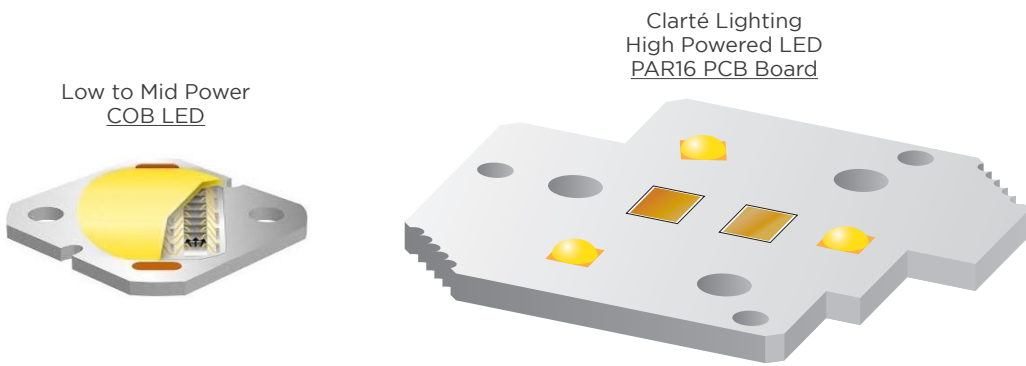


C: Thermal Differences

COB LED arrays utilize blue LEDs in closely packed groups of 12 to 48 low to mid power LEDs, operating at lower milliamps, with a phosphorus dome covering the Blue LEDs for color correction.

COB LEDs have a greater number of LEDs with less surface area between the location of each LED, as compared to a discrete high powered TIR LED board design.

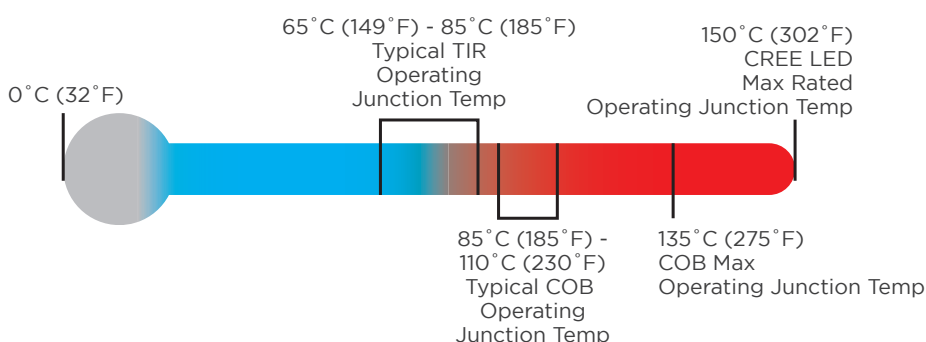


The greater number of LED's utilized in a COB LED creates a higher forward voltage of the COB LED array as compared to individual discrete LED TIR optical array design. The higher forward voltage creates greater thermal resistance and higher junction temperatures of each LED.

Clarté PAR16 Scale TIR vs COB	
97% Thicker LED Board	(1.5MM vs 0.76MM)
73% Larger LED Board	(21.68MM vs 12.5MM)
3900% LED Distance	(20MM vs 0.5MM)

High Powered LEDs (3,000mA Max Drive Current @ 12V)	# of LEDs Per Optic	Avg Forward LED Voltage	LED Face Size	LED Board Thickness	LED Location Distance	LED Board Size
Clarté Lighting PAR8 scale optical array	1	11.2V	3.45MM	1.5MM	N/A	21.68MM
Clarté Lighting PAR16 scale optical array	3	8.37V	3.45MM	1.5MM	20MM	30.16MM x 34.11MM
Clarté Lighting PAR20 scale optical array	6	16.74V	3.45MM	1.5MM	20MM	62.6MM
Low to Mid Powered LEDs (300mA to 700mA Max Drive Current @ 12V)						
CREE XLAMP® CHA0410 LED	12	36V	7.8MM	.76MM	.5MM	13.5MM
CREE XLAMP® CHA0612 LED	24	36V	7.8MM	.76MM	.5MM	13.5MM
CREE XLAMP CHA0825 LED	48	36V	10.3MM	.76MM	.5MM	19.MM
Bridgelux BXRH-30E0300-A-8x	12	35.2V	5.2MM	.76MM	.5MM	12.5MM
Bridgelux BXRH-30E0600-A	12	26.4V	5.2MM	.76MM	.5MM	12.5.MM
Bridgelux BXRH-30E1000-B-8x	24	36.6V	6.6MM	.76MM	.5MM	13.5MM
Bridgelux BXRH-30E3000-D-73	48	36.4V	9.2MM	.76MM	.5MM	19MM
Xicato XOB06903010X33621	22	33V	6MM	.76MM	.5MM	13.5MM
Xicato XOB014953050X3621	22	34.2V	6.6MM	.76MM	.5MM	13.5MM
Xicato XOB09903015X3621	48	34V	9.8MM	.76MM	.5MM	13.5MM

The combination of the higher forward voltage, greater number of LEDs, and close spacing between each of the LEDs in a COB LED designed fixture operates warmer at the junction temperature from 85°C to 105°C+ versus Clarté Lighting's high powered individual discrete TIR LED junction temperature of 65°C to 85°C maximum.



Junction temperature of an LED is the #1 parameter that determines L70 life of an LED. The lower the junction temperature of the LED the longer the L70 life.

Clarté Lighting's 10 Points of Light provides a detailed overview of the engineering and fixture design features that creates a premium life L70 architectural high powered discrete LED TIR optical designed product of 105,000 hrs. to 260,000 hrs. depending upon the wattage and heat of each Clarté Lighting optical array.

10 Points of Light
(click here to learn more)