







LARGE Reflector Selection Guide

Best for lighting spaces:

- with medium to high ceiling height,
- where higher wattage allows fewer luminaires,
- where high light levels are desired.

This guide is designed to assist the lighting professional in comparing and selecting the lamp(s) and luminaire(s) best suited for a project. First determine lamp and luminaire characteristics most important to your application. Then select lamp wattage(s) based on a similar size/type of space, number of luminaires and desired light level. Use lumen or illuminance ratios to approximate alternative light levels or quantity of units.

Typical Applications: Space Code / Size (L x W x H) / Use
 A 12' x 10' x 9' private office, conference room, lobby, reception area
 B 18' x 12' x 9' office, conference room, lobby, living room
 D 36' x 24' x 12' open office, mall/airport concourse (typical bay), lecture/reading/multi-purpose room
 E 100' x 60' x 25' gymnasium, pool, atrium, sanctuary, auditorium
 F 320' x 200' x 50' field house, atrium, sanctuary, great hall

Source	Lamp Type ④		Lamp Characteristics			Control Characteristics			Performance ⑥			Typical Applications ⑧				
			Correlated Color Temp ④	Color Rendering Index (CRI)	Lamp Life ① (Hours)	Starting	Dimming	Emergency	Lamp Wattage	Lamp Output	Efficacy	Space Code	No. Units	Wattage	E _{wp} (fcai)	Watts /sq.ft.
Point Sources Best where setback can be 1/3 to 1/5 the distance the light is to be projected (36" minimum recommended) and where individually mounted luminaires can be spaced 1.5 to 2 times the setback distance.	 Tungsten Halogen	3000K Warm	>95 CRI <i>Excellent</i> Ideal for sanctuaries, museums, galleries, retail, residential, offices, etc.	2000 Approx. 165 days at 12 hours operation per day. Note: dimming extends lamp life. ②	Instant-on	Dimmable using incandescent dimmers (by others). ③ 220, 240 and 277V lamps require compatible dimmer.	Can be wired to separate emergency or standby circuit.	300W	5900	20	A	2	350W	42	5.8	
								350W	10,000	29	B	2	350W	27	3.2	
								500W	10,700	21	D	8	350W	30	3.2	
								900W	32,000	36	D	3	900W	38	3.1	
								1000W	21,500	22	E	16	900W	30	2.4	
	 Metal Halide	175W - 4000K Cool 250W - 3200K Warm 400W - <i>Warm</i> 1000W - ④ (for alternative colors, see lamp chart in Accessories Section)	65 CRI <i>Good</i> Suitable for public spaces, malls, airports, schools, offices, atriums, lobbies, etc.	400W - 15,000 250W-10,000 1000W - 8000 175W - 7500 Approx. 2 to 3-1/2 years at 12 hours operation per day.	3 to 5 minutes from cold start; 10 to 20 minutes from warm start (restrike period).	Not dimmable	Optional auxiliary halogen lamp and relay (available on some styles).	175W	12,800	63	A	1	250W	48	2.5	
								250W	21,000	73	A	1	400W	88	3.8	
								400W	38,000	83	B	2	250W	62	2.7	
								2x400W	76,000	83	D	6	400W	87	3.2	
								1000W	100,000	100	E	12	2x400W	46	1.8	
 Example: 32' wide space uplighted from 2 sides (16' throw), 4' setback, 8' on center.	 4X® Double Long Twin-Tube Compact Fluorescent	3000K Warm ④ 3500K Neutral 4100K Cool	82 CRI <i>Very Good</i> Suitable for retail, mall and airport concourses, hotels, schools, sanctuaries, offices, conference, reception and lobby spaces, etc.	20,000 55W - 12,000 Approx. 2-1/2 to 4-1/2 years at 12 hours/day.	Rapid start	Optional electronic dimming ballast ⑤	Optional emergency battery pack operates one lamp for 90 minutes at reduced light output.	2x39W	5800	88	A	2	2x50W	30	1.8	
								2x40W	6600	97	B	4	2x50W	39	1.9	
								2x50W	8600	78	D	10	2x55W	32	1.3	
								2x55W	9200	84	E	38	8x55W	55	2.8	
								1x80W	6000	75	F	240	8x55W	43	1.7	
	 Hex-Tube Compact Fluorescent	32W Approx. 2 to 2-1/2 years at 12 hours/day.	12,000 Approx. 2 to 2-1/2 years at 12 hours/day.	82 CRI <i>Very Good</i>	Rapid start or instant start	Optional electronic dimming ballast ⑤	Optional emergency battery pack operates 90 minutes at reduced light.	32W	2400	73	A	4	42W	26	1.6	
								42W	3200	73	B	8	42W	34	1.7	
								2x42W	6400	73	B	6	2x42W	51	2.6	
											D	10	2x42W	26	1.1	
Linear Sources Best where setback is limited to 1/6 to 1/10 the distance the light is to be projected (18" minimum recommended) and where luminaires can be mounted end-to-end in a row.	 Long Twin-Tube Compact Fluorescent, continuous	3000K Warm ④ 3500K Neutral 4100K Cool	82 CRI <i>Very Good</i>	20,000 55W - 12,000 Approx. 2-1/2 to 4-1/2 years at 12 hours/day.	Rapid start or instant start	Optional electronic dimming ballast ⑤	Optional emergency battery pack operates 90 minutes at reduced light.	39/40W	3300	90⑦	B	6	2x50W	58	2.9	
								50W	4300	80⑦	D	18	2x50W	48	2.2	
								55W	4800	87⑦	E	38	4x55W	37	1.4	
								80W	6000	75⑦	F	240	4x55W	28	0.8	

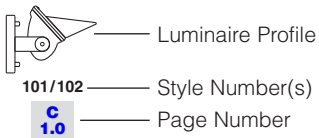
① Average rated life is the number of hours at which 50% of a large group of lamps are still operating. Fluorescent lamp ratings based on 3 or more operating hours per start. Metal halide based on 10 or more hours per start. Average life may increase or decrease as the period per start increases or decreases.
 Where low maintenance is desired or for locations that are difficult to reach, long life metal halide or fluorescent lamps are suggested.

② Dimming halogen lamps to 95% of rated lamp voltage will double the average lamp life and reduce light output approximately 15%.
 ③ Dimming tungsten halogen lamps causes the color temperature to shift warmer and the projected light pattern to noticeably shrink. When operating continuously or frequently at reduced voltage, increase setback distance and/or decrease spacing between luminaires to maintain uniformity on the ceiling by remote distance. Refer to individual data pages for complete specifications.

④ Lamp(s) furnished with luminaires, except T8. Standard fluorescent color temperature is 3000K. See lamp charts in Accessories Section.
 ⑤ Standard dimming ballast dims down to 5% to 15% of full light output (varies with the lamp type). Ballasts that allow dimming to lower light levels may be available. Dimming may be limited to certain lamps, luminaire configurations or by remote distance. Refer to individual data pages for complete specifications.

Key

Styles are available for uplighting from pendant or cantilever. Refer to data pages for complete specifications.



Surface - 100 Series		Semi-Recessed 200 Series	Concealed - 300 Series	Enssconce - 400 Series		Lamp Type
Remote Ballast (or no ballast)	Integral Ballast	Remote or Integral Ballast	Remote (or no ballast) or Integral Ballast	Remote Ballast (or no ballast)	Integral Ballast	
<p>103/104 (E-mount shown) C 28.0</p> <p>116 KO Series (Y-mount shown) C 32.0</p> <p>107 (extruded cylinder) C 29.0</p> <p>127 KO Series C 36.0</p> <p>137 ...the dotted line C 39.0</p> <p>117 XL C 33.0</p>	<p>108 (extruded cylinder) C 29.0</p> <p>128 KO Series C 36.0</p> <p>113/114 (4X) C 30.0</p> <p>113/114 (Hex) C 31.0</p> <p>126 (4X) KO Series C 34.0</p> <p>126 (Hex) KO Series C 35.0</p>	<p>204* C 42.0</p> <p>* 500W maximum</p> <p>204 (4X) C 43.0</p> <p>204 (Hex) C 44.0</p>	<p>302 (long twin tube) (contractor fabricated cover by others) C 45.0</p> <p>302 (long twin-tube) (contractor fabricated cover by others) C 45.0</p>	<p>404 ELA ELN C 46.0 C 46.2</p> <p>404 ELB ELO C 46.0 C 46.2</p> <p>404 ELC C 46.0</p> <p>429 Flight C 52.0</p>	<p>408/409 (Position 1) C 49.0</p> <p>408/409 (Position 2) C 49.0</p> <p>408/409 (Position 3) C 49.0</p> <p>406 ELN C 48.0</p> <p>406 ELO C 48.0</p> <p>412 KO Series (Position 2) C 50.0</p> <p>412 ELS C 50.1</p> <p>406/ELA Hex C 47.0</p>	<p>Tungsten Halogen</p> <p>Metal Halide</p> <p>4X® Double Long Twin-Tube Compact Fluorescent</p> <p>Hex-Tube Compact Fluorescent</p> <p>Long Twin-Tube Compact Fluorescent, continuous</p>

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⑥ **Lamp output** = initial rated lumens; may vary with lamp manufacturer.
Efficacy = expressed in lumens per watt (lpw); includes ballast losses and may vary, depending on actual lamp and ballast parameters.
 ⑦ Efficacy and energy for linear fluorescent luminaires will vary depending on the combination of lamp lengths and number of lamps per ballast.

⑧ Typical uplight applications:
Ewp = illuminance, footcandles average initial (fcai), on workplane (based on rectangular room, uniform distribution of luminaires and 80/50/20 ceiling/wall/floor reflectance factors).
Watts/sq.ft. = input watts (includes ballast) per area for given number of luminaires; use for comparison purposes only.

Estimated light levels are for guidance in narrowing the selection of lamp source(s) and/or wattage(s). Values do not represent specific recommendations for all uses/tasks for a given sample space. Consult the IESNA Lighting Handbook for recommended light levels. For maintained light levels, apply suitable light loss factors.