



Dim-To-Warm COB LED

- Dimmable Mood Lighting
- CCT Ranging From 1500K-2700K
- 20W, For Optimum Performance
- 100 Lumens/W At Full Brightness

A photograph of a restaurant interior. The walls are covered in a textured, stacked stone pattern. The ceiling is recessed with several small, circular lights. A long, rectangular light fixture with a warm, yellow glow is mounted on the wall. In the foreground, there are several tables set with white tablecloths, glassware, and silverware. The overall atmosphere is warm and elegant.

**Create a beautiful, dimmable,
candlelight quality environment.**

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Product Overview

Hailux Lighting's Dim-To-Warm COB LED provides the ability to control the color temperature of an LED luminaire in a smooth, seamless, fashion to provide soft ambient lighting control. The performance is equivalent to the dimming curve of an Incandescent lamp.

The DW-208 is a dual-section chip-on-board (COB) LED consisting of two separate LED strings. The DW-208's light output is a blend of string one and string two resulting in a combined COB color temperature ranging from approximately 2700K at full brightness to 1500K when dimmed.

The color temperature is adjusted by modifying the current between the two strings. As current is reduced to the first string, the second string which is the lower CCT string becomes more dominant creating a blended LED light that replicates dimmed incandescent light, or that of a candle with a color temperature less than 2000K.

The Dim-To-Warm operation of the COB requires an external balance resistor and a dimmable constant current power supply.

Product Features

- Color temperature range 1500K to 2700K.
- Smooth dimming through 'off' to full brightness.
- Efficacy, typically 100 Lumens/Watt at full brightness.
- Full beam angle 120°.
- Compatible with 3rd party reflectors.
- 20 to 22 Watts for optimum performance.
- Alignment board supplied to aid assembly.



Ordering Information

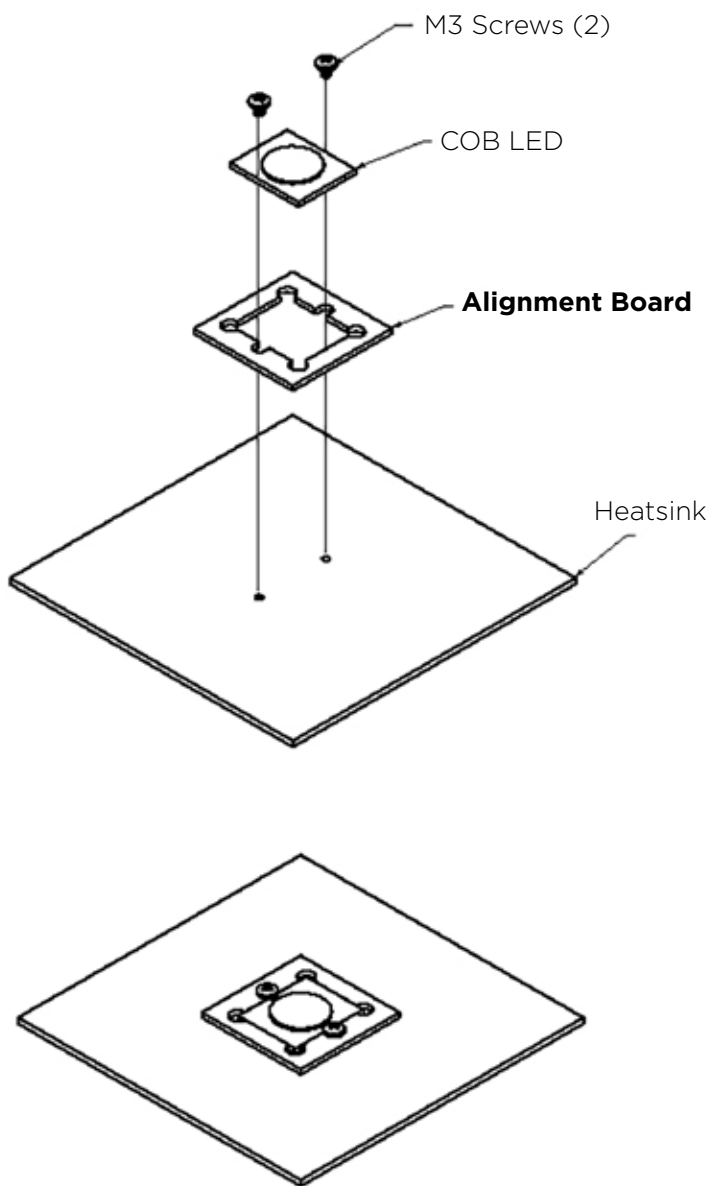
Description	Order Number
Dim-To-Warm COB LED	DW208
Balance Resistor (Spare)	DW208-BR
Alignment Board (Spare)	ALIGNBRD
Ledil 18° Reflector	12352
Ledil 34° Reflector	12083
Ledil 47° Reflector	12084

What's Included?

- Dim-To-Warm COB
- Color Balance Resistor (see page 5)
- Alignment Board to aid assembly

What's Not Included?

- M3 Screws
- Thermal Interface Material
- Heatsink

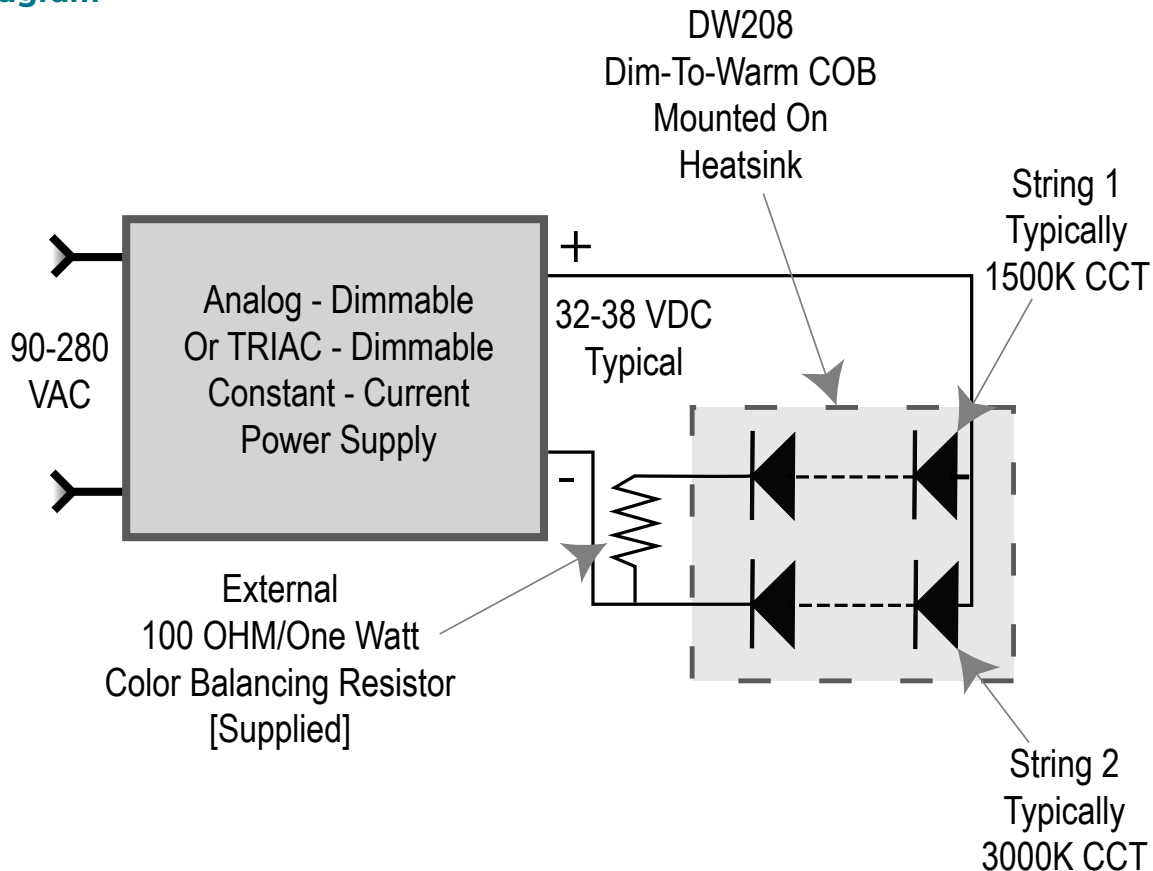


See page 6 for detailed assembly instructions.

ASSEMBLY WITHOUT REFLECTOR



Block Diagram



Operation

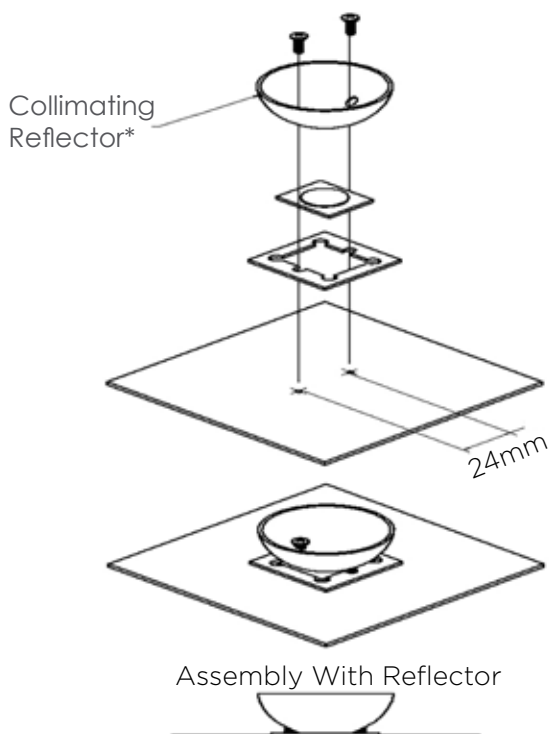
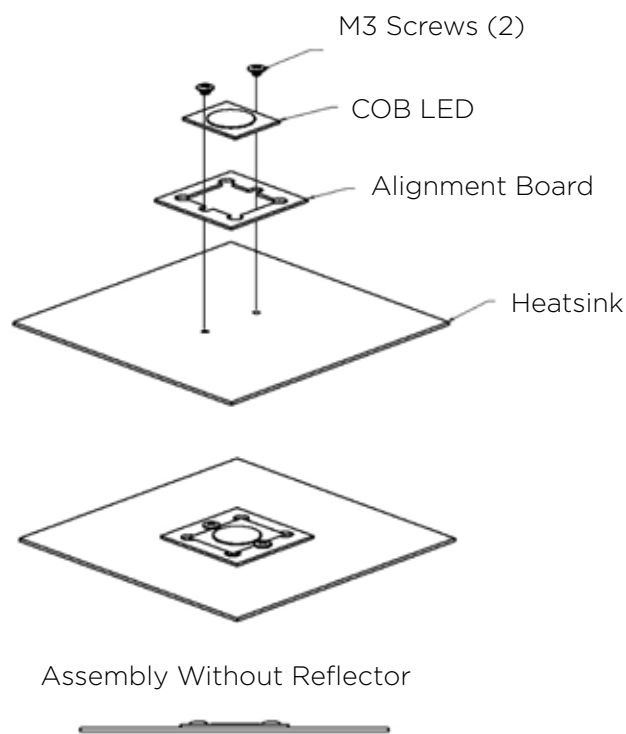
LED String #1 (1500k - deep amber light) has a maximum power output of 10W and is connected to a series color balancing 100 Ohm/1watt resistor [supplied]. LED String #2 (2700K - soft white light) has a maximum power output for optimum performance of 20W.

When the DW208 is powered up, via the analog dimmable (or TRIAC dimmable) constant current power supply, LED String #2 can be adjusted to any light level, within its range.

When the dimmer is applied, the current is varied to LED String #1. At a low brightness setting, full current is applied to this string, and it will contribute its deep amber light to the overall COB light output. The Dim-To-Warm effect of the COB is controlled by the dimmer and can be adjusted to the users' preference from warm white to cool white and everything in between. The dimming operation is very smooth and can provide 100% brightness to zero.

In practice, the 1500K string and the 2700K string combine to give a typical CCT of 2700K at full power.

Assembly Instructions



*Hailux Lighting recommends the use of Ledil Brooke Series reflectors [Models #12352 (18°), #12083 (34°) and #12084 (47°)] for mechanical compatibility with the 2 x M3 screw installation.

Assembly Instructions Without A Reflector

- Step 1: Prepare the heatsink with two threaded M3 holes, 24mm apart
- Step 2: Temporarily locate the alignment board with the two M3 screws. (Do not tighten)
- Step 3: Apply Thermal Interface Material
- Step 4: Place the COB inside the alignment board and tighten the screws clamping both the COB and alignment board.

Assembly Instructions With A Reflector

Complete Steps 1 through 4, then remove the screws and washers, assemble the reflector reusing the 4-40UNC screws and washers.

Absolute Maximum Ratings

Description	Symbol	Rating	Unit
Power Dissipation (Note 1)	P	25	Watts
Forward Current	I-f	750	mA
Reverse Voltage	V-r	60	V
Operating Temperature (Note 2)	T-oper	75	Deg C
Storage Temperature	T-stg	100	Deg C
Case Temperature	T-C	75	Deg C

Note 1: Absolute maximum power dissipation and forward current are for the sum of both strings, for best performance, power should be limited to 20-22 watts.

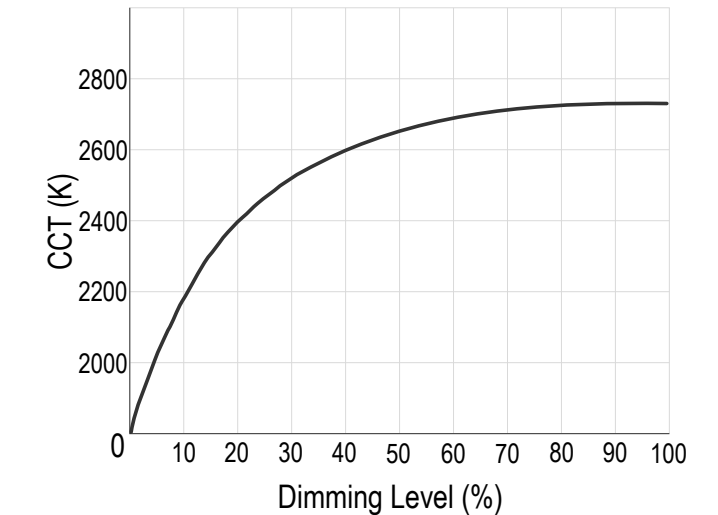
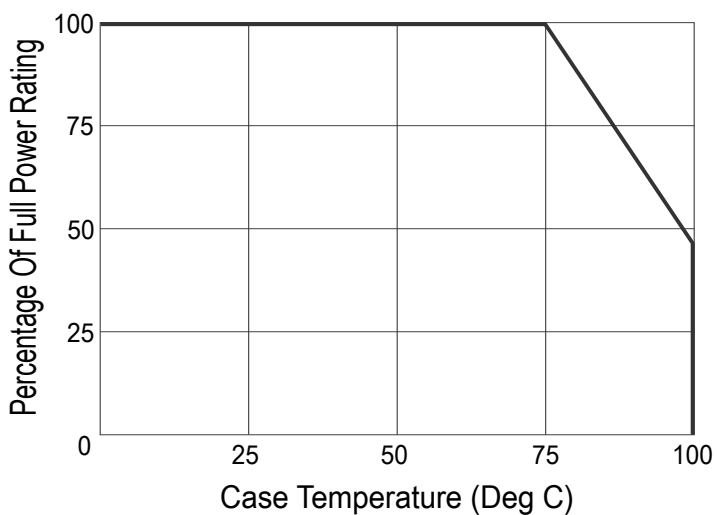
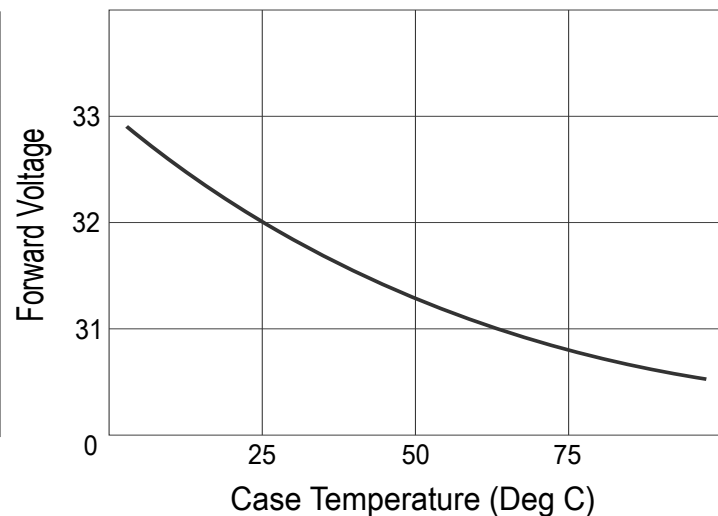
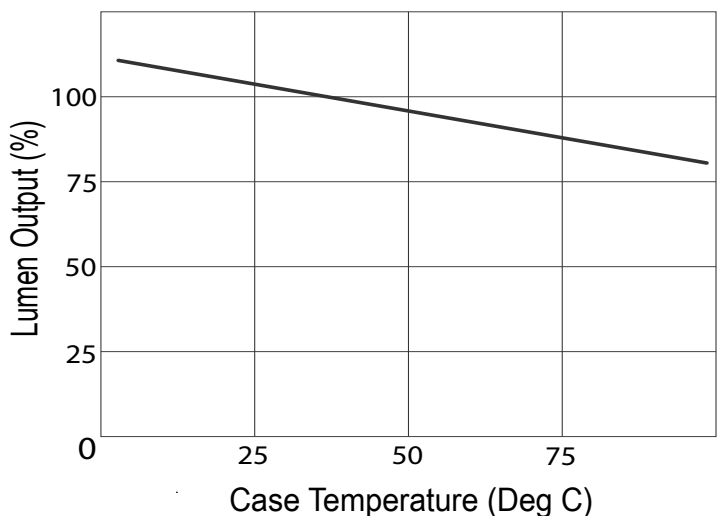
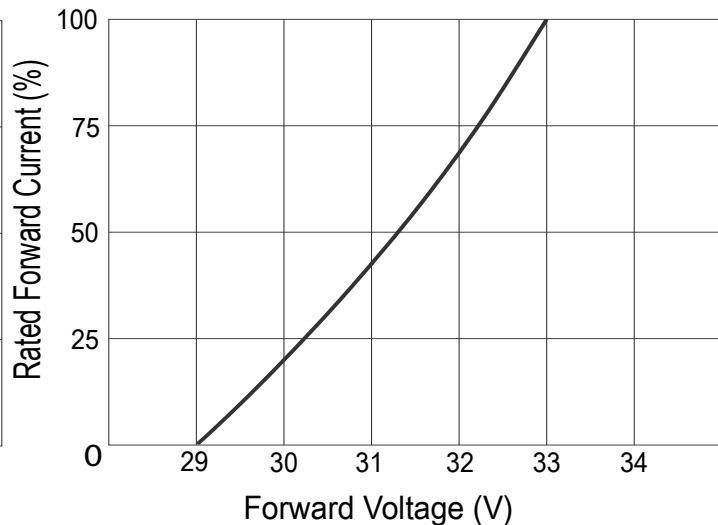
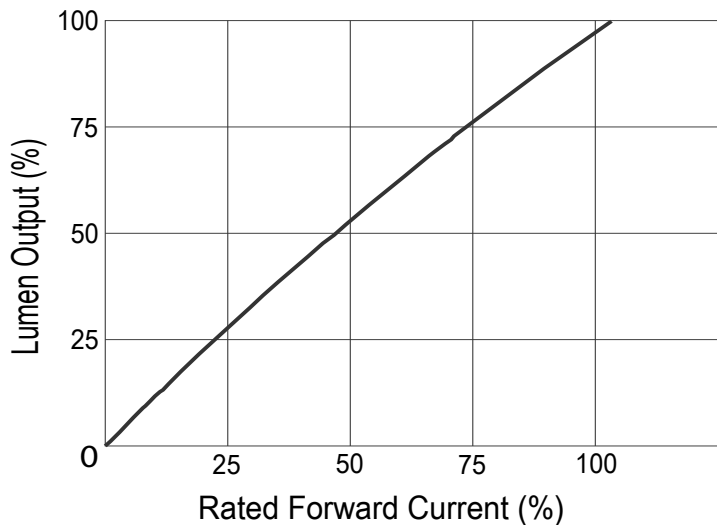
Note 2: Operating temperature as measured at point on the COB marked "TC".

Performance Specifications

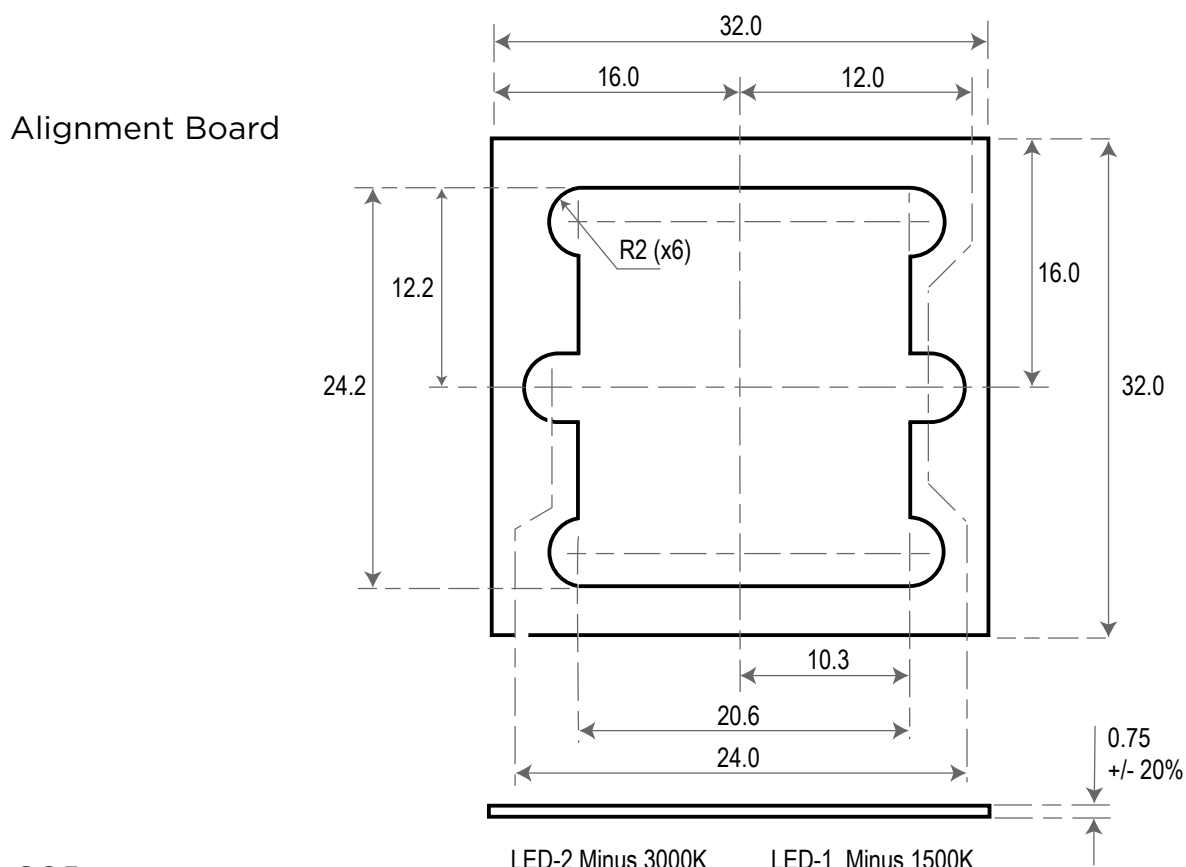
Conditions (T _J =25)	Parameter	Limits		
		Min	Typ	Max
Forward Current, 600mA	Forward Voltage	32	33	34
100% Brightness	CCT		2700K	
50% Brightness	CCT		2400K	
25% Brightness	CCT		2200K	
10% Brightness	CCT		1800K	
Efficacy	Lumens/Watt			
75% to 100% Brightness	CRI		80	
25% to 75% Brightness	CRI		70	
5% to 25% Brightness	CRI		50	



Performance Charts



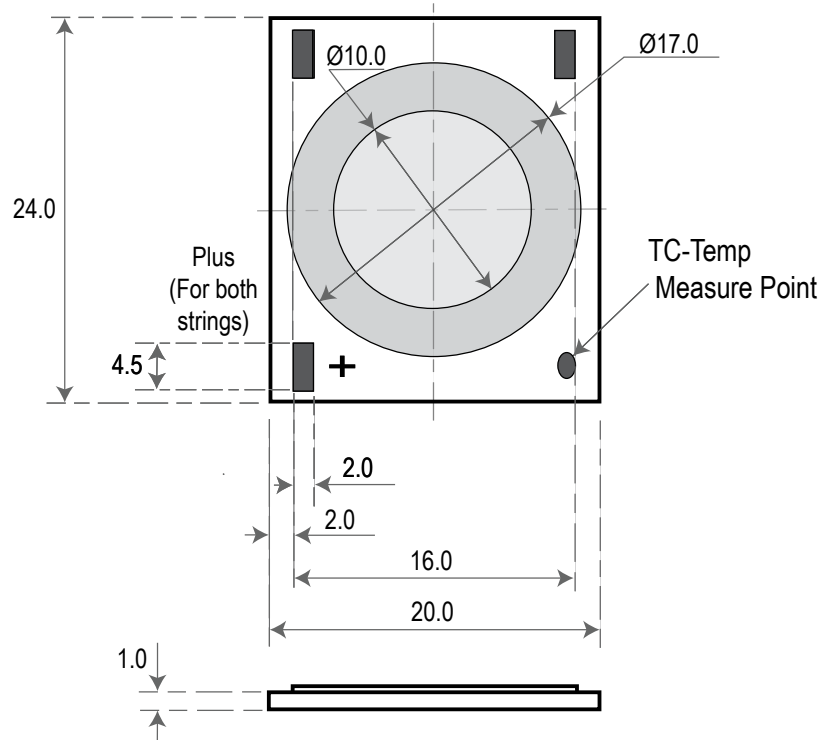
Mechanical Outlines



COB



Actual Size

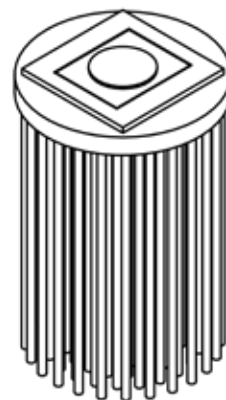


Application Examples

20W

20W COB installed on a 2.45°C/W Heatsink at full beam angle (120°)

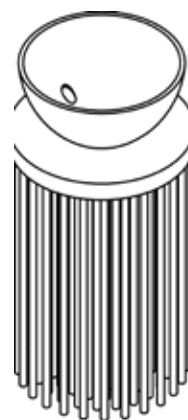
Heatsink: Pin Fin Style



20W With Collimating Reflector

20W COB installed on a 2.45°C/W Heatsink with a Ledil Brooke Series reflector [Models #12352 (18°), #12083 (34°) and #12084 (47°)] to narrow the beam angle less than 60°.

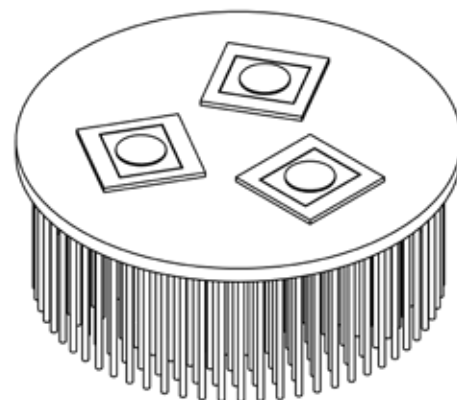
Heatsink: Pin Fin Style



60W

60W (3 x 20W COBs) installed on a 0.9°C/W Heatsink at full beam angle (120°)

Heatsink: Pin Fin Style



60W With Collimating Reflectors

60W (3 x 20W COBs) installed on a 0.9°C/W Heatsink with Ledil Brooke Series Reflectors [Models #12352 (18°), #12083 (34°) and #12084 (47°)] to narrow the beam angle of each COB to less than 60°.

Heatsink: Pin Fin Style

