FELICIA

FELICIA DC

2C

Super high Flux output and high Luminance LED Module Solution

Background

This LED module 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 2C series is designed for high current operation and high flux output applications. Optodrive LED's thermal management perform exceeds other power LED Module solutions. It incorporates state of the art SMD design and Thermal emission material.

Pages for reference:

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Web: www.optoga.se
E-mail: info@optoga.se

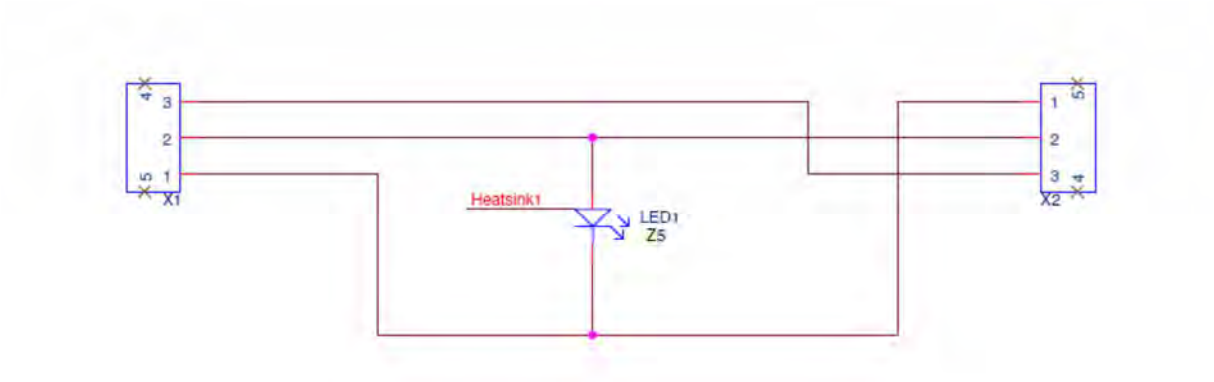
Short form Characteristics

Mechanical	
Board dimensions:	30x27 mm diameter
Wire Connector:	PHR-3 or similar
Assembly holes:	2x3,8 mm
Height:	5,5 mm

Electrical	
Number of LED's:	1 ea
Connector:	2 ea
Voltage Vf	See each colour and LED version
LED current:	800 mA maximum pro LED
Total LED Voltage:	50 VDC over all LEDs in the chain

Environmental operation conditions:	
Temperature range:	From -40°C to 65°C
Relative Humidity:	
Ambient air pressure:	

Schematic diagram:



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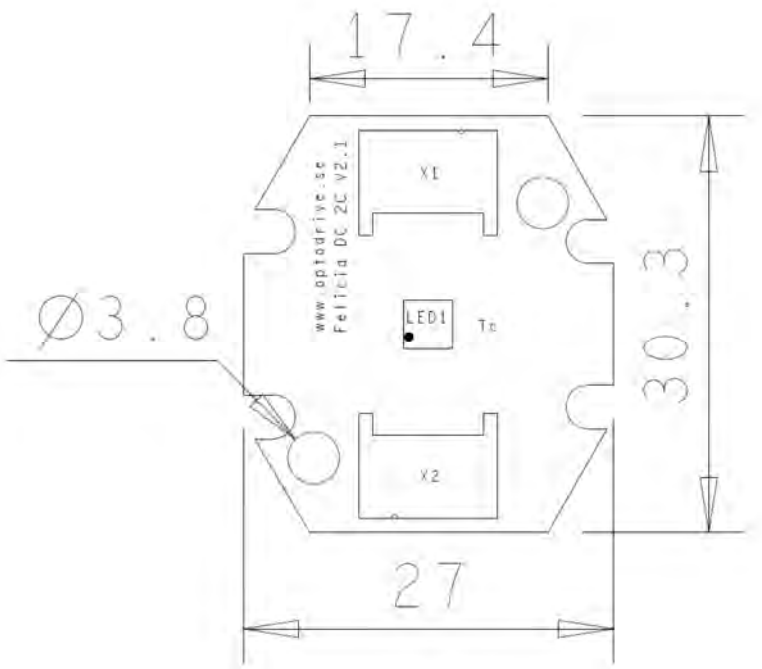
Dimensions PCB



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Characteristics for Optodrive Felicia 2C

White LED

Electro-Optical characteristics at I_F=350mA, T_A=25ºC

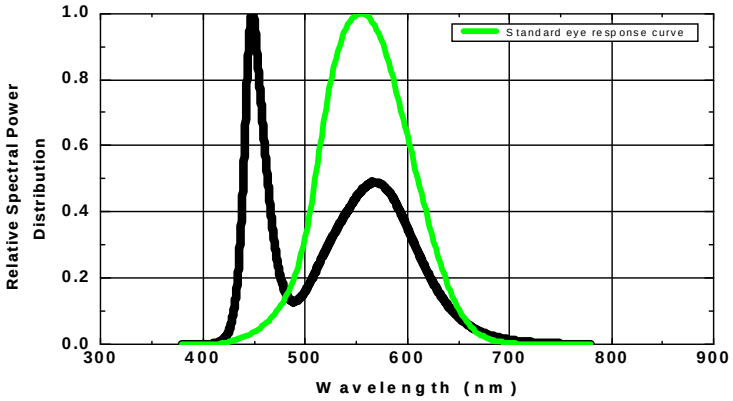
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux	Φ_V		156		lm
Correlated Color Temperature	CCT		6000		K
CRI	R_a	-	70	-	-
Forward Voltage (3)	V_F	2.9	3.25	4	V
View Angle	2Θ ½	118			deg.

(1)See detailed information in chapter" Luminous Flux Bin"
(2)See detailed information in chapter" Binning structure graphical representation"
(3)See detailed information in chapter" Forward Voltage"

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Forward Current	I_F	1000 (@ Tj = 90 ºC)	mA
Power Dissipation	P_d	5	W
Junction Temperature	T_j	150(@ $I_F \leq$ 700mA)	ºC
Operating Temperature	T_{opr}	-40 ~ +65°C	ºC
Storage Temperature	T_{stg}	-40 ~ +85°C	ºC

Colour Spectrum White



Warm White

Electro-Optical characteristics at I_F=350mA, T_A=25ºC

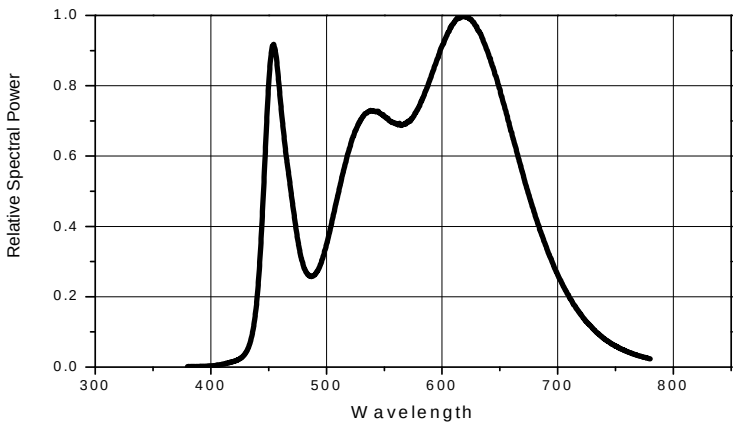
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux	Φ_V		105		lm
Correlated Color Temperature	CCT		3000		K
CRI	ST	-	93	-	-
Forward Voltage	V_F	2.8	3.0	3,25	V
View Angle	2Θ ½	118			deg.

(1)See detailed information in chapter" Luminous Flux Bin"
(2)See detailed information in chapter" Binning structure graphical representation"
(3)See detailed information in chapter" Forward Voltage"

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Forward Current	I_F	800	mA
Power Dissipation	P_d	3.2	W
Junction Temperature	T_j	145	ºC
Operating Temperature	T_{opr}	-40 ~ +65°C	ºC
Storage Temperature	T_{stg}	-40 ~ +85°C	ºC

Colour Spectrum Warm White



Neutral White

Electro-Optical characteristics at I_F=350mA, T_A=25ºC

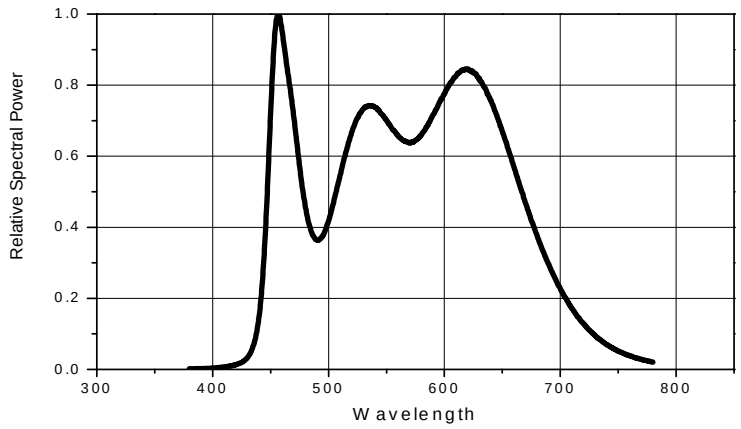
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux	Φ_V		95		lm
Correlated Color Temperature	CCT		3000		K
CRI	R_a	-	93	-	-
Forward Voltage (3)	V_F	2.8	3.0	3,25	V
View Angle	2Θ ½	118			deg.

(1)See detailed information in chapter" Luminous Flux Bin"
(2)See detailed information in chapter" Binning structure graphical representation"
(3)See detailed information in chapter" Forward Voltage"

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Forward Current	I_F	800	mA
Power Dissipation	P_d	3.2	W
Junction Temperature	T_j	145	ºC
Operating Temperature	T_{opr}	-40 ~ +65°C	ºC
Storage Temperature	T_{stg}	-40 ~ +85°C	ºC

Colour Spectrum Neutral White



Red

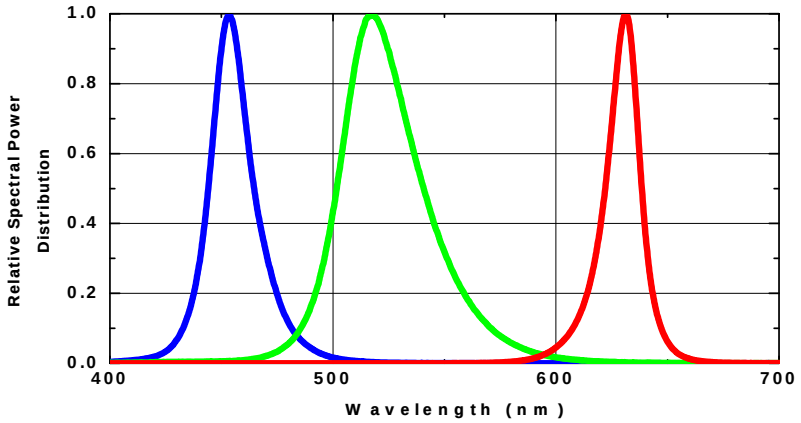
Electro-Optical characteristics at I_F=350mA, T_A=25ºC

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Luminous Flux	Φ_V	-	48	-	lm
Dominant Wavelength	λ_D	618	625	632	nm
Forward Voltage	V_F	2.0	2.4	3.0	V
View Angle	2Θ 1/2	130			deg.

Absolute Maximum Rating

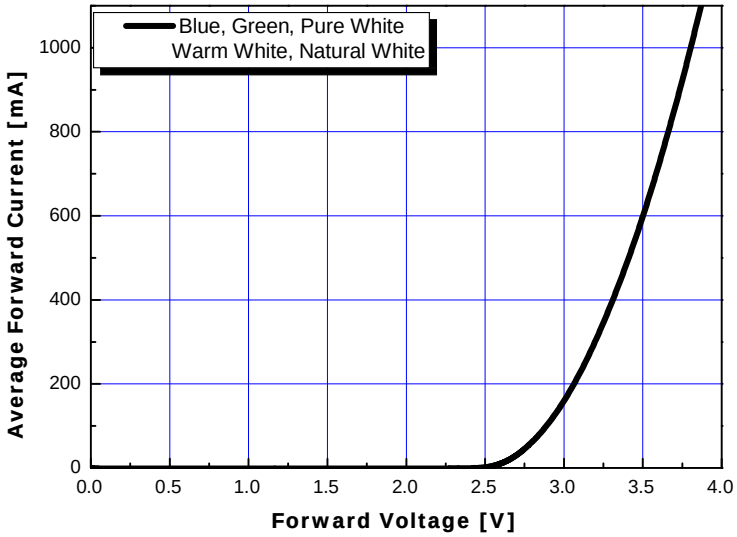
Parameter	Symbol	Value	Unit
Forward Current	I_F	700	mA
Power Dissipation	P_d	2.3	W
Junction Temperature	T_j	125	ºC
Operating Temperature	T_{opr}	-40 ~ +65°C	ºC
Storage Temperature	T_{stg}	-40 ~ +85°C	ºC
ESD Sensitivity	-	±2,000V HBM	-

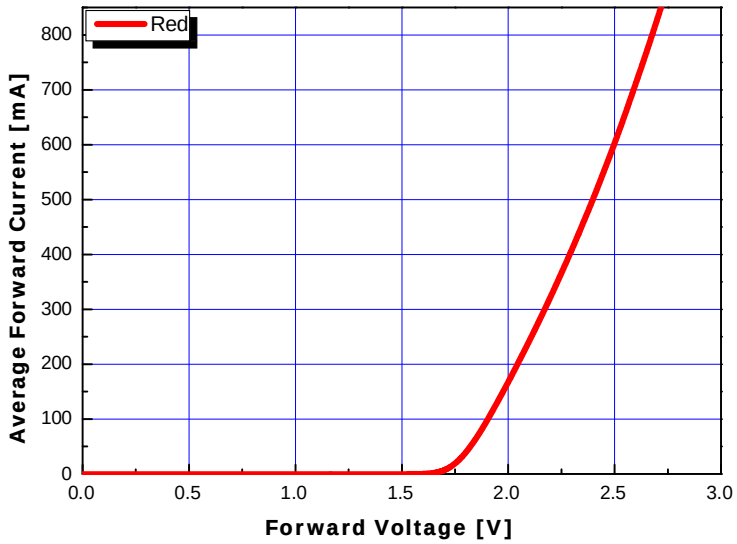
Colour Spectrum RED, Green, Blue



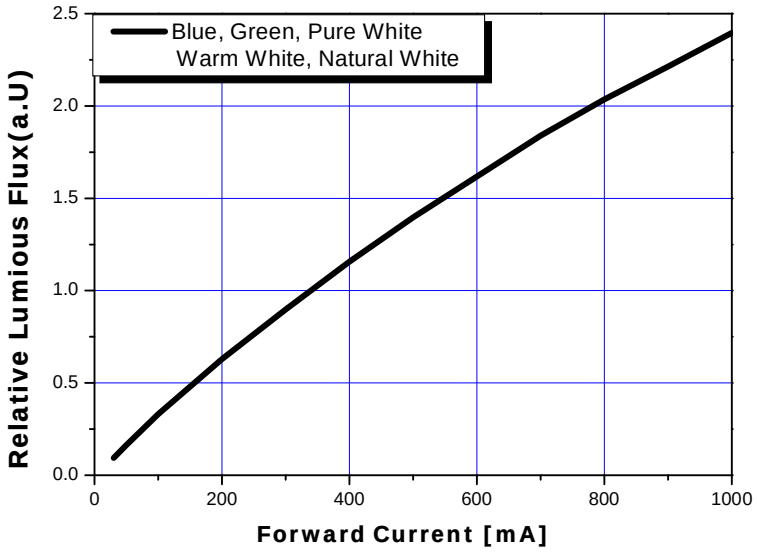
Electro-Optical Information

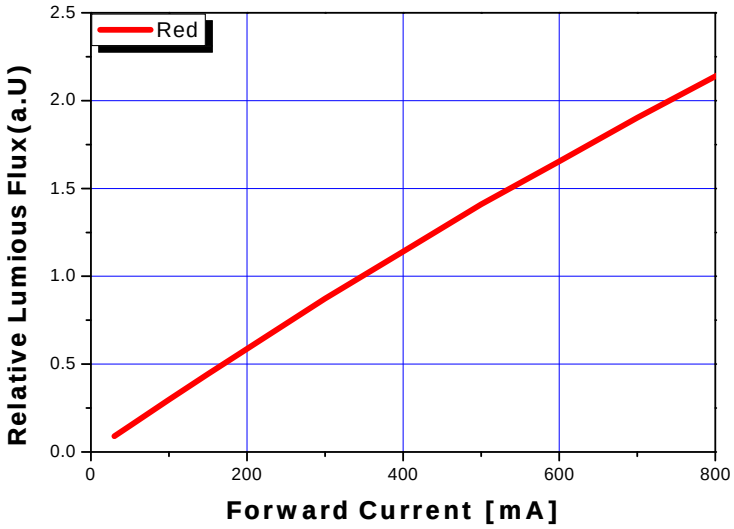
Forward Voltage vs. Forward Current





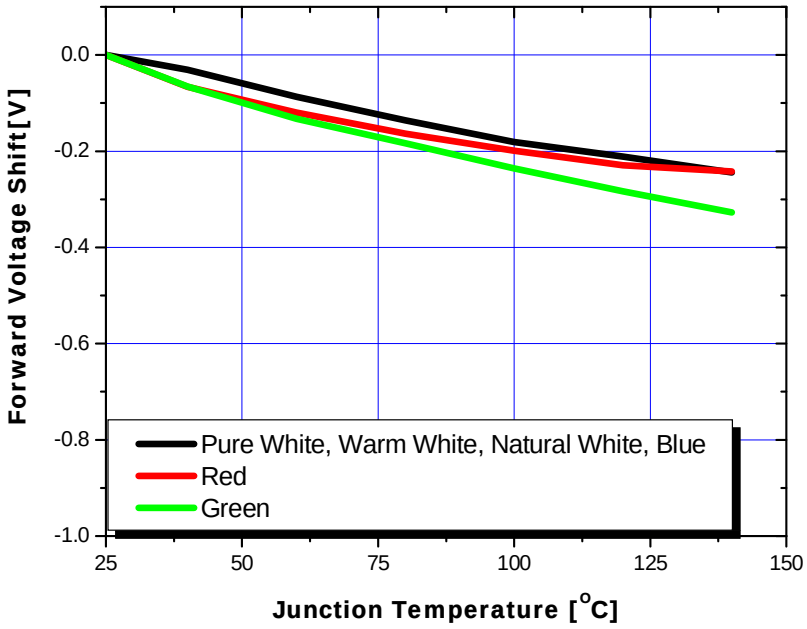
Forward Current vs. Luminous Flux



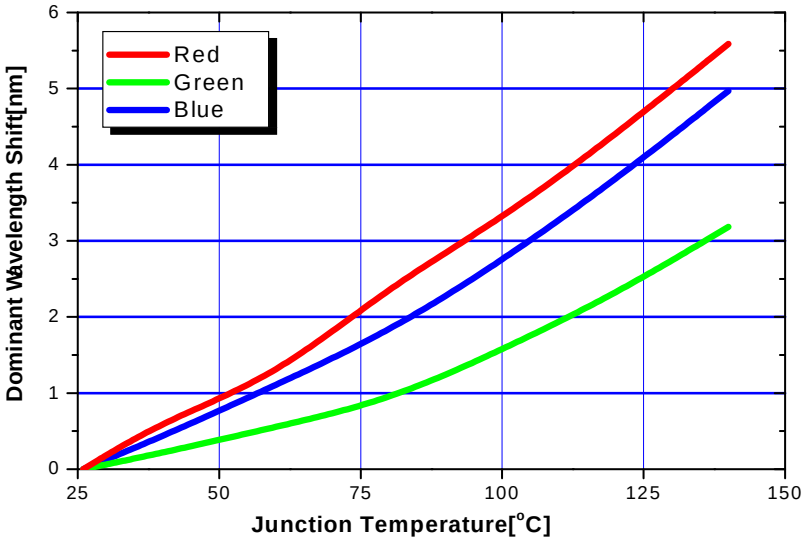


Junction Temperature Characteristics

Forward Voltage Shift vs. Junction Temperature at I_F=350mA

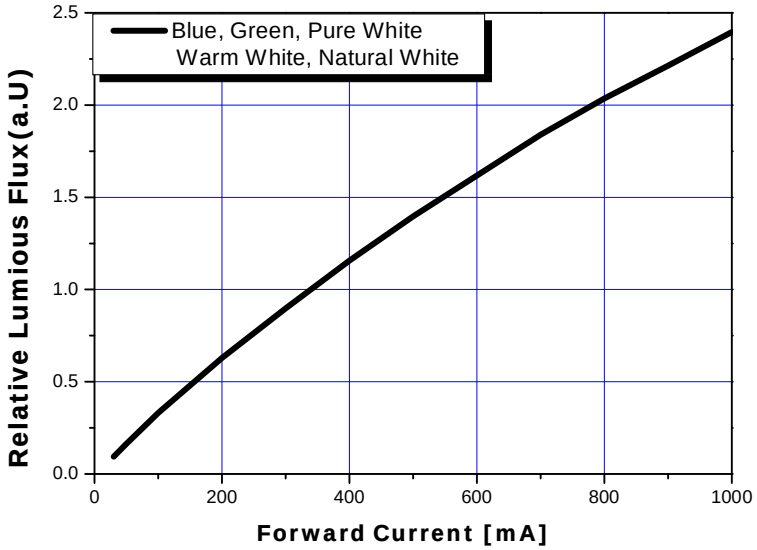


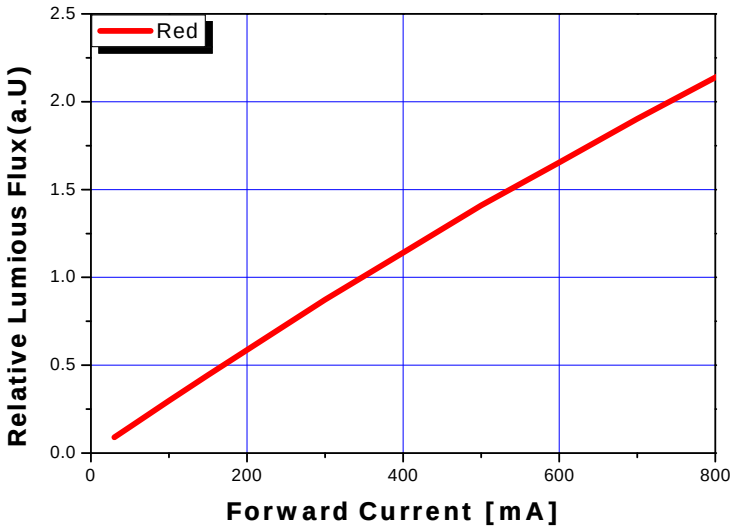
Wavelength Shift vs Junction Temperature at I_F=350mA



Forward Current Characteristics

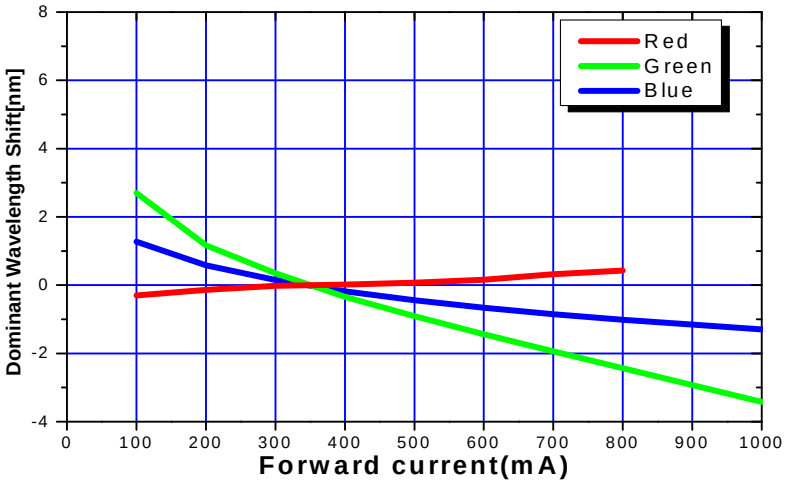
Forward Current vs. Normalized Relative Luminous Flux, T_A=25 ºC





Forward Current Characteristics

Forward Current vs Wavelength Shift, T_A=25 ºc



Part number

Article number	Article name	Module name	P. supply	Power	Current	LED	CRI	CCT
	Felicia 2C ED.4.350.1.927-NN	Felicia	ED	4	350	1	>90	2700
	Felicia 2C ED.4.350.1.930-NN	Felicia	ED	4	350	1	>90	3000
	Felicia 2C ED.4.350.1.940-NN	Felicia	ED	4	350	1	>90	4000
103691	Felicia 2C ED.4.350.1.760-NN	Felicia	ED	4	350	1	>70	6000
103692	Felicia 2C ED.4.350.1.R-NN	Felicia	ED	4	350	1	-	625nm (RED)

*Binning condition

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Measurement Control for Temperature

The purpose of the measurement is to control the Junction (Tj) temperature of the LED. When we have control over this we can also see the average lifetime on the product.

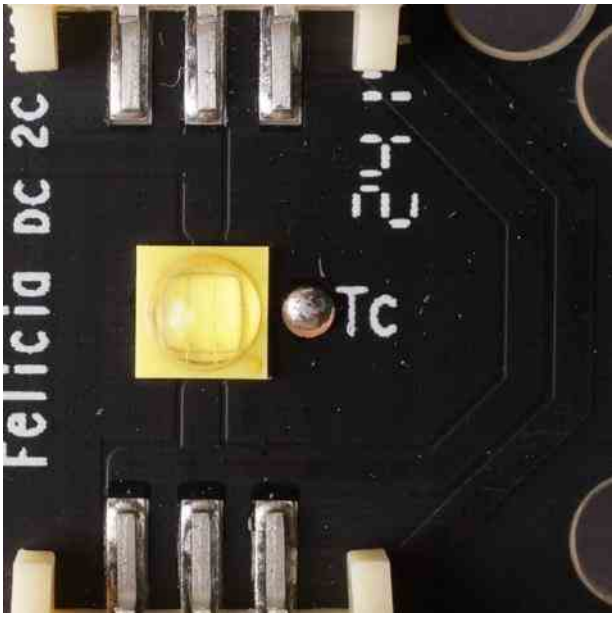
The thermal connection is measured in Temperature vs. Power.

Measurement points

When the measurements taking place we control the temperature on different places where the maximum temperature is depending on the life time expected. We recommend a temperature below 65°C on the measuring point to get a proper lifetime.

Measurement points:

- TC (- and +)



This measurement is to be done when the heat sink is connected properly!

Precautions for use

- This device should not be used in any type of fluids such as water, oil, organic solvent etc.
- When cleaning is required, use only water together with mild soap on the outside of the lens. Cleaning inside of the LED module is strictly prohibited.
- 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.
- Opening of the LED module is prohibited due to risk of EMC, dust, grease and other exposures that will damage it.
- The LED Module should always be mounted to a proper heat sink before itôs connected with its proper leads.

Handling in regards to static electricity

- The Optodrive products have integrated circuits (IC) on board that may be damaged if exposed to static electricity. Please handle the products only while using equipment that prevents static electricity. Do not handle them without having ESD protection.
- The Optodrive products are not be installed into the end product without proper ESD protection.

Storage before use

- Use only properly rated test equipment and tools for the rated voltage and current of the product being tested.
- It is strongly suggested to wear rubber insulated gloves and rubber bottom shoes while handling the product.
- Do not wear any conductive items (such as jewelry) which could accidentally contact electric circuits.
- Faults, lightning, or switching transients can cause voltage surges in excess of the normal ratings.
- Internal component failure can cause excessive voltages.
- Stored or residual electricity in long wire could be hazardous.

ROHS Compliant

All our LED modules meet the Restrictions of Hazardous Substances (RoHS)!

There has been a growing consensus that Lead Free Systems should increase for the safety of our environment. It is a 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 led 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 module makers providing products to these countries should comply with these restrictions. In order to meet the 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.

Design for Environment:

According to the EU-directive 2002/95/EC (RoHS) the following substances must not be used in this product

- Lead (Pb) alloys
- Mercury (Hg)
- Cadmium (Cd)
- Chromium (6+) compounds

Do you want to know more about the benefits of OptoDrive™ LED?

Read more about OptoDrive™ at www.optodrive.se. You can also register your interest via info@optoga.se.

Obviously, you can also call us on +46 (0)589 490 950.

Optoga AB

Founded in November 2004, Optoga has over 30 years of experience in electronic components. The company develops and supplies LEDs, LED drivers, LED modules and software solutions for the lighting industry, vehicle manufacturers and electronics companies.

By developing products with integrated LED and driver electronics, Optoga has taken the initiative to replace strip lights, incandescent and halogen bulbs with LED-based light sources.

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