

SMALL Reflector Selection Guide


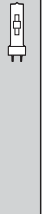




Best for lighting spaces:

- with low to medium ceiling height,
- where setback (distance from ceiling) is limited,
- where compact size is 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
- C 40' x 8' x 9' corridor, overpass, tunnel
- D 36' x 24' x 12' open office, mall or airport concourse (typical bay), court, lecture or reading room

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	Watt-age	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 (30" minimum recommended) and where individually mounted luminaires can be spaced 1.5 to 2 times the setback distance. Example: 12' wide space uplighted from one side, 3' setback, 6' on center.	 Tungsten Halogen	2900K Warm	>95 CRI <i>Excellent</i> Ideal for museums, galleries, sanctuaries, retail, residential, offices, etc.	2000 Approx. 165 days at 12 hrs operation per day. Note: dimming extends lamp life. ^②	Instant-on	Dimmable using incandescent dimmers (by others) ^③	Can be wired to separate emergency or standby circuit.	100W	1550 lumens	16 lpw	A	2	250W	19	4.2
								150W	2700	18	B	4	250W	24	4.6
								200W	3400	17	C	5	250W	18	3.9
								250W	4800	19	A	2	350W	41	5.8
								350W	10,000	29	B	2	350W	25	3.2
	 Compact Ceramic Metal Halide	3000K Warm Lamps using ceramic arc tubes offer lamp-to-lamp color consistency and a stable color temperature (+/-200K) over their life.	81 to 85 CRI <i>Very Good</i> Suitable for retail, malls, offices, schools, libraries, airports, reception, atrium and lobby spaces, etc.	12,000 Approx. 2 1/2 to 3 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).	70W	6600	70	A	2	70W	27	1.6
								150W	14,000	78	B	4	70W	33	1.7
											C	4	70W	20	1.2
											D	10	70W	24	1.1
											A	2	150W	49	3.0
								B	2	150W	31	1.7			
	D	8	150W	34	1.7										
D	12	150W	50	2.5											
 Quad-Tube Compact Fluorescent	2700K Incandescent 3000K Warm^④ 3500K Neutral 4100K Cool	82 to 85 CRI <i>Very Good</i> Suitable for schools, offices, lobbies, corridors, etc.	12,000 Approx. 2-1/2 to 3 years at 12 hours operation per day.	Rapid start	Optional electronic dimming ballast. ^⑤	Optional emergency battery pack operates one lamp for 90 minutes at reduced light output.	26W (4-pin) 1800 64	A	4	26W	12	0.9			
								B	8	26W	16	1.0			
								C	5	26W	7	0.4			
								C	10	26W	13	0.8			
Linear Sources Best where setback is limited to 1/6 to 1/10 the distance the light is to be projected (12" minimum recommended) and where luminaires can be mounted end-to-end in a row.	 T8 Fluorescent ^④	3000K Warm 3500K Neutral 4100K Cool	75 to 95 CRI <i>Good to Excellent</i>	20,000 TO 35,000 Approx. 4-1/2 to 8 years at 12 hours operation per day.	Rapid start or instant start	Optional electronic dimming ballasts. ^⑤	Optional emergency battery pack operates one lamp for 90 minutes at reduced light output.	17W (24")	1400	79 to 103 ^⑦	A	6	32W	25	1.6
								25W (36")	2225		B	14	32W	38	2.0
								32W (48")	3000		C	10	32W	17	1.0
								40W (60")	3775		D	28	32W	26	1.0
	 T5 Fluorescent	3000K Warm^④ 3500K Neutral 4100K Cool	82 to 85 CRI <i>Very Good</i> Suitable for retail, malls, sanctuaries, residences, offices, atrium, lobbies, etc.	20,000 TO 35,000 Approx. 4-1/2 to 8 years at 12 hours operation per day.	Rapid start or instant start	Optional electronic dimming ballasts. ^⑤	Optional emergency battery pack operates one lamp for 90 minutes at reduced light output.	14W (22")	1350	79 to 103 ^⑦	A	6	28W	27	1.4
								21W (34")	2100		B	14	28W	40	1.8
								28W (46")	2900		C	10	28W	19	0.9
								35W (58")	3650		D	28	28W	27	0.9
								24W (22")	2000		A	6	55W	46	2.9
								39W (34")	3500		B	14	55W	69	3.7
								55W (46")	5000		C	10	55W	32	1.8
	80W (58")	7000	D	28	55W	47	1.8								
	 T5 HO Fluorescent	3000K Warm^④ 3500K Neutral 4100K Cool	82 to 85 CRI <i>Very Good</i> Suitable for retail, malls, sanctuaries, residences, offices, atrium, lobbies, etc.	20,000 TO 35,000 Approx. 4-1/2 to 8 years at 12 hours operation per day.	Rapid start or instant start	Optional electronic dimming ballasts. ^⑤	Optional emergency battery pack operates one lamp for 90 minutes at reduced light output.	24W (22")	2000	79 to 103 ^⑦	A	6	55W	46	2.9
								39W (34")	3500		B	14	55W	69	3.7
								55W (46")	5000		C	10	55W	32	1.8
							80W (58")	7000		D	28	55W	47	1.8	

^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.

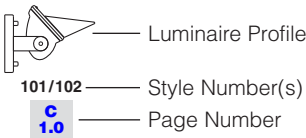
^④ Lamp(s) furnished with luminaires, except T8. Standard fluorescent color temperature is 3000K. See lamp charts in Accessories Section.

^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		Enconce - 400 Series		Lamp Type
Remote Ballast (or no ballast)	Integral Ballast	Remote Ballast (or no ballast)	Remote Ballast (or no ballast)	Integral Ballast	Remote Ballast (or no ballast)	Integral Ballast	
<p>101/102* C 1.0</p> <p>115* KO Series C 8.0</p> <p>130 KO Series C 13.0</p> <p>120 C 9.0</p> <p>133 ...the dotted line C 14.0</p> <p>* 250W maximum</p>	<p>105/106 Ovalinear C 2.0</p>	<p>203* C 16.0</p> <p>* 250W maximum</p>	<p>301 (T6-1/2 incandescent) contractor fabricated cover by others) C 17.0</p>		<p>403/ESA C 25.0</p> <p>403/ESB C 25.0</p> <p>403/ESC C 25.0</p> <p>427 Flight C 27.0</p>	<p>401/402 C 24.0</p> <p>407 (cove by others) C 24.0</p> <p>407/ESD C 24.1</p> <p>405/ESN C 26.0</p> <p>405/ESS C 26.0</p> <p>425 Flight C 27.0</p>	<p>Compact Ceramic Metal Halide</p>
	<p>121/122 KO Series C 10.0</p> <p>125 KO Series C 12.0</p> <p>105/106 Ovalinear C 3.0</p>						<p>Quad-Tube Compact Fluorescent</p>
<p>144 (T5) Uplight C 15.0</p> <p>105/106 (T5) Ovalinear C 5.0</p> <p>109 (T5) KO Series C 7.0</p> <p>105/106 (T5) Ovalinear C 4.0</p> <p>109 (T5) Ovalinear KO Series C 6.0</p> <p>124 (T5) C 11.0</p>		<p>301 (T8 only) C 18.0</p> <p>(contractor fabricated covers by others)</p>	<p>305 (T5 only) C 19.0</p> <p>306 (T5/T8) C 20.0</p> <p>307 (T5) C 21.0</p> <p>308 (T5) C 22.0</p>			<p>T8 Fluorescent</p> <p>T5 Fluorescent</p> <p>T5 HO Fluorescent</p>	



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.