

Lens Temperature Data

All temperatures were measured in a controlled ambient. Actual temperatures may vary.

Lamp	Description	TR	RD	RS
		<i>Integral</i>	<i>Remote Deep</i>	<i>Remote Shallow</i>
		Lens °F	Lens °F	Lens °F
MR-16				
1	- ESX (20W) 12° Spot	129.63	116.50	117.77
2	- BAB (20W) 40° Flood	144.24	131.11	138.20
3	- FRB (35W) 12° Spot	152.58	139.45	140.28
4	- FRA (35W) 23° Narrow Flood	159.17	146.04	150.33
5	- FMW (35W) 40° Flood	169.36	156.23	165.87
15	- EYR (42W) 12° Spot	168.73	159.44	162.78
16	- EYS (42W) 25° Narrow Flood	174.46	161.33	176.35
17	- EYP (42W) 40° Flood	181.07	167.94	192.01
6	- EXT (50W) 13° Spot	170.98	157.85	152.77
7	- EXZ (50W) 26° Narrow Flood	182.30	169.17	167.10
8	- EXN (50W) 40° Flood	194.49	181.36	182.53
9	- FNV (50W) 60° Wide Flood	211.90	198.77	204.57
32	- EYF (75W) 13° Spot	198.60	185.47	166.92
33	- EYJ (75W) 26° Narrow Flood	228.61	215.48	189.40
34	- EYC (75W) 44° Flood	236.37	223.24	202.94
PAR-36				
25	- (18W) 50/25° Flood	127.80	118.51	100.20
26	- (36W) 5° V Narrow Spot	156.15	143.02	143.36
27	- (36W) 13° Spot	160.63	151.34	145.13
28	- (36W) 30° Narrow Flood	170.16	160.87	148.89
29	- (50W) 5° V Narrow Spot	189.50	176.37	166.00
30	- (50W) 8° Narrow Spot	190.04	176.91	186.02
31	- (50W) 30° Flood	203.11	189.98	170.35
AR-111				
35	- (35W) 4° V Narrow Spot	209.01	195.88	186.07
36	- (35W) 8° Spot	210.71	197.58	189.63
37	- (35W) 25° Flood	217.92	204.79	204.77
38	- (50W) 4° V Narrow Spot	227.74	214.61	206.51
39	- (50W) 8° Spot	232.49	219.36	204.90
40	- (50W) 25° Flood	252.68	239.55	198.06
41	- (75W) 8° Spot	268.79	255.66	230.35
42	- (75W) 25° Flood	310.61	297.48	282.95
43	- (75W) 45° Wide Flood	332.19	319.06	344.84
GU10- Line Voltage MR16				
163	- (35W) 25° Narrow Flood		160.97	
164	- (50W) 25° Narrow Flood		235.12	
161	- (50W) 40° Flood		192.78	
PAR-20 Halogen				
47	- (50W) 10° Spot		198.57	
48	- (50W) 25° Flood		208.09	
PAR-30L Halogen				
50	- (50W) 10° Spot		233.70	
51	- (50W) 16° Spot		223.70	
52	- (50W) 25° Flood		203.69	
53	- (50W) 40° Flood		189.40	
54	- (75W) 10° Spot		265.52	
55	- (75W) 16° Spot		255.62	
56	- (75W) 25° Flood		246.26	
57	- (75W) 40° Flood		232.51	

Lens Temperature Data



Lamp	Description	TR	RD
		<i>Integral</i>	<i>Remote Deep</i>
		Lens	Lens
			°F °F
Compact Fluorescent			
100	- (18W) Triple Twin Tube	.129.24	
101	- (26W) Triple Twin Tube	.139.47	
102	- (32W) Triple Twin Tube	.147.14	
103	- (42W) Triple Twin Tube	.159.93	
ES-16 Metal Halide			
276	- (20W) CMH20MR16/830/12° Spot	.194.55	
277	- (20W) CMH20MR16/830/25° Flood	.207.94	
279	- (20W) CMH20MR16/830/40° Flood	.144.79	
310	- (35W) CMH35MR16/830/12° Spot	.237.44	.238.74
311	- (35W) CMH35MR16/830/25° Flood	.201.25	.202.55
312	- (35W) CMH35MR16/830/40° Flood	.279.20	.280.50
E-17 High Pressure Sodium (Spot Reflector)			
112	- (35W) E-17, Med. Base, Clear	.150.44	.137.20
113	- (35W) E-17, Med. Base, Diffuse	.147.92	.134.68
104	- (50W) E-17, Med. Base, Clear		.144.55
105	- (50W) E-17, Med. Base, Diffuse		.142.03
108	- (70W) E-17, Med. Base, Clear		.154.34
109	- (70W) E-17, Med. Base, Diffuse		.151.82
CDM-R111 Metal Halide			
270	- (35W) CDM-R111/810/10° Spot	.177.94	.179.24
271	- (35W) CDM-R111/830/24° Narrow Flood	.173.07	.174.37
272	- (35W) CDM-R111/830/40° Flood	.167.50	.168.80
273	- (70W) CDM-R111/830/10° Spot		.208.29
274	- (70W) CDM-R111/830/24° Narrow Flood		.214.54
275	- (70W) CDM-R111/830/40° Flood		.221.68
PAR-20 Metal Halide			
308	- (20W) 8° Spot	.143.57	.133.09
309	- (20W) 25° Spot	.126.58	.116.10
58	- (35W) 10° Spot	.200.16	.189.68
59	- (35W) 30° Flood	.207.12	.196.64
PAR-30 Metal Halide			
60	- (35W) 10° Spot	.163.31	.152.83
61	- (35W) 30° Flood	.157.95	.147.47
62	- (70W) 10° Spot		.219.62
63	- (70W) 40° Flood		.203.93
T-4.5 Metal Halide (Spot Reflector)			
278	- (20W) T-4.5 / 830	.162.19	
314	- (35W) T-4.5 / 830	.196.14	.201.17
T-6 Metal Halide (Spot Reflector)			
81	- (35W) T-6 / 830	.188.64	.193.67
82	- (70W) T-6 / 830		.206.18
E-17 Metal Halide (Spot Reflector)			
106	- (50W) E-17, Med. Base, Clear		.141.45
107	- (50W) E-17, Med. Base, Diffuse		.160.26
110	- (70W) E-17, Med. Base, Clear		.162.21
111	- (70W) E-17, Med. Base, Diffuse		.181.02



Interstice Cooling Evacuated Enclosure
U.S. Patent No. 7,560,148

Interstice

n. pl. ináterásticáes (-st-sz, -sz)

A space, especially a small or narrow one, between things or parts.

**38% Temperature Reduction. 90% + Lumen Output.
Full Optical Control.
Now that's Really Cool. Finally!**

What is ICEE™?

ICEE™, or Interstice Cooling Evacuated Enclosure, is a significant advancement in the science of temperature management. It effectively reduces surface lens temperatures without compromising lumen output or optical control. ICEE™ is available on all aluminum HP² Faceplates.

How does ICEE™ work?

ICEE™'s patented system effectively reduces the transfer of thermal energy to the luminaire's lens and faceplate. To do so, ICEE™ employs a vacuum-sealed chamber, or interstice, between the lamp and the surface.

B-K Lighting's patented ACV™ valve evacuates the air from the interstice, reducing the number of air and water molecules available to transfer heat. The valve also eliminates any condensation that may otherwise be present within the luminaire.

Why does ICEE™ work?

Without air and water molecules, there is significantly less heat transfer to the top of the luminaire. In addition, the ICEE™ chamber is designed to transfer the lamp's thermal energy toward the side of the fixture and not the lens.

Is ICEE™ effective?

The ICEE™ lens reduces the 'true' hot spot by an average of 38%, when measuring in °F. At the same time, lumen output is an amazing 90+% versus standard products. ICEE™ minimally adds 2" to fixture depth, allowing a full 360° horizontal by up to 30° vertical optical adjustment and minimizing the impact in beam distribution.

Is there a safety standard for lens temperature?

Given the absence of any U.S. standard in this area, B-K Lighting has adopted a 'common sense' standard to guide our product development:

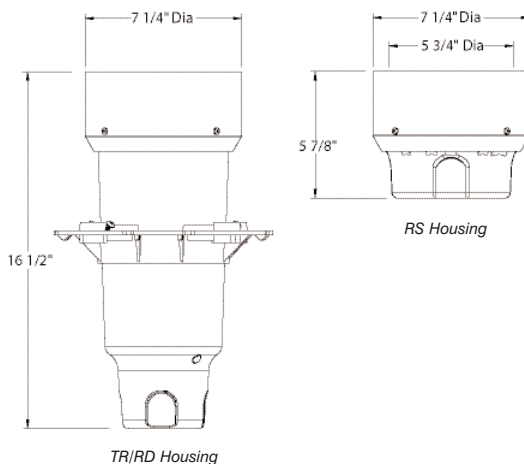
1. Not every system can be made safe. We understand that many lamp and wattage choices available will simply not permit installation into areas of pedestrian contact.
2. European standards establish a 160°F temperature threshold that permits contact time up to 4 seconds without injury. B-K Lighting has adopted this threshold as its maximum ICEE™ temperature for areas of pedestrian contact. Systems that fall within this range are listed in the chart at right in the "Yellow" Zone. Systems that exceed this temperature are listed in the "Orange" Zone.
3. Temperatures of 140°F or lower permit contact time up to 30 seconds without injury (see chart). B-K Lighting has adopted this threshold as safe for sustained contact. Systems that fall within this range are listed in the chart at right in the "Green" Zone.

What is the testing method to establish temperature?

B-K Lighting conducts heat tests pursuant to UL standards, in a controlled ambient of 23°C. In addition, pursuant to standard, all test products are packed in sand, to simulate the "worst case" performance scenario.

To conduct a test, first the luminaire's "true" hot spot is established. Then, the fixture is returned to ambient temperature. Because lamp, wattage, and distribution configurations differ, the luminaire is then energized for a full 8 hour cycle. This allows sufficient time to achieve the maximum sustained temperature on the upper lens. During this time, continuous infrared measurements are recorded at the hot spot to establish the effectiveness of the ICEE™ lens.

ICEE™ Lens available with HP² Only. Faceplate standard aluminum only with 5 3/4" diameter lens. Concrete Pour Collar included.



Know Your Zone

Sustained Contact



30 Seconds

Pedestrian Contact



4 Seconds

Minimal Contact



Less than 4 Seconds



MR16 Lamp No.

1	2	3	4	5	6	7	8	9	15	16	17	32	33	34
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Par 36 Lamp No.

25	26	27	28	29	30	31
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GU10 Lamp No.

161	163	164
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AR111 Lamp No.

35	36	37	38	39	40	41	42	43
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CFL Lamp No.

100	101	102	103
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Par 20 Hal. Lamp No.

47	49
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Par 30 Hal. Lamp No.

50	51	52	53	54	55	56	57
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ES-16MH Lamp No.

276	277	279	310	311	312
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T4.5MH Lamp No.

278	314
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T6MH Lamp No.

81	82
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Par 20MH Lamp No.

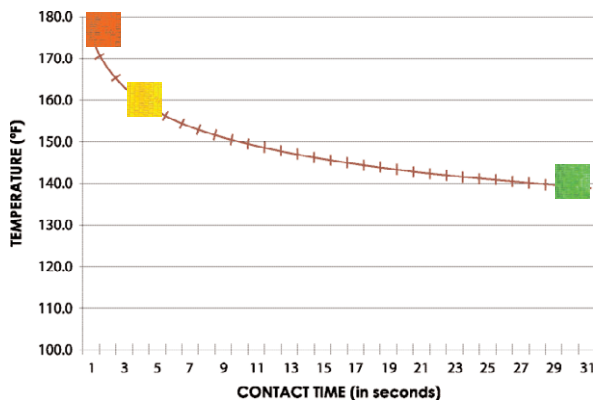
58	59	308	309
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Par 30MH Lamp No.

60	61	62	63
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TEMPERATURE OVER TIME



As temperature rises, allowable contact time decreases. Green indicates an allowable contact time of 30 seconds. Yellow indicates an allowable contact time of 4 seconds. Orange indicates a contact time of more than 4 seconds.



E17MH Lamp No.

106	107	110	111
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CDM-R111 Lamp No.

270	271	272	273	274	275
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E17 HPS Lamp No.

104	105	108	109	112	113
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B-K LIGHTING

Precision² and its features are covered in whole or in part by U.S. Patent No. 7,033,038; U.S. Patent No. 6,254,258 B1; U.S. Patent No. 7,249,867 B2; U.S. Patent No. 7,370,988 B2; and U.S. Patent No. 7,560,148.

