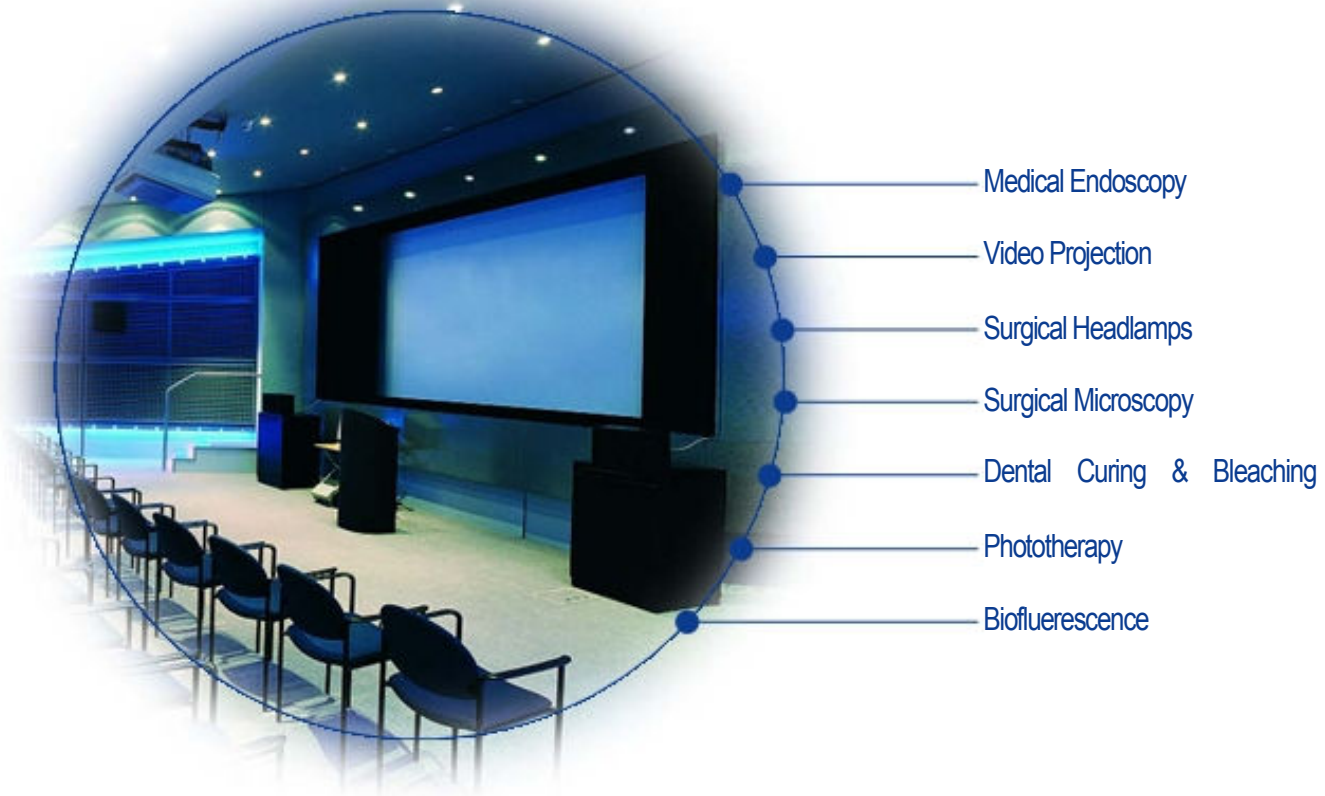


Cermax[®]

Products and Specifications



Short Arc: Xenon lamps, modules



Excelitas Technologies' Cermax[®]

xenon short arc lamps and associated operating equipment are a unique and innovative approach to many challenging and demanding lighting applications. Cermax[®] lamp technology is the leading technology for use in diagnostic and surgical endoscopes, surgical microscopes, surgical headlamps as well as a variety of high performance video and home theatre projectors.

and power supplies.

Safe and compact solution

Utilizing an integrated parabolic or ellipsoidal reflector, Cermax[®] lamps produce high intensity, collimated or focused output of light. Due to the xenon lamps broad color spectrum, the lamp is filtered to emit either visible, UV or IR light depending on application or usage. With their internal reflector and rugged ceramic body and seal construction, Cermax[®] lamps are a safe and compact alternative to conventional quartz xenon lamps making them ideal for such applications as medical endoscopy, fiber optic illumination and video projection.

Due to its new extended operating life, output degradation curve, instant on-off, DC operation and mercury-free content, Excelitas' new Cermax[®] lamps are an excellent alternative solution to high pressure mercury lamps for the newly emerging home theatre and RPTV markets.

Flexible power ranges

Available in two configurations —parabolic and ellipsoidal, Standard Cermax[®] lamps have operating power ranges from 80W to 1000W. The newly designed Cermax[®] lamps are available only with ellipsoidal reflectors and are offered with operating power ranges from 270W to 2700W.

Solid construction

Lamp construction for all lamps is entirely of metal, sapphire and ceramic. No organic (carbon-based) materials, mercury, rare-earth elements, or any other materials with disposal problems are used in the construction of Cermax[®] lamps. The xenon fill gas is an inert gas and is non-toxic.

Complete solutions

Excelitas Technologies lamp operating equipment, including DC power supplies, lamp holders (modules and heat sinks), light engines and complete fiber-optic illuminators are also included in this specification sheet. All operating equipment has been specifically designed to work perfectly with Cermax[®] lamps providing the correct amount of current, voltage, ignition pulses, and cooling.

High performance

Although the overall efficacy of Cermax[®] lamps is lower than some alternative technologies, Cermax[®] xenon lamps provide extremely high brightness due to their DC operation, high pressure and ultra-short arc gaps. They also don't require external reflectors, optics or color balancing (to achieve 6000 K) which greatly lowers the usable efficacy of other lamp technologies. It is the usable, focused, color balance light that is important and Cermax[®] lamps achieve tremendous performance parameters as compared to any other lamp technology available today.



Type A Elliptical

| | PE80A-10F | PE80A-10UV | PE80A-13F | PE80A-13UV | PE150A-10F | PE150A-10UV | PE150A-13F | PE150A-13UV |
|---|---------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Power (Watts) _____ | Nominal | 85 | 85 | 85 | 85 | 150 | 150 | 150 |
| | Range | 85 - 100 | 85 - 100 | 85 - 100 | 85 - 100 | 100 - 150 | 100 - 150 | 100 - 150 |
| Current (Amps DC) _____ | Nominal | 7.7 | 7.7 | 7.7 | 7.7 | 12.5 | 12.5 | 12.5 |
| | Range | 7.0- 10.0 | 7.0- 10.0 | 7.0- 10.0 | 7.0- 10.0 | 10.0- 14.0 | 10.0- 14.0 | 10.0- 14.0 |
| Voltage (Volts DC) _____ | Nominal | 11.0 | 11.0 | 11.0 | 11.0 | 11.7 | 11.7 | 11.7 |
| | Range | 10.5- 13.5 | 10.5- 13.5 | 10.5- 13.5 | 10.5- 13.5 | 10.0- 13.6 | 10.0- 13.6 | 10.0- 13.6 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| Minimum Ignition Voltage at Lamp (kV) ² | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| Minimum Ignition Pulse Duration (nS) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | 7.0 | 7.0 | 7.0 | 7.0 | 21.0 | 21.0 | 21.0 | 21.0 |
| UV Output, <390nm (Watts) ³ | 0.4 | 0.9 | 0.4 | 0.9 | 1.1 | 2.5 | 1.1 | 2.5 |
| IR Output, >770nm (Watts) ³ | 4.0 | 3.6 | 4.0 | 3.6 | 12.0 | 10.8 | 12.0 | 10.8 |
| Visible Output, 390-770nm (Lumens) ³ | 800 | 720 | 800 | 720 | 1800 | 1620 | 1800 | 1620 |
| Color Temperature (Kelvin) ⁴ | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 |
| Spot Size at Crossover _____ | @ 50% points ⁴ | .10 / 2.5 | .10 / 2.6 | .11 / 2.8 | .11 / 2.9 | .10 / 2.5 | .10 / 2.6 | .11 / 2.8 |
| | @ 10% points ⁴ | .25 / 6.4 | .25 / 6.5 | .25 / 6.4 | .25 / 6.5 | .25 / 6.4 | .25 / 6.5 | .25 / 6.4 |
| f-Number | 1.0 | 1.0 | 1.3 | 1.3 | 1.0 | 1.0 | 1.3 | 1.3 |
| Focal Distance "A" (inches / mm) | .242 / 6.15 | .242 / 6.15 | .490 / 12.45 | .490 / 12.45 | .242 / 6.15 | .242 / 6.15 | .490 / 12.45 | .490 / 12.45 |
| Cathode Defocus "D" (inches / mm) | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 |
| Arc Gap (inches / mm) | .025 / .64 | .025 / .64 | .025 / .64 | .025 / .64 | .032 / .81 | .032 / .81 | .032 / .81 | .032 / .64 |
| Window Diameter (inches / mm) | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 |
| Focused Output _____ | 6mm Aperture | 920 / 8.4 | - | 660 / 6.0 | - | 1500 / 14.0 | - | 1100 / 10.0 |
| | 3mm Aperture | 590 / 5.2 | - | 420 / 3.7 | - | 1000 / 8.5 | - | 700 / 6.3 |

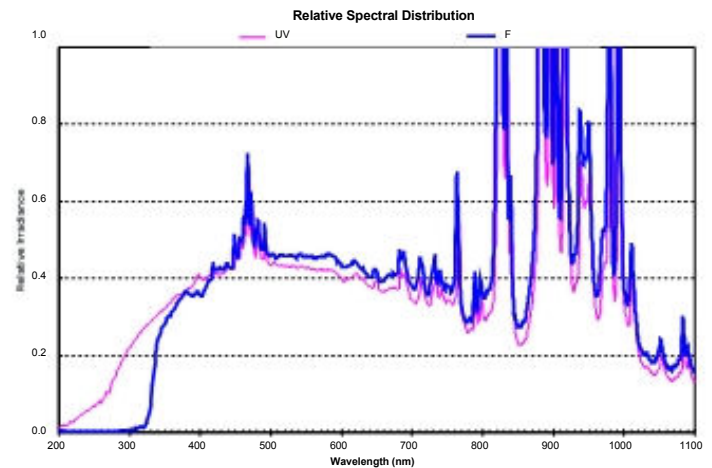
¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply.

³ Total nominal output from lamp in all directions.

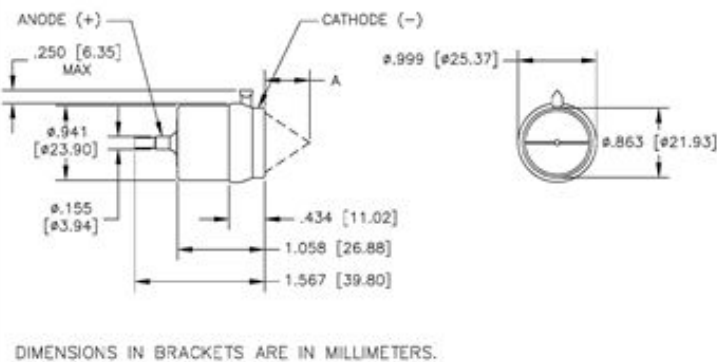
⁴ Nominal value. All specifications subject to change without notice.



Spectral Output



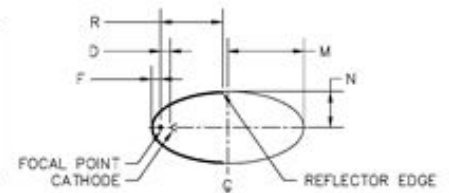
Type A Elliptical Dimensions



Type A Elliptical Reflector

| | |
|-----------|-----------|
| f/1.0 | f/1.3 |
| M = .6875 | M = .8000 |
| N = .3772 | N = .3873 |
| R = .500 | R = .500 |
| F = .113 | F = .100 |

$$1 = \frac{x^2}{M^2} + \frac{y^2}{N^2}$$



NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. B. Seal temperature must not exceed 150°C. C. Current/power regulated power supplies and Exelitas lamp housing units are recommended. D. Lamp must be operated within recommended current and power range. Overpowering may lead to arc instability, hard starting and premature aging. E. A hot mirror assembly is available for filtering for 390W lamps and below. F. Ceramic lamps are much safer lamps to use than their quartz xenon arc lamp equivalents. However, caution must be practiced when operating lamps because they are under high pressure, require high voltage, reach temperatures up to 200°C, and their IR and UV radiation can cause skin burns and eye damage. Read hazard sheet included with each lamp shipment.

Type B Elliptical

| | PE125B-10F | PE125B-10UV | PE175B-10F | PE175B-10UV | PE300B-10F | PE300B-10UV |
|---|---------------------------|--------------|--------------|--------------|--------------|--------------|
| Power (Watts) | Nominal | 125 | 125 | 175 | 175 | 300 |
| | Range | 75 - 150 | 75 - 150 | 150 - 200 | 150 - 200 | 175 - 305 |
| Current (Amps DC) | Nominal | 11 | 11 | 14 | 14 | 22 |
| | Range | 7 - 14 | 7 - 14 | 12 - 16 | 12 - 16 | 13 - 23 |
| Voltage (Volts DC) | Nominal | 11.0 | 11.0 | 12.5 | 12.5 | 13.5 |
| | Range | 10.0 - 12.5 | 10.0 - 12.5 | 10.5 - 13.5 | 10.5 - 13.5 | 11.5 - 15.0 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | 150 | 150 | 150 | 150 | 150 | 150 |
| Minimum Ignition Voltage at Lamp (kV) ² | 23 | 23 | 23 | 23 | 23 | 23 |
| Minimum Ignition Pulse Duration (ns) | 100 | 100 | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | 18.5 | 18.5 | 34.0 | 34.0 | 65.0 | 65.0 |
| UV Output, <390nm (Watts) ³ | 1.1 | 2.7 | 1.5 | 4.9 | 3.3 | 8.5 |
| IR Output, >770nm (Watts) ³ | 10.3 | 9.7 | 18.8 | 18.0 | 32.0 | 30.0 |
| Visible Output, 390-770nm (Lumens) ³ | 1570 | 1400 | 2740 | 2460 | 6900 | 5850 |
| Color Temperature (Kelvin) ⁴ | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 |
| Spot Size at Crossover (inches / mm) | @ 50% points ⁴ | .09 / 2.3 | .09 / 2.3 | .09 / 2.3 | .09 / 2.3 | .09 / 2.3 |
| | @ 10% points ⁴ | .23 / 5.8 | .23 / 5.8 | .23 / 5.8 | .23 / 5.8 | .23 / 5.8 |
| f-Number | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Focal Distance "A" (inches / mm) | .550 / 13.97 | .550 / 13.97 | .550 / 13.97 | .550 / 13.97 | .550 / 13.97 | .550 / 13.97 |
| Cathode Defocus "D" (inches / mm) | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 |
| Arc Gap (inches / mm) | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 |
| Window Diameter (inches / mm) | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 |
| Focused Output (Lumens / Watts) | 6mm Aperture | 1250 / 11 | - | 1930 / 18.5 | - | 3500 / 32 |
| | 3mm Aperture | 650 / 6.4 | - | 1170 / 9 | - | 2000 / 20 |

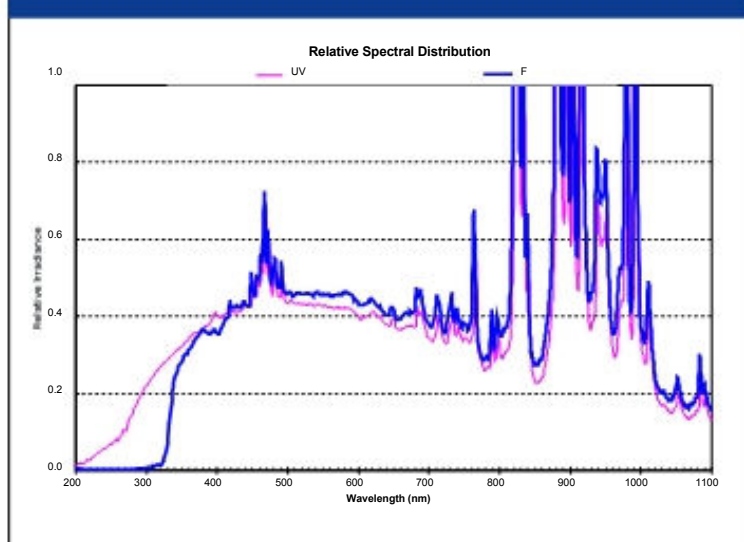
¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply.

³ Total nominal output from lamp in all directions.

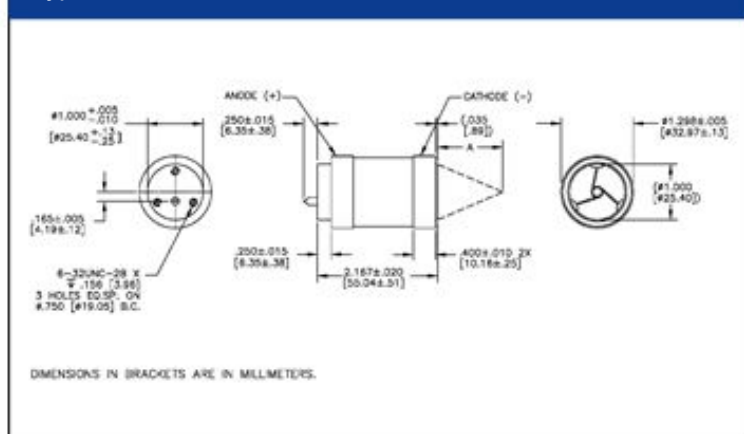
⁴ Nominal value.

All specifications subject to change without notice.

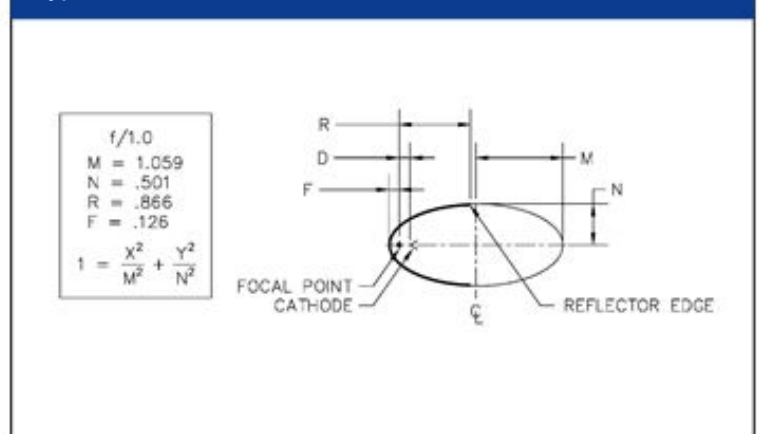
Spectral Output



Type B Dimensions



Type B Reflector



NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. B. Seal temperature must not exceed 150°C. C. Current/power regulated power supplies and Exelitas lamp housing units are recommended. D. Lamp must be operated within recommended current and power range. Over-powering may lead to arc instability, hard starting and premature aging. E. Hot mirror assembly is available for filtering for 390W lamps and below. F. Ceramic lamps are much safer lamps to use than their quartz xenon arc lamp equivalents. However, caution must be practiced when operating lamps because they are under high pressure, require high voltage, reach temperatures up to 200°C, and their IR and UV radiation can cause skin burns and eye damage. Read hazard sheet included with each lamp shipment.

Type C Elliptical

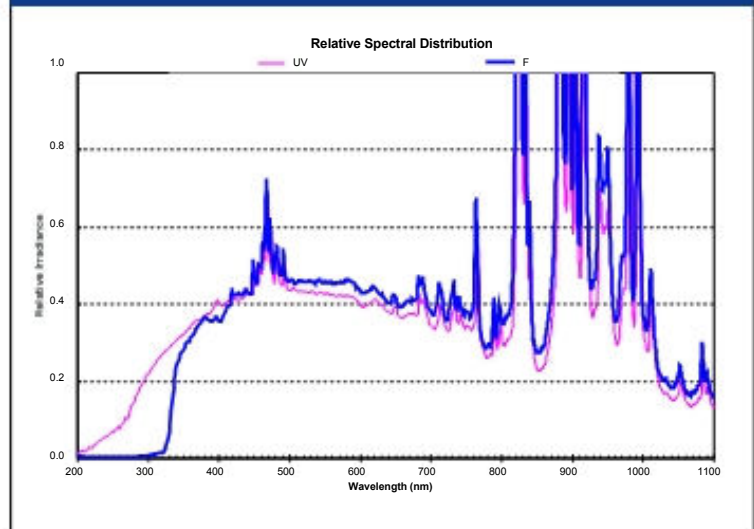
| | | PE300C-10F | PE300C-10UV | PE300C-13F | PE300C-13UV | PE500C-10F | PE500C-10UV | PE500C-13F | PE500C-13UV |
|---|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Power (Watts) _____ | Nominal | 300 | 300 | 300 | 300 | 500 | 500 | 500 | 500 |
| | Range | 175 - 300 | 175 - 300 | 175 - 300 | 175 - 300 | 350 - 525 | 350 - 525 | 350 - 525 | 350 - 525 |
| Current (Amps DC) _____ | Nominal | 22.0 | 22.0 | 22.0 | 22.0 | 32.0 | 32.0 | 32.0 | 32.0 |
| | Range | 13.0 - 23.0 | 13.0 - 23.0 | 13.0 - 23.0 | 13.0 - 23.0 | 23.0 - 35.0 | 23.0 - 35.0 | 23.0 - 35.0 | 23.0 - 35.0 |
| Voltage (Volts DC) _____ | Nominal | 13.5 | 13.5 | 13.5 | 13.5 | 15.5 | 15.5 | 15.5 | 15.5 |
| | Range | 11.5 - 15.0 | 11.5 - 15.0 | 11.5 - 15.0 | 11.5 - 15.0 | 14.0 - 16.5 | 14.0 - 16.5 | 14.0 - 16.5 | 14.0 - 16.5 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Minimum Ignition Voltage at Lamp (kV) ² | | 23 | 23 | 23 | 23 | 30 | 30 | 30 | 30 |
| Minimum Ignition Pulse Duration (nS) | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | | 75 | 75 | 75 | 75 | 112 | 112 | 112 | 112 |
| UV Output, <390nm (Watts) ³ | | 3.8 | 9.7 | 3.8 | 9.7 | 5.0 | 10.3 | 5.0 | 10.3 |
| IR Output, >770nm (Watts) ³ | | 37.0 | 34.5 | 37.0 | 34.5 | 65.0 | 63.0 | 65.0 | 63.0 |
| Visible Output, 390-770nm (Lumens) ³ | | 7475 | 6725 | 7475 | 6725 | 10500 | 9550 | 10500 | 9550 |
| Color Temperature (Kelvin) ⁴ | | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 |
| Spot Size at Crossover _____ | @ 50% points ⁴ | .06 / 1.5 | .06 / 1.5 | .07 / 1.8 | .07 / 1.8 | .07 / 1.8 | .07 / 1.8 | .07 / 1.8 | .07 / 1.8 |
| | @ 10% points ⁴ | .21 / 5.3 | .21 / 5.3 | .23 / 5.8 | .23 / 5.8 | .21 / 5.3 | .21 / 5.3 | .23 / 5.8 | .23 / 5.8 |
| f-Number | | 1.0 | 1.0 | 1.3 | 1.3 | 1.0 | 1.0 | 1.3 | 1.3 |
| Focal Distance "A" (inches / mm) | | .75 / 19.1 | .75 / 19.1 | 1.10 / 27.9 | 1.10 / 27.9 | .75 / 19.1 | .75 / 19.1 | 1.10 / 27.9 | 1.10 / 27.9 |
| Cathode Defocus "D" (inches / mm) | | .005 / .13 | .005 / .13 | .005 / .13 | .005 / .13 | .005 / .13 | .005 / .13 | .005 / .13 | .005 / .13 |
| Arc Gap (inches / mm) | | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 | .045 / 1.14 |
| Window Diameter (inches / mm) | | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 |
| Focused Output _____ | 12mm Aperture | - | - | - | - | - | - | - | - |
| | 9mm Aperture | - | - | - | - | - | - | - | - |
| | 6mm Aperture | 4500 / 37 | - | 3100 / 28.5 | - | 7700 / 75 | - | 7200 / 70 | - |
| | 3mm Aperture | 2300 / 23 | - | 1750 / 17.5 | - | 4085 / 39 | - | 3600 / 35 | - |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions.

⁴ Nominal value. All specifications subject to change without notice.



Spectral Output



Type D Elliptical

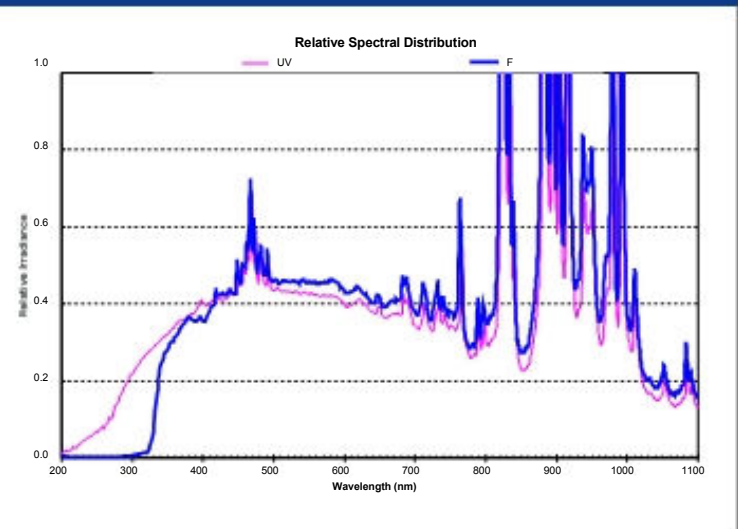
| | | PE1000D-10F | PE1000D-10UV | PE1000D-13F | PE1000D-13UV | PE1200D-10F | PE1200D-10UV | PE1200D-13F | PE1200D-13UV |
|---|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Power (Watts) _____ | Nominal | 1000 | 1000 | 1000 | 1000 | 1200 | 1200 | 1200 | 1200 |
| | Range | 600 - 1050 | 600 - 1050 | 600 - 1050 | 600 - 1050 | 950 - 1250 | 950 - 1250 | 950 - 1250 | 950 - 1250 |
| Current (Amps DC) _____ | Nominal | 50 | 50 | 50 | 50 | 63 | 63 | 63 | 63 |
| | Range | 30 - 56 | 30 - 56 | 30 - 56 | 30 - 56 | 45 - 70 | 45 - 70 | 45 - 70 | 45 - 70 |
| Voltage (Volts DC) _____ | Nominal | 20.0 | 20.0 | 20.0 | 20.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| | Range | 15.0 - 24.0 | 15.0 - 24.0 | 15.0 - 24.0 | 15.0 - 24.0 | 17.0 - 22.0 | 17.0 - 22.0 | 17.0 - 22.0 | 17.0 - 22.0 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | | 150 | 150 | 150 | 150 | 160 | 160 | 160 | 160 |
| Minimum Ignition Voltage at Lamp (kV) ² | | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| Minimum Ignition Pulse Duration (nS) | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | | 245 | 245 | 245 | 245 | 273 | 273 | 273 | 273 |
| UV Output, <390nm (Watts) ³ | | 13.0 | 24.0 | 13.0 | 24.0 | 14.6 | 37.0 | 14.6 | 37.0 |
| IR Output, >770nm (Watts) ³ | | 135 | 132 | 135 | 132 | 150 | 146 | 150 | 146 |
| Visible Output, 390-770nm (Lumens) ³ | | 23500 | 21000 | 23500 | 21000 | 30000 | 27000 | 30000 | 27000 |
| Color Temperature (Kelvin) ⁴ | | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 | 5900 | 5050 |
| Spot Size at Crossover _____ | @ 50% points ⁴ | .14 / 3.5 | .14 / 3.5 | .15 / 3.8 | .15 / 3.8 | .15 / 3.8 | .15 / 3.8 | .16 / 4.1 | .16 / 4.1 |
| | @ 10% points ⁴ | .33 / 8.4 | .33 / 8.4 | .35 / 8.9 | .35 / 8.9 | .40 / 10.3 | .40 / 10.3 | .53 / 13.5 | .53 / 13.5 |
| f-Number | | 1.0 | 1.0 | 1.3 | 1.3 | 1.0 | 1.0 | 1.3 | 1.3 |
| Focal Distance "A" (inches / mm) | | .946 / 24.03 | .946 / 24.03 | 1.389 / 35.28 | 1.389 / 35.28 | .946 / 24.03 | .946 / 24.03 | 1.389 / 35.28 | 1.389 / 35.28 |
| Cathode Defocus "D" (inches / mm) | | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 |
| Arc Gap (inches / mm) | | .062 / 1.57 | .062 / 1.57 | .062 / 1.57 | .062 / 1.57 | .067 / 1.70 | .067 / 1.70 | .067 / 1.70 | .067 / 1.70 |
| Window Diameter (inches / mm) | | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 |
| Focused Output _____ | 12mm Aperture | 21000 / 200 | 18900 / 180 | 18000 / 163 | 16200 / 147 | 23250 / 208 | 21000 / 187 | 22000 / 195 | 19725 / 176 |
| | 9mm Aperture | - | - | - | - | 19500 / 185 | 17250 / 164 | 18750 / 178 | 16875 / 158 |
| | 6mm Aperture | 13000 / 120 | 11700 / 108 | 12000 / 110 | 10800 / 99 | 13500 / 128 | 12000 / 113 | 12000 / 108 | 10800 / 97 |
| | 3mm Aperture | 4800 / 47 | 4320 / 42 | 3500 / 33 | 3150 / 30 | 5700 / 54 | 5100 / 49 | 4200 / 40 | 3780 / 36 |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions.

⁴ Nominal value. All specifications subject to change without notice.



Spectral Output



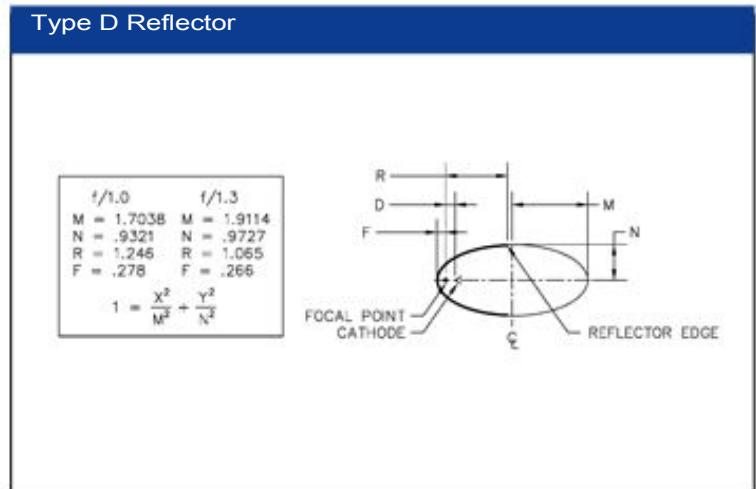
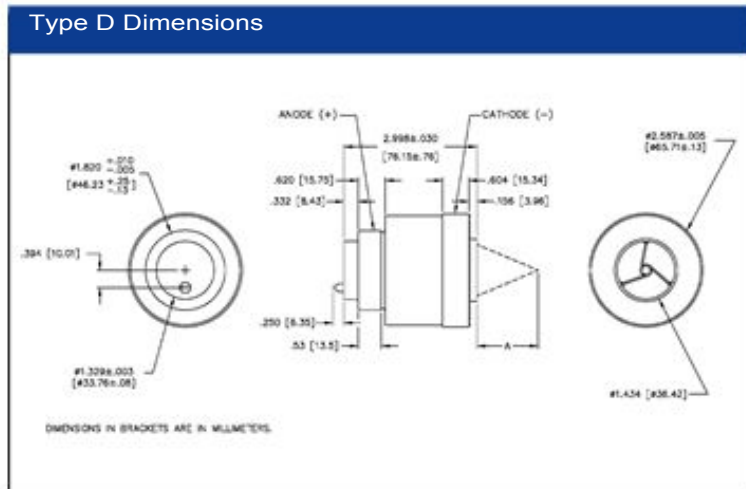
Type D Elliptical

| | | PE1500D-10F | PE1500D-10UV | PE1500D-13F | PE1500D-13UV |
|---|---------------------------|---------------|---------------|---------------|---------------|
| Power (Watts) _____ | Nominal | 1500 | 1500 | 1500 | 1500 |
| | Range | 900 - 1550 | 900 - 1550 | 900 - 1550 | 900 - 1550 |
| Current (Amps DC) _____ | Nominal | 65 | 65 | 65 | 65 |
| | Range | 45 - 80 | 45 - 80 | 45 - 80 | 45 - 80 |
| Voltage (Volts DC) _____ | Nominal | 18.5 | 18.5 | 18.5 | 18.5 |
| | Range | 17.0 - 23.0 | 17.0 - 23.0 | 17.0 - 23.0 | 17.0 - 23.0 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | | 160 | 160 | 160 | 160 |
| Minimum Ignition Voltage at Lamp (kV) ² | | 28 | 28 | 28 | 28 |
| Minimum Ignition Pulse Duration (nS) | | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | | 365 | 365 | 365 | 365 |
| UV Output, <390nm (Watts) ³ | | 19.5 | 49.0 | 19.5 | 49.0 |
| IR Output, >770nm (Watts) ³ | | 200 | 195 | 200 | 195 |
| Visible Output, 390-770nm (Lumens) ³ | | 40000 | 36000 | 40000 | 36000 |
| Color Temperature (Kelvin) ⁴ | | 5900 | 5050 | 5900 | 5050 |
| Spot Size at Crossover _____ | @ 50% points ⁴ | .15 / 3.8 | .15 / 3.8 | .16 / 4.1 | .16 / 4.1 |
| | @ 10% points ⁴ | .40 / 10.3 | .40 / 10.3 | .53 / 13.5 | .53 / 13.5 |
| f-Number | | 1.0 | 1.0 | 1.3 | 1.3 |
| Focal Distance "A" (inches / mm) | | .946 / 24.03 | .946 / 24.03 | 1.389 / 35.28 | 1.389 / 35.28 |
| Cathode Defocus "D" (inches / mm) | | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 |
| Arc Gap (inches / mm) | | .075 / 1.91 | .075 / 1.91 | .075 / 1.91 | .075 / 1.91 |
| Window Diameter (inches / mm) | | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 | 1.375 / 34.92 |
| Focused Output _____ | 12mm Aperture | 31000 / 278 | 28000 / 250 | 29000 / 280 | 26000 / 235 |
| | 9mm Aperture | 26000 / 247 | 23000 / 225 | 25000 / 238 | 22500 / 211 |
| | 6mm Aperture | 18000 / 171 | 16000 / 154 | 16000 / 145 | 14400 / 130 |
| | 3mm Aperture | 7500 / 72 | 6800 / 65 | 5600 / 53 | 5040 / 48 |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions.

⁴ Nominal value.

All specifications subject to change without notice.

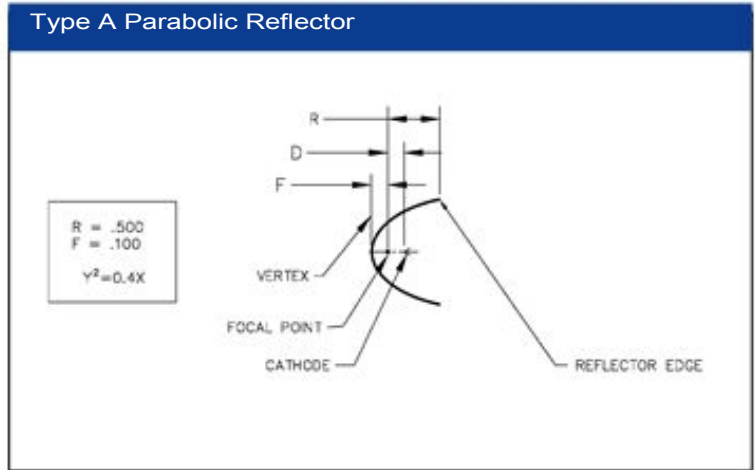
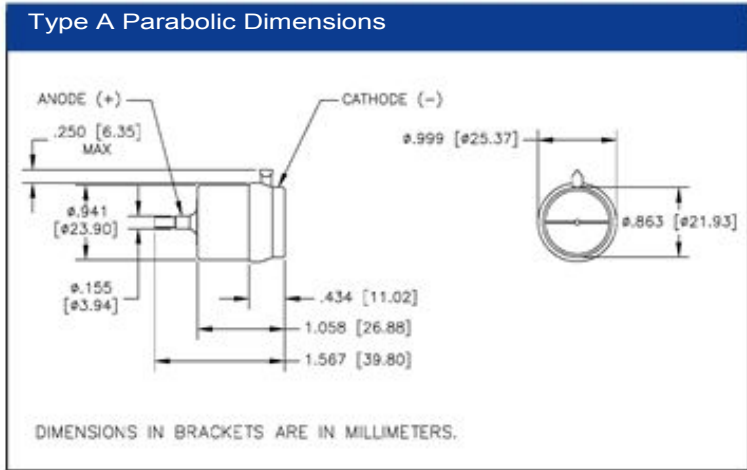
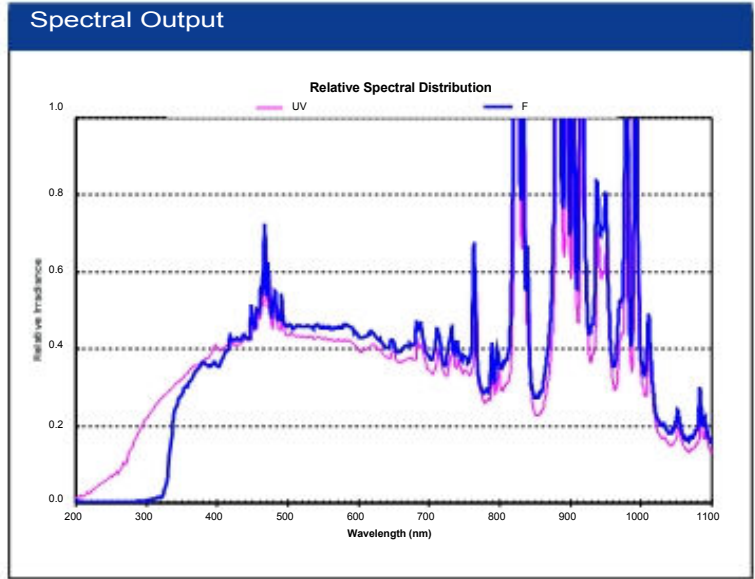


NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. B. Seal temperature must not exceed 150°C. C. Current/power regulated power supplies and Excilite lamp housing units are recommended. D. Lamp must be operated within recommended current and power range. Over-powering may lead to arc instability, hard starting and premature aging. E. Filter mirrors assembly is available for IR filtering for 390W lamps and below. F. Ceramic lamps are much safer lamps to use than their quartz xenon arc lamp equivalents. However, caution must be practiced when operating lamps because they are under high pressure, require high voltage, reach temperatures up to 200°C, and their IR and UV radiation can cause skin burns and eye damage. Read hazard sheet included with each lamp shipment.

Type A Parabolic

| | PE80AF | PE80AUV | PE150AF | PE150AUV |
|---|--------------|--------------|--------------|--------------|
| Power (Watts) | Nominal | 85 | 85 | 150 |
| | Range | 85 - 100 | 85 - 100 | 100 - 150 |
| Current (Amps DC) | Nominal | 7.7 | 7.7 | 12.5 |
| | Range | 7.0- 10.0 | 7.0- 10.0 | 10.0- 14.0 |
| Voltage (Volts DC) | Nominal | 11.0 | 11.0 | 11.7 |
| | Range | 10.5- 13.5 | 10.5- 13.5 | 10.0- 13.6 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | 120 | 120 | 120 | 120 |
| Minimum Ignition Voltage at Lamp (kV) ² | 28 | 28 | 28 | 28 |
| Minimum Ignition Pulse Duration (nS) | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | 6.0 | 6.0 | 16.0 | 16.0 |
| UV Output, <390nm (Watts) ³ | 0.3 | 0.7 | 0.9 | 2.0 |
| IR Output, >770nm (Watts) ³ | 3.2 | 2.9 | 8.0 | 7.2 |
| Visible Output, 390-770nm (Lumens) ³ | 650 | 580 | 1350 | 1210 |
| Color Temperature (Kelvin) ⁴ | 5900 | 5050 | 5900 | 5050 |
| Cathode Defocus "D" (inches / mm) | .014 / .36 | .014 / .36 | .014 / .36 | .014 / .36 |
| Arc Gap (inches / mm) | .025 / .64 | .025 / .64 | .032 / .81 | .032 / .81 |
| Window Diameter (inches / mm) | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 | .770 / 19.56 |
| Focused Output with f/1.0 lens | 6mm Aperture | 540 / 4.8 | - | 900 / 8.0 |
| | 3mm Aperture | 350 / 3.3 | - | 700 / 5.5 |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions. ⁴ Nominal value. All specifications subject to change without notice.

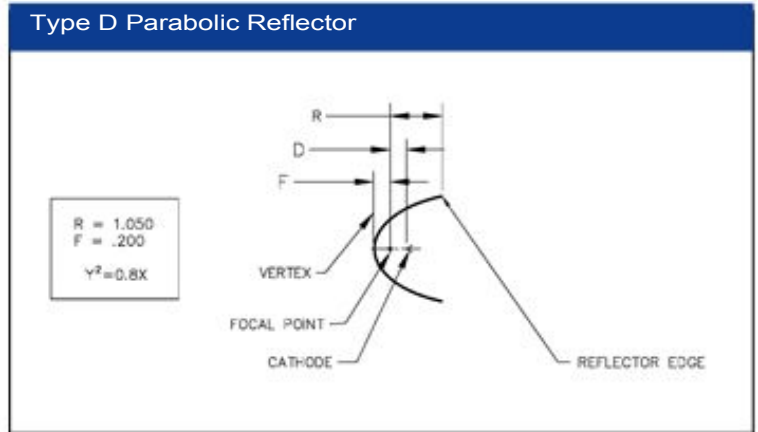
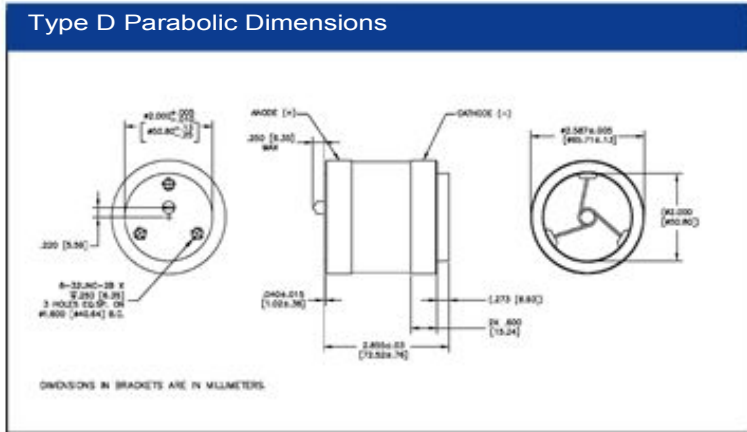
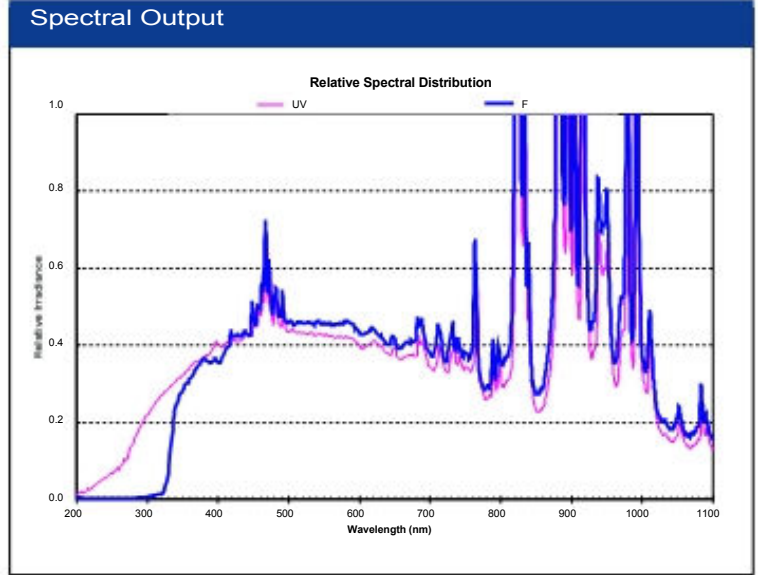


NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. B. Seal temperature must not exceed 150°C. C. Current/power regulated power supplies and Excelitas lamp housing units are recommended. D. Lamp must be operated within recommended current and power range. Overpowering may lead to arc instability, hard starting and premature aging. E. The minimum assembly is available for filtering for 390W lamps and below. F. Ceramic lenses are much safer lamps to use than their quartz xenon arc lamp equivalents. However, caution must be practiced when operating lamps because they are under high pressure, require high voltage, reach temperatures up to 200°C, and their IR and UV radiation can cause skin burns and eye damage. Read hazard sheet included with each lamp shipment.

Type D Parabolic

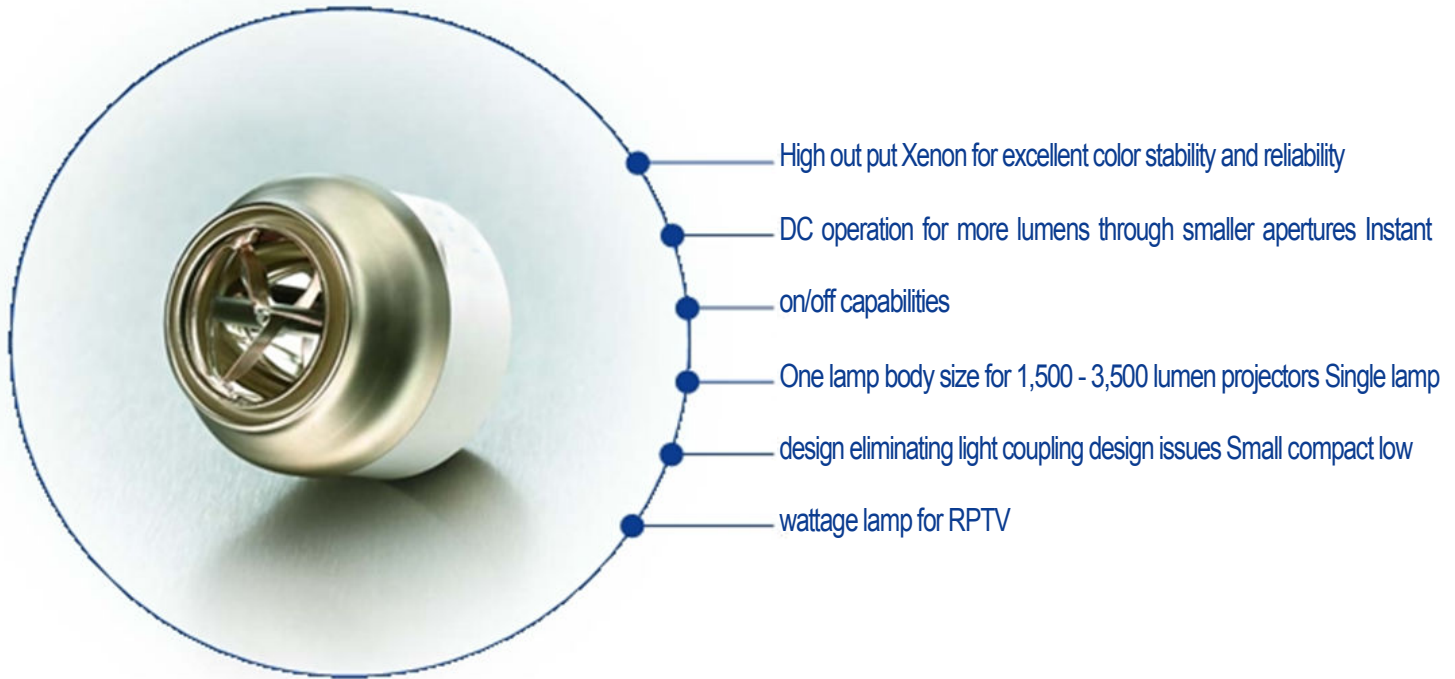
| | PE500DF | PE500DUV | PE1000DF | PE1000DUV |
|---|------------------------|-----------------------|-----------------------|-----------------------|
| Power (Watts) _____ | Nominal 500 | 500 | 1000 | 1000 |
| _____ | Range 340 - 575 | 340 - 575 | 850 - 1050 | 850 - 1050 |
| Current (Amps DC) _____ | Nominal 27 | 27 | 51 | 51 |
| _____ | Range 20 - 32 | 20 - 32 | 46 - 54 | 46 - 54 |
| Voltage (Volts DC) _____ | Nominal 18.5 | 18.5 | 19.5 | 19.5 |
| _____ | Range 16.0 - 21.0 | 16.0 - 21.0 | 18.5 - 22.0 | 18.5 - 22.0 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | 150 | 150 | 150 | 150 |
| Minimum Ignition Voltage at Lamp (kV) ² | 35 | 35 | 35 | 35 |
| Minimum Ignition Pulse Duration (nS) | 100 | 100 | 100 | 100 |
| Peak Intensity (Candelas) | 2.4 x 10 ⁶ | 1.7 x 10 ⁶ | 3.8 x 10 ⁶ | 2.7 x 10 ⁶ |
| Radiant Output (Watts) ³ | 112 | 112 | 250 | 250 |
| UV Output, <390nm (Watts) ³ | 5.5 | 11.5 | 13.0 | 25.0 |
| IR Output, >770nm (Watts) ³ | 65 | 62 | 137 | 133 |
| Visible Output, 390-770nm (Lumens) ³ | 10500 | 9600 | 24000 | 22000 |
| Color Temperature (Kelvin) ⁴ | 5600 | 5050 | 5600 | 5050 |
| Beam Geometry ⁵ _____ | @ 1 Hour 3.0 | 3.0 | 4.5 | 4.5 |
| (Degrees) _____ | @ 100 Hours 4.0 | 4.0 | 5.0 | 5.0 |
| _____ | @ 1000 Hours 5.0 | 5.0 | 6.0 | 6.0 |
| Cathode Defocus "D" (inches / mm) | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 |
| Arc Gap (inches / mm) | .090 / 2.29 | .090 / 2.29 | .090 / 2.29 | .090 / 2.29 |
| Window Diameter (inches / mm) | 2.00 / 50.8 | 2.00 / 50.8 | 2.00 / 50.8 | 2.00 / 50.8 |
| Focused Output with f1.0 lens _____ | 6mm Aperture 5200 / 48 | - | 10400 / 96 | - |
| (Lumens / Watts) _____ | 3mm Aperture 2300 / 22 | - | 4600 / 44 | - |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions. ⁴ Nominal value. ⁵ Half angle at 10% points. All specifications subject to change without notice.



NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. B. Seal temperature must not exceed 150°C. C. Current/power regulated power supplies and Exelitas lamp housing units are recommended. D. Lamp must be operated within recommended current and power range. Overpowering may lead to arc instability, hard starting and premature aging. E. Full mirror assembly is available for filtering for 390W lamps and below. F. Ceramic lenses are much safer lamps to use than their quartz xenon arc lamp equivalents. However, caution must be practiced when operating lamps because they are under high pressure, require high voltage, reach temperatures up to 200°C, and their IR and UV radiation can cause skin burns and eye damage. Read hazard sheet included with each lamp shipment.

Video Projection Lighting Products



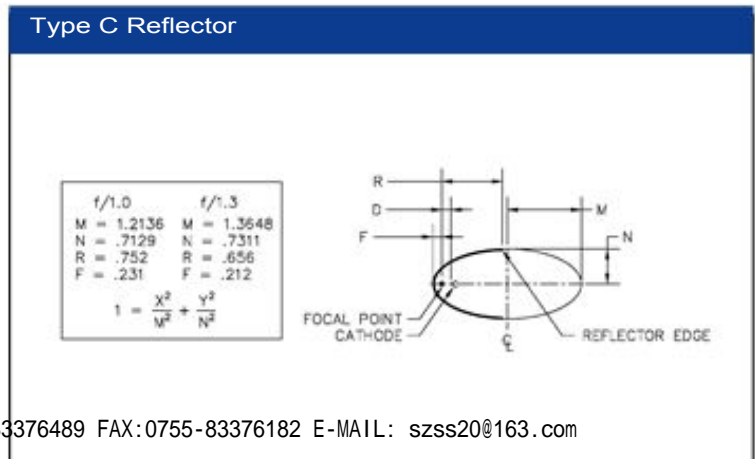
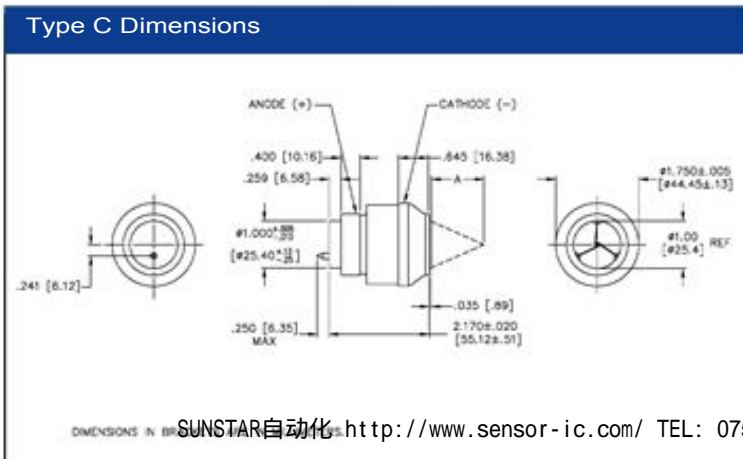
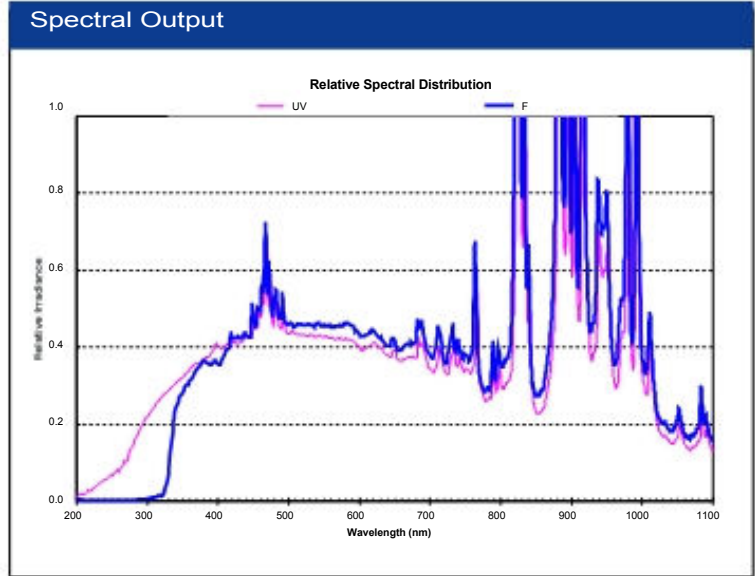
Excelitas Technologies is fueling the digital revolution with its new Cemax[®] high pressure xenon lamps. These new lamps provide unparalleled performance ideal for video projection applications and are a safe and compact alternative to conventional quartz xenon lamps or high pressure mercury lamps currently used in the video market.

Cemax[®] lamps have been innovatively designed to achieve an unprecedented 4000 hour life rating which, for the first time, makes xenon a viable alternative to high pressure mercury lamps used in RPTV and Home Theatre projector applications. The xenon gas fill provides a balanced D6500 / D5900 color spectrum

and true white light to produce the accurate and brilliant colors that consumers expect from the cinema experience. Xenon provides the added benefit of being environmentally friendly as it is an inert gas and non-toxic. Cemax[®] lamps are also designed with revolutionary performance features: shortest arc gap available in the industry, DC operation to reduce any sequencing and flicker issues, and instant on-off with no warm up or cool down time necessary. Lamp construction is entirely of metal, sapphire and ceramic. No organic (carbon-based) materials, mercury, rare-earth elements, or any other materials with disposal problems are used in its construction.

| | XE330C-10FH | XE330C-13FH | XE420C-10FH | XE420C-13FH | XE550C-10FH | XE550C-13FH | XE825C-10FH | XE825C-13FH |
|---|-------------|-------------|-------------|------------------------|-------------|-------------|-------------|-------------|
| Power (Watts) _____ Nominal | 330 | 330 | 420 | 420 | 550 | 550 | 825 | 825 |
| _____ Range | 270 - 390 | 270 - 390 | 350 - 420 | 350 - 420 | 400 - 575 | 400 - 575 | 700 - 750 | 700 - 750 |
| Current (Amps DC) _____ Nominal | 22.8 | 22.8 | 25.8 | 25.8 | 34.7 | 34.7 | 43.0 | 43.0 |
| _____ Range | 21.5- 26.5 | 21.5- 26.5 | 24.2- 27.6 | 24.2- 27.6 | 32.0- 37.5 | 32.0- 37.5 | 40.0- 45.0 | 40.0- 45.0 |
| Voltage (Volts DC) _____ Nominal | 15.5 | 15.5 | 15.8 | 15.8 | 15.9 | 15.9 | 17.4 | 17.4 |
| _____ Range | 14.5- 16.5 | 14.5- 16.5 | 15.0- 16.8 | 15.0- 16.8 | 15.0- 17.5 | 15.0- 17.5 | 16.0- 18.5 | 16.0- 18.5 |
| Maximum Top Ceramic Operating Temperature (°C) ¹ | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| Minimum Ignition Voltage at lamp (kV) ² | 35 | 35 | 35 | 35 | 35 | 35 | 38 | 38 |
| Minimum Ignition Pulse Duration (nS) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Radiant Output (Watts) ³ | 69 | 69 | 83 | 83 | 124 | 124 | 170 | 170 |
| UV Output, <390nm (Watts) ³ | 3.0 | 3.0 | 3.7 | 3.7 | 6.0 | 6.0 | 7.6 | 7.6 |
| IR Output, >770nm (Watts) ³ | 40 | 40 | 48 | 48 | 72 | 72 | 87 | 87 |
| Visible Output, 390-770nm (Lumens) ³ | 6800 | 6800 | 7800 | 7800 | 11700 | 11700 | 25000 | 25000 |
| Color Temperature (Kelvin) ⁴ | 5900 | 5900 | 5900 | 5900 | 5900 | 5900 | 5900 | 5900 |
| Spot Size at Crossover _____ @ 50% points ⁴ | .067 / 1.7 | .067 / 1.7 | .067 / 1.7 | .067 / 1.7 | .067 / 1.7 | .067 / 1.7 | .10 / 2.5 | .10 / 2.5 |
| (inches / mm) @ 10% points ⁴ | .220 / 5.6 | .220 / 5.6 | .220 / 5.6 | .220 / 5.6 | .220 / 5.6 | .220 / 5.6 | .24 / 6.1 | .25 / 6.4 |
| f-Number | 1.0 | 1.3 | 1.0 | 1.3 | 1.0 | 1.3 | 1.0 | 1.3 |
| Focal Distance "A" (inches / mm) | .75 / 19.1 | 1.10 / 27.9 | .75 / 19.1 | 1.10 / 27.9 | .75 / 19.1 | 1.10 / 27.9 | .75 / 19.1 | 1.10 / 27.9 |
| Cathode Defocus "D" (inches / mm) | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 | .008 / .20 |
| Arc Gap (inches / mm) | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 | .038 / .97 |
| Window Diameter (inches / mm) | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 | 1.00 / 25.4 |
| Focused Output - XGA/SXGA | | | | Available upon request | | | | |

¹ Optimum operating temperature 120-130 (°C). ² With a PKI approved power supply. ³ Total nominal output from lamp in all directions. ⁴ Nominal value. All specifications subject to change without notice.





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