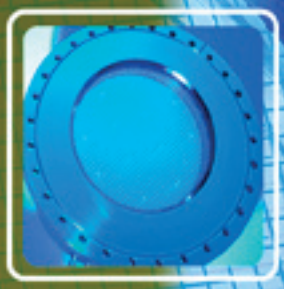
CiMAX®-200

EXCIMER LAMP SYSTEMS



USHIO

CiMAX® Excimer Lamp Systems

USHIO America's CiMAX® high power excimer lamp systems stand in a class of their own. No other excimer lamp system can match the CiMAX® design in terms of output power, uniformity, useful lamp life, surface temperature, conversion efficiency, or compact form factor.

And with USHIO America's proven ability to produce customized turnkey solutions offering near monochromatic vacuum UV** at 172nm, there is simply no comparison.

Models with up to 300mm diameter output window, vacuum compatible design, closed loop power and/or dose control with alternate wavelengths (222nm, 282nm and 308nm) available upon request.

Applications

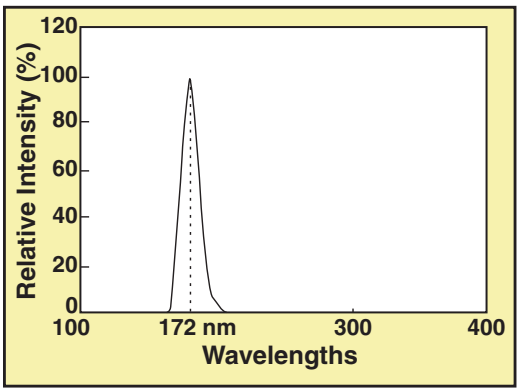
Organic decomposition and oxidation.
Low temperature dry cleaning of organics from photomasks, wafers and LCD/OLED substrates.

Surface modification.
Wettability improvement of silicon and glass substrates. Hydrophilic enhancement of PI, PMMA, PET, PE, PS and PTFE.

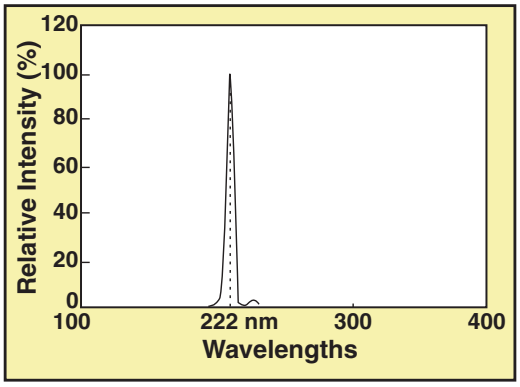
Photo chemical vapor deposition.
Low temperature deposition of stochiometric SiO_2, SiC, TiO_2, Ta_2O_5, Si_3N_4, SiO_XN_Y, a-Si:H, high-k dielectrics, low-k dielectrics and metal-organic films.

Semiconductor process and yield improvement.
Enhancement of SOG/SOD/HMDS coatings, prevention of footing and pattern fall, strengthening of gate oxide dielectric property, improved Al/Cu/Pt plating, photoresist ashing, photomask passivation.

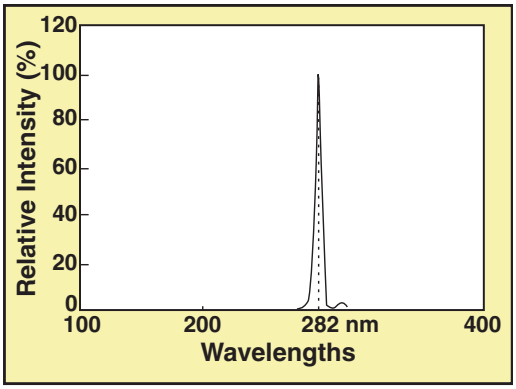
OLED process enhancement.
Dry cleaning of ITO anodes, curing of encapsulation adhesive, barrier layer deposition, inorganic/organic layer adhesion improvement.



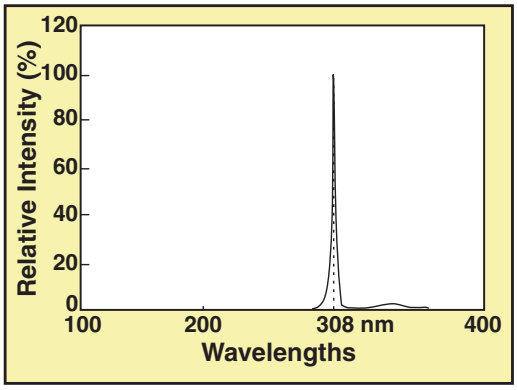
Xe2 at 172nm FWHM* = 14nm



KrCl at 222nm FWHM = 3nm



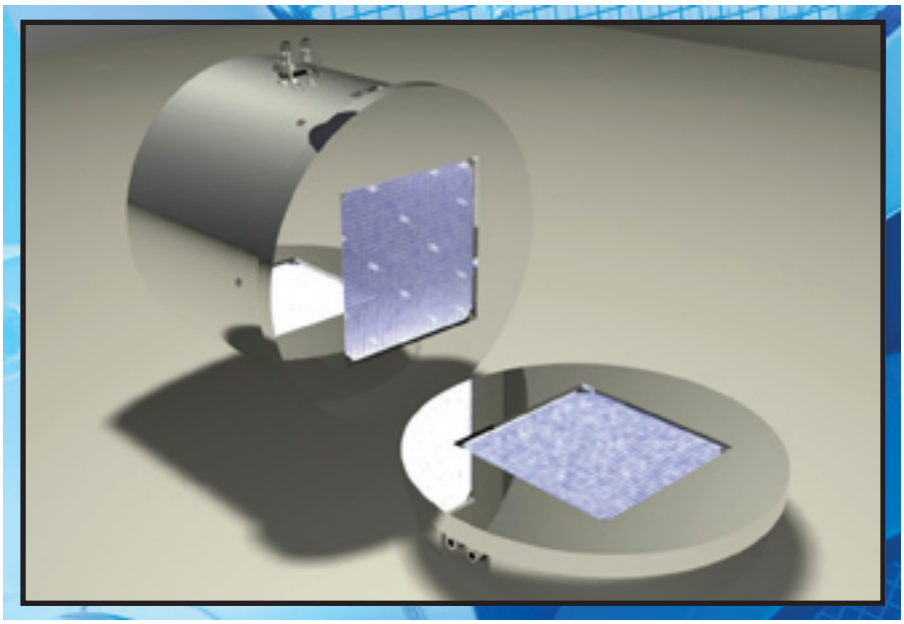
XeBr at 282nm FWHM = 3nm



XeCl at 308nm FWHM = 5nm

* Full width at half maximum

** The vacuum UV spectrum is defined as wavelengths between 100nm to 190nm and deep UV is defined as wavelengths between 190nm to 280nm.



Picture: CiMAX®–200 Excimer Lamp System and Excimer Lamp Module with square window (optional).

Ideal wavelength.

The CiMAX® system emits UV light centered at 172nm. This is the ideal spectrum for many surface cleaning and modification applications. Models are also available at 222nm, 282nm and 308nm upon request.

Long lamp life.

The CiMAX® system's lamp module provides 1,000 hours of continuous use at 172nm. Effective operational life is maximized through the CiMAX® system's instant ON/OFF capability that eliminates the need for warm up or minimum running time.

Low thermal output.

The FWHM for 172nm is 14nm and is much less (3–5nm) for other wavelengths. The CiMAX® system is perfect for processing thermally sensitive materials.

Compact design.

Ultra-compact lamp house with incorporated power supply allows for easier system integration.

High output power.

The CiMAX® system uses an advanced power delivery system that enables a much higher conversion efficiency that results in a 5 to 10 times increase in vacuum UV power output (50–100 mW/cm^2 depending on the system configuration).

High output uniformity.

The CiMAX® system uses a patent pending "flat" lamp module design that emits a uniform light across a large emitting surface. Compared to traditional "tubular" designs, the CiMAX® system delivers a five fold improvement in uniformity.

No lamp-house inerting required.

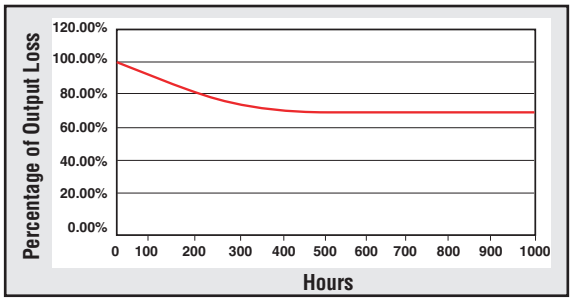
The CiMAX® system uses an innovative non-reactive front electrode design that eliminates the need for nitrogen purge further reducing the operating cost.

Flexible options.

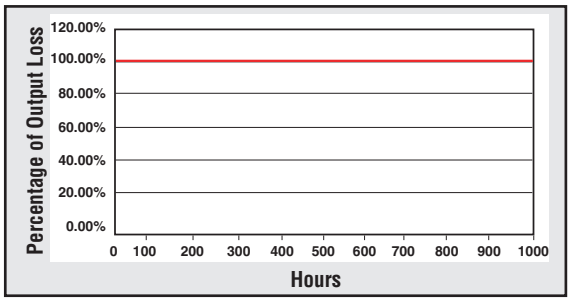
A vacuum compatible window option is available for integration with vacuum equipment. The closed-loop control option is available for ultra-high precision dose control. An air cooled option is available for water sensitive environments.

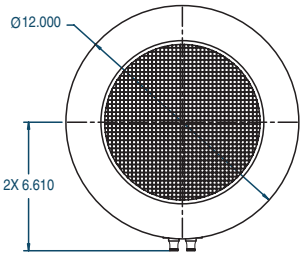
CiMAX®–200 Excimer Lamp System

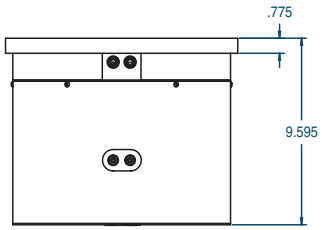
Average Output Degradation for 172nm CiMAX® – 200 Excimer Lamp System



Optional closed loop control technology maximizes output power over the life of the lamp.







Technical Specifications for the CiMAX®–200 Excimer Lamp System

Output

Wavelength	172nm
FWHM	14nm
Output power	50-100 mW/cm²*
Lamp life	1000 hours
Output window size	200mm diameter
Window temperature	less than 50ºC
Uniformity	±2.5%

*Depending on system configuration

Mechanical

Diameter	12 in.
Height	10 in.
Weight	42 lbs.
Enclosure material	316 stainless steel

Safety

Fault sensors	Dual redundant

Power

Input voltage	85-265 Vac
Frequency	50-60 Hz
Maximum input current	3.7 A
Power factor	0.99

Environment

Cooling water	2-3 liter/min

Certifications

Agency approvals	UL, CE, Semi

Options

- Vacuum compatible window
- 6 in. X 6 in. square window
- Closed-loop control

TPD CiMAX (E) – 06/05

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