

TYPICAL CAMPUS LIGHTING TECHNOLOGIES

Main Lighting Types: Efficacy and CRI



- Efficacy = the efficiency of a light source expressed in lumens of light per watt of power input
- CRI = Color Rendering Index; a measure of the way artificial light affects the color of things as compared to their color in natural sunlight, which is assigned a value of 100.





Main Lighting Type	Efficacy in Lumens/watt*	CRI
Incandescent	9 - 34	90 - 100
Mercury Vapor	39 - 54	40
Fluorescent	15 - 109	52 - 62 (older models); 72 - 82 (newer)
Metal Halide	65 - 106	60 - 75
High Pressure Sodium	55 - 136	22
Low Pressure Sodium	54 - 170	0



* Efficacy expressed as a range because efficiency typically increases as the lamp wattage increases.

Specific Lighting Technologies

Watts are for bulb only; if lamp uses a ballast, lamp + ballast wattage is noted in parenthesis

Type	Watts (bulb only)	Lumens	Where Used	How to Recognize
Incandescent: Standard 20 W 60 W 100 W	20 60 100	— 860 1,750	Overall room lighting; display & accent lighting	 filament burns very hot
Incandescent: "PAR"(Parabolic aluminized reflectors) 75 W 100 W 150 W	75 100 150	1,200 1,750 2,580	Highly effective reflective flood light used for recessed indoor lighting & outside lighting	 have very thick glass
Type	Watts (bulb only)	Lumens	Where Used	How to Recognize

	only)			
Incandescent: "R" (Reflector) 75 W 100 W 150 W	75 100 150	1,200 1,750 2,580	Reflective flood light used for recessed lighting; indoor only	 have very thin glass
Incandescent: Tubular quartz halogen 500 WQ 1000 WQ	500 1000	10,600 23,100	Outside safety lighting	 have a very long filament; produce clear, white light
Fluorescent: CFL (compact fluorescent lamp) 5 W 28 W	5 28	250 1,800	R/PAR for overall room lighting; small CFLs desk/table lamps	<ul style="list-style-type: none"> • Desk/table types:  <ul style="list-style-type: none"> • R/PAR types: resemble incandescent R & PAR, but have a ballast located before the screw threads
Fluorescent: Tubular 4ft T12 Standard T12"Supersaver"	40 34	3,050 2,850	Overall room lighting	 1 1/2" diam., 4 ft. long tubes found in rectangular housing; may have 1 - 4 lamps; will cast a shadow or can actually be seen, depending on housing; CRI depends on make & model
Fluorescent Tubular 8 ft T12 Standard T12"Supersaver"	75 60	6,000 5,800	Overall room lighting	1 1/2 " diam., 8 ft. long tubes in long rectangular housing typically containing two tubes; see above to count number of tubes
Type	Watts (bulb only)	Lumens	Where Used	How to Recognize

Fluorescent Tubular 4 ft T8 Standard	32	2,900	Overall room lighting	1" diam.; 4 ft. long tubes in rectangular housing; see above to count number of tubes
Fluorescent U-tube Standard "Supersaver"	40 34	3,050 2,850	Overall room lighting	 CRI depends on make & model
HID (high intensity discharge): Mercury Vapor 175 W 400 W	175 400	7,300 21,000	Outside safety lighting; sometimes in gyms	 Have a clear "arc" tube inside the lamp; poor CRI - 40; light appears blue
HID: Metal Halide 400 W 1000 W	400 1000	32,000 _____	Used in gyms & other spaces with high ceilings; mostly for outdoor lighting	Resemble HID mercury vapor lamps; Look for white caps on one or both arc tube ends; Good CRI - 60-75; very bright light
HID: High pressure sodium 70 W 100 W 400 W	70 100 400	6,300 9,500 50,000	Mostly used for safety and roadway lighting	Resemble mercury vapor lights; have very slender, ceramic arc tube; older models have poor CRI - 22 with yellow-orange light; newer models have much better CRI