

LED LIGHT ENGINE MODULE

8-30VDC/AC Regulated



LHA-06B30-N-00 (8-30V)
Ultra Bright



LHA-06B30-B-00 (8-30V)
No Heatsink Required



LHA-06B30-G-00 (8-30V)
Modular Connectivity



LHA-06B30-R-00 (8-30V)
Built-in LED Driver



**ACTUAL PICTURES
NOT SIMULATED**

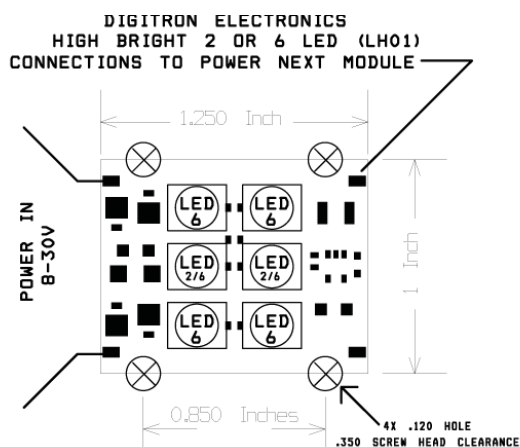
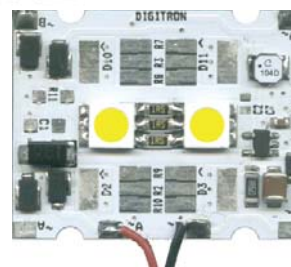
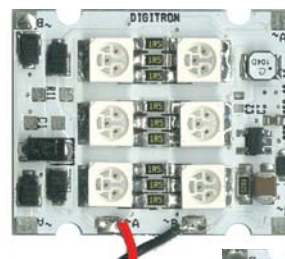
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LED LIGHT ENGINE / MODULE

DESCRIPTION

- 2 or 6 Ultra Brite 5050 LED's
- Colors: White, Green, Red, Blue
- Built-in LED Drivers, 8-30VDC/AC input
- No Heat Sink Required
- Linkability up to 30 modules
- Can be mounted with double sided tape



NOTE: Board can be mounted with double sided tape

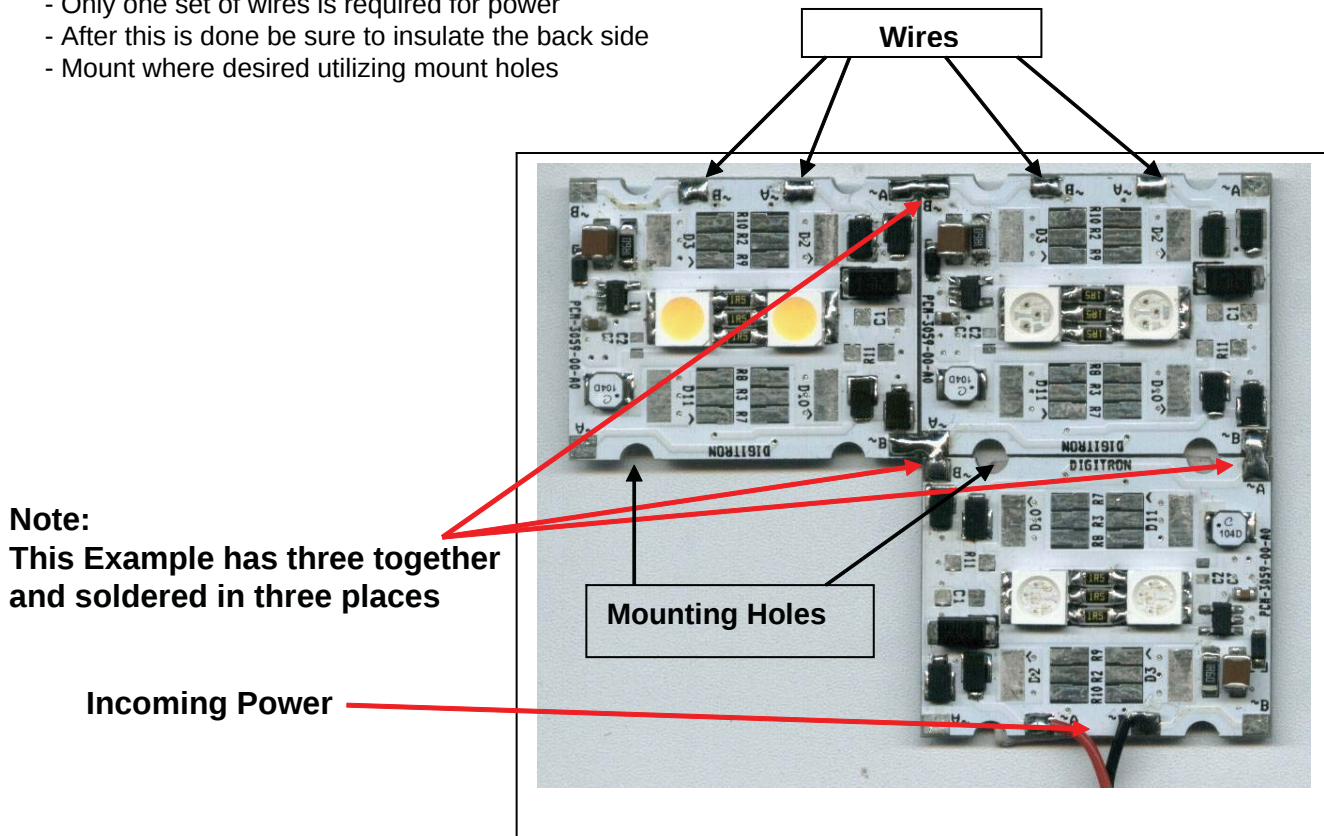
Part Number	LEDs	Power @12VDC	Input Voltage	Color Temp Wavelength	Viewing Angle	Lumen	Power (Watts)
LHA-02B30-N-00	2	40ma	8-30	White	120	29	.5W
LHA-02B30-G-00	2	40ma	8-30	525nm	120	22	.5W
LHA-02B30-R-00	2	32ma	8-30	624nm	120	10	.4W
LHA-02B30-B-00	2	40ma	8-30	465nm	120	6	.5W
LHA-06B30-N-00	6	74mA	8-30	White	120	87	.9W
LHA-06B30-G-00	6	76mA	8-30	525nm	120	65	.9W
LHA-06B30-R-00	6	59mA	8-30	624nm	120	29	.7W
LHA-06B30-B-00	6	75mA	8-30	475nm	120	17	.9W

Mounting Info:

Insulate back of board from ground.
Use double sided tape or screw down via mounting holes.

Interconnecting Modules:

- Layout desired placement
- Solder adjoining pads
- Only one set of wires is required for power
- After this is done be sure to insulate the back side
- Mount where desired utilizing mount holes

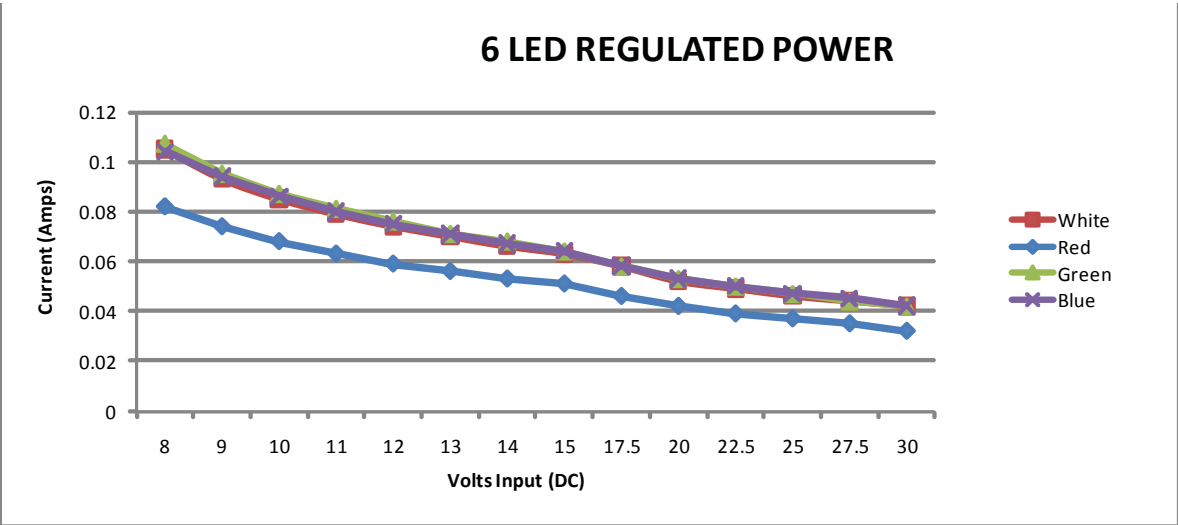
**Note:**

This Example has three together and soldered in three places

WARNING:

DO NOT SHORT REAR OF PCB TO GROUND.
UNITS CAN GET WARM, UP TO 75C.

WARNING: MULTIPLE MODULES
MUST BE POWER IN PARALLEL.
DO NOT CONNECT VIA SERIAL
CONNECTION

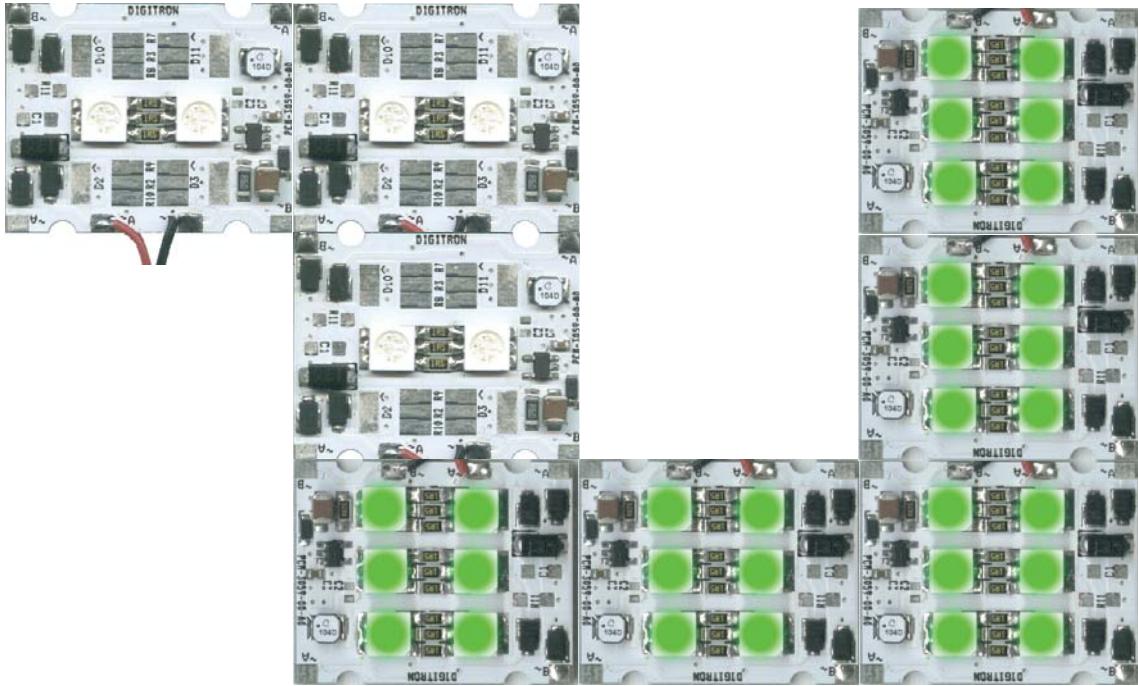


Volts	8	9	10	11	12	13	14	15	17.5	20	22.5	25	27.5	30	
6 LED White	0.105	0.093	0.085	0.079	0.074	0.07	0.066	0.063	0.058	0.052	0.049	0.046	0.044	0.042	ma
6 LED Red	0.082	0.074	0.068	0.063	0.059	0.056	0.053	0.051	0.046	0.042	0.039	0.037	0.035	0.032	ma
6 LED Green	0.107	0.095	0.087	0.081	0.076	0.071	0.068	0.064	0.058	0.053	0.05	0.047	0.044	0.042	ma
6 LED Blue	0.104	0.094	0.086	0.08	0.075	0.071	0.067	0.064	0.058	0.053	0.05	0.047	0.045	0.042	ma

POWER SUPPLY REQUIREMENTS

The easiest way to determine what the best power supply would be to drive your LED design is to add the Power (W) together for all modules and then choose a appropriate power supply by calculating the voltage and required amperage of the supply.

This is an example of what the power supply requirements for the below configuration would be.



If you had quantity 3 of the: LHA-02B30-N-00 each taking .5W (3 x .5W = 1.5W)

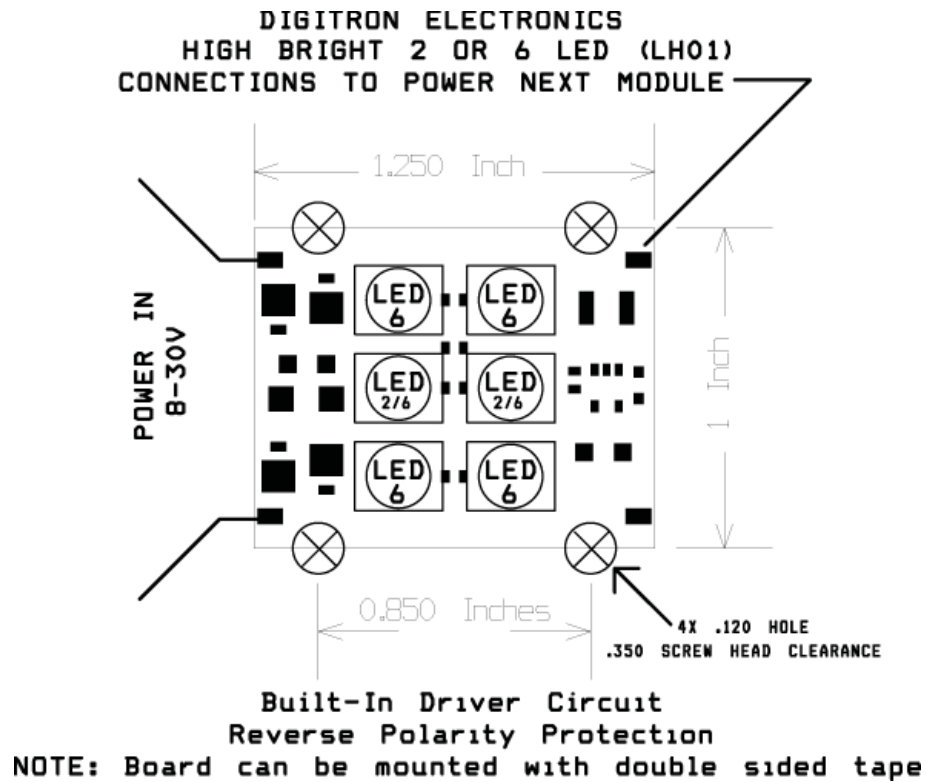
and 5 of the: LHA-06B30-G-00 each taking .9W (5 x .9W = 4.5W)

you would have a total of 6W of power need to drive all modules.

If you had a power supply that is a 9VDC it would have to have $(6W / 9VDC) = .667 A$ or 667 ma of current
A safe power supply would be 9VDC at 750ma or more.

If you had a power supply that is 24VDC it would have to have $6W / 24VDC = .25 A$ or 250 ma of current

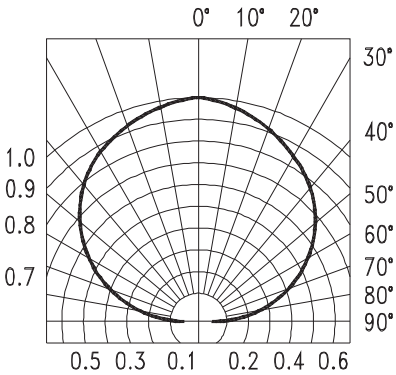
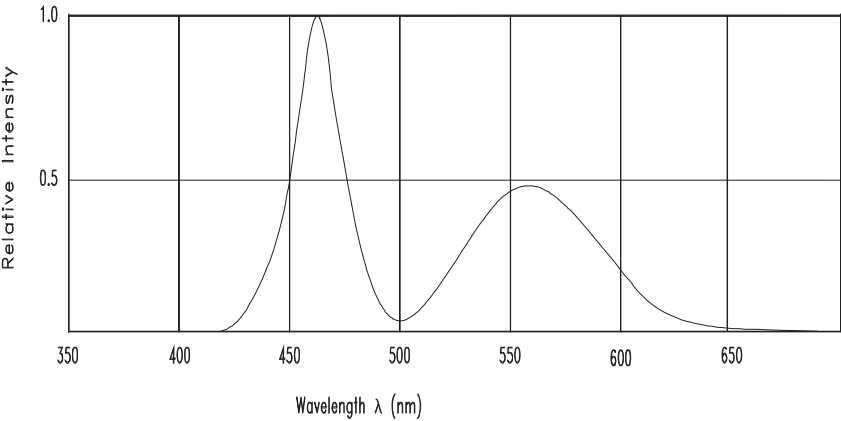
LED MODULE DIMENSIONS



LED SPECIFICATIONS

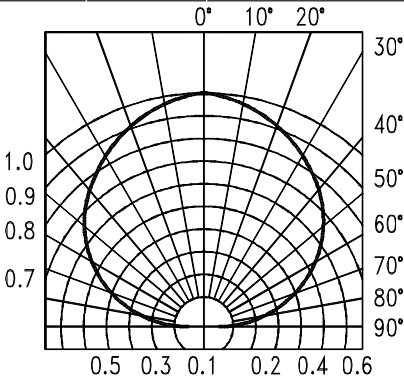
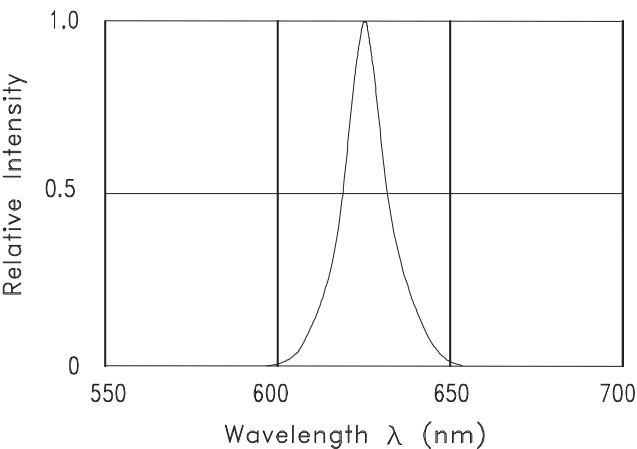
WHITE

CIE 1931 Coordinate	X/Y	W1	---	X:0.29 Y:0.29	---	nm	IF=20mA/dice
		W2	---	X:0.29 Y:0.29	---		
		W3	---	X:0.29 Y:0.29	---		



RED

Dominant Wavelength	λ_d	R1	---	624	---	nm	IF=20mA
		R2	---	624	---		
		R3	---	624	---		
Peak Wavelength	λ_p	R1	---	630	---	nm	IF=20mA
		R2	---	630	---		
		R3	---	630	---		
Spectral Line Half-Width	$\Delta\lambda$	R1	---	20	---	nm	IF=20mA
		R2	---	20	---		
		R3	---	20	---		



GREEN

Dominant Wavelength	λ_d	G1	---	525	---	nm	IF=20mA
		G2	---	525	---		
		G3	---	525	---		
Peak Wavelength	λ_p	G1	---	530	---	nm	IF=20mA
		G2	---	530	---		
		G3	---	530	---		
Spectral Line Half-Width	$\Delta\lambda$	G1	---	35	---	nm	IF=20mA
		G2	---	35	---		
		G3	---	35	---		

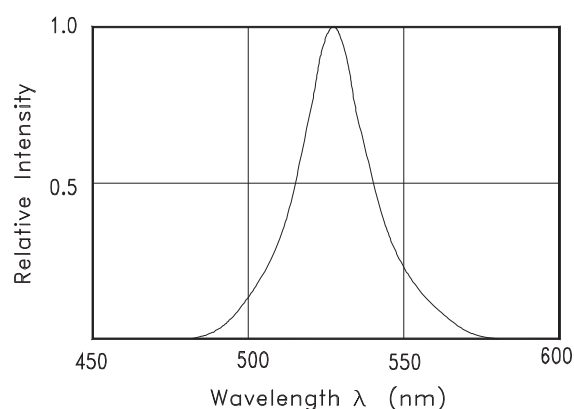


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

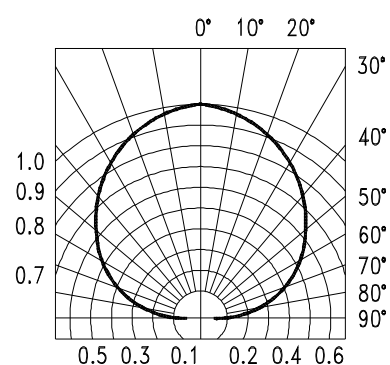


Fig.6 Spatial Distribution

- Notes: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λ_d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

