

# HID to Induction Wattage Cross Reference

HID to Induction Wattage Cross-Reference						
SCHOTOPIC/PHOTOPIC MULTIPLIER METHOD*						
HID Fixture Info				Induction Lamp, 6500K		
HID Lamp	Lamp Mean Lumens	Visually Effective Lumens Exiting Fixture (Mean)**	System Input Watts	Induction Equivalent Input Wattage	Visually Effective Lumens Exiting Fixture (mean)**	Energy Savings
70W PSMH	4,400	4,589	85	55	4,614	35%
100W PSMH	5,800	6,049	129	72	6,040	44%
150W PSMH	10,000	10,430	186	124	10,402	33%
175W MH	10,800	11,264	210	134	11,241	36%
200W PSMH	16,800	17,522	234	209	17,533	11%
250W MH	17,000	17,731	292	211	17,700	28%
250W PSMH	19,000	19,817	288	236	19,798	18%
320W PSMH	21,000	21,903	364	261	21,895	28%
350W PSMH	27,000	28,161	400	336	28,186	16%
400W MH	23,500	24,511	460	292	24,495	37%
400W PSMH	31,000	32,333	456	385	32,297	16%
70W HPS	5,350	2,322	91	28	2,349	69%
100W HPS	8,550	3,711	129	44	3,691	66%
150W HPS	14,400	6,250	185	74	6,208	60%
250W HPS	27,000	11,718	295	140	11,744	53%
400W HPS	45,000	19,530	464	233	19,546	50%

PHOTOPIC METHOD						
HID Fixture Info				Induction Lamp, 6500K		
HID Lamp	Lamp Mean Lumens	Lumens Exiting Fixture (mean)**	System Watts	Induction Equivalent Input Wattage	Lumens Exiting Fixture (mean)	Energy Savings
70W PSMH	4,400	3,080	85	79	3,097	7%
100W PSMH	5,800	4,060	129	104	4,077	19%
150W PSMH	10,000	7,000	186	179	7,017	4%
175W MH	10,800	7,560	210	193	7,566	8%
200W PSMH	16,800	11,760	234	300	11,760	-28%
250W MH	17,000	11,900	292	304	11,917	-4%
250W PSMH	19,000	13,300	288	339	13,289	-18%
320W PSMH	21,000	14,700	364	375	14,700	-3%
350W PSMH	27,000	18,900	400	482	18,894	-21%
400W MH	23,500	16,450	460	420	16,464	9%
400W PSMH	31,000	21,700	456	554	21,717	-21%
70W HPS	5,350	3,745	91	96	3,763	-5%
100W HPS	8,550	5,985	129	153	5,998	-19%
150W HPS	14,400	10,080	185	257	10,074	-39%
250W HPS	27,000	18,900	295	482	18,894	-63%
400W HPS	45,000	31,500	464	804	31,517	-73%

\*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, Induction = 2.14. Both HID & induction fixtures assumed to be 70% optically efficient., actual efficiency will vary. Mean lumens of 80% used for induction.

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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