

SPECIFICATION FOR COB LED

Part No:LC4012-010W-M

Description:

40*12mm RGB COB LED

Dice Material: InGaAlP / InGaN



LC4012-010W-M

RGB COB LED



Introduction

Lume COB LED Light engine is based on our main patent----- **MCOB** (**M**ulti-**C**hips **O**n **B**oard) . Lume COB LEDs combine tens or hundreds power LED chips with a rugged package capable of operating in excess of power . Lume COB LEDs maximumly decrease LED uncomfortable glare and also Zebra strips, at the same time increase LED light efficiency and reduce thermal resistance.

Features:

- ◇ Area light source, which can avoid glare
- ◇ More energy efficient than incandescent , halogen and some fluorescent lamps
- ◇ Industry's lowest thermal resistance
- ◇ Long operating life, lumen maintenance of greater than 70% after 50,000 hours
- ◇ Low forward voltage operated
- ◇ Instant light (less than 100ns)
- ◇ Lead Free product, RoHS compliant
- ◇ No UV

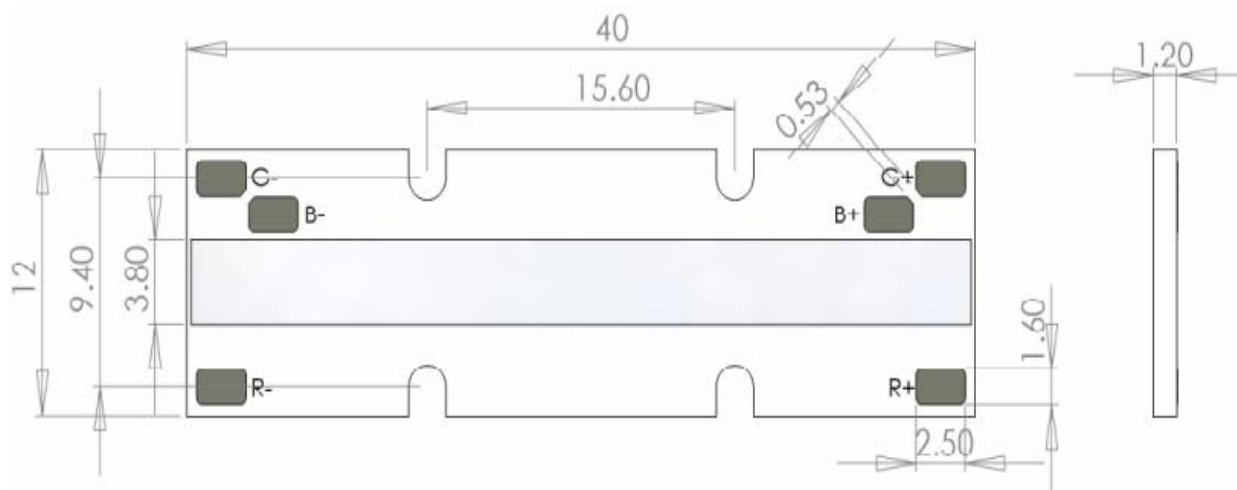
Ceramic Board:

- ▶ thermal resistance 1-3 °C/W
- ▶ conductivity 18W/m.K compared to aluminium COB 0.8-1W/m.K
- ▶ insulating
- ▶ pass hi-pot test

Application

- ◇ Automotive interior / exterior lighting
- ◇ Automotive signal lighting
- ◇ General Torch
- ◇ Architectural lighting
- ◇ LCD TV / Monitor Backlight
- ◇ Projector light source
- ◇ Traffic signals
- ◇ Task lighting
- ◇ Decorative / Pathway lighting
- ◇ Remote / Solar powered lighting
- ◇ Household appliances

Outline Dimensions:



LC4012-010W-M

Absolute Maximum Ratings at Ta=25°C:

Parameter	Part No.	Symbol	Maximum	Unit
Power Dissipation	LC4012-010W-M	Pd	1.0	W
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)		IF(peak)	150	mA
Continuous Forward Current		IF	100	mA
LED junction temperature		JT	150	°C
Reverse Voltage		VR	5	V
Thermal Resistance, junction to case	LC4012-010W-M	R θ j-c	2.0	°C/W
Soldering Temperature °C	3.5 seconds, 260°C or lower			
Operating temperature range		Topr	-20°C to + 60°C	
Storage Temperature Range		Tstg	-40°C to + 100°C	

● Red

Parameter	Part No.	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous flux	LC4012-010W-M	ϕ	I _F =100mA	7	/	10	lm
Viewing Angle		2 θ 1/2			120		deg
Forward Voltage		V _F	I _F =100mA	1.8	/	2.2	V
Reverse Current		I _R	V _R =5V			50	uA
Wavelength		λ d	I _F =100mA	620	/	625	nm

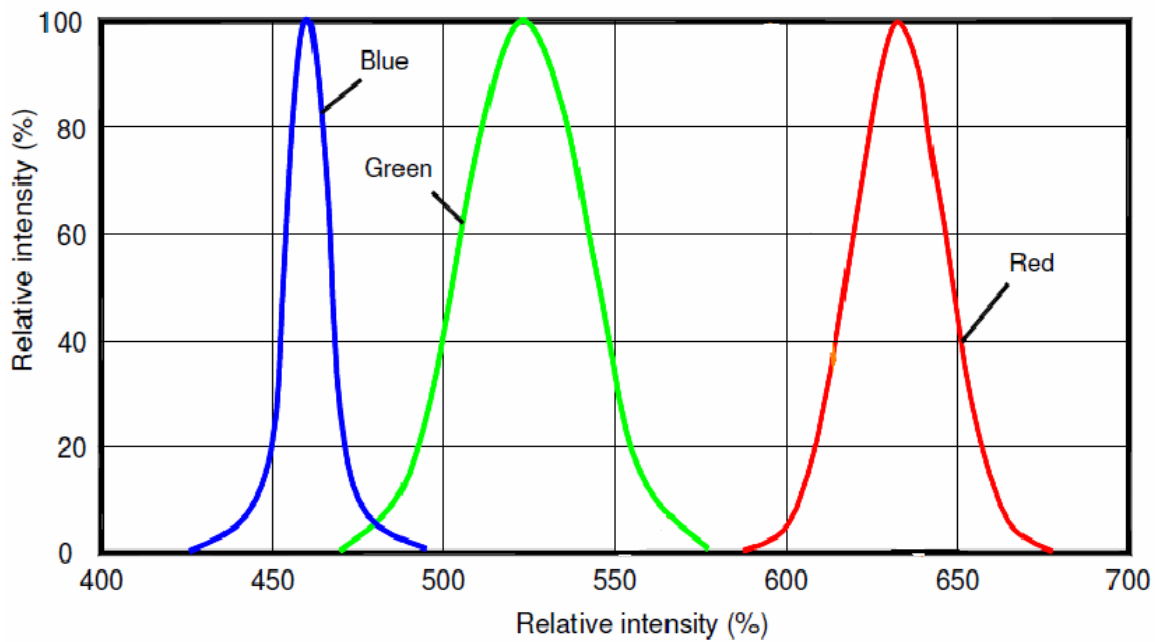
● Green

Parameter	Part No.	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous flux	LC4012-010W-M	ϕ	$I_F=100\text{mA}$	12	/	17	lm
Viewing Angle		2 θ 1/2			120		deg
Forward Voltage		V_F	$I_F=100\text{mA}$	3.0	/	3.4	V
Reverse Current		I_R	$V_R=5\text{V}$			50	μA
Wavelength		λ_d	$I_F=100\text{mA}$	525	/	530	nm

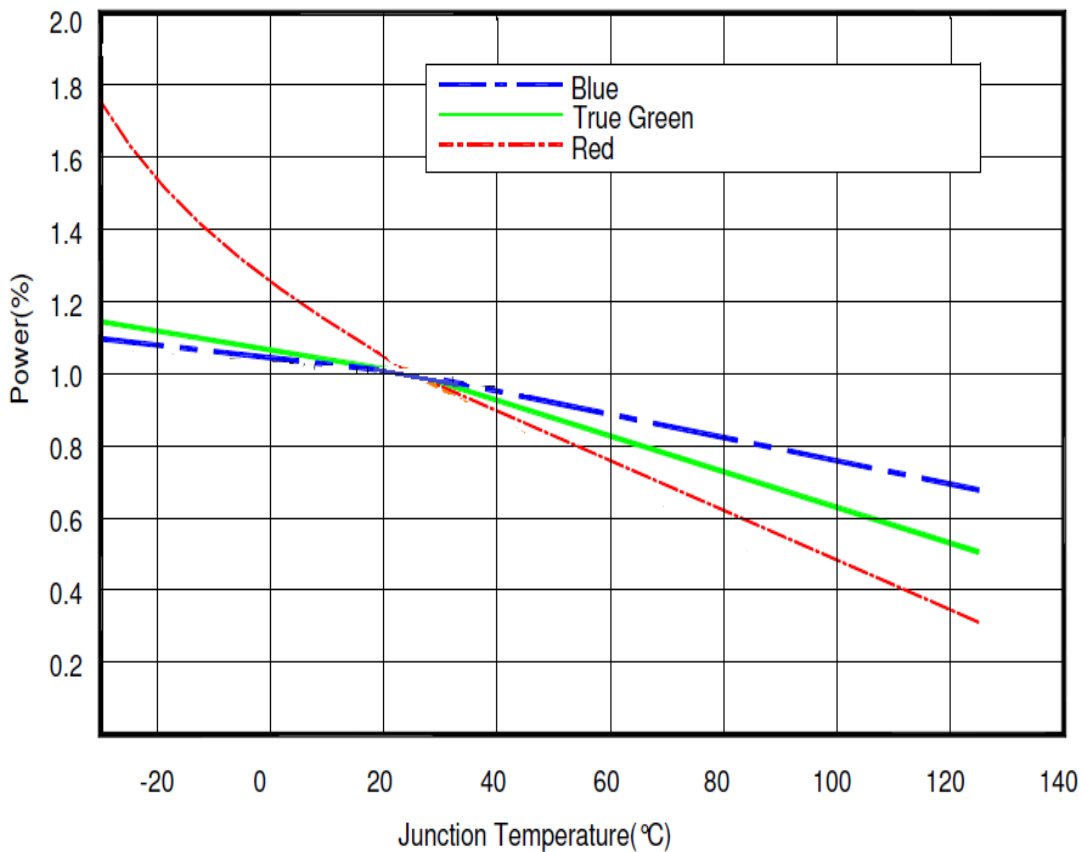
● Blue

Parameter	Part No.	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous flux	LC4012-010W-M	ϕ	$I_F=100\text{mA}$	4.5	/	7.5	lm
Viewing Angle		2 θ 1/2			120		deg
Forward Voltage		V_F	$I_F=100\text{mA}$	3.0	/	3.4	V
Reverse Current		I_R	$V_R=5\text{V}$			50	μA
Wavelength		λ_d	$I_F=100\text{mA}$	465	/	470	nm

Relative Spectral Power Distribution

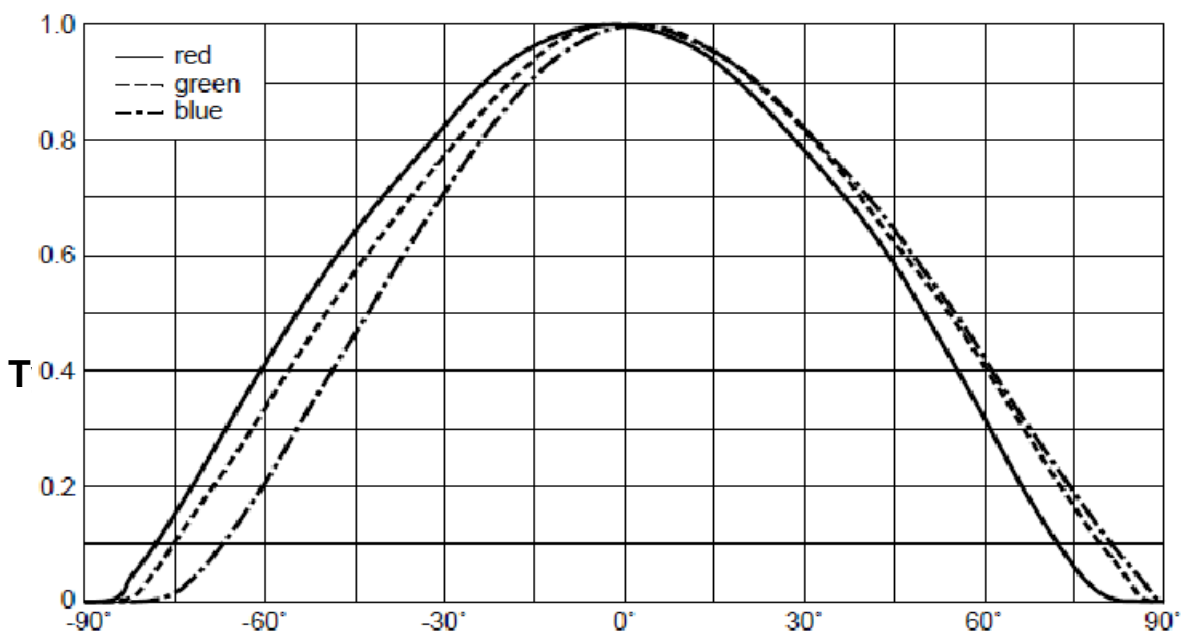
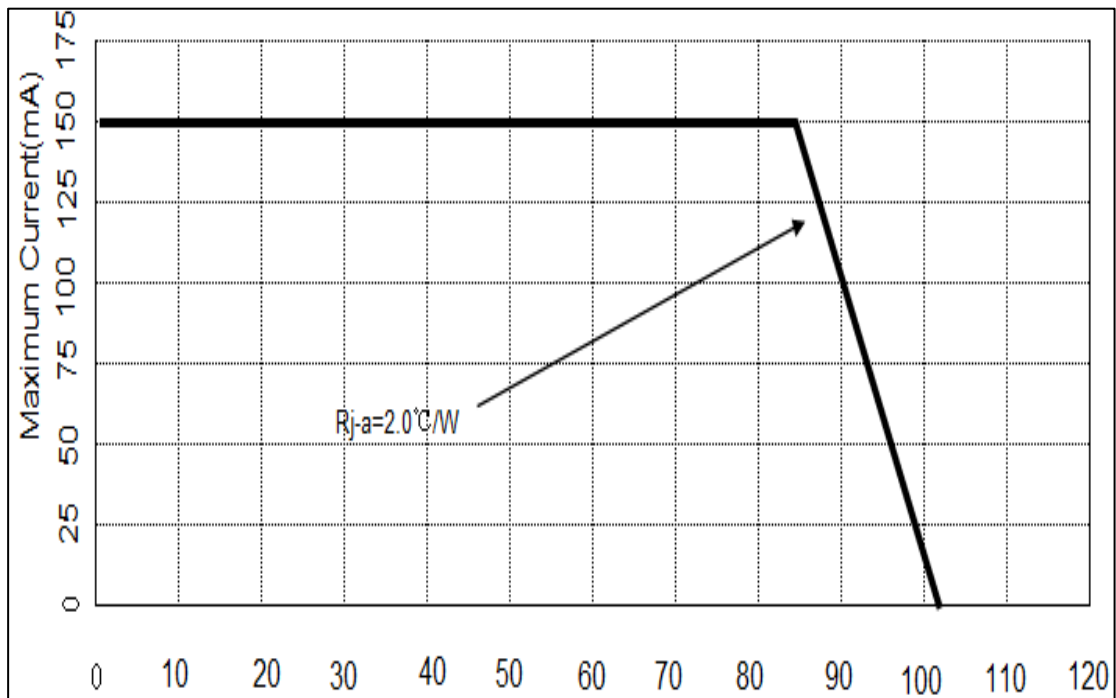


Relative Flux vs. Junction Temperature

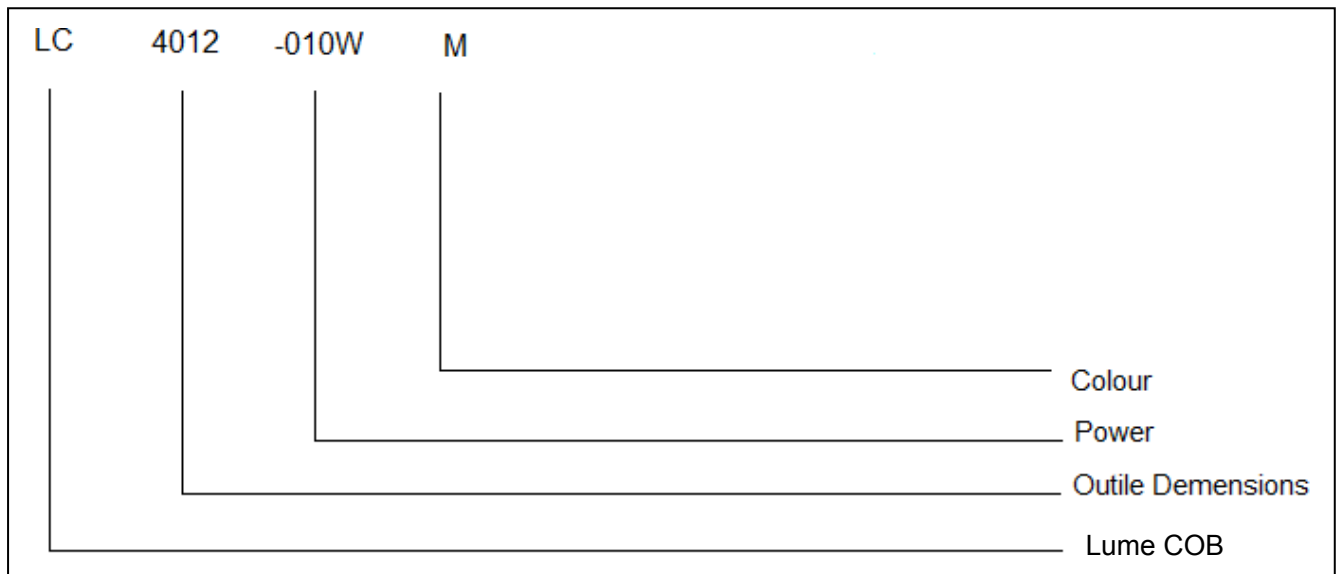


Thermal Design

The maximum forward current is determined by the thermal resistance between the LED junction and ambient. it is crucial for the end product to be designed in a manner that minimizes the thermal resistance from the Lume LED case to ambient in order to optimize lamp life and optical characteristics.



Order Code



	Colour / White
R	Red
G	Green
B	Blue
A	Amber
O	Red-Orange
V	violet
M	RGB
C	Cool white
N	Neutral white
W	Warm White

More detail please see “[Lume LED Binning and Labeling.pdf](#)”

NOTICE:

- All dimensions are in millimeter.
- Tolerance is $\pm 0.1\text{mm}$ unless otherwise noted.
- It is strongly recommended that the temperature of lead be not higher than 60°C .
- This information in this document is subject to change in order to improve reliability, design or function without prior notice and does not represent a commitment on the part of this company.