Industrial X-Ray

Bipolar Metal Ceramic Tubes

Overview

Bipolar Metal Ceramic Tubes

Overview and Configuration Information

About Bipolar Metal Ceramic X-Ray Tubes

The COMET Bipolar Metal Ceramic tubes are designed for use in demanding industrial applications like Security and Non-Destructive Testing.
The tube assembly consists of a Bipolar X-Ray tube and tube housing with two integrated high voltage receptacle sockets. The X-Ray proof housing has an integrated cooling system and is equipped with oil hose connections.
The main advantages are high power, small dimensions, low weight and rugged mechanical design.

"One Stop Shop" for Industrial X-Ray Sources: COMET's XRS Modules

COMET is pleased to offer all of the necessary components for a customized X-Ray Source: The new XRS modules each contain a COMET X-Ray tube, high voltage generator with cables and coolers designed for easy integration that will optimize system performance.
All XRS modules are factory prepared and tested for hassle free installation and operation.
This novel solution demonstrates COMET's continuous commitment and investment in delivering real added value to our worldwide customer base.

About the Business Unit Industrial X-Ray

COMET Industrial X-Ray is an experienced supplier of components and modules for industrial X-Ray applications and is proud of its reputation as the preferred engineering partner in terms of innovation potential, know how, flexibility and speed. Our product range features X-Ray tubes and sources with small focal spot resolution (< 1 µm) up to 6 kW in output for more power demanding requirements. From the smallest footprint for use in portable units to 450 kV fixed gantry systems that are suitable for cargo screening.

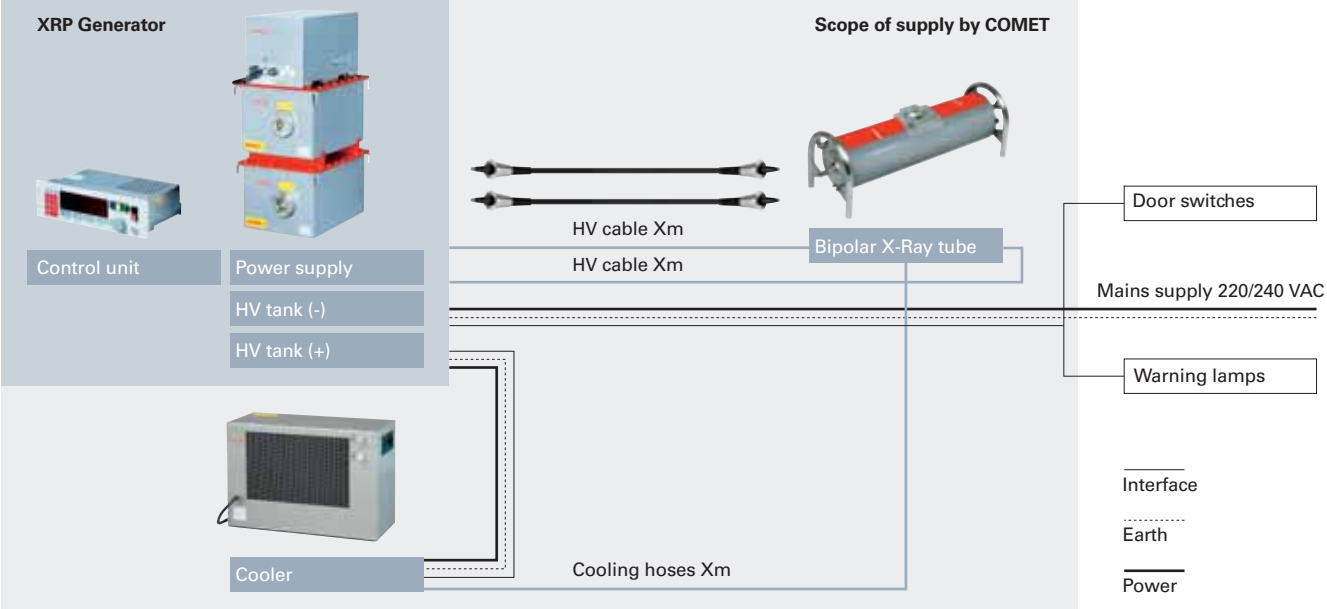
Bipolar Metal Ceramic Tubes – Configuration Information

Overview of tubes and fitting module components; high voltage generator, high voltage cable and cooler.

	Generator							Tube
XRS Module	Type	Ordering No.	Voltage range (kV)	Current range (mA)	Max. power (W)	Output connector	Ordering No. flange	Tube type example
XRS-320	XRP-320/4500/2	**10006467**	15–320	0–22.5	4500	R24	**651136**	MXR-320/23
								MXR-320/26
								MXR-320HP/11
XRS-350	XRP-450/4500/2	**10006468**	20–450	0–15	4500	R28	**100001710**	MXR-350/23
								MXR-350/26
XRS-400	XRP-450/4500/2	**10006468**	20–450	0–15	4500	R28	**100001710**	MXR-400/25
XRS-420	XRP-450/4500/2	**10006468**	20–450	0–15	4500	R28	**100001710**	MXR-421/26
XRS-450	XRP-450/4500/2	**10006468**	20–450	0–15	4500	R28	**100001710**	MXR-451/26
								MXR-452
								MXR-451HP/11

Bipolar X-Ray Source

Diagram of a Bipolar X-Ray Source XRS and its environment.



Ordering No.	Focal spots (EN 12543)	Terminal type	Ordering No. flange	Cable Type Ordering No.	Cooler Type	Cooler Ordering No.
915334.51	d=1.9mm/d=3.6mm	R24	**100001711**	N3/160-R24-R24-Xm	XRC-4501-OW	**10008643**
915358.51	d=3.0mm/d=5.5mm	R24	**100001711**	N3/160-R24-R24-Xm	XRC-4501-OA	**10008642**
915368.51	d=0.4mm/d=1.0mm	R24	**100001711**	N3/160-R24-R24-Xm	XRC-4501-OW	**10008643**
915334.61	d=1.9mm/d=3.6mm	R24	**100001711**	P3/250-R28-R24-Xm	XRC-4501-OA	**10008642**
915358.61	d=3.0mm/d=5.5mm	R24	**100001711**	P3/250-R28-R24-Xm	XRC-4501-OW	**10008643**
915331.53	d=3.0mm/d=7.0mm	R24	**100001711**	P3/250-R28-R24-Xm	XRC-4501-OW	**10008643**
915366.55	d=2.5mm/d=5.5mm	R28	**100001710**	P3/250-R28-R28-Xm	XRC-4501-OA	**10008642**
915366.51	d=2.5mm/d=5.5mm	R28	**100001710**	P3/250-R28-R28-Xm	XRC-4501-OW	**10008643**
915344.51	d=2.5mm/d=5.5mm	R28	**100001710**	P3/250-R28-R28-Xm	XRC-4501-OW	**10008643**
915369.51	d=0.4mm/d=1.0mm	R28	**100001710**	P3/250-R28-R28-Xm	XRC-4501-OA	**10008642**

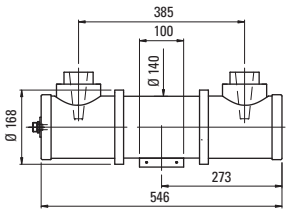
Bipolar Metal Ceramic Tubes

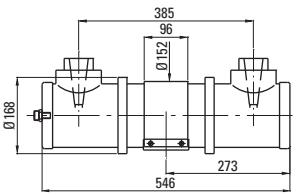
Technical Data

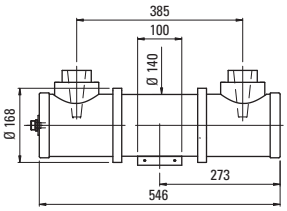
	MXR-320/23	MXR-320/26	MXR-320HP/11
Ordering No.	**915334.51**	**915358.51**	**915368.51**
Ordering No. with 90° housing	**915334.56**	**915358.56**	–
Nominal tube voltage	320 kV	320 kV	320 kV
Continuous rating	640 W / 1600 W	1500 W / 4200 W	800 W / 1800 W
Focal spot acc. EN 12543	d = 1.9 mm / d = 3.6 mm	d = 3.0 mm / d = 5.5 mm	d = 0.4 mm* / d = 1.0 mm
Filament current, max.	4.9 A / 4.6 A	4.9 A / 4.6 A	4.1 A / 4.6 A
Filament voltage, typical	3.0 V / 6.8 V	2.6 V / 6.4 V	2.3 V / 6.8 V
Inherent filtration	3 mm Be	3 mm Be	3 mm Be
Target material	W	W	W
Target angle	20°	20°	11°
Radiation coverage	40°	40°	40° x 30°
Leakage radiation, max.	5 mSv/h	5 mSv/h	5 mSv/h
Cooling medium	Oil	Oil	Oil
Cooling medium flow, min.	14 l/min	14 l/min	14 l/min
Temperature at inlet, max.	50° C	50° C	50° C
Weight	40 kg	40 kg	40 kg
Terminal type	R24	R24	R24
Mounting flange	10001711	10001711	10001711
Locking device	940303	940303	940303

*Threshold: 25 %

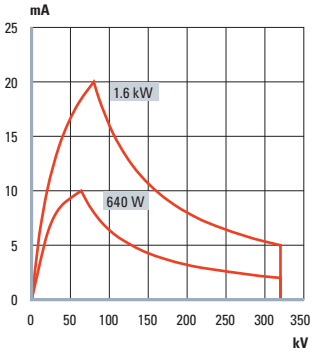
Outline drawing

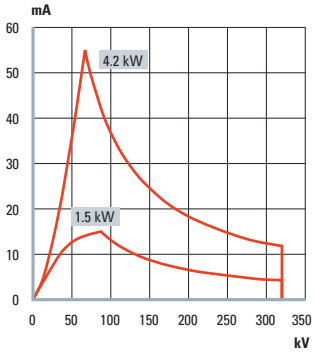


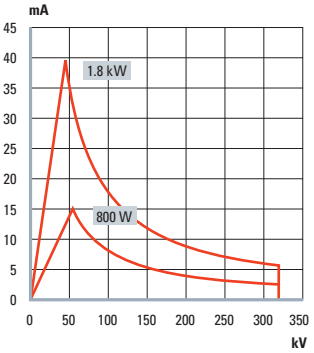




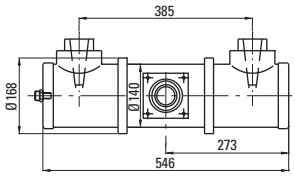
Tube diagram

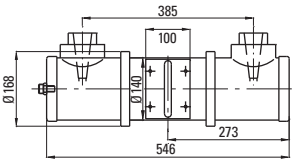


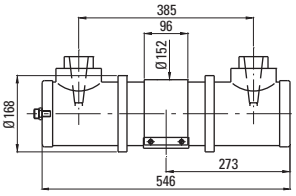


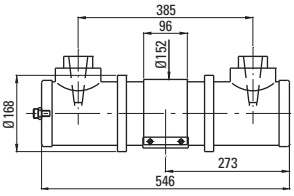


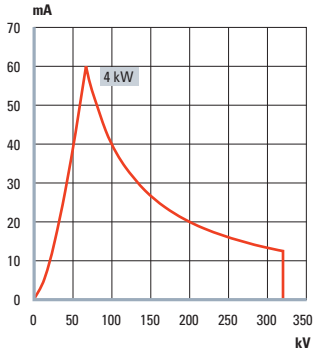
MXR-321	MXR-322	MXR-350/23	MXR-350/26
–	–	**915334.61**	**915358.61**
915341.51	**915337.61**	**915334.66**	**915358.66**
320 kV	320 kV	350 kV	350 kV
4000 W	3200 W	640 W / 1600 W	1500 W / 4200 W
d = 8 mm	d = 4.5 mm	d = 1.9 mm / d = 3.6 mm	d = 3.0 mm / d = 5.5 mm
4.6 A	4.6 A	4.9 A / 4.6 A	4.9 A / 4.6 A
6.4 V	6.4 V	3.0 V / 6.8 V	2.6 V / 6.4 V
3 mm Be	0.2 mm Cu + 0.4 mm Fe	3 mm Be	2.0 mm + 1.0 mm Be
W	W	W	W
30°	20°	20°	20°
40°	80° x 8°	40°	40°
10 mSv/h	10 mSv/h	5 mSv/h	5 mSv/h
Oil	Oil	Oil	Oil
14 l/min	14 l/min	14 l/min	14 l/min
50° C	50° C	50° C	50° C
40 kg	40 kg	40 kg	40 kg
R24	R24	R24	R24
10001711	10001711	10001711	10001711
940303	940303	940303	940303

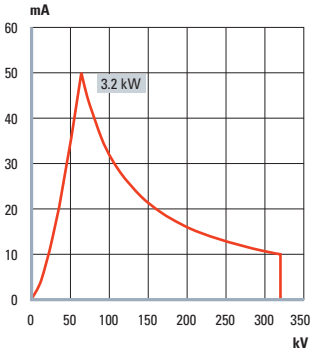


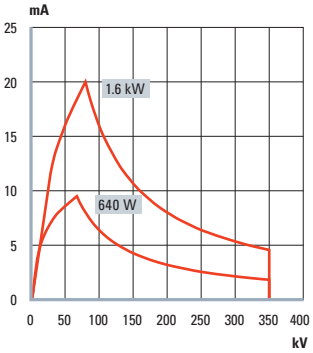


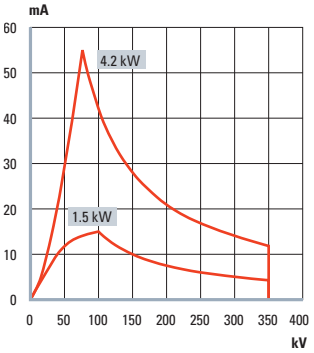






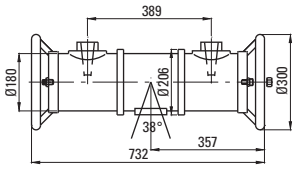


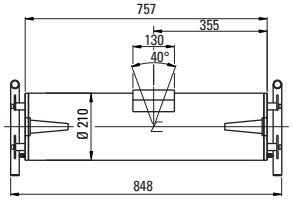


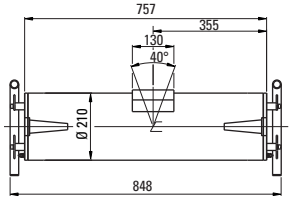


	MXR-400/25	MXR-421/26	MXR-451/26
Ordering No.	**915331.53**	**915366.55**	**915366.51**
Ordering No. with 90° housing	–	–	–
Nominal tube voltage	400 kV	420 kV	450 kV
Continuous rating	1500 W / 4200 W	900 W / 4500 W	900 W / 4500 W
Focal spot acc. EN 12543	d = 3.0 mm / d = 7.0 mm	d = 2.5 mm / d = 5.5 mm	d = 2.5 mm / d = 5.5 mm
Filament current, max.	4.9 A / 4.6 A	4.9 A / 4.6 A	4.9 A / 4.6 A
Filament voltage, typical	2.6 V / 6.4 V	3.0 V / 6.8 V	3.0 V / 6.8 V
Inherent filtration	3 mm Be	5 mm Be	5 mm Be
Target material	W	W	W
Target angle	20°	30°	30°
Radiation coverage	38°	40°	40°
Leakage radiation, max.	10 mSv/h	10 mSv/h	10 mSv/h
Cooling medium	Oil	Oil	Oil
Cooling medium flow, min.	14 l/min	14 l/min	14 l/min
Temperature at inlet, max.	50° C	50° C	50° C
Weight	100 kg	95 kg	95 kg
Terminal type	R24	R28	R28
Mounting flange	10001711	10001710	10001710
Locking device	940303	–	–

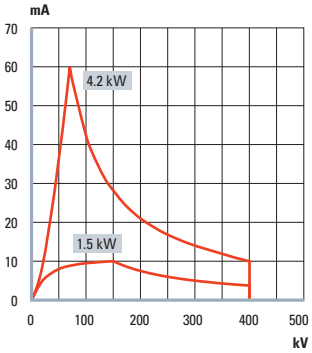
Outline drawing

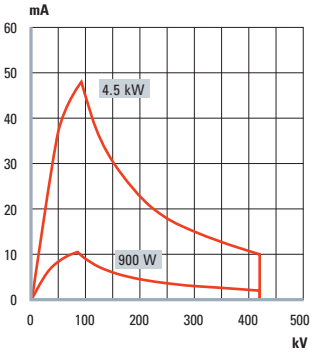


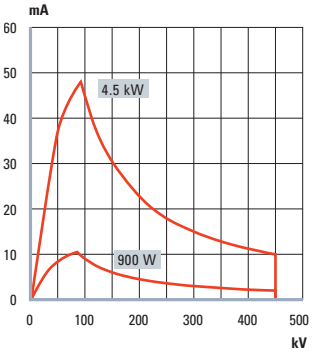




Tube diagram

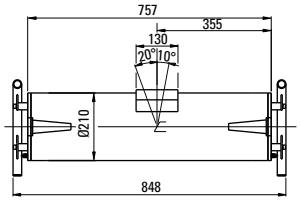


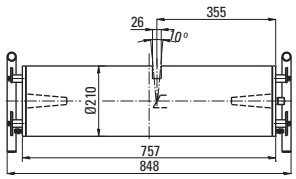


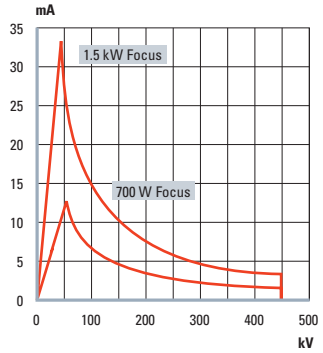


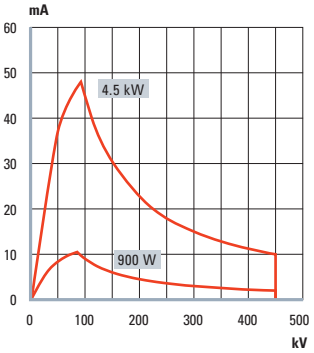
MXR-451HP/11	MXR-452
915369.51	**915344.51**
–	–
450 kV	450 kV
700 W / 1500 W	900 W / 4500 W
d = 0.4 mm* / d = 1.0 mm	d = 2.5 mm / d = 5.5 mm
4.1 A / 4.6 A	4.9 A / 4.6 A
2.3 V / 6.8 V	3.0 V / 6.8 V
5 mm Be	2.3 mm Fe + 1.0 mm Cu
W	W
11°	30°
40° x 30°	90° x 10°
5 mSv/h	10 mSv/h
Oil	Oil
14 l/min	14 l/min
50° C	50° C
95 kg	95 kg
R28	R28
10001710	10001710
–	–

* Threshold: 25 %









COMET is a successful international technology company in the growth markets of security, inspection, electronics and communication. As an expert in the field of applied physics, COMET provides a complete and highly flexible portfolio of components, modules, systems and services from a single source.

COMET Industrial X-Ray is an experienced supplier of components and modules for industrial X-Ray applications and is proud of its reputation as the preferred engineering partner in terms of innovation potential, know how, flexibility and speed.

COMET – The X-perts for security, inspection, electronics and communication

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