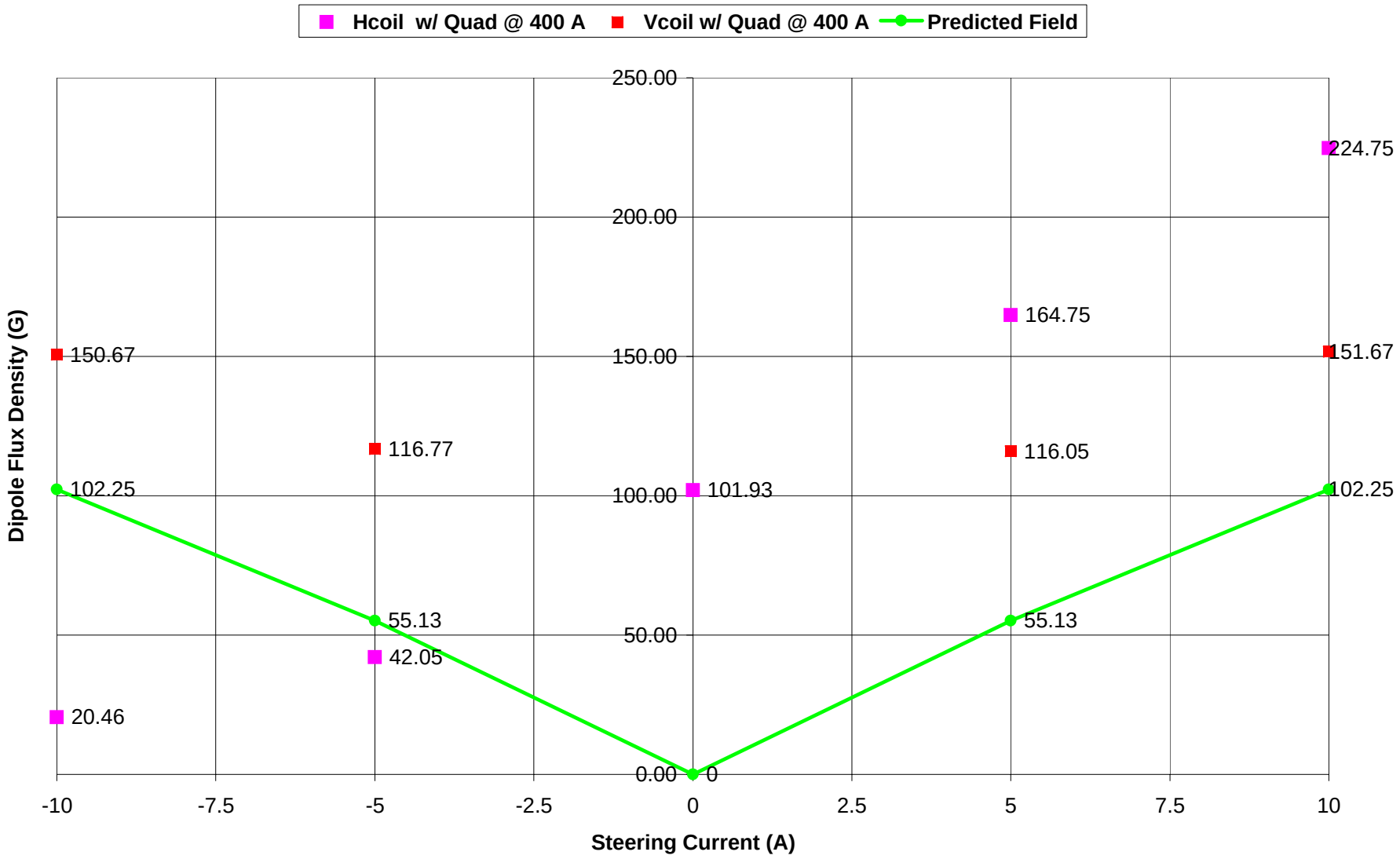

GL/I vs. I
CCW GL/I Data
CW GL/I Data
8.00E-03
7.00E-03
6.00E-03
5.00E-03
4.00E-03
3.00E-03
2.00E-03
1.00E-03
0.00E+00
-1.00E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.712	395.6946	0.989237	2.755404
0				
50	0.3614	49.76591	0.995318	0.367828
100	0.7213	96.9446	0.969446	0.698376
150	1.082	148.8284	0.992189	1.07629
200	1.44	199.5659	0.997829	1.4511
250	1.796	248.121	0.992484	1.805332
300	2.141	296.0741	0.986914	2.141651
350	2.45	344.8354	0.985244	2.460023
400	2.71	395.2593	0.988148	2.753068
450	2.919	445.8071	0.990682	2.997737
400	2.718	397.0058	0.992515	2.762415
350	2.463	347.1062	0.991732	2.474098
300	2.156	298.2631	0.99421	2.156529
250	1.806	249.4763	0.997905	1.815067
200	1.45	200.9514	1.004757	1.461313
150	1.093	150.4149	1.002766	1.087984
100	0.7303	98.21413	0.982141	0.707479
50	0.3692	50.68051	1.01361	0.37407
		average =	**99.262%**	

Dipole Field vs. Steering Current



The conditions for each c ase are following.
core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q11_21.mpl	0	0	400	6.22E-04	101.93		2.70E-02
Q11_22.mpl	5	0	400	1.01E-03	164.75	266.69	2.70E-02
Q11_23.mpl	10	0	400	1.37E-03	224.75	326.69	2.70E-02
Q11_24.mpl	-5	0	400	2.57E-04	42.05	-59.89	2.70E-02
Q11_25.mpl	-10	0	400	1.25E-04	20.46	-81.48	2.70E-02
Q11_26.mpl	0	5	400	7.08E-04	116.05	14.11	2.70E-02
Q11_27.mpl	0	10	400	9.25E-04	151.67	49.74	2.70E-02
Q11_28.mpl	0	-5	400	7.12E-04	116.77	218.70	2.70E-02
Q11_29.mpl	0	-10	400	9.19E-04	150.67	252.61	2.70E-02
Q11_30.mpl	5	5	400	1.06E-03	172.95	274.89	2.70E-02
Q11_31.mpl	10	10	400	1.52E-03	249.84	351.77	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	102.25	127.81
-5	55.13	76.14
0	0	0
5	55.13	76.14
10	102.25	127.81

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q8_12.mpl	Q8_13.mpl	Q8_14.mpl	Q8_15.mpl	Q8_16.mpl	Q8_17.mpl	Q8_18.mpl	Q8_19.mpl	Q8_20.mpl	Q8_21.mpl	Q8_22.mpl	Q8_23.mpl	Q8_24.mpl	Q8_25.mpl	Q8_26.mpl	Q8_27.mpl	Q8_28.mpl	Q8_29.mpl	Q8_30.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		8.26E-05	4.55E-06	9.52E-06	2.47E-05	3.53E-05	4.94E-05	6.40E-05	6.84E-05	7.45E-05	8.19E-05	8.56E-05	7.20E-05	7.82E-05	7.03E-05	6.14E-05	4.64E-05	3.33E-05	2.05E-05	1.04E-05	**1**
cn = 2		2.72E-02	6.27E-05	3.62E-03	7.23E-03	1.09E-02	1.44E-02	1.80E-02	2.14E-02	2.46E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.32E-03	3.70E-03	**2**
cn = 3		5.59E-06	3.30E-06	1.52E-06	4.63E-06	6.01E-06	4.66E-06	5.61E-06	3.39E-06	7.35E-06	8.72E-06	2.47E-06	1.55E-05	5.43E-06	6.29E-06	4.75E-06	4.60E-06	7.61E-06	4.57E-06	3.60E-06	**3**
cn = 4		2.88E-06	1.39E-06	7.01E-07	3.77E-06	2.94E-06	1.13E-06	2.87E-06	1.75E-06	4.25E-06	1.15E-05	9.58E-07	2.07E-05	2.02E-06	7.02E-06	8.54E-07	1.28E-06	1.33E-05	1.78E-06	1.18E-06	**4**
cn = 5		8.60E-07	7.11E-07	5.67E-07	5.76E-06	4.20E-06	5.03E-07	8.60E-07	2.43E-06	1.54E-06	1.01E-05	1.90E-06	2.06E-05	3.85E-07	5.53E-06	1.21E-06	1.03E-06	8.35E-06	2.65E-06	1.21E-06	**5**
cn = 6		4.61E-05	1.77E-06	5.36E-06	1.16E-05	1.27E-05	2.38E-05	2.96E-05	3.53E-05	3.94E-05	4.63E-05	5.17E-05	4.52E-05	4.18E-05	3.48E-05	2.83E-05	2.26E-05	1.85E-05	1.13E-05	3.70E-06	**6**
cn = 7		8.19E-07	1.54E-06	2.11E-07	5.28E-06	1.20E-06	8.88E-07	8.93E-07	3.07E-06	6.33E-07	8.95E-06	1.56E-06	2.28E-05	1.46E-06	5.80E-06	1.23E-06	1.15E-06	1.18E-05	1.75E-06	2.06E-06	**7**
cn = 8		1.08E-06	2.33E-06	1.25E-06	5.23E-06	3.01E-06	9.53E-07	1.66E-06	1.63E-06	9.12E-07	1.07E-05	6.65E-07	2.19E-05	9.53E-07	7.48E-06	9.53E-07	4.78E-07	9.78E-06	9.09E-07	1.50E-06	**8**
cn = 9		1.23E-06	8.32E-07	1.24E-06	6.82E-06	4.73E-07	1.35E-06	1.73E-06	1.62E-06	8.53E-07	9.95E-06	1.27E-06	1.98E-05	2.19E-07	5.59E-06	3.77E-07	1.55E-06	8.85E-06	1.96E-06	7.93E-07	**9**
cn = 10		6.58E-07	2.89E-20	6.58E-07	6.33E-06	9.31E-07	1.40E-06	6.58E-07	3.29E-06	1.68E-06	9.82E-06	1.47E-06	2.16E-05	6.58E-07	5.45E-06	1.47E-06	2.33E-06	9.82E-06	4.65E-07	1.68E-06	**10**
cn = 11		1.75E-06	1.70E-06	9.21E-07	5.11E-06	8.21E-07	1.39E-06	1.76E-06	2.43E-06	1.06E-06	7.87E-06	2.36E-06	1.84E-05	1.30E-06	4.46E-06	5.60E-07	1.32E-06	1.03E-05	7.10E-07	1.74E-06	**11**
cn = 12		9.81E-07	2.58E-06	1.07E-06	4.49E-06	6.03E-07	6.64E-07	1.95E-06	1.43E-06	2.03E-06	7.81E-06	1.76E-06	1.64E-05	1.51E-06	6.28E-06	2.66E-07	1.78E-06	6.96E-06	3.35E-06	9.62E-07	**12**
cn = 13		8.11E-07	9.74E-07	1.08E-06	4.02E-06	1.34E-06	1.69E-06	7.82E-07	1.33E-06	2.47E-06	9.47E-06	1.15E-07	1.46E-05	1.26E-06	3.80E-06	1.83E-06	9.74E-07	9.14E-06	1.46E-06	1.68E-06	**13**
cn = 14		1.23E-06	2.03E-06	2.00E-06	3.88E-06	2.21E-06	2.29E-06	7.91E-07	2.98E-06	9.35E-07	7.45E-06	1.67E-06	1.78E-05	1.98E-06	3.30E-06	1.13E-06	1.36E-06	5.97E-06	1.47E-06	9.58E-07	**14**
cn = 15		1.59E-06	5.45E-07	1.99E-06	3.33E-06	5.53E-07	3.86E-07	1.59E-06	1.75E-06	1.75E-06	7.72E-06	9.25E-07	1.61E-05	7.12E-07	4.24E-06	1.46E-06	1.21E-06	7.50E-06	1.82E-06	1.60E-07	**15**
cn = 16		5.76E-07	4.48E-07	4.96E-07	2.67E-06	9.86E-07	4.39E-07	1.24E-06	1.65E-06	2.98E-06	7.66E-06	9.33E-07	1.55E-05	4.39E-07	4.80E-06	4.39E-07	1.30E-06	7.39E-06	1.53E-06	1.12E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q8_12.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%		Q2_2.dat	0
Q8_13.mpl	**0**	6.27E-05	6.27E-03	5.26%	2.22%	1.13%	2.82%	2.45%	3.71%	1.33%	0.00%	2.71%	4.12%	1.55%	3.23%	0.87%	0.71%	**67.87%**	Q2_3.dat	50
Q8_14.mpl	**50**	3.62E-03	3.62E-01	0.04%	0.02%	0.02%	0.15%	0.01%	0.03%	0.03%	0.02%	0.03%	0.03%	0.03%	0.06%	0.05%	0.01%	**99.47%**	Q2_4.dat	100
Q8_15.mpl	**100**	7.23E-03	7.23E-01	0.06%	0.05%	0.08%	0.16%	0.07%	0.07%	0.09%	0.09%	0.07%	0.06%	0.06%	0.05%	0.05%	0.04%	**98.99%**	Q2_5.dat	150
Q8_16.mpl	**150**	1.09E-02	1.09E+00	0.06%	0.03%	0.04%	0.12%	0.01%	0.03%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.65%**	Q2_6.dat	200
Q8_17.mpl	**200**	1.44E-02	1.44E+00	0.03%	0.01%	0.00%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.00%	0.00%	**99.71%**	Q2_7.dat	250
Q8_18.mpl	**250**	1.80E-02	1.80E+00	0.03%	0.02%	0.00%	0.16%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	**99.71%**	Q2_8.dat	300
Q8_19.mpl	**300**	2.14E-02	2.14E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.70%**	Q2_9.dat	350
Q8_20.mpl	**350**	2.46E-02	2.46E+00	0.03%	0.02%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.72%**	Q2_10.dat	400
Q8_21.mpl	**400**	2.71E-02	2.71E+00	0.03%	0.04%	0.04%	0.17%	0.03%	0.04%	0.04%	0.04%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	**99.40%**	Q2_11.dat	450
Q8_22.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.00%	0.01%	0.18%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.76%**	Q2_12.dat	400
Q8_23.mpl	**400**	2.72E-02	2.72E+00	0.06%	0.08%	0.08%	0.17%	0.08%	0.08%	0.07%	0.08%	0.07%	0.06%	0.05%	0.07%	0.06%	0.06%	**98.95%**	Q2_13.dat	350
Q8_24.mpl	**350**	2.47E-02	2.47E+00	0.02%	0.01%	0.00%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.76%**	Q2_14.dat	300
Q8_25.mpl	**300**	2.16E-02	2.16E+00	0.03%	0.03%	0.03%	0.16%	0.03%	0.03%	0.03%	0.03%	0.02%	0.03%	0.02%	0.02%	0.02%	0.02%	**99.51%**	Q2_15.dat	250
Q8_26.mpl	**250**	1.81E-02	1.81E+00	0.03%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.75%**	Q2_16.dat	200
Q8_27.mpl	**200**	1.46E-02	1.46E+00	0.03%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.71%**	Q2_17.dat	150
Q8_28.mpl	**150**	1.10E-02	1.10E+00	0.07%	0.12%	0.08%	0.17%	0.11%	0.09%	0.08%	0.09%	0.09%	0.06%	0.08%	0.05%	0.07%	0.07%	**98.76%**	Q2_18.dat	100
Q8_29.mpl	**100**	7.32E-03	7.32E-01	0.06%	0.02%	0.04%	0.15%	0.02%	0.01%	0.03%	0.01%	0.01%	0.05%	0.02%	0.02%	0.02%	0.02%	**99.51%**	Q2_19.dat	50
Q8_30.mpl	**50**	3.70E-03	3.70E-01	0.10%	0.03%	0.03%	0.10%	0.06%	0.04%	0.02%	0.05%	0.05%	0.03%	0.05%	0.03%	0.00%	0.03%			
																	average =	**97.64%**		
			Average Da	0.32%	0.14%	0.08%	0.30%	0.15%	0.22%	0.09%	0.02%	0.17%	0.24%	0.10%	0.19%	0.07%	0.06%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q8_12.mpl	400	2.72E-02	2.7160	0.02%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00679	400
Q8_13.mpl	0																			0
Q8_14.mpl	50																			50
Q8_15.mpl	100																			100
Q8_16.mpl	150	1.09E-02	1.0850	0.06%	0.03%	0.04%	0.12%	0.01%	0.03%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	99.65%	0.00723	150
Q8_17.mpl	200	1.44E-02	1.4430	0.03%	0.01%	0.00%	0.17%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.02%	0.00%	0.00%	99.71%	0.00722	200
Q8_18.mpl	250	1.80E-02	1.7990	0.03%	0.02%	0.00%	0.16%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	99.71%	0.00720	250
Q8_19.mpl	300	2.14E-02	2.1440	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.70%	0.00715	300
Q8_20.mpl	350	2.46E-02	2.4550	0.03%	0.02%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	99.72%	0.00701	350
Q8_21.mpl	400																			400
Q8_22.mpl	450	2.92E-02	2.9200	0.01%	0.00%	0.01%	0.18%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.76%	0.00649	450
Q8_23.mpl	400																			400
Q8_24.mpl	350	2.47E-02	2.4660	0.02%	0.01%	0.00%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	99.76%	0.00705	350
Q8_25.mpl	300	2.16E-02	2.1580	0.03%	0.03%	0.03%	0.16%	0.03%	0.03%	0.03%	0.03%	0.02%	0.03%	0.02%	0.02%	0.02%	0.02%	99.51%	0.00719	300
Q8_26.mpl	250	1.81E-02	1.8100	0.03%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	99.75%	0.00724	250
Q8_27.mpl	200	1.46E-02	1.4550	0.03%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.71%	0.00728	200
Q8_28.mpl	150																			150
Q8_29.mpl	100																			100
Q8_30.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.70%
	Average Data:	0.03%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

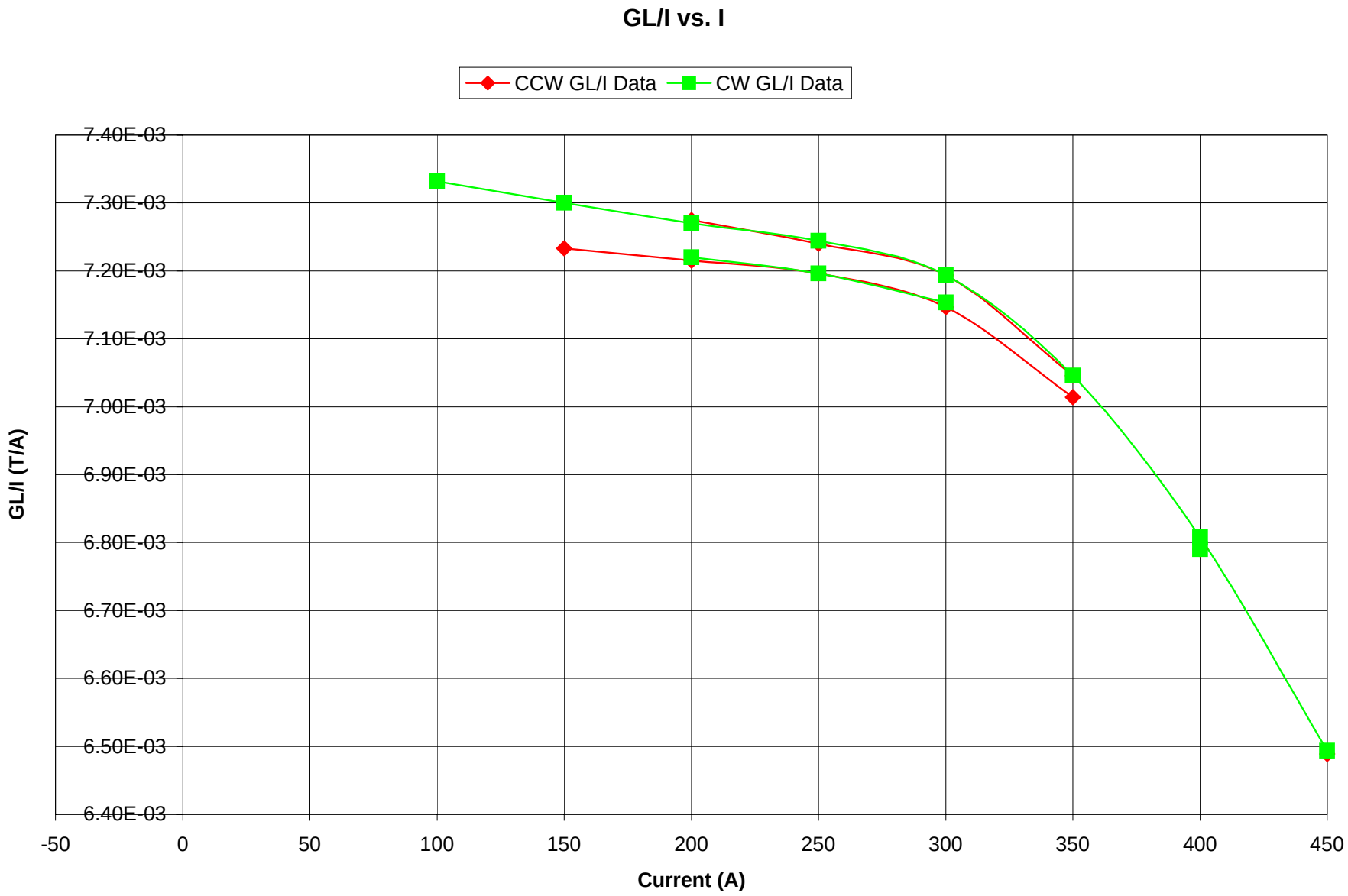
data file	Q8_12.mpl	Q8_13.mpl	Q8_14.mpl	Q8_15.mpl	Q8_16.mpl	Q8_17.mpl	Q8_18.mpl	Q8_19.mpl	Q8_20.mpl	Q8_21.mpl	Q8_22.mpl	Q8_23.mpl	Q8_24.mpl	Q8_25.mpl	Q8_26.mpl	Q8_27.mpl	Q8_28.mpl	Q8_29.mpl	Q8_30.mpl	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	8.23E-05	4.71E-06	9.62E-06	2.36E-05	3.67E-05	4.79E-05	5.50E-05	7.55E-05	7.88E-05	7.85E-05	7.37E-05	8.09E-05	7.40E-05	6.38E-05	5.51E-05	4.65E-05	3.19E-05	2.39E-05	8.07E-06	**1**
cn = 2	2.72E-02	6.23E-05	3.62E-03	7.23E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.45E-02	1.10E-02	7.33E-03	3.70E-03	**2**
cn = 3	7.08E-06	1.77E-06	2.00E-06	2.33E-06	6.20E-06	3.31E-06	6.97E-06	6.36E-06	1.36E-05	2.28E-05	7.31E-06	7.66E-06	5.00E-06	6.87E-06	8.10E-06	6.34E-06	2.92E-06	2.07E-06	5.02E-06	**3**
cn = 4	2.68E-06	1.13E-06	3.08E-06	1.33E-06	4.35E-06	5.03E-07	8.15E-07	2.03E-06	1.16E-05	2.35E-05	4.01E-06	5.60E-06	1.91E-06	2.16E-06	3.13E-06	1.98E-06	3.44E-06	1.00E-06	5.89E-06	**4**
cn = 5	2.05E-06	3.61E-07	1.03E-06	7.41E-07	1.51E-06	8.70E-07	5.03E-07	1.37E-06	1.10E-05	2.18E-05	1.79E-06	1.81E-06	1.70E-06	2.44E-06	8.70E-07	2.17E-06	2.58E-06	9.65E-07	5.78E-06	**5**
cn = 6	4.65E-05	7.93E-07	6.23E-06	1.18E-05	1.69E-05	2.38E-05	3.17E-05	3.53E-05	3.50E-05	3.70E-05	4.92E-05	4.51E-05	3.99E-05	3.62E-05	2.81E-05	2.39E-05	1.76E-05	1.27E-05	2.69E-06	**6**
cn = 7	1.73E-06	9.68E-07	1.52E-07	1.33E-06	1.28E-06	1.67E-06	1.15E-06	9.41E-07	9.25E-06	2.03E-05	6.99E-07	4.25E-06	1.67E-06	2.25E-06	1.88E-06	9.05E-07	8.65E-07	9.26E-07	7.41E-06	**7**
cn = 8	1.08E-06	7.73E-07	1.57E-06	1.36E-06	3.28E-06	2.10E-06	1.36E-06	4.78E-07	1.07E-05	2.08E-05	6.01E-07	3.20E-06	9.53E-07	9.09E-07	1.25E-06	7.82E-07	2.80E-06	1.36E-06	7.09E-06	**8**
cn = 9	2.20E-06	9.56E-07	1.39E-06	1.44E-06	9.37E-07	2.97E-06	1.15E-06	2.14E-06	1.05E-05	2.01E-05	8.72E-07	3.51E-06	3.19E-07	4.59E-07	1.17E-06	2.21E-06	8.83E-07	8.67E-07	5.88E-06	**9**
cn = 10	1.04E-06	4.65E-07	1.40E-06	1.92E-06	1.68E-06	1.92E-06	4.65E-07	6.58E-07	1.07E-05	2.23E-05	2.83E-06	4.16E-06	6.58E-07	2.08E-06	1.04E-06	1.40E-06	4.65E-07	2.83E-06	5.60E-06	**10**
cn = 11	2.40E-07	1.18E-06	1.38E-06	2.15E-07	1.65E-06	7.24E-07	4.74E-07	9.46E-07	9.94E-06	1.85E-05	8.44E-07	2.62E-06	5.53E-07	2.20E-06	1.46E-06	5.70E-07	1.18E-06	1.83E-06	5.63E-06	**11**
cn = 12	4.72E-07	6.64E-07	2.06E-06	1.26E-06	1.62E-06	1.50E-06	9.24E-07	1.23E-06	9.05E-06	1.80E-05	1.68E-06	9.93E-07	5.94E-07	7.80E-07	1.54E-06	7.34E-07	9.12E-07	5.06E-07	6.49E-06	**12**
cn = 13	1.02E-06	1.09E-06	7.65E-07	9.20E-07	7.33E-07	1.47E-06	1.34E-06	1.52E-06	8.08E-06	1.77E-05	1.30E-06	2.37E-06	2.67E-06	1.65E-06	4.76E-07	2.46E-06	7.27E-07	2.46E-07	4.99E-06	**13**
cn = 14	1.37E-06	6.00E-07	2.45E-06	1.62E-06	7.13E-07	9.45E-07	1.91E-06	1.23E-06	7.11E-06	1.59E-05	2.45E-07	1.94E-06	2.03E-07	9.75E-07	8.68E-07	6.64E-07	1.77E-06	3.46E-07	3.91E-06	**14**
cn = 15	8.91E-07	1.61E-06	1.21E-06	1.08E-06	1.16E-06	6.68E-07	3.86E-07	8.26E-07	9.42E-06	1.57E-05	4.47E-07	2.64E-06	1.13E-06	1.36E-06	6.68E-07	1.05E-06	7.40E-07	1.98E-06	4.53E-06	**15**
cn = 16	5.76E-07	8.03E-07	6.62E-07	1.16E-06	9.96E-07	1.47E-06	1.16E-06	1.30E-06	8.85E-06	1.55E-05	1.73E-06	1.95E-06	4.39E-07	1.53E-06	4.96E-07	1.77E-06	1.48E-06	1.16E-06	3.33E-06	**16**

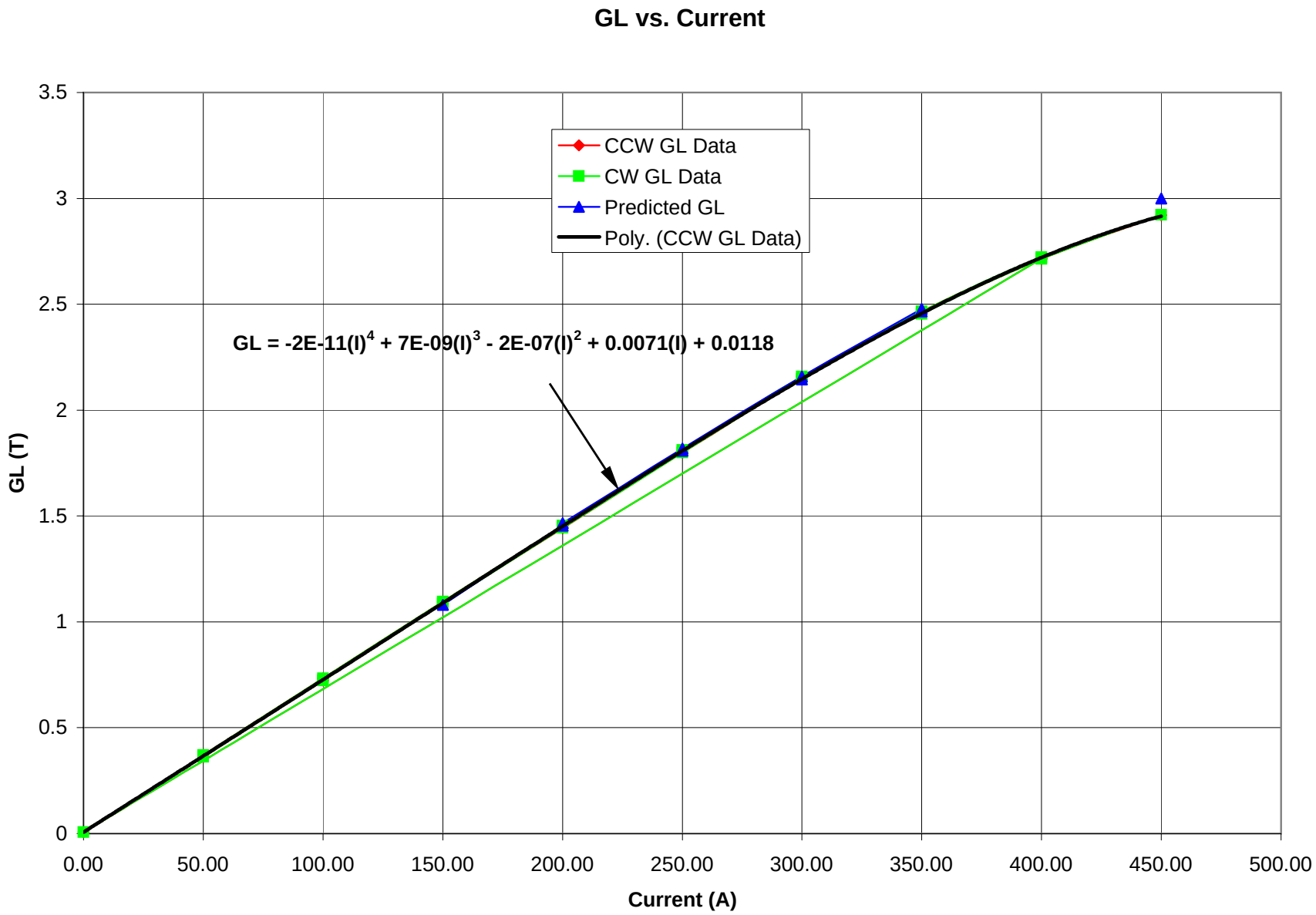
Normalized Data

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q8_12.mpl	**400**	2.72E-02	2.72E+00	0.03%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	
Q8_13.mpl	**0**	6.23E-05	6.23E-03	2.85%	1.82%	0.58%	1.27%	1.55%	1.24%	1.53%	0.75%	1.90%	1.07%	1.74%	0.96%	2.59%	1.29%	**78.85%**
Q8_14.mpl	**50**	3.62E-03	3.62E-01	0.06%	0.09%	0.03%	0.17%	0.00%	0.04%	0.04%	0.04%	0.04%	0.06%	0.02%	0.07%	0.03%	0.02%	**99.30%**
Q8_15.mpl	**100**	7.23E-03	7.23E-01	0.03%	0.02%	0.01%	0.16%	0.02%	0.02%	0.02%	0.03%	0.00%	0.02%	0.01%	0.02%	0.01%	0.02%	**99.61%**
Q8_16.mpl	**150**	1.09E-02	1.09E+00	0.06%	0.04%	0.01%	0.16%	0.01%	0.03%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.60%**
Q8_17.mpl	**200**	1.44E-02	1.44E+00	0.02%	0.00%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.70%**
Q8_18.mpl	**250**	1.80E-02	1.80E+00	0.04%	0.00%	0.00%	0.18%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.72%**
Q8_19.mpl	**300**	2.15E-02	2.15E+00	0.03%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.74%**
Q8_20.mpl	**350**	2.45E-02	2.45E+00	0.06%	0.05%	0.04%	0.14%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.03%	0.03%	0.04%	0.04%	**99.33%**
Q8_21.mpl	**400**	2.71E-02	2.71E+00	0.08%	0.09%	0.08%	0.14%	0.07%	0.08%	0.07%	0.08%	0.07%	0.07%	0.07%	0.06%	0.06%	0.06%	**98.93%**
Q8_22.mpl	**450**	2.92E-02	2.92E+00	0.03%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.75%**
Q8_23.mpl	**400**	2.72E-02	2.72E+00	0.03%	0.02%	0.01%	0.17%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.68%**
Q8_24.mpl	**350**	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.77%**
Q8_25.mpl	**300**	2.16E-02	2.16E+00	0.03%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.71%**
Q8_26.mpl	**250**	1.81E-02	1.81E+00	0.04%	0.02%	0.00%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.72%**
Q8_27.mpl	**200**	1.45E-02	1.45E+00	0.04%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.00%	0.01%	0.01%	**99.68%**
Q8_28.mpl	**150**	1.10E-02	1.10E+00	0.03%	0.03%	0.02%	0.16%	0.01%	0.03%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.65%**
Q8_29.mpl	**100**	7.33E-03	7.33E-01	0.03%	0.01%	0.01%	0.17%	0.01%	0.02%	0.01%	0.04%	0.02%	0.01%	0.00%	0.00%	0.03%	0.02%	**99.61%**
Q8_30.mpl	**50**	3.70E-03	3.70E-01	0.14%	0.16%	0.16%	0.07%	0.20%	0.19%	0.16%	0.15%	0.15%	0.18%	0.13%	0.11%	0.12%	0.09%	
																	average =	**98.37%**
			Average Da	0.19%	0.13%	0.05%	0.22%	0.11%	0.09%	0.10%	0.06%	0.12%	0.08%	0.11%	0.07%	0.16%	0.08%	

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q8_12.mpl	400	2.72E-02	2.72E+00	0.03%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00679	400
Q8_13.mpl	0																			0
Q8_14.mpl	50																			50
Q8_15.mpl	100																			100
Q8_16.mpl	150																			150
Q8_17.mpl	200	1.44E-02	1.44E+00	0.02%	0.00%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.70%	0.00722	200
Q8_18.mpl	250	1.80E-02	1.80E+00	0.04%	0.00%	0.00%	0.18%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.72%	0.00720	250
Q8_19.mpl	300	2.15E-02	2.15E+00	0.03%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.74%	0.00715	300
Q8_20.mpl	350																			350
Q8_21.mpl	400																			400
Q8_22.mpl	450	2.92E-02	2.92E+00	0.03%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	99.75%	0.00649	450
Q8_23.mpl	400	2.72E-02	2.72E+00	0.03%	0.02%	0.01%	0.17%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.68%	0.00681	400
Q8_24.mpl	350	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	99.77%	0.00705	350
Q8_25.mpl	300	2.16E-02	2.16E+00	0.03%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.71%	0.00719	300
Q8_26.mpl	250	1.81E-02	1.81E+00	0.04%	0.02%	0.00%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	99.72%	0.00724	250
Q8_27.mpl	200	1.45E-02	1.45E+00	0.04%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.00%	0.01%	0.01%	99.68%	0.00727	200
Q8_28.mpl	150	1.10E-02	1.10E+00	0.03%	0.03%	0.02%	0.16%	0.01%	0.03%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	99.65%	0.00730	150
Q8_29.mpl	100	7.33E-03	7.33E-01	0.03%	0.01%	0.01%	0.17%	0.01%	0.02%	0.01%	0.04%	0.02%	0.01%	0.00%	0.00%	0.03%	0.02%	99.61%	0.00733	100
Q8_30.mpl	50																			50
	n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.70%**				
	Average Data	**0.03%**	**0.01%**	**0.01%**	**0.17%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**					

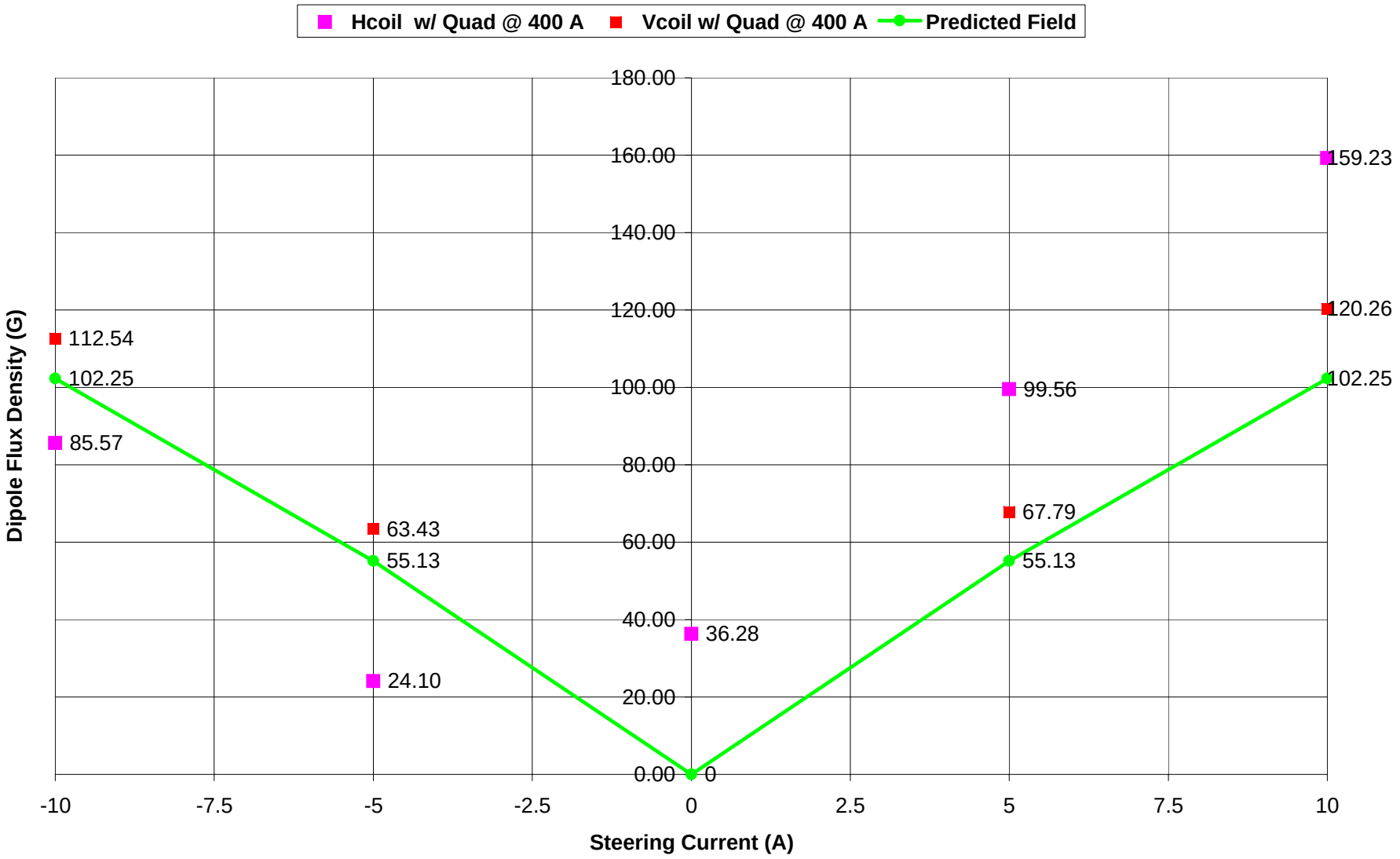

GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.40E-03
7.30E-03
7.20E-03
7.10E-03
7.00E-03
6.90E-03
6.80E-03
6.70E-03
6.60E-03
6.50E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.716	396.5679	0.99142	2.760077
0				
50				
100				
150	1.085	149.2612	0.995074	1.07948
200	1.443	199.9817	0.999909	1.454165
250	1.799	248.5275	0.99411	1.808253
300	2.144	296.5108	0.988369	2.144623
350	2.455	345.7062	0.987732	2.465429
400				
450	2.92	446.0761	0.99128	2.998885
400				
350	2.466	347.6334	0.993238	2.477355
300	2.158	298.556	0.995187	2.158516
250	1.81	250.0186	1.000074	1.818958
200	1.455	201.6434	1.008217	1.466413
150				
100				
50				
		average =	**99.496%**	

Dipole Field vs. Steering Current



The conditions for each case are following.
core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q8_1.mpl	0	0	400	2.21E-04	36.28		2.70E-02
Q8_2.mpl	5	0	400	6.07E-04	99.56	135.84	2.70E-02
Q8_3.mpl	10	0	400	9.71E-04	159.23	195.51	2.70E-02
Q8_4.mpl	-5	0	400	1.47E-04	24.10	-12.18	2.70E-02
Q8_5.mpl	-10	0	400	5.22E-04	85.57	49.30	2.70E-02
Q8_6.mpl	0	5	400	4.14E-04	67.79	31.51	2.70E-02
Q8_7.mpl	0	10	400	7.34E-04	120.26	83.98	2.70E-02
Q8_8.mpl	0	-5	400	3.87E-04	63.43	99.70	2.70E-02
Q8_9.mpl	0	-10	400	6.87E-04	112.54	148.82	2.70E-02
Q8_10.mpl	5	5	400	6.97E-04	114.25	150.52	2.70E-02
Q8_11.mpl	10	10	400	1.19E-03	194.75	231.03	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	102.25	127.81
-5	55.13	76.14
0	0	0
5	55.13	76.14
10	102.25	127.81

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q12_1.mpl	Q12_2.mpl	Q12_3.mpl	Q12_4.mpl	Q12_5.mpl	Q12_6.mpl	Q12_7.mpl	Q12_8.mpl	Q12_9.mpl	Q12_10.mp	Q12_11.mp	Q12_12.mp	Q12_13.mp	Q12_14.mp	Q12_15.mp	Q12_16.mp	Q12_17.mpl	Q12_18.mp	Q12_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.48E-04	3.19E-06	2.71E-05	5.84E-05	8.97E-05	1.25E-04	1.60E-04	1.91E-04	2.23E-04	2.50E-04	2.70E-04	2.54E-04	2.36E-04	1.97E-04	1.66E-04	1.31E-04	9.65E-05	6.50E-05	3.29E-05	**1**
cn = 2		2.72E-02	6.34E-05	3.63E-03	7.24E-03	1.09E-02	1.45E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.73E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.35E-03	3.71E-03	**2**
cn = 3		1.99E-06	5.52E-07	4.08E-07	1.28E-06	8.19E-07	9.48E-07	2.17E-06	2.61E-06	2.48E-06	1.06E-06	3.14E-06	1.49E-06	3.48E-06	3.33E-06	2.44E-06	2.04E-06	4.22E-07	1.52E-06	4.74E-07	**3**
cn = 4		1.71E-06	7.01E-07	3.83E-07	1.12E-06	1.25E-07	5.28E-07	1.91E-06	1.88E-06	1.39E-06	2.31E-06	5.28E-07	1.46E-06	8.15E-07	1.05E-06	8.15E-07	7.01E-07	8.54E-07	5.03E-07	8.15E-07	**4**
cn = 5		1.07E-06	3.61E-07	5.44E-07	8.70E-07	9.42E-07	1.21E-06	1.01E-06	9.19E-07	7.11E-07	2.36E-20	1.87E-06	8.70E-07	2.28E-06	2.17E-06	7.69E-07	2.94E-07	1.01E-06	1.32E-06	2.08E-07	**5**
cn = 6		4.66E-05	4.82E-07	5.47E-06	1.07E-05	1.67E-05	2.35E-05	2.72E-05	3.38E-05	4.23E-05	4.59E-05	5.19E-05	4.71E-05	4.12E-05	3.56E-05	2.98E-05	2.40E-05	1.84E-05	1.15E-05	5.83E-06	**6**
cn = 7		4.99E-07	7.91E-07	6.70E-07	4.82E-07	3.93E-07	3.48E-07	9.28E-07	6.90E-07	3.49E-07	1.39E-06	9.54E-07	9.31E-07	1.00E-06	1.60E-06	5.35E-07	6.18E-07	6.17E-07	1.79E-06	9.00E-07	**7**
cn = 8		8.23E-07	1.54E-06	5.01E-07	8.41E-07	7.18E-07	1.59E-06	2.25E-07	9.53E-07	2.20E-06	1.32E-06	6.65E-07	1.43E-06	5.89E-07	1.14E-06	5.89E-07	1.18E-07	1.14E-06	6.01E-07	1.57E-06	**8**
cn = 9		1.63E-07	7.76E-07	1.68E-06	2.91E-07	1.76E-06	1.45E-07	1.58E-06	7.78E-07	8.64E-07	7.75E-07	6.13E-07	1.06E-06	2.93E-07	5.61E-07	4.76E-07	1.25E-06	9.60E-07	1.33E-06	9.15E-07	**9**
cn = 10		1.68E-06	1.04E-06	1.32E-06	1.04E-06	2.08E-06	2.33E-06	2.41E-19	2.33E-06	2.79E-06	1.86E-06	1.68E-06	2.98E-06	2.98E-06	1.68E-06	1.32E-06	2.08E-06	2.33E-06	6.58E-07	4.65E-07	**10**
cn = 11		3.65E-07	5.58E-07	1.80E-06	1.86E-06	1.51E-06	8.31E-07	7.89E-07	2.70E-07	1.00E-06	5.63E-07	6.02E-07	4.51E-07	8.22E-07	2.56E-06	9.91E-07	3.68E-07	2.44E-06	1.82E-06	5.31E-07	**11**
cn = 12		5.32E-07	1.07E-06	1.32E-06	1.58E-06	1.82E-06	4.30E-07	5.94E-07	1.39E-06	1.83E-06	1.21E-06	4.30E-07	9.98E-07	9.24E-07	2.47E-06	9.24E-07	1.07E-06	2.66E-07	1.50E-06	9.24E-07	**12**
cn = 13		9.82E-07	5.28E-07	1.52E-06	1.13E-06	8.62E-07	1.22E-06	1.33E-06	5.88E-07	1.10E-06	8.57E-07	2.76E-07	2.03E-06	2.46E-06	3.48E-07	1.24E-06	8.58E-07	8.37E-07	8.43E-07	6.03E-07	**13**
cn = 14		2.09E-07	1.50E-06	1.21E-06	1.45E-06	4.48E-07	1.20E-06	7.56E-07	3.20E-07	1.99E-06	4.86E-07	7.87E-07	1.00E-06	1.79E-06	8.21E-07	2.22E-06	1.35E-06	2.24E-06	1.48E-06	2.37E-06	**14**
cn = 15		1.79E-06	1.61E-06	1.01E-06	6.68E-07	1.75E-06	1.60E-07	7.71E-07	1.48E-06	5.45E-07	7.42E-19	1.10E-06	6.68E-07	1.18E-06	1.05E-06	1.43E-06	1.32E-06	2.38E-06	1.77E-06	9.31E-07	**15**
cn = 16		3.02E-06	2.71E-07	3.73E-07	1.87E-06	1.67E-06	1.97E-06	1.86E-06	4.39E-07	7.16E-07	2.24E-06	9.33E-07	1.44E-06	7.10E-07	1.29E-06	7.10E-07	1.58E-06	1.29E-06	1.73E-06	6.62E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q12_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.77%**		
Q12_2.mpl	**0**	6.34E-05	6.34E-03	0.87%	1.10%	0.57%	0.76%	1.25%	2.43%	1.22%	1.64%	0.88%	1.69%	0.83%	2.36%	2.54%	0.43%	**81.42%**		
Q12_3.mpl	**50**	3.63E-03	3.63E-01	0.01%	0.01%	0.01%	0.15%	0.02%	0.01%	0.05%	0.04%	0.05%	0.04%	0.04%	0.03%	0.03%	0.01%	**99.50%**		
Q12_4.mpl	**100**	7.24E-03	7.24E-01	0.02%	0.02%	0.01%	0.15%	0.01%	0.01%	0.00%	0.01%	0.03%	0.02%	0.02%	0.02%	0.01%	0.03%	**99.65%**		
Q12_5.mpl	**150**	1.09E-02	1.09E+00	0.01%	0.00%	0.01%	0.15%	0.00%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.00%	0.02%	0.02%	**99.71%**		
Q12_6.mpl	**200**	1.45E-02	1.45E+00	0.01%	0.00%	0.01%	0.16%	0.00%	0.01%	0.00%	0.02%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.75%**		
Q12_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.01%	0.01%	0.15%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.77%**		
Q12_8.mpl	**300**	2.15E-02	2.15E+00	0.01%	0.01%	0.00%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	**99.77%**		
Q12_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.76%**		
Q12_10.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.00%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.78%**		
Q12_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.00%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.78%**		
Q12_12.mpl	**400**	2.73E-02	2.73E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.77%**		
Q12_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	**99.75%**		
Q12_14.mpl	**300**	2.16E-02	2.16E+00	0.02%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.74%**		
Q12_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.76%**		
Q12_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.74%**		
Q12_17.mpl	**150**	1.10E-02	1.10E+00	0.00%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.02%	0.01%	**99.68%**		
Q12_18.mpl	**100**	7.35E-03	7.35E-01	0.02%	0.01%	0.02%	0.16%	0.02%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.02%	0.02%	0.02%	**99.61%**		
Q12_19.mpl	**50**	3.71E-03	3.71E-01	0.01%	0.02%	0.01%	0.16%	0.02%	0.04%	0.02%	0.01%	0.01%	0.02%	0.02%	0.06%	0.03%	0.02%	**99.54%**		
																	average =	**98.64%**		
			Average Da	0.06%	0.07%	0.04%	0.19%	0.07%	0.14%	0.07%	0.10%	0.06%	0.10%	0.05%	0.14%	0.14%	0.03%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q12_1.mpl	400	2.715E-02	2.7150	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	99.77%	0.00679	400
Q12_2.mpl	0																			0
Q12_3.mpl	50	3.627E-03	0.3627	0.01%	0.01%	0.01%	0.15%	0.02%	0.01%	0.05%	0.04%	0.05%	0.04%	0.04%	0.03%	0.03%	0.01%	99.50%	0.00725	50
Q12_4.mpl	100	7.236E-03	0.7236	0.02%	0.02%	0.01%	0.15%	0.01%	0.01%	0.00%	0.01%	0.03%	0.02%	0.02%	0.02%	0.01%	0.03%	99.65%	0.00724	100
Q12_5.mpl	150	1.087E-02	1.0870	0.01%	0.00%	0.01%	0.15%	0.00%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.00%	0.02%	0.02%	99.71%	0.00725	150
Q12_6.mpl	200	1.445E-02	1.4450	0.01%	0.00%	0.01%	0.16%	0.00%	0.01%	0.00%	0.02%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	99.75%	0.00723	200
Q12_7.mpl	250	1.801E-02	1.8010	0.01%	0.01%	0.01%	0.15%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.77%	0.00720	250
Q12_8.mpl	300	2.147E-02	2.1470	0.01%	0.01%	0.00%	0.16%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	99.77%	0.00716	300
Q12_9.mpl	350	2.460E-02	2.4600	0.01%	0.01%	0.00%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	99.76%	0.00703	350
Q12_10.mpl	400	2.716E-02	2.7160	0.00%	0.01%	0.00%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	99.78%	0.00679	400
Q12_11.mpl	450	2.922E-02	2.9220	0.01%	0.00%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.78%	0.00649	450
Q12_12.mpl	400	2.725E-02	2.7250	0.01%	0.01%	0.00%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.77%	0.00681	400
Q12_13.mpl	350	2.469E-02	2.4690	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	99.75%	0.00705	350
Q12_14.mpl	300	2.163E-02	2.1630	0.02%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	99.74%	0.00721	300
Q12_15.mpl	250	1.813E-02	1.8130	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.76%	0.00725	250
Q12_16.mpl	200	1.457E-02	1.4570	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	99.74%	0.00729	200
Q12_17.mpl	150	1.097E-02	1.0970	0.00%	0.01%	0.01%	0.17%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.02%	0.01%	99.68%	0.00731	150
Q12_18.mpl	100	7.348E-03	0.7348	0.02%	0.01%	0.02%	0.16%	0.02%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.02%	0.02%	0.02%	99.61%	0.00735	100
Q12_19.mpl	50	3.708E-03	0.3708	0.01%	0.02%	0.01%	0.16%	0.02%	0.04%	0.02%	0.01%	0.01%	0.02%	0.02%	0.06%	0.03%	0.02%	99.54%	0.00742	50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.72%
	Average Data:	**0.01%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

data file	Q11_1.mpl	Q11_2.mpl	Q11_3.mpl	Q11_4.mpl	Q11_5.mpl	Q11_6.mpl	Q11_7.mpl	Q11_8.mpl	Q11_9.mpl	Q11_10.mp	Q11_11.mp	Q11_12.mp	Q11_13.mp	Q11_14.mp	Q11_15.mp	Q11_16.mp	Q11_17.mpl	Q11_18.mp	Q11_19.mpl	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	2.52E-04	2.95E-06	2.55E-05	5.57E-05	8.79E-05	1.21E-04	1.56E-04	1.86E-04	2.21E-04	2.48E-04	2.68E-04	2.53E-04	2.23E-04	1.98E-04	1.61E-04	1.29E-04	9.25E-05	6.18E-05	2.95E-05	**1**
cn = 2	2.72E-02	6.49E-05	3.63E-03	7.24E-03	1.09E-02	1.45E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.73E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.34E-03	3.71E-03	**2**
cn = 3	2.30E-06	8.23E-07	1.58E-06	1.17E-06	2.92E-07	1.74E-06	2.05E-06	2.96E-07	1.89E-06	2.65E-06	1.58E-06	3.99E-06	2.03E-06	1.10E-06	2.14E-06	2.38E-06	2.31E-06	1.43E-06	4.05E-07	**3**
cn = 4	1.84E-06	7.01E-07	2.02E-07	1.51E-06	1.46E-06	5.79E-07	1.06E-06	1.02E-06	1.46E-06	2.34E-06	1.52E-06	1.71E-06	1.20E-06	1.13E-06	5.28E-07	9.36E-07	1.64E-06	2.02E-07	6.20E-07	**4**
cn = 5	1.05E-06	5.82E-07	6.66E-07	5.44E-07	1.71E-06	5.67E-07	1.21E-06	1.21E-06	8.70E-07	1.08E-06	1.03E-06	1.51E-06	1.41E-06	1.89E-06	1.41E-06	1.16E-06	1.23E-06	1.30E-06	7.11E-07	**5**
cn = 6	4.70E-05	1.24E-06	5.88E-06	1.16E-05	1.69E-05	2.18E-05	2.92E-05	3.53E-05	4.11E-05	4.63E-05	5.26E-05	4.81E-05	4.14E-05	3.59E-05	2.77E-05	2.39E-05	1.69E-05	1.04E-05	5.55E-06	**6**
cn = 7	6.56E-07	2.35E-06	1.43E-06	3.72E-07	1.89E-06	8.56E-07	2.91E-07	9.63E-07	2.66E-07	4.95E-07	4.48E-07	6.63E-07	3.83E-07	5.92E-07	1.25E-06	1.01E-06	2.46E-06	4.72E-07	5.79E-07	**7**
cn = 8	1.16E-06	3.64E-07	1.48E-06	3.10E-07	8.11E-07	8.89E-07	6.19E-07	3.64E-07	8.55E-07	5.89E-07	1.84E-06	6.19E-07	8.55E-07	1.22E-06	5.01E-07	5.89E-07	1.43E-06	3.10E-07	2.46E-06	**8**
cn = 9	7.58E-07	1.39E-06	7.16E-07	8.30E-07	8.52E-07	5.21E-07	1.03E-06	1.00E-06	6.24E-07	9.63E-07	3.76E-07	7.92E-07	1.48E-06	1.90E-06	1.67E-06	3.56E-07	6.12E-07	7.87E-07	5.26E-07	**9**
cn = 10	1.74E-19	1.04E-06	1.47E-06	9.31E-07	2.08E-06	1.47E-06	1.47E-06	2.33E-06	4.65E-07	6.58E-07	1.92E-06	4.65E-07	1.68E-06	1.04E-06	1.04E-06	4.65E-07	1.04E-06	1.32E-06	9.31E-07	**10**
cn = 11	7.26E-07	6.42E-07	1.26E-06	4.94E-07	7.21E-07	1.62E-06	9.87E-07	1.82E-06	1.30E-06	1.99E-06	6.28E-07	1.10E-06	1.26E-06	8.31E-07	1.53E-06	1.43E-06	1.04E-06	7.68E-07	7.62E-07	**11**
cn = 12	4.10E-07	1.07E-06	1.13E-06	1.66E-06	9.98E-07	2.19E-06	8.60E-07	1.23E-06	9.98E-07	1.79E-06	8.34E-07	5.32E-07	1.48E-06	6.64E-07	4.30E-07	1.35E-06	1.17E-06	1.13E-06	8.18E-07	**12**
cn = 13	1.26E-06	8.73E-07	1.36E-06	9.36E-07	1.14E-06	8.87E-07	6.75E-07	2.19E-06	1.73E-06	7.18E-07	1.03E-06	1.52E-06	2.93E-06	9.59E-07	9.81E-07	1.16E-06	2.08E-06	7.40E-07	1.03E-06	**13**
cn = 14	9.27E-07	5.23E-07	5.96E-07	7.26E-07	1.07E-06	5.28E-07	8.53E-07	9.07E-07	7.12E-07	1.27E-06	1.79E-06	1.29E-06	5.75E-07	1.69E-06	4.84E-07	6.33E-07	1.62E-06	1.88E-06	8.21E-07	**14**
cn = 15	1.53E-06	1.37E-06	1.23E-06	1.01E-06	2.06E-06	1.99E-06	1.46E-06	1.60E-07	6.68E-07	1.05E-06	1.21E-06	1.16E-06	5.68E-07	1.72E-06	5.68E-07	1.57E-06	2.44E-06	2.09E-06	5.45E-07	**15**
cn = 16	1.03E-06	1.15E-06	1.84E-06	6.04E-07	2.31E-07	1.17E-06	1.21E-06	1.15E-06	1.40E-06	7.10E-07	7.95E-07	1.21E-06	1.40E-06	1.54E-06	3.73E-07	7.10E-07	1.44E-06	6.04E-07	1.34E-06	**16**

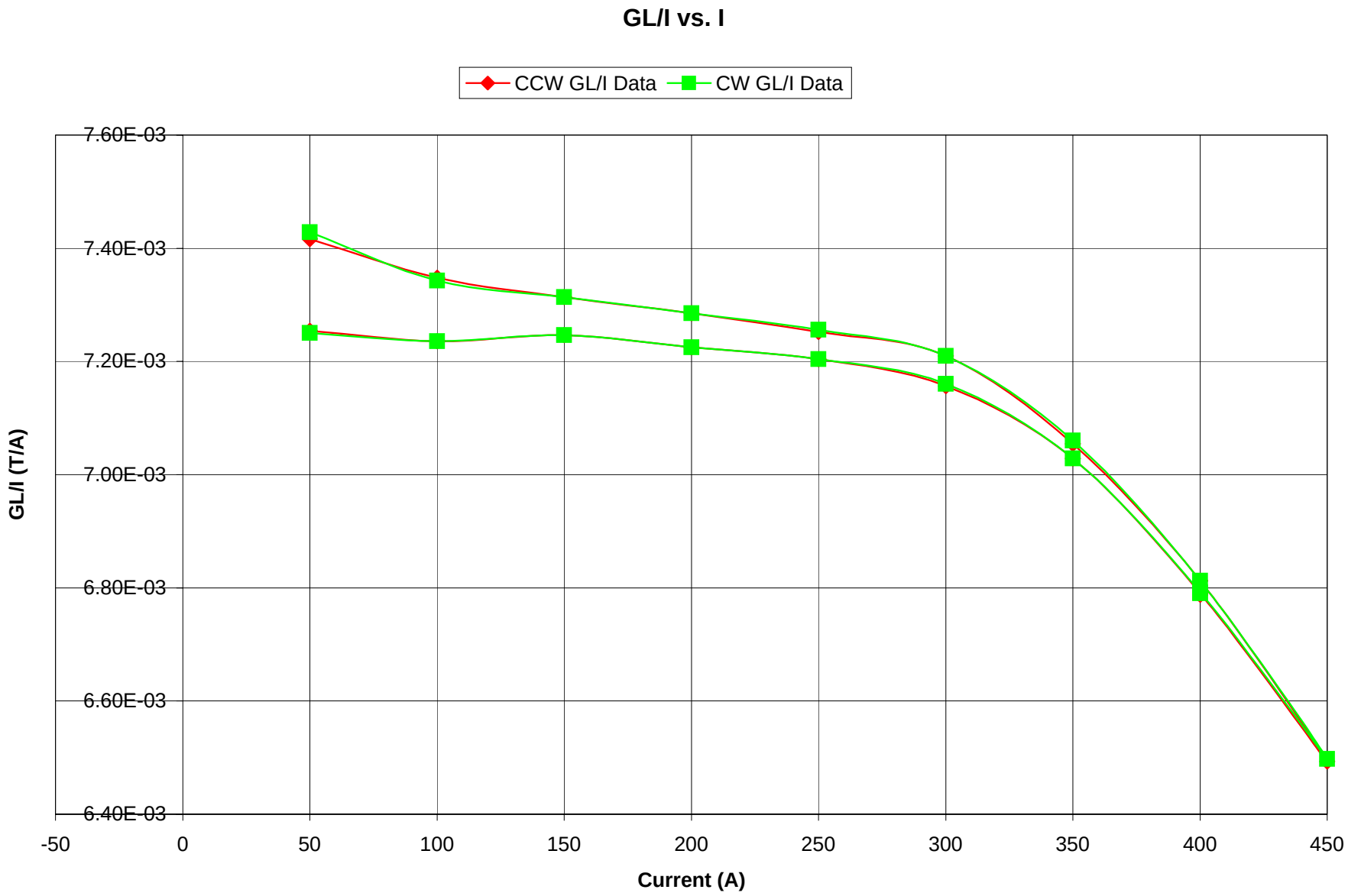
Normalized Data

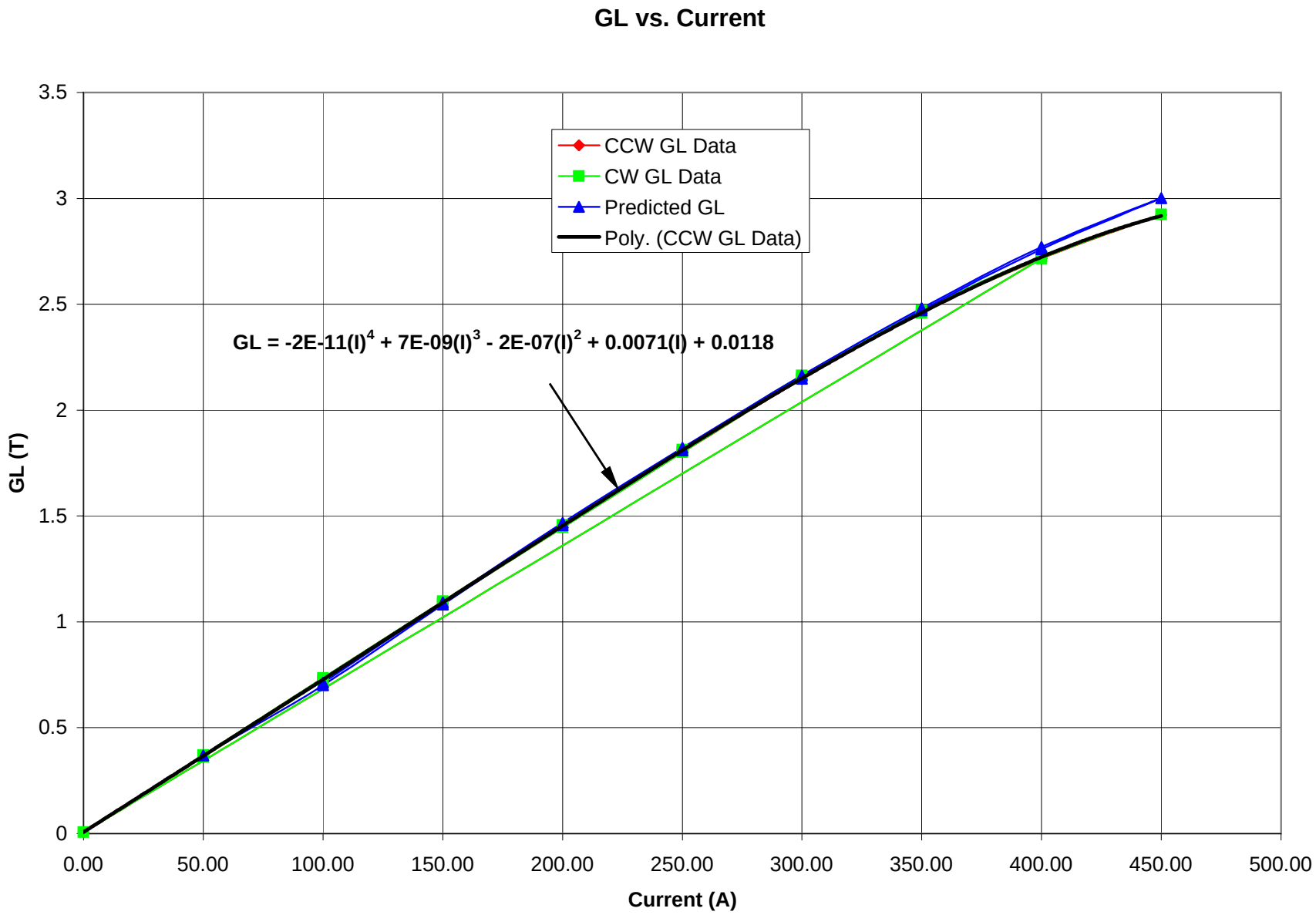
Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q11_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.78%**
Q11_2.mpl	**0**	6.49E-05	6.49E-03	1.27%	1.08%	0.90%	1.91%	3.62%	0.56%	2.14%	1.60%	0.99%	1.66%	1.35%	0.81%	2.11%	1.77%	**78.24%**
Q11_3.mpl	**50**	3.63E-03	3.63E-01	0.04%	0.01%	0.02%	0.16%	0.04%	0.04%	0.02%	0.04%	0.03%	0.03%	0.04%	0.02%	0.03%	0.05%	**99.43%**
Q11_4.mpl	**100**	7.24E-03	7.24E-01	0.02%	0.02%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	**99.69%**
Q11_5.mpl	**150**	1.09E-02	1.09E+00	0.00%	0.01%	0.02%	0.16%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	**99.70%**
Q11_6.mpl	**200**	1.45E-02	1.45E+00	0.01%	0.00%	0.00%	0.15%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	**99.75%**
Q11_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.76%**
Q11_8.mpl	**300**	2.15E-02	2.15E+00	0.00%	0.00%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.77%**
Q11_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.78%**
Q11_10.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.77%**
Q11_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.00%	0.18%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.77%**
Q11_12.mpl	**400**	2.73E-02	2.73E+00	0.01%	0.01%	0.01%	0.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**
Q11_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.76%**
Q11_14.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.76%**
Q11_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.00%	0.01%	0.15%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.78%**
Q11_16.mpl	**200**	1.46E-02	1.46E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.74%**
Q11_17.mpl	**150**	1.10E-02	1.10E+00	0.02%	0.01%	0.01%	0.15%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	**99.66%**
Q11_18.mpl	**100**	7.34E-03	7.34E-01	0.02%	0.00%	0.02%	0.14%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.03%	0.03%	0.01%	**99.68%**
Q11_19.mpl	**50**	3.71E-03	3.71E-01	0.01%	0.02%	0.02%	0.15%	0.02%	0.07%	0.01%	0.03%	0.02%	0.02%	0.03%	0.02%	0.01%	0.04%	**99.54%**
			Average Da	0.08%	0.06%	0.06%	0.25%	0.20%	0.04%	0.12%	0.09%	0.06%	0.10%	0.08%	0.05%	0.12%	0.10%	**average = 98.46%**

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q11_1.mpl	400	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	99.78%	0.00679	400
Q11_2.mpl	0																			0
Q11_3.mpl	50	3.63E-03	3.63E-01	0.04%	0.01%	0.02%	0.16%	0.04%	0.04%	0.02%	0.04%	0.03%	0.03%	0.04%	0.02%	0.03%	0.05%	99.43%	0.00725	50
Q11_4.mpl	100	7.24E-03	7.24E-01	0.02%	0.02%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	99.69%	0.00724	100
Q11_5.mpl	150	1.09E-02	1.09E+00	0.00%	0.01%	0.02%	0.16%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	99.70%	0.00725	150
Q11_6.mpl	200	1.45E-02	1.45E+00	0.01%	0.00%	0.00%	0.15%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	99.75%	0.00723	200
Q11_7.mpl	250	1.80E-02	1.80E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	99.76%	0.00720	250
Q11_8.mpl	300	2.15E-02	2.15E+00	0.00%	0.00%	0.01%	0.16%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.77%	0.00716	300
Q11_9.mpl	350	2.46E-02	2.46E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	99.78%	0.00703	350
Q11_10.mpl	400	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	99.77%	0.00679	400
Q11_11.mpl	450	2.92E-02	2.92E+00	0.01%	0.01%	0.00%	0.18%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	99.77%	0.00650	450
Q11_12.mpl	400	2.73E-02	2.73E+00	0.01%	0.01%	0.01%	0.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00681	400
Q11_13.mpl	350	2.47E-02	2.47E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.76%	0.00706	350
Q11_14.mpl	300	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	99.76%	0.00721	300
Q11_15.mpl	250	1.81E-02	1.81E+00	0.01%	0.00%	0.01%	0.15%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.78%	0.00726	250
Q11_16.mpl	200	1.46E-02	1.46E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	99.74%	0.00729	200
Q11_17.mpl	150	1.10E-02	1.10E+00	0.02%	0.01%	0.01%	0.15%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	99.66%	0.00731	150
Q11_18.mpl	100	7.34E-03	7.34E-01	0.02%	0.00%	0.02%	0.14%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.03%	0.03%	0.01%	99.68%	0.00734	100
Q11_19.mpl	50	3.71E-03	3.71E-01	0.01%	0.02%	0.02%	0.15%	0.02%	0.07%	0.01%	0.03%	0.02%	0.02%	0.03%	0.02%	0.01%	0.04%	99.54%	0.00743	50

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.72%
n =															
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.60E-03
7.40E-03
7.20E-03
7.00E-03
6.80E-03
6.60E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.715	396.3493	0.990873	2.758908
0				
50	0.3627	49.91789	0.998358	0.368865
100	0.7236	97.26879	0.972688	0.7007
150	1.087	149.5497	0.996998	1.081606
200	1.445	200.2588	1.001294	1.456208
250	1.801	248.7986	0.995194	1.8102
300	2.147	296.9481	0.989827	2.147597
350	2.46	346.5802	0.990229	2.470845
400	2.716	396.5679	0.99142	2.760077
450	2.922	446.615	0.992478	3.001179
400	2.725	398.5451	0.996363	2.770603
350	2.469	348.1619	0.994748	2.480616
300	2.163	299.2893	0.997631	2.163487
250	1.813	250.4254	1.001702	1.821877
200	1.457	201.9201	1.009601	1.468452
150	1.097	150.9916	1.006611	1.092235
100	0.7348	98.84985	0.988499	0.712041
50	0.3708	50.86891	1.017378	0.375357
		average =	**99.622%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q15_1.mpl	Q15_2.mpl	Q15_3.mpl	Q15_4.mpl	Q15_5.mpl	Q15_6.mpl	Q15_7.mpl	Q15_8.mpl	Q15_9.mpl	Q15_10.mp	Q15_11.mp	Q15_12.mp	Q15_13.mp	Q15_14.mp	Q15_15.mp	Q15_16.mp	Q15_17.mpl	Q15_18.mp	Q15_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.00E-05	8.35E-06	3.25E-06	5.78E-07	6.31E-06	9.99E-06	1.68E-05	1.51E-05	2.09E-05	1.92E-05	1.05E-05	1.71E-05	2.25E-05	1.54E-05	1.13E-05	7.54E-06	1.52E-05	1.49E-05	1.03E-05	**1**
cn = 2		2.72E-02	7.02E-05	3.64E-03	7.25E-03	1.09E-02	1.44E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.45E-02	1.10E-02	7.33E-03	3.72E-03	**2**
cn = 3		2.63E-06	9.31E-07	5.72E-07	2.00E-07	2.36E-06	2.10E-06	7.74E-07	1.37E-06	2.88E-06	2.04E-06	2.39E-06	2.33E-06	2.90E-06	2.28E-06	1.61E-06	9.38E-07	9.83E-07	1.56E-06	1.17E-06	**3**
cn = 4		8.15E-07	1.38E-06	3.26E-07	9.36E-07	1.22E-06	1.84E-06	1.44E-06	1.40E-06	3.83E-07	1.00E-06	1.94E-06	1.55E-06	1.28E-06	2.32E-06	1.12E-06	2.18E-06	1.22E-06	1.01E-06	1.13E-06	**4**
cn = 5		1.37E-06	1.59E-07	9.29E-07	3.85E-07	2.71E-06	1.99E-06	7.11E-07	8.70E-07	1.61E-06	2.13E-06	5.03E-07	1.21E-06	1.32E-06	7.39E-07	5.44E-07	7.11E-07	9.29E-07	5.67E-07	4.82E-20	**5**
cn = 6		4.82E-05	5.31E-07	6.49E-06	1.14E-05	1.96E-05	2.27E-05	2.85E-05	3.62E-05	4.08E-05	4.64E-05	5.13E-05	4.67E-05	4.12E-05	3.57E-05	2.83E-05	2.25E-05	1.77E-05	1.11E-05	6.36E-06	**6**
cn = 7		8.38E-07	1.27E-06	1.19E-06	5.64E-07	1.13E-06	9.56E-07	2.63E-07	1.28E-06	5.35E-07	7.69E-07	3.78E-07	6.36E-07	1.35E-06	1.06E-06	6.04E-07	1.17E-06	9.66E-07	6.34E-07	1.19E-06	**7**
cn = 8		5.89E-07	1.91E-07	1.78E-06	5.89E-07	3.10E-07	1.19E-06	1.57E-06	3.83E-07	6.65E-07	1.66E-06	1.72E-06	7.73E-07	8.11E-07	1.08E-06	1.10E-06	9.29E-07	7.73E-07	8.89E-07	8.89E-07	**8**
cn = 9		3.41E-07	1.38E-06	9.11E-07	1.83E-06	4.82E-07	1.66E-06	1.75E-06	1.38E-06	2.14E-06	1.17E-06	1.90E-06	7.60E-07	1.41E-06	5.58E-07	7.37E-08	1.31E-06	1.81E-06	1.26E-06	2.44E-06	**9**
cn = 10		2.71E-06	1.47E-06	1.47E-06	2.71E-06	1.40E-06	1.04E-06	9.31E-07	2.51E-06	1.47E-06	2.79E-06	1.68E-06	1.92E-06	1.47E-06	1.47E-06	2.79E-06	1.86E-06	6.58E-07	6.58E-07	1.86E-06	**10**
cn = 11		2.74E-06	9.21E-07	1.18E-06	4.56E-07	3.09E-06	1.75E-06	9.26E-07	7.57E-07	1.27E-06	8.35E-07	5.74E-07	1.30E-06	1.40E-06	3.48E-08	1.66E-06	5.59E-07	1.00E-06	1.81E-06	1.30E-06	**11**
cn = 12		9.24E-07	1.64E-07	6.96E-07	1.35E-06	1.19E-06	4.10E-07	2.26E-06	2.15E-06	1.32E-06	5.06E-07	9.15E-07	1.09E-06	1.78E-06	8.24E-07	1.58E-06	1.05E-06	1.19E-06	1.89E-06	6.64E-07	**12**
cn = 13		1.53E-06	3.81E-07	2.62E-06	2.19E-06	1.26E-06	1.07E-06	1.21E-06	7.23E-07	1.79E-07	1.80E-06	4.23E-07	6.91E-07	1.54E-06	2.20E-06	7.40E-07	1.57E-06	2.02E-06	1.85E-06	7.62E-07	**13**
cn = 14		1.45E-06	6.69E-07	8.65E-07	1.53E-06	1.48E-06	8.20E-07	9.73E-07	1.12E-06	1.91E-06	1.39E-06	1.55E-06	4.87E-07	1.85E-06	6.01E-07	1.26E-06	1.06E-06	4.27E-07	1.90E-06	1.40E-06	**14**
cn = 15		8.26E-07	1.72E-06	2.95E-07	7.12E-07	3.57E-07	2.39E-06	5.45E-07	6.68E-07	5.11E-07	1.64E-06	3.86E-07	1.60E-07	1.77E-06	3.66E-06	1.01E-06	5.45E-07	2.95E-07	1.99E-06	2.27E-19	**15**
cn = 16		7.10E-07	9.78E-07	1.20E-06	7.10E-07	6.04E-07	1.73E-06	6.62E-07	1.96E-06	9.33E-07	1.76E-06	1.51E-06	8.03E-07	2.31E-07	5.76E-07	1.95E-06	1.81E-06	8.03E-07	1.17E-06	1.17E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q15_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.00%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	**99.76%**	Q2_1.dat	400
Q15_2.mpl	**0**	7.02E-05	7.02E-03	1.33%	1.97%	0.23%	0.76%	1.81%	0.27%	1.97%	2.09%	1.31%	0.23%	0.54%	0.95%	2.45%	1.39%	**82.71%**	Q2_2.dat	0
Q15_3.mpl	**50**	3.64E-03	3.64E-01	0.02%	0.01%	0.03%	0.18%	0.03%	0.05%	0.03%	0.04%	0.03%	0.02%	0.07%	0.02%	0.01%	0.03%	**99.44%**	Q2_3.dat	50
Q15_4.mpl	**100**	7.25E-03	7.25E-01	0.00%	0.01%	0.01%	0.16%	0.01%	0.01%	0.03%	0.04%	0.01%	0.02%	0.03%	0.02%	0.01%	0.01%	**99.65%**	Q2_4.dat	100
Q15_5.mpl	**150**	1.09E-02	1.09E+00	0.02%	0.01%	0.02%	0.18%	0.01%	0.00%	0.00%	0.01%	0.03%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.66%**	Q2_5.dat	150
Q15_6.mpl	**200**	1.44E-02	1.44E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	**99.71%**	Q2_6.dat	200
Q15_7.mpl	**250**	1.80E-02	1.80E+00	0.00%	0.01%	0.00%	0.16%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.76%**	Q2_7.dat	250
Q15_8.mpl	**300**	2.15E-02	2.15E+00	0.01%	0.01%	0.00%	0.17%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	**99.75%**	Q2_8.dat	300
Q15_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.77%**	Q2_9.dat	350
Q15_10.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.76%**	Q2_10.dat	400
Q15_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.00%	0.18%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	**99.77%**	Q2_11.dat	450
Q15_12.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.78%**	Q2_12.dat	400
Q15_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.76%**	Q2_13.dat	350
Q15_14.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.02%	0.00%	**99.75%**	Q2_14.dat	300
Q15_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.00%	0.16%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.76%**	Q2_15.dat	250
Q15_16.mpl	**200**	1.45E-02	1.45E+00	0.01%	0.02%	0.00%	0.15%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.74%**	Q2_16.dat	200
Q15_17.mpl	**150**	1.10E-02	1.10E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.00%	0.00%	0.01%	**99.72%**	Q2_17.dat	150
Q15_18.mpl	**100**	7.33E-03	7.33E-01	0.02%	0.01%	0.01%	0.15%	0.01%	0.01%	0.02%	0.01%	0.02%	0.03%	0.03%	0.03%	0.03%	0.02%	**99.61%**	Q2_18.dat	100
Q15_19.mpl	**50**	3.72E-03	3.72E-01	0.03%	0.03%	0.00%	0.17%	0.03%	0.02%	0.07%	0.05%	0.03%	0.02%	0.02%	0.04%	0.00%	0.03%	**99.45%**	Q2_19.dat	50
																	average =	**98.71%**		
			Average Da	0.08%	0.11%	0.02%	0.20%	0.10%	0.02%	0.12%	0.12%	0.08%	0.02%	0.04%	0.06%	0.14%	0.08%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q15_1.mpl	400	2.717E-02	2.7170	0.01%	0.00%	0.01%	0.18%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	99.76%	0.00679	400
Q15_2.mpl	0																			0
Q15_3.mpl	50	3.637E-03	0.3637	0.02%	0.01%	0.03%	0.18%	0.03%	0.05%	0.03%	0.04%	0.03%	0.02%	0.07%	0.02%	0.01%	0.03%	99.44%	0.00727	50
Q15_4.mpl	100	7.251E-03	0.7251	0.00%	0.01%	0.01%	0.16%	0.01%	0.01%	0.03%	0.04%	0.01%	0.02%	0.03%	0.02%	0.01%	0.01%	99.65%	0.00725	100
Q15_5.mpl	150	1.086E-02	1.0860	0.02%	0.01%	0.02%	0.18%	0.01%	0.00%	0.00%	0.01%	0.03%	0.01%	0.01%	0.01%	0.00%	0.01%	99.66%	0.00724	150
Q15_6.mpl	200	1.444E-02	1.4440	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	99.71%	0.00722	200
Q15_7.mpl	250	1.800E-02	1.8000	0.00%	0.01%	0.00%	0.16%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	99.76%	0.00720	250
Q15_8.mpl	300	2.148E-02	2.1480	0.01%	0.01%	0.00%	0.17%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	99.75%	0.00716	300
Q15_9.mpl	350	2.459E-02	2.4590	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.77%	0.00703	350
Q15_10.mpl	400	2.717E-02	2.7170	0.01%	0.00%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	99.76%	0.00679	400
Q15_11.mpl	450	2.923E-02	2.9230	0.01%	0.01%	0.00%	0.18%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	99.77%	0.00650	450
Q15_12.mpl	400	2.724E-02	2.7240	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.78%	0.00681	400
Q15_13.mpl	350	2.469E-02	2.4690	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.76%	0.00705	350
Q15_14.mpl	300	2.163E-02	2.1630	0.01%	0.01%	0.00%	0.17%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.02%	0.00%	99.75%	0.00721	300
Q15_15.mpl	250	1.813E-02	1.8130	0.01%	0.01%	0.00%	0.16%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	99.76%	0.00725	250
Q15_16.mpl	200	1.454E-02	1.4540	0.01%	0.02%	0.00%	0.15%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.74%	0.00727	200
Q15_17.mpl	150	1.096E-02	1.0960	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.00%	0.00%	0.01%	99.72%	0.00731	150
Q15_18.mpl	100	7.334E-03	0.7334	0.02%	0.01%	0.01%	0.15%	0.01%	0.01%	0.02%	0.01%	0.02%	0.03%	0.03%	0.03%	0.03%	0.02%	99.61%	0.00733	100
Q15_19.mpl	50	3.715E-03	0.3715	0.03%	0.03%	0.00%	0.17%	0.03%	0.02%	0.07%	0.05%	0.03%	0.02%	0.02%	0.04%	0.00%	0.03%	99.45%	0.00743	50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.71%
	Average Data:	**0.01%**	**0.01%**	**0.01%**	**0.17%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

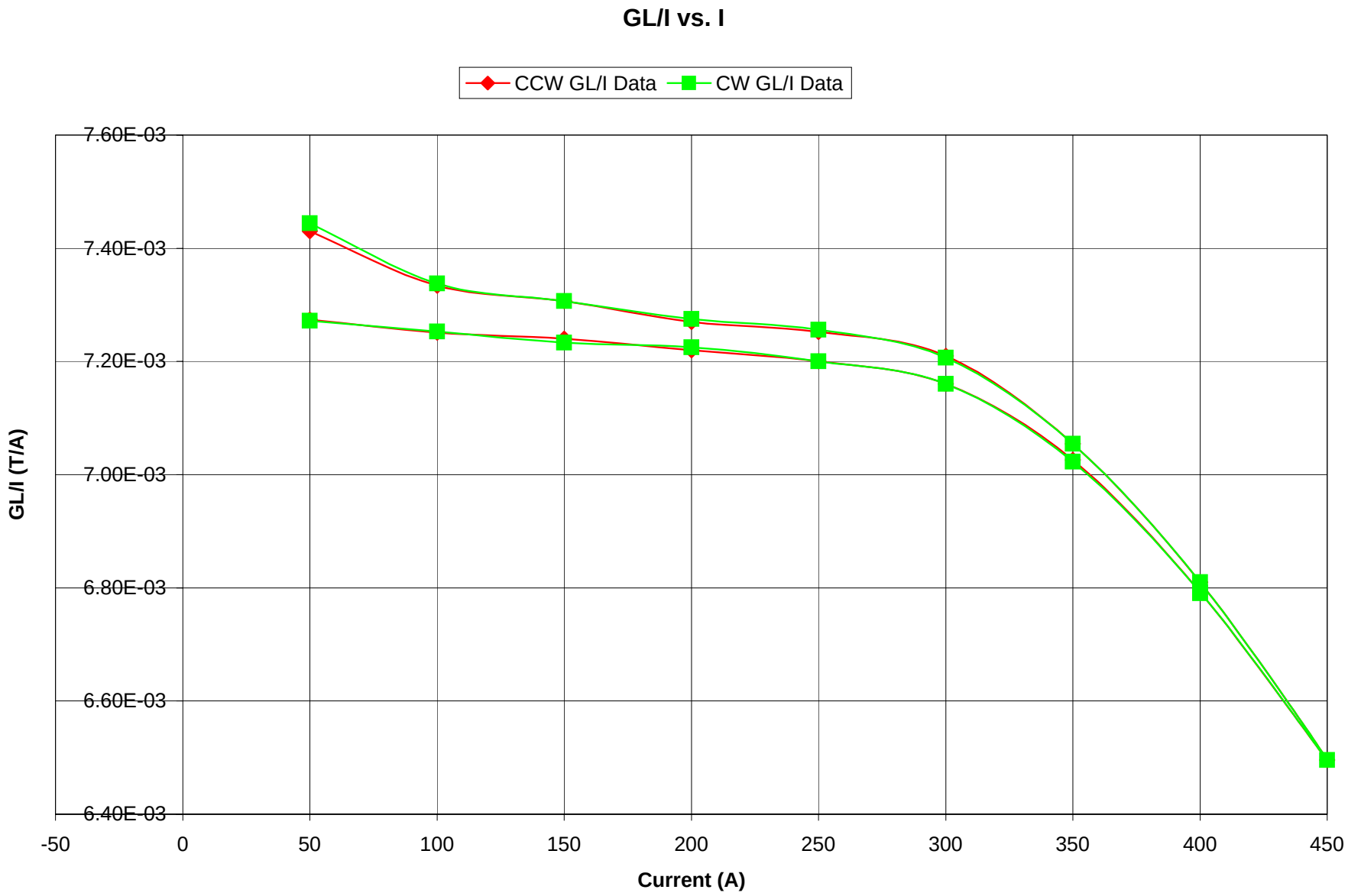
magnet 25B1346 B-1 **Rcoil = 0.01 m**

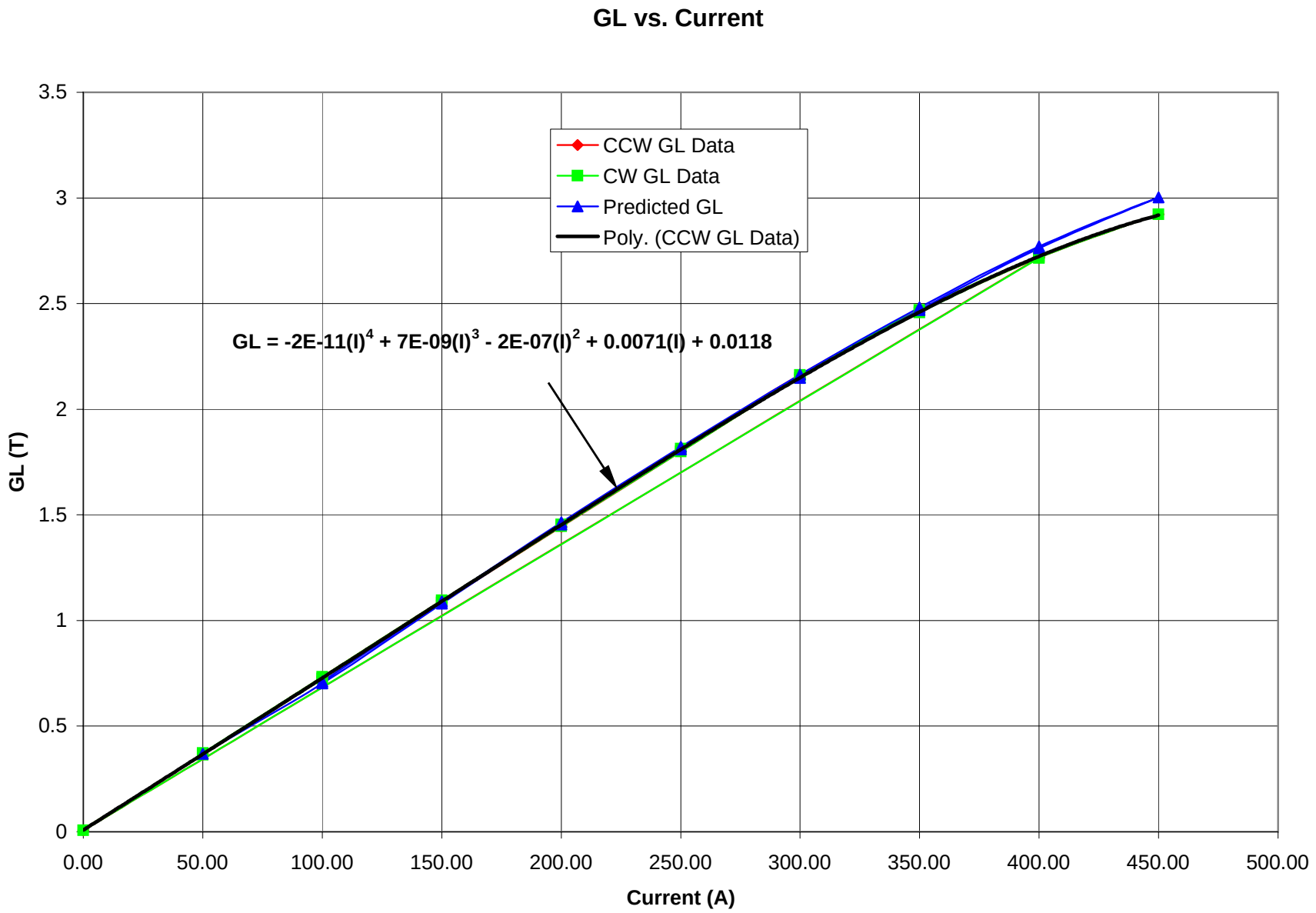
Raw CW Data	**data file**	**Q15_1.mpl**	**Q15_2.mpl**	**Q15_3.mpl**	**Q15_4.mpl**	**Q15_5.mpl**	**Q15_6.mpl**	**Q15_7.mpl**	**Q15_8.mpl**	**Q15_9.mpl**	**Q15_10.mp**	**Q15_11.mp**	**Q15_12.mp**	**Q15_13.mp**	**Q15_14.mp**	**Q15_15.mp**	**Q15_16.mp**	**Q15_17.mpl**	**Q15_18.mp**	**Q15_19.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		2.18E-05	2.56E-06	2.65E-06	4.54E-06	1.37E-05	9.27E-06	1.25E-05	2.30E-05	1.67E-05	1.11E-05	1.53E-05	1.82E-05	1.70E-05	8.65E-06	8.96E-06	1.08E-05	3.49E-06	1.04E-05	3.09E-06	**1**
cn = 2		2.72E-02	6.52E-05	3.64E-03	7.25E-03	1.09E-02	1.45E-02	1.80E-02	2.15E-02	2.46E-02	2.72E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.34E-03	3.72E-03	**2**
cn = 3		5.40E-06	4.53E-07	9.33E-07	3.74E-07	1.27E-06	4.05E-06	1.37E-06	1.68E-06	3.37E-06	3.13E-06	3.54E-06	1.45E-06	3.90E-06	2.58E-06	2.22E-06	1.94E-06	2.30E-06	9.33E-07	2.37E-06	**3**
cn = 4		2.13E-06	8.54E-07	3.83E-07	9.36E-07	1.13E-06	1.96E-06	1.33E-06	1.06E-06	1.24E-06	1.02E-06	2.75E-06	7.67E-07	2.13E-06	2.95E-06	1.22E-06	9.00E-07	9.36E-07	1.66E-06	2.54E-06	**4**
cn = 5		1.44E-06	6.66E-07	8.70E-07	1.12E-06	2.08E-07	1.28E-06	2.94E-07	6.53E-07	1.51E-06	5.03E-07	6.53E-07	3.85E-07	1.43E-06	2.33E-06	1.01E-06	8.70E-07	5.82E-07	4.16E-07	1.86E-06	**5**
cn = 6		4.58E-05	3.93E-07	5.46E-06	1.20E-05	1.79E-05	2.28E-05	2.96E-05	3.53E-05	4.15E-05	4.64E-05	5.17E-05	4.71E-05	4.21E-05	3.39E-05	2.97E-05	2.27E-05	1.74E-05	1.12E-05	8.00E-06	**6**
cn = 7		1.78E-06	2.83E-07	1.03E-06	9.53E-07	7.12E-07	3.63E-07	1.57E-06	5.56E-07	3.23E-07	1.95E-06	6.38E-07	1.48E-06	1.86E-06	5.85E-07	5.20E-07	7.36E-07	7.91E-07	6.11E-07	1.09E-06	**7**
cn = 8		1.44E-06	6.59E-07	3.12E-06	1.32E-06	4.11E-07	5.01E-07	1.43E-06	6.19E-07	6.19E-07	1.44E-06	5.01E-07	2.56E-19	5.01E-07	4.12E-06	4.11E-07	6.01E-07	1.30E-06	1.48E-06	1.74E-06	**8**
cn = 9		7.22E-07	1.25E-06	8.96E-07	1.31E-06	2.74E-06	7.25E-07	1.66E-06	6.12E-07	1.11E-06	7.60E-07	1.01E-06	2.81E-07	1.66E-06	1.34E-06	1.69E-06	1.58E-06	2.22E-06	1.14E-06	1.44E-06	**9**
cn = 10		1.04E-06	6.58E-07	1.04E-06	1.04E-06	1.68E-06	1.40E-06	9.31E-07	4.65E-07	1.04E-06	1.04E-06	4.65E-07	1.97E-06	6.58E-07	1.92E-06	1.04E-06	1.92E-06	1.40E-06	9.31E-07	9.31E-07	**10**
cn = 11		7.37E-07	1.19E-06	1.24E-06	8.64E-07	1.75E-06	1.64E-06	1.63E-06	6.15E-07	7.78E-07	1.50E-06	2.02E-06	1.36E-06	1.04E-06	1.04E-06	1.33E-06	1.44E-06	3.90E-07	1.82E-06	5.36E-07	**11**
cn = 12		1.48E-06	2.66E-07	1.32E-06	1.35E-06	6.64E-07	1.84E-06	1.26E-06	8.60E-07	1.64E-06	1.23E-06	9.44E-07	2.65E-06	1.48E-06	1.28E-06	1.19E-06	1.61E-06	1.35E-06	7.63E-07	1.48E-06	**12**
cn = 13		2.47E-06	2.22E-06	9.54E-07	9.32E-07	2.22E-07	1.37E-06	9.54E-07	7.78E-07	9.57E-07	4.38E-07	4.71E-07	6.81E-07	1.22E-06	1.88E-06	3.58E-07	1.72E-06	1.20E-06	1.34E-06	1.77E-06	**13**
cn = 14		3.33E-07	5.84E-07	1.14E-06	7.70E-07	1.29E-06	1.45E-06	2.06E-06	1.02E-06	1.06E-06	2.06E-06	6.98E-07	1.48E-06	1.32E-06	1.45E-06	9.74E-07	1.50E-06	2.12E-06	3.16E-07	1.64E-06	**14**
cn = 15		1.43E-06	1.23E-06	6.68E-07	8.62E-07	9.31E-07	1.87E-06	1.32E-06	1.90E-06	1.16E-06	3.86E-07	1.90E-06	7.12E-07	2.04E-06	8.19E-07	2.38E-06	6.68E-07	1.37E-06	1.86E-06	5.90E-07	**15**
cn = 16		7.25E-07	2.22E-06	6.59E-07	1.59E-06	1.51E-06	3.73E-07	1.44E-06	1.21E-06	1.21E-06	7.25E-07	3.73E-07	1.36E-19	3.73E-07	2.53E-07	1.51E-06	1.73E-06	2.37E-06	1.84E-06	3.56E-07	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q15_1.mpl	**400**	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.75%**
Q15_2.mpl	**0**	6.52E-05	6.52E-03	0.70%	1.31%	1.02%	0.60%	0.43%	1.01%	1.92%	1.01%	1.83%	0.41%	3.41%	0.90%	1.89%	3.40%	**80.15%**
Q15_3.mpl	**50**	3.64E-03	3.64E-01	0.03%	0.01%	0.02%	0.15%	0.03%	0.09%	0.02%	0.03%	0.03%	0.04%	0.03%	0.03%	0.02%	0.02%	**99.46%**
Q15_4.mpl	**100**	7.25E-03	7.25E-01	0.01%	0.01%	0.02%	0.17%	0.01%	0.02%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	**99.65%**
Q15_5.mpl	**150**	1.09E-02	1.09E+00	0.01%	0.01%	0.00%	0.17%	0.01%	0.00%	0.03%	0.02%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.70%**
Q15_6.mpl	**200**	1.45E-02	1.45E+00	0.03%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.71%**
Q15_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.01%	0.00%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.74%**
Q15_8.mpl	**300**	2.15E-02	2.15E+00	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.78%**
Q15_9.mpl	**350**	2.46E-02	2.46E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.77%**
Q15_10.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.00%	0.00%	0.17%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.77%**
Q15_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.00%	0.18%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.77%**
Q15_12.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.00%	0.00%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.78%**
Q15_13.mpl	**350**	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.75%**
Q15_14.mpl	**300**	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.74%**
Q15_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.75%**
Q15_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.73%**
Q15_17.mpl	**150**	1.10E-02	1.10E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	0.02%	**99.67%**
Q15_18.mpl	**100**	7.34E-03	7.34E-01	0.01%	0.02%	0.01%	0.15%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.00%	0.03%	0.03%	**99.64%**
Q15_19.mpl	**50**	3.72E-03	3.72E-01	0.06%	0.07%	0.05%	0.21%	0.03%	0.05%	0.04%	0.03%	0.01%	0.04%	0.05%	0.04%	0.02%	0.01%	**99.29%**
																	average =	**98.56%**
			Average Da	0.05%	0.08%	0.06%	0.19%	0.03%	0.07%	0.11%	0.06%	0.11%	0.03%	0.19%	0.06%	0.11%	0.19%	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q15_1.mpl	400	2.72E-02	2.72E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	99.75%	0.00679	400
Q15_2.mpl	0																			0
Q15_3.mpl	50	3.64E-03	3.64E-01	0.03%	0.01%	0.02%	0.15%	0.03%	0.09%	0.02%	0.03%	0.03%	0.04%	0.03%	0.03%	0.02%	0.02%	99.46%	0.00727	50
Q15_4.mpl	100	7.25E-03	7.25E-01	0.01%	0.01%	0.02%	0.17%	0.01%	0.02%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	99.65%	0.00725	100
Q15_5.mpl	150	1.09E-02	1.09E+00	0.01%	0.01%	0.00%	0.17%	0.01%	0.00%	0.03%	0.02%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	99.70%	0.00723	150
Q15_6.mpl	200	1.45E-02	1.45E+00	0.03%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.71%	0.00723	200
Q15_7.mpl	250	1.80E-02	1.80E+00	0.01%	0.01%	0.00%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.74%	0.00720	250
Q15_8.mpl	300	2.15E-02	2.15E+00	0.01%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	99.78%	0.00716	300
Q15_9.mpl	350	2.46E-02	2.46E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	99.77%	0.00702	350
Q15_10.mpl	400	2.72E-02	2.72E+00	0.01%	0.00%	0.00%	0.17%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	99.77%	0.00679	400
Q15_11.mpl	450	2.92E-02	2.92E+00	0.01%	0.01%	0.00%	0.18%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.77%	0.00650	450
Q15_12.mpl	400	2.72E-02	2.72E+00	0.01%	0.00%	0.00%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	99.78%	0.00681	400
Q15_13.mpl	350	2.47E-02	2.47E+00	0.02%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	99.75%	0.00705	350
Q15_14.mpl	300	2.16E-02	2.16E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	99.74%	0.00721	300
Q15_15.mpl	250	1.81E-02	1.81E+00	0.01%	0.01%	0.01%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	99.75%	0.00726	250
Q15_16.mpl	200	1.46E-02	1.46E+00	0.01%	0.01%	0.01%	0.16%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.73%	0.00728	200
Q15_17.mpl	150	1.10E-02	1.10E+00	0.02%	0.01%	0.01%	0.16%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.02%	0.01%	0.02%	99.67%	0.00731	150
Q15_18.mpl	100	7.34E-03	7.34E-01	0.01%	0.02%	0.01%	0.15%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.00%	0.03%	0.03%	99.64%	0.00734	100
Q15_19.mpl	50	3.72E-03	3.72E-01	0.06%	0.07%	0.05%	0.21%	0.03%	0.05%	0.04%	0.03%	0.01%	0.04%	0.05%	0.04%	0.02%	0.01%	99.29%	0.00744	50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.71%**
Average Data	**0.02%**	**0.01%**	**0.01%**	**0.17%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
7.60E-03
7.40E-03
7.20E-03
7.00E-03
6.80E-03
6.60E-03
6.40E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.717	396.7868	0.991967	2.761246
0				
50	0.3637	50.03493	1.000699	0.369663
100	0.7251	97.48031	0.974803	0.702216
150	1.086	149.4054	0.996036	1.080543
200	1.444	200.1203	1.000601	1.455187
250	1.8	248.663	0.994652	1.809227
300	2.148	297.094	0.990313	2.148589
350	2.459	346.4052	0.989729	2.469761
400	2.717	396.7868	0.991967	2.761246
450	2.923	446.8849	0.993078	3.002325
400	2.724	398.3246	0.995812	2.769433
350	2.469	348.1619	0.994748	2.480616
300	2.163	299.2893	0.997631	2.163487
250	1.813	250.4254	1.001702	1.821877
200	1.454	201.5051	1.007525	1.465393
150	1.096	150.8474	1.00565	1.091172
100	0.7334	98.652	0.98652	0.710621
50	0.3715	50.95142	1.019028	0.375921
		average =	**99.625%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q6_1.mpl	Q6_2.mpl	Q6_3.mpl	Q6_4.mpl	Q6_5.mpl	Q6_6.mpl	Q6_7.mpl	Q6_8.mpl	Q6_9.mpl	Q6_10.mpl	Q6_11.mpl	Q6_12.mpl	Q6_13.mpl	Q6_14.mpl	Q6_15.mpl	Q6_16.mpl	Q6_17.mpl	Q6_18.mpl	Q6_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.24E-04	5.96E-06	2.76E-05	5.90E-05	8.95E-05	1.22E-04	1.52E-04	1.81E-04	2.09E-04	2.27E-04	2.42E-04	2.26E-04	2.10E-04	1.82E-04	1.54E-04	1.20E-04	9.05E-05	6.40E-05	2.97E-05	**1**
cn = 2		2.72E-02	6.67E-05	3.62E-03	7.24E-03	1.08E-02	1.45E-02	1.80E-02	2.15E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.45E-02	1.10E-02	7.33E-03	3.70E-03	**2**
cn = 3		1.93E-06	1.47E-06	1.57E-06	3.37E-07	7.89E-07	2.57E-06	7.77E-06	4.97E-06	1.68E-06	2.13E-06	2.09E-06	8.55E-07	2.99E-06	1.04E-06	2.05E-06	1.58E-06	6.97E-07	2.62E-06	9.33E-07	**3**
cn = 4		1.13E-06	1.43E-06	2.61E-06	1.74E-06	3.26E-07	1.66E-06	1.09E-05	2.63E-06	8.15E-07	1.82E-06	3.36E-06	2.08E-06	2.68E-06	1.38E-06	2.52E-06	1.75E-06	6.20E-07	1.55E-06	6.20E-07	**4**
cn = 5		3.47E-06	1.81E-06	7.41E-07	1.61E-06	1.07E-06	2.53E-06	9.59E-06	3.44E-06	2.10E-06	1.31E-06	2.41E-06	1.61E-06	3.24E-06	7.41E-07	4.16E-07	7.03E-07	2.94E-07	1.23E-06	9.29E-07	**5**
cn = 6		4.69E-05	2.25E-06	6.04E-06	1.22E-05	1.57E-05	2.34E-05	2.67E-05	3.87E-05	4.19E-05	4.59E-05	4.99E-05	4.56E-05	4.13E-05	3.50E-05	2.92E-05	2.14E-05	1.66E-05	1.28E-05	5.34E-06	**6**
cn = 7		1.63E-06	1.48E-06	3.50E-07	1.44E-06	1.22E-06	1.48E-06	1.17E-05	1.63E-06	1.35E-06	1.77E-06	1.91E-06	7.05E-07	1.55E-06	8.70E-07	2.93E-06	1.29E-06	2.01E-06	8.97E-07	1.61E-06	**7**
cn = 8		6.92E-07	1.88E-06	2.05E-06	1.38E-06	4.78E-07	9.53E-07	1.09E-05	3.39E-06	1.19E-06	2.20E-06	3.10E-07	1.54E-06	8.11E-07	1.91E-07	9.72E-07	6.65E-07	1.22E-06	2.25E-07	4.11E-07	**8**
cn = 9		1.61E-06	9.50E-07	1.11E-06	2.42E-06	2.12E-06	1.51E-06	8.93E-06	2.80E-06	2.92E-07	1.29E-06	6.02E-07	2.97E-06	1.09E-06	1.59E-06	1.12E-06	8.97E-07	5.22E-07	5.62E-07	7.72E-07	**9**
cn = 10		1.04E-06	1.04E-06	1.04E-06	2.37E-06	1.04E-06	1.32E-06	9.35E-06	1.68E-06	1.40E-06	2.94E-06	1.47E-06	1.47E-06	1.04E-06	1.92E-06	9.31E-07	2.37E-06	2.08E-06	9.31E-07	1.47E-06	**10**
cn = 11		1.07E-06	1.68E-06	3.98E-07	9.69E-07	1.97E-06	1.32E-06	9.90E-06	2.54E-06	4.48E-07	1.36E-06	9.09E-07	8.53E-07	2.33E-06	1.39E-06	1.75E-06	1.83E-06	6.86E-07	7.73E-07	9.78E-07	**11**
cn = 12		6.64E-07	1.33E-06	2.49E-06	2.02E-06	6.96E-07	7.63E-07	8.25E-06	1.83E-06	9.24E-07	9.76E-07	6.79E-07	1.10E-06	4.72E-07	1.64E-07	2.89E-06	1.43E-06	8.18E-07	1.09E-06	8.18E-07	**12**
cn = 13		1.29E-06	8.12E-08	1.98E-06	7.93E-07	5.59E-07	1.46E-06	9.89E-06	1.61E-06	8.79E-07	1.90E-06	2.35E-06	1.18E-06	4.80E-07	1.33E-06	6.96E-07	1.04E-06	1.36E-06	6.65E-07	2.13E-06	**13**
cn = 14		6.80E-07	1.20E-06	7.83E-07	2.26E-06	2.11E-07	1.59E-06	8.35E-06	2.73E-06	3.25E-07	1.30E-06	2.16E-06	7.78E-07	6.68E-07	6.56E-07	1.12E-06	9.69E-07	1.02E-06	2.20E-06	4.47E-07	**14**
cn = 15		5.94E-07	1.39E-06	1.08E-06	5.11E-07	1.79E-06	6.32E-07	7.47E-06	1.04E-06	2.77E-07	4.17E-07	2.35E-06	5.11E-07	1.91E-06	1.08E-06	1.86E-06	2.73E-06	1.32E-06	9.44E-07	2.95E-07	**15**
cn = 16		1.35E-06	6.37E-07	6.78E-07	8.66E-07	1.30E-06	4.39E-07	7.74E-06	2.92E-06	1.73E-06	7.16E-07	6.04E-07	2.71E-07	2.31E-07	9.78E-07	1.07E-06	9.33E-07	1.54E-06	1.86E-06	1.51E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q6_1.mpl	**400**	2.72E-02	2.72E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		Q2_2.dat	0
Q6_2.mpl	**0**	6.67E-05	6.67E-03	2.21%	2.15%	2.72%	3.37%	2.21%	2.82%	1.42%	1.56%	2.51%	2.00%	0.12%	1.80%	2.08%	0.95%	**72.07%**	Q2_3.dat	50
Q6_3.mpl	**50**	3.62E-03	3.62E-01	0.04%	0.07%	0.02%	0.17%	0.01%	0.06%	0.03%	0.03%	0.01%	0.07%	0.05%	0.02%	0.03%	0.02%	**99.37%**	Q2_4.dat	100
Q6_4.mpl	**100**	7.24E-03	7.24E-01	0.00%	0.02%	0.02%	0.17%	0.02%	0.02%	0.03%	0.03%	0.01%	0.03%	0.01%	0.03%	0.01%	0.01%	**99.57%**	Q2_5.dat	150
Q6_5.mpl	**150**	1.08E-02	1.08E+00	0.01%	0.00%	0.01%	0.14%	0.01%	0.00%	0.02%	0.01%	0.02%	0.01%	0.01%	0.00%	0.02%	0.01%	**99.73%**	Q2_6.dat	200
Q6_6.mpl	**200**	1.45E-02	1.45E+00	0.02%	0.01%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.71%**	Q2_7.dat	250
Q6_7.mpl	**250**	1.80E-02	1.80E+00	0.04%	0.06%	0.05%	0.15%	0.06%	0.06%	0.05%	0.05%	0.06%	0.05%	0.05%	0.05%	0.04%	0.04%	**99.18%**	Q2_8.dat	300
Q6_8.mpl	**300**	2.15E-02	2.15E+00	0.02%	0.01%	0.02%	0.18%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.66%**	Q2_9.dat	350
Q6_9.mpl	**350**	2.45E-02	2.45E+00	0.01%	0.00%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	**99.77%**	Q2_10.dat	400
Q6_10.mpl	**400**	2.71E-02	2.71E+00	0.01%	0.01%	0.00%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	**99.76%**	Q2_11.dat	450
Q6_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.76%**	Q2_12.dat	400
Q6_12.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**99.77%**	Q2_13.dat	350
Q6_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.75%**	Q2_14.dat	300
Q6_14.mpl	**300**	2.16E-02	2.16E+00	0.00%	0.01%	0.00%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	**99.78%**	Q2_15.dat	250
Q6_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.00%	0.16%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	**99.73%**	Q2_16.dat	200
Q6_16.mpl	**200**	1.45E-02	1.45E+00	0.01%	0.01%	0.00%	0.15%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	**99.73%**	Q2_17.dat	150
Q6_17.mpl	**150**	1.10E-02	1.10E+00	0.01%	0.01%	0.00%	0.15%	0.02%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.72%**	Q2_18.dat	100
Q6_18.mpl	**100**	7.33E-03	7.33E-01	0.04%	0.02%	0.02%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%	0.01%	0.03%	**99.61%**	Q2_19.dat	50
Q6_19.mpl	**50**	3.70E-03	3.70E-01	0.03%	0.02%	0.03%	0.14%	0.04%	0.01%	0.02%	0.04%	0.03%	0.02%	0.06%	0.01%	0.01%	0.04%			
																	average =	**98.04%**		
			Average Da	0.13%	0.13%	0.16%	0.33%	0.13%	0.16%	0.09%	0.10%	0.14%	0.12%	0.02%	0.11%	0.12%	0.06%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q6_1.mpl	400	2.72E-02	2.7160	0.01%	0.00%	0.01%	0.17%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00679	400
Q6_2.mpl	0																			0
Q6_3.mpl	50																			50
Q6_4.mpl	100	7.24E-03	0.7238	0.00%	0.02%	0.02%	0.17%	0.02%	0.02%	0.03%	0.03%	0.01%	0.03%	0.01%	0.03%	0.01%	0.01%	99.57%	0.00724	100
Q6_5.mpl	150	1.08E-02	1.0840	0.01%	0.00%	0.01%	0.14%	0.01%	0.00%	0.02%	0.01%	0.02%	0.01%	0.01%	0.00%	0.02%	0.01%	99.73%	0.00723	150
Q6_6.mpl	200	1.45E-02	1.4450	0.02%	0.01%	0.02%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	99.71%	0.00723	200
Q6_7.mpl	250																			250
Q6_8.mpl	300	2.15E-02	2.1450	0.02%	0.01%	0.02%	0.18%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.66%	0.00715	300
Q6_9.mpl	350	2.45E-02	2.4530	0.01%	0.00%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	99.77%	0.00701	350
Q6_10.mpl	400	2.712E-02	2.7120	0.01%	0.01%	0.00%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	99.76%	0.00678	400
Q6_11.mpl	450	2.92E-02	2.9190	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	99.76%	0.00649	450
Q6_12.mpl	400	2.720E-02	2.7200	0.00%	0.01%	0.01%	0.17%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	99.77%	0.00680	400
Q6_13.mpl	350	2.47E-02	2.4670	0.01%	0.01%	0.01%	0.17%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.75%	0.00705	350
Q6_14.mpl	300	2.16E-02	2.1580	0.00%	0.01%	0.00%	0.16%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	99.78%	0.00719	300
Q6_15.mpl	250	1.81E-02	1.8120	0.01%	0.01%	0.00%	0.16%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	0.01%	99.73%	0.00725	250
Q6_16.mpl	200	1.45E-02	1.4540	0.01%	0.01%	0.00%	0.15%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	99.73%	0.00727	200
Q6_17.mpl	150	1.10E-02	1.0950	0.01%	0.01%	0.00%	0.15%	0.02%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00730	150
Q6_18.mpl	100	7.33E-03	0.7331	0.04%	0.02%	0.02%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%	0.01%	0.03%	99.61%	0.00733	100
Q6_19.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.72%
	Average Data:	0.01%	0.01%	0.01%	0.16%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

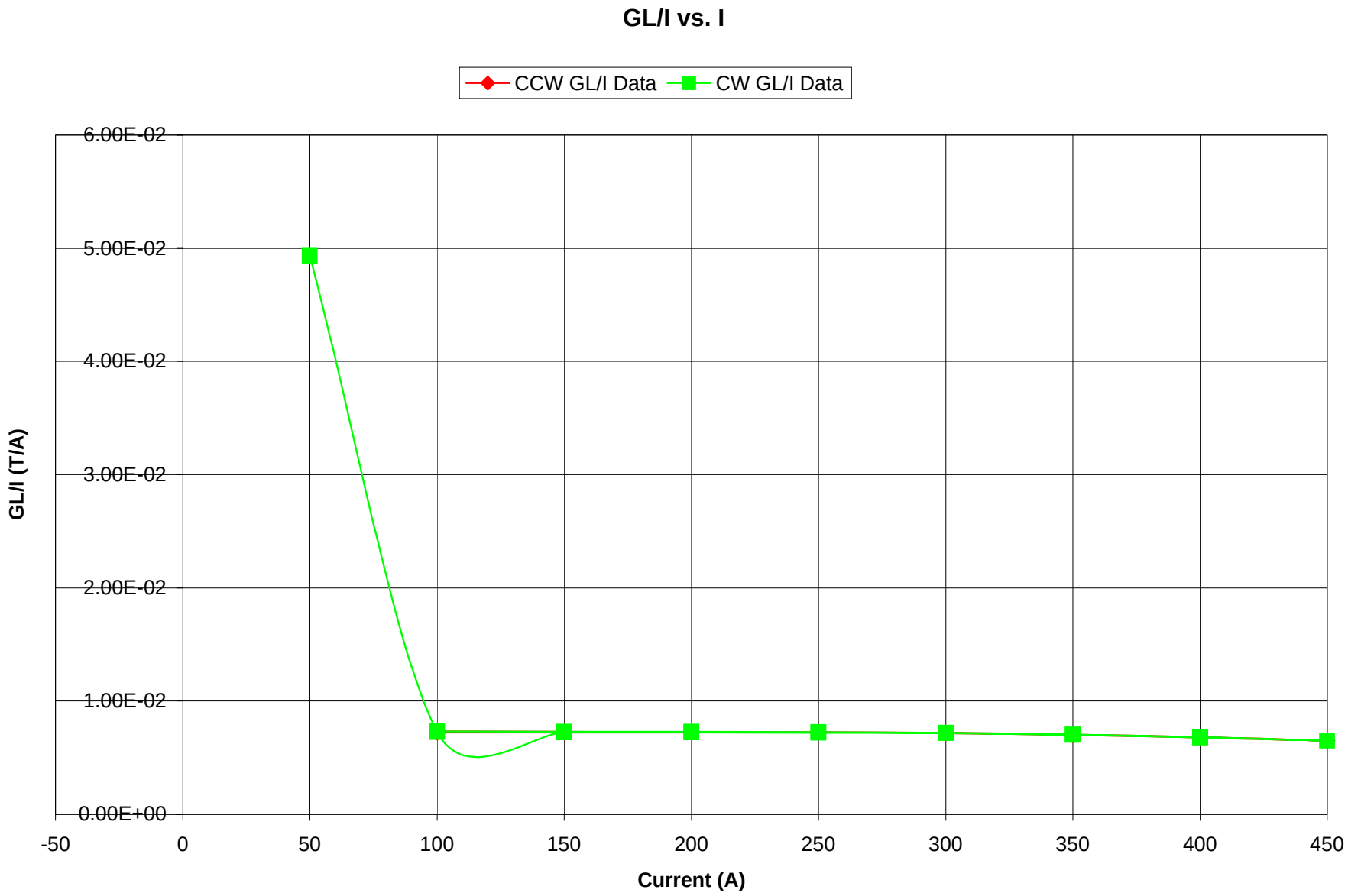
magnet 25B1346 B-1 **Rcoil = 0.01 m**

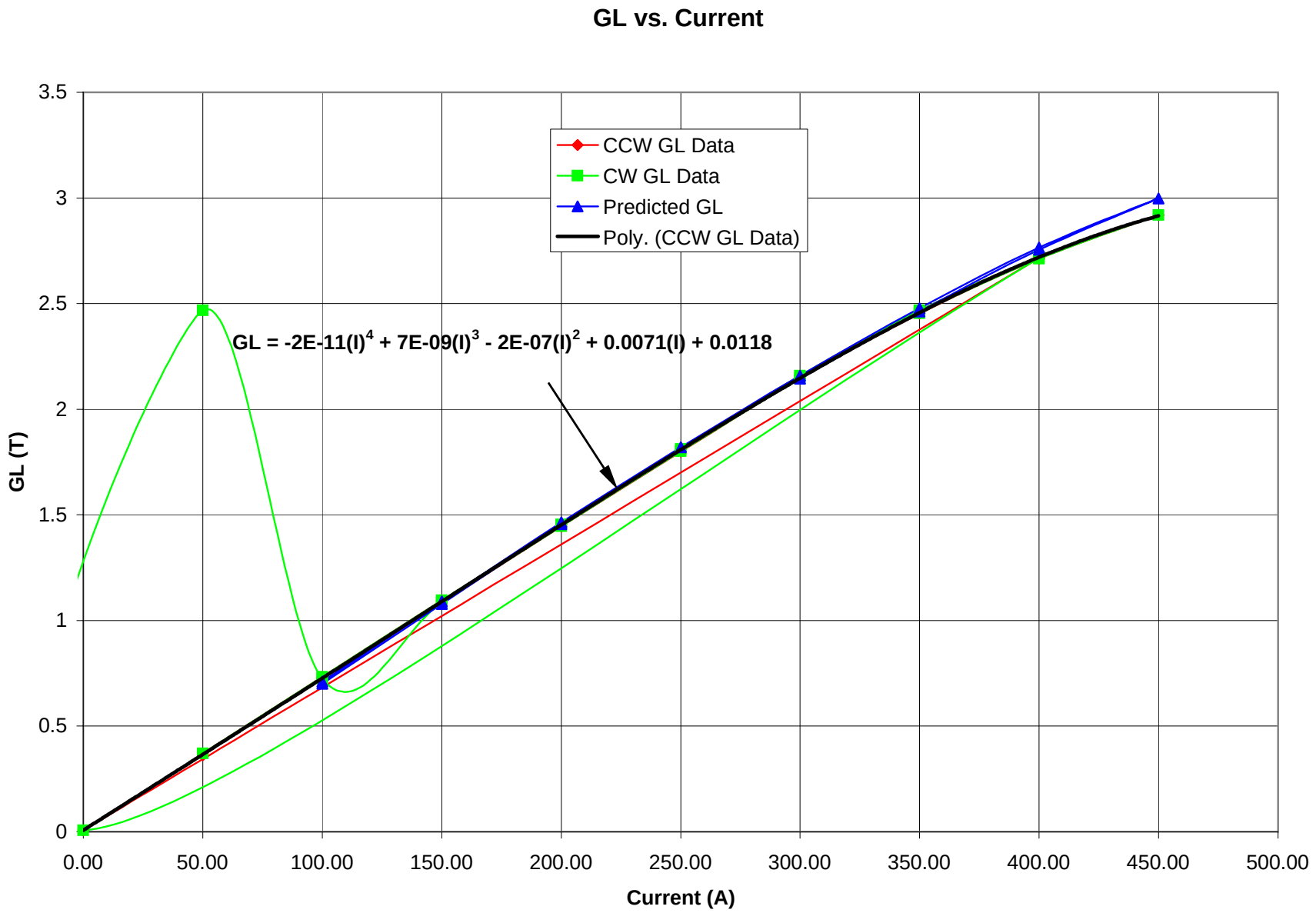
Raw CW Data	**data file**	**Q6_1.mpl**	**Q6_2.mpl**	**Q6_3.mpl**	**Q6_4.mpl**	**Q6_5.mpl**	**Q6_6.mpl**	**Q6_7.mpl**	**Q6_8.mpl**	**Q6_9.mpl**	**Q6_10.mpl**	**Q6_11.mpl**	**Q6_12.mpl**	**Q6_13.mpl**	**Q6_14.mpl**	**Q6_15.mpl**	**Q6_16.mpl**	**Q6_17.mpl**	**Q6_18.mpl**	**Q6_19.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		2.24E-04	5.44E-06	2.05E-04	6.02E-05	9.00E-05	1.21E-04	1.52E-04	1.82E-04	2.06E-04	2.25E-04	2.41E-04	2.23E-04	2.05E-04	1.83E-04	1.53E-04	1.21E-04	8.99E-05	5.78E-05	2.99E-05	**1**
cn = 2		2.72E-02	6.91E-05	2.47E-02	7.24E-03	1.09E-02	1.45E-02	1.80E-02	2.15E-02	2.45E-02	2.71E-02	2.92E-02	2.72E-02	2.47E-02	2.16E-02	1.81E-02	1.46E-02	1.10E-02	7.33E-03	3.70E-03	**2**
cn = 3		1.08E-06	1.99E-06	3.01E-06	3.01E-06	2.89E-06	3.79E-06	1.67E-06	3.52E-07	8.56E-07	9.84E-07	2.72E-06	3.22E-07	3.01E-06	3.24E-06	2.46E-06	1.27E-06	2.86E-06	7.83E-07	1.19E-06	**3**
cn = 4		1.61E-06	1.55E-06	2.63E-06	7.01E-07	5.28E-07	3.26E-07	4.33E-07	1.32E-06	2.18E-06	1.84E-06	2.27E-06	3.92E-06	2.63E-06	1.06E-06	2.32E-06	7.01E-07	4.07E-06	5.92E-07	1.20E-06	**4**
cn = 5		1.75E-06	1.99E-06	2.22E-06	2.90E-06	2.98E-06	1.59E-07	1.03E-06	2.03E-06	2.43E-06	2.74E-06	2.96E-06	3.43E-06	2.22E-06	2.71E-06	2.72E-06	1.16E-06	3.58E-06	8.70E-07	1.70E-06	**5**
cn = 6		4.50E-05	4.78E-07	4.08E-05	1.19E-05	1.69E-05	2.32E-05	3.06E-05	3.46E-05	4.05E-05	4.47E-05	4.97E-05	4.58E-05	4.08E-05	3.61E-05	3.13E-05	2.35E-05	1.90E-05	1.09E-05	5.69E-06	**6**
cn = 7		4.27E-07	8.14E-07	1.58E-06	2.19E-07	1.87E-06	1.11E-06	4.09E-07	1.75E-06	7.73E-07	2.70E-06	1.03E-06	2.82E-06	1.58E-06	1.37E-06	8.76E-07	1.62E-06	9.35E-07	5.42E-07	2.48E-06	**7**
cn = 8		1.84E-06	1.31E-06	2.09E-06	9.09E-07	1.12E-06	8.55E-07	1.91E-07	9.72E-07	7.73E-07	2.33E-06	1.00E-06	9.56E-07	2.09E-06	1.20E-06	1.19E-06	1.07E-06	7.73E-07	1.92E-06	1.43E-06	**8**
cn = 9		9.31E-07	7.98E-08	6.72E-07	1.37E-06	9.63E-07	7.54E-07	4.79E-07	8.67E-07	3.99E-07	1.22E-06	3.10E-06	1.62E-06	6.72E-07	1.34E-06	1.50E-06	2.48E-07	3.39E-07	8.90E-07	2.43E-06	**9**
cn = 10		2.37E-06	2.08E-06	2.33E-06	1.86E-06	1.68E-06	6.58E-07	4.65E-07	1.49E-19	2.08E-06	2.08E-06	2.33E-06	3.36E-06	2.33E-06	1.04E-06	4.65E-07	2.51E-06	1.04E-06	1.04E-06	1.97E-06	**10**
cn = 11		3.07E-06	2.20E-07	5.90E-07	3.43E-07	1.15E-06	8.77E-07	1.70E-06	1.52E-06	1.57E-06	9.98E-07	1.12E-06	3.33E-06	5.90E-07	7.94E-07	1.32E-06	5.95E-07	1.32E-06	9.73E-07	1.97E-06	**11**
cn = 12		2.05E-06	1.09E-06	1.83E-06	1.07E-06	4.30E-07	6.96E-07	1.74E-06	5.71E-07	1.05E-06	4.10E-07	1.33E-06	3.67E-06	1.83E-06	8.60E-07	8.24E-07	1.07E-06	8.10E-07	2.85E-06	1.48E-06	**12**
cn = 13		1.64E-06	7.63E-07	1.33E-06	1.78E-06	2.76E-06	1.91E-06	3.18E-06	2.16E-06	1.93E-06	7.31E-07	1.02E-06	1.10E-07	1.33E-06	1.23E-06	1.73E-07	3.90E-07	2.01E-06	1.51E-06	1.79E-06	**13**
cn = 14		2.10E-06	7.79E-07	1.79E-06	1.39E-06	1.63E-06	1.49E-06	1.17E-07	1.09E-06	1.68E-06	7.01E-07	1.26E-06	8.16E-07	1.79E-06	8.42E-07	7.88E-07	1.38E-06	1.63E-06	1.67E-06	1.86E-06	**14**
cn = 15		2.18E-06	8.04E-07	6.11E-07	1.26E-06	1.01E-06	1.72E-06	1.21E-06	2.03E-06	3.19E-07	1.65E-06	1.86E-06	4.52E-07	6.11E-07	3.57E-07	2.46E-06	1.57E-06	1.29E-06	6.68E-07	1.13E-06	**15**
cn = 16		7.95E-07	1.43E-07	1.65E-06	1.53E-06	8.35E-07	1.40E-06	9.78E-07	1.07E-06	8.03E-07	4.48E-07	7.47E-07	2.60E-06	1.65E-06	3.47E-06	1.73E-06	1.37E-06	8.03E-07	1.31E-06	1.44E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals	
Q6_1.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%		
Q6_2.mpl	**0**	6.91E-05	6.91E-03	2.88%	2.24%	2.88%	0.69%	1.18%	1.90%	0.12%	3.01%	0.32%	1.57%	1.10%	1.13%	1.16%	0.21%	**79.60%**	
Q6_3.mpl	**50**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.74%**	
Q6_4.mpl	**100**	7.24E-03	7.24E-01	0.04%	0.01%	0.04%	0.16%	0.00%	0.01%	0.02%	0.03%	0.00%	0.01%	0.02%	0.02%	0.02%	0.02%	**99.58%**	
Q6_5.mpl	**150**	1.09E-02	1.09E+00	0.03%	0.00%	0.03%	0.16%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.03%	0.02%	0.01%	0.01%	**99.66%**	
Q6_6.mpl	**200**	1.45E-02	1.45E+00	0.03%	0.00%	0.00%	0.16%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.73%**	
Q6_7.mpl	**250**	1.80E-02	1.80E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	**99.75%**	
Q6_8.mpl	**300**	2.15E-02	2.15E+00	0.00%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.77%**	
Q6_9.mpl	**350**	2.45E-02	2.45E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	**99.77%**	
Q6_10.mpl	**400**	2.71E-02	2.71E+00	0.00%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.77%**	
Q6_11.mpl	**450**	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.75%**	
Q6_12.mpl	**400**	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.73%**	
Q6_13.mpl	**350**	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.74%**	
Q6_14.mpl	**300**	2.16E-02	2.16E+00	0.02%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.02%	**99.74%**	
Q6_15.mpl	**250**	1.81E-02	1.81E+00	0.01%	0.01%	0.02%	0.17%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.72%**	
Q6_16.mpl	**200**	1.46E-02	1.46E+00	0.01%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.02%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.74%**	
Q6_17.mpl	**150**	1.10E-02	1.10E+00	0.03%	0.04%	0.03%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	**99.63%**	
Q6_18.mpl	**100**	7.33E-03	7.33E-01	0.01%	0.01%	0.01%	0.15%	0.01%	0.03%	0.01%	0.01%	0.01%	0.04%	0.02%	0.02%	0.01%	0.02%	**99.64%**	
Q6_19.mpl	**50**	3.70E-03	3.70E-01	0.03%	0.03%	0.05%	0.15%	0.07%	0.04%	0.07%	0.05%	0.05%	0.04%	0.05%	0.05%	0.03%	0.04%		
			Average Da	0.17%	0.13%	0.17%	0.19%	0.07%	0.11%	0.01%	0.17%	0.03%	0.09%	0.07%	0.07%	0.07%	0.02%	**average =**	**98.53%**

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current	
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)	
Q6_1.mpl	400	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00679		400
Q6_2.mpl	0																				0
Q6_3.mpl	50	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.74%	0.04934		50
Q6_4.mpl	100	7.24E-03	7.24E-01	0.04%	0.01%	0.04%	0.16%	0.00%	0.01%	0.02%	0.03%	0.00%	0.01%	0.02%	0.02%	0.02%	0.02%	99.58%	0.00724		100
Q6_5.mpl	150	1.09E-02	1.09E+00	0.03%	0.00%	0.03%	0.16%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.03%	0.02%	0.01%	0.01%	99.66%	0.00723		150
Q6_6.mpl	200	1.45E-02	1.45E+00	0.03%	0.00%	0.00%	0.16%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.73%	0.00723		200
Q6_7.mpl	250	1.80E-02	1.80E+00	0.01%	0.00%	0.01%	0.17%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.00%	0.01%	0.01%	99.75%	0.00720		250
Q6_8.mpl	300	2.15E-02	2.15E+00	0.00%	0.01%	0.01%	0.16%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	99.77%	0.00715		300
Q6_9.mpl	350	2.45E-02	2.45E+00	0.00%	0.01%	0.01%	0.17%	0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	99.77%	0.00701		350
Q6_10.mpl	400	2.71E-02	2.71E+00	0.00%	0.01%	0.01%	0.16%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	99.77%	0.00678		400
Q6_11.mpl	450	2.92E-02	2.92E+00	0.01%	0.01%	0.01%	0.17%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	99.75%	0.00649		450
Q6_12.mpl	400	2.72E-02	2.72E+00	0.00%	0.01%	0.01%	0.17%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	99.73%	0.00680		400
Q6_13.mpl	350	2.47E-02	2.47E+00	0.01%	0.01%	0.01%	0.17%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	99.74%	0.00705		350
Q6_14.mpl	300	2.16E-02	2.16E+00	0.02%	0.00%	0.01%	0.17%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.02%	99.74%	0.00719		300
Q6_15.mpl	250	1.81E-02	1.81E+00	0.01%	0.01%	0.02%	0.17%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	99.72%	0.00725		250
Q6_16.mpl	200	1.46E-02	1.46E+00	0.01%	0.00%	0.01%	0.16%	0.01%	0.01%	0.00%	0.02%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	99.74%	0.00728		200
Q6_17.mpl	150	1.10E-02	1.10E+00	0.03%	0.04%	0.03%	0.17%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	99.63%	0.00730		150
Q6_18.mpl	100	7.33E-03	7.33E-01	0.01%	0.01%	0.01%	0.15%	0.01%	0.03%	0.01%	0.01%	0.01%	0.04%	0.02%	0.02%	0.01%	0.02%	99.64%	0.00733		100
Q6_19.mpl	50																				50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.72%**
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.16%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
6.00E-02
5.00E-02
4.00E-02
3.00E-02
2.00E-02
1.00E-02
0.00E+00
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Poly. (CCW GL Data)
GL = -2E-11(I)^4 + 7E-09(I)^3 - 2E-07(I)^2 + 0.0071(I) + 0.0118
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
3
3.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	2.716	396.5679	0.99142	2.760077
0				
50				
100	0.7238	97.29699	0.97297	0.700902
150	1.084	149.1169	0.994113	1.078416
200	1.445	200.2588	1.001294	1.456208
250				
300	2.145	296.6565	0.988855	2.145614
350	2.453	345.3575	0.986736	2.463266
400	2.712	395.6946	0.989237	2.755404
450	2.919	445.8071	0.990682	2.997737
400	2.72	397.4446	0.993611	2.764754
350	2.467	347.8094	0.993741	2.478442
300	2.158	298.556	0.995187	2.158516
250	1.812	250.2898	1.001159	1.820904
200	1.454	201.5051	1.007525	1.465393
150	1.095	150.7033	1.004688	1.090109
100	0.7331	98.60962	0.986096	0.710317
50				
		average =	**99.315%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q16_1.mpl	Q16_2.mpl	Q16_3.mpl	Q16_4.mpl	Q16_5.mpl	Q16_6.mpl	Q16_7.mpl	Q16_8.mpl	Q16_9.mpl	Q16_10.mp	Q16_11.mp	Q16_12.mp	Q16_13.mp	Q16_14.mp	Q16_15.mp	Q16_16.mp	Q16_17.mpl	Q16_18.mp	Q16_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.20E-04	3.07E-06	2.69E-05	5.90E-05	8.36E-05	1.19E-04	1.49E-04	1.68E-04	1.98E-04	2.37E-04	2.53E-04	2.20E-04	1.94E-04	1.66E-04	1.40E-04	1.10E-04	8.87E-05	5.81E-05	3.42E-05	**1**
cn = 2		1.77E-02	4.26E-05	2.23E-03	4.46E-03	6.68E-03	8.90E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.78E-02	1.56E-02	1.34E-02	1.12E-02	8.98E-03	6.75E-03	4.52E-03	2.28E-03	**2**
cn = 3		8.27E-07	8.69E-07	4.69E-07	5.62E-07	6.44E-07	4.52E-07	1.26E-06	8.99E-07	1.72E-06	1.39E-06	3.95E-07	1.21E-06	1.34E-06	1.63E-07	4.95E-07	5.47E-07	7.09E-07	1.43E-06	8.10E-07	**3**
cn = 4		5.79E-07	5.28E-07	3.11E-07	8.15E-07	3.83E-07	6.20E-07	3.26E-07	7.01E-07	8.15E-07	1.22E-06	1.13E-06	5.28E-07	1.38E-06	6.94E-07	1.01E-06	1.02E-06	8.15E-07	1.62E-06	2.37E-07	**4**
cn = 5		1.67E-06	7.11E-07	9.29E-07	1.23E-06	1.59E-07	1.08E-06	9.65E-07	1.07E-06	1.12E-06	1.61E-06	1.54E-06	1.81E-06	1.78E-06	1.37E-06	7.41E-07	1.12E-06	1.79E-06	1.23E-06	2.94E-07	**5**
cn = 6		1.56E-05	2.58E-07	1.83E-06	5.25E-06	5.98E-06	7.18E-06	9.61E-06	1.16E-05	1.43E-05	1.72E-05	1.92E-05	1.64E-05	1.61E-05	1.22E-05	9.17E-06	7.67E-06	5.61E-06	3.47E-06	2.03E-06	**6**
cn = 7		1.66E-06	1.26E-06	1.88E-07	1.57E-06	1.02E-06	8.34E-07	5.33E-07	1.64E-06	1.76E-06	4.96E-07	1.78E-06	2.21E-06	2.21E-06	8.91E-07	1.27E-06	1.85E-06	1.43E-06	2.04E-06	5.69E-07	**7**
cn = 8		3.10E-07	5.01E-07	5.01E-07	8.11E-07	8.41E-07	3.10E-07	5.89E-07	2.99E-06	1.16E-06	6.01E-07	8.89E-07	2.24E-06	1.91E-07	2.07E-06	3.10E-07	9.72E-07	9.60E-07	6.65E-07	1.43E-06	**8**
cn = 9		1.99E-06	8.34E-07	4.49E-07	1.66E-06	9.62E-07	2.74E-07	9.49E-07	5.07E-07	7.56E-07	2.14E-06	8.81E-07	8.34E-07	1.16E-06	3.38E-07	1.93E-06	7.71E-07	1.33E-06	5.47E-07	1.76E-06	**9**
cn = 10		4.65E-07	9.31E-07	1.97E-06	9.31E-07	1.47E-06	1.47E-06	1.40E-06	1.04E-06	1.04E-06	1.47E-06	3.26E-06	1.04E-06	1.97E-06	1.97E-06	4.65E-07	4.65E-07	2.33E-06	2.08E-06	2.08E-06	**10**
cn = 11		1.19E-06	1.44E-06	1.09E-06	1.97E-06	2.15E-06	1.41E-06	2.01E-06	2.89E-07	2.03E-06	2.02E-06	1.04E-06	1.83E-06	1.09E-06	6.19E-07	1.45E-06	1.76E-06	1.43E-06	4.82E-07	1.37E-06	**11**
cn = 12		2.19E-06	4.30E-07	2.42E-06	9.24E-07	1.32E-06	8.18E-07	6.96E-07	1.07E-06	9.24E-07	1.19E-06	6.64E-07	4.30E-07	1.64E-07	2.55E-06	1.89E-06	1.23E-06	9.24E-07	3.13E-07	2.14E-06	**12**
cn = 13		1.35E-06	1.76E-06	9.68E-07	9.62E-07	8.82E-07	1.04E-06	7.61E-07	1.05E-07	1.72E-06	1.84E-06	9.89E-07	1.20E-06	1.61E-06	1.31E-06	2.92E-06	1.46E-06	1.20E-06	1.02E-06	9.09E-07	**13**
cn = 14		5.66E-07	1.51E-06	3.99E-07	8.36E-07	1.41E-06	6.33E-07	7.85E-07	1.18E-06	1.53E-06	3.31E-07	1.62E-06	9.94E-07	1.77E-06	1.24E-06	1.40E-06	8.04E-07	7.15E-07	1.93E-06	2.88E-07	**14**
cn = 15		1.28E-06	5.45E-07	2.95E-07	9.44E-07	1.72E-06	1.05E-06	1.98E-06	1.79E-06	8.62E-07	5.11E-07	1.75E-06	1.39E-06	1.51E-06	8.26E-07	1.08E-06	8.62E-07	4.47E-07	9.44E-07	1.32E-06	**15**
cn = 16		6.04E-07	3.73E-07	3.73E-07	2.31E-07	1.87E-06	6.04E-07	7.10E-07	7.79E-07	1.03E-06	1.73E-06	1.17E-06	5.35E-07	9.78E-07	9.08E-07	6.04E-07	1.07E-06	1.64E-06	9.33E-07	1.44E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q16_1.mpl	**400**	1.77E-02	1.77E+00	0.00%	0.00%	0.01%	0.09%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.83%**		
Q16_2.mpl	**0**	4.26E-05	4.26E-03	2.04%	1.24%	1.67%	0.61%	2.96%	1.18%	1.96%	2.19%	3.39%	1.01%	4.14%	3.55%	1.28%	0.88%	**71.91%**		
Q16_3.mpl	**50**	2.23E-03	2.23E-01	0.02%	0.01%	0.04%	0.08%	0.01%	0.02%	0.02%	0.09%	0.05%	0.11%	0.04%	0.02%	0.01%	0.02%	**99.45%**		
Q16_4.mpl	**100**	4.46E-03	4.46E-01	0.01%	0.02%	0.03%	0.12%	0.04%	0.02%	0.04%	0.02%	0.04%	0.02%	0.02%	0.02%	0.02%	0.01%	**99.58%**		
Q16_5.mpl	**150**	6.68E-03	6.68E-01	0.01%	0.01%	0.00%	0.09%	0.02%	0.01%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	0.03%	0.03%	**99.69%**		
Q16_6.mpl	**200**	8.90E-03	8.90E-01	0.01%	0.01%	0.01%	0.08%	0.01%	0.00%	0.00%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.80%**		
Q16_7.mpl	**250**	1.11E-02	1.11E+00	0.01%	0.00%	0.01%	0.09%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	**99.80%**		
Q16_8.mpl	**300**	1.33E-02	1.33E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.02%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.81%**		
Q16_9.mpl	**350**	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.80%**		
Q16_10.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.81%**		
Q16_11.mpl	**450**	1.98E-02	1.98E+00	0.00%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.82%**		
Q16_12.mpl	**400**	1.78E-02	1.78E+00	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.82%**		
Q16_13.mpl	**350**	1.56E-02	1.56E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.79%**		
Q16_14.mpl	**300**	1.34E-02	1.34E+00	0.00%	0.01%	0.01%	0.09%	0.01%	0.02%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	**99.80%**		
Q16_15.mpl	**250**	1.12E-02	1.12E+00	0.00%	0.01%	0.01%	0.08%	0.01%	0.00%	0.02%	0.00%	0.01%	0.02%	0.03%	0.01%	0.01%	0.01%	**99.78%**		
Q16_16.mpl	**200**	8.98E-03	8.98E-01	0.01%	0.01%	0.01%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	**99.76%**		
Q16_17.mpl	**150**	6.75E-03	6.75E-01	0.01%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	**99.68%**		
Q16_18.mpl	**100**	4.52E-03	4.52E-01	0.03%	0.04%	0.03%	0.08%	0.05%	0.01%	0.01%	0.05%	0.01%	0.01%	0.02%	0.04%	0.02%	0.02%	**99.59%**		
Q16_19.mpl	**50**	2.28E-03	2.28E-01	0.04%	0.01%	0.01%	0.09%	0.02%	0.06%	0.08%	0.09%	0.06%	0.09%	0.04%	0.01%	0.06%	0.06%	**99.27%**		
																	average =	**98.10%**		
			Average Da	0.12%	0.07%	0.10%	0.12%	0.17%	0.07%	0.12%	0.14%	0.20%	0.07%	0.23%	0.20%	0.08%	0.06%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q16_1.mpl	400	1.769E-02	1.7690	0.00%	0.00%	0.01%	0.09%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	99.83%	0.00442	400
Q16_2.mpl	0																			0
Q16_3.mpl	50																			50
Q16_4.mpl	100	4.459E-03	0.4459	0.01%	0.02%	0.03%	0.12%	0.04%	0.02%	0.04%	0.02%	0.04%	0.02%	0.02%	0.02%	0.02%	0.01%	99.58%	0.00446	100
Q16_5.mpl	150	6.684E-03	0.6684	0.01%	0.01%	0.00%	0.09%	0.02%	0.01%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	0.03%	0.03%	99.69%	0.00446	150
Q16_6.mpl	200	8.899E-03	0.8899	0.01%	0.01%	0.01%	0.08%	0.01%	0.00%	0.00%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00445	200
Q16_7.mpl	250	1.113E-02	1.1130	0.01%	0.00%	0.01%	0.09%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	99.80%	0.00445	250
Q16_8.mpl	300	1.334E-02	1.3340	0.01%	0.01%	0.01%	0.09%	0.01%	0.02%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	99.81%	0.00445	300
Q16_9.mpl	350	1.554E-02	1.5540	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00444	350
Q16_10.mpl	400	1.770E-02	1.7700	0.01%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.81%	0.00443	400
Q16_11.mpl	450	1.984E-02	1.9840	0.00%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	99.82%	0.00441	450
Q16_12.mpl	400	1.778E-02	1.7780	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	99.82%	0.00445	400
Q16_13.mpl	350	1.560E-02	1.5600	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.79%	0.00446	350
Q16_14.mpl	300	1.341E-02	1.3410	0.00%	0.01%	0.01%	0.09%	0.01%	0.02%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00447	300
Q16_15.mpl	250	1.119E-02	1.1190	0.00%	0.01%	0.01%	0.08%	0.01%	0.00%	0.02%	0.00%	0.01%	0.02%	0.03%	0.01%	0.01%	0.01%	99.78%	0.00448	250
Q16_16.mpl	200	8.978E-03	0.8978	0.01%	0.01%	0.01%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	99.76%	0.00449	200
Q16_17.mpl	150	6.747E-03	0.6747	0.01%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	99.68%	0.00450	150
Q16_18.mpl	100	4.522E-03	0.4522	0.03%	0.04%	0.03%	0.08%	0.05%	0.01%	0.01%	0.05%	0.01%	0.01%	0.02%	0.04%	0.02%	0.02%	99.59%	0.00452	100
Q16_19.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.75%
	Average Data:	0.01%	0.01%	0.01%	0.09%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

data file	Q16_1.mpl	Q16_2.mpl	Q16_3.mpl	Q16_4.mpl	Q16_5.mpl	Q16_6.mpl	Q16_7.mpl	Q16_8.mpl	Q16_9.mpl	Q16_10.mp	Q16_11.mp	Q16_12.mp	Q16_13.mp	Q16_14.mp	Q16_15.mp	Q16_16.mp	Q16_17.mpl	Q16_18.mp	Q16_19.mpl	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1	1.74E-04	3.15E-06	3.18E-05	5.17E-05	7.21E-05	9.74E-05	1.10E-04	1.36E-04	1.55E-04	1.77E-04	1.97E-04	1.56E-04	1.55E-04	1.28E-04	1.13E-04	9.99E-05	7.49E-05	3.32E-05	3.02E-05	**1**
cn = 2	1.77E-02	3.39E-05	2.22E-03	4.44E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.33E-02	1.12E-02	8.96E-03	6.73E-03	4.49E-03	2.28E-03	**2**
cn = 3	9.49E-07	1.38E-06	1.33E-06	1.59E-06	6.42E-07	7.64E-07	9.68E-07	3.10E-07	7.00E-07	7.26E-07	7.33E-07	1.50E-06	1.17E-06	5.25E-07	1.21E-06	7.28E-07	4.13E-07	9.34E-07	4.41E-07	**3**
cn = 4	5.28E-07	7.01E-07	9.36E-07	2.61E-20	7.42E-20	1.12E-06	5.56E-07	1.88E-06	1.06E-06	8.54E-07	5.28E-07	3.11E-07	7.01E-07	6.52E-07	6.20E-07	6.52E-07	3.26E-07	8.54E-07	5.03E-07	**4**
cn = 5	7.11E-07	7.41E-07	1.25E-06	5.82E-07	5.44E-07	9.29E-07	5.44E-07	5.03E-07	1.47E-06	7.41E-07	7.41E-07	1.58E-06	8.70E-07	1.16E-06	1.21E-06	3.61E-07	1.08E-06	5.44E-07	1.31E-06	**5**
cn = 6	1.63E-05	8.32E-07	1.69E-06	3.63E-06	6.68E-06	7.42E-06	1.06E-05	1.28E-05	1.47E-05	1.60E-05	1.95E-05	1.64E-05	1.48E-05	1.26E-05	9.74E-06	7.83E-06	7.37E-06	4.23E-06	1.96E-06	**6**
cn = 7	2.83E-06	2.53E-07	1.34E-07	7.82E-07	1.05E-06	1.19E-06	1.40E-06	1.45E-06	1.42E-06	2.26E-06	2.29E-06	1.26E-06	2.82E-06	9.10E-07	5.36E-07	1.93E-06	1.20E-06	7.10E-07	5.89E-07	**7**
cn = 8	1.10E-06	1.18E-06	2.07E-06	6.19E-07	6.19E-07	9.72E-07	1.91E-06	1.55E-06	2.00E-06	1.61E-06	3.34E-06	1.07E-06	2.51E-06	1.18E-06	1.03E-06	6.19E-07	5.89E-07	1.38E-06	1.74E-06	**8**
cn = 9	3.57E-07	4.94E-07	5.60E-07	9.96E-07	1.02E-06	4.88E-07	1.69E-06	1.58E-06	7.21E-07	4.60E-07	2.18E-06	4.17E-07	1.23E-06	1.22E-06	5.54E-07	5.24E-07	4.55E-07	1.33E-06	1.21E-06	**9**
cn = 10	1.32E-06	1.04E-06	1.92E-06	1.04E-06	2.01E-19	6.58E-07	9.31E-07	1.04E-06	1.47E-06	4.65E-07	1.04E-06	1.04E-06	1.40E-06	1.04E-06	1.47E-06	1.04E-06	6.58E-07	9.31E-07	9.31E-07	**10**
cn = 11	4.77E-07	1.99E-06	1.02E-06	1.15E-06	1.20E-06	5.03E-07	4.91E-07	3.10E-06	2.51E-06	1.23E-06	1.16E-06	1.40E-06	1.51E-06	1.87E-07	1.20E-06	1.64E-06	5.51E-07	1.24E-06	2.66E-06	**11**
cn = 12	4.30E-07	1.07E-06	1.35E-06	1.58E-19	1.16E-19	1.58E-06	2.61E-06	1.39E-06	8.60E-07	2.66E-07	4.30E-07	2.42E-06	1.07E-06	1.39E-06	8.18E-07	1.39E-06	6.96E-07	2.66E-07	1.50E-06	**12**
cn = 13	9.71E-07	1.30E-06	5.51E-07	6.49E-07	4.14E-07	1.32E-06	1.60E-06	1.96E-06	1.30E-06	1.34E-06	1.41E-06	1.68E-06	6.34E-07	1.47E-06	2.44E-06	7.39E-07	1.13E-06	3.21E-07	4.14E-07	**13**
cn = 14	8.60E-07	1.34E-06	9.62E-07	1.87E-06	2.26E-07	1.41E-07	4.35E-07	1.01E-06	7.11E-07	3.77E-07	1.27E-06	1.33E-06	1.62E-06	4.48E-07	3.56E-07	2.04E-06	7.66E-07	3.13E-07	1.03E-06	**14**
cn = 15	5.45E-07	1.08E-06	1.33E-06	1.37E-06	1.01E-06	2.95E-07	1.01E-06	3.86E-07	1.30E-06	1.08E-06	1.08E-06	7.88E-07	6.68E-07	1.57E-06	1.46E-06	1.61E-06	1.05E-06	1.01E-06	4.17E-07	**15**
cn = 16	1.95E-06	2.13E-06	9.08E-07	1.21E-06	1.21E-06	1.07E-06	1.81E-06	1.02E-06	1.49E-06	1.33E-06	1.57E-06	1.37E-06	6.27E-07	1.42E-06	2.00E-06	1.21E-06	7.10E-07	8.66E-07	3.56E-07	**16**

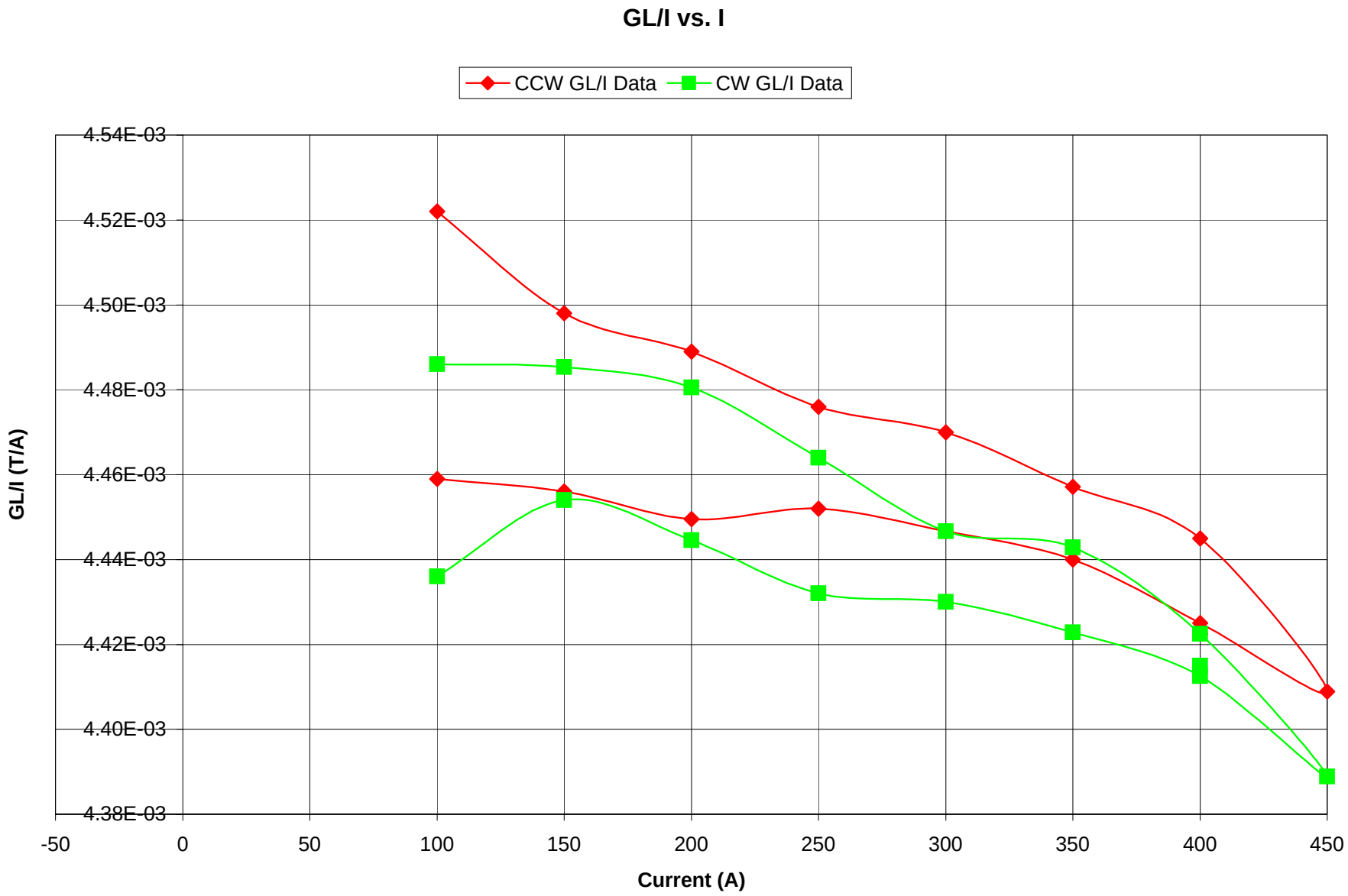
Normalized Data

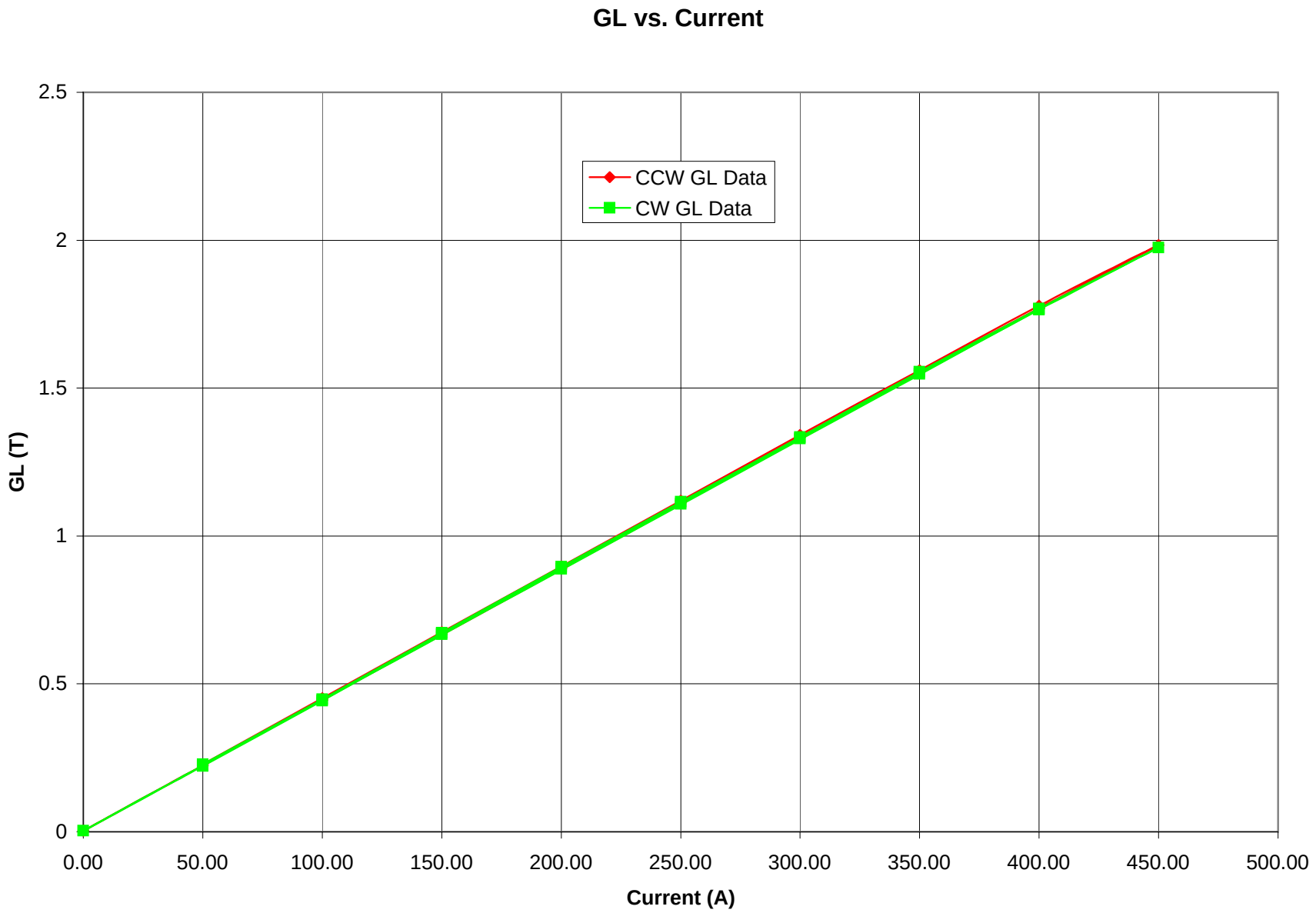
Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16 totals	% Quadrupole
Q16_1.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.00%	0.00%	0.09%	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.83%**
Q16_2.mpl	**0**	3.39E-05	3.39E-03	4.07%	2.07%	2.19%	2.46%	0.75%	3.50%	1.46%	3.07%	5.88%	3.17%	3.82%	3.97%	3.19%	6.28%	**54.14%**
Q16_3.mpl	**50**	2.22E-03	2.22E-01	0.06%	0.04%	0.06%	0.08%	0.01%	0.09%	0.03%	0.09%	0.05%	0.06%	0.02%	0.04%	0.06%	0.04%	**99.28%**
Q16_4.mpl	**100**	4.44E-03	4.44E-01	0.04%	0.00%	0.01%	0.08%	0.02%	0.01%	0.02%	0.02%	0.03%	0.00%	0.01%	0.04%	0.03%	0.03%	**99.65%**
Q16_5.mpl	**150**	6.68E-03	6.68E-01	0.01%	0.00%	0.01%	0.10%	0.02%	0.01%	0.02%	0.00%	0.02%	0.00%	0.01%	0.00%	0.02%	0.02%	**99.78%**
Q16_6.mpl	**200**	8.89E-03	8.89E-01	0.01%	0.01%	0.01%	0.08%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.00%	0.00%	0.01%	**99.79%**
Q16_7.mpl	**250**	1.11E-02	1.11E+00	0.01%	0.01%	0.00%	0.10%	0.01%	0.02%	0.02%	0.01%	0.00%	0.02%	0.01%	0.00%	0.01%	0.02%	**99.76%**
Q16_8.mpl	**300**	1.33E-02	1.33E+00	0.00%	0.01%	0.00%	0.10%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.77%**
Q16_9.mpl	**350**	1.55E-02	1.55E+00	0.00%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.80%**
Q16_10.mpl	**400**	1.77E-02	1.77E+00	0.00%	0.00%	0.00%	0.09%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	**99.84%**
Q16_11.mpl	**450**	1.98E-02	1.98E+00	0.00%	0.00%	0.00%	0.10%	0.01%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.81%**
Q16_12.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.82%**
Q16_13.mpl	**350**	1.56E-02	1.56E+00	0.01%	0.00%	0.01%	0.10%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	**99.80%**
Q16_14.mpl	**300**	1.33E-02	1.33E+00	0.00%	0.00%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.81%**
Q16_15.mpl	**250**	1.12E-02	1.12E+00	0.01%	0.01%	0.01%	0.09%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.02%	**99.78%**
Q16_16.mpl	**200**	8.96E-03	8.96E-01	0.01%	0.01%	0.00%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.02%	0.02%	0.01%	**99.75%**
Q16_17.mpl	**150**	6.73E-03	6.73E-01	0.01%	0.00%	0.02%	0.11%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	**99.75%**
Q16_18.mpl	**100**	4.49E-03	4.49E-01	0.02%	0.02%	0.01%	0.09%	0.02%	0.03%	0.03%	0.02%	0.03%	0.01%	0.01%	0.01%	0.02%	0.02%	**99.67%**
Q16_19.mpl	**50**	2.28E-03	2.28E-01	0.02%	0.02%	0.06%	0.09%	0.03%	0.08%	0.05%	0.04%	0.12%	0.07%	0.02%	0.05%	0.02%	0.02%	**99.34%**
																	average =	**97.06%**
			Average Da	0.23%	0.12%	0.13%	0.22%	0.05%	0.20%	0.09%	0.18%	0.33%	0.18%	0.21%	0.22%	0.18%	0.34%	

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16 totals	% Quadrupole	Norm GL/I (T/A)	Current (A)
Q16_1.mpl	400	1.766E-02	1.766E+00	0.01%	0.00%	0.00%	0.09%	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	99.83%	0.00442	400
Q16_2.mpl	0																			0
Q16_3.mpl	50																			50
Q16_4.mpl	100	4.436E-03	4.436E-01	0.04%	0.00%	0.01%	0.08%	0.02%	0.01%	0.02%	0.02%	0.03%	0.00%	0.01%	0.04%	0.03%	0.03%	99.65%	0.00444	100
Q16_5.mpl	150	6.681E-03	6.681E-01	0.01%	0.00%	0.01%	0.10%	0.02%	0.01%	0.02%	0.00%	0.02%	0.00%	0.01%	0.00%	0.02%	0.02%	99.78%	0.00445	150
Q16_6.mpl	200	8.889E-03	8.889E-01	0.01%	0.01%	0.01%	0.08%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.00%	0.00%	0.01%	99.79%	0.00444	200
Q16_7.mpl	250	1.108E-02	1.108E+00	0.01%	0.01%	0.00%	0.10%	0.01%	0.02%	0.02%	0.01%	0.00%	0.02%	0.01%	0.00%	0.01%	0.02%	99.76%	0.00443	250
Q16_8.mpl	300	1.329E-02	1.329E+00	0.00%	0.01%	0.00%	0.10%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	99.77%	0.00443	300
Q16_9.mpl	350	1.548E-02	1.548E+00	0.00%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	99.80%	0.00442	350
Q16_10.mpl	400	1.765E-02	1.765E+00	0.00%	0.00%	0.00%	0.09%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	99.84%	0.00441	400
Q16_11.mpl	450	1.975E-02	1.975E+00	0.00%	0.00%	0.00%	0.10%	0.01%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.81%	0.00439	450
Q16_12.mpl	400	1.769E-02	1.769E+00	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.82%	0.00442	400
Q16_13.mpl	350	1.555E-02	1.555E+00	0.01%	0.00%	0.01%	0.10%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	99.80%	0.00444	350
Q16_14.mpl	300	1.334E-02	1.334E+00	0.00%	0.00%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	99.81%	0.00445	300
Q16_15.mpl	250	1.116E-02	1.116E+00	0.01%	0.01%	0.01%	0.09%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.00%	0.01%	0.02%	99.78%	0.00446	250
Q16_16.mpl	200	8.961E-03	8.961E-01	0.01%	0.01%	0.00%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.02%	0.02%	0.01%	99.75%	0.00448	200
Q16_17.mpl	150	6.728E-03	6.728E-01	0.01%	0.00%	0.02%	0.11%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	99.75%	0.00449	150
Q16_18.mpl	100	4.486E-03	4.486E-01	0.02%	0.02%	0.01%	0.09%	0.02%	0.03%	0.03%	0.02%	0.03%	0.01%	0.01%	0.01%	0.02%	0.02%	99.67%	0.00449	100
Q16_19.mpl	50																			50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.77%**	
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**		

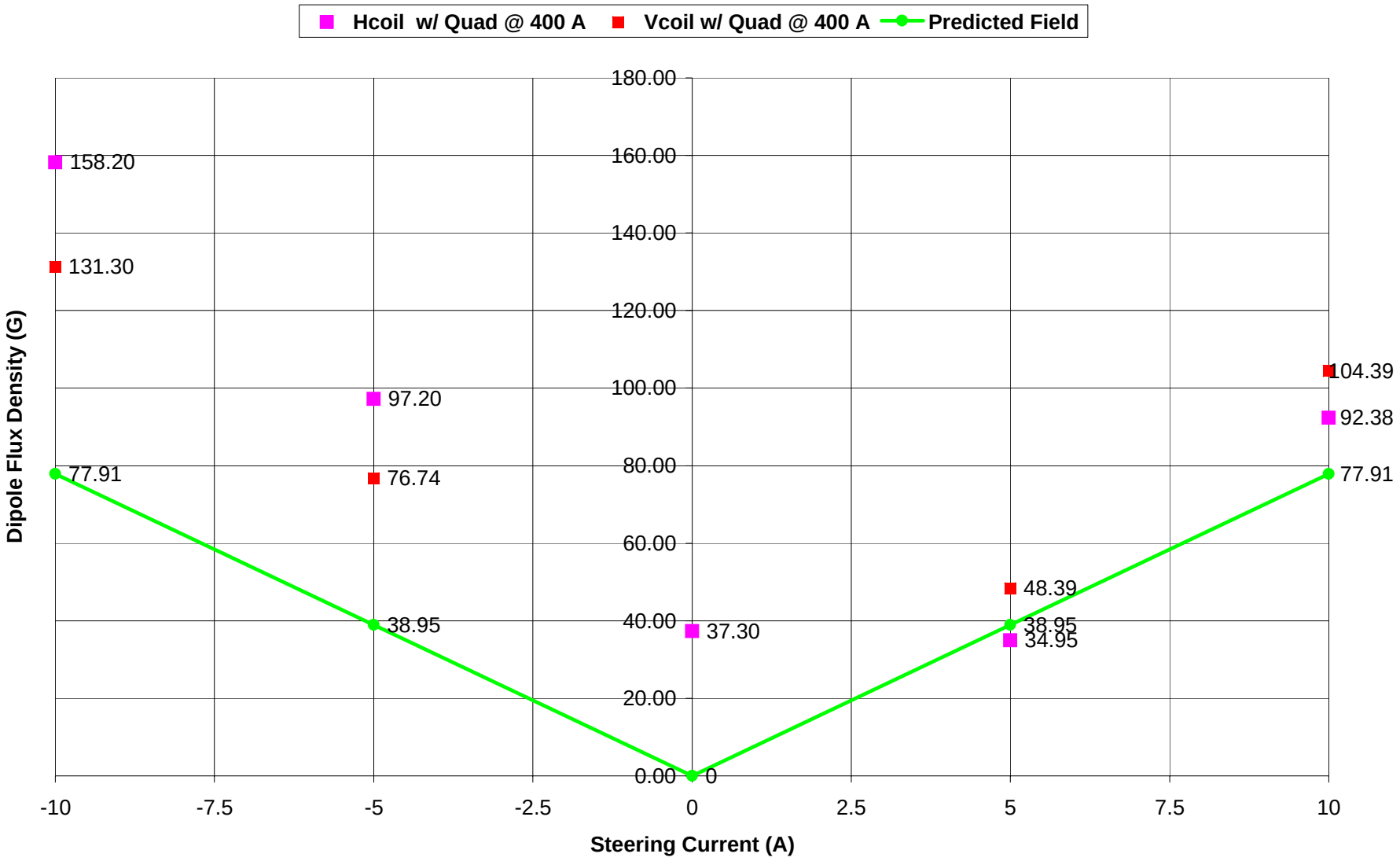

GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.54E-03
4.52E-03
4.50E-03
4.48E-03
4.46E-03
4.44E-03
4.42E-03
4.40E-03
4.38E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.769	382.0557	0.955139	1.85162
0				
50				
100	0.4459	94.69162	0.946916	0.470341
150	0.6684	143.0164	0.953443	0.700554
200	0.8899	191.124	0.95562	0.930768
250	1.113	239.5791	0.958316	1.160981
300	1.334	287.5781	0.958594	1.391194
350	1.554	335.3599	0.958171	1.621407
400	1.77	382.2729	0.955682	1.85162
450	1.984	428.7516	0.952781	2.081833
400	1.778	384.0104	0.960026	1.85162
350	1.56	336.663	0.961894	1.621407
300	1.341	289.0984	0.963661	1.391194
250	1.119	240.8822	0.963529	1.160981
200	0.8978	192.8398	0.964199	0.930768
150	0.6747	144.3847	0.962565	0.700554
100	0.4522	96.05992	0.960599	0.470341
50				
		average =	**95.820%**	

Dipole Field vs. Steering Current



The conditions for each case are following.

core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q16_21.mpl	0	0	400	2.28E-04	37.30		2.70E-02
Q16_22.mpl	5	0	400	2.13E-04	34.95	72.25	2.70E-02
Q16_23.mpl	10	0	400	5.64E-04	92.38	129.67	2.70E-02
Q16_24.mpl	-5	0	400	5.93E-04	97.20	59.90	2.70E-02
Q16_25.mpl	-10	0	400	9.65E-04	158.20	120.90	2.70E-02
Q16_26.mpl	0	5	400	2.95E-04	48.39	11.10	2.70E-02
Q16_27.mpl	0	10	400	6.37E-04	104.39	67.10	2.70E-02
Q16_28.mpl	0	-5	400	4.68E-04	76.74	114.03	2.70E-02
Q16_29.mpl	0	-10	400	8.01E-04	131.30	168.59	2.70E-02
Q16_30.mpl	5	5	400	3.44E-04	56.39	93.69	2.70E-02
Q16_31.mpl	10	10	400	8.26E-04	135.41	172.70	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	77.91	77.91
-5	38.95	38.95
0	0	0
5	38.95	38.95
10	77.91	77.91

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q3RT_12.m	Q3RT_13.m	Q3RT_14.m	Q3RT_15.m	Q3RT_16.m	Q3RT_17.m	Q3RT_18.m	Q3RT_19.m	Q3RT_20.m	Q3RT_21.m	Q3RT_22.m	Q3RT_23.m	Q3RT_24.m	Q3RT_25.m	Q3RT_26.m	Q3RT_27.m	Q3RT_28.mp	Q3RT_29.m	Q3RT_30.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.31E-04	3.22E-06	2.32E-05	5.82E-05	8.51E-05	1.17E-04	1.41E-04	1.74E-04	2.05E-04	2.38E-04	2.59E-04	2.35E-04	2.05E-04	1.77E-04	1.45E-04	1.15E-04	8.72E-05	5.74E-05	2.88E-05	**1**
cn = 2		1.76E-02	3.29E-05	2.24E-03	4.44E-03	6.67E-03	8.88E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.93E-03	6.73E-03	4.50E-03	2.28E-03	**2**
cn = 3		4.03E-06	4.90E-06	8.32E-08	1.34E-05	1.51E-06	1.51E-06	3.62E-05	1.78E-05	2.79E-06	2.18E-06	3.19E-06	1.46E-06	2.58E-06	1.33E-06	6.34E-06	2.29E-06	6.32E-07	2.72E-06	1.65E-06	**3**
cn = 4		1.13E-06	2.11E-06	9.58E-07	1.76E-05	3.48E-06	1.12E-06	4.42E-05	2.04E-05	4.19E-06	1.62E-06	1.84E-06	1.06E-06	3.83E-06	1.39E-06	1.32E-06	4.33E-07	2.13E-06	8.24E-07	1.32E-06	**4**
cn = 5		1.97E-06	3.85E-07	7.97E-07	1.77E-05	2.17E-06	1.25E-06	4.05E-05	1.85E-05	6.58E-07	2.64E-06	2.60E-06	4.19E-06	2.52E-06	1.28E-06	3.01E-06	2.12E-06	3.50E-06	2.35E-06	1.07E-06	**5**
cn = 6		1.85E-05	1.29E-06	3.64E-06	1.78E-05	5.83E-06	7.03E-06	3.93E-05	1.89E-05	1.53E-05	1.84E-05	1.88E-05	1.74E-05	1.19E-05	1.25E-05	1.14E-05	6.66E-06	6.59E-06	5.31E-06	1.93E-06	**6**
cn = 7		7.11E-07	1.33E-06	1.41E-06	1.87E-05	3.37E-06	4.99E-07	4.23E-05	1.95E-05	2.79E-06	2.50E-06	1.59E-06	1.80E-06	3.10E-06	1.89E-06	1.57E-06	1.12E-06	1.01E-06	7.37E-07	1.29E-06	**7**
cn = 8		3.10E-07	1.55E-06	5.01E-07	2.01E-05	8.89E-07	1.50E-06	4.17E-05	2.09E-05	2.00E-06	3.88E-06	2.07E-06	1.00E-06	3.23E-06	1.73E-06	1.63E-06	1.08E-06	1.55E-06	4.11E-07	1.25E-06	**8**
cn = 9		9.38E-07	7.55E-07	1.18E-06	1.76E-05	2.03E-06	1.31E-06	3.91E-05	1.93E-05	2.52E-06	3.73E-07	1.71E-06	2.48E-06	1.81E-06	2.04E-06	1.26E-06	4.06E-07	5.00E-07	1.04E-06	9.10E-07	**9**
cn = 10		6.58E-07	6.58E-07	4.65E-07	1.86E-05	1.40E-06	1.04E-06	3.91E-05	2.00E-05	2.94E-06	1.68E-06	1.47E-06	4.65E-07	2.37E-06	1.40E-06	1.92E-06	1.47E-06	2.08E-06	1.92E-06	1.68E-06	**10**
cn = 11		2.00E-06	1.97E-06	8.61E-07	1.80E-05	7.19E-07	1.90E-06	3.68E-05	1.65E-05	2.34E-06	1.98E-06	1.01E-06	1.68E-06	1.27E-06	1.20E-06	2.49E-06	1.82E-06	2.27E-06	7.07E-07	7.14E-07	**11**
cn = 12		6.64E-07	1.72E-06	1.76E-06	1.81E-05	2.08E-06	1.58E-06	3.41E-05	1.58E-05	2.24E-06	3.13E-07	4.10E-07	8.60E-07	1.38E-06	2.58E-06	5.71E-07	1.74E-06	3.53E-07	2.04E-06	5.71E-07	**12**
cn = 13		2.64E-06	9.08E-07	6.53E-07	1.62E-05	1.25E-06	5.76E-07	3.55E-05	1.50E-05	1.64E-06	8.92E-07	7.13E-07	8.79E-07	2.44E-06	1.28E-06	7.80E-07	1.76E-06	1.61E-06	6.77E-07	2.90E-07	**13**
cn = 14		1.15E-06	1.17E-06	7.66E-07	1.53E-05	1.16E-06	2.53E-06	3.23E-05	1.67E-05	3.22E-06	9.16E-07	2.30E-06	2.71E-07	1.00E-06	4.87E-07	9.12E-07	3.35E-06	7.99E-07	1.63E-06	2.83E-06	**14**
cn = 15		1.37E-06	7.12E-07	1.70E-06	1.67E-05	1.05E-06	1.33E-06	3.22E-05	1.59E-05	2.94E-06	1.25E-06	4.35E-07	1.90E-06	1.28E-06	1.87E-06	5.49E-07	1.98E-06	7.08E-07	1.55E-06	1.79E-06	**15**
cn = 16		6.04E-07	1.61E-06	3.73E-07	1.48E-05	1.17E-06	1.12E-06	3.02E-05	1.47E-05	3.58E-06	2.42E-06	9.08E-07	7.47E-07	1.73E-06	8.47E-07	1.65E-06	5.76E-07	1.02E-06	1.51E-06	4.96E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q3RT_12.mpl	**400**	1.76E-02	1.76E+00	0.02%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.79%**	Q2_2.dat	0
Q3RT_13.mpl	**0**	3.29E-05	3.29E-03	14.89%	6.41%	1.17%	3.91%	4.04%	4.70%	2.29%	2.00%	5.98%	5.22%	2.76%	3.55%	2.16%	4.88%	**36.03%**	Q2_3.dat	50
Q3RT_14.mpl	**50**	2.24E-03	2.24E-01	0.00%	0.04%	0.04%	0.16%	0.06%	0.02%	0.05%	0.02%	0.04%	0.08%	0.03%	0.03%	0.08%	0.02%	**99.32%**	Q2_4.dat	100
Q3RT_15.mpl	**100**	4.44E-03	4.44E-01	0.30%	0.40%	0.40%	0.40%	0.42%	0.45%	0.40%	0.42%	0.41%	0.41%	0.36%	0.34%	0.38%	0.33%	**94.59%**	Q2_5.dat	150
Q3RT_16.mpl	**150**	6.67E-03	6.67E-01	0.02%	0.05%	0.03%	0.09%	0.05%	0.01%	0.03%	0.02%	0.01%	0.03%	0.02%	0.02%	0.02%	0.02%	**99.58%**	Q2_6.dat	200
Q3RT_17.mpl	**200**	8.88E-03	8.88E-01	0.02%	0.01%	0.01%	0.08%	0.01%	0.02%	0.01%	0.01%	0.02%	0.02%	0.01%	0.03%	0.01%	0.01%	**99.73%**	Q2_7.dat	250
Q3RT_18.mpl	**250**	1.11E-02	1.11E+00	0.33%	0.40%	0.36%	0.35%	0.38%	0.38%	0.35%	0.35%	0.33%	0.31%	0.32%	0.29%	0.29%	0.27%	**95.28%**	Q2_8.dat	300
Q3RT_19.mpl	**300**	1.33E-02	1.33E+00	0.13%	0.15%	0.14%	0.14%	0.15%	0.16%	0.15%	0.15%	0.12%	0.12%	0.11%	0.13%	0.12%	0.11%	**98.12%**	Q2_9.dat	350
Q3RT_20.mpl	**350**	1.55E-02	1.55E+00	0.02%	0.03%	0.00%	0.10%	0.02%	0.01%	0.02%	0.02%	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	**99.68%**	Q2_10.dat	400
Q3RT_21.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.02%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.77%**	Q2_11.dat	450
Q3RT_22.mpl	**450**	1.98E-02	1.98E+00	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	**99.80%**	Q2_12.dat	400
Q3RT_23.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	**99.80%**	Q2_13.dat	350
Q3RT_24.mpl	**350**	1.56E-02	1.56E+00	0.02%	0.02%	0.02%	0.08%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	**99.74%**	Q2_14.dat	300
Q3RT_25.mpl	**300**	1.34E-02	1.34E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	**99.76%**	Q2_15.dat	250
Q3RT_26.mpl	**250**	1.12E-02	1.12E+00	0.06%	0.01%	0.03%	0.10%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.68%**	Q2_16.dat	200
Q3RT_27.mpl	**200**	8.93E-03	8.93E-01	0.03%	0.00%	0.02%	0.07%	0.01%	0.01%	0.00%	0.02%	0.02%	0.02%	0.02%	0.04%	0.02%	0.01%	**99.70%**	Q2_17.dat	150
Q3RT_28.mpl	**150**	6.73E-03	6.73E-01	0.01%	0.03%	0.05%	0.10%	0.01%	0.02%	0.01%	0.03%	0.03%	0.01%	0.02%	0.01%	0.01%	0.02%	**99.63%**	Q2_18.dat	100
Q3RT_29.mpl	**100**	4.50E-03	4.50E-01	0.06%	0.02%	0.05%	0.12%	0.02%	0.01%	0.02%	0.04%	0.02%	0.05%	0.02%	0.04%	0.03%	0.03%	**99.48%**	Q2_19.dat	50
Q3RT_30.mpl	**50**	2.28E-03	2.28E-01	0.07%	0.06%	0.05%	0.08%	0.06%	0.05%	0.04%	0.07%	0.03%	0.03%	0.01%	0.12%	0.08%	0.02%	**99.22%**		
																	average =	**95.28%**		
			Average Da	0.84%	0.40%	0.13%	0.33%	0.28%	0.31%	0.18%	0.17%	0.37%	0.33%	0.20%	0.25%	0.17%	0.31%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q3RT_12.mpl	400	1.76E-02	1.7640	0.02%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	99.79%	0.00441	400
Q3RT_13.mpl	0																			0
Q3RT_14.mpl	50																			50
Q3RT_15.mpl	100																			100
Q3RT_16.mpl	150																			150
Q3RT_17.mpl	200	8.88E-03	0.8884	0.02%	0.01%	0.01%	0.08%	0.01%	0.02%	0.01%	0.01%	0.02%	0.02%	0.01%	0.03%	0.01%	0.01%	99.73%	0.00444	200
Q3RT_18.mpl	250																			250
Q3RT_19.mpl	300																			300
Q3RT_20.mpl	350	1.55E-02	1.5500	0.02%	0.03%	0.00%	0.10%	0.02%	0.01%	0.02%	0.02%	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	99.68%	0.00443	350
Q3RT_21.mpl	400	1.77E-02	1.7660	0.01%	0.01%	0.01%	0.10%	0.01%	0.02%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.77%	0.00442	400
Q3RT_22.mpl	450	1.98E-02	1.9770	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	99.80%	0.00439	450
Q3RT_23.mpl	400	1.77E-02	1.7730	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.00%	99.80%	0.00443	400
Q3RT_24.mpl	350	1.56E-02	1.5560	0.02%	0.02%	0.02%	0.08%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	99.74%	0.00445	350
Q3RT_25.mpl	300	1.34E-02	1.3370	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	99.76%	0.00446	300
Q3RT_26.mpl	250	1.12E-02	1.1150	0.06%	0.01%	0.03%	0.10%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.00%	0.01%	99.68%	0.00446	250
Q3RT_27.mpl	200	8.93E-03	0.8931	0.03%	0.00%	0.02%	0.07%	0.01%	0.01%	0.00%	0.02%	0.02%	0.02%	0.02%	0.04%	0.02%	0.01%	99.70%	0.00447	200
Q3RT_28.mpl	150	6.73E-03	0.6725	0.01%	0.03%	0.05%	0.10%	0.01%	0.02%	0.01%	0.03%	0.03%	0.01%	0.02%	0.01%	0.01%	0.02%	99.63%	0.00448	150
Q3RT_29.mpl	100																			100
Q3RT_30.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.73%
	Average Data:	**0.02%**	**0.01%**	**0.02%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

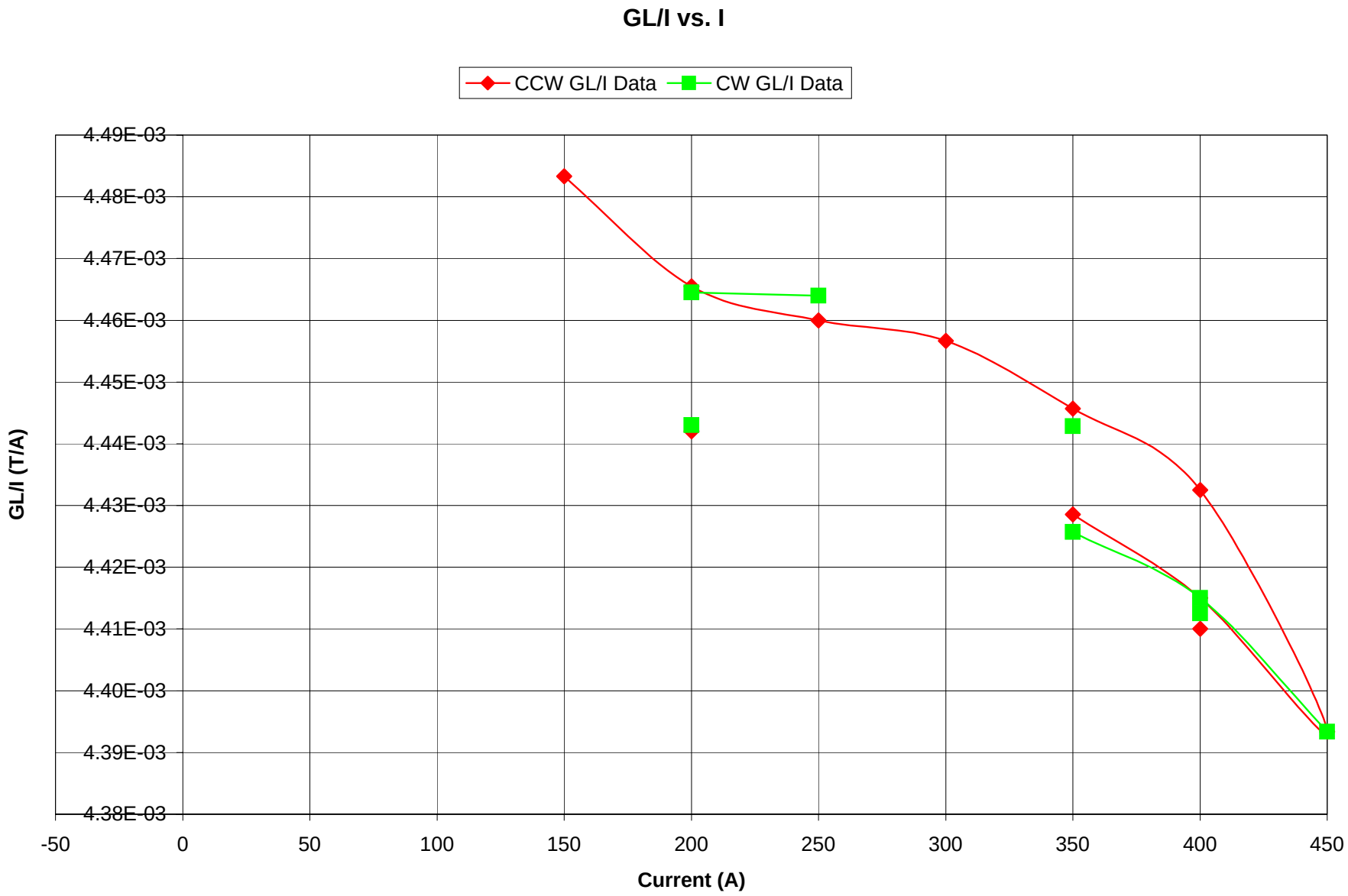
magnet 25B1346 B-1 **Rcoil = 0.01 m**

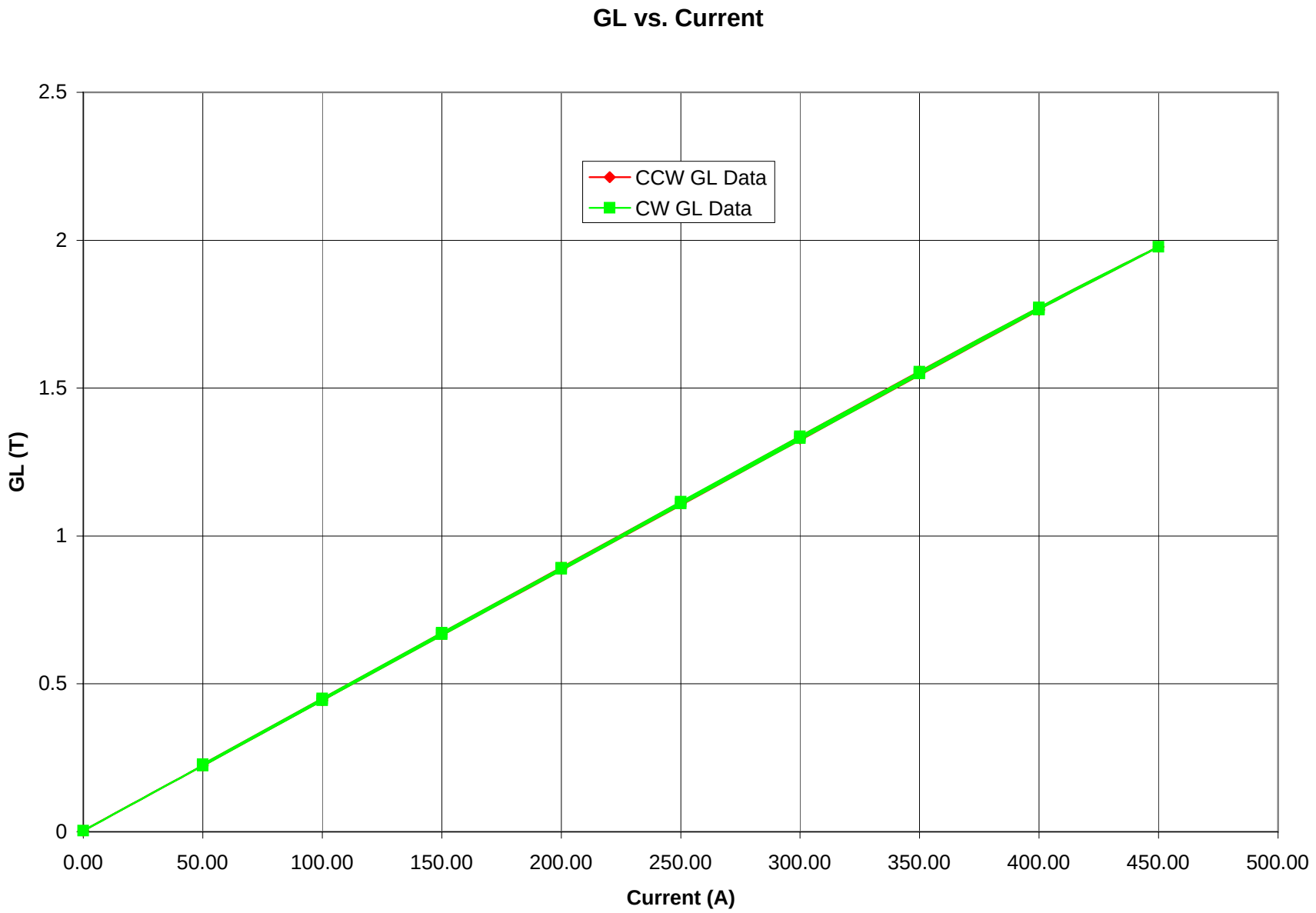
Raw CW Data	**data file**	**Q3RT_12.m**	**Q3RT_13.m**	**Q3RT_14.m**	**Q3RT_15.m**	**Q3RT_16.m**	**Q3RT_17.m**	**Q3RT_18.m**	**Q3RT_19.m**	**Q3RT_20.m**	**Q3RT_21.m**	**Q3RT_22.m**	**Q3RT_23.m**	**Q3RT_24.m**	**Q3RT_25.m**	**Q3RT_26.m**	**Q3RT_27.m**	**Q3RT_28.mp**	**Q3RT_29.m**	**Q3RT_30.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		2.30E-04	2.37E-06	2.67E-05	5.62E-05	8.50E-05	1.19E-04	1.44E-04	1.74E-04	2.01E-04	2.29E-04	2.53E-04	2.31E-04	1.98E-04	1.73E-04	1.47E-04	1.17E-04	8.48E-05	5.63E-05	2.76E-05	**1**
cn = 2		1.77E-02	3.72E-05	2.24E-03	4.44E-03	6.67E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.93E-03	6.73E-03	4.51E-03	2.28E-03	**2**
cn = 3		3.60E-06	2.61E-06	8.55E-07	1.73E-05	6.17E-06	1.87E-06	3.69E-05	1.78E-05	8.18E-07	3.97E-06	3.69E-06	1.65E-05	5.85E-07	1.72E-05	1.79E-06	9.93E-07	1.03E-05	9.07E-07	4.96E-07	**3**
cn = 4		1.86E-06	3.53E-06	8.54E-07	2.12E-05	1.20E-06	1.32E-06	4.50E-05	2.01E-05	1.51E-06	2.33E-06	7.40E-07	1.97E-05	1.18E-06	2.06E-05	1.75E-06	2.08E-06	9.75E-06	1.13E-06	1.46E-06	**4**
cn = 5		2.28E-06	3.52E-06	2.08E-07	2.03E-05	3.35E-06	1.08E-06	4.36E-05	2.33E-05	1.37E-06	1.30E-06	2.07E-06	2.21E-05	3.29E-06	2.23E-05	2.68E-06	2.97E-06	1.07E-05	2.15E-06	1.99E-06	**5**
cn = 6		1.78E-05	2.64E-06	2.63E-06	1.95E-05	6.66E-06	7.10E-06	4.05E-05	1.89E-05	1.44E-05	1.71E-05	2.00E-05	1.97E-05	1.52E-05	1.99E-05	9.94E-06	8.59E-06	1.02E-05	3.94E-06	3.68E-06	**6**
cn = 7		1.10E-06	2.26E-06	4.89E-07	2.05E-05	1.06E-06	8.72E-07	4.47E-05	2.05E-05	1.32E-06	1.90E-06	1.80E-06	2.08E-05	2.13E-06	2.09E-05	2.27E-06	1.91E-06	1.19E-05	2.71E-06	7.05E-07	**7**
cn = 8		4.78E-07	1.57E-06	1.22E-06	1.96E-05	2.34E-06	2.34E-06	4.20E-05	2.25E-05	1.38E-06	1.25E-06	6.92E-07	2.06E-05	2.04E-06	2.16E-05	3.72E-06	2.61E-06	1.00E-05	2.22E-06	2.57E-06	**8**
cn = 9		1.26E-06	3.19E-06	1.30E-06	2.02E-05	2.34E-06	1.22E-06	4.16E-05	1.89E-05	1.45E-06	2.52E-07	1.93E-06	1.83E-05	3.78E-06	2.01E-05	2.39E-06	1.78E-06	1.24E-05	8.05E-07	9.30E-07	**9**
cn = 10		1.32E-06	1.47E-06	1.04E-06	1.77E-05	1.47E-06	6.58E-07	3.86E-05	1.92E-05	6.58E-07	9.31E-07	1.04E-06	1.91E-05	3.54E-06	2.00E-05	1.32E-06	1.32E-06	9.31E-06	2.37E-06	4.65E-07	**10**
cn = 11		2.10E-06	1.90E-06	1.73E-06	1.95E-05	1.60E-06	1.65E-06	3.89E-05	1.87E-05	1.22E-06	1.53E-06	1.72E-06	1.79E-05	1.64E-06	1.96E-05	6.19E-07	4.21E-07	7.71E-06	7.55E-07	1.13E-06	**11**
cn = 12		1.64E-06	6.46E-07	2.66E-07	1.78E-05	1.48E-06	5.71E-07	3.62E-05	1.67E-05	1.66E-06	1.40E-06	2.40E-06	1.74E-05	9.62E-07	1.70E-05	1.43E-06	1.10E-06	8.88E-06	6.64E-07	9.98E-07	**12**
cn = 13		9.59E-07	7.41E-07	9.63E-07	1.94E-05	2.44E-06	1.28E-06	3.44E-05	1.60E-05	7.91E-07	1.19E-06	1.17E-06	1.64E-05	9.96E-07	1.70E-05	1.81E-06	1.82E-06	9.80E-06	1.47E-06	8.75E-07	**13**
cn = 14		6.51E-07	1.59E-06	1.42E-07	1.48E-05	4.86E-07	1.88E-07	3.38E-05	1.44E-05	1.70E-06	7.13E-07	1.92E-06	1.49E-05	1.73E-06	1.63E-05	1.23E-06	1.40E-06	8.79E-06	1.22E-06	4.47E-07	**14**
cn = 15		7.23E-07	2.28E-06	9.31E-07	1.45E-05	1.06E-06	1.05E-06	3.29E-05	1.62E-05	8.26E-07	2.09E-06	1.59E-06	1.63E-05	1.60E-06	1.60E-05	1.31E-06	3.91E-07	8.18E-06	1.20E-06	2.39E-06	**15**
cn = 16		1.30E-06	6.62E-07	1.54E-06	1.59E-05	1.45E-06	1.91E-06	3.09E-05	1.63E-05	8.66E-07	4.96E-07	1.35E-06	1.74E-05	1.89E-06	1.61E-05	2.14E-06	8.20E-07	7.56E-06	1.56E-06	1.22E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals	
Q3RT_12.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.79%**	
Q3RT_13.mpl	**0**	3.72E-05	3.72E-03	7.02%	9.49%	9.46%	7.11%	6.07%	4.23%	8.59%	3.95%	5.11%	1.74%	1.99%	4.28%	6.13%	1.78%	**23.05%**	
Q3RT_14.mpl	**50**	2.24E-03	2.24E-01	0.04%	0.04%	0.01%	0.12%	0.02%	0.05%	0.06%	0.05%	0.08%	0.01%	0.04%	0.01%	0.04%	0.07%	**99.37%**	
Q3RT_15.mpl	**100**	4.44E-03	4.44E-01	0.39%	0.48%	0.46%	0.44%	0.46%	0.44%	0.46%	0.40%	0.44%	0.40%	0.44%	0.33%	0.33%	0.36%	**94.19%**	
Q3RT_16.mpl	**150**	6.67E-03	6.67E-01	0.09%	0.02%	0.05%	0.10%	0.02%	0.04%	0.04%	0.02%	0.02%	0.02%	0.04%	0.01%	0.02%	0.02%	**99.50%**	
Q3RT_17.mpl	**200**	8.89E-03	8.89E-01	0.02%	0.01%	0.01%	0.08%	0.01%	0.03%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.02%	**99.74%**	
Q3RT_18.mpl	**250**	1.11E-02	1.11E+00	0.33%	0.41%	0.39%	0.37%	0.40%	0.38%	0.37%	0.35%	0.35%	0.33%	0.31%	0.30%	0.30%	0.28%	**95.14%**	
Q3RT_19.mpl	**300**	1.33E-02	1.33E+00	0.13%	0.15%	0.18%	0.14%	0.15%	0.17%	0.14%	0.14%	0.14%	0.13%	0.12%	0.11%	0.12%	0.12%	**98.05%**	
Q3RT_20.mpl	**350**	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.81%**	
Q3RT_21.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	**99.79%**	
Q3RT_22.mpl	**450**	1.98E-02	1.98E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.79%**	
Q3RT_23.mpl	**400**	1.77E-02	1.77E+00	0.09%	0.11%	0.12%	0.11%	0.12%	0.12%	0.10%	0.11%	0.10%	0.10%	0.09%	0.08%	0.09%	0.10%	**98.55%**	
Q3RT_24.mpl	**350**	1.56E-02	1.56E+00	0.00%	0.01%	0.02%	0.10%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.74%**	
Q3RT_25.mpl	**300**	1.34E-02	1.34E+00	0.13%	0.15%	0.17%	0.15%	0.16%	0.16%	0.15%	0.15%	0.15%	0.13%	0.13%	0.12%	0.12%	0.12%	**98.02%**	
Q3RT_26.mpl	**250**	1.12E-02	1.12E+00	0.02%	0.02%	0.02%	0.09%	0.02%	0.03%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	**99.69%**	
Q3RT_27.mpl	**200**	8.93E-03	8.93E-01	0.01%	0.02%	0.03%	0.10%	0.02%	0.03%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	0.00%	0.01%	**99.68%**	
Q3RT_28.mpl	**150**	6.73E-03	6.73E-01	0.15%	0.14%	0.16%	0.15%	0.18%	0.15%	0.18%	0.14%	0.11%	0.13%	0.15%	0.13%	0.12%	0.11%	**97.99%**	
Q3RT_29.mpl	**100**	4.51E-03	4.51E-01	0.02%	0.03%	0.05%	0.09%	0.06%	0.05%	0.02%	0.05%	0.02%	0.01%	0.03%	0.03%	0.03%	0.03%	**99.49%**	
Q3RT_30.mpl	**50**	2.28E-03	2.28E-01	0.02%	0.06%	0.09%	0.16%	0.03%	0.11%	0.04%	0.02%	0.05%	0.04%	0.04%	0.02%	0.10%	0.05%	**99.15%**	
																	average =	**94.21%**	
			Average Da	0.45%	0.59%	0.59%	0.51%	0.41%	0.32%	0.54%	0.29%	0.35%	0.16%	0.18%	0.29%	0.39%	0.16%		

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q3RT_12.mpl	400	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.79%	0.00441	400
Q3RT_13.mpl	0																			0
Q3RT_14.mpl	50																			50
Q3RT_15.mpl	100																			100
Q3RT_16.mpl	150																			150
Q3RT_17.mpl	200	8.89E-03	8.89E-01	0.02%	0.01%	0.01%	0.08%	0.01%	0.03%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.02%	99.74%	0.00444	200
Q3RT_18.mpl	250																			250
Q3RT_19.mpl	300																			300
Q3RT_20.mpl	350	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.81%	0.00443	350
Q3RT_21.mpl	400	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	99.79%	0.00442	400
Q3RT_22.mpl	450	1.98E-02	1.98E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.79%	0.00439	450
Q3RT_23.mpl	400																			400
Q3RT_24.mpl	350	1.56E-02	1.56E+00	0.00%	0.01%	0.02%	0.10%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.74%	0.00444	350
Q3RT_25.mpl	300																			300
Q3RT_26.mpl	250	1.12E-02	1.12E+00	0.02%	0.02%	0.02%	0.09%	0.02%	0.03%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	99.69%	0.00446	250
Q3RT_27.mpl	200	8.93E-03	8.93E-01	0.01%	0.02%	0.03%	0.10%	0.02%	0.03%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	0.00%	0.01%	99.68%	0.00446	200
Q3RT_28.mpl	150																			150
Q3RT_29.mpl	100																			100
Q3RT_30.mpl	50																			50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.75%**
Average Data	**0.01%**	**0.01%**	**0.02%**	**0.09%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

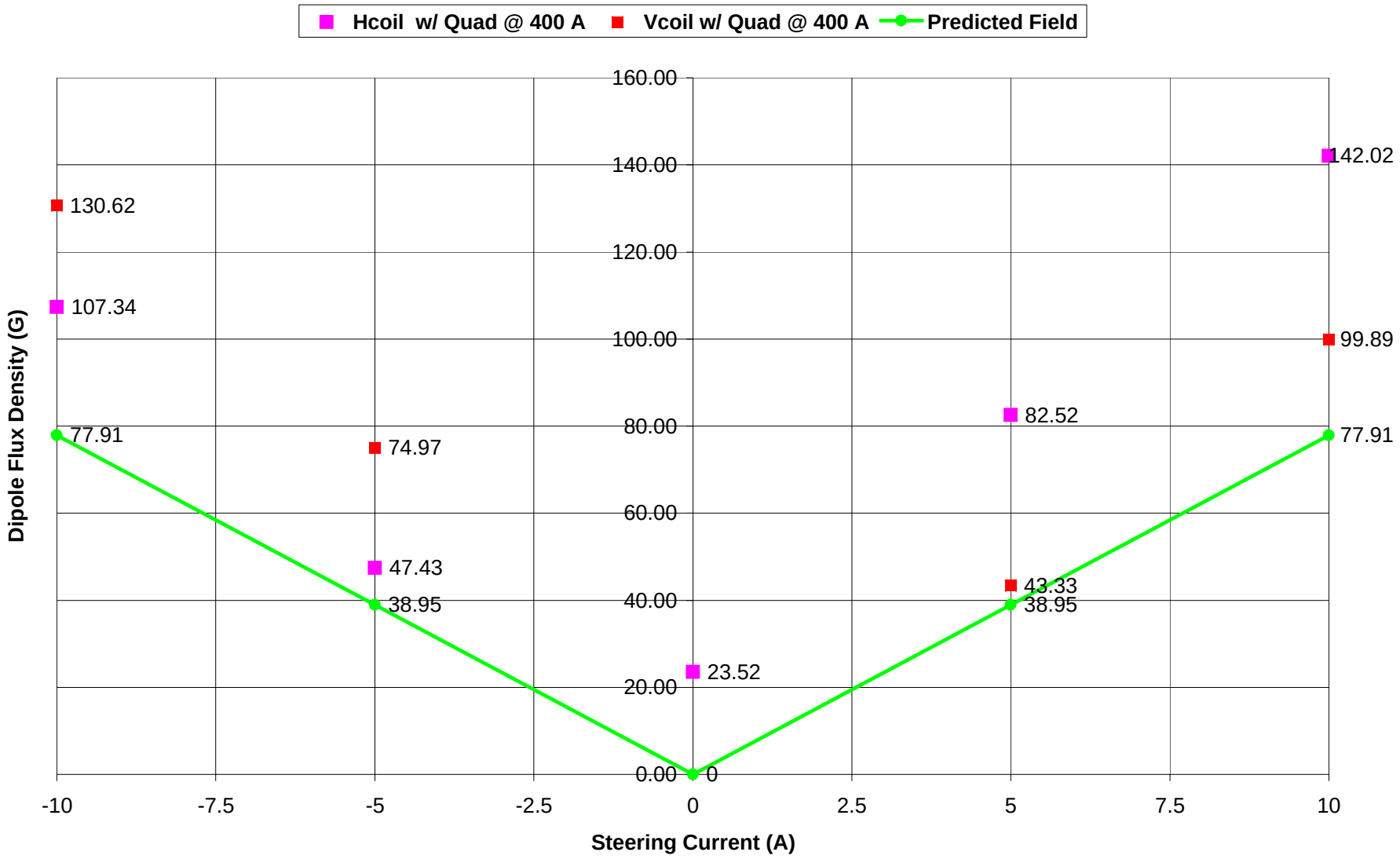

GL/I vs. I
CCW GL/I Data
CW GL/I Data
GL/I (T/A)
4.49E-03
4.48E-03
4.47E-03
4.46E-03
4.45E-03
4.44E-03
4.43E-03
4.42E-03
4.41E-03
4.40E-03
4.39E-03
4.38E-03
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.764	380.9698	0.952424	1.85162
0				
50				
100				
150				
200	0.8884	190.7982	0.953991	0.930768
250				
300				
350	1.55	334.4911	0.955689	1.621407
400	1.766	381.4041	0.95351	1.85162
450	1.977	427.2312	0.949403	2.081833
400	1.773	382.9245	0.957311	1.85162
350	1.556	335.7942	0.959412	1.621407
300	1.337	288.2296	0.960765	1.391194
250	1.115	240.0135	0.960054	1.160981
200	0.8931	191.819	0.959095	0.930768
150	0.6725	143.9069	0.959379	0.700554
100				
50				
		average =	**95.646%**	

Dipole Field vs. Steering Current



The conditions for each case are following.
core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q3RT_1.dat	0	0	400	1.44E-04	23.52		2.70E-02
Q3RT_2.dat	5	0	400	5.03E-04	82.52	106.05	2.70E-02
Q3RT_3.dat	10	0	400	8.66E-04	142.02	165.54	2.70E-02
Q3RT_4.dat	-5	0	400	2.89E-04	47.43	23.90	2.70E-02
Q3RT_5.dat	-10	0	400	6.55E-04	107.34	83.82	2.70E-02
Q3RT_6.dat	0	5	400	2.64E-04	43.33	19.80	2.70E-02
Q3RT_7.dat	0	10	400	6.09E-04	99.89	76.36	2.70E-02
Q3RT_8.dat	0	-5	400	4.57E-04	74.97	98.49	2.70E-02
Q3RT_9.dat	0	-10	400	7.97E-04	130.62	154.15	2.70E-02
Q3RT_10.dat	5	5	400	5.48E-04	89.84	113.36	2.70E-02
Q3RT_11.dat	10	10	400	1.04E-03	170.49	194.02	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	77.91	77.91
-5	38.95	38.95
0	0	0
5	38.95	38.95
10	77.91	77.91

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q10_1.mpl	Q10_2.mpl	Q10_3.mpl	Q10_4.mpl	Q10_5.mpl	Q10_6.mpl	Q10_7.mpl	Q10_8.mpl	Q10_9.mpl	Q10_10.mp	Q10_11.mp	Q10_12.mp	Q10_13.mp	Q10_14.mp	Q10_15.mp	Q10_16.mp	Q10_17.mpl	Q10_18.mp	Q10_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		2.55E-04	3.17E-06	3.38E-05	6.47E-05	9.65E-05	1.27E-04	1.58E-04	1.91E-04	2.20E-04	2.49E-04	2.82E-04	2.53E-04	2.22E-04	1.88E-04	1.59E-04	1.26E-04	9.71E-05	6.66E-05	3.48E-05	**1**
cn = 2		1.77E-02	3.31E-05	2.23E-03	4.45E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.94E-03	6.72E-03	4.50E-03	2.28E-03	**2**
cn = 3		2.02E-06	7.42E-07	1.81E-05	1.75E-05	2.59E-06	3.37E-05	1.72E-06	1.44E-05	4.60E-06	3.09E-06	2.17E-06	3.77E-07	1.90E-06	2.62E-06	4.22E-06	1.68E-05	1.14E-06	1.43E-06	4.11E-07	**3**
cn = 4		1.33E-06	8.15E-07	2.24E-05	2.22E-05	1.13E-06	4.40E-05	2.02E-07	2.07E-05	2.68E-06	5.79E-07	4.03E-07	1.66E-06	2.03E-06	1.02E-06	1.91E-06	2.25E-05	1.31E-06	5.79E-07	1.25E-07	**4**
cn = 5		2.65E-06	7.97E-07	2.15E-05	2.03E-05	2.28E-06	4.12E-05	9.29E-07	2.14E-05	2.28E-06	2.15E-06	2.41E-06	2.19E-06	1.99E-06	1.66E-06	2.31E-06	2.03E-05	1.12E-06	1.73E-06	3.61E-07	**5**
cn = 6		1.72E-05	6.65E-07	2.11E-05	2.20E-05	5.70E-06	4.05E-05	1.14E-05	2.21E-05	1.61E-05	1.68E-05	2.01E-05	1.58E-05	1.52E-05	1.21E-05	1.30E-05	1.87E-05	4.38E-06	5.01E-06	1.67E-06	**6**
cn = 7		5.27E-07	5.22E-07	2.01E-05	2.05E-05	1.44E-06	4.15E-05	3.37E-07	2.18E-05	2.05E-06	4.54E-07	1.42E-06	3.57E-07	8.02E-07	9.84E-07	1.72E-06	2.05E-05	4.41E-07	9.19E-07	8.43E-07	**7**
cn = 8		2.54E-07	1.36E-06	1.96E-05	2.02E-05	8.89E-07	4.04E-05	4.11E-07	1.92E-05	1.16E-06	4.11E-07	1.18E-06	7.31E-08	1.08E-06	5.01E-07	1.64E-06	2.04E-05	9.60E-07	9.53E-07	5.01E-07	**8**
cn = 9		4.82E-07	1.97E-06	1.98E-05	2.07E-05	1.35E-06	3.86E-05	6.00E-07	2.04E-05	2.11E-06	2.18E-06	1.15E-06	1.16E-06	2.13E-06	5.81E-07	3.42E-07	2.04E-05	6.28E-07	1.65E-07	1.11E-06	**9**
cn = 10		1.47E-06	2.33E-06	1.82E-05	1.96E-05	4.65E-07	3.68E-05	6.58E-07	1.91E-05	1.32E-06	1.92E-19	6.58E-07	1.04E-06	1.32E-06	4.65E-07	1.97E-06	1.95E-05	1.68E-06	1.04E-06	1.04E-06	**10**
cn = 11		6.52E-07	8.57E-07	1.64E-05	1.97E-05	1.31E-06	3.67E-05	9.83E-07	1.82E-05	1.65E-06	1.57E-06	1.66E-06	1.09E-06	2.28E-07	1.27E-06	4.37E-07	1.88E-05	1.41E-06	3.32E-07	1.37E-06	**11**
cn = 12		1.26E-06	9.24E-07	1.68E-05	1.72E-05	6.64E-07	3.68E-05	1.13E-06	1.74E-05	4.72E-07	2.19E-06	2.25E-06	7.63E-07	1.23E-06	1.23E-06	5.94E-07	1.74E-05	2.39E-06	2.19E-06	1.82E-06	**12**
cn = 13		5.42E-07	1.45E-06	1.52E-05	1.75E-05	1.92E-07	3.40E-05	1.23E-06	1.67E-05	1.15E-06	7.37E-07	1.84E-06	1.82E-06	1.70E-06	6.81E-07	1.15E-06	1.74E-05	1.30E-06	4.82E-07	1.26E-06	**13**
cn = 14		9.20E-07	7.92E-07	1.68E-05	1.65E-05	8.89E-07	3.27E-05	1.06E-06	1.51E-05	7.36E-07	6.45E-07	1.52E-06	1.69E-06	2.07E-06	8.60E-07	1.31E-06	1.74E-05	2.45E-08	1.69E-06	1.01E-06	**14**
cn = 15		1.10E-06	1.70E-06	1.44E-05	1.61E-05	1.18E-06	3.16E-05	2.95E-07	1.53E-05	7.23E-07	2.10E-06	2.35E-06	1.68E-06	8.04E-07	2.41E-06	1.02E-06	1.45E-05	8.62E-07	9.58E-07	1.61E-06	**15**
cn = 16		2.44E-06	1.16E-06	1.59E-05	1.68E-05	1.17E-06	2.93E-05	1.51E-06	1.39E-05	1.03E-06	1.51E-06	1.42E-06	2.56E-06	5.76E-07	3.73E-07	1.92E-06	1.44E-05	1.64E-06	4.39E-07	3.73E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q10_1.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.02%	0.10%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.81%**	Q2_1.dat	400
Q10_2.mpl	**0**	3.31E-05	3.31E-03	2.24%	2.46%	2.41%	2.01%	1.58%	4.12%	5.95%	7.04%	2.59%	2.79%	4.39%	2.40%	5.15%	3.50%	**51.38%**	Q2_2.dat	0
Q10_3.mpl	**50**	2.23E-03	2.23E-01	0.81%	1.00%	0.97%	0.94%	0.90%	0.88%	0.89%	0.81%	0.73%	0.75%	0.68%	0.75%	0.64%	0.71%	**88.52%**	Q2_3.dat	50
Q10_4.mpl	**100**	4.45E-03	4.45E-01	0.39%	0.50%	0.45%	0.49%	0.46%	0.45%	0.47%	0.44%	0.44%	0.39%	0.39%	0.37%	0.36%	0.38%	**94.01%**	Q2_4.dat	100
Q10_5.mpl	**150**	6.68E-03	6.68E-01	0.04%	0.02%	0.03%	0.09%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	**99.68%**	Q2_5.dat	150
Q10_6.mpl	**200**	8.89E-03	8.89E-01	0.38%	0.49%	0.46%	0.46%	0.47%	0.45%	0.43%	0.41%	0.41%	0.41%	0.38%	0.37%	0.36%	0.33%	**94.18%**	Q2_6.dat	200
Q10_7.mpl	**250**	1.11E-02	1.11E+00	0.02%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.80%**	Q2_7.dat	250
Q10_8.mpl	**300**	1.33E-02	1.33E+00	0.11%	0.16%	0.16%	0.17%	0.16%	0.14%	0.15%	0.14%	0.14%	0.13%	0.13%	0.11%	0.12%	0.10%	**98.08%**	Q2_8.dat	300
Q10_9.mpl	**350**	1.55E-02	1.55E+00	0.03%	0.02%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.75%**	Q2_9.dat	350
Q10_10.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	**99.81%**	Q2_10.dat	400
Q10_11.mpl	**450**	1.98E-02	1.98E+00	0.01%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.80%**	Q2_11.dat	450
Q10_12.mpl	**400**	1.77E-02	1.77E+00	0.00%	0.01%	0.01%	0.09%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.82%**	Q2_12.dat	400
Q10_13.mpl	**350**	1.56E-02	1.56E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.79%**	Q2_13.dat	350
Q10_14.mpl	**300**	1.34E-02	1.34E+00	0.02%	0.01%	0.01%	0.09%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	**99.80%**	Q2_14.dat	300
Q10_15.mpl	**250**	1.12E-02	1.12E+00	0.04%	0.02%	0.02%	0.12%	0.02%	0.01%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	**99.70%**	Q2_15.dat	250
Q10_16.mpl	**200**	8.94E-03	8.94E-01	0.19%	0.25%	0.23%	0.21%	0.23%	0.23%	0.23%	0.22%	0.21%	0.19%	0.19%	0.19%	0.16%	0.16%	**97.11%**	Q2_16.dat	200
Q10_17.mpl	**150**	6.72E-03	6.72E-01	0.02%	0.02%	0.02%	0.07%	0.01%	0.01%	0.01%	0.02%	0.02%	0.04%	0.02%	0.00%	0.01%	0.02%	**99.71%**	Q2_17.dat	150
Q10_18.mpl	**100**	4.50E-03	4.50E-01	0.03%	0.01%	0.04%	0.11%	0.02%	0.02%	0.00%	0.02%	0.01%	0.05%	0.01%	0.04%	0.02%	0.01%	**99.60%**	Q2_18.dat	100
Q10_19.mpl	**50**	2.28E-03	2.28E-01	0.02%	0.01%	0.02%	0.07%	0.04%	0.02%	0.05%	0.05%	0.06%	0.08%	0.06%	0.04%	0.07%	0.02%	**99.41%**	Q2_19.dat	50
																	average =	**95.32%**		
			Average Da	0.23%	0.26%	0.26%	0.29%	0.21%	0.34%	0.43%	0.49%	0.25%	0.26%	0.33%	0.23%	0.37%	0.28%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q10_1.mpl	400	1.765E-02	1.7650	0.01%	0.01%	0.02%	0.10%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	99.81%	0.00441	400
Q10_2.mpl	0																			0
Q10_3.mpl	50																			50
Q10_4.mpl	100																			100
Q10_5.mpl	150	6.679E-03	0.6679	0.04%	0.02%	0.03%	0.09%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	99.68%	0.00445	150
Q10_6.mpl	200																			200
Q10_7.mpl	250	1.109E-02	1.1090	0.02%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.80%	0.00444	250
Q10_8.mpl	300																			300
Q10_9.mpl	350	1.549E-02	1.5490	0.03%	0.02%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	99.75%	0.00443	350
Q10_10.mpl	400	1.765E-02	1.7650	0.02%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	99.81%	0.00441	400
Q10_11.mpl	450	1.978E-02	1.9780	0.01%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00440	450
Q10_12.mpl	400	1.773E-02	1.7730	0.00%	0.01%	0.01%	0.09%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.82%	0.00443	400
Q10_13.mpl	350	1.556E-02	1.5560	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	99.79%	0.00445	350
Q10_14.mpl	300	1.337E-02	1.3370	0.02%	0.01%	0.01%	0.09%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.00%	99.80%	0.00446	300
Q10_15.mpl	250	1.116E-02	1.1160	0.04%	0.02%	0.02%	0.12%	0.02%	0.01%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	99.70%	0.00446	250
Q10_16.mpl	200																			200
Q10_17.mpl	150	6.719E-03	0.6719	0.02%	0.02%	0.02%	0.07%	0.01%	0.01%	0.01%	0.02%	0.02%	0.04%	0.02%	0.00%	0.01%	0.02%	99.71%	0.00448	150
Q10_18.mpl	100	4.500E-03	0.4500	0.03%	0.01%	0.04%	0.11%	0.02%	0.02%	0.00%	0.02%	0.01%	0.05%	0.01%	0.04%	0.02%	0.01%	99.60%	0.00450	100
Q10_19.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.75%
	Average Data:	0.02%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	

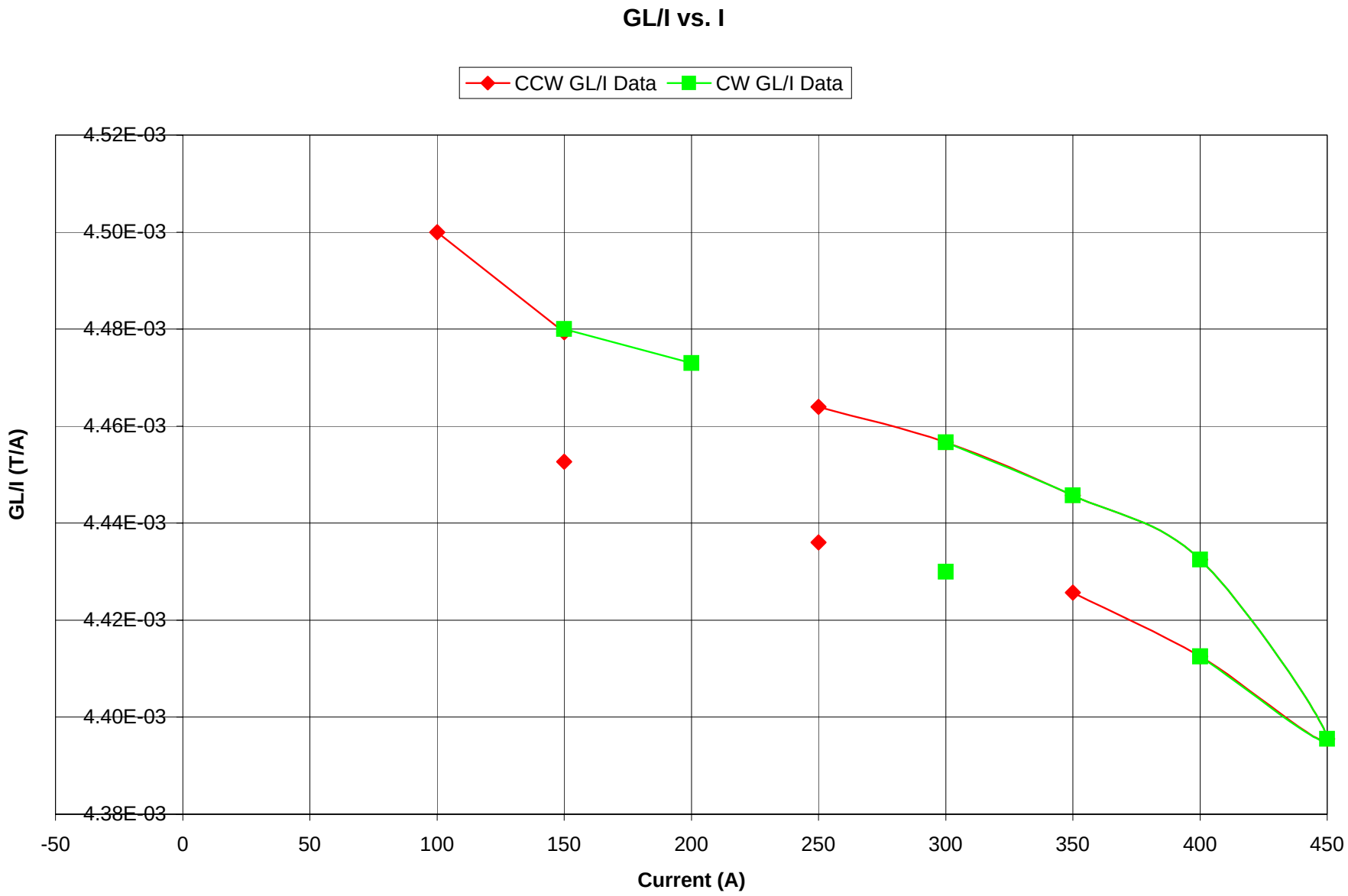
magnet 25B1346 B-1 **Rcoil = 0.01 m**

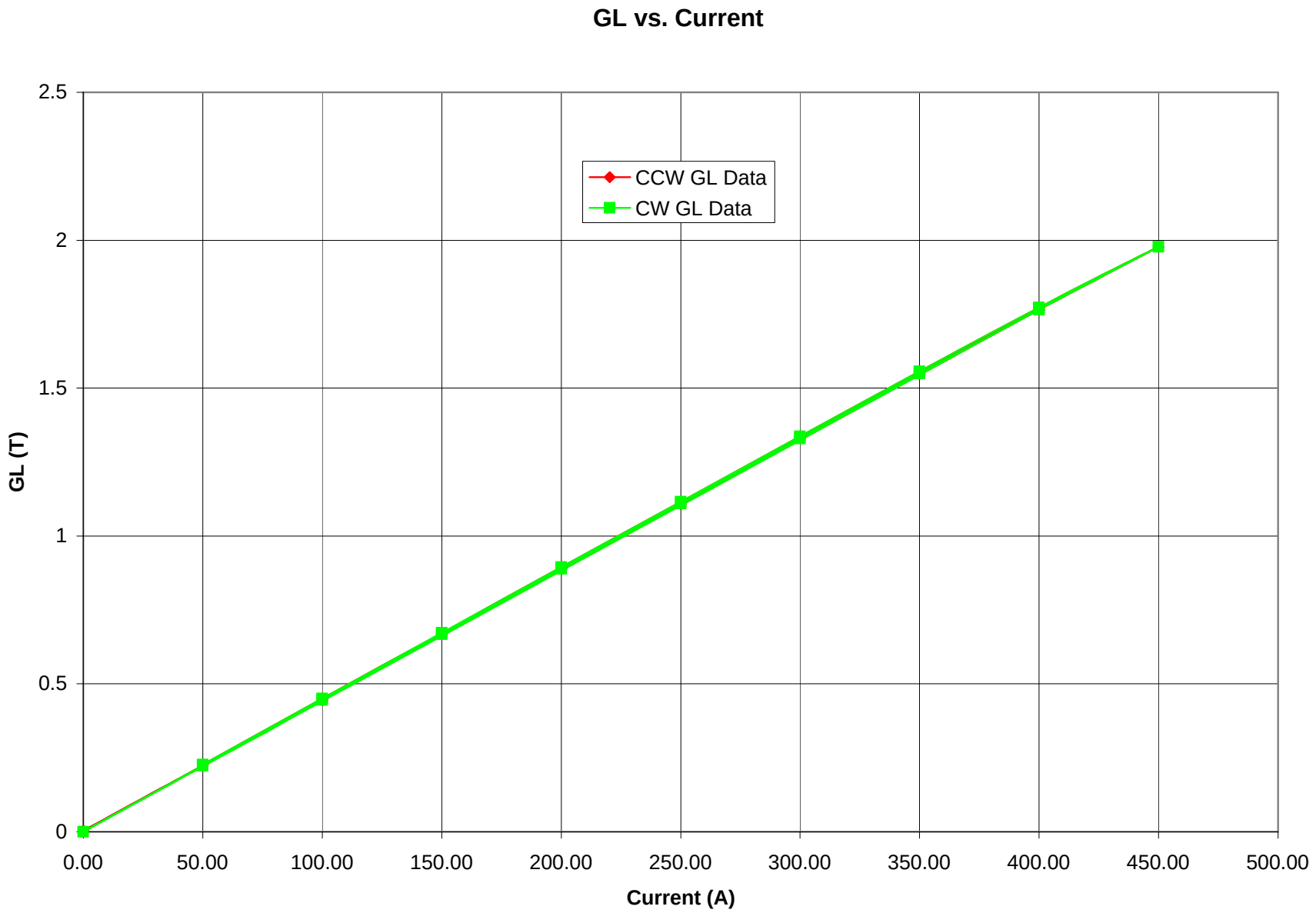
Raw CW Data	**data file**	**Q10_1.mpl**	**Q10_2.mpl**	**Q10_3.mpl**	**Q10_4.mpl**	**Q10_5.mpl**	**Q10_6.mpl**	**Q10_7.mpl**	**Q10_8.mpl**	**Q10_9.mpl**	**Q10_10.mp**	**Q10_11.mp**	**Q10_12.mp**	**Q10_13.mp**	**Q10_14.mp**	**Q10_15.mp**	**Q10_16.mp**	**Q10_17.mpl**	**Q10_18.mp**	**Q10_19.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		2.55E-04	0.00E+00	3.29E-05	6.47E-05	9.50E-05	1.25E-04	1.53E-04	1.88E-04	2.20E-04	2.47E-04	2.82E-04	2.52E-04	2.21E-04	1.88E-04	1.58E-04	1.26E-04	9.66E-05	6.17E-05	3.65E-05	**1**
cn = 2		1.77E-02	0.00E+00	2.23E-03	4.45E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.95E-03	6.72E-03	4.50E-03	2.28E-03	**2**
cn = 3		3.28E-06	0.00E+00	8.55E-07	1.03E-06	1.82E-05	2.02E-05	1.80E-05	6.62E-07	9.87E-06	2.74E-06	1.22E-06	1.37E-06	3.30E-06	3.88E-06	9.04E-06	2.99E-06	1.65E-06	2.02E-06	1.20E-06	**3**
cn = 4		2.54E-06	0.00E+00	1.25E-07	1.06E-06	2.11E-05	2.38E-05	2.35E-05	1.72E-06	1.22E-05	2.83E-06	6.20E-07	1.02E-06	2.39E-06	1.75E-06	1.10E-05	3.26E-07	8.15E-07	1.98E-06	1.22E-06	**4**
cn = 5		2.30E-06	0.00E+00	1.74E-06	1.21E-06	1.96E-05	2.14E-05	1.89E-05	6.66E-07	1.01E-05	1.58E-06	1.69E-06	1.05E-06	1.87E-06	2.28E-06	9.70E-06	2.99E-06	1.61E-06	1.81E-06	3.85E-07	**5**
cn = 6		1.58E-05	0.00E+00	3.53E-06	3.28E-06	2.00E-05	2.14E-05	2.16E-05	1.27E-05	1.59E-05	1.78E-05	2.02E-05	1.73E-05	1.40E-05	1.22E-05	9.52E-06	8.35E-06	6.63E-06	4.26E-06	3.08E-06	**6**
cn = 7		5.16E-06	0.00E+00	1.52E-06	1.92E-06	2.13E-05	2.30E-05	2.34E-05	9.27E-07	1.13E-05	1.60E-06	5.86E-07	3.20E-07	2.87E-06	1.38E-06	9.63E-06	4.45E-06	1.68E-06	1.81E-06	1.39E-06	**7**
cn = 8		3.88E-06	0.00E+00	1.25E-06	3.51E-20	2.03E-05	2.05E-05	2.04E-05	8.55E-07	1.08E-05	1.64E-06	6.92E-07	1.25E-06	1.64E-06	9.72E-07	1.11E-05	1.75E-06	1.78E-06	1.08E-06	4.11E-07	**8**
cn = 9		2.46E-06	0.00E+00	9.64E-07	1.82E-06	1.85E-05	2.05E-05	2.15E-05	1.31E-06	1.04E-05	9.52E-07	1.28E-06	1.99E-06	1.08E-06	1.84E-06	1.05E-05	3.31E-06	8.17E-07	1.23E-06	7.85E-07	**9**
cn = 10		2.51E-06	0.00E+00	9.31E-07	1.97E-06	1.82E-05	1.95E-05	2.01E-05	1.47E-06	8.49E-06	1.04E-06	4.65E-07	9.31E-07	4.68E-06	1.32E-06	8.85E-06	2.83E-06	6.58E-07	9.31E-07	6.58E-07	**10**
cn = 11		3.01E-06	0.00E+00	4.44E-07	1.07E-06	1.94E-05	2.11E-05	1.87E-05	1.79E-06	9.18E-06	1.83E-06	3.30E-07	1.18E-06	2.08E-06	1.51E-06	1.04E-05	2.03E-06	1.51E-06	1.45E-06	1.91E-06	**11**
cn = 12		3.30E-06	0.00E+00	1.82E-06	8.60E-07	1.57E-05	1.94E-05	2.01E-05	2.21E-06	7.35E-06	8.82E-07	8.18E-07	1.23E-06	3.76E-06	1.43E-06	8.11E-06	6.96E-07	9.24E-07	7.34E-07	1.19E-06	**12**
cn = 13		3.52E-06	0.00E+00	1.60E-06	9.93E-07	1.49E-05	1.77E-05	1.94E-05	2.15E-06	8.41E-06	1.98E-06	8.25E-07	8.37E-07	2.72E-06	1.07E-06	1.02E-05	1.70E-06	2.97E-06	9.32E-07	1.89E-06	**13**
cn = 14		1.84E-06	0.00E+00	5.92E-07	3.01E-06	1.57E-05	1.69E-05	1.82E-05	8.94E-07	8.22E-06	1.50E-06	7.84E-07	1.84E-06	1.10E-06	8.92E-07	8.48E-06	2.90E-06	1.55E-06	1.89E-06	1.29E-07	**14**
cn = 15		2.70E-06	0.00E+00	1.34E-06	1.46E-06	1.50E-05	1.75E-05	1.72E-05	1.23E-06	6.21E-06	7.88E-07	1.84E-06	1.53E-06	1.10E-06	7.23E-07	1.12E-05	1.66E-06	5.11E-07	2.64E-06	7.12E-07	**15**
cn = 16		3.30E-06	0.00E+00	4.96E-07	5.77E-20	1.64E-05	1.69E-05	1.69E-05	1.40E-06	9.57E-06	1.92E-06	1.35E-06	4.96E-07	1.92E-06	1.07E-06	9.50E-06	2.76E-06	1.20E-06	5.76E-07	1.51E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q10_1.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.09%	0.03%	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	0.01%	0.02%	0.02%	**99.69%**
Q10_2.mpl	**0**	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	**#DIV/0!**
Q10_3.mpl	**50**	2.23E-03	2.23E-01	0.04%	0.01%	0.08%	0.16%	0.07%	0.06%	0.04%	0.04%	0.02%	0.08%	0.07%	0.03%	0.06%	0.02%	**99.23%**
Q10_4.mpl	**100**	4.45E-03	4.45E-01	0.02%	0.02%	0.03%	0.07%	0.04%	0.00%	0.04%	0.04%	0.02%	0.02%	0.02%	0.07%	0.03%	0.00%	**99.56%**
Q10_5.mpl	**150**	6.68E-03	6.68E-01	0.27%	0.32%	0.29%	0.30%	0.32%	0.30%	0.28%	0.27%	0.29%	0.24%	0.22%	0.24%	0.23%	0.25%	**96.19%**
Q10_6.mpl	**200**	8.89E-03	8.89E-01	0.23%	0.27%	0.24%	0.24%	0.26%	0.23%	0.23%	0.22%	0.24%	0.22%	0.20%	0.19%	0.20%	0.19%	**96.85%**
Q10_7.mpl	**250**	1.11E-02	1.11E+00	0.16%	0.21%	0.17%	0.19%	0.21%	0.18%	0.19%	0.18%	0.17%	0.18%	0.17%	0.16%	0.15%	0.15%	**97.50%**
Q10_8.mpl	**300**	1.33E-02	1.33E+00	0.00%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	**99.77%**
Q10_9.mpl	**350**	1.55E-02	1.55E+00	0.06%	0.08%	0.07%	0.10%	0.07%	0.07%	0.07%	0.05%	0.06%	0.05%	0.05%	0.05%	0.04%	0.06%	**99.11%**
Q10_10.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.02%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.78%**
Q10_11.mpl	**450**	1.98E-02	1.98E+00	0.01%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	**99.83%**
Q10_12.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.82%**
Q10_13.mpl	**350**	1.56E-02	1.56E+00	0.02%	0.02%	0.01%	0.09%	0.02%	0.01%	0.01%	0.03%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	**99.71%**
Q10_14.mpl	**300**	1.34E-02	1.34E+00	0.03%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.76%**
Q10_15.mpl	**250**	1.12E-02	1.12E+00	0.08%	0.10%	0.09%	0.09%	0.09%	0.10%	0.09%	0.08%	0.09%	0.07%	0.09%	0.08%	0.10%	0.09%	**98.77%**
Q10_16.mpl	**200**	8.95E-03	8.95E-01	0.03%	0.00%	0.03%	0.09%	0.05%	0.02%	0.04%	0.03%	0.02%	0.01%	0.02%	0.03%	0.02%	0.03%	**99.57%**
Q10_17.mpl	**150**	6.72E-03	6.72E-01	0.02%	0.01%	0.02%	0.10%	0.03%	0.03%	0.01%	0.01%	0.02%	0.01%	0.04%	0.02%	0.01%	0.02%	**99.64%**
Q10_18.mpl	**100**	4.50E-03	4.50E-01	0.04%	0.04%	0.04%	0.09%	0.04%	0.02%	0.03%	0.02%	0.03%	0.02%	0.02%	0.04%	0.06%	0.01%	**99.48%**
Q10_19.mpl	**50**	2.28E-03	2.28E-01	0.05%	0.05%	0.02%	0.14%	0.06%	0.02%	0.03%	0.03%	0.08%	0.05%	0.08%	0.01%	0.03%	0.07%	**99.28%**
																	average =	**#DIV/0!**
			Average Da	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q10_1.mpl	400	1.765E-02	1.77E+00	0.02%	0.01%	0.01%	0.09%	0.03%	0.02%	0.01%	0.01%	0.02%	0.02%	0.02%	0.01%	0.02%	0.02%	99.69%	0.00441	400
Q10_2.mpl	0																			0
Q10_3.mpl	50																			50
Q10_4.mpl	100																			100
Q10_5.mpl	150																			150
Q10_6.mpl	200																			200
Q10_7.mpl	250																			250
Q10_8.mpl	300	1.329E-02	1.33E+00	0.00%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	99.77%	0.00443	300
Q10_9.mpl	350																			350
Q10_10.mpl	400	1.765E-02	1.77E+00	0.02%	0.02%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	99.78%	0.00441	400
Q10_11.mpl	450	1.978E-02	1.98E+00	0.01%	0.00%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	99.83%	0.00440	450
Q10_12.mpl	400	1.773E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.82%	0.00443	400
Q10_13.mpl	350	1.556E-02	1.56E+00	0.02%	0.02%	0.01%	0.09%	0.02%	0.01%	0.01%	0.03%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	99.71%	0.00445	350
Q10_14.mpl	300	1.337E-02	1.34E+00	0.03%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.76%	0.00446	300
Q10_15.mpl	250																			250
Q10_16.mpl	200	8.946E-03	8.95E-01	0.03%	0.00%	0.03%	0.09%	0.05%	0.02%	0.04%	0.03%	0.02%	0.01%	0.02%	0.03%	0.02%	0.03%	99.57%	0.00447	200
Q10_17.mpl	150	6.720E-03	6.72E-01	0.02%	0.01%	0.02%	0.10%	0.03%	0.03%	0.01%	0.01%	0.02%	0.01%	0.04%	0.02%	0.01%	0.02%	99.64%	0.00448	150
Q10_18.mpl	100																			100
Q10_19.mpl	50																			50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.74%**
Average Data	**0.02%**	**0.01%**	**0.01%**	**0.10%**	**0.02%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.01%**	

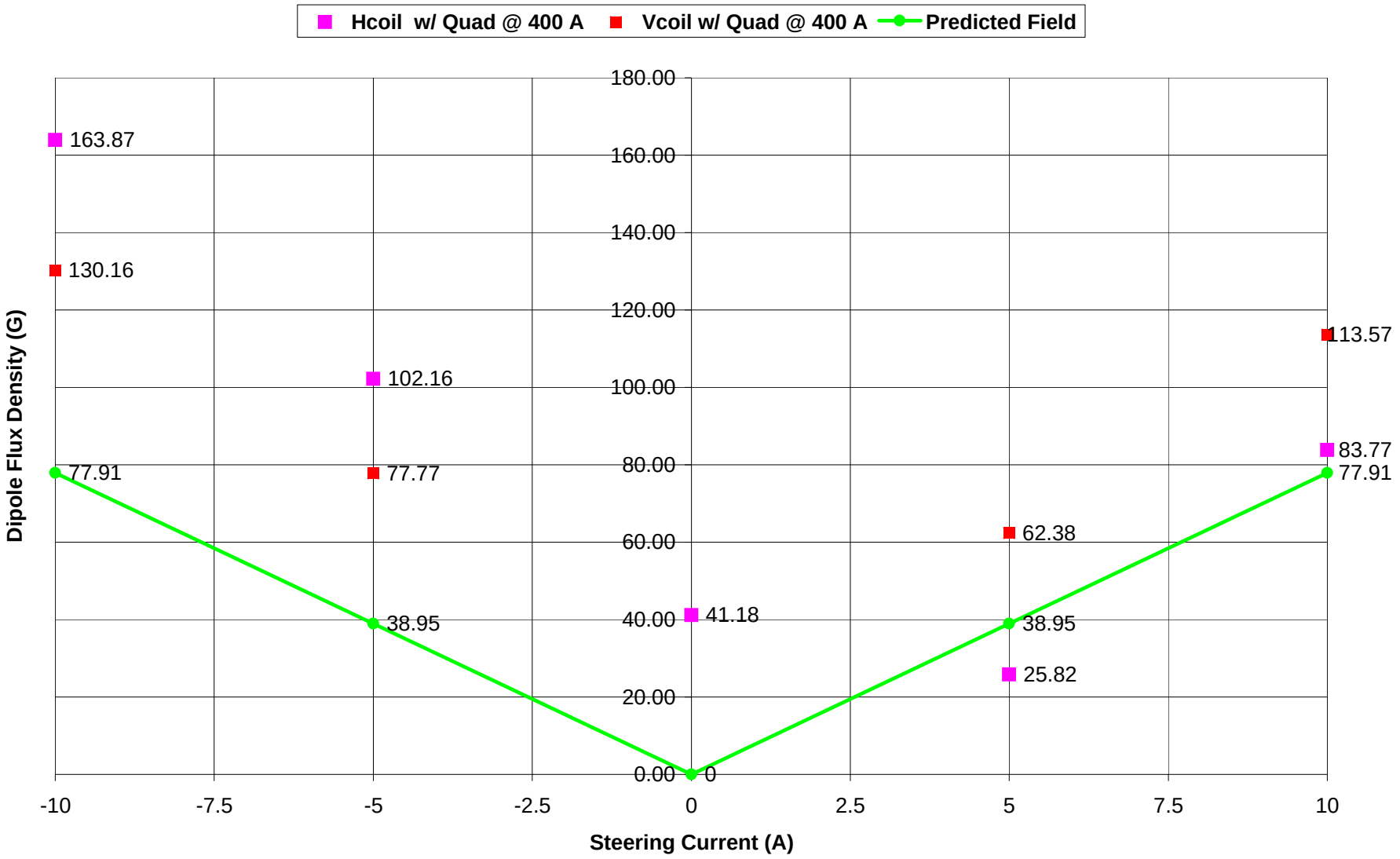

GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.52E-03
4.50E-03
4.48E-03
4.46E-03
4.44E-03
4.42E-03
4.40E-03
4.38E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.765	381.187	0.952967	1.85162
0				
50				
100				
150	0.6679	142.9078	0.952719	0.700554
200				
250	1.109	238.7103	0.954841	1.160981
300				
350	1.549	334.2739	0.955068	1.621407
400	1.765	381.187	0.952967	1.85162
450	1.978	427.4484	0.949885	2.081833
400	1.773	382.9245	0.957311	1.85162
350	1.556	335.7942	0.959412	1.621407
300	1.337	288.2296	0.960765	1.391194
250	1.116	240.2306	0.960923	1.160981
200				
150	0.6719	143.7766	0.95851	0.700554
100	0.45	95.5821	0.955821	0.470341
50				
		average =	**95.593%**	

Dipole Field vs. Steering Current



The conditions for each c ase are following.
core length = 0.061 m

data file name	Hcoils (A)	Vcoils (A)	Qcoils (A)	c1	B1 (G)	B1 minus offset	c2
Q10_21.mpl	0	0	400	2.51E-04	41.18		2.70E-02
Q10_22.mpl	5	0	400	1.58E-04	25.82	67.00	2.70E-02
Q10_23.mpl	10	0	400	5.11E-04	83.77	124.95	2.70E-02
Q10_24.mpl	-5	0	400	6.23E-04	102.16	60.98	2.70E-02
Q10_25.mpl	-10	0	400	1.00E-03	163.87	122.69	2.70E-02
Q10_26.mpl	0	5	400	3.81E-04	62.38	21.20	2.70E-02
Q10_27.mpl	0	10	400	6.93E-04	113.57	72.39	2.70E-02
Q10_28.mpl	0	-5	400	4.74E-04	77.77	118.95	2.70E-02
Q10_29.mpl	0	-10	400	7.94E-04	130.16	171.34	2.70E-02
Q10_30.mpl	5	5	400	3.26E-04	53.41	94.59	2.70E-02
Q10_31.mpl	10	10	400	8.24E-04	135.11	176.30	2.70E-02

Predicted Filed current (A)	η = 80% Field (G)	η = 100% Field (G)
-10	77.91	77.91
-5	38.95	38.95
0	0	0
5	38.95	38.95
10	77.91	77.91

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q9_1.mpl	Q9_2.mpl	Q9_3.mpl	Q9_4.mpl	Q9_5.mpl	Q9_6.mpl	Q9_7.mpl	Q9_8.mpl	Q9_9.mpl	Q9_10.mpl	Q9_11.mpl	Q9_12.mpl	Q9_13.mpl	Q9_14.mpl	Q9_15.mpl	Q9_16.mpl	Q9_17.mpl	Q9_18.mpl	Q9_19.mpl	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		8.51E-05	5.77E-06	1.34E-05	2.20E-05	3.36E-05	4.44E-05	5.36E-05	6.53E-05	7.50E-05	8.47E-05	9.23E-05	8.37E-05	7.35E-05	6.84E-05	5.25E-05	4.40E-05	3.27E-05	2.33E-05	1.35E-05	**1**
cn = 2		1.77E-02	3.55E-05	2.23E-03	4.45E-03	6.67E-03	8.90E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.95E-03	6.74E-03	4.51E-03	2.28E-03	**2**
cn = 3		1.21E-06	2.21E-06	1.46E-06	4.15E-07	1.38E-06	1.96E-06	8.08E-07	1.04E-05	2.54E-06	3.17E-06	1.19E-05	4.79E-06	3.87E-06	5.33E-06	3.71E-06	2.16E-06	1.06E-06	2.23E-07	6.43E-07	**3**
cn = 4		3.26E-06	1.98E-06	1.02E-06	2.13E-06	8.15E-07	1.16E-06	8.15E-07	1.03E-05	7.45E-21	9.00E-07	1.16E-05	6.52E-07	1.39E-06	5.67E-06	2.87E-06	7.57E-07	2.02E-07	1.71E-06	2.37E-07	**4**
cn = 5		2.44E-06	9.19E-07	5.82E-07	2.50E-06	8.70E-07	2.56E-06	8.24E-07	1.01E-05	5.82E-07	5.03E-07	1.21E-05	1.28E-06	2.94E-06	6.69E-06	2.64E-06	9.42E-07	5.82E-07	1.32E-06	5.03E-07	**5**
cn = 6		2.03E-05	1.00E-06	1.43E-06	5.66E-06	5.75E-06	7.08E-06	1.26E-05	1.30E-05	1.53E-05	1.74E-05	1.59E-05	1.65E-05	1.48E-05	1.26E-05	7.95E-06	7.66E-06	5.89E-06	5.41E-06	1.97E-06	**6**
cn = 7		5.85E-07	2.69E-06	1.07E-06	1.46E-06	8.52E-07	1.33E-06	1.11E-06	9.15E-06	1.94E-06	5.22E-07	1.09E-05	1.76E-06	1.46E-06	4.55E-06	1.78E-06	1.06E-06	2.28E-06	4.54E-07	1.32E-06	**7**
cn = 8		2.84E-06	5.89E-07	9.72E-07	2.02E-06	2.19E-06	2.21E-06	9.60E-07	1.07E-05	1.00E-06	1.88E-06	9.28E-06	1.55E-06	3.10E-07	5.92E-06	2.57E-06	1.54E-06	6.59E-07	6.19E-07	1.91E-07	**8**
cn = 9		1.66E-06	2.99E-06	2.80E-07	1.24E-06	1.25E-06	1.69E-06	2.12E-06	1.04E-05	8.61E-07	5.93E-07	9.18E-06	9.38E-07	1.32E-06	4.33E-06	1.91E-06	9.87E-07	3.96E-07	1.53E-06	8.10E-07	**9**
cn = 10		1.40E-06	1.04E-06	4.65E-07	9.31E-07	1.92E-06	9.31E-07	1.86E-06	1.03E-05	1.04E-06	1.04E-06	8.85E-06	1.04E-06	1.73E-19	4.39E-06	1.68E-06	2.94E-06	4.65E-07	1.97E-06	1.04E-06	**10**
cn = 11		1.14E-06	2.61E-07	4.20E-07	1.55E-06	1.16E-06	1.27E-06	3.73E-07	8.12E-06	2.07E-06	1.25E-06	1.08E-05	2.08E-06	1.26E-06	4.10E-06	2.14E-06	1.64E-06	1.11E-06	1.73E-06	1.40E-06	**11**
cn = 12		1.29E-06	7.34E-07	1.23E-06	1.48E-06	9.24E-07	2.24E-06	9.24E-07	7.76E-06	5.79E-20	1.61E-06	7.43E-06	1.39E-06	1.83E-06	5.09E-06	2.25E-06	1.92E-06	1.13E-06	5.32E-07	2.14E-06	**12**
cn = 13		1.55E-06	9.33E-08	1.30E-06	6.00E-07	6.94E-07	8.18E-07	2.20E-06	7.01E-06	1.73E-06	2.21E-06	8.17E-06	2.43E-07	8.47E-07	4.04E-06	2.09E-06	1.09E-06	1.88E-07	7.90E-07	1.50E-06	**13**
cn = 14		2.76E-06	7.59E-07	7.34E-07	1.33E-06	1.88E-06	2.47E-06	9.38E-07	7.26E-06	2.14E-06	4.35E-07	9.21E-06	9.94E-07	1.83E-06	2.95E-06	2.13E-06	4.45E-07	9.76E-07	4.08E-07	1.48E-06	**14**
cn = 15		9.84E-07	1.48E-06	1.37E-06	2.65E-06	6.68E-07	1.97E-06	1.94E-06	6.13E-06	1.37E-06	3.86E-07	7.69E-06	1.87E-06	9.33E-07	5.68E-06	1.25E-06	1.75E-06	1.37E-06	1.77E-06	3.86E-07	**15**
cn = 16		1.71E-06	7.10E-07	1.07E-06	1.28E-06	1.05E-06	1.21E-06	1.64E-06	7.54E-06	7.47E-07	6.37E-07	7.03E-06	1.61E-06	6.04E-07	4.01E-06	1.22E-06	2.71E-07	2.22E-06	1.21E-06	9.78E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	Q2_1.dat	400
Q9_1.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.02%	0.01%	0.11%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.76%**	Q2_2.dat	0
Q9_2.mpl	**0**	3.55E-05	3.55E-03	6.22%	5.58%	2.59%	2.83%	7.58%	1.66%	8.42%	2.93%	0.74%	2.07%	0.26%	2.14%	4.16%	2.00%	**50.82%**	Q2_3.dat	50
Q9_3.mpl	**50**	2.23E-03	2.23E-01	0.07%	0.05%	0.03%	0.06%	0.05%	0.04%	0.01%	0.02%	0.02%	0.06%	0.06%	0.03%	0.06%	0.05%	**99.40%**	Q2_4.dat	100
Q9_4.mpl	**100**	4.45E-03	4.45E-01	0.01%	0.05%	0.06%	0.13%	0.03%	0.05%	0.03%	0.02%	0.03%	0.03%	0.01%	0.03%	0.06%	0.03%	**99.43%**	Q2_5.dat	150
Q9_5.mpl	**150**	6.67E-03	6.67E-01	0.02%	0.01%	0.01%	0.09%	0.01%	0.03%	0.02%	0.03%	0.02%	0.01%	0.01%	0.03%	0.01%	0.02%	**99.68%**	Q2_6.dat	200
Q9_6.mpl	**200**	8.90E-03	8.90E-01	0.02%	0.01%	0.03%	0.08%	0.01%	0.02%	0.02%	0.01%	0.01%	0.03%	0.01%	0.03%	0.02%	0.01%	**99.68%**	Q2_7.dat	250
Q9_7.mpl	**250**	1.11E-02	1.11E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	**99.74%**	Q2_8.dat	300
Q9_8.mpl	**300**	1.33E-02	1.33E+00	0.08%	0.08%	0.08%	0.10%	0.07%	0.08%	0.08%	0.08%	0.06%	0.06%	0.05%	0.05%	0.05%	0.06%	**99.04%**	Q2_9.dat	350
Q9_9.mpl	**350**	1.55E-02	1.55E+00	0.02%	0.00%	0.00%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	**99.80%**	Q2_10.dat	400
Q9_10.mpl	**400**	1.766E-02	1.77E+00	0.02%	0.01%	0.00%	0.10%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	**99.82%**	Q2_11.dat	450
Q9_11.mpl	**450**	1.98E-02	1.98E+00	0.06%	0.06%	0.06%	0.08%	0.06%	0.05%	0.05%	0.04%	0.05%	0.04%	0.04%	0.05%	0.04%	0.04%	**99.29%**	Q2_12.dat	400
Q9_12.mpl	**400**	1.772E-02	1.772E+00	0.03%	0.00%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.79%**	Q2_13.dat	350
Q9_13.mpl	**350**	1.56E-02	1.56E+00	0.02%	0.01%	0.02%	0.10%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.79%**	Q2_14.dat	300
Q9_14.mpl	**300**	1.34E-02	1.34E+00	0.04%	0.04%	0.05%	0.09%	0.03%	0.04%	0.03%	0.03%	0.03%	0.04%	0.03%	0.02%	0.04%	0.03%	**99.44%**	Q2_15.dat	250
Q9_15.mpl	**250**	1.12E-02	1.12E+00	0.03%	0.03%	0.02%	0.07%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%	0.01%	**99.68%**	Q2_16.dat	200
Q9_16.mpl	**200**	8.95E-03	8.95E-01	0.02%	0.01%	0.01%	0.09%	0.01%	0.02%	0.01%	0.03%	0.02%	0.02%	0.01%	0.00%	0.02%	0.00%	**99.72%**	Q2_17.dat	150
Q9_17.mpl	**150**	6.74E-03	6.74E-01	0.02%	0.00%	0.01%	0.09%	0.03%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.03%	**99.73%**	Q2_18.dat	100
Q9_18.mpl	**100**	4.51E-03	4.51E-01	0.00%	0.04%	0.03%	0.12%	0.01%	0.01%	0.03%	0.04%	0.04%	0.01%	0.02%	0.01%	0.04%	0.03%	**99.56%**	Q2_19.dat	50
Q9_19.mpl	**50**	2.28E-03	2.28E-01	0.03%	0.01%	0.02%	0.09%	0.06%	0.01%	0.04%	0.05%	0.06%	0.09%	0.07%	0.06%	0.02%	0.04%	**99.36%**		
																	average =	**96.73%**		
			Average Da	0.35%	0.32%	0.16%	0.24%	0.42%	0.11%	0.46%	0.18%	0.06%	0.13%	0.03%	0.13%	0.24%	0.13%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q9_1.mpl	400	1.766E-02	1.7660	0.01%	0.02%	0.01%	0.11%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	99.76%	0.00442	400
Q9_2.mpl	0																			0
Q9_3.mpl	50																			50
Q9_4.mpl	100																			100
Q9_5.mpl	150	6.673E-03	0.6673	0.02%	0.01%	0.01%	0.09%	0.01%	0.03%	0.02%	0.03%	0.02%	0.01%	0.01%	0.03%	0.01%	0.02%	99.68%	0.00445	150
Q9_6.mpl	200	8.904E-03	0.8904	0.02%	0.01%	0.03%	0.08%	0.01%	0.02%	0.02%	0.01%	0.01%	0.03%	0.01%	0.03%	0.02%	0.01%	99.68%	0.00445	200
Q9_7.mpl	250	1.110E-02	1.1100	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	99.74%	0.00444	250
Q9_8.mpl	300																			300
Q9_9.mpl	350	1.550E-02	1.5500	0.02%	0.00%	0.00%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	99.80%	0.00443	350
Q9_10.mpl	400	1.766E-02	1.7660	0.02%	0.01%	0.00%	0.10%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	99.82%	0.00442	400
Q9_11.mpl	450																			450
Q9_12.mpl	400	1.772E-02	1.7720	0.03%	0.00%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	99.79%	0.00443	400
Q9_13.mpl	350	1.555E-02	1.5550	0.02%	0.01%	0.02%	0.10%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	99.79%	0.00444	350
Q9_14.mpl	300																			300
Q9_15.mpl	250	1.117E-02	1.1170	0.03%	0.03%	0.02%	0.07%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%	0.01%	99.68%	0.00447	250
Q9_16.mpl	200	8.954E-03	0.8954	0.02%	0.01%	0.01%	0.09%	0.01%	0.02%	0.01%	0.03%	0.02%	0.02%	0.01%	0.00%	0.02%	0.00%	99.72%	0.00448	200
Q9_17.mpl	150	6.735E-03	0.6735	0.02%	0.00%	0.01%	0.09%	0.03%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.02%	0.03%	99.73%	0.00449	150
Q9_18.mpl	100																			100
Q9_19.mpl	50																			50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.74%
	Average Data:	**0.02%**	**0.01%**	**0.01%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

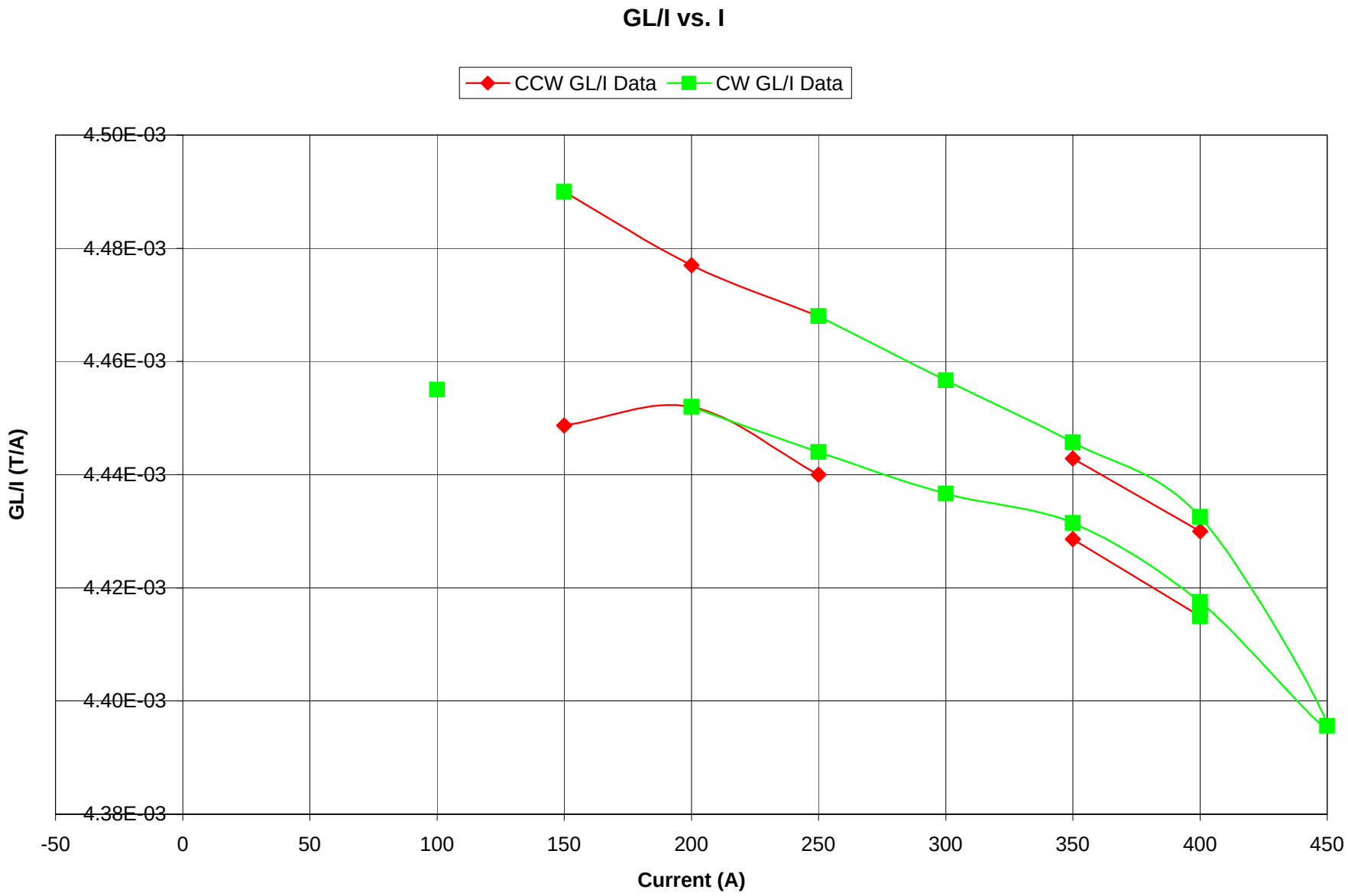
magnet 25B1346 B-1 **Rcoil = 0.01 m**

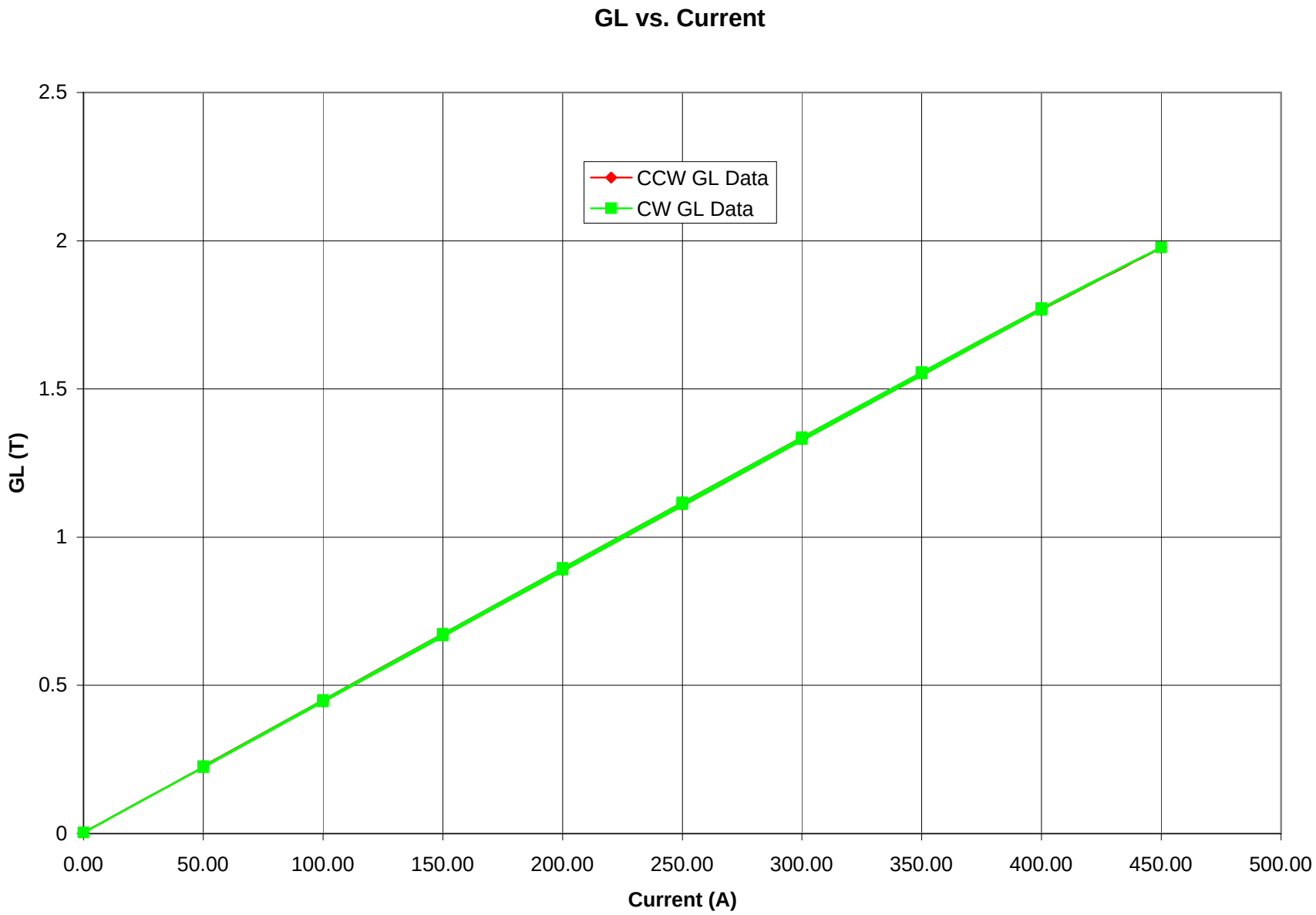
Raw CW Data	**data file**	**Q9_1.mpl**	**Q9_2.mpl**	**Q9_3.mpl**	**Q9_4.mpl**	**Q9_5.mpl**	**Q9_6.mpl**	**Q9_7.mpl**	**Q9_8.mpl**	**Q9_9.mpl**	**Q9_10.mpl**	**Q9_11.mpl**	**Q9_12.mpl**	**Q9_13.mpl**	**Q9_14.mpl**	**Q9_15.mpl**	**Q9_16.mpl**	**Q9_17.mpl**	**Q9_18.mpl**	**Q9_19.mpl**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		8.61E-05	5.65E-06	1.30E-05	2.22E-05	3.30E-05	4.45E-05	5.40E-05	6.46E-05	7.42E-05	8.42E-05	9.48E-05	8.28E-05	7.26E-05	6.28E-05	5.31E-05	4.55E-05	3.27E-05	2.26E-05	1.43E-05	**1**
cn = 2		1.77E-02	3.68E-05	2.24E-03	4.46E-03	6.67E-03	8.90E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.96E-03	6.74E-03	4.51E-03	2.28E-03	**2**
cn = 3		4.31E-06	3.15E-06	1.37E-06	5.93E-07	2.39E-06	1.29E-06	2.44E-06	3.17E-06	2.86E-06	1.86E-06	1.55E-06	1.97E-06	2.48E-06	2.92E-06	5.28E-07	1.94E-06	1.59E-06	3.76E-06	1.99E-06	**3**
cn = 4		3.47E-06	1.01E-06	1.41E-06	6.33E-07	2.28E-06	3.26E-07	1.84E-06	2.01E-06	1.52E-06	1.02E-06	1.63E-06	1.43E-06	1.06E-06	1.70E-06	3.61E-06	1.22E-06	3.26E-07	2.20E-06	2.45E-06	**4**
cn = 5		2.97E-06	3.18E-06	1.92E-06	1.37E-06	1.15E-06	1.12E-06	2.13E-06	1.37E-06	2.08E-07	9.19E-07	1.97E-06	1.78E-06	3.85E-07	2.13E-06	1.07E-06	2.73E-06	8.70E-07	1.33E-06	2.52E-06	**5**
cn = 6		1.75E-05	1.79E-06	3.49E-06	3.45E-06	6.75E-06	8.18E-06	1.10E-05	1.24E-05	1.43E-05	1.79E-05	2.06E-05	1.87E-05	1.46E-05	1.20E-05	1.05E-05	7.78E-06	6.22E-06	3.91E-06	1.33E-06	**6**
cn = 7		1.07E-06	6.54E-07	8.70E-07	1.07E-06	2.69E-06	6.00E-07	5.92E-07	1.50E-06	7.72E-07	1.37E-06	1.33E-06	1.89E-06	2.19E-07	1.39E-06	1.23E-06	1.50E-06	1.57E-06	5.15E-06	1.30E-06	**7**
cn = 8		1.27E-06	1.31E-06	1.25E-06	4.78E-07	1.27E-06	8.55E-07	1.08E-06	1.62E-06	1.53E-06	1.18E-07	6.19E-07	7.73E-07	1.18E-06	2.19E-06	7.18E-07	2.38E-06	2.13E-06	1.92E-06	7.73E-07	**8**
cn = 9		1.63E-06	2.22E-06	1.22E-06	8.47E-07	1.42E-06	1.37E-06	6.78E-07	1.79E-06	2.31E-06	7.67E-07	4.27E-07	7.60E-07	1.34E-06	2.68E-06	1.03E-06	1.04E-06	9.02E-07	2.01E-06	1.10E-06	**9**
cn = 10		1.32E-06	1.92E-06	1.92E-06	6.58E-07	3.29E-06	4.65E-07	2.63E-06	2.71E-06	2.98E-06	1.04E-06	6.58E-07	1.47E-06	6.58E-07	1.86E-06	1.04E-06	1.04E-06	1.68E-06	2.94E-06	9.31E-07	**10**
cn = 11		1.50E-06	1.45E-06	5.39E-07	1.54E-06	1.68E-06	1.59E-06	1.93E-06	2.15E-06	1.04E-06	1.63E-06	2.47E-06	1.54E-06	1.56E-06	7.70E-07	8.22E-07	5.46E-07	1.67E-06	2.67E-06	2.12E-06	**11**
cn = 12		1.34E-06	1.89E-06	2.82E-06	2.00E-06	1.74E-06	6.96E-07	4.10E-07	1.01E-06	8.34E-07	1.23E-06	1.85E-06	1.33E-06	8.60E-07	1.53E-06	1.43E-06	1.19E-06	6.96E-07	2.64E-06	5.16E-07	**12**
cn = 13		7.37E-07	1.29E-06	8.74E-07	1.71E-06	1.43E-06	7.82E-07	1.63E-06	8.04E-07	2.71E-07	1.40E-06	1.35E-06	9.54E-07	6.15E-07	1.68E-06	2.06E-06	2.13E-06	8.69E-07	2.43E-06	1.24E-06	**13**
cn = 14		6.84E-07	2.45E-06	1.54E-06	1.15E-06	1.37E-06	6.53E-07	1.45E-06	3.23E-07	1.82E-06	7.44E-07	3.50E-07	1.56E-06	4.03E-07	2.29E-06	1.32E-06	3.33E-06	2.05E-06	1.84E-06	1.17E-06	**14**
cn = 15		3.91E-07	9.47E-07	7.05E-07	8.26E-07	2.14E-06	8.62E-07	1.64E-06	8.26E-07	9.31E-07	1.48E-06	1.37E-06	1.51E-06	7.12E-07	1.64E-06	1.79E-06	1.36E-06	6.68E-07	2.47E-06	2.14E-06	**15**
cn = 16		2.49E-06	3.02E-05	4.62E-07	3.56E-07	1.24E-06	8.65E-06	7.25E-07	1.53E-06	2.57E-06	1.30E-06	1.64E-06	2.04E-06	7.25E-07	1.53E-06	8.40E-06	1.64E-05	1.86E-06	1.53E-06	1.64E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q9_1.mpl	**400**	1.77E-02	1.77E+00	0.02%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	**99.77%**
Q9_2.mpl	**0**	3.68E-05	3.68E-03	8.56%	2.75%	8.63%	4.87%	1.78%	3.56%	6.02%	5.21%	3.94%	5.14%	3.51%	6.65%	2.57%	82.12%	**-45.31%**
Q9_3.mpl	**50**	2.24E-03	2.24E-01	0.06%	0.06%	0.09%	0.16%	0.04%	0.06%	0.05%	0.09%	0.02%	0.13%	0.04%	0.07%	0.03%	0.02%	**99.09%**
Q9_4.mpl	**100**	4.46E-03	4.46E-01	0.01%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.01%	0.03%	0.04%	0.04%	0.03%	0.02%	0.01%	**99.63%**
Q9_5.mpl	**150**	6.67E-03	6.67E-01	0.04%	0.03%	0.02%	0.10%	0.04%	0.02%	0.02%	0.05%	0.03%	0.03%	0.02%	0.02%	0.03%	0.02%	**99.54%**
Q9_6.mpl	**200**	8.90E-03	8.90E-01	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.10%	**99.69%**
Q9_7.mpl	**250**	1.11E-02	1.11E+00	0.02%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.73%**
Q9_8.mpl	**300**	1.33E-02	1.33E+00	0.02%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.75%**
Q9_9.mpl	**350**	1.55E-02	1.55E+00	0.02%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	**99.78%**
Q9_10.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.81%**
Q9_11.mpl	**450**	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.81%**
Q9_12.mpl	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.79%**
Q9_13.mpl	**350**	1.56E-02	1.56E+00	0.02%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	**99.83%**
Q9_14.mpl	**300**	1.34E-02	1.34E+00	0.02%	0.01%	0.02%	0.09%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.73%**
Q9_15.mpl	**250**	1.12E-02	1.12E+00	0.00%	0.03%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.08%	**99.68%**
Q9_16.mpl	**200**	8.96E-03	8.96E-01	0.02%	0.01%	0.03%	0.09%	0.02%	0.03%	0.01%	0.01%	0.01%	0.01%	0.02%	0.04%	0.02%	0.18%	**99.50%**
Q9_17.mpl	**150**	6.74E-03	6.74E-01	0.02%	0.00%	0.01%	0.09%	0.02%	0.03%	0.01%	0.02%	0.02%	0.01%	0.01%	0.03%	0.01%	0.03%	**99.66%**
Q9_18.mpl	**100**	4.51E-03	4.51E-01	0.08%	0.05%	0.03%	0.09%	0.11%	0.04%	0.04%	0.07%	0.06%	0.06%	0.05%	0.04%	0.05%	0.03%	**99.18%**
Q9_19.mpl	**50**	2.28E-03	2.28E-01	0.09%	0.11%	0.11%	0.06%	0.06%	0.03%	0.05%	0.04%	0.09%	0.02%	0.05%	0.05%	0.09%	0.07%	**99.07%**
																	average =	**91.11%**
			Average Da	0.48%	0.17%	0.48%	0.35%	0.11%	0.20%	0.33%	0.30%	0.23%	0.29%	0.20%	0.37%	0.15%	4.36%	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q9_1.mpl	400	1.77E-02	1.77E+00	0.02%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.01%	99.77%	0.00442	400
Q9_2.mpl	0																			0
Q9_3.mpl	50																			50
Q9_4.mpl	100	4.46E-03	4.46E-01	0.01%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.01%	0.03%	0.04%	0.04%	0.03%	0.02%	0.01%	99.63%	0.00446	100
Q9_5.mpl	150																			150
Q9_6.mpl	200	8.90E-03	8.90E-01	0.01%	0.00%	0.01%	0.09%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.10%	99.69%	0.00445	200
Q9_7.mpl	250	1.11E-02	1.11E+00	0.02%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.02%	0.02%	0.00%	0.01%	0.01%	0.01%	0.01%	99.73%	0.00444	250
Q9_8.mpl	300	1.33E-02	1.33E+00	0.02%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	99.75%	0.00444	300
Q9_9.mpl	350	1.55E-02	1.55E+00	0.02%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.02%	99.78%	0.00443	350
Q9_10.mpl	400	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	99.81%	0.00442	400
Q9_11.mpl	450	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	99.81%	0.00440	450
Q9_12.mpl	400	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.79%	0.00443	400
Q9_13.mpl	350	1.56E-02	1.56E+00	0.02%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	99.83%	0.00445	350
Q9_14.mpl	300	1.34E-02	1.34E+00	0.02%	0.01%	0.02%	0.09%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	99.73%	0.00446	300
Q9_15.mpl	250	1.12E-02	1.12E+00	0.00%	0.03%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.08%	99.68%	0.00447	250
Q9_16.mpl	200																			200
Q9_17.mpl	150	6.74E-03	6.74E-01	0.02%	0.00%	0.01%	0.09%	0.02%	0.03%	0.01%	0.02%	0.02%	0.01%	0.01%	0.03%	0.01%	0.03%	99.66%	0.00449	150
Q9_18.mpl	100																			100
Q9_19.mpl	50																			50

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.74%**
Average Data	**0.02%**	**0.01%**	**0.01%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.02%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.50E-03
4.48E-03
4.46E-03
4.44E-03
4.42E-03
4.40E-03
4.38E-03
GL/I (T/A)
-50
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.766	381.4041	0.95351	1.85162
0				
50				
100				
150	0.6673	142.7775	0.95185	0.700554
200	0.8904	191.2326	0.956163	0.930768
250	1.11	238.9275	0.95571	1.160981
300				
350	1.55	334.4911	0.955689	1.621407
400	1.766	381.4041	0.95351	1.85162
450				
400	1.772	382.7073	0.956768	1.85162
350	1.555	335.5771	0.958792	1.621407
300				
250				
200	0.8954	192.3185	0.961593	0.930768
150	0.6735	144.1241	0.960827	0.700554
100				
50				
		average =	**95.644%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q2_1.dat	Q2_2.dat	Q2_3.dat	Q2_4.dat	Q2_5.dat	Q2_6.dat	Q2_7.dat	Q2_8.dat	Q2_9.dat	Q2_10.dat	Q2_11.dat	Q2_12.dat	Q2_13.dat	Q2_14.dat	Q2_15.dat	Q2_16.dat	Q2_17.dat	Q2_18.dat	Q2_19.dat	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		3.23E-04	2.90E-06	4.26E-05	7.98E-05	1.22E-04	1.59E-04	2.01E-04	2.38E-04	2.89E-04	3.24E-04	3.67E-04	3.27E-04	2.88E-04	2.51E-04	2.08E-04	1.65E-04	1.25E-04	8.58E-05	5.02E-05	**1**
cn = 2		1.77E-02	3.68E-05	2.23E-03	4.44E-03	6.67E-03	8.88E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.94E-03	6.71E-03	4.50E-03	2.28E-03	**2**
cn = 3		1.07E-06	6.68E-07	1.52E-05	1.45E-06	1.28E-06	1.64E-06	2.64E-06	3.12E-06	3.59E-06	2.11E-06	2.67E-06	4.44E-06	5.76E-06	2.17E-05	1.42E-06	3.64E-07	2.34E-06	1.63E-06	4.06E-06	**3**
cn = 4		1.00E-06	5.28E-07	2.24E-05	1.55E-06	1.00E-06	2.93E-06	2.68E-06	2.31E-06	1.05E-06	2.45E-06	3.07E-06	4.93E-06	3.85E-06	2.14E-05	1.53E-06	2.64E-06	1.33E-06	7.01E-07	1.95E-06	**4**
cn = 5		1.99E-06	5.03E-07	2.21E-05	2.39E-06	4.66E-07	5.44E-07	2.64E-06	9.42E-07	2.48E-06	2.44E-06	5.44E-07	5.96E-06	7.62E-06	2.30E-05	4.66E-07	1.59E-06	2.35E-06	1.03E-06	1.86E-06	**5**
cn = 6		1.73E-05	1.24E-06	2.16E-05	4.35E-06	6.63E-06	7.16E-06	1.10E-05	1.38E-05	1.56E-05	1.85E-05	2.05E-05	1.57E-05	1.36E-05	2.05E-05	1.13E-05	1.05E-05	6.48E-06	4.16E-06	3.15E-06	**6**
cn = 7		1.53E-06	8.10E-07	2.25E-05	4.99E-07	1.69E-06	1.27E-06	1.76E-06	1.74E-06	2.13E-06	1.41E-06	8.35E-07	5.31E-06	3.06E-06	2.08E-05	1.61E-06	1.37E-06	5.61E-07	1.70E-06	1.82E-06	**7**
cn = 8		4.78E-07	5.94E-07	2.33E-05	7.73E-07	1.73E-06	1.03E-06	8.45E-07	1.93E-06	6.92E-07	1.45E-06	4.78E-07	5.54E-06	4.72E-06	1.96E-05	1.31E-06	1.62E-06	1.57E-06	6.65E-07	1.95E-06	**8**
cn = 9		1.01E-06	7.39E-07	2.07E-05	1.62E-06	2.10E-07	1.52E-06	6.46E-07	2.10E-06	1.10E-06	2.65E-07	2.46E-06	4.17E-06	4.06E-06	1.92E-05	7.37E-07	1.28E-06	1.47E-06	4.40E-07	3.86E-07	**9**
cn = 10		9.31E-07	1.04E-06	2.20E-05	4.65E-07	1.40E-06	3.47E-19	9.31E-07	1.32E-06	2.51E-06	1.04E-06	1.32E-06	4.41E-06	5.76E-06	2.09E-05	4.65E-07	9.31E-07	1.40E-06	1.04E-06	1.97E-06	**10**
cn = 11		1.57E-06	2.60E-06	1.86E-05	1.02E-06	1.79E-06	2.80E-06	7.94E-07	1.59E-06	1.81E-06	1.72E-06	3.33E-07	5.68E-06	5.69E-06	1.84E-05	1.98E-06	7.38E-07	1.25E-06	1.27E-06	2.41E-06	**11**
cn = 12		5.06E-07	4.30E-07	1.93E-05	1.09E-06	5.06E-07	1.07E-06	4.72E-07	1.21E-06	2.47E-06	5.16E-07	1.31E-06	4.07E-06	4.06E-06	1.60E-05	2.30E-06	1.14E-06	1.26E-06	1.07E-06	1.45E-06	**12**
cn = 13		1.08E-06	2.58E-06	1.87E-05	1.37E-06	4.09E-07	6.69E-07	9.41E-07	2.97E-06	1.06E-06	7.14E-07	1.04E-06	2.84E-06	5.02E-06	1.56E-05	8.48E-07	7.30E-07	1.58E-06	1.73E-06	8.81E-07	**13**
cn = 14		2.09E-06	5.23E-07	1.72E-05	1.14E-06	1.24E-06	1.69E-06	1.09E-06	1.79E-06	1.13E-06	2.18E-06	7.92E-07	3.10E-06	5.02E-06	1.60E-05	2.50E-07	8.16E-07	1.77E-06	7.22E-07	1.76E-06	**14**
cn = 15		8.04E-07	3.86E-07	1.70E-05	1.30E-06	2.08E-06	1.01E-06	1.56E-06	1.75E-06	5.01E-07	9.84E-07	1.01E-06	2.65E-06	3.86E-06	1.55E-05	2.08E-06	1.22E-06	1.55E-06	1.21E-06	1.82E-06	**15**
cn = 16		1.30E-06	2.66E-06	1.54E-05	8.03E-07	8.47E-07	2.00E-06	3.17E-06	1.07E-06	1.35E-06	3.10E-06	1.30E-06	3.93E-06	4.31E-06	1.59E-05	1.43E-07	4.62E-07	6.62E-07	9.33E-07	2.36E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q2_1.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%			
Q2_2.dat	**0**	3.68E-05	3.68E-03	1.81%	1.43%	1.37%	3.37%	2.20%	1.61%	2.01%	2.83%	7.08%	1.17%	7.01%	1.42%	1.05%	7.22%	**58.43%**		
Q2_3.dat	**50**	2.23E-03	2.23E-01	0.68%	1.01%	0.99%	0.97%	1.01%	1.05%	0.93%	0.98%	0.83%	0.87%	0.84%	0.77%	0.76%	0.69%	**87.62%**		
Q2_4.dat	**100**	4.44E-03	4.44E-01	0.03%	0.03%	0.05%	0.10%	0.01%	0.02%	0.04%	0.01%	0.02%	0.02%	0.03%	0.03%	0.03%	0.02%	**99.55%**		
Q2_5.dat	**150**	6.67E-03	6.67E-01	0.02%	0.02%	0.01%	0.10%	0.03%	0.03%	0.00%	0.02%	0.03%	0.01%	0.01%	0.02%	0.03%	0.01%	**99.68%**		
Q2_6.dat	**200**	8.88E-03	8.88E-01	0.02%	0.03%	0.01%	0.08%	0.01%	0.01%	0.02%	0.00%	0.03%	0.01%	0.01%	0.02%	0.01%	0.02%	**99.71%**		
Q2_7.dat	**250**	1.11E-02	1.11E+00	0.02%	0.02%	0.02%	0.10%	0.02%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.03%	**99.72%**		
Q2_8.dat	**300**	1.33E-02	1.33E+00	0.02%	0.02%	0.01%	0.10%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	**99.72%**		
Q2_9.dat	**350**	1.55E-02	1.55E+00	0.02%	0.01%	0.02%	0.10%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	**99.76%**		
Q2_10.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	**99.78%**		
Q2_11.dat	**450**	1.98E-02	1.98E+00	0.01%	0.02%	0.00%	0.10%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.81%**		
Q2_12.dat	**400**	1.77E-02	1.77E+00	0.03%	0.03%	0.03%	0.09%	0.03%	0.03%	0.02%	0.02%	0.03%	0.02%	0.02%	0.02%	0.01%	0.02%	**99.59%**		
Q2_13.dat	**350**	1.56E-02	1.56E+00	0.04%	0.02%	0.05%	0.09%	0.02%	0.03%	0.03%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.03%	**99.51%**		
Q2_14.dat	**300**	1.34E-02	1.34E+00	0.16%	0.16%	0.17%	0.15%	0.16%	0.15%	0.14%	0.16%	0.14%	0.12%	0.12%	0.12%	0.12%	0.12%	**98.02%**		
Q2_15.dat	**250**	1.12E-02	1.12E+00	0.01%	0.01%	0.00%	0.10%	0.01%	0.01%	0.01%	0.00%	0.02%	0.02%	0.01%	0.00%	0.02%	0.00%	**99.76%**		
Q2_16.dat	**200**	8.94E-03	8.94E-01	0.00%	0.03%	0.02%	0.12%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.72%**		
Q2_17.dat	**150**	6.71E-03	6.71E-01	0.03%	0.02%	0.03%	0.10%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%	0.02%	0.01%	**99.62%**		
Q2_18.dat	**100**	4.50E-03	4.50E-01	0.04%	0.02%	0.02%	0.09%	0.04%	0.01%	0.01%	0.02%	0.03%	0.02%	0.04%	0.02%	0.03%	0.02%	**99.59%**		
Q2_19.dat	**50**	2.28E-03	2.28E-01	0.18%	0.09%	0.08%	0.14%	0.08%	0.09%	0.02%	0.09%	0.11%	0.06%	0.04%	0.08%	0.08%	0.10%			
																	average =	**96.45%**		
			Average Da	0.17%	0.16%	0.15%	0.32%	0.19%	0.16%	0.17%	0.22%	0.44%	0.13%	0.43%	0.14%	0.12%	0.44%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q2_1.dat	400	1.77E-02	1.7650	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%		0.00441	400
Q2_2.dat	0																			
Q2_3.dat	50																			
Q2_4.dat	100	4.44E-03	0.4440	0.03%	0.03%	0.05%	0.10%	0.01%	0.02%	0.04%	0.01%	0.02%	0.02%	0.03%	0.03%	0.03%	0.02%	99.55%	0.00444	100
Q2_5.dat	150	6.67E-03	0.6668	0.02%	0.02%	0.01%	0.10%	0.03%	0.03%	0.00%	0.02%	0.03%	0.01%	0.01%	0.02%	0.03%	0.01%	99.68%	0.00445	150
Q2_6.dat	200	8.88E-03	0.8883	0.02%	0.03%	0.01%	0.08%	0.01%	0.01%	0.02%	0.00%	0.03%	0.01%	0.01%	0.02%	0.01%	0.02%	99.71%	0.00444	200
Q2_7.dat	250	1.11E-02	1.1090	0.02%	0.02%	0.02%	0.10%	0.02%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.03%	99.72%	0.00444	250
Q2_8.dat	300	1.33E-02	1.3300	0.02%	0.02%	0.01%	0.10%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	99.72%	0.00443	300
Q2_9.dat	350	1.55E-02	1.5480	0.02%	0.01%	0.02%	0.10%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	99.76%	0.00442	350
Q2_10.dat	400	1.77E-02	1.7660	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	99.78%	0.00442	400
Q2_11.dat	450	1.98E-02	1.9780	0.01%	0.02%	0.00%	0.10%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	99.81%	0.00440	450
Q2_12.dat	400	1.77E-02	1.7730	0.03%	0.03%	0.03%	0.09%	0.03%	0.03%	0.02%	0.02%	0.03%	0.02%	0.02%	0.02%	0.01%	0.02%	99.59%	0.00443	400
Q2_13.dat	350	1.56E-02	1.5560	0.04%	0.02%	0.05%	0.09%	0.02%	0.03%	0.03%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.03%	99.51%	0.00445	350
Q2_14.dat	300																			
Q2_15.dat	250	1.12E-02	1.1170	0.01%	0.01%	0.00%	0.10%	0.01%	0.01%	0.01%	0.00%	0.02%	0.02%	0.01%	0.00%	0.02%	0.00%	99.76%	0.00447	250
Q2_16.dat	200	8.94E-03	0.8935	0.00%	0.03%	0.02%	0.12%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.72%	0.00447	200
Q2_17.dat	150	6.71E-03	0.6714	0.03%	0.02%	0.03%	0.10%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%	0.02%	0.01%	99.62%	0.00448	150
Q2_18.dat	100	4.50E-03	0.4502	0.04%	0.02%	0.02%	0.09%	0.04%	0.01%	0.01%	0.02%	0.03%	0.02%	0.04%	0.02%	0.03%	0.02%	99.59%	0.00450	100
Q2_19.dat	50	2.28E-03	0.2277	0.18%	0.09%	0.08%	0.14%	0.08%	0.09%	0.02%	0.09%	0.11%	0.06%	0.04%	0.08%	0.08%	0.10%		0.00455	50

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.68%
	Average Data:	**0.03%**	**0.02%**	**0.02%**	**0.10%**	**0.02%**	**0.02%**	**0.01%**	**0.02%**	**0.02%**	**0.02%**	**0.02%**	**0.02%**	**0.02%**	**0.02%**	

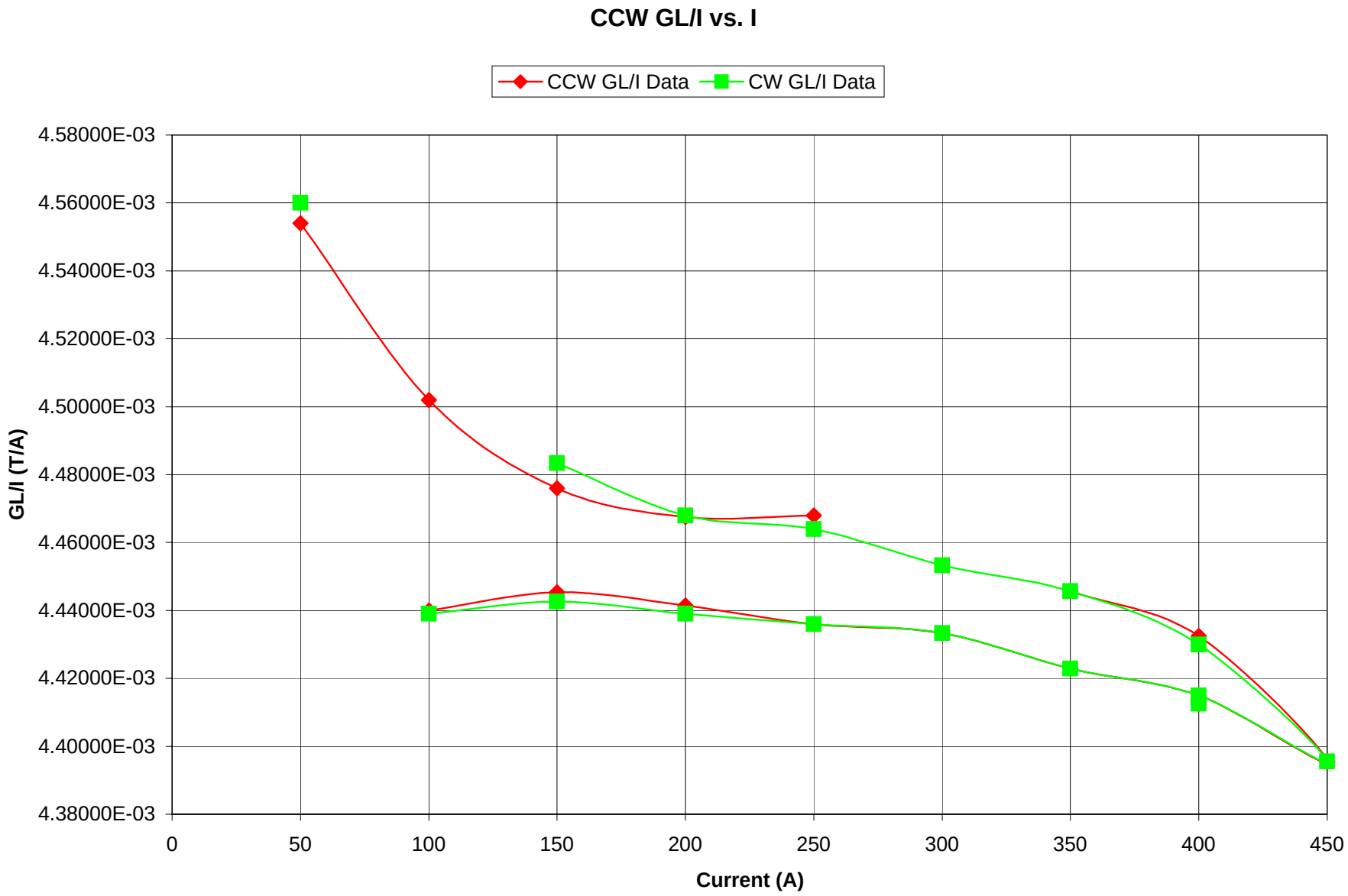
magnet 25B1346 B-1 **Rcoil = 0.01 m**

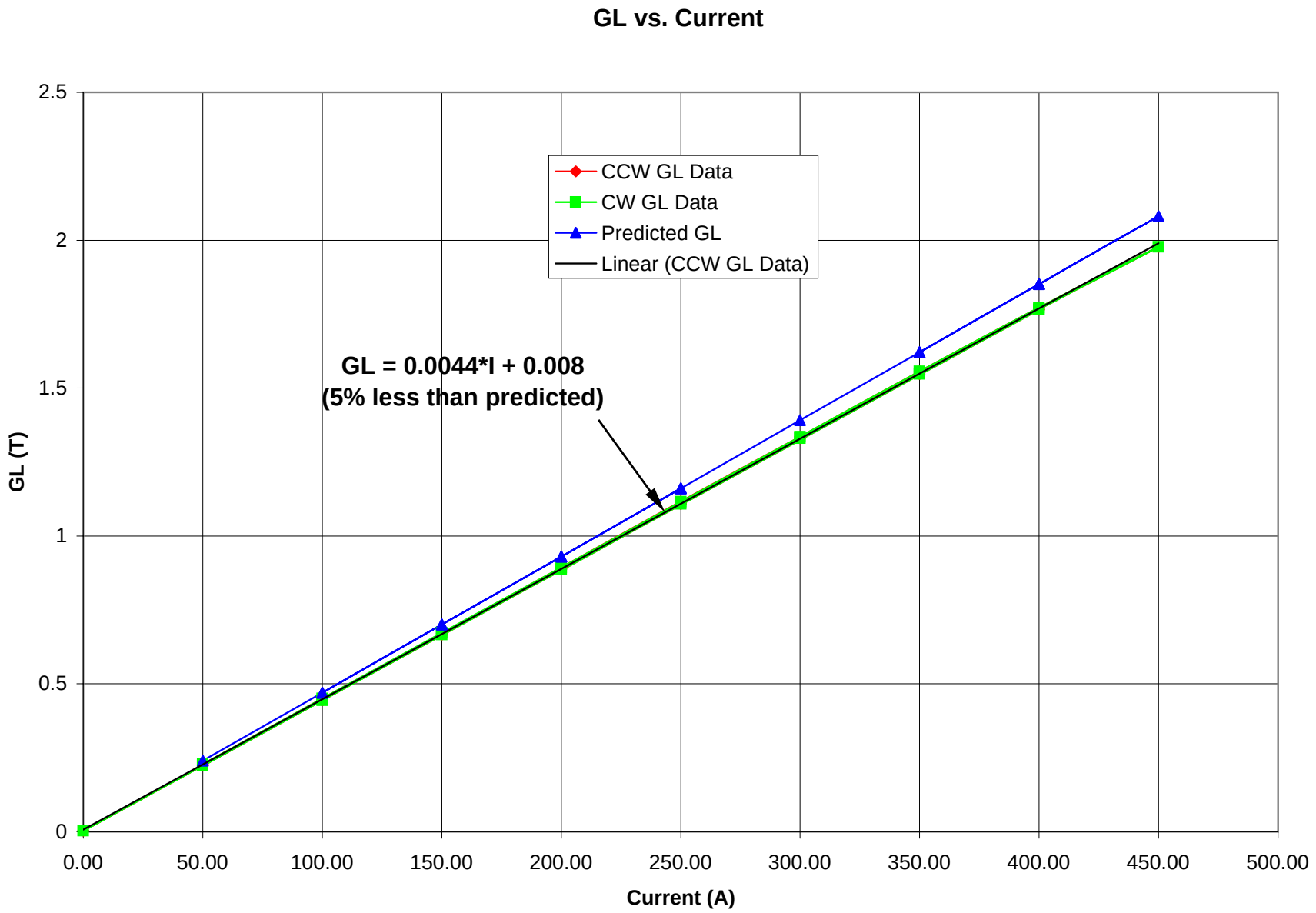
Raw CW Data	**data file**	**Q2_1.dat**	**Q2_2.dat**	**Q2_3.dat**	**Q2_4.dat**	**Q2_5.dat**	**Q2_6.dat**	**Q2_7.dat**	**Q2_8.dat**	**Q2_9.dat**	**Q2_10.dat**	**Q2_11.dat**	**Q2_12.dat**	**Q2_13.dat**	**Q2_14.dat**	**Q2_15.dat**	**Q2_16.dat**	**Q2_17.dat**	**Q2_18.dat**	**Q2_19.dat**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		3.29E-04	6.16E-06	4.43E-05	8.23E-05	1.22E-04	1.63E-04	2.01E-04	2.37E-04	2.85E-04	3.19E-04	3.63E-04	3.27E-04	2.87E-04	2.48E-04	2.07E-04	1.63E-04	1.26E-04	8.40E-05	4.44E-05	**1**
cn = 2		1.77E-02	3.55E-05	2.23E-03	4.44E-03	6.66E-03	8.88E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.94E-03	6.73E-03	4.51E-03	2.28E-03	**2**
cn = 3		3.81E-06	1.29E-06	1.71E-05	2.66E-06	3.13E-06	3.23E-06	1.74E-06	8.03E-07	4.67E-06	1.78E-06	2.57E-06	3.94E-06	2.73E-06	2.28E-06	1.33E-06	2.70E-06	1.22E-06	1.74E-05	1.26E-06	**3**
cn = 4		1.06E-06	1.01E-06	2.07E-05	1.22E-06	3.83E-07	7.01E-07	2.02E-07	2.47E-06	2.13E-06	1.58E-06	2.71E-06	5.03E-07	1.66E-06	8.15E-07	3.11E-07	2.27E-06	1.98E-06	2.18E-05	5.03E-07	**4**
cn = 5		3.40E-06	2.10E-06	2.00E-05	1.78E-06	1.81E-06	2.77E-06	1.37E-06	2.44E-06	1.21E-06	1.86E-06	2.39E-06	2.44E-06	1.81E-06	1.99E-06	8.60E-07	1.92E-06	5.03E-07	2.01E-05	6.66E-07	**5**
cn = 6		1.73E-05	2.23E-06	2.25E-05	4.39E-06	4.81E-06	7.13E-06	1.16E-05	1.31E-05	1.34E-05	1.72E-05	2.18E-05	1.73E-05	1.48E-05	1.26E-05	1.09E-05	8.35E-06	6.52E-06	2.08E-05	2.24E-06	**6**
cn = 7		1.39E-06	1.51E-06	2.11E-05	9.60E-07	2.55E-06	1.60E-06	7.58E-07	9.94E-07	7.11E-07	2.59E-06	1.53E-06	1.45E-06	1.22E-06	1.45E-06	4.45E-07	9.08E-07	9.57E-07	2.08E-05	2.16E-07	**7**
cn = 8		2.62E-06	2.68E-06	2.18E-05	8.89E-07	1.10E-06	1.12E-06	1.22E-06	1.69E-06	1.55E-06	1.66E-06	1.61E-06	3.10E-07	6.92E-07	2.96E-06	1.72E-06	1.91E-06	2.43E-06	2.00E-05	3.10E-07	**8**
cn = 9		8.30E-07	8.70E-07	1.91E-05	1.90E-06	6.03E-07	1.87E-06	9.83E-07	7.92E-07	1.02E-06	1.35E-06	1.84E-06	1.35E-06	4.96E-07	1.23E-06	3.19E-07	1.40E-06	1.26E-06	1.87E-05	1.47E-06	**9**
cn = 10		1.04E-06	4.65E-07	2.00E-05	2.51E-06	4.65E-07	4.65E-07	1.97E-06	1.40E-06	3.29E-06	1.47E-06	1.04E-06	1.32E-06	1.04E-06	9.31E-07	6.58E-07	1.04E-06	1.92E-06	1.96E-05	1.97E-06	**10**
cn = 11		1.02E-06	1.13E-06	1.97E-05	9.45E-07	3.57E-07	3.66E-07	6.97E-07	1.63E-06	5.14E-07	8.88E-07	3.25E-07	2.14E-07	1.41E-06	1.14E-06	3.69E-07	2.09E-06	1.65E-06	1.61E-05	9.36E-07	**11**
cn = 12		8.60E-07	1.89E-06	1.92E-05	1.19E-06	1.32E-06	1.07E-06	1.13E-06	1.67E-06	3.53E-07	1.29E-06	1.41E-06	1.50E-06	7.63E-07	9.24E-07	2.42E-06	1.33E-06	7.34E-07	1.73E-05	1.50E-06	**12**
cn = 13		1.43E-06	1.45E-06	1.77E-05	2.11E-06	2.49E-06	1.64E-06	7.95E-07	9.34E-07	1.42E-06	1.23E-06	7.22E-07	1.70E-06	5.99E-07	1.61E-06	1.47E-06	1.14E-06	9.32E-07	1.75E-05	1.26E-06	**13**
cn = 14		1.09E-06	1.96E-06	1.53E-05	1.35E-06	9.91E-07	1.47E-06	1.17E-06	1.61E-06	9.68E-07	1.96E-06	2.39E-06	1.45E-06	9.28E-07	6.96E-07	6.70E-07	2.11E-06	1.17E-06	1.66E-05	1.13E-06	**14**
cn = 15		2.35E-07	2.77E-07	1.57E-05	2.09E-06	1.39E-06	1.07E-06	8.26E-07	9.84E-07	1.46E-06	1.82E-06	1.30E-06	1.36E-06	1.39E-06	8.04E-07	1.59E-06	7.05E-07	3.86E-07	1.54E-05	1.23E-06	**15**
cn = 16		2.85E-07	1.09E-06	1.58E-05	1.17E-06	1.95E-06	8.35E-07	1.54E-06	2.10E-06	1.02E-06	1.24E-06	1.33E-06	6.04E-07	1.35E-06	1.19E-06	1.51E-06	8.78E-07	6.92E-07	1.45E-05	6.04E-07	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q2_1.dat	**400**	1.77E-02	1.77E+00	0.02%	0.01%	0.02%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%	
Q2_2.dat	**0**	3.55E-05	3.55E-03	3.62%	2.85%	5.91%	6.27%	4.24%	7.54%	2.45%	1.31%	3.18%	5.32%	4.09%	5.52%	0.78%	3.05%	**43.87%**
Q2_3.dat	**50**	2.23E-03	2.23E-01	0.77%	0.93%	0.90%	1.01%	0.95%	0.97%	0.86%	0.90%	0.88%	0.86%	0.79%	0.68%	0.70%	0.71%	**88.09%**
Q2_4.dat	**100**	4.44E-03	4.44E-01	0.06%	0.03%	0.04%	0.10%	0.02%	0.02%	0.04%	0.06%	0.02%	0.03%	0.05%	0.03%	0.05%	0.03%	**99.43%**
Q2_5.dat	**150**	6.66E-03	6.66E-01	0.05%	0.01%	0.03%	0.07%	0.04%	0.02%	0.01%	0.01%	0.01%	0.02%	0.04%	0.01%	0.02%	0.03%	**99.65%**
Q2_6.dat	**200**	8.88E-03	8.88E-01	0.04%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	0.01%	0.01%	**99.71%**
Q2_7.dat	**250**	1.11E-02	1.11E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.77%**
Q2_8.dat	**300**	1.33E-02	1.33E+00	0.01%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	**99.75%**
Q2_9.dat	**350**	1.55E-02	1.55E+00	0.03%	0.01%	0.01%	0.09%	0.00%	0.01%	0.01%	0.02%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.78%**
Q2_10.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.79%**
Q2_11.dat	**450**	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	**99.78%**
Q2_12.dat	**400**	1.77E-02	1.77E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.80%**
Q2_13.dat	**350**	1.56E-02	1.56E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.80%**
Q2_14.dat	**300**	1.34E-02	1.34E+00	0.02%	0.01%	0.01%	0.09%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.77%**
Q2_15.dat	**250**	1.12E-02	1.12E+00	0.01%	0.00%	0.01%	0.10%	0.00%	0.02%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	**99.78%**
Q2_16.dat	**200**	8.94E-03	8.94E-01	0.03%	0.03%	0.02%	0.09%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.68%**
Q2_17.dat	**150**	6.73E-03	6.73E-01	0.02%	0.03%	0.01%	0.10%	0.01%	0.04%	0.02%	0.03%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	**99.67%**
Q2_18.dat	**100**	4.51E-03	4.51E-01	0.39%	0.48%	0.45%	0.46%	0.46%	0.44%	0.41%	0.43%	0.36%	0.38%	0.39%	0.37%	0.34%	0.32%	**94.31%**
Q2_19.dat	**50**	2.28E-03	2.28E-01	0.06%	0.02%	0.03%	0.10%	0.01%	0.01%	0.06%	0.09%	0.04%	0.07%	0.06%	0.05%	0.05%	0.03%	
																	average =	**95.44%**
			Average Da	0.27%	0.23%	0.40%	0.49%	0.31%	0.48%	0.21%	0.15%	0.24%	0.36%	0.29%	0.36%	0.11%	0.23%	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q2_1.dat	400	1.77E-02	1.77E+00	0.02%	0.01%	0.02%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.00%		0.00441	400
Q2_2.dat	0																			
Q2_3.dat	50																			
Q2_4.dat	100	4.44E-03	4.44E-01	0.06%	0.03%	0.04%	0.10%	0.02%	0.02%	0.04%	0.06%	0.02%	0.03%	0.05%	0.03%	0.05%	0.03%	99.43%	0.00444	100
Q2_5.dat	150	6.66E-03	6.66E-01	0.05%	0.01%	0.03%	0.07%	0.04%	0.02%	0.01%	0.01%	0.01%	0.02%	0.04%	0.01%	0.02%	0.03%	99.65%	0.00444	150
Q2_6.dat	200	8.88E-03	8.88E-01	0.04%	0.01%	0.03%	0.08%	0.02%	0.01%	0.02%	0.01%	0.00%	0.01%	0.02%	0.02%	0.01%	0.01%	99.71%	0.00444	200
Q2_7.dat	250	1.11E-02	1.11E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.77%	0.00444	250
Q2_8.dat	300	1.33E-02	1.33E+00	0.01%	0.02%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	99.75%	0.00443	300
Q2_9.dat	350	1.55E-02	1.55E+00	0.03%	0.01%	0.01%	0.09%	0.00%	0.01%	0.01%	0.02%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	99.78%	0.00442	350
Q2_10.dat	400	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.79%	0.00442	400
Q2_11.dat	450	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	99.78%	0.00440	450
Q2_12.dat	400	1.77E-02	1.77E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	99.80%	0.00443	400
Q2_13.dat	350	1.56E-02	1.56E+00	0.02%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	99.80%	0.00445	350
Q2_14.dat	300	1.34E-02	1.34E+00	0.02%	0.01%	0.01%	0.09%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.77%	0.00445	300
Q2_15.dat	250	1.12E-02	1.12E+00	0.01%	0.00%	0.01%	0.10%	0.00%	0.02%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.01%	0.01%	99.78%	0.00446	250
Q2_16.dat	200	8.94E-03	8.94E-01	0.03%	0.03%	0.02%	0.09%	0.01%	0.02%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	99.68%	0.00447	200
Q2_17.dat	150	6.73E-03	6.73E-01	0.02%	0.03%	0.01%	0.10%	0.01%	0.04%	0.02%	0.03%	0.02%	0.01%	0.01%	0.02%	0.01%	0.01%	99.67%	0.00448	150
Q2_18.dat	100																			
Q2_19.dat	50	2.28E-03	2.28E-01	0.06%	0.02%	0.03%	0.10%	0.01%	0.01%	0.06%	0.09%	0.04%	0.07%	0.06%	0.05%	0.05%	0.03%		0.00456	50

	3	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.73%**
n =															
Average Data	**0.03%**	**0.01%**	**0.02%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.01%**	


CCW GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.58000E-03
4.56000E-03
4.54000E-03
4.52000E-03
4.50000E-03
4.48000E-03
4.46000E-03
4.44000E-03
4.42000E-03
4.40000E-03
4.38000E-03
GL/I (T/A)
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
Predicted GL
Linear (CCW GL Data)
GL = 0.0044*I + 0.008
(5% less than predicted)
GL (T)
Current (A)
0
0.5
1
1.5
2
2.5
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.765	381.187	0.952967	1.85162
0				
50				
100	0.444	94.27896	0.94279	0.470341
150	0.6668	142.6689	0.951126	0.700554
200	0.8883	190.7765	0.953882	0.930768
250	1.109	238.7103	0.954841	1.160981
300	1.33	286.7093	0.955698	1.391194
350	1.548	334.0567	0.954448	1.621407
400	1.766	381.4041	0.95351	1.85162
450	1.978	427.4484	0.949885	2.081833
400	1.773	382.9245	0.957311	1.85162
350	1.556	335.7942	0.959412	1.621407
300				
250	1.117	240.4478	0.961791	1.160981
200	0.8935	191.9059	0.959529	0.930768
150	0.6714	143.668	0.957786	0.700554
100	0.4502	95.62554	0.956255	0.470341
50	0.2277	47.30076	0.946015	0.240128
		average =	**95.420%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q5_1.dat	Q5_2.dat	Q5_3.dat	Q5_4.dat	Q5_5.dat	Q5_6.dat	Q5_7.dat	Q5_8.dat	Q5_9.dat	Q5_10.dat	Q5_11.dat	Q5_12.dat	Q5_13.dat	Q5_14.dat	Q5_15.dat	Q5_16.dat	Q5_17.dat	Q5_18.dat	Q5_19.dat	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		1.86E-04	8.20E-07	2.23E-05	4.46E-05	6.69E-05	9.01E-05	1.15E-04	1.40E-04	1.64E-04	1.88E-04	2.09E-04	1.91E-04	1.64E-04	1.41E-04	1.17E-04	9.39E-05	6.91E-05	4.43E-05	2.38E-05	**1**
cn = 2		1.77E-02	3.73E-05	2.22E-03	4.44E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.95E-03	6.72E-03	4.49E-03	2.28E-03	**2**
cn = 3		2.83E-06	3.67E-05	5.76E-07	4.54E-07	1.78E-06	2.00E-06	2.83E-06	2.05E-05	1.60E-06	2.07E-06	2.83E-06	1.28E-05	2.27E-06	1.26E-05	5.07E-06	1.44E-06	2.03E-07	1.40E-06	1.73E-07	**3**
cn = 4		1.38E-06	4.61E-05	1.25E-07	5.28E-07	3.26E-07	1.20E-06	1.94E-06	2.27E-05	1.55E-06	1.46E-06	1.02E-06	1.44E-05	1.46E-06	1.42E-05	6.41E-06	1.00E-06	9.36E-07	1.32E-06	1.02E-06	**4**
cn = 5		1.93E-06	4.37E-05	1.21E-06	3.85E-07	1.08E-06	5.03E-07	8.60E-07	2.09E-05	9.42E-07	5.10E-07	1.31E-06	1.20E-05	1.21E-06	1.22E-05	5.59E-06	6.53E-07	1.44E-06	1.21E-06	8.50E-07	**5**
cn = 6		1.61E-05	4.47E-05	9.49E-07	3.19E-06	6.65E-06	9.20E-06	1.01E-05	2.14E-05	1.38E-05	1.67E-05	1.94E-05	1.87E-05	1.61E-05	1.38E-05	1.01E-05	7.95E-06	7.74E-06	2.62E-06	2.05E-06	**6**
cn = 7		8.70E-07	4.25E-05	1.31E-06	5.92E-07	1.45E-06	1.62E-07	1.84E-06	2.26E-05	9.92E-07	4.52E-07	7.72E-07	1.26E-05	5.83E-07	1.38E-05	6.08E-06	8.83E-07	5.58E-07	8.12E-07	4.49E-07	**7**
cn = 8		8.55E-07	4.24E-05	1.12E-06	9.09E-07	9.60E-07	2.54E-07	1.53E-06	2.27E-05	4.11E-07	1.08E-06	5.01E-07	1.29E-05	1.57E-06	1.38E-05	5.66E-06	5.89E-07	1.91E-07	5.01E-07	6.65E-07	**8**
cn = 9		3.33E-07	4.05E-05	1.13E-06	1.36E-06	7.78E-07	1.19E-06	1.18E-06	2.04E-05	7.83E-07	1.22E-06	1.64E-06	1.20E-05	1.24E-06	1.33E-05	6.03E-06	3.93E-07	1.63E-06	3.16E-06	6.70E-07	**9**
cn = 10		9.31E-07	4.00E-05	1.04E-06	6.58E-07	1.47E-06	4.65E-07	1.47E-06	2.06E-05	1.32E-06	1.32E-06	1.52E-19	1.16E-05	1.04E-06	1.12E-05	5.58E-06	1.04E-06	1.68E-06	2.37E-06	4.65E-07	**10**
cn = 11		5.26E-07	3.71E-05	3.93E-07	1.60E-06	1.13E-06	1.27E-06	2.48E-06	1.93E-05	9.43E-07	4.39E-07	1.45E-06	1.21E-05	1.69E-06	1.09E-05	4.35E-06	1.01E-06	7.50E-07	2.13E-06	4.66E-07	**11**
cn = 12		1.64E-07	3.56E-05	1.82E-06	4.30E-07	6.96E-07	1.48E-06	9.15E-07	1.85E-05	1.09E-06	9.98E-07	1.23E-06	1.22E-05	9.98E-07	1.11E-05	5.19E-06	5.06E-07	1.35E-06	5.71E-07	1.23E-06	**12**
cn = 13		5.07E-07	3.49E-05	1.85E-06	8.65E-07	2.01E-06	1.10E-06	1.81E-06	1.82E-05	1.15E-06	1.29E-06	1.51E-06	1.13E-05	1.13E-06	9.61E-06	4.21E-06	5.76E-07	5.72E-07	7.47E-07	6.51E-07	**13**
cn = 14		1.03E-06	3.34E-05	9.32E-07	3.28E-06	1.53E-06	8.21E-07	1.53E-06	1.87E-05	8.11E-07	1.42E-06	2.48E-07	9.36E-06	1.25E-06	1.09E-05	5.11E-06	6.56E-07	1.54E-06	2.56E-07	5.84E-07	**14**
cn = 15		2.36E-06	3.36E-05	1.60E-07	7.12E-07	1.05E-06	3.86E-07	1.59E-06	1.72E-05	1.75E-06	2.28E-06	4.17E-07	1.10E-05	1.60E-07	9.91E-06	4.57E-06	1.90E-06	1.43E-06	1.46E-06	2.15E-06	**15**
cn = 16		1.40E-06	3.08E-05	8.35E-07	1.53E-06	1.64E-06	2.44E-06	1.78E-06	1.68E-05	1.51E-06	5.76E-07	3.73E-07	1.00E-05	6.62E-07	9.78E-06	2.62E-06	7.10E-07	9.78E-07	3.73E-07	9.33E-07	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q5_1.dat	**400**	1.77E-02	1.77E+00	0.02%	0.01%	0.01%	0.09%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	**99.82%**		
Q5_2.dat	**0**	3.73E-05	3.73E-03	98.28%	123.43%	117.18%	119.89%	113.80%	113.64%	108.42%	107.26%	99.54%	95.42%	93.49%	89.44%	89.92%	82.52%	**-1352.24%**		
Q5_3.dat	**50**	2.22E-03	2.22E-01	0.03%	0.01%	0.05%	0.04%	0.06%	0.05%	0.05%	0.05%	0.02%	0.08%	0.08%	0.04%	0.01%	0.04%	**99.39%**		
Q5_4.dat	**100**	4.44E-03	4.44E-01	0.01%	0.01%	0.01%	0.07%	0.01%	0.02%	0.03%	0.01%	0.04%	0.01%	0.02%	0.07%	0.02%	0.03%	**99.63%**		
Q5_5.dat	**150**	6.68E-03	6.68E-01	0.03%	0.00%	0.02%	0.10%	0.02%	0.01%	0.01%	0.02%	0.02%	0.01%	0.03%	0.02%	0.02%	0.02%	**99.66%**		
Q5_6.dat	**200**	8.89E-03	8.89E-01	0.02%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.03%	**99.75%**		
Q5_7.dat	**250**	1.11E-02	1.11E+00	0.03%	0.02%	0.01%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	**99.71%**		
Q5_8.dat	**300**	1.33E-02	1.33E+00	0.15%	0.17%	0.16%	0.16%	0.17%	0.17%	0.15%	0.15%	0.14%	0.14%	0.14%	0.14%	0.13%	0.13%	**97.89%**		
Q5_9.dat	**350**	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.82%**		
Q5_10.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	**99.82%**		
Q5_11.dat	**450**	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	**99.83%**		
Q5_12.dat	**400**	1.77E-02	1.772E+00	0.07%	0.08%	0.07%	0.11%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.06%	0.05%	0.06%	0.06%	**99.02%**		
Q5_13.dat	**350**	1.56E-02	1.56E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	**99.80%**		
Q5_14.dat	**300**	1.34E-02	1.34E+00	0.09%	0.11%	0.09%	0.10%	0.10%	0.10%	0.10%	0.08%	0.08%	0.08%	0.07%	0.08%	0.07%	0.07%	**98.75%**		
Q5_15.dat	**250**	1.12E-02	1.12E+00	0.05%	0.06%	0.05%	0.09%	0.05%	0.05%	0.05%	0.05%	0.04%	0.05%	0.04%	0.05%	0.04%	0.02%	**99.31%**		
Q5_16.dat	**200**	8.95E-03	8.95E-01	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	**99.78%**		
Q5_17.dat	**150**	6.72E-03	6.72E-01	0.00%	0.01%	0.02%	0.12%	0.01%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	**99.69%**		
Q5_18.dat	**100**	4.49E-03	4.49E-01	0.03%	0.03%	0.03%	0.06%	0.02%	0.01%	0.07%	0.05%	0.05%	0.01%	0.02%	0.01%	0.03%	0.01%	**99.58%**		
Q5_19.dat	**50**	2.28E-03	2.28E-01	0.01%	0.04%	0.04%	0.09%	0.02%	0.03%	0.03%	0.02%	0.02%	0.05%	0.03%	0.03%	0.09%	0.04%	**99.46%**		
																	average =	**14.07%**		
			Average Da	5.20%	6.53%	6.20%	6.40%	6.02%	6.01%	5.74%	5.68%	5.27%	5.05%	4.95%	4.74%	4.76%	4.37%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q5_1.dat	400	1.77E-02	1.7660	0.02%	0.01%	0.01%	0.09%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	99.82%	0.00442	400
Q5_2.dat	0																			
Q5_3.dat	50																			
Q5_4.dat	100	4.44E-03	0.4442	0.01%	0.01%	0.01%	0.07%	0.01%	0.02%	0.03%	0.01%	0.04%	0.01%	0.02%	0.07%	0.02%	0.03%	99.63%	0.00444	100
Q5_5.dat	150	6.68E-03	0.6680	0.03%	0.00%	0.02%	0.10%	0.02%	0.01%	0.01%	0.02%	0.02%	0.01%	0.03%	0.02%	0.02%	0.02%	99.66%	0.00445	150
Q5_6.dat	200	8.89E-03	0.8887	0.02%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.03%	99.75%	0.00444	200
Q5_7.dat	250	1.11E-02	1.1110	0.03%	0.02%	0.01%	0.09%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.01%	0.02%	99.71%	0.00444	250
Q5_8.dat	300																			
Q5_9.dat	350	1.55E-02	1.5500	0.01%	0.01%	0.01%	0.09%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.82%	0.00443	350
Q5_10.dat	400	1.77E-02	1.7660	0.01%	0.01%	0.00%	0.09%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	99.82%	0.00442	400
Q5_11.dat	450	1.98E-02	1.9780	0.01%	0.01%	0.01%	0.10%	0.00%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	99.83%	0.00440	450
Q5_12.dat	400																			
Q5_13.dat	350	1.56E-02	1.5550	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	99.80%	0.00444	350
Q5_14.dat	300																			
Q5_15.dat	250																			
Q5_16.dat	200	8.95E-03	0.8948	0.02%	0.01%	0.01%	0.09%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	99.78%	0.00447	200
Q5_17.dat	150	6.72E-03	0.6724	0.00%	0.01%	0.02%	0.12%	0.01%	0.00%	0.02%	0.02%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	99.69%	0.00448	150
Q5_18.dat	100	4.49E-03	0.4488	0.03%	0.03%	0.03%	0.06%	0.02%	0.01%	0.07%	0.05%	0.05%	0.01%	0.02%	0.01%	0.03%	0.01%	99.58%	0.00449	100
Q5_19.dat	50																			

	n =	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.73%
	Average Data:	**0.02%**	**0.01%**	**0.01%**	**0.09%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	**0.01%**	

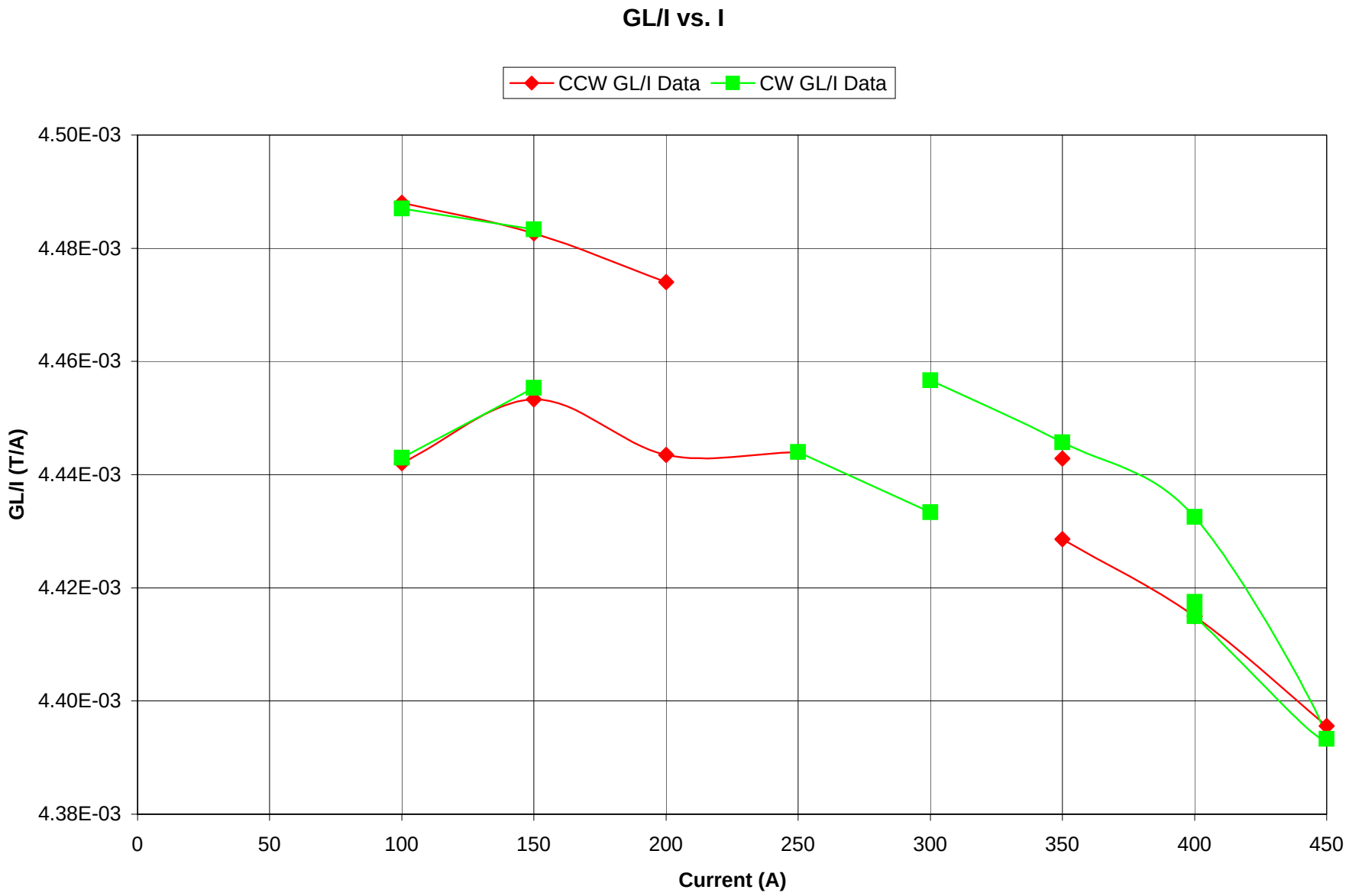
magnet 25B1346 B-1 **Rcoil = 0.01 m**

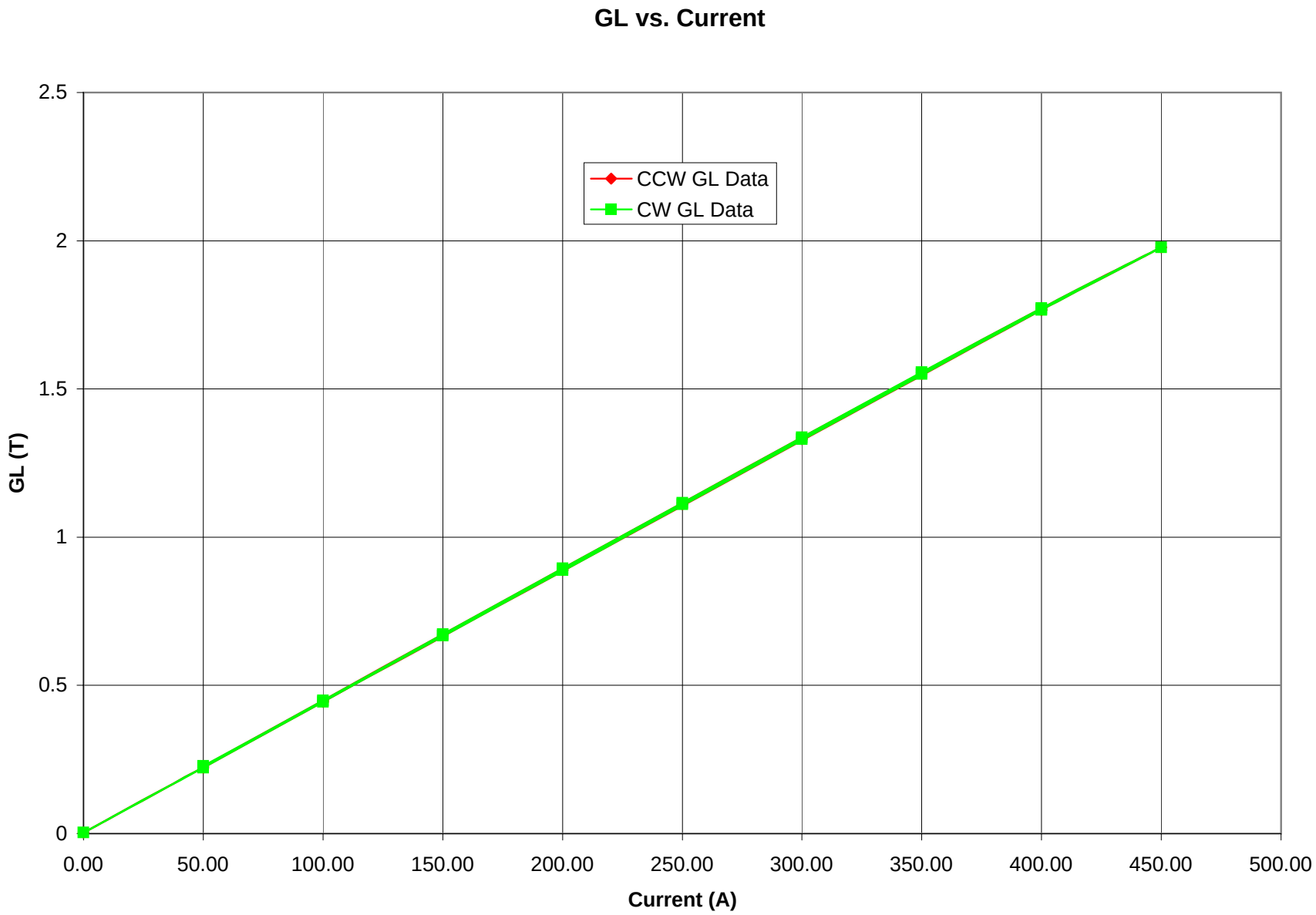
Raw CW Data	**data file**	**Q5_1.dat**	**Q5_2.dat**	**Q5_3.dat**	**Q5_4.dat**	**Q5_5.dat**	**Q5_6.dat**	**Q5_7.dat**	**Q5_8.dat**	**Q5_9.dat**	**Q5_10.dat**	**Q5_11.dat**	**Q5_12.dat**	**Q5_13.dat**	**Q5_14.dat**	**Q5_15.dat**	**Q5_16.dat**	**Q5_17.dat**	**Q5_18.dat**	**Q5_19.dat**	
	current (A)	**400**	**0**	**50**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**400**	**350**	**300**	**250**	**200**	**150**	**100**	**50**	
cn = 1		1.85E-04	1.13E-06	2.13E-05	4.37E-05	6.71E-05	8.90E-05	1.16E-04	1.40E-04	1.60E-04	1.86E-04	2.10E-04	1.83E-04	1.62E-04	1.38E-04	1.18E-04	9.14E-05	6.71E-05	4.64E-05	2.37E-05	**1**
cn = 2		1.77E-02	3.85E-05	2.22E-03	4.44E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.95E-03	6.73E-03	4.49E-03	2.28E-03	**2**
cn = 3		3.26E-06	3.56E-05	4.18E-07	1.15E-06	1.90E-06	9.05E-06	8.83E-07	1.31E-06	2.78E-06	2.62E-06	1.80E-06	2.39E-06	2.52E-06	1.14E-06	7.28E-06	1.61E-05	5.36E-07	4.59E-07	5.95E-07	**3**
cn = 4		5.96E-06	4.30E-05	1.24E-06	2.02E-07	8.86E-07	1.03E-05	1.02E-06	7.57E-07	5.22E-06	1.33E-06	1.46E-06	1.95E-06	7.01E-07	1.96E-06	1.07E-05	2.15E-05	9.00E-07	7.01E-07	8.15E-07	**4**
cn = 5		6.15E-06	4.14E-05	5.44E-07	8.60E-07	5.82E-07	1.03E-05	4.16E-07	1.39E-06	6.04E-06	8.60E-07	1.70E-06	1.71E-06	8.60E-07	2.74E-06	1.12E-05	2.11E-05	1.52E-06	7.11E-07	5.44E-07	**5**
cn = 6		1.53E-05	4.32E-05	1.51E-06	4.01E-06	5.86E-06	1.02E-05	9.85E-06	1.25E-05	1.40E-05	1.65E-05	1.92E-05	1.72E-05	1.51E-05	1.34E-05	1.13E-05	1.87E-05	7.72E-06	5.02E-06	2.33E-06	**6**
cn = 7		5.12E-06	4.32E-05	1.56E-06	6.17E-07	1.39E-06	1.19E-05	1.09E-06	7.54E-07	5.51E-06	1.49E-06	1.15E-06	1.73E-06	8.55E-07	2.22E-06	9.95E-06	2.08E-05	1.12E-06	1.86E-06	9.75E-07	**7**
cn = 8		5.55E-06	4.17E-05	1.62E-06	1.74E-06	1.66E-06	1.05E-05	1.44E-06	9.09E-07	4.63E-06	4.78E-07	9.60E-07	1.14E-06	1.44E-06	9.09E-07	9.66E-06	2.14E-05	2.25E-07	9.09E-07	9.60E-07	**8**
cn = 9		4.93E-06	4.00E-05	9.70E-07	1.89E-06	5.29E-07	9.21E-06	1.07E-06	1.44E-06	4.69E-06	7.67E-07	2.28E-07	9.21E-07	1.25E-06	1.48E-06	9.27E-06	1.89E-05	6.76E-07	3.50E-07	5.88E-07	**9**
cn = 10		4.41E-06	3.77E-05	1.32E-06	1.97E-06	4.65E-07	8.58E-06	1.86E-06	4.65E-07	5.66E-06	1.47E-06	1.47E-06	1.32E-06	1.47E-06	9.31E-07	1.07E-05	2.05E-05	1.32E-06	1.86E-06	2.54E-20	**10**
cn = 11		5.27E-06	3.80E-05	2.00E-06	2.35E-06	1.22E-06	9.54E-06	7.75E-07	3.44E-07	4.11E-06	2.58E-06	1.24E-06	1.29E-07	9.39E-07	2.05E-06	9.43E-06	1.73E-05	8.65E-07	1.45E-06	9.79E-07	**11**
cn = 12		4.46E-06	3.51E-05	1.64E-06	1.13E-06	2.16E-06	8.41E-06	1.23E-06	1.92E-06	5.25E-06	1.26E-06	9.98E-07	1.45E-06	1.07E-06	1.84E-06	9.21E-06	1.72E-05	1.61E-06	1.07E-06	9.24E-07	**12**
cn = 13		4.62E-06	3.38E-05	2.27E-06	8.35E-07	5.94E-07	6.41E-06	2.29E-06	8.01E-07	4.37E-06	9.98E-07	1.59E-06	8.20E-07	7.37E-07	1.21E-06	8.70E-06	1.66E-05	1.39E-06	9.76E-07	1.66E-06	**13**
cn = 14		3.51E-06	3.34E-05	1.83E-06	1.17E-06	2.92E-07	7.86E-06	6.68E-07	7.46E-07	4.46E-06	1.63E-06	1.91E-06	2.06E-07	2.10E-06	1.07E-06	9.84E-06	1.66E-05	8.63E-07	7.00E-07	1.02E-06	**14**
cn = 15		3.04E-06	3.07E-05	1.01E-06	1.59E-06	1.37E-06	6.79E-06	1.86E-06	2.12E-06	4.81E-06	1.59E-06	1.13E-06	2.06E-06	1.59E-06	1.65E-06	9.20E-06	1.62E-05	1.49E-06	5.45E-07	1.01E-06	**15**
cn = 16		2.49E-06	3.02E-05	4.62E-07	3.56E-07	1.24E-06	8.65E-06	7.25E-07	1.53E-06	2.57E-06	1.30E-06	1.64E-06	2.04E-06	7.25E-07	1.53E-06	8.40E-06	1.64E-05	1.86E-06	1.53E-06	1.64E-06	**16**

Normalized Data	**current (A)**	**c2**	**GL**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**cn/c2**	**% Quadrupole**
Data file		**(Tm)**	**(T)**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	totals
Q5_1.dat	**400**	1.77E-02	1.77E+00	0.02%	0.03%	0.03%	0.09%	0.03%	0.03%	0.03%	0.02%	0.03%	0.03%	0.03%	0.02%	0.02%	0.01%	**99.58%**
Q5_2.dat	**0**	3.85E-05	3.85E-03	92.55%	111.71%	107.56%	112.18%	112.07%	108.15%	103.77%	97.87%	98.75%	91.09%	87.82%	86.81%	79.75%	78.50%	**-1268.58%**
Q5_3.dat	**50**	2.22E-03	2.22E-01	0.02%	0.06%	0.02%	0.07%	0.07%	0.07%	0.04%	0.06%	0.09%	0.07%	0.10%	0.08%	0.05%	0.02%	**99.17%**
Q5_4.dat	**100**	4.44E-03	4.44E-01	0.03%	0.00%	0.02%	0.09%	0.01%	0.04%	0.04%	0.04%	0.05%	0.03%	0.02%	0.03%	0.04%	0.01%	**99.55%**
Q5_5.dat	**150**	6.68E-03	6.68E-01	0.03%	0.01%	0.01%	0.09%	0.02%	0.02%	0.01%	0.01%	0.02%	0.03%	0.01%	0.00%	0.02%	0.02%	**99.70%**
Q5_6.dat	**200**	8.89E-03	8.89E-01	0.10%	0.12%	0.12%	0.11%	0.13%	0.12%	0.10%	0.10%	0.11%	0.09%	0.07%	0.09%	0.08%	0.10%	**98.56%**
Q5_7.dat	**250**	1.11E-02	1.11E+00	0.01%	0.01%	0.00%	0.09%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	**99.77%**
Q5_8.dat	**300**	1.33E-02	1.33E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	**99.80%**
Q5_9.dat	**350**	1.55E-02	1.55E+00	0.02%	0.03%	0.04%	0.09%	0.04%	0.03%	0.03%	0.04%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%	**99.52%**
Q5_10.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.00%	0.09%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.80%**
Q5_11.dat	**450**	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.82%**
Q5_12.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	**99.80%**
Q5_13.dat	**350**	1.56E-02	1.56E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	**99.80%**
Q5_14.dat	**300**	1.34E-02	1.34E+00	0.01%	0.01%	0.02%	0.10%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.74%**
Q5_15.dat	**250**	1.12E-02	1.12E+00	0.07%	0.10%	0.10%	0.10%	0.09%	0.09%	0.08%	0.10%	0.08%	0.08%	0.08%	0.09%	0.08%	0.08%	**98.79%**
Q5_16.dat	**200**	8.95E-03	8.95E-01	0.18%	0.24%	0.24%	0.21%	0.23%	0.24%	0.21%	0.23%	0.19%	0.19%	0.19%	0.19%	0.18%	0.18%	**97.10%**
Q5_17.dat	**150**	6.73E-03	6.73E-01	0.01%	0.01%	0.02%	0.11%	0.02%	0.00%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.02%	0.03%	**99.67%**
Q5_18.dat	**100**	4.49E-03	4.49E-01	0.01%	0.02%	0.02%	0.11%	0.04%	0.02%	0.01%	0.04%	0.03%	0.02%	0.02%	0.02%	0.01%	0.03%	**99.60%**
Q5_19.dat	**50**	2.28E-03	2.28E-01	0.03%	0.04%	0.02%	0.10%	0.04%	0.04%	0.03%	0.00%	0.04%	0.04%	0.07%	0.04%	0.04%	0.07%	**99.38%**
																	average =	**18.92%**
			Average Da	4.90%	5.92%	5.70%	6.00%	5.94%	5.73%	5.50%	5.19%	5.24%	4.83%	4.66%	4.60%	4.23%	4.16%	

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q5_1.dat	400	1.77E-02	1.77E+00	0.02%	0.03%	0.03%	0.09%	0.03%	0.03%	0.03%	0.02%	0.03%	0.03%	0.03%	0.02%	0.02%	0.01%	99.58%	0.00442	400
Q5_2.dat	0																			
Q5_3.dat	50																			
Q5_4.dat	100	4.44E-03	4.44E-01	0.03%	0.00%	0.02%	0.09%	0.01%	0.04%	0.04%	0.04%	0.05%	0.03%	0.02%	0.03%	0.04%	0.01%	99.55%	0.00444	100
Q5_5.dat	150	6.68E-03	6.68E-01	0.03%	0.01%	0.01%	0.09%	0.02%	0.02%	0.01%	0.01%	0.02%	0.03%	0.01%	0.00%	0.02%	0.02%	99.70%	0.00446	150
Q5_6.dat	200																			
Q5_7.dat	250	1.11E-02	1.11E+00	0.01%	0.01%	0.00%	0.09%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	99.77%	0.00444	250
Q5_8.dat	300	1.33E-02	1.33E+00	0.01%	0.01%	0.01%	0.09%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	99.80%	0.00443	300
Q5_9.dat	350																			
Q5_10.dat	400	1.77E-02	1.77E+00	0.01%	0.01%	0.00%	0.09%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00442	400
Q5_11.dat	450	1.98E-02	1.98E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.82%	0.00439	450
Q5_12.dat	400	1.77E-02	1.77E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	99.80%	0.00443	400
Q5_13.dat	350	1.56E-02	1.56E+00	0.02%	0.00%	0.01%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	99.80%	0.00445	350
Q5_14.dat	300	1.34E-02	1.34E+00	0.01%	0.01%	0.02%	0.10%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	99.74%	0.00446	300
Q5_15.dat	250																			
Q5_16.dat	200																			
Q5_17.dat	150	6.73E-03	6.73E-01	0.01%	0.01%	0.02%	0.11%	0.02%	0.00%	0.01%	0.02%	0.01%	0.02%	0.02%	0.01%	0.02%	0.03%	99.67%	0.00448	150
Q5_18.dat	100	4.49E-03	4.49E-01	0.01%	0.02%	0.02%	0.11%	0.04%	0.02%	0.01%	0.04%	0.03%	0.02%	0.02%	0.02%	0.01%	0.03%	99.60%	0.00449	100
Q5_19.dat	50																			

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.73%**
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.10%**	**0.02%**	**0.01%**	**0.01%**	**0.02%**	**0.02%**	**0.02%**	**0.01%**	**0.01%**	**0.02%**	**0.01%**	


GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.50E-03
4.48E-03
4.46E-03
4.44E-03
4.42E-03
4.40E-03
4.38E-03
GL/I (T/A)
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.766	381.4041	0.95351	1.85162
0				
50				
100	0.4442	94.3224	0.943224	0.470341
150	0.668	142.9295	0.952863	0.700554
200	0.8887	190.8634	0.954317	0.930768
250	1.111	239.1447	0.956579	1.160981
300				
350	1.55	334.4911	0.955689	1.621407
400	1.766	381.4041	0.95351	1.85162
450	1.978	427.4484	0.949885	2.081833
400				
350	1.555	335.5771	0.958792	1.621407
300				
250				
200	0.8948	192.1882	0.960941	0.930768
150	0.6724	143.8852	0.959234	0.700554
100	0.4488	95.32147	0.953215	0.470341
50				
		average =	**95.431%**	

magnet 25B1346 B-1 Rcoil = 0.01 m

Raw CCW Data	data file	Q4_1.dat	Q4_2.dat	Q4_3.dat	Q4_4.dat	Q4_5.dat	Q4_6.dat	Q4_7.dat	Q4_8.dat	Q4_9.dat	Q4_10.dat	Q4_11.dat	Q4_12.dat	Q4_13.dat	Q4_14.dat	Q4_15.dat	Q4_16.dat	Q4_17.dat	Q4_18.dat	Q4_19.dat	
	current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	
cn = 1		6.17E-04	9.08E-06	8.48E-05	1.64E-04	2.48E-04	2.56E-04	4.13E-04	4.86E-04	5.55E-04	5.61E-04	7.15E-04	6.65E-04	5.67E-04	4.80E-04	4.16E-04	3.22E-04	2.50E-04	1.73E-04	9.07E-05	**1**
cn = 2		1.77E-02	3.82E-05	2.23E-03	4.46E-03	6.70E-03	8.88E-03	1.12E-02	1.33E-02	1.55E-02	1.76E-02	1.98E-02	1.77E-02	1.56E-02	1.34E-02	1.12E-02	8.93E-03	6.76E-03	4.52E-03	2.27E-03	**2**
cn = 3		1.16E-06	7.32E-07	1.07E-06	1.87E-05	1.70E-06	2.17E-05	1.52E-06	1.42E-06	1.15E-06	1.92E-05	1.13E-06	2.10E-06	5.21E-07	6.50E-07	1.06E-06	1.81E-05	1.68E-05	1.79E-05	1.73E-07	**3**
cn = 4		1.25E-06	5.03E-07	5.28E-07	2.20E-05	2.02E-06	2.68E-05	1.13E-06	7.01E-07	5.28E-07	2.31E-05	1.52E-06	1.52E-06	1.24E-06	1.25E-07	3.83E-07	2.11E-05	2.19E-05	2.00E-05	1.06E-06	**4**
cn = 5		3.38E-06	5.82E-07	3.61E-07	2.23E-05	2.39E-06	2.77E-05	2.87E-06	1.57E-06	3.01E-06	2.39E-05	4.66E-06	3.93E-06	2.98E-06	4.02E-06	3.01E-06	2.17E-05	2.17E-05	2.17E-05	6.66E-07	**5**
cn = 6		1.70E-05	9.11E-07	1.07E-06	2.27E-05	5.88E-06	2.74E-05	1.03E-05	1.27E-05	1.49E-05	2.26E-05	1.91E-05	1.57E-05	1.43E-05	1.18E-05	1.13E-05	2.01E-05	2.13E-05	1.99E-05	2.02E-06	**6**
cn = 7		2.19E-06	1.30E-07	5.28E-07	2.19E-05	2.17E-06	2.68E-05	1.12E-06	9.38E-07	2.27E-06	2.38E-05	1.83E-06	3.63E-06	1.91E-06	2.24E-06	2.93E-06	2.17E-05	2.25E-05	2.04E-05	9.96E-07	**7**
cn = 8		9.09E-07	7.73E-07	3.61E-07	2.07E-05	2.09E-06	2.70E-05	8.89E-07	7.18E-07	2.28E-06	2.00E-05	1.21E-06	1.18E-07	1.55E-06	1.12E-06	6.65E-07	2.00E-05	2.01E-05	2.17E-05	3.83E-07	**8**
cn = 9		1.36E-06	2.85E-06	1.48E-06	2.20E-05	2.16E-06	2.37E-05	6.72E-07	1.30E-06	2.21E-06	2.19E-05	5.20E-07	2.35E-06	8.62E-07	4.10E-07	2.73E-07	1.88E-05	1.96E-05	1.92E-05	1.28E-06	**9**
cn = 10		1.92E-06	1.04E-06	1.77E-06	2.01E-05	1.04E-06	2.47E-05	4.65E-07	6.58E-07	4.65E-07	1.95E-05	2.33E-06	2.98E-06	1.40E-06	1.40E-06	1.47E-06	2.05E-05	1.96E-05	1.96E-05	1.47E-06	**10**
cn = 11		9.78E-07	9.27E-07	1.84E-06	2.02E-05	2.88E-06	2.30E-05	7.81E-07	2.80E-07	1.28E-06	1.94E-05	1.07E-06	1.93E-06	2.57E-06	8.77E-07	3.45E-06	1.75E-05	1.73E-05	1.76E-05	6.61E-07	**11**
cn = 12		2.45E-06	1.50E-06	1.01E-06	1.95E-05	1.51E-06	2.23E-05	6.64E-07	1.07E-06	4.30E-07	1.93E-05	8.34E-07	8.34E-07	1.64E-06	1.82E-06	1.32E-06	1.81E-05	1.79E-05	1.73E-05	8.60E-07	**12**
cn = 13		9.11E-07	1.34E-06	1.04E-06	1.78E-05	8.66E-07	2.14E-05	9.07E-07	6.74E-07	7.80E-07	1.86E-05	2.00E-06	1.46E-06	9.53E-07	1.65E-06	5.28E-07	1.72E-05	1.64E-05	1.76E-05	1.31E-06	**13**
cn = 14		1.17E-06	1.35E-06	1.30E-06	1.73E-05	2.68E-06	2.00E-05	1.94E-07	1.71E-06	3.91E-07	1.71E-05	2.53E-06	9.27E-07	3.94E-07	4.93E-07	4.40E-07	1.63E-05	1.64E-05	1.68E-05	9.19E-07	**14**
cn = 15		1.58E-06	1.37E-06	4.30E-07	1.76E-05	1.30E-06	1.96E-05	1.78E-06	1.65E-06	5.49E-07	1.72E-05	1.88E-06	8.37E-07	1.01E-06	5.30E-07	1.55E-06	1.50E-05	1.50E-05	1.50E-05	1.23E-06	**15**
cn = 16		1.53E-06	8.03E-07	6.42E-07	1.50E-05	2.29E-06	1.97E-05	1.17E-06	1.67E-06	1.01E-06	1.70E-05	2.54E-06	1.58E-06	1.61E-06	8.35E-07	9.33E-07	1.57E-05	1.42E-05	1.37E-05	1.96E-06	**16**

Normalized Data	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole		
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals		
Q4_1.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.79%**		
Q4_2.dat	**0**	3.82E-05	3.82E-03	1.91%	1.32%	1.52%	2.38%	0.34%	2.02%	7.45%	2.72%	2.42%	3.91%	3.49%	3.54%	3.59%	2.10%	**61.28%**		
Q4_3.dat	**50**	2.23E-03	2.23E-01	0.05%	0.02%	0.02%	0.05%	0.02%	0.02%	0.07%	0.08%	0.08%	0.05%	0.05%	0.06%	0.02%	0.03%	**99.40%**		
Q4_4.dat	**100**	4.46E-03	4.46E-01	0.42%	0.49%	0.50%	0.51%	0.49%	0.46%	0.49%	0.45%	0.45%	0.44%	0.40%	0.39%	0.40%	0.34%	**93.77%**		
Q4_5.dat	**150**	6.70E-03	6.70E-01	0.03%	0.03%	0.04%	0.09%	0.03%	0.03%	0.03%	0.02%	0.04%	0.02%	0.01%	0.04%	0.02%	0.03%	**99.54%**		
Q4_6.dat	**200**	8.88E-03	8.88E-01	0.24%	0.30%	0.31%	0.31%	0.30%	0.30%	0.27%	0.28%	0.26%	0.25%	0.24%	0.23%	0.22%	0.22%	**96.26%**		
Q4_7.dat	**250**	1.12E-02	1.12E+00	0.01%	0.01%	0.03%	0.09%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.02%	0.01%	**99.78%**		
Q4_8.dat	**300**	1.33E-02	1.33E+00	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.80%**		
Q4_9.dat	**350**	1.55E-02	1.55E+00	0.01%	0.00%	0.02%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	**99.80%**		
Q4_10.dat	**400**	1.76E-02	1.76E+00	0.11%	0.13%	0.14%	0.13%	0.14%	0.11%	0.12%	0.11%	0.11%	0.11%	0.11%	0.10%	0.10%	0.10%	**98.40%**		
Q4_11.dat	**450**	1.98E-02	1.98E+00	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	**99.78%**		
Q4_12.dat	**400**	1.77E-02	1.77E+00	0.01%	0.01%	0.02%	0.09%	0.02%	0.00%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	**99.77%**		
Q4_13.dat	**350**	1.56E-02	1.56E+00	0.00%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	**99.79%**		
Q4_14.dat	**300**	1.34E-02	1.34E+00	0.00%	0.00%	0.03%	0.09%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	**99.79%**		
Q4_15.dat	**250**	1.12E-02	1.12E+00	0.01%	0.00%	0.03%	0.10%	0.03%	0.01%	0.00%	0.01%	0.03%	0.01%	0.00%	0.00%	0.01%	0.01%	**99.74%**		
Q4_16.dat	**200**	8.93E-03	8.93E-01	0.20%	0.24%	0.24%	0.23%	0.24%	0.22%	0.21%	0.23%	0.20%	0.20%	0.19%	0.18%	0.17%	0.18%	**97.07%**		
Q4_17.dat	**150**	6.76E-03	6.76E-01	0.25%	0.32%	0.32%	0.32%	0.33%	0.30%	0.29%	0.29%	0.26%	0.26%	0.24%	0.24%	0.22%	0.21%	**96.14%**		
Q4_18.dat	**100**	4.52E-03	4.52E-01	0.40%	0.44%	0.48%	0.44%	0.45%	0.48%	0.43%	0.43%	0.39%	0.38%	0.39%	0.37%	0.33%	0.30%	**94.29%**		
Q4_19.dat	**50**	2.27E-03	2.27E-01	0.01%	0.05%	0.03%	0.09%	0.04%	0.02%	0.06%	0.06%	0.03%	0.04%	0.06%	0.04%	0.05%	0.09%	**99.34%**		
																	average =	**96.14%**		
			Average Da	0.19%	0.18%	0.20%	0.28%	0.13%	0.21%	0.50%	0.25%	0.23%	0.30%	0.28%	0.28%	0.27%	0.19%			

Good Data Only	current (A)	c2	GL	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	cn/c2	% Quadrupole	Norm GL/I	Current
Data file		(Tm)	(T)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	totals	(T/A)	(A)
Q4_1.dat	400	1.77E-02	1.7740	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	99.79%	0.00444	400
Q4_2.dat	0																			
Q4_3.dat	50																			
Q4_4.dat	100																			
Q4_5.dat	150																			
Q4_6.dat	200																			
Q4_7.dat	250	1.12E-02	1.1150	0.01%	0.01%	0.03%	0.09%	0.01%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.02%	0.01%	99.78%	0.00446	250
Q4_8.dat	300	1.33E-02	1.3330	0.01%	0.01%	0.01%	0.10%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	99.80%	0.00444	300
Q4_9.dat	350	1.55E-02	1.5480	0.01%	0.00%	0.02%	0.10%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	99.80%	0.00442	350
Q4_10.dat	400																			
Q4_11.dat	450	1.98E-02	1.9800	0.01%	0.01%	0.02%	0.10%	0.01%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	99.78%	0.00440	450
Q4_12.dat	400	1.77E-02	1.7720	0.01%	0.01%	0.02%	0.09%	0.02%	0.00%	0.01%	0.02%	0.01%	0.00%	0.01%	0.01%	0.00%	0.01%	99.77%	0.00443	400
Q4_13.dat	350	1.56E-02	1.5610	0.00%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	99.79%	0.00446	350
Q4_14.dat	300	1.34E-02	1.3380	0.00%	0.00%	0.03%	0.09%	0.02%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.01%	99.79%	0.00446	300
Q4_15.dat	250	1.12E-02	1.1210	0.01%	0.00%	0.03%	0.10%	0.03%	0.01%	0.00%	0.01%	0.03%	0.01%	0.00%	0.00%	0.01%	0.01%	99.74%	0.00448	250
Q4_16.dat	200																			
Q4_17.dat	150																			
Q4_18.dat	100																			
Q4_19.dat	50																			

n =	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**99.78%**
Average Data:	**0.01%**	**0.01%**	**0.02%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

magnet 25B1346 B-1 **Rcoil = 0.01 m**

Raw CW Data

data file	Q4_1.dat	Q4_2.dat	Q4_3.dat	Q4_4.dat	Q4_5.dat	Q4_6.dat	Q4_7.dat	Q4_8.dat	Q4_9.dat	Q4_10.dat	Q4_11.dat	Q4_12.dat	Q4_13.dat	Q4_14.dat	Q4_15.dat	Q4_16.dat	Q4_17.dat	Q4_18.dat	Q4_19.dat	Q4_20.dat	
current (A)	400	0	50	100	150	200	250	300	350	400	450	400	350	300	250	200	150	100	50	0	
cn = 1	5.77E-04	9.44E-06	6.88E-05	1.48E-04	2.17E-04	2.89E-04	3.60E-04	4.31E-04	5.04E-04	5.80E-04	6.39E-04	5.70E-04	5.09E-04	4.45E-04	3.54E-04	2.87E-04	2.17E-04	1.49E-04	8.14E-05		**1**
cn = 2	1.77E-02	4.05E-05	2.22E-03	4.44E-03	6.68E-03	8.89E-03	1.11E-02	1.33E-02	1.55E-02	1.77E-02	1.97E-02	1.76E-02	1.55E-02	1.34E-02	1.11E-02	8.90E-03	6.70E-03	4.50E-03	2.27E-03		**2**
cn = 3	2.85E-06	6.84E-07	8.43E-07	1.75E-05	2.48E-07	5.92E-07	1.04E-06	1.45E-06	9.75E-07	1.19E-06	2.52E-06	1.08E-06	8.07E-07	1.45E-06	3.52E-05	6.56E-07	3.45E-05	1.92E-06	2.21E-07		**3**
cn = 4	3.20E-06	2.02E-07	5.28E-07	2.16E-05	2.77E-20	7.01E-07	1.25E-07	2.31E-06	1.00E-06	5.28E-07	3.18E-06	2.13E-06	1.43E-06	1.06E-06	4.36E-05	6.20E-07	4.45E-05	1.13E-06	5.03E-07		**4**
cn = 5	1.05E-06	1.59E-07	3.85E-07	2.00E-05	1.44E-06	1.31E-06	1.95E-06	1.42E-06	3.35E-06	1.92E-06	2.08E-06	2.22E-06	1.41E-06	3.36E-06	3.99E-05	1.21E-06	3.91E-05	1.23E-06	2.25E-07		**5**
cn = 6	1.66E-05	4.74E-07	1.82E-06	2.06E-05	6.78E-06	8.64E-06	9.48E-06	1.20E-05	1.42E-05	1.51E-05	1.83E-05	1.88E-05	1.49E-05	1.26E-05	4.05E-05	8.47E-06	4.07E-05	4.26E-06	1.27E-06		**6**
cn = 7	1.18E-06	6.46E-07	2.51E-06	1.99E-05	8.42E-07	1.35E-06	1.25E-06	9.01E-07	1.88E-06	1.00E-06	1.70E-06	2.41E-06	3.68E-07	3.85E-06	4.08E-05	1.46E-06	4.01E-05	1.72E-06	9.95E-07		**7**
cn = 8	1.14E-06	4.11E-07	1.50E-06	1.91E-05	3.83E-07	5.28E-07	5.01E-07	3.83E-06	1.80E-06	5.94E-07	2.71E-06	8.84E-07	1.38E-06	1.00E-06	4.13E-05	1.41E-06	4.18E-05	1.38E-06	6.01E-07		**8**
cn = 9	1.86E-06	2.27E-07	9.26E-07	1.90E-05	8.81E-07	9.54E-08	4.96E-07	5.85E-07	2.00E-06	2.21E-06	2.66E-06	1.31E-06	2.24E-06	1.14E-06	3.92E-05	8.54E-07	3.96E-05	8.10E-07	4.21E-07		**9**
cn = 10	2.08E-06	1.47E-06	6.58E-07	1.77E-05	1.68E-06	9.31E-07	1.04E-06	2.94E-06	6.58E-07	4.65E-07	2.37E-06	1.04E-06	2.33E-06	2.83E-06	3.82E-05	1.04E-06	3.68E-05	2.08E-06	9.31E-07		**10**
cn = 11	2.18E-06	1.15E-06	1.75E-06	1.93E-05	1.66E-06	2.13E-06	8.90E-07	1.68E-06	4.50E-07	2.74E-06	2.86E-06	2.56E-06	1.27E-06	2.01E-06	3.70E-05	2.73E-07	3.60E-05	9.09E-07	1.10E-07		**11**
cn = 12	2.36E-06	1.13E-06	4.30E-07	1.86E-05	6.26E-20	1.07E-06	1.82E-06	2.85E-06	5.06E-07	4.30E-07	1.96E-06	1.48E-06	1.33E-06	8.60E-07	3.61E-05	8.18E-07	3.58E-05	6.64E-07	1.50E-06		**12**
cn = 13	3.00E-06	1.99E-06	1.33E-06	1.71E-05	1.10E-06	2.03E-06	1.50E-06	3.63E-06	2.32E-07	1.56E-06	1.37E-06	5.40E-07	2.62E-06	9.52E-07	3.45E-05	1.87E-06	3.35E-05	1.62E-06	1.77E-06		**13**
cn = 14	2.88E-06	2.00E-07	8.23E-07	1.56E-05	1.23E-06	6.15E-07	5.07E-07	2.60E-06	2.37E-06	1.51E-06	2.19E-06	8.93E-07	1.75E-06	9.44E-07	3.30E-05	8.02E-07	3.36E-05	1.85E-06	2.10E-06		**14**
cn = 15	1.53E-06	1.72E-06	7.12E-07	1.70E-05	1.43E-06	4.17E-07	1.49E-06	1.09E-06	1.06E-06	2.16E-06	6.60E-07	6.11E-07	5.68E-07	8.79E-07	3.11E-05	1.60E-07	3.17E-05	9.44E-07	2.43E-06		**15**
cn = 16	2.04E-06	1.51E-06	1.12E-06	1.76E-05	1.96E-06	2.27E-06	3.73E-07	2.32E-06	1.83E-06	2.66E-06	1.38E-06	2.33E-06	8.66E-07	7.47E-07	2.96E-05	1.63E-06	2.99E-05	8.66E-07	1.73E-06		**16**

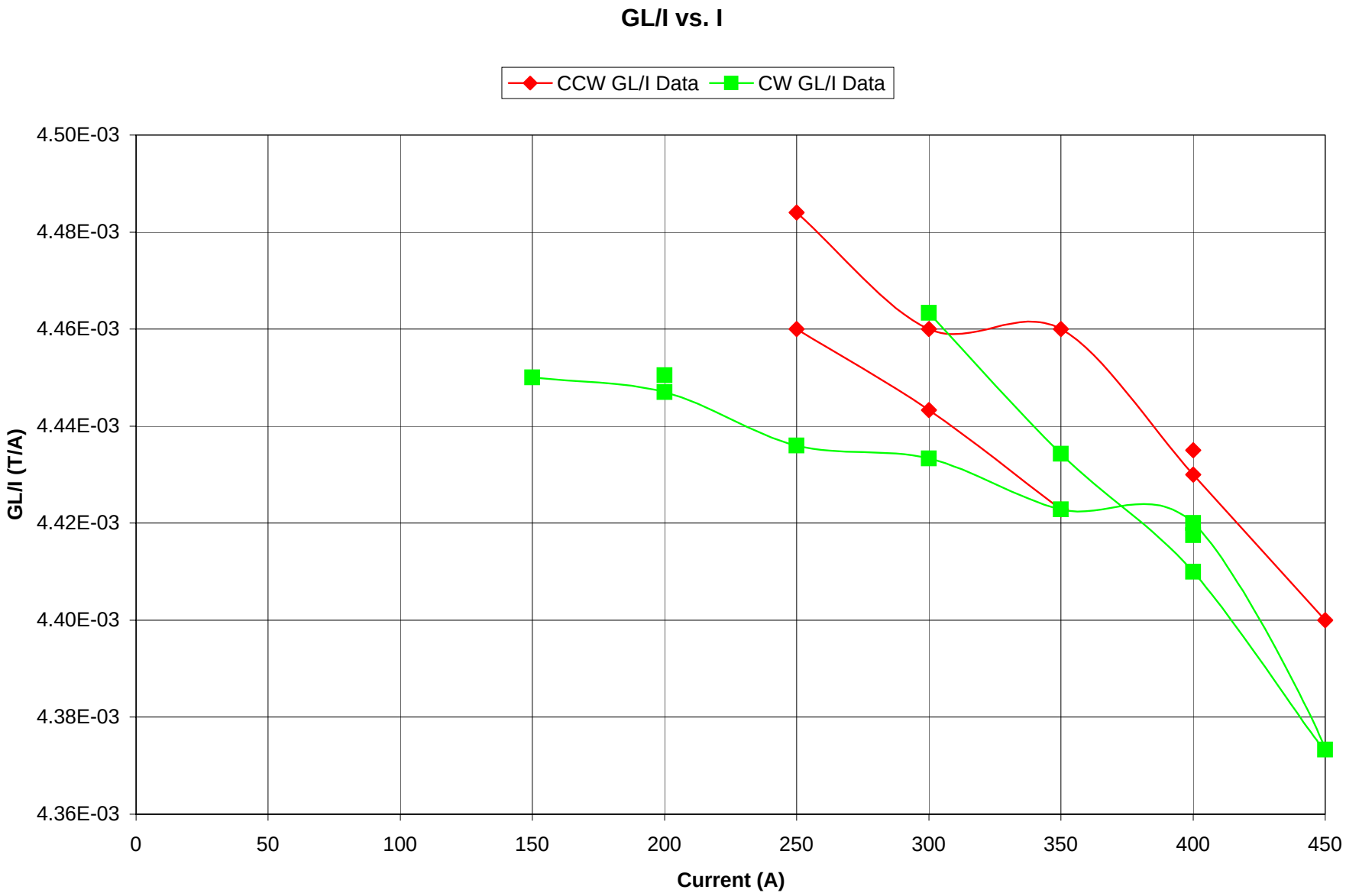
Normalized Data

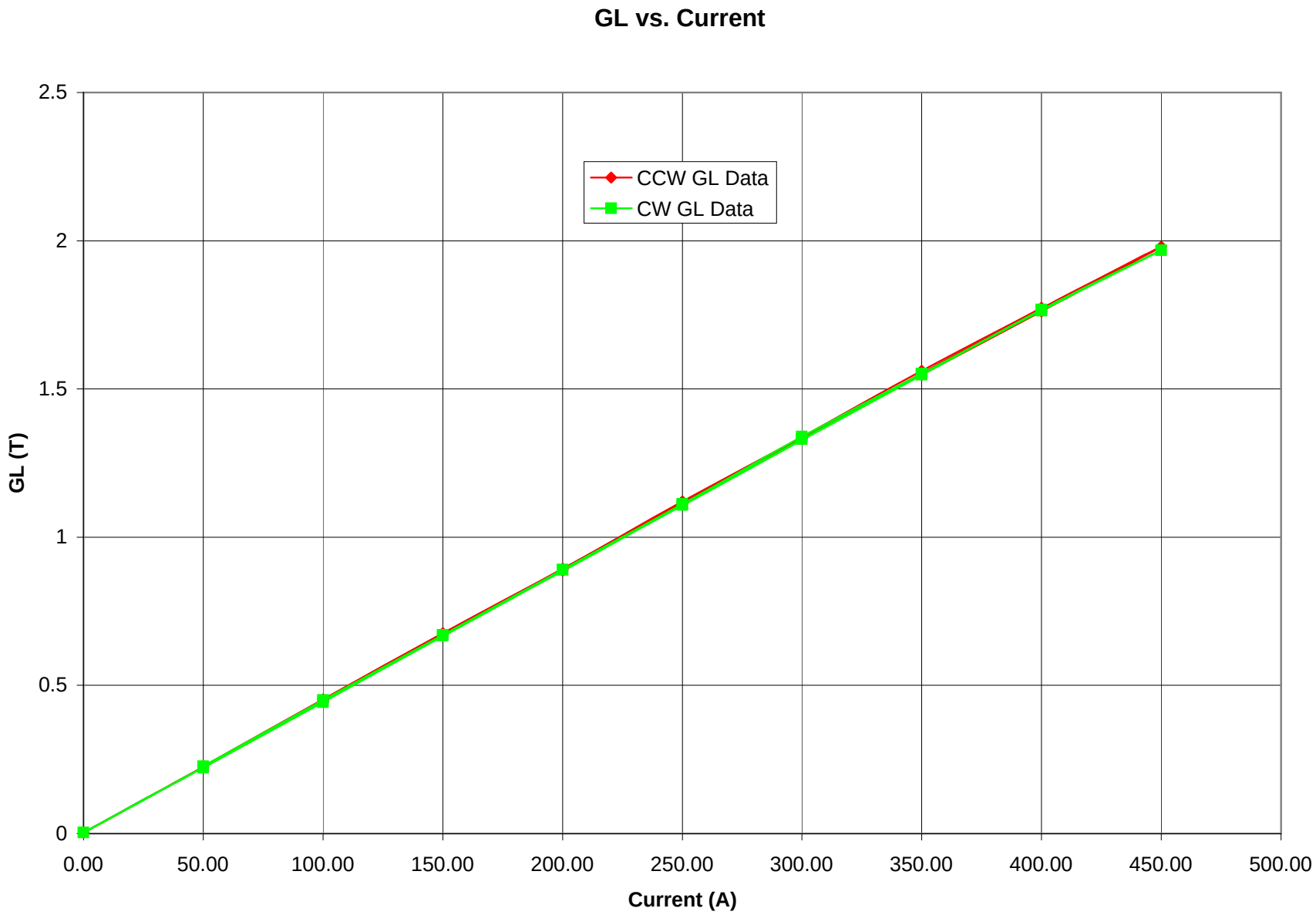
Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals
Q4_1.dat	**400**	1.77E-02	1.77E+00	0.02%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	**99.75%**
Q4_2.dat	**0**	4.05E-05	4.05E-03	1.69%	0.50%	0.39%	1.17%	1.60%	1.02%	0.56%	3.63%	2.85%	2.78%	4.91%	0.49%	4.25%	3.73%	**70.43%**
Q4_3.dat	**50**	2.22E-03	2.22E-01	0.04%	0.02%	0.02%	0.08%	0.11%	0.07%	0.04%	0.03%	0.08%	0.02%	0.06%	0.04%	0.03%	0.05%	**99.31%**
Q4_4.dat	**100**	4.44E-03	4.44E-01	0.39%	0.49%	0.45%	0.46%	0.45%	0.43%	0.43%	0.40%	0.44%	0.42%	0.38%	0.35%	0.38%	0.40%	**94.13%**
Q4_5.dat	**150**	6.68E-03	6.68E-01	0.00%	0.00%	0.02%	0.10%	0.01%	0.01%	0.01%	0.03%	0.02%	0.00%	0.02%	0.02%	0.02%	0.03%	**99.71%**
Q4_6.dat	**200**	8.89E-03	8.89E-01	0.01%	0.01%	0.01%	0.10%	0.02%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.00%	0.03%	**99.74%**
Q4_7.dat	**250**	1.11E-02	1.11E+00	0.01%	0.00%	0.02%	0.09%	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.00%	**99.80%**
Q4_8.dat	**300**	1.33E-02	1.33E+00	0.01%	0.02%	0.01%	0.09%	0.01%	0.03%	0.00%	0.02%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	**99.70%**
Q4_9.dat	**350**	1.55E-02	1.55E+00	0.01%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.02%	0.01%	0.01%	**99.79%**
Q4_10.dat	**400**	1.77E-02	1.77E+00	0.01%	0.00%	0.01%	0.09%	0.01%	0.00%	0.01%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.02%	**99.81%**
Q4_11.dat	**450**	1.97E-02	1.97E+00	0.01%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	**99.77%**
Q4_12.dat	**400**	1.76E-02	1.76E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	**99.78%**
Q4_13.dat	**350**	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	**99.79%**
Q4_14.dat	**300**	1.34E-02	1.34E+00	0.01%	0.01%	0.03%	0.09%	0.03%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	**99.75%**
Q4_15.dat	**250**	1.11E-02	1.11E+00	0.32%	0.39%	0.36%	0.36%	0.37%	0.37%	0.35%	0.34%	0.33%	0.32%	0.31%	0.30%	0.28%	0.27%	**95.33%**
Q4_16.dat	**200**	8.90E-03	8.90E-01	0.01%	0.01%	0.01%	0.10%	0.02%	0.02%	0.01%	0.01%	0.00%	0.01%	0.02%	0.01%	0.00%	0.02%	**99.76%**
Q4_17.dat	**150**	6.70E-03	6.70E-01	0.52%	0.66%	0.58%	0.61%	0.60%	0.62%	0.59%	0.55%	0.54%	0.53%	0.50%	0.50%	0.47%	0.45%	**92.27%**
Q4_18.dat	**100**	4.50E-03	4.50E-01	0.04%	0.03%	0.03%	0.09%	0.04%	0.03%	0.02%	0.05%	0.02%	0.01%	0.04%	0.04%	0.02%	0.02%	**99.52%**
Q4_19.dat	**50**	2.27E-03	2.27E-01	0.01%	0.02%	0.01%	0.06%	0.04%	0.03%	0.02%	0.04%	0.00%	0.07%	0.08%	0.09%	0.11%	0.08%	**99.35%**
																	average =	**96.96%**
			Average Da	0.16%	0.12%	0.11%	0.21%	0.18%	0.14%	0.11%	0.27%	0.23%	0.22%	0.34%	0.10%	0.30%	0.27%	

Good Data Only

Data file	current (A)	c2 (Tm)	GL (T)	cn/c2 3	cn/c2 4	cn/c2 5	cn/c2 6	cn/c2 7	cn/c2 8	cn/c2 9	cn/c2 10	cn/c2 11	cn/c2 12	cn/c2 13	cn/c2 14	cn/c2 15	cn/c2 16	% Quadrupole totals	Norm GL/I (T/A)	Current (A)
Q4_1.dat	400	1.77E-02	1.77E+00	0.02%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	99.75%	0.00442	400
Q4_2.dat	0																			
Q4_3.dat	50																			
Q4_4.dat	100																			
Q4_5.dat	150	6.68E-03	6.68E-01	0.00%	0.00%	0.02%	0.10%	0.01%	0.01%	0.01%	0.03%	0.02%	0.00%	0.02%	0.02%	0.02%	0.03%	99.71%	0.00445	150
Q4_6.dat	200	8.89E-03	8.89E-01	0.01%	0.01%	0.01%	0.10%	0.02%	0.01%	0.00%	0.01%	0.02%	0.01%	0.02%	0.01%	0.00%	0.03%	99.74%	0.00445	200
Q4_7.dat	250	1.11E-02	1.11E+00	0.01%	0.00%	0.02%	0.09%	0.01%	0.00%	0.00%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	0.00%	99.80%	0.00444	250
Q4_8.dat	300	1.33E-02	1.33E+00	0.01%	0.02%	0.01%	0.09%	0.01%	0.03%	0.00%	0.02%	0.01%	0.02%	0.03%	0.02%	0.01%	0.02%	99.70%	0.00443	300
Q4_9.dat	350	1.55E-02	1.55E+00	0.01%	0.01%	0.02%	0.09%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.02%	0.01%	0.01%	99.79%	0.00442	350
Q4_10.dat	400	1.77E-02	1.77E+00	0.01%	0.00%	0.01%	0.09%	0.01%	0.00%	0.01%	0.00%	0.02%	0.00%	0.01%	0.01%	0.01%	0.02%	99.81%	0.00442	400
Q4_11.dat	450	1.97E-02	1.97E+00	0.01%	0.02%	0.01%	0.09%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	99.77%	0.00437	450
Q4_12.dat	400	1.76E-02	1.76E+00	0.01%	0.01%	0.01%	0.11%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	99.78%	0.00441	400
Q4_13.dat	350	1.55E-02	1.55E+00	0.01%	0.01%	0.01%	0.10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.00%	0.01%	99.79%	0.00443	350
Q4_14.dat	300	1.34E-02	1.34E+00	0.01%	0.01%	0.03%	0.09%	0.03%	0.01%	0.01%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	99.75%	0.00446	300
Q4_15.dat	250																			
Q4_16.dat	200	8.90E-03	8.90E-01	0.01%	0.01%	0.01%	0.10%	0.02%	0.02%	0.01%	0.01%	0.00%	0.01%	0.02%	0.01%	0.00%	0.02%	99.76%	0.00445	200
Q4_17.dat	150																			
Q4_18.dat	100																			
Q4_19.dat	50																			

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	99.76%
n =															
Average Data	**0.01%**	**0.01%**	**0.01%**	**0.09%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	

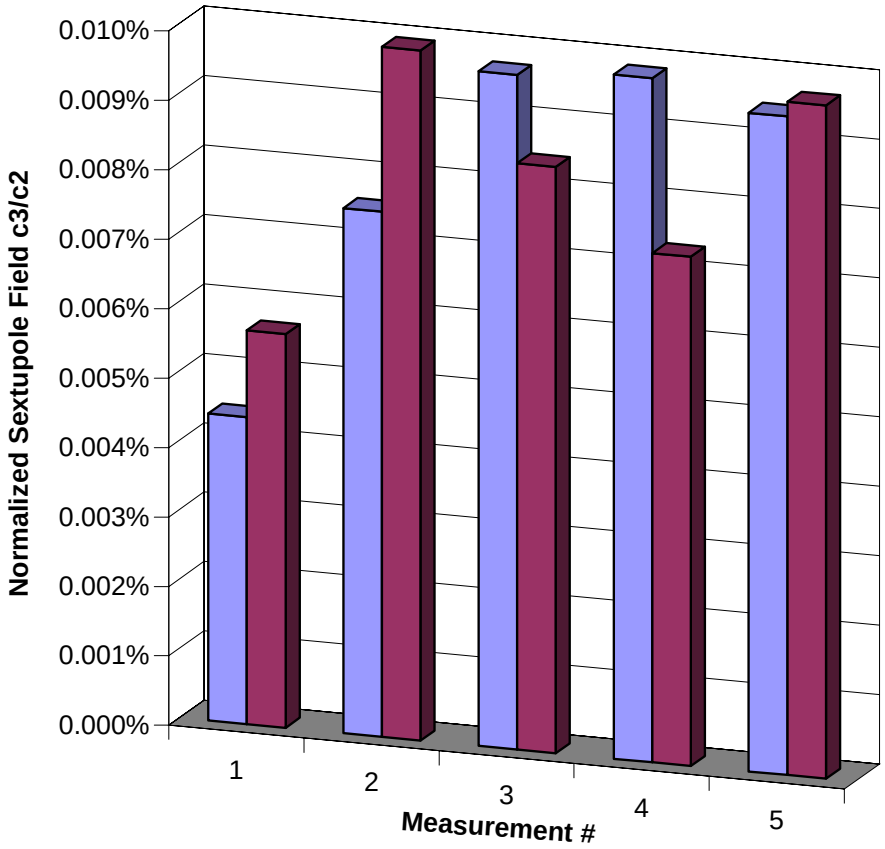

GL/I vs. I
CCW GL/I Data
CW GL/I Data
4.50E-03
4.48E-03
4.46E-03
4.44E-03
4.42E-03
4.40E-03
4.38E-03
4.36E-03
GL/I (T/A)
0
50
100
150
200
250
300
350
400
450
Current (A)


GL vs. Current
CCW GL Data
CW GL Data
GL (T)
Current (A)
2.5
2
1.5
1
0.5
0
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00

CCW Data

I (A)	GL (T)	Predicted I (A)	Difference	Predicted GL(T)
400	1.774	383.1417	0.957854	1.85162
0				
50				
100				
150				
200				
250	1.115	240.0135	0.960054	1.160981
300	1.333	287.3609	0.95787	1.391194
350	1.548	334.0567	0.954448	1.621407
400				
450	1.98	427.8828	0.950851	2.081833
400	1.772	382.7073	0.956768	1.85162
350	1.561	336.8802	0.962515	1.621407
300	1.338	288.4468	0.961489	1.391194
250	1.121	241.3166	0.965266	1.160981
200				
150				
100				
50				
		average =	**95.857%**	

Q32_7: Effect of Disassembly On Sextupole Field



	1	2	3	4	5
Before Disassembly	0.004%	0.008%	0.010%	0.010%	0.009%
After Disassembly	0.006%	0.010%	0.008%	0.007%	0.010%

Quad Magnet Serial Number: 25B1346B-7

Split Test

Data File	Qcoil (A)	c2	C3	C3/C2
Before disassembly				
Q12SPLIT_1.mpl	400	2.72E-02	1.20E-06	0.004%
Q12SPLIT_2.mpl	400	2.72E-02	2.06E-06	0.008%
Q12SPLIT_3.mpl	400	2.72E-02	2.64E-06	0.010%
Q12SPLIT_4.mpl	400	2.72E-02	2.68E-06	0.010%
Q12SPLIT_5.mpl	400	2.72E-02	2.58E-06	0.009%
After Reassembly				
Q12SPLIT_6.mpl	400	2.72E-02	1.54E-06	0.006%
Q12SPLIT_7.mpl	400	2.72E-02	2.70E-06	0.010%
Q12SPLIT_8.mpl	400	2.72E-02	2.29E-06	0.008%
Q12SPLIT_9.mpl	400	2.72E-02	1.99E-06	0.007%
Q12SPLIT_10.mpl	400	2.72E-02	2.64E-06	0.010%