

TECHNICAL UPDATE

UPDATE NO: 1655 / ISSUED BY THE PRODUCT DEVELOPMENT LAB IN FAIRFIELD, NJ



“Scotopic Lumens is a new scientific way to measure light. It measures the quality of perceived light (the light we see). That’s why one lamp can look brighter than another, even though they have the same lumens.”

SP Ratio For Several Light Bulbs

Lamp	S/P Ratio
High Pressure Sodium	0.62
Mercury Vapor	0.80
HighMax 5000K	1.96

Chart 1

Calculating Scotopic Lumens

$$= 9,200 \text{ Lumens} \times 1.96 \text{ S/P Ratio} = 18,032 \text{ Scotopic Lumens}$$

$$= 20,000 \text{ Lumens} \times 0.80 \text{ S/P Ratio} = 16,000 \text{ Scotopic Lumens}$$

Chart 2

HOW A 150 WATT LAMP CAN REPLACE A 400 WATT LAMP AND STILL PROVIDE MORE LIGHT!

The Science Of Scotopic Lumens:

Scotopic Lumens is a new scientific way to measure light. It measures the quality of perceived light (the light we see). That’s why one lamp can look brighter than another, even though they have the same lumens.

This phenomenon occurs because the human eye sees light several ways at the same time. (It has to do with the rods and cones in the eye). On the other hand, technical measuring tools have a one dimensional view of light. They do not allow for the perceived value of light.

This perceived value is called Scotopic Lumens and different light sources have different scotopic values.(Chart 1)

Multiplying the lumens of the light source by its S/P (Scotopic) multiplier gives the scotopic lumens. (Chart 2: the high wattage HighMax CFL provides more useable Lumens, 18,032; uses 250 Watts less power; and has a CRI of 85 instead of 41).

Use The Scotopic Lumen Cross Reference Chart below as a guide to replacement wattages. Calculate which is the lowest wattage that can be used to replace the existing high wattage source.

For more information on these and other MaxLite products, please contact your MaxLite representative or manager

Product “Scotopic” Lumen Cross Reference Chart*

HighMax 5000K	40W	60W	80W	100W	150W	200W
Mercury Vapor	175W		250W		400W	
High Pressure Sodium	75W	100W	150W	175W	200W	400W
Low Pressure Sodium	90W	180W				
Metal Halide	100W	120W	150W	175W	200W	320-400W

*Replacement wattages are for comparison only.



Tel: 1-800-555-5629

Fax: 973-244-7333

E-mail: info@maxlite.com

Web: www.MaxLite.com

