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	Object: Datasheet Clara RGB	Author: SL	Date: 2008-10-07	


Super high Flux output and high Luminance RGB LED Solution

Background

This LED is for daisy chain application where it can be used with external driver. No end harness is necessary please look into wiring diagram guide. Lenses are available when needed from 10 – 60° in viewing angle.

Description

Optodrive Felicia RGB series is designed for high current operation and high flux output applications. Optodrive LED's thermal management perform exceeds other power LED solutions. It incorporates state of the art SMD design and Thermal emission material. Full color Optodrive LED is the first full color package, using 3 RGB power chips and rendering 7colors. In case of the full color product used in architectural lighting or decoration, it emits 7colors in one package so that it can render a clear mixed color when it is mixed with other colors.

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Mechanical Characteristics:

PCB dimensions:	48.4 mm diameter
Assembly holes:	2 x 3,8 mm
Connector:	PHR-5 or similar
Height PCB	1.6 +/- 0,16 mm
LED	1.0 mm
Connector	5.5 mm
Total	7.1 mm
Lens Package	16,6 mm

LED dimensions:	1 x 6 x 5 mm
Total height LED + PCB:	2.75mm
Total height 5-way connector (PH) + PCB:	7.2mm
Total height Driver IC + PCB:	3.4mm
Total height Resistors + PCB:	2.2 mm

Electrical characteristics:

Number of LED's ¹ :	3 ea
Connector	1 ea
Voltage Vf:	Typical 3.3V (3-3.5V @ 350mA)
LED current:	400 mA maximum pro chip
Total LED Voltage	12-14 VDC
Led Type	F50360
Connector	PH

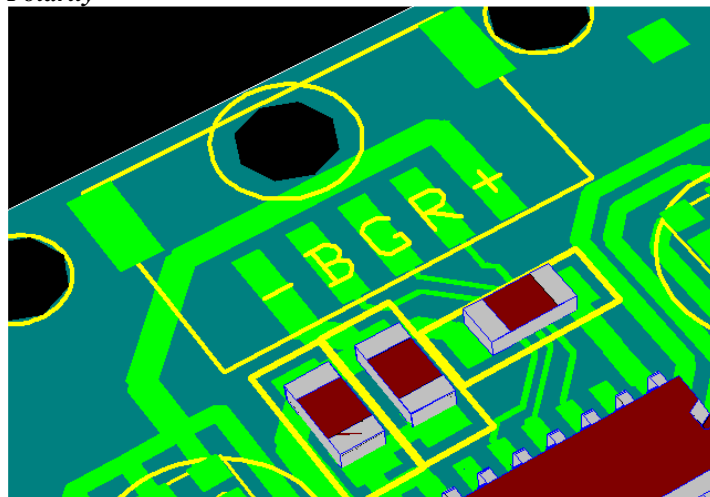
PWM characteristic:


Vpwm low:	-0.3(min), 1(max) [V]
Vpwm high:	3(min), 18(max) [V]
Pwm frequency:	<1MHz

Protection:

Reversed polarity protection:	No
Transient protection:	No
Overvoltage protection	
Dimming-signal	No

Polarity

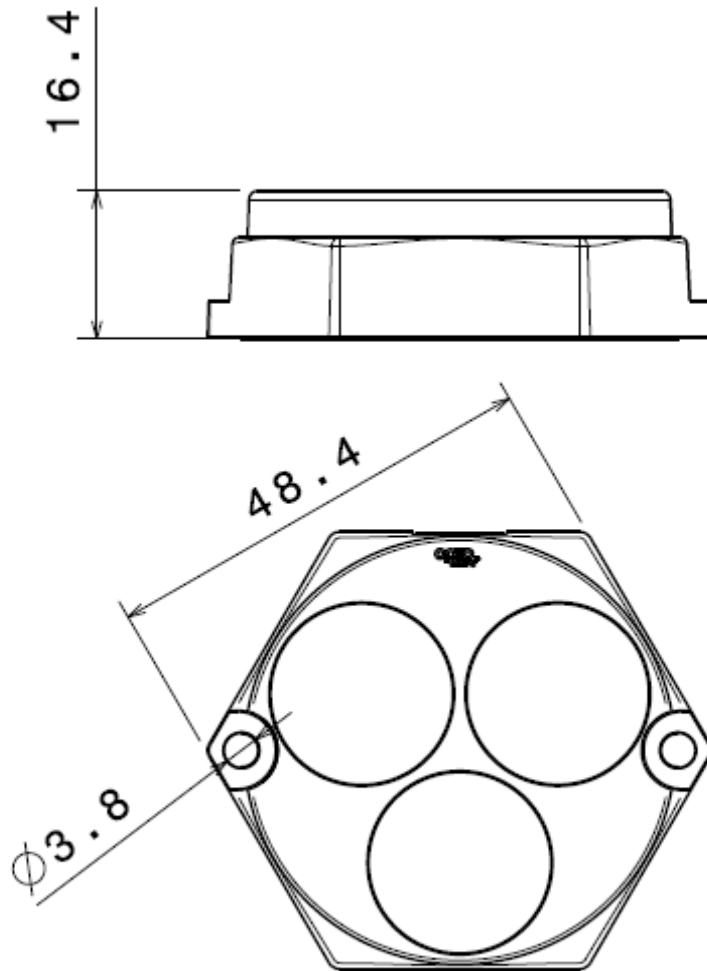


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Wiring diagram:
TBD

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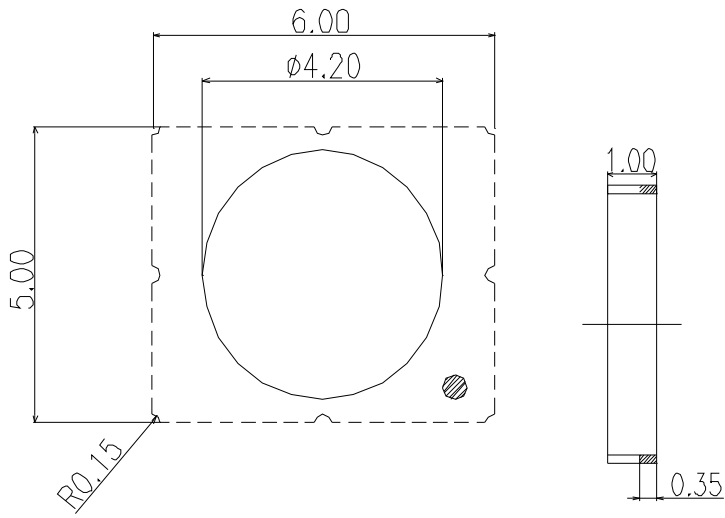
Dimension Module:




Top view

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Dimensions LED:



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1. Electro-Optical characteristics at (Red, Green, and Blue All Color in use) Pure White

1-1 Electro-Optical characteristics at TA=25°C

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux		-	105 (78) [3]	-	lm
Forward Voltage	VF	-	R: 2.5 G: 3.5 B: 3.2	-	V
Forward Current	IF	R,G,B:350			mA
View Angle	2 x 1/2	120			deg.

2. Blue

2-1 Electro-Optical characteristics at IF=350mA, TA=25°C

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux		-	13	-	lm
Dominant Wavelength	λ_D	455	460	475	nm
Forward Voltage	VF	-	3.2	-	V
View Angle	2 θ 1/2	120			deg.
Thermal Resistance		14			°C / W

3. Green

3-1 Electro-Optical characteristics at IF=350mA, TA=25°C

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux		-	57	-	lm
Dominant Wavelength	λ_D	520	525	535	nm
Forward Voltage	VF	-	3.5	-	V
View Angle	2 θ 1/2	120			deg.
Thermal Resistance		16			°C / W

4. Red

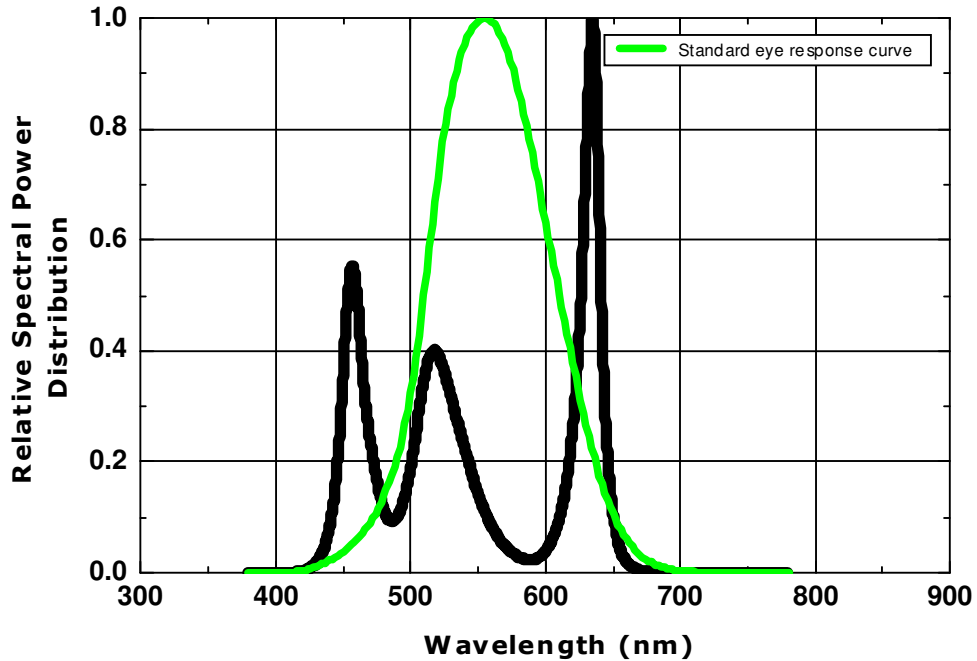
4-1 Electro-Optical characteristics at IF=350mA, TA=25°C

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux		-	35	-	lm
Dominant Wavelength	λ_D	618	625	630	nm
Forward Voltage	VF	-	2.5	-	V
View Angle	2 θ 1/2	120			deg.
Thermal Resistance		16			°C / W

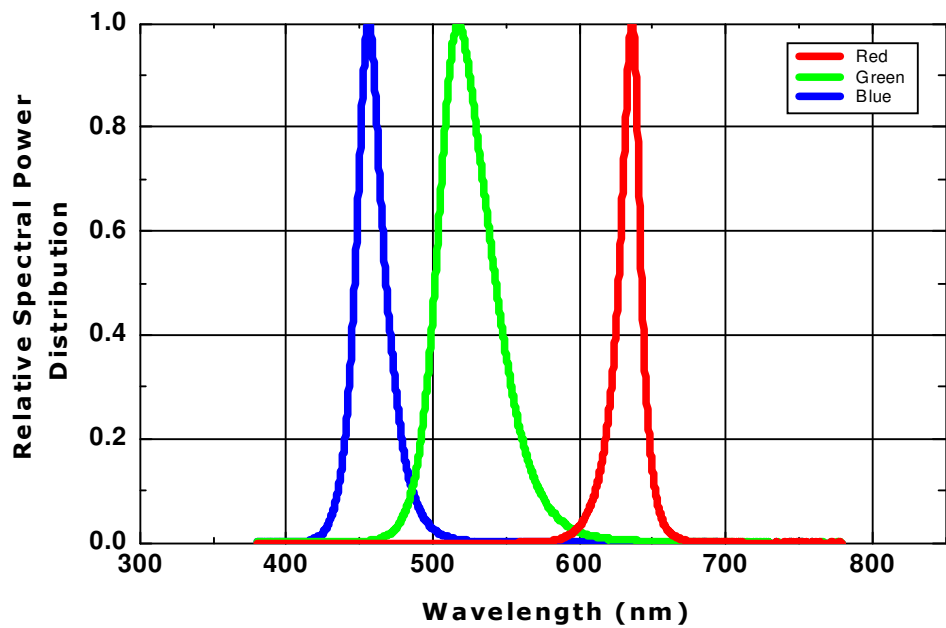
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Colour Spectrum

1. Pure White (IF = R:220, G:350, B:100 mA for the reference condition)

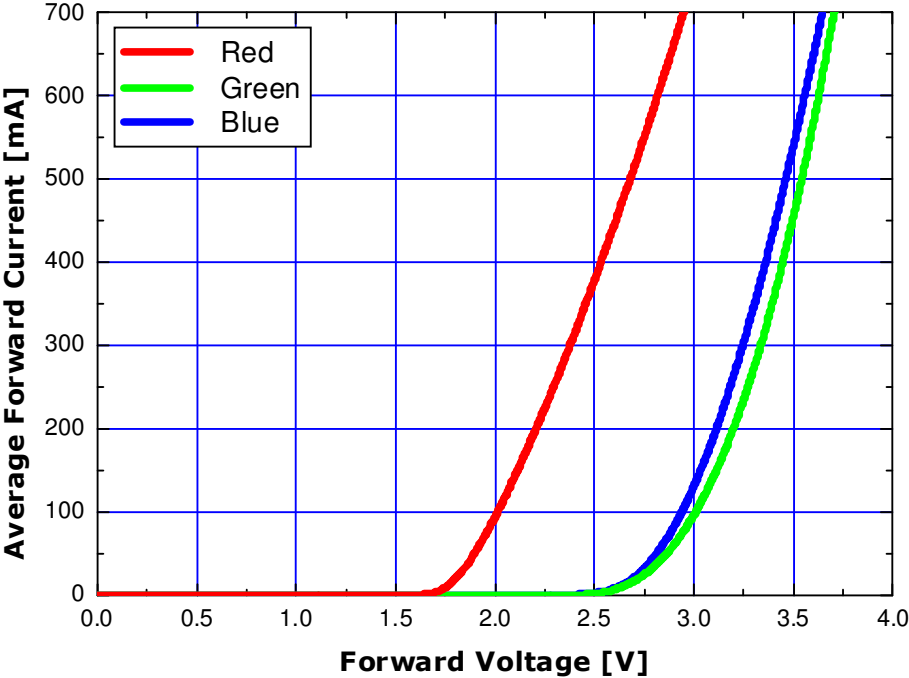



2. Blue, Green, Red (IF= 350mA)



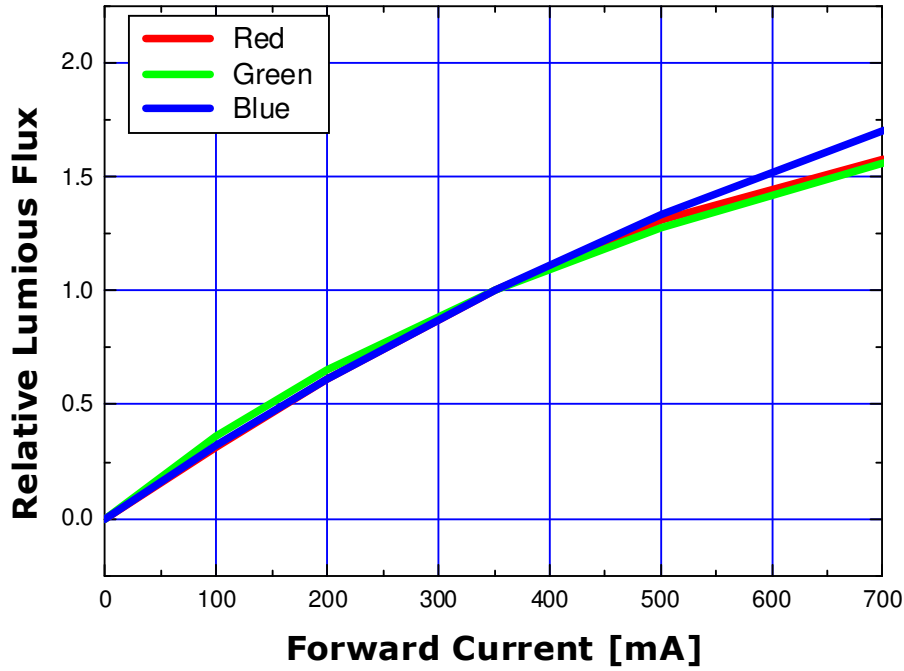
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1. Forward Voltage vs. Forward Current, TA=25°C

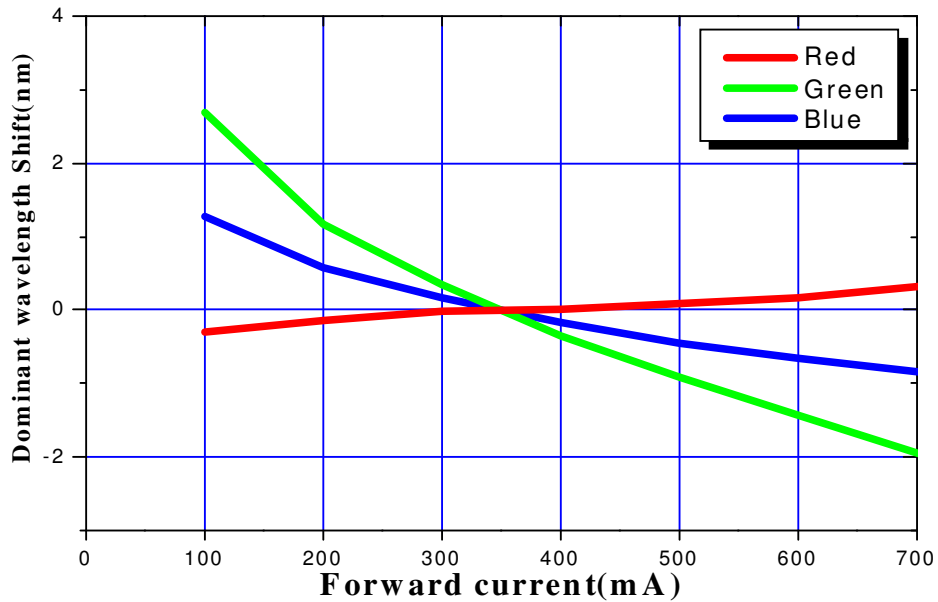


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2. Forward Current vs. Normalized Relative Luminous Flux, $T_A=25^{\circ}\text{C}$



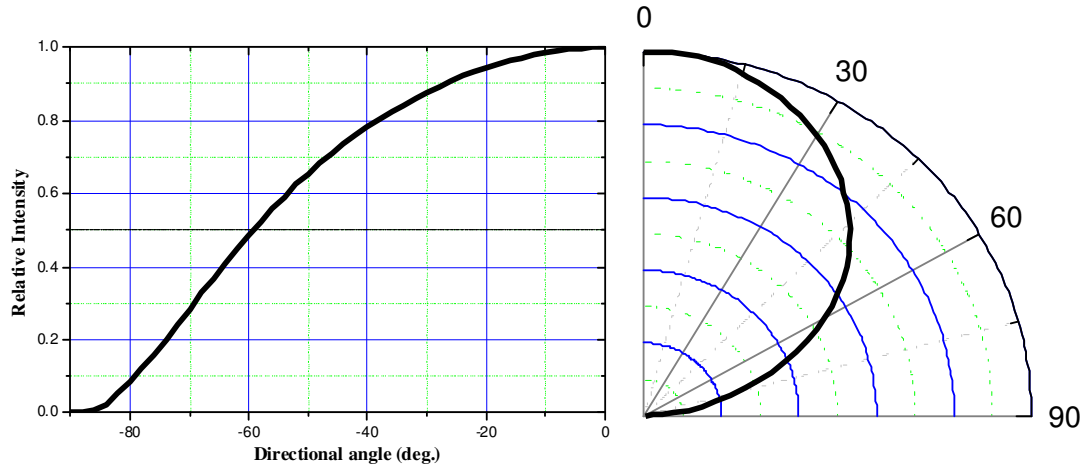
3. Forward Current vs Wavelength shift $T_A=25^{\circ}\text{C}$



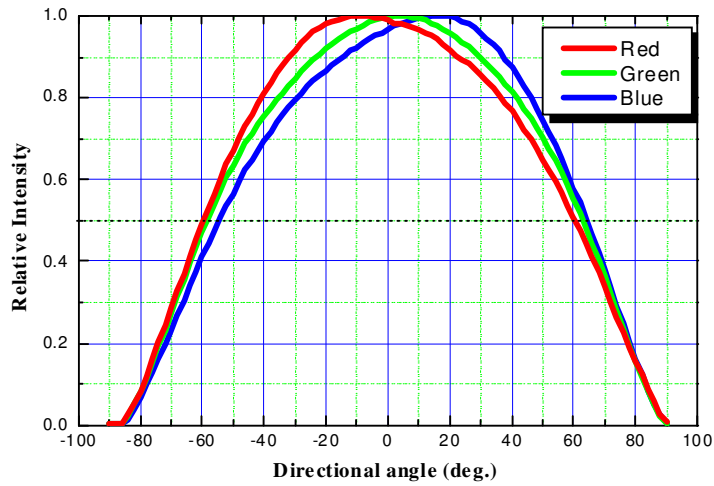
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Typical Dome Type Radiation pattern

1. Pure White



2. Red, Green, Blue



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Precaution for use

- This device should not be used in any type of fluid such as water, oil, organic solvent and etc.
- When washing is required, IPA(Isopropyl Alcohol) should be used.
- When the LEDs are illuminating, operating current should be decided after considering the package maximum temperature.
- The appearance and specifications of the product may be modified for improvement without notice.
- Long time exposure of sunlight or occasional UV exposure will cause lens discoloration.

ROHS Compliant

Its all LED products have been meeting the Restriction of Hazardous Substances (RoHS). There has been a growing consensus that Lead Free Systems should increase for the safety of our environment. It is very serious problem that lead and other harmful materials are being used in commercial and industrial products, causing more and more environmental problems. This has lead to regulations such as RoHS (Restriction of the use of certain Hazardous Substances) from the EU and the Japan Ministry of Trade and Industry (MITI). All LED makers providing products to these countries should comply with these restrictions. In order to meet RoHS regulation, Optoga is strictly implementing a ban on lead and other hazardous materials in its products. This is in compliance with our responsibilities as good corporate citizens.