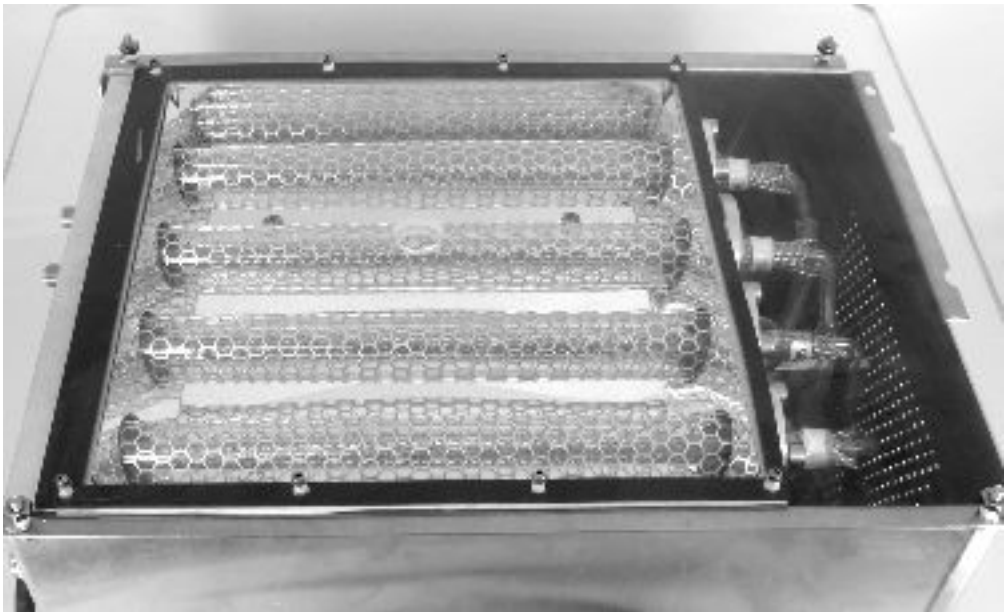
RESONANCE LTD
Optical Solutions & Technologies

Xenon High Power Continuum Source
REX-4

This Xenon filled RF powered lamp system is a reliable and maintenance free high intensity source of deep VUV emissions from 158 to 190 NM. This source mounts to an easily customizable 350 x 400 MM inch flange for convenient connection to a HV or gas flow system. VUV fluxes greater than 10 milliwatts/cm2 are delivered through the 230 MM output aperture for use in applications such as wafer cleaning and LCD panel cleaning.



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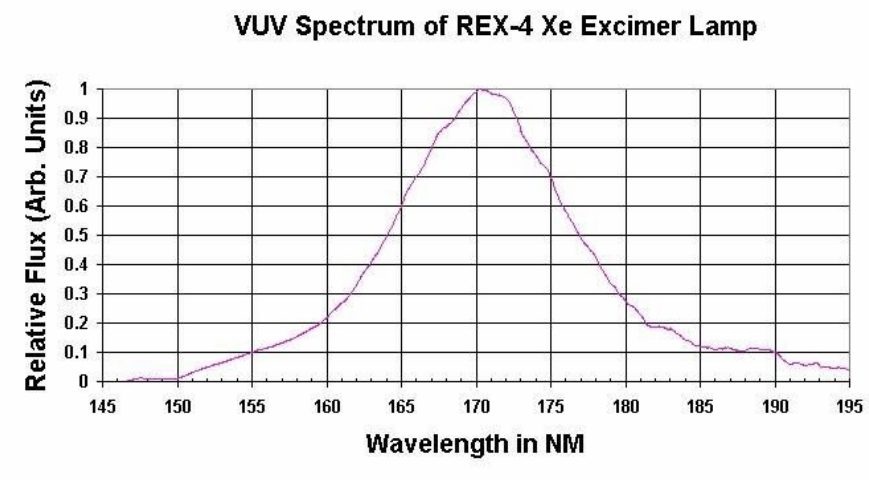
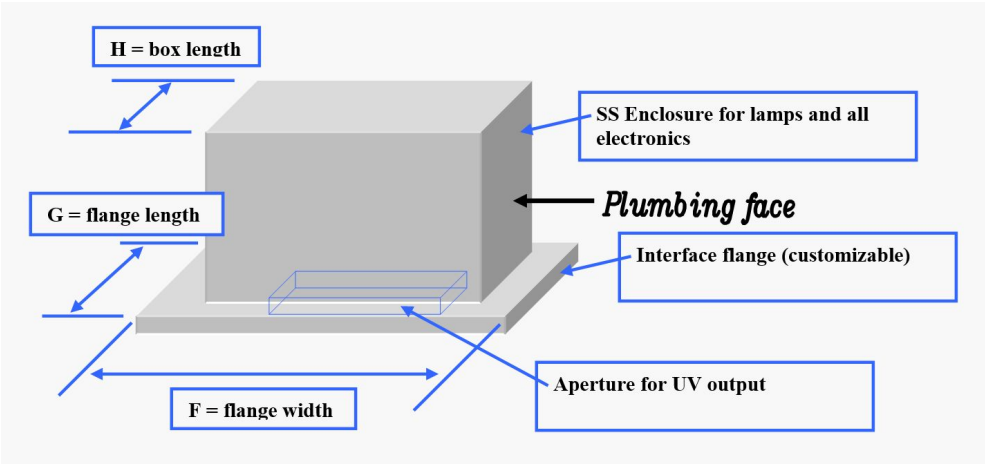
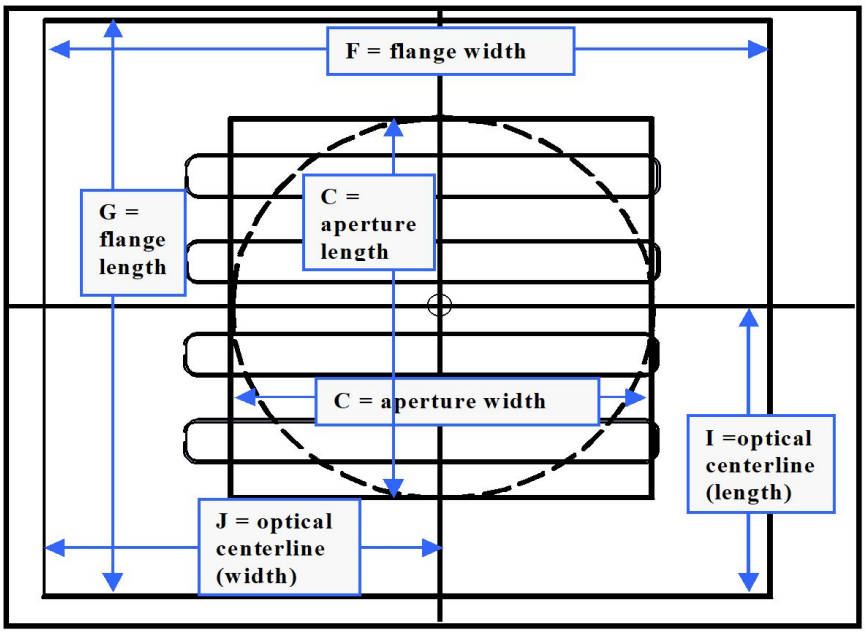
Electrical/Optical Specifications				
Specification	min	typical	max	units
Gas Fill		Xenon		
Peak Wavelengths		172.0		nm
Spectral Output (half power points)		164 - 177		nm
VUV Average Intensity across input aperture (207W)	8.5	12	15	mW per cm^2
Plasma Diameter inside Lamp tubes	22	23	24	mm
Plasma Length inside lamp tubes	22	23	24	mm
Number of lamp tubes		4		
Clear Aperture of Window		23 circ.		cm
Window Material		ss Qtz.		
Certification	NIST Traceable Calibration of Intensity.			
Output Area		415.5	65	cm^2
Input Power	200	210	220	Watts
Input Voltage	95	115	125	VAC
Input Line Frequency	50	60	65	Hz
Mounting Flange	Customizable Aluminum plate with 8 inch aperture.			
Cooling	Forced air.			
Intensity Monitor	Available as option.			
Pulse	Modulation input.			
System	Complete system includes power supply, EMI shielded enclosure, vacuum flange and NIST traceable calibration.			

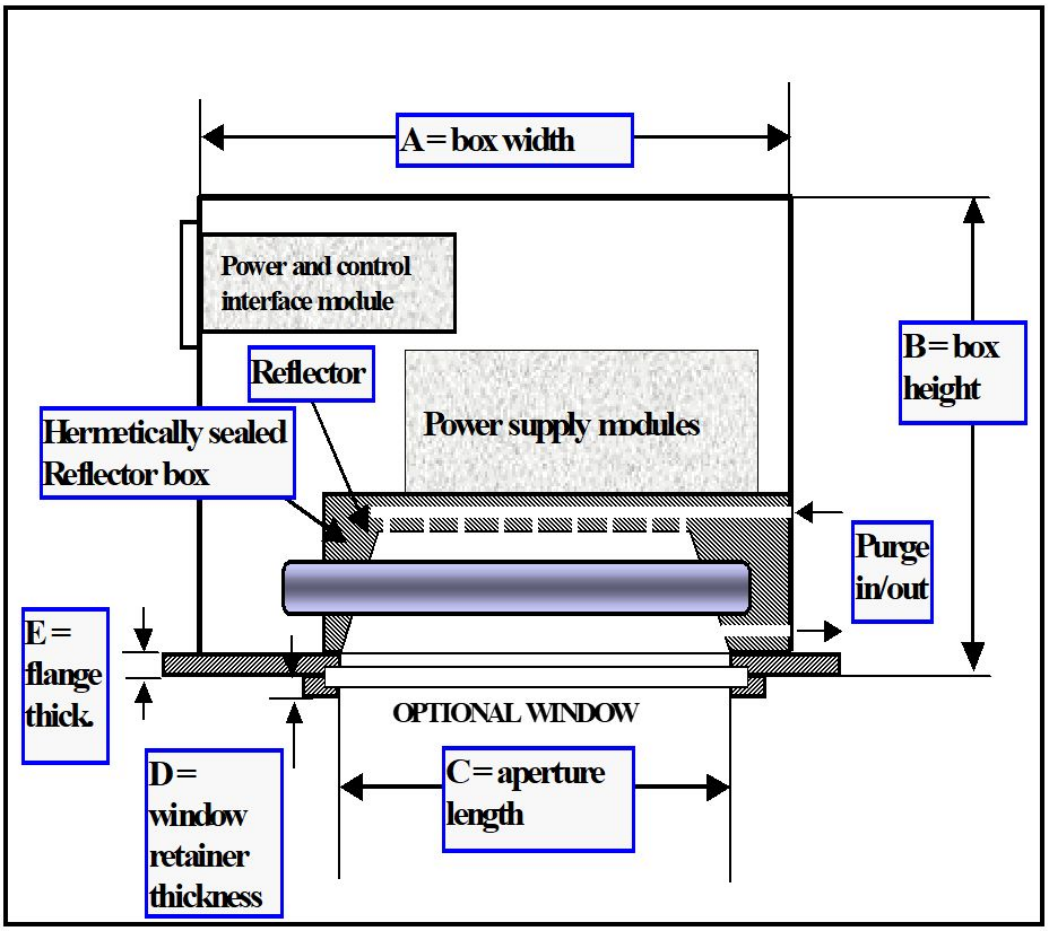

VUV Spectrum of REX-4 Xe Excimer Lamp
Relative Flux (Arb. Units)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
145
150
155
160
165
170
175
180
185
190
195
Wavelength in NM


Plumbing Face


H = box length
SS Enclosure for lamps and all electronics
G = flange length
Plumbing face
Interface flange (customizable)
Aperture for UV output
F = flange width



Dimension	Description	Value	Unit
A	Stainless steel enclosure box width	382	mm
B	Stainless steel enclosure box height	250	mm
C	Optical aperture max. Width, length or diameter	230	mm
D	Window retainer flange thickness	7	mm
E	Bottom flange thickness	10	mm
F	Flange width (customizable)	430	mm
G	Flange length (customizable)	380	mm
H	Stainless steel outer enclosure box length	290	mm
I	Location of optical centerline in length	190	mm
J	Location of optical centerline in width	240	mm
Tolerances		±0.25	mm



Materials	
Window	Suprasil Quartz (optional)
Body	Stainless Steel
Mass	15kg
Vacuum Adapters	6061 Aluminum interface plate (SS optional)
Bolt pattern on main flange	Customizable

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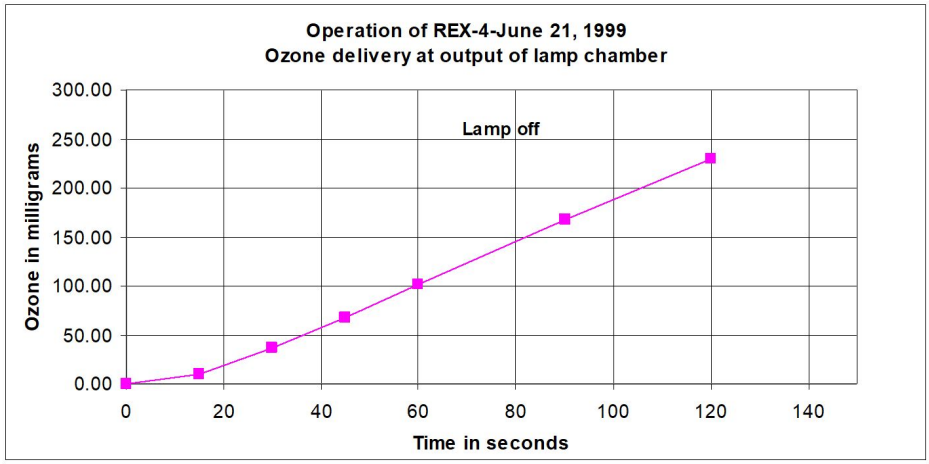
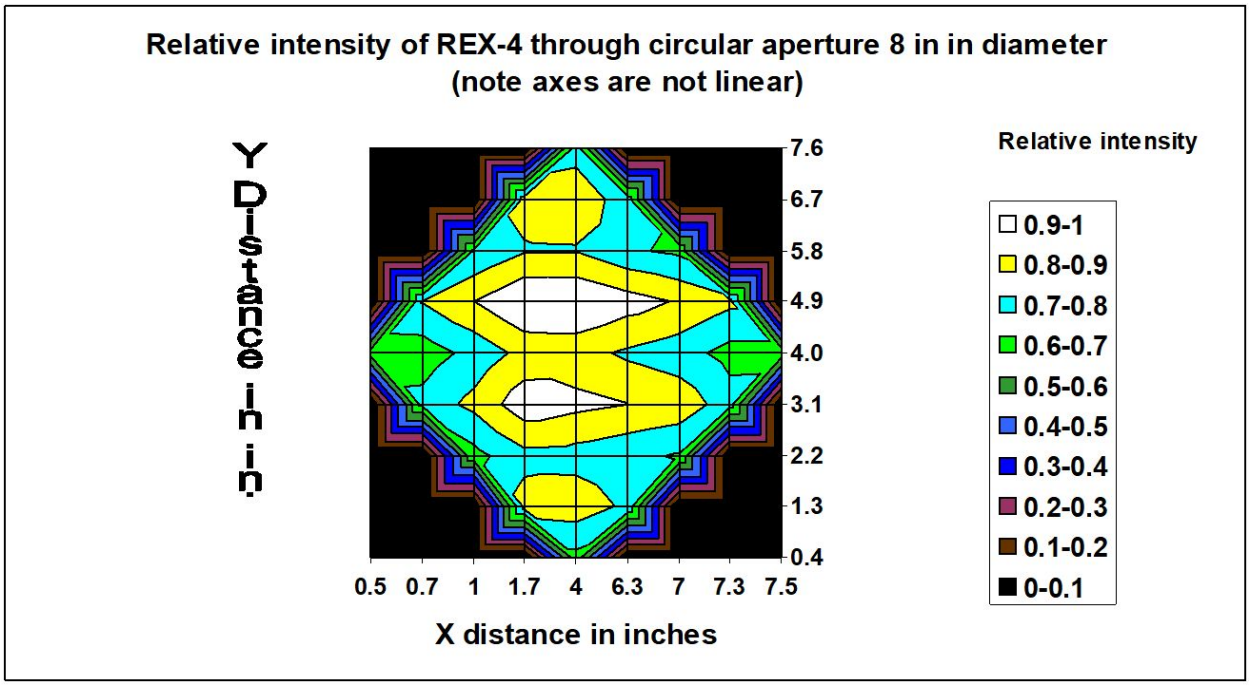
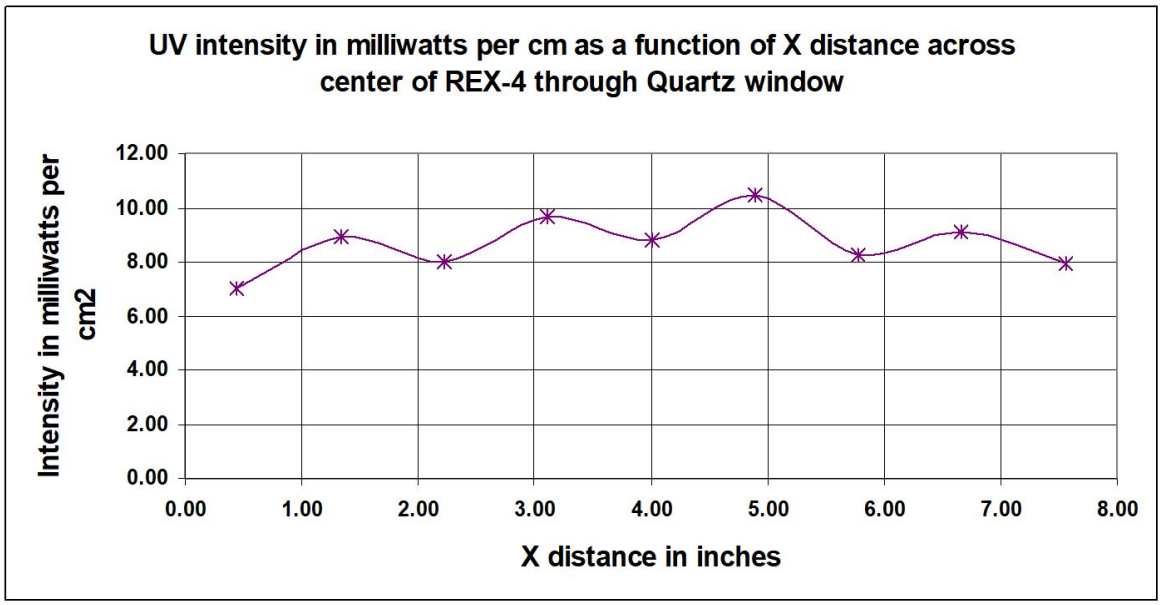
Operational Specifications

Ozone delivery is a measure of the total VUV flux generated by the excimer lamps. This chart shows the delivered ozone at the output purge line from the reflector box when UHP O2 is flowed into the input purge on the reflector box. In approximately 400 seconds the unit delivers 1 gram of Ozone.

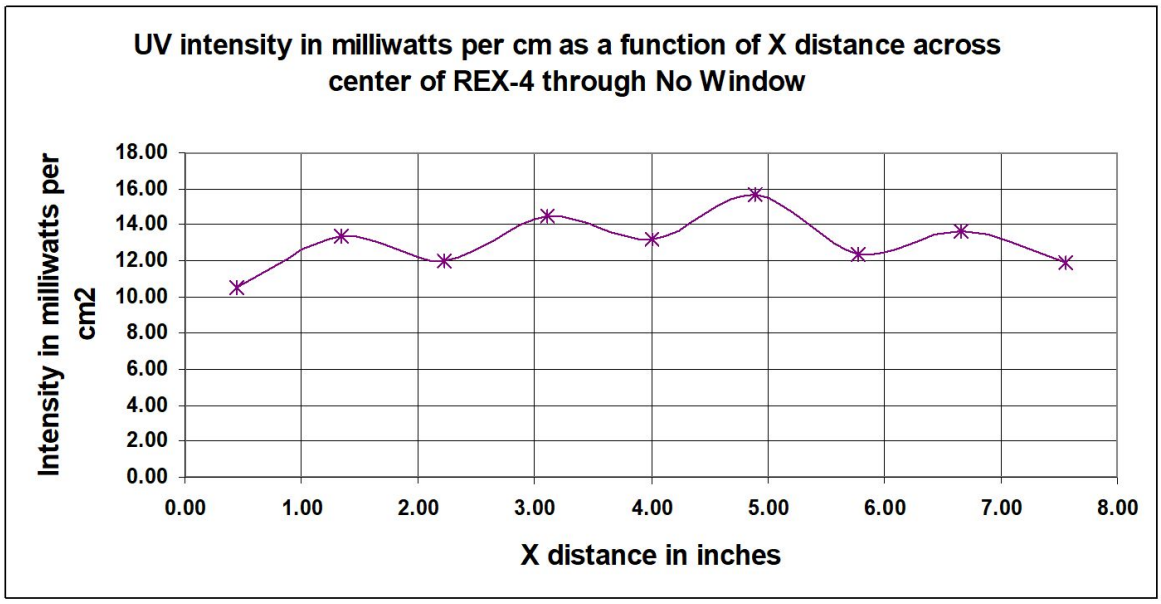




Output with Quartz Window

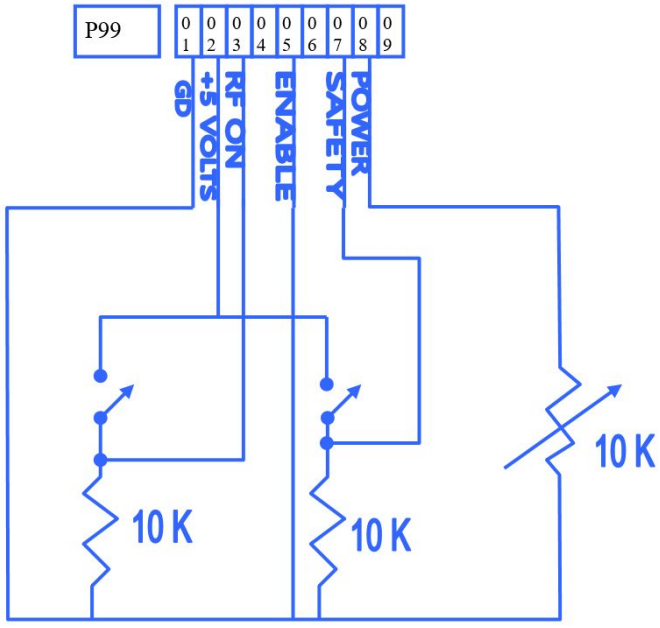


Output through Aperture without Window



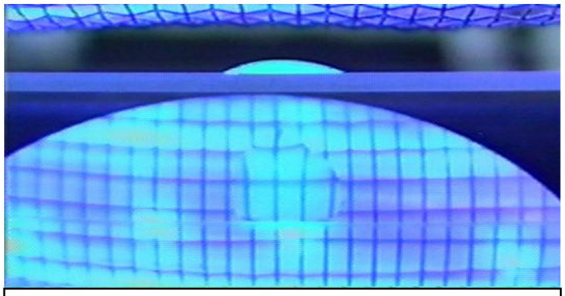
Electrical/Optical Specifications				
Specification	min	typical	max	units
Input Voltage	95	115	125	VAC
Input Current	2	2.4	3.5	ACA
Input Line Frequency	50	60	65	Hz
Control Inputs				
Safety on/off	TTL			
Power on/off	TTL			
Intensity Level Adjustment	0		10	K Ohms
Computer Interface (optional)				
RS-232 (optional)				
Sensor Outputs (optional)				
Lamp VUV and Lamp Intensity Warning	Output through RS-232			

External Control Circuit Requirements

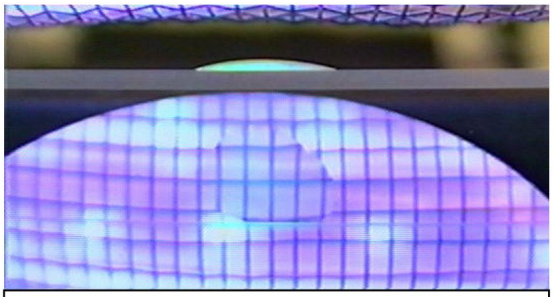


Contact Angle Data:

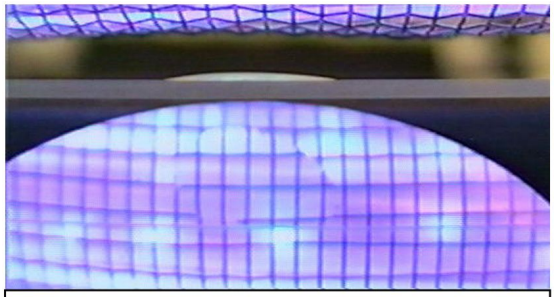
This series of figures shows the spreading of a water droplet on a pyrex glass surface with exposure to UV flux at 172 NM from a REX-4 lamp bulb.



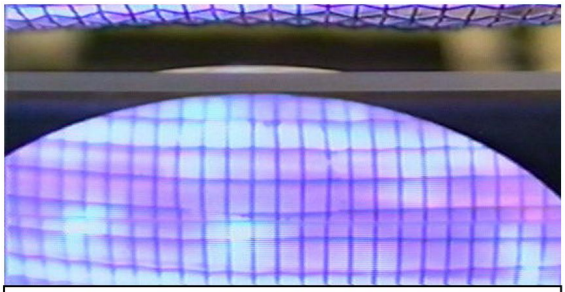
0 seconds



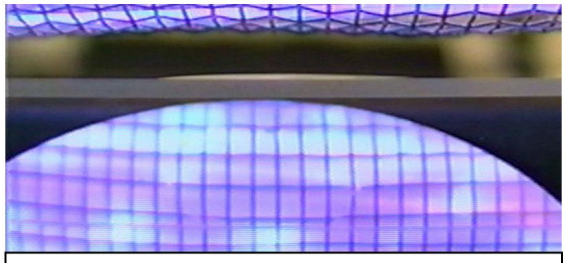
12 seconds



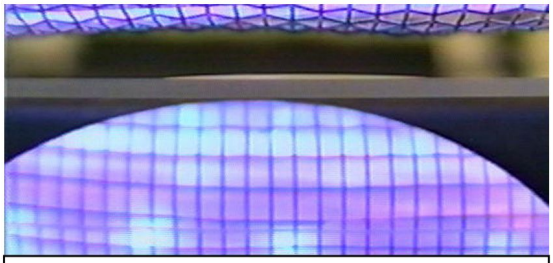
19 seconds



28 seconds



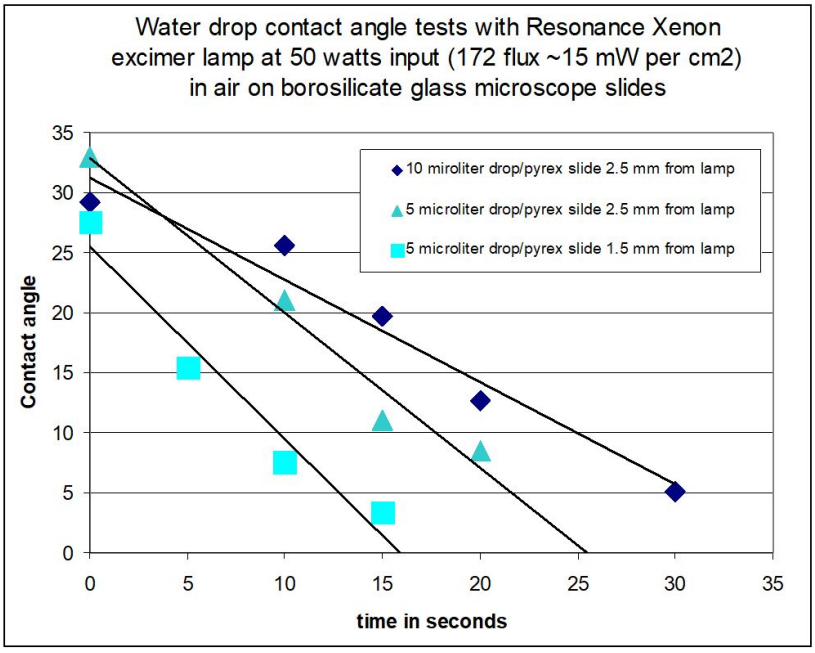
39 seconds



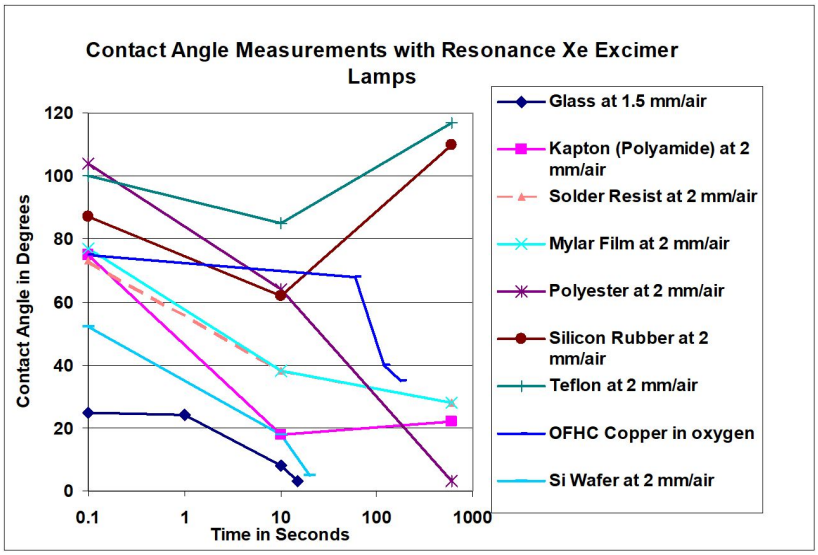
48 seconds

Water Drop Contact Angle Data:

The following figure shows water drop data for borosilicate glass surfaces with varying drop size and lamp distance:

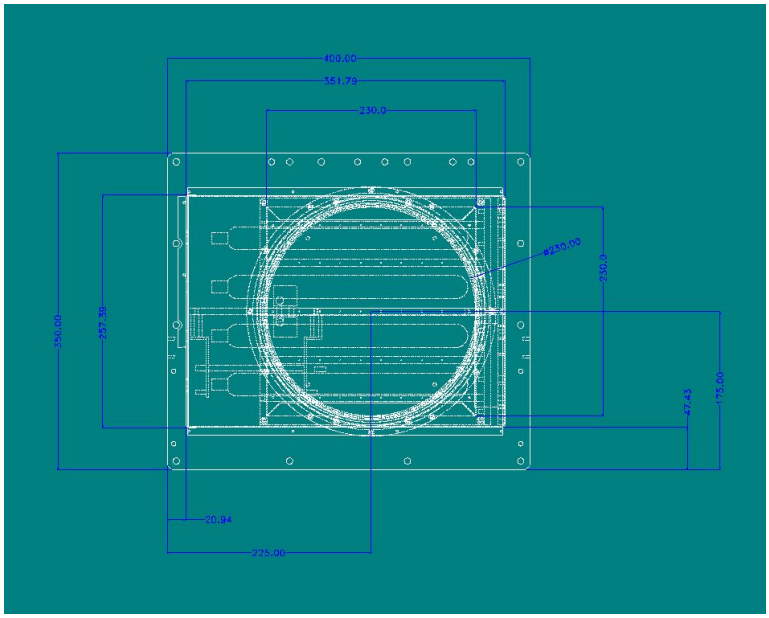


The following figure shows water drop data contact angle data for nine materials surfaces



Accessories and Options

- Ozone Monitor with RS-232 output
- UV Intensity Monitor with fiber optic coupling
- VUV Diodes mounted to CF flanges
- Control Interface to PC
- Custom Flanges/windows/sizes



- Flow control and Ozone filter
- On site technical support
- Application engineering support