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Cermax®

Products and Specifications



PerkinElmer®
precisely.

Short Arc:
Xenon lamps, modules



- Medical Endoscopy
- Video Projection
- Surgical Headlamps
- Surgical Microscopy
- Dental Curing & Bleaching
- Phototherapy
- Bioflueresecence

PerkinElmer Optoelectronics' 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 it's new extended operating life, output degradation curve, instant on-off, DC operation and mercury-free content, PerkinElmer's 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 it the construction of Cermax® lamps. The xenon fill gas is an inert gas and is non-toxic.

Complete solutions

PerkinElmer Optoelectronics 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.



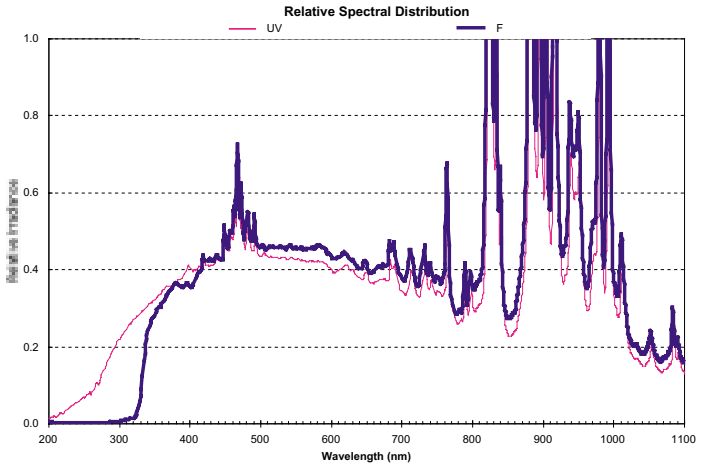
Type A Elliptical

		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	150
	Range	85 - 100	85 - 100	85 - 100	85 - 100	100 - 150	100 - 150	100 - 150	100 - 150
Current (Amps DC)	Nominal	7.7	7.7	7.7	7.7	12.5	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	10.0 - 14.0
Voltage (Volts DC)	Nominal	11.0	11.0	11.0	11.0	11.7	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	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 (inches / mm)	@ 50% points[4]	.10 / 2.5	.10 / 2.6	.11 / 2.8	.11 / 2.9	.10 / 2.5	.10 / 2.6	.11 / 2.8	.11 / 2.9
	@ 10% points[4]	.25 / 6.4	.25 / 6.5	.25 / 6.4	.25 / 6.5	.25 / 6.4	.25 / 6.5	.25 / 6.4	.25 / 6.5
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 / .64	.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 (Lumens / Watts)	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	-

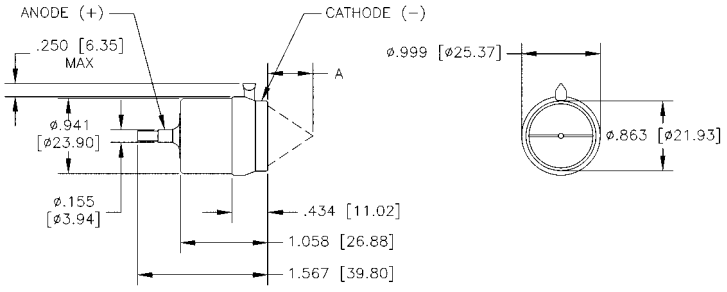
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. All specifications subject to change without notice.



Spectral Output



Type A Elliptical Dimensions

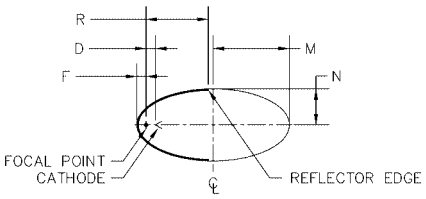


DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

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

$$1 = \frac{X^2}{M^2} + \frac{Y^2}{N^2}$$



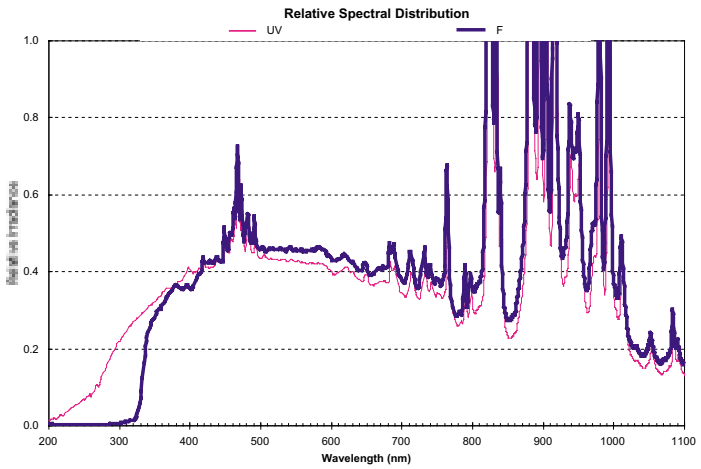
NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. **B.** Seal temperature must not exceed 150°C. **C.** Current/power regulated power supplies and PerkinElmer lamp housing units are recommended. **D.** Lamp must be operated within recommended current and power range. Over powering may lead to arc instability, hard starting and premature aging. **E.** Hot mirror assembly is available for IR filtering for 300W lamps and below. **F.** Cermax® 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	300
	Range	75 - 150	75 - 150	150 - 200	150 - 200	175 - 305	175 - 305
Current (Amps DC)	Nominal	11	11	14	14	22	22
	Range	7 - 14	7 - 14	12 - 16	12 - 16	13 - 23	13 - 23
Voltage (Volts DC)	Nominal	11.0	11.0	12.5	12.5	13.5	13.5
	Range	10.0 - 12.5	10.0 - 12.5	10.5 - 13.5	10.5 - 13.5	11.5 - 15.0	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	.09 / 2.3
	@ 10% points[4]	.23 / 5.8	.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	-

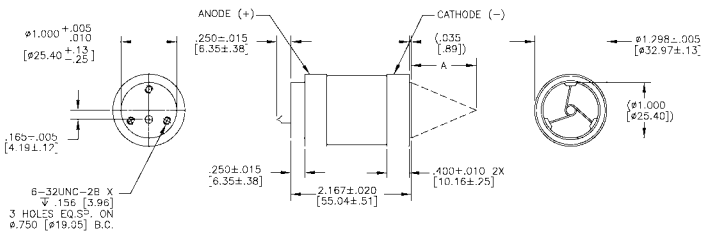
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. All specifications subject to change without notice.

Spectral Output



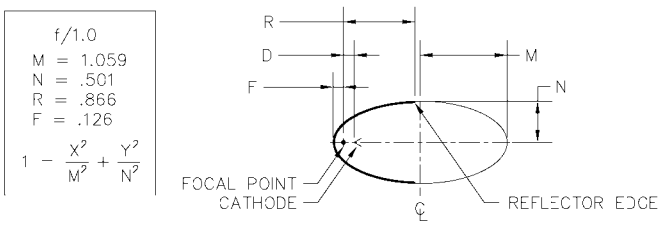


Type B Dimensions



DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.

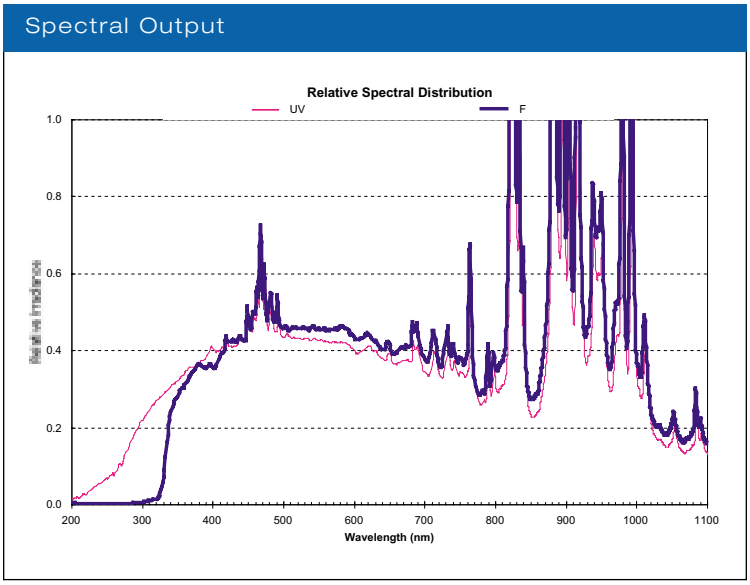
Type C Elliptical

		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 (inches / mm)	@ 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 (Lumens / Watts)	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

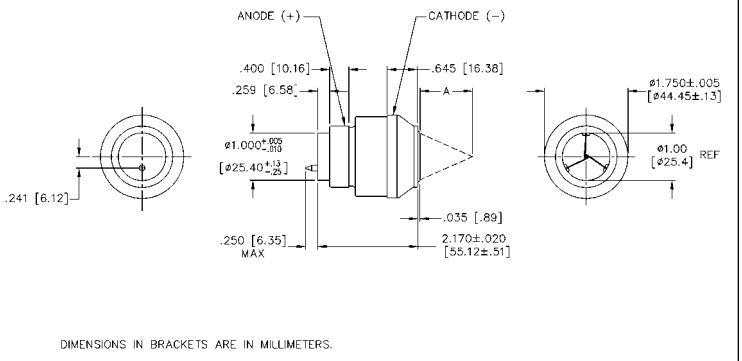


Type C Elliptical

		PE700C-10F	PE700C-10UV	PE700C-13F	PE700C-13UV
Power (Watts)	Nominal	700	700	700	700
	Range	600 - 750	600 - 750	600 - 750	600 - 750
Current (Amps DC)	Nominal	41.5	41.5	41.5	41.5
	Range	35.0 - 46.0	35.0 - 46.0	35.0 - 46.0	35.0 - 46.0
Voltage (Volts DC)	Nominal	16.85	16.85	16.85	16.85
	Range	15.5 - 18.0	15.5 - 18.0	15.5 - 18.0	15.5 - 18.0
Maximum Top Ceramic Operating Temperature (°C)[1]		180	180	180	180
Minimum Ignition Voltage at Lamp (kV)[2]		38	38	38	38
Minimum Ignition Pulse Duration (nS)		100	100	100	100
Radiant Output (Watts)[3]		190	190	190	190
UV Output, <390nm (Watts)[3]		8.5	17.0	8.5	17.0
IR Output, >770nm (Watts)[3]		100.0	97.0	100.0	97.0
Visible Output, 390-770nm (Lumens)[3]		21000	18600	21000	18600
Color Temperature (Kelvin)[4]		5900	5050	5900	5050
Spot Size at Crossover (inches / mm)	@ 50% points[4]	.10 / 2.5	.10 / 2.5	.10 / 2.5	.10 / 2.5
	@ 10% points[4]	.21 / 5.3	.21 / 5.3	.23 / 5.8	.23 / 5.8
f-Number		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
Cathode Defocus "D" (inches / mm)		.005 / .13	.005 / .13	.005 / .13	.005 / .13
Arc Gap (inches / mm)		.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
Focused Output (Lumens / Watts)	12mm Aperture	20000 / 193	17800 / 172	18500 / 180	16500 / 175
	9mm Aperture	18000 / 175	16800 / 162	16500 / 160	14650 / 150
	6mm Aperture	12100 / 117	10850 / 105	11232 / 109	10200 / 109
	3mm Aperture	7300 / 65	6500 / 62	6500 / 60	5700 / 54

[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.

Type C Dimensions

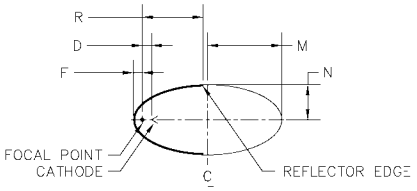


DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

Type C Reflector

f/1.0	f/1.3
M = 1.2136	M = 1.3648
N = .7129	N = .7311
R = .752	R = .656
F = .231	F = .212

$$1 = \frac{X^2}{M^2} + \frac{Y^2}{N^2}$$



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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.

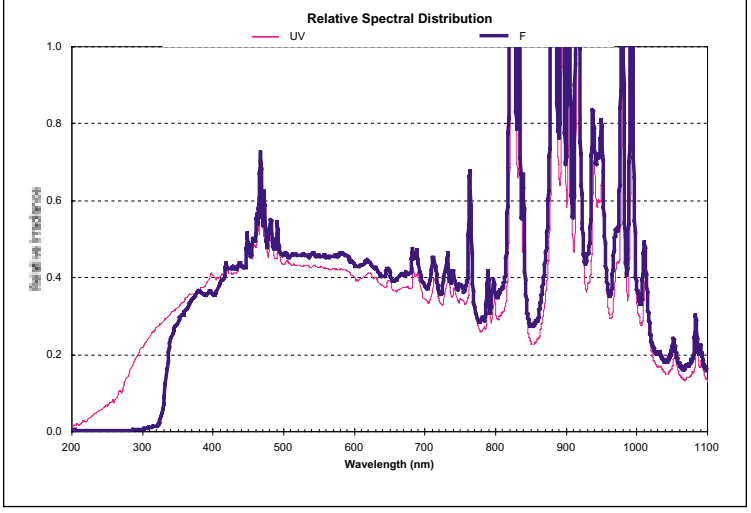
Type D Elliptical

		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 (inches / mm)	@ 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 (Lumens / Watts)	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

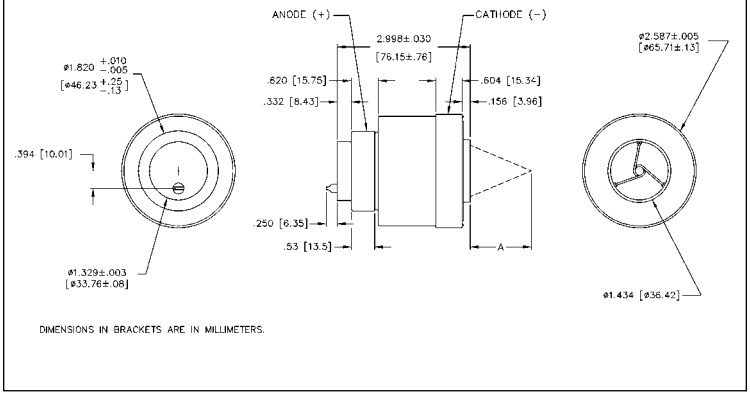


Type D Elliptical

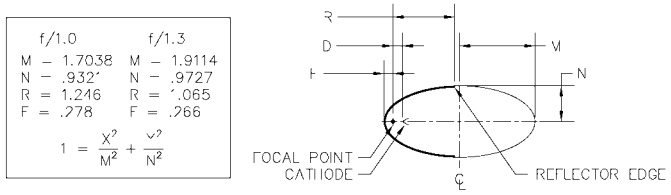
		PE1500D-10F	PE1500D-10UV	PE1500D-13F	PE1500D-13UV
Power (Watts)	Nominal	1500	1500	1500	1500
	Range	900 - 1550	900 - 1550	900 - 1550	900 - 1550
Current (Amps DC)	Nominal	65	65	65	65
	Range	45 - 80	45 - 80	45 - 80	45 - 80
Voltage (Volts DC)	Nominal	18.5	18.5	18.5	18.5
	Range	17.0 - 23.0	17.0 - 23.0	17.0 - 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 (inches / mm)	@ 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 (Lumens / Watts)	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.

Type D Dimensions



Type D 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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.

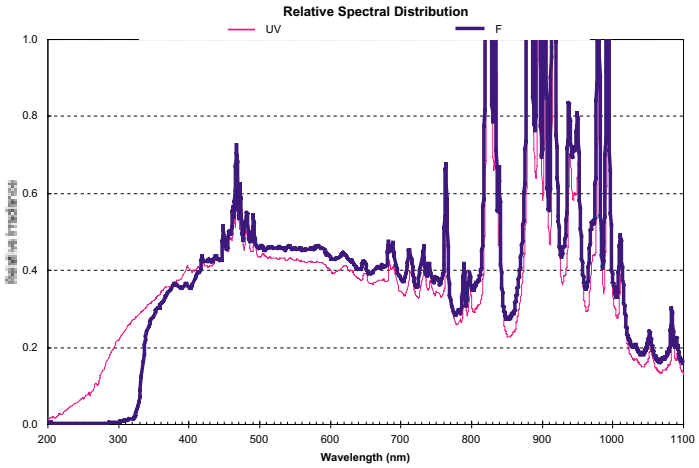
Type A Parabolic

		PE80AF	PE80AUV	PE150AF	PE150AUV
Power (Watts)	Nominal	85	85	150	150
	Range	85 - 100	85 - 100	100 - 150	100 - 150
Current (Amps DC)	Nominal	7.7	7.7	12.5	12.5
	Range	7.0 - 10.0	7.0 - 10.0	10.0 - 14.0	10.0 - 14.0
Voltage (Volts DC)	Nominal	11.0	11.0	11.7	11.7
	Range	10.5 - 13.5	10.5 - 13.5	10.0 - 13.6	100 - 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 (Lumens / Watts)	6mm Aperture	540 / 4.8	-	900 / 8.0	-
	3mm Aperture	350 / 3.3	-	700 / 5.5	-

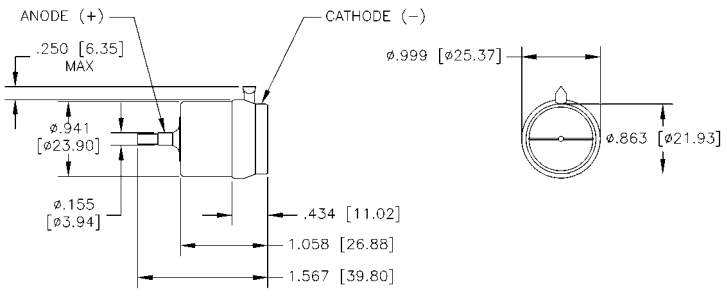
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. All specifications subject to change without notice.



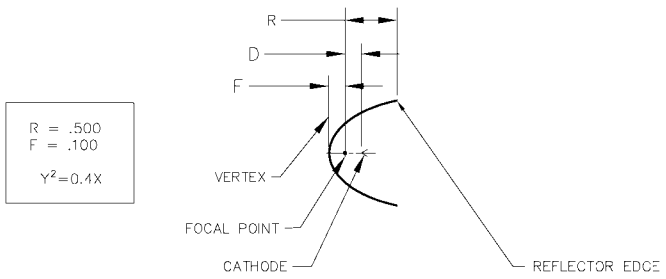
Spectral Output



Type A Parabolic Dimensions



Type A Parabolic Reflector



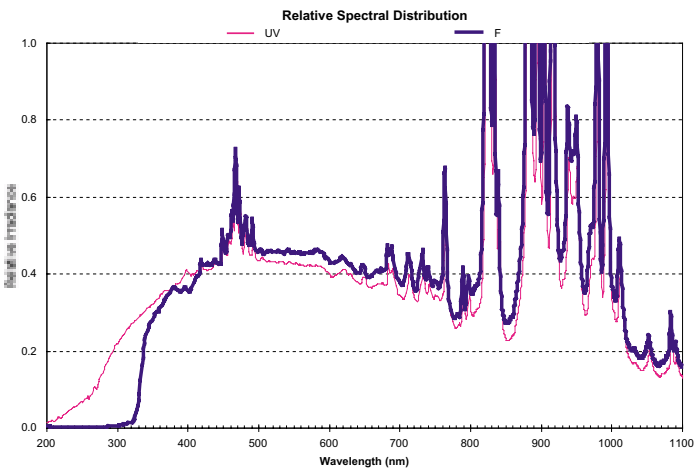
NOTES: A. Lamp must not be operated with window facing upwards within 45° of vertical. **B.** Seal temperature must not exceed 150°C. **C.** Current/power regulated power supplies and PerkinElmer lamp housing units are recommended. **D.** Lamp must be operated within recommended current and power range. Over powering may lead to arc instability, hard starting and premature aging. **E.** Hot mirror assembly is available for IR filtering for 300W lamps and below. **F.** Cermax® 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 Parabolic

		PE125BF	PE125BUV	PE175BF	PE175BUV	PE300BF	PE300BUV
Power (Watts)	Nominal	125	125	175	175	300	300
	Range	75 - 150	75 - 150	150 - 200	150 - 200	180 - 320	180 - 320
Current (Amps DC)	Nominal	12	12	14	14	21	21
	Range	6 - 14	6 - 14	12 - 16	12 - 16	10 - 22	10 - 22
Voltage (Volts DC)	Nominal	11.0	11.0	12.5	12.5	14.0	14.0
	Range	9.5 - 12.5	9.5 - 12.5	11.0 - 14.0	11.0 - 14.0	13.0 - 16.0	13.0 - 16.0
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)							
Peak Intensity (Candelas)		3.0 x 10^5	2.8 x 10^5	3.5 x 10^5	3.3 x 10^5	5.2 x 10^5	4.6 x 10^5
Radiant Output (Watts)[3]		17	17	25	25	50	50
UV Output, <390nm (Watts)[3]		0.8	2.2	1.2	3.5	2.6	6.6
IR Output, >770nm (Watts)[3]		10.0	9.0	14.0	13.0	28.8	26.8
Visible Output, 390-770nm (Lumens)[3]		1500	1350	2200	2000	5000	4500
Color Temperature (Kelvin)[4]		5600	5050	5600	5050	5600	5050
Beam Geometry[5] (Degrees)	@ 1 Hour	4.5	4.5	4.5	4.5	5.0	5.0
	@ 100 Hours	5.0	5.0	5.0	5.0	6.0	6.0
	@ 1000 Hours	6.0	6.0	6.0	6.0	7.0	7.0
Cathode Defocus "D" (inches / mm)		.003 / .08	.003 / .08	.003 / .08	.003 / .08	.003 / .08	.003 / .08
Arc Gap (inches / mm)		.045 / 1.14	.045 / 1.14	.045 / 1.14	.045 / 1.14	.049 / 1.24	.049 / 1.24
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 with f/1.0 lens (Lumens / Watts)	8mm Aperture	1050 / 9.5	-	1400 / 13.0	-	3130 / 29.0	-
	6mm Aperture	620 / 5.6	-	830 / 7.8	-	1410 / 14.0	-

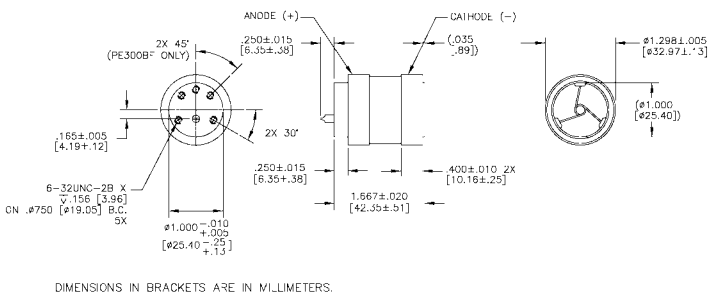
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. [5] Half angle at 10% points.
All specifications subject to change without notice.

Spectral Output

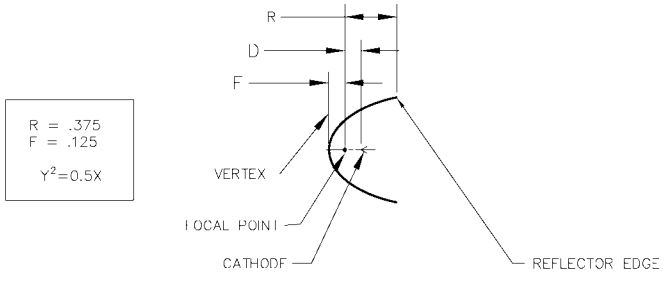




Type B Parabolic Dimensions



Type B Parabolic 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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.

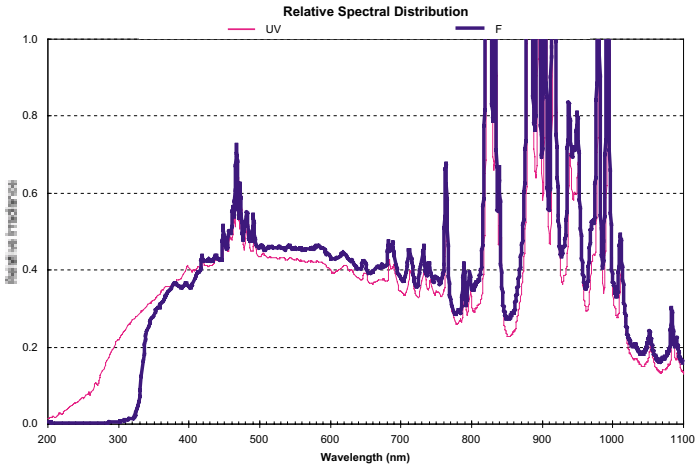
Type D Parabolic

		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] (Degrees)	@ 1 Hour	3.0	3.0	4.5	4.5
	@ 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 f/1.0 lens (Lumens / Watts)	6mm Aperture	5200 / 48	-	10400 / 96	-
	3mm Aperture	2300 / 22	-	4600 / 44	-

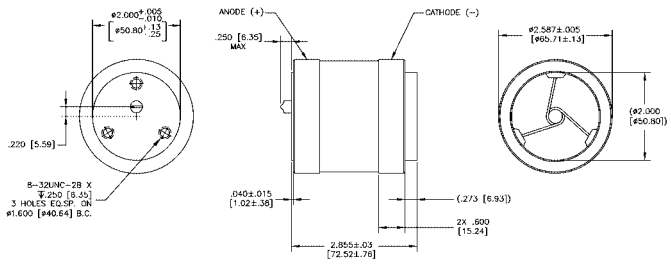
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. [5] Half angle at 10% points.
All specifications subject to change without notice.



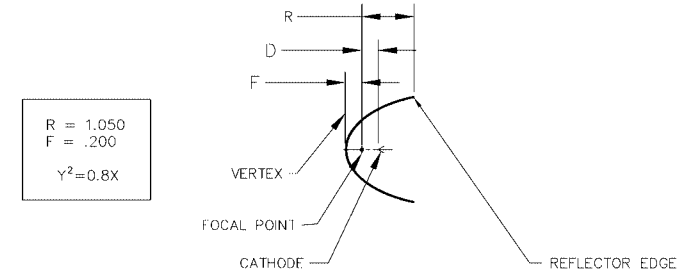
Spectral Output



Type D Parabolic Dimensions



Type D Parabolic 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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.

Video Projection Lighting Products



- High out put Xenon for excellent color stability and reliability
- DC operation for more lumens through smaller apertures
- Instant on/off capabilities
- One lamp body size for 1,500 - 3,500 lumen projectors
- Single lamp design eliminating light coupling design issues
- Small compact low wattage lamp for RPTV

PerkinElmer Optoelectronics is fueling the digital revolution with its new Cermax® high pressure xenon lamps. These new lamps provide unparallel 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.

Cermax® 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. Cermax® 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.

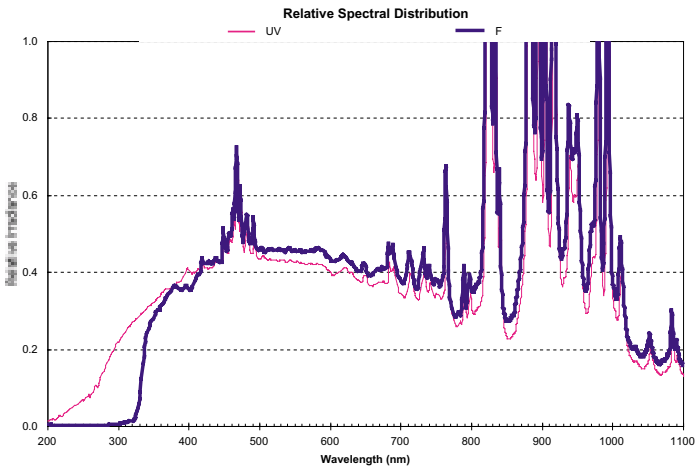
Video Projection

		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 (inches / mm)	@ 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
	@ 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				

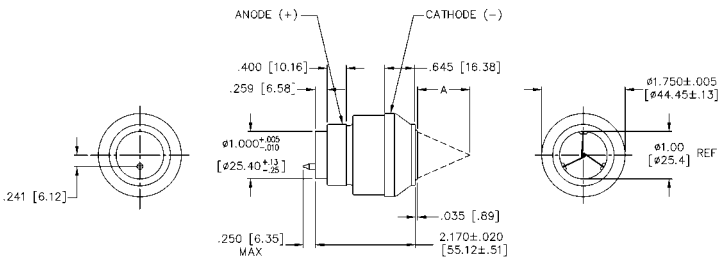
[1] Optimum operating temperature 120-130 (°C). [2] With a PKI approved power supply. [3] Total nominal output from lamp in all directions. [4] Nominal value. All specifications subject to change without notice.



Spectral Output



Type C Dimensions

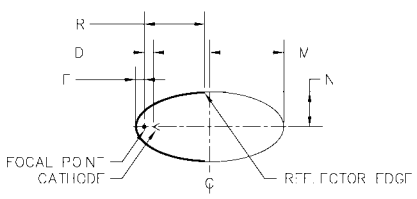


DIMENSIONS IN BRACKETS ARE IN MILLIMETERS.

Type C Reflector

f/1.0	f/1.3
M – 1.2136	M – 1.3648
N = .7129	N = .7311
R = .752	R = .656
F – .231	F – .212

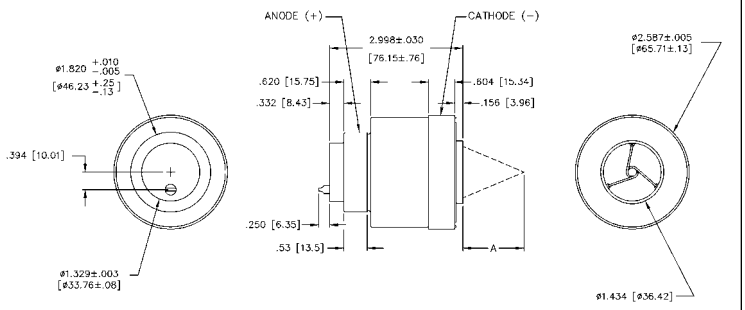
$$1 - \frac{X^2}{M^2} + \frac{Y^2}{N^2}$$



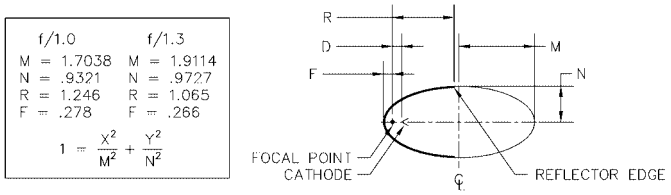
		XE1850D-10FH	XE1850D-13FH	XE2400E-10FH	XE2400E-13FH
Power (Watts)	Nominal	1850	1850	2400	2400
	Range	1400 - 1850	1400 - 1850	1800 - 2700	1800 - 2700
Current (Amps DC)	Nominal	65.0	65.0	104.0	104.0
	Range	60.0 - 95.0	60.0 - 95.0	75.0 - 110.0	75.0 - 110.0
Voltage (Volts DC)	Nominal	20.0	20.0	23.0	23.0
	Range	19.0 - 26.0	19.0 - 26.0	19.0 - 26.0	19.0 - 26.0
Maximum Top Ceramic Operating Temperature (°C)[1]		160	160	160	160
Minimum Ignition Voltage at lamp (kV)[2]		28	28	35	35
Minimum Ignition Pulse Duration (nS)		100	100	100	100
Radiant Output (Watts)[3]		365	365	635	635
UV Output, <390nm (Watts)[3]		19.5	19.5	31.0	31.0
IR Output, >770nm (Watts)[3]		200	200	350	350
Visible Output, 390-770nm (Lumens)[3]		40000	40000	73000	73000
Color Temperature (Kelvin)[4]		5900	5900	5900	5900
Spot Size at Crossover (inches / mm)	@ 50% points[4]	.15 / 3.8	.16 / 4.1	.19 / 4.8	.19 / 4.8
	@ 10% points[4]	.40 / 10.2	.53 / 13.5	.65 / 16.5	.65 / 16.5
f-Number		1.0	1.3	1.0	1.3
Focal Distance "A" (inches / mm)		.946 / 24.03	1.389 / 35.28	.825 / 20.95	1.885 / 47.88
Cathode Defocus "D" (inches / mm)		.008 / .20	.008 / .20	.012 / .30	.012 / .30
Arc Gap (inches / mm)		.053 / 1.35	.053 / 1.35	.075 / 1.91	.075 / 1.91
Window Diameter (inches / mm)		1.375 / 34.93	1.375 / 34.93	2.00 / 50.8	2.00 / 50.8
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.

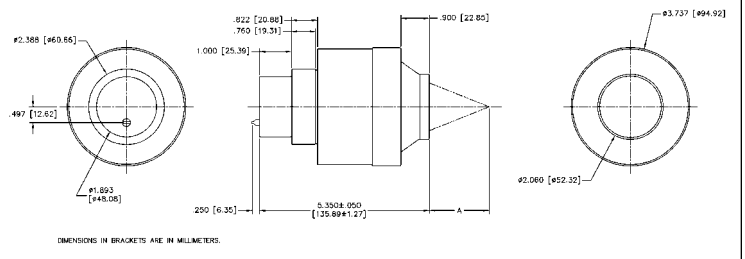
Type D Dimensions



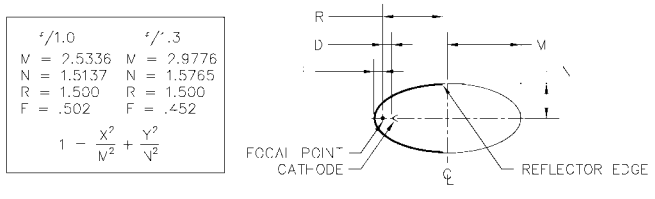
Type D Reflector



Type E Dimensions



Type E 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 PerkinElmer 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 IR filtering for 300W lamps and below. **F.** Cermax® 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.



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