

## DataSheet

LED109056	Voltage = 120 V	PPF = 380.70 $\mu\text{mol}/\text{sec}$	YPF= 337.80 $\mu\text{mol}/\text{sec}$	PSS = 0.87
LED	Power = 302.4 W	PPF/W= 1.26 $\mu\text{mol}/\text{J}$	YPF/W = 1.12 $\mu\text{mol}/\text{J}$	RCR= 325537.80
Unknown	PF = 2.52	PPF% = 0.90%		
\$100.00	THD = 12.00%			



### Simple Payback Calculations

Summary (assuming target PPFD of 300 $\mu\text{mol}/\text{sec m}^2$ )	1000 W HPS	600 W HPS	LED
Quantity	21	45	84
Initial cost	\$11025	\$20700	\$8400
Power demand (W/m <sup>2</sup> )	1449.0	3105.0	2540.2
Total energy use per year (kWh/m <sup>2</sup> year)	6347	13600	11126
Total energy cost per year (\$/m <sup>2</sup> year)	\$665	\$1425	\$1166
Annual energy savings for LED compared to 1000 W HPS			<b>\$-501.</b>
Annual energy savings for LED compared to 600 W HPS			<b>\$259.</b>
Simple payback compared to 1000 W HPS (years)			No Payback
Simple payback compared to 600 W HPS (years)			32

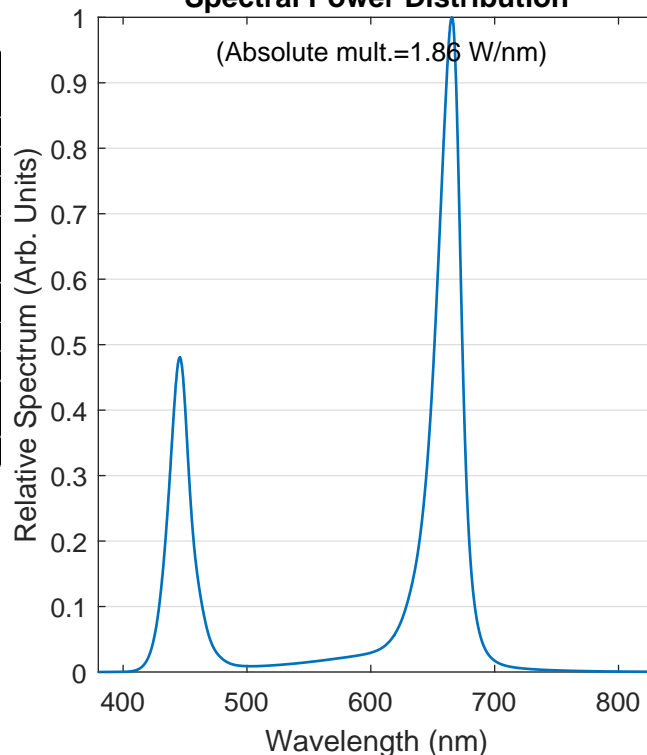
Note: Assuming a \$0.1048 per kWh. Lamps are used for 12 hours per day.

Note: All calculations use a 10mX10m growing area.

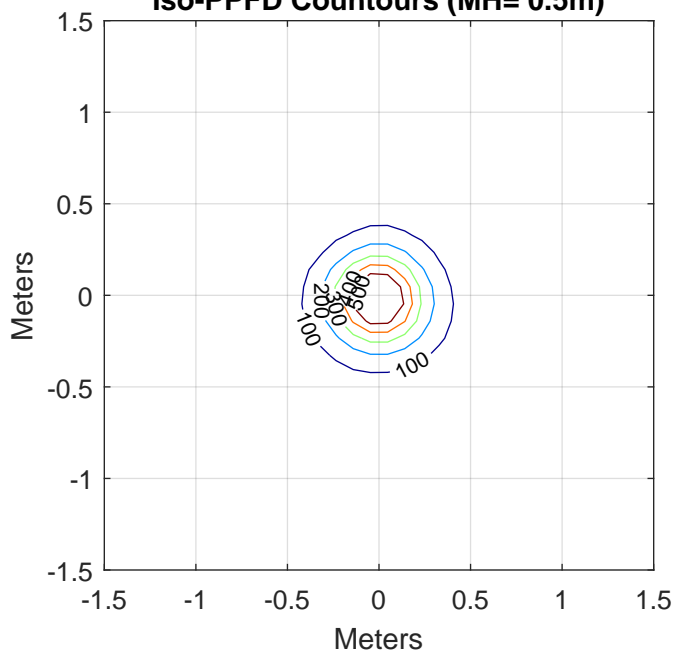
**An incentive of at least \$100 per luminaire is required to have equal energy cost as the 1000 W HPS system.**

**An incentive of 91 would reduce the payback period to less than 3 years compared to the 600W HPS.**

### Spectral Power Distribution



### Iso-PPFD Countours (MH= 0.5m)



### Luminaire System Application Efficiency (LSAE)

Mounting Height (m)	100 PPFD		200 PPFD		300 PPFD		400 PPFD		500 PPFD	
	$\mu\text{mol}/\text{J}$	Qty	$\mu\text{mol}/\text{J}$	Qty	$\mu\text{mol}/\text{J}$	Qty	$\mu\text{mol}/\text{J}$	Qty	$\mu\text{mol}/\text{J}$	Qty
0.5	0.56	28	0.68	55	1.11	84	1.14	112	1.17	140
1	1.06	30	1.08	60	1.09	90	1.08	121	1.05	152
1.5	1.00	32	1.01	64	0.97	98	0.94	132	0.94	165
2	0.88	35	0.92	70	0.93	105	0.85	143	0.82	180
2.5	0.63	40	0.86	75	0.82	114	0.83	152	0.81	192
3	0.82	40	0.79	81	0.69	126	0.74	165	0.73	207
3.5	0.68	44	0.70	88	0.71	132	0.71	176	0.70	221
4	0.61	48	0.63	95	0.63	143	0.65	189	0.64	238

Note: LSAE is for a 10mX10m growing area with an average:minimum < 4:1;