

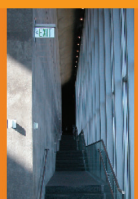
# HID to LED Wattage Cross Reference

HID to LED Wattage Cross-Reference									
SCHOTOPIC/PHOTOPIC MULTIPLIER METHOD*									
HID Fixture Info				LED drive current = 350mA @25°C			LED drive current = 500mA @25°C		
HID Lamp	Lamp Mean Lumens	Visually Effective Lumens Exiting Fixture (Mean)**	System Input Watts	LED Equivalent Input Wattage	Visually Effective Lumens Exiting Fixture**	Energy Savings	LED Equivalent Input Wattage	Visually Effective Lumens Exiting Fixture**	Energy Savings
70W PSMH	4,400	4,589	85	36	4,538	58%	40	4,554	53%
100W PSMH	5,800	6,049	129	48	6,050	63%	53	6,034	59%
150W PSMH	10,000	10,430	186	83	10,462	55%	92	10,474	51%
175W MH	10,800	11,264	210	89	11,218	58%	99	11,271	53%
200W PSMH	16,800	17,522	234	139	17,520	41%	154	17,533	34%
250W MH	17,000	17,731	292	141	17,772	52%	156	17,760	47%
250W PSMH	19,000	19,817	288	157	19,789	45%	174	19,810	40%
320W PSMH	21,000	21,903	364	174	21,932	52%	192	21,859	47%
350W PSMH	27,000	28,161	400	223	28,108	44%	247	28,120	38%
400W MH	23,500	24,511	460	194	24,453	58%	215	24,477	53%
400W PSMH	31,000	32,333	456	257	32,394	44%	284	32,333	38%
70W HPS	5,350	2,322	91	18	2,269	80%	20	2,277	78%
100W HPS	8,550	3,711	129	29	3,655	78%	33	3,757	74%
150W HPS	14,400	6,250	185	50	6,302	73%	55	6,262	70%
250W HPS	27,000	11,718	295	93	11,722	68%	103	11,726	65%
400W HPS	45,000	19,530	464	155	19,537	67%	172	19,582	63%

PHOTOPIC METHOD									
HID Fixture Info				LED drive current = 350mA @25°C			LED drive current = 500mA @25°C		
HID Lamp	Lamp Mean Lumens	Lumens Exiting Fixture (mean)**	System Watts	LED Equivalent Input Wattage	Lumens Exiting Fixture	Energy Savings	LED Equivalent Input Wattage	Lumens Exiting Fixture	Energy Savings
70W PSMH	4,400	3,080	85	52	3,063	39%	58	3,248	32%
100W PSMH	5,800	4,060	129	69	4,064	47%	76	4,256	41%
150W PSMH	10,000	7,000	186	119	7,009	36%	132	7,392	29%
175W MH	10,800	7,560	210	128	7,539	39%	142	7,952	32%
200W PSMH	16,800	11,760	234	200	11,780	15%	221	12,376	6%
250W MH	17,000	11,900	292	202	11,898	31%	224	12,544	23%
250W PSMH	19,000	13,300	288	226	13,311	22%	250	14,000	13%
320W PSMH	21,000	14,700	364	250	14,725	31%	276	15,456	24%
350W PSMH	27,000	18,900	400	321	18,907	20%	355	19,880	11%
400W MH	23,500	16,450	460	279	16,433	39%	309	17,304	33%
400W PSMH	31,000	21,700	456	368	21,675	19%	408	22,848	11%
70W HPS	5,350	3,745	91	64	3,770	30%	70	3,920	23%
100W HPS	8,550	5,985	129	102	6,008	21%	113	6,328	12%
150W HPS	14,400	10,080	185	171	10,072	8%	189	10,584	-2%
250W HPS	27,000	18,900	295	321	18,907	-9%	355	19,880	-20%
400W HPS	45,000	31,500	464	535	31,512	-15%	592	33,152	-28%

\*Scotopic refers to visual perception in low light , photopic refers to color perception in normal light . The ratio of Scotopic light vs. Photopic light is called the S/P ratio. This ratio determines the apparent visual brightness of a light source. Higher S/P ratios appear brighter to the human eye. See: "Energy Efficiency Consequences of Scotopic Sensitivity", Dr. Sam Berman, Journal of the IES, Vol 21 No.1, Dec. 1992  
 "The Coming Revolution in Lighting Practice", Dr. Sam Berman, <http://www.lightenergysource.com/ScotopicTechnical.htm>  
 \*\*Scotopic/Photopic ratios used: MH/PSMH = 1.49, HPS = 0.62, LED (6500K) = 2.14. HID fixtures assumed to be 70% optically efficient., actual efficiency will vary. Mean lumens of 95% used for LED.

The HI Lighting Calculator is provided to assist users in making lighting decisions based on various assumptions, factors, and methods. Efforts have been made to ensure accurate assumptions in developing this tool, however, HOWARD INDUSTRIES DOES NOT WARRANT OR GUARANTEE, EITHER EXPRESS OR IMPLIED, THAT THE RESULTS OBTAINED HEREIN WILL BE OBTAINABLE UNDER ACTUAL USE CONDITIONS. HOWARD INDUSTRIES IS NOT RESPONSIBLE FOR ANY LOSS RESULTING FROM THE USE OF THIS TOOL.



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