



CREE ™

**GREENHOUSE FULL SPECTRUM HIGH
BAY REFERENCE DESIGN (1000W HPS
REPLACEMENT)**

Horticulture Reference Design: White + Red High Bay

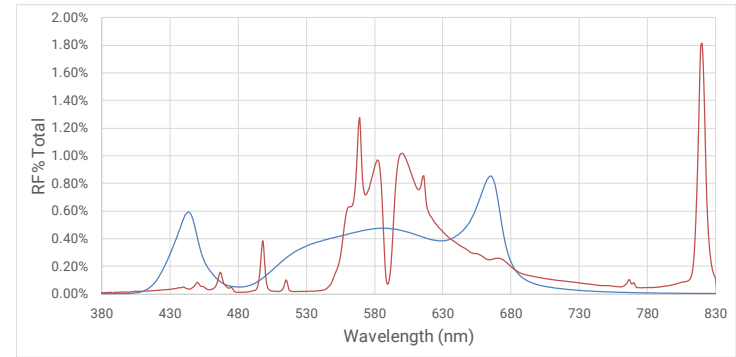
LEDs (Count)	(144) XLamp XP-L2 , 4000K, 70 CRI (48) XLamp XP-E HE Photo Red		
PPF *	1110 $\mu\text{mol}\cdot\text{s}^{-1}$	608 $\mu\text{mol}\cdot\text{s}^{-1}$	316 $\mu\text{mol}\cdot\text{s}^{-1}$
PPF/W *	2.20 $\mu\text{mol}\cdot\text{J}^{-1}$	2.49 $\mu\text{mol}\cdot\text{J}^{-1}$	2.65 $\mu\text{mol}\cdot\text{J}^{-1}$
Power	504.4 W	227.7 W	124.6 W
Dimensions (LWH)	25" x 15" x 3" 63 cm x 38 cm x 8 cm		
Weight	27 lbs / 12.2 kg		

**Stable measurement includes optic losses (no driver)*



Spectral Distribution

- Target was to improve the relative amount of blue green and red spectral content versus the incumbent HPS technology
- Ratios can be customized depending on application



Wavelength (nm)			Relative Radiant Flux	
	Min	Max	Reference Design	HPS
UV	300	399	0.0%	0.3%
Blue	431	500	10.0%	4.9%
Green	501	580	28.1%	21.7%
Orange/Red	581	700	60.8%	51.8%
Far Red	701	780	0.0%	6.0%
IR	781	1000	0.0%	15.3%

Increased relative amount of blue & green to balance spectrum like sunlight

Improving amount of orange/red for McCree curve optimization

No IR to heat up plants

Parts List

Part	Description	P/N	Qty
LED	Cree XP-E HE Photo Red 660nm	XPEEPR-L1-P30-29-C-01	48
LED	Cree XP-L2 4000K	XPLBWT-00-0000-000BV60E5	144
Optic	LeDil Strada VSM	CS15019-IP-VSM-2x6	16
PCB	Galaxy MCPCB	Available Gerber files from Cree	16
Heatsink	Aavid Black Anodized	62625	4
TIM	Graftech HITHERM 1200	G10230	16
Frame	80/20	various	various
Driver	Mean Well	HLG-320H-C1050B	2

