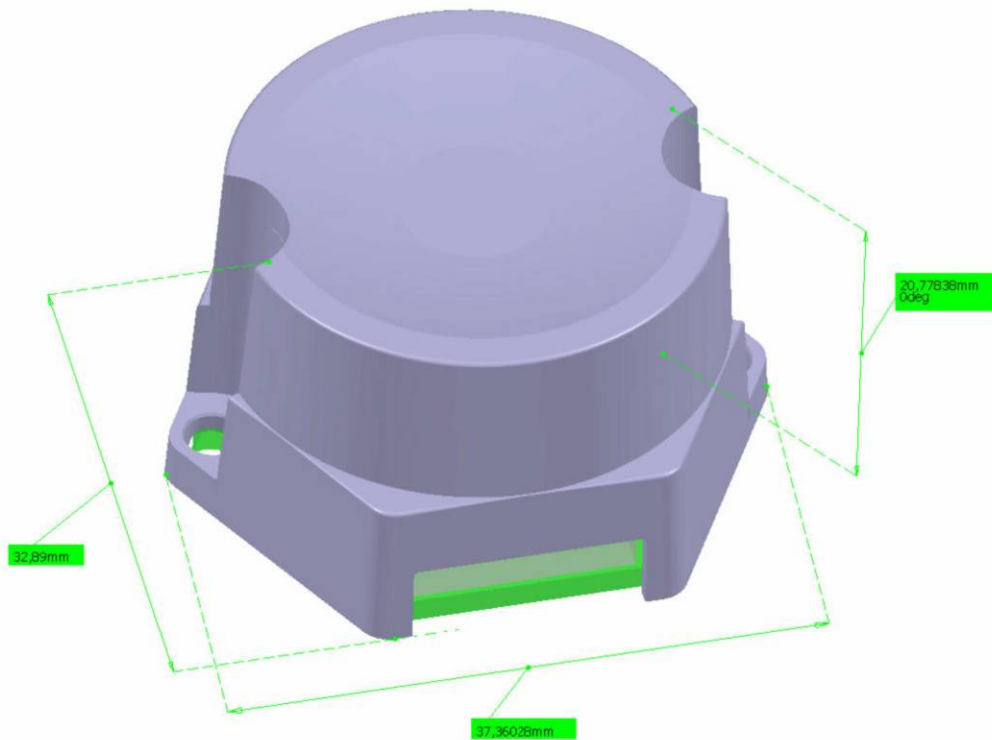
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	<b>Object:</b> Datasheet Felicia EDP7 Dome White	<b>Author:</b> SL	<b>Date:</b> 2010-08-16	

## Felicia ED Warm White 10W Module Solution for light fitting integration




*This LED Module is designed to be used with external driver and is therefore very easy to connect in applications. The efficiency are the highest available on the market for such applications.*

### **Description**

Optodrive Clara series is designed for high current operation and high flux output applications. Optodrive LED's thermal management performance exceeds other power LED solutions. It incorporates state of the art SMD design and Thermal emission material as well as the most efficient technology. The white color Optodrive LED solution is the first built driver package designed, using high performance power chips and rendering a perfect white light.

### **Light Performance**

The standard light temperature is 2950 and 5350 Kelvin with Colour Rendering Index with a type value better than CRI 80 on 2650 up to 3500K. The light temperatures 5350 K and above have a CRI of 70.

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### *Short form Characteristics*

#### **Mechanical**

Board dimensions: 34.56 mm diameter  
Assembly holes: 2 x 3.2 mm  
Wire Connector: CP04-03S0 or  
direct connect with wire without connector  
Height 20.8 mm

#### **Electrical**

Number of LED's: 1  
Power supply: External Driver  
Power: 10 W  
LED current: Connector 1000 mA +/-10% ea.  
Wire direct connect 2800mA

#### **Article number structure**

**Article number: Felicia ED10X01xxWS\*\*zz-00**

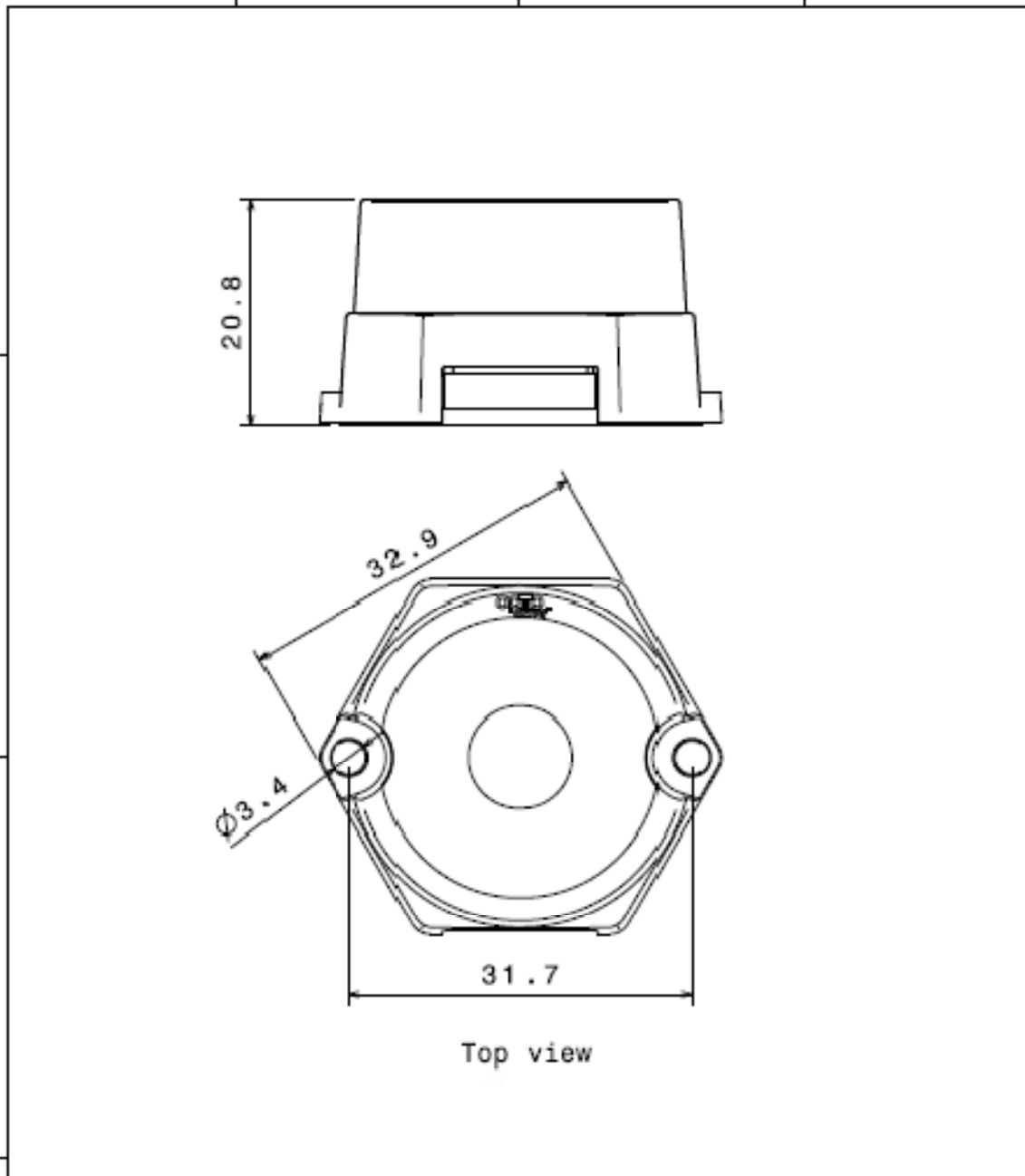
Felicia: Module name  
ED: External driver required  
10: Power (Watt)  
X: Forward Voltage Vf  
01: Amount of LED  
xx: Color  
W: Luminous Flux Bin  
S\*\*:  
Binning Color  
zz: Viewing angle (NN without lens system)  
00 00 is standard and will not be notified (01 with wire locking connector)

**Wiring diagram:**

See separate wiring diagram documentation.

	<b>Felicia ED P7 Cool white</b>	<b>Felicia ED P7-II Warm white</b>
<b>Circuit diagram</b>		
<b>Max IF</b>	2800mA (700mA per chip)	1400mA (700mA per chip)
<b>Typ IF</b>	1400mA (350mA per chip)	700mA (350mA per chip)
<b>VF</b>	3~4V	6~8V
<b>CRI</b>	70	77
<b>Luminous Flux</b>	Typ 750lm (@2800mA)	Typ 330lm (@700mA)

*Dimensions LED Module:*



Top view

This drawing is our property.  
It can't be reproduced  
or communicated without  
our written agreement.



DRAWING TITLE

Felicia1-A integ.Lens-pcb assembly

DRAWN BY  
pv

DATE  
27.01.2009

CHECKED BY  
fk

DATE  
28.07.2008

SIZE  
A4

DRAWING NUMBER

REV  
1.0


DESIGNED BY  
hh

DATE  
23.07.2008

SCALE 2:1 WEIGHT(g)

SHEET 1/1

Measurement given in mm

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### Parameters of the Lens system

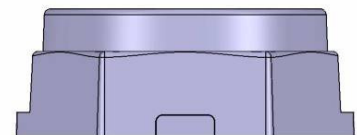
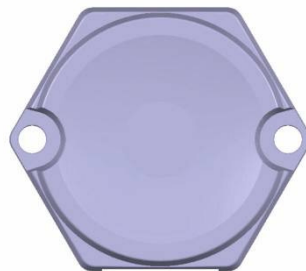
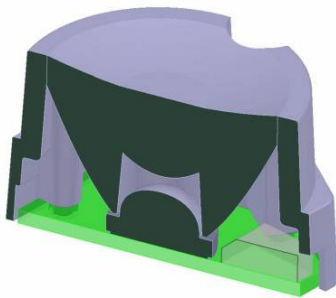
The lens system is mounted and fixated on to the PCB with press fit solution to keep the parts connected to each other. They can be separated from each other without damage. The light parameters are according to the following:


Version	Viewing Angle	FWHM Angle
<b>Felicia Smooth Spot<sup>(1)</sup></b>	14°	±7°
<b>Felicia Diffuser<sup>(1)</sup></b>	20°	±10°
<b>Felicia Medium</b>	30°	±15°
<b>Felicia Wide<sup>(1)</sup></b>	60°	±30°

(1) Versions are in development

Lens material optical grade PMMA.

- Allows use of high current and temperature conditions
- Best available optical efficiency, up to 90%
- Very even color distribution over the whole beam angle
- Integrated holder. Fastening to heat sink with two screws
- Compact dimensions



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### Parameters of the light output

#### White

Electro-Optical characteristics LED module at  $I_F=55mA$ , 230VAC,  $T_A=25^\circ C$

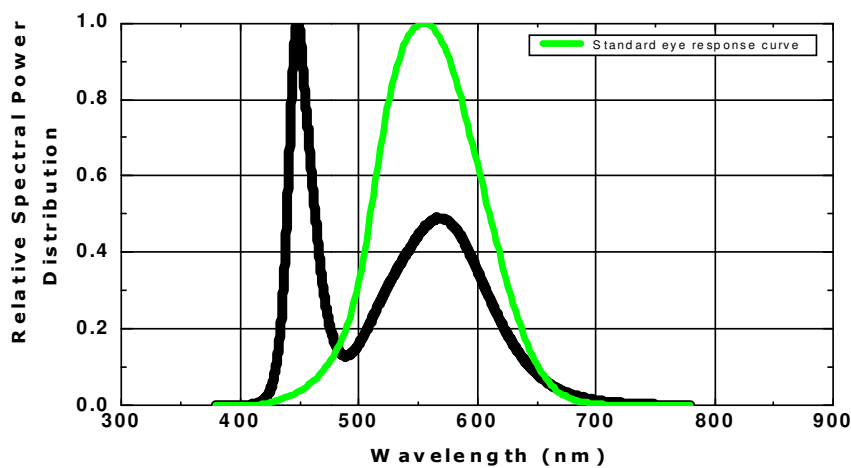
Parameter	Rank / Binning	Symbol	Value			Unit
			Min	Typ	Max	
Luminous Flux	B rank <sup>(1)</sup>	$\Phi_V$	570		700	lm
	C rank <sup>(1)</sup>	$\Phi_V$	700		800	lm
	D rank <sup>(1)</sup>		800		900	lm
Correlated Color Temperature	SV* rank <sup>(2)</sup>	CCT	5000	5350	5700	K
CRI		$R_a$	-	70	-	-
Power		$P_o$			11.8	W
Thermal resistance		$R\theta_{J-B}$	3			$^\circ C$

(1) See detailed information in chapter "Luminous Flux Bin"

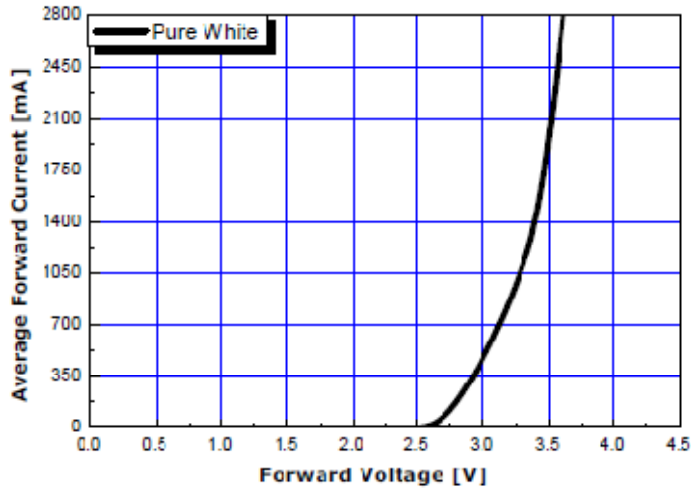
(2) See detailed information in chapter "Binning structure graphical representation"

### Colour Spectrum

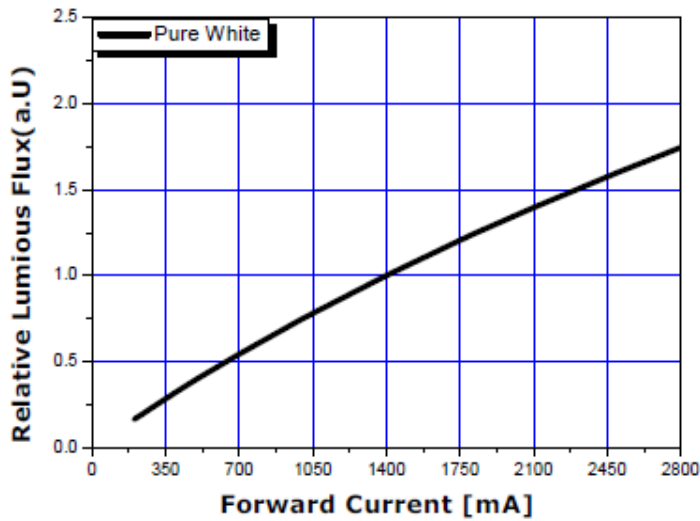
#### White



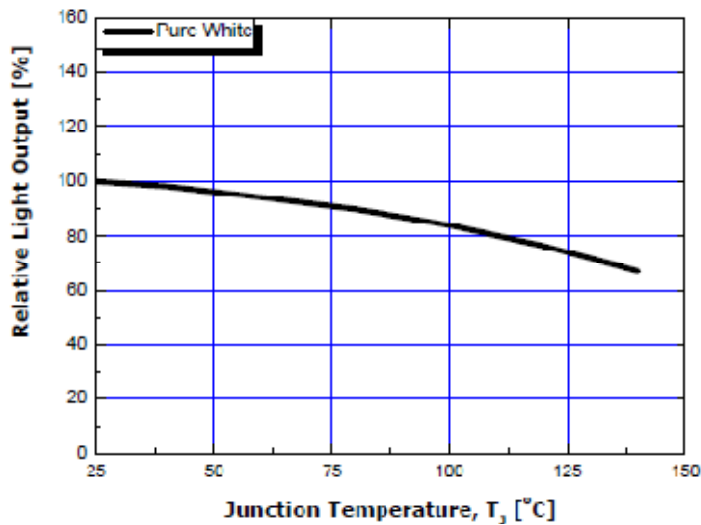
**Module Performance White**  
**Voltage vs. Current**



**Current vs Flux**

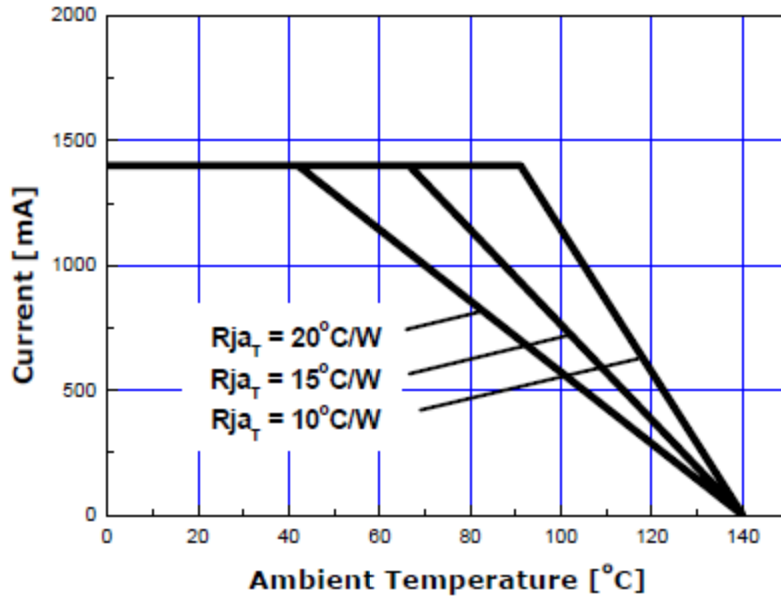


**Relative light output vs Junction Temperature**

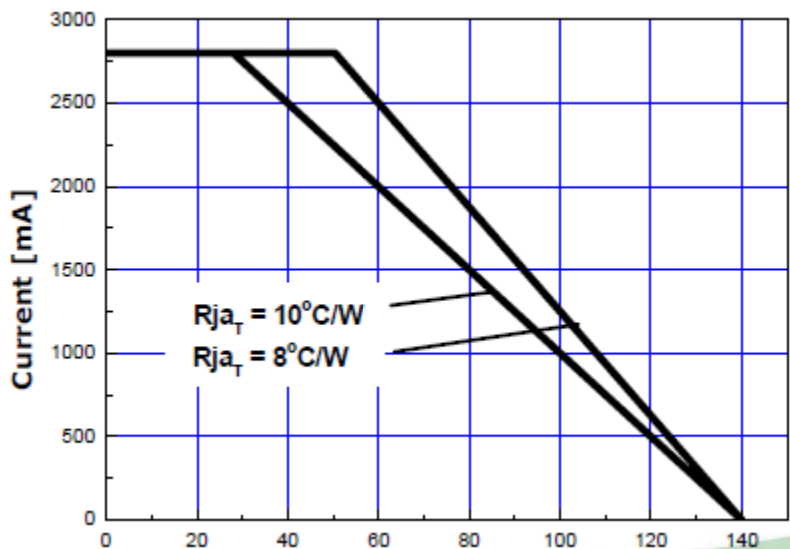



Ambient Temperature vs Allowable Forward Current

Warm White (T<sub>JMAX</sub> = 140 °C, @1400mA)



Warm White (T<sub>JMAX</sub> = 140 °C, @2800mA)



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## Binning and Labelling

### Short form letter for colour


Colour Code	Colour
W	White
N	Warm White

### Luminous Flux Bins pro LED

Bin Code	Luminous Flux [lm]	
J	6 ~ 8.5	
K	8.5 ~ 11.0	
L	11.0 ~ 14.5	
M	14.5 ~ 19.0	
O	19.0 ~ 24.5	
P	24.5 ~ 32.0	
Q	32.0 ~ 41.5	
R	41.5 ~ 54.0	
S	S1	54.0 ~ 60.0
	S2	60.0 ~ 70.0
T	T1	70.0 ~ 80.0
	T2	80.0 ~ 91.0
U	U1	91.0 ~ 100.0
	U2	100.0 ~ 118.5
V	118.5 ~ 154.0	
W	154.0 ~ 200.0	
X	200.0 ~ 260.0	
Y	260.0 ~ 340.0	

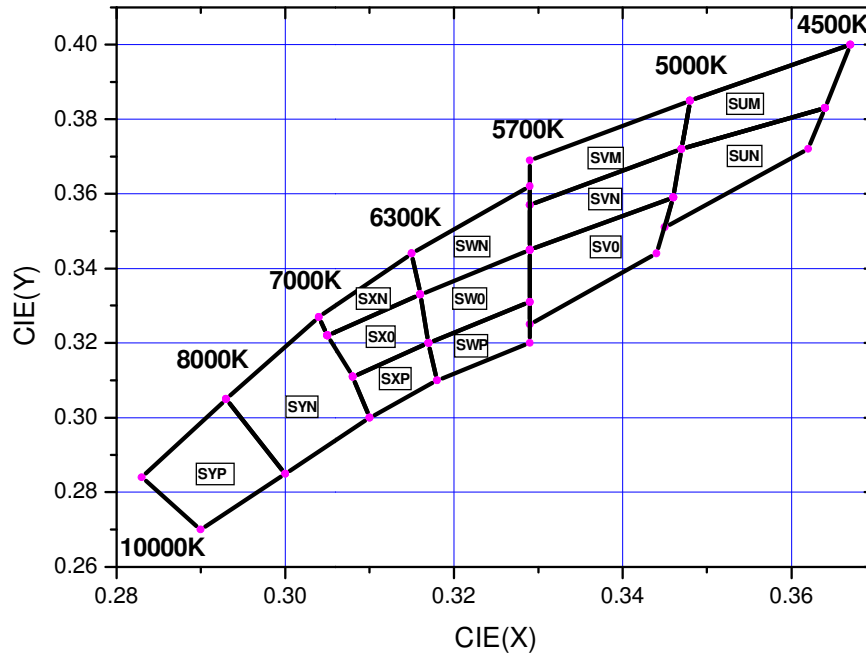
### Forward Voltage


Vf Rank	Forward Voltage [Vf]
G	2.75 ~ 3.0
H	3.00 ~ 3.25
I	3.25 ~ 3.50
J	3.50 ~ 3.75
K	3.75 ~ 4.00

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*Binning structure graphical representation*

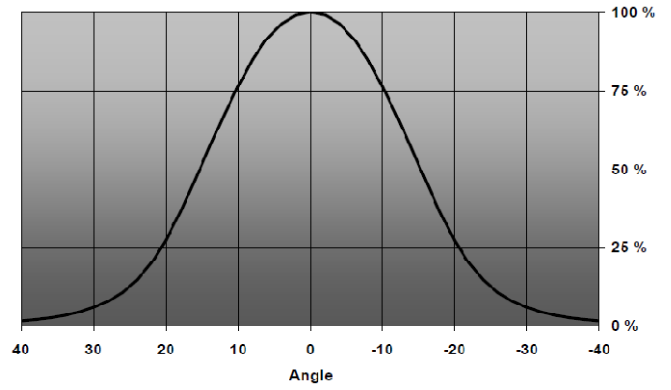
*Pure White Binning (4500 – 10000K)*




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*Optics performance*

*Medium Version*



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### *Measurement Control*

The recommended maximum value is 65°C on Tc or measuring point. If this value is exceeded we can't guarantee the function and the life time. The purpose of the measurement is to control the Junction (Tj) temperature of the LED and also control the performance on the whole set up. By the help of the junction temperature (Tj) the average lifetime of the product is known.

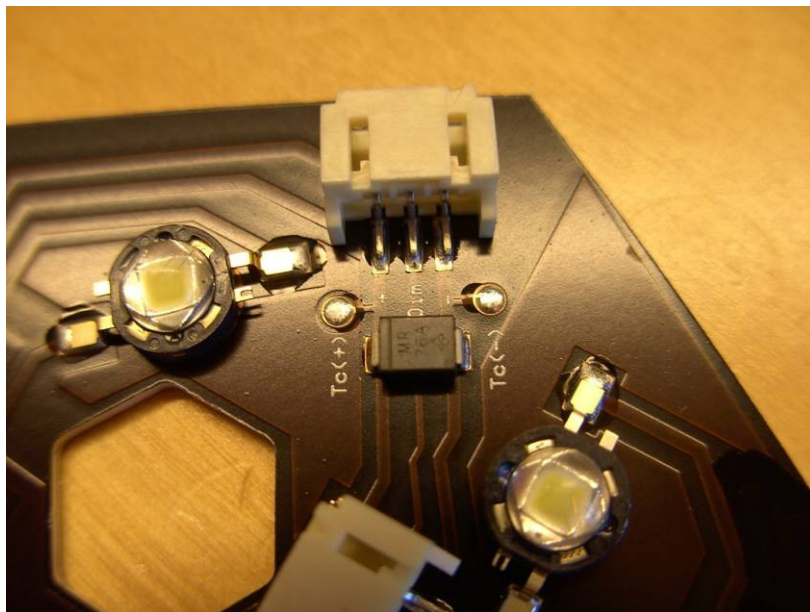
The thermal connection is measured in temperature vs. Power.

### *Measurement points*


When the measurement takes place we verify the temperature on different places where the life time expected is depending on maximum temperature.

Measurement points

- TC (- and +)
- LED legs at the soldering point




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

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*Lifetime*

TBD

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### *Precaution for use*

- This device should not be used in any type of fluid such as water, oil, organic solvent etc.
- When washing is required, only clean water together with mild soap on the outside of the lens. Washing inside of the LED module is 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 are prohibited due to risk of EMC, dust, grease and other exposures that are out of control.
- The LED Module should always be mounted inside a proper heat sink before it's connected with its proper cores. This due to electrical hazard.
- Please secure proper grounding on the thermal side of the LED module.

### *ROHS Compliant*

All our LED modules are 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 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 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.