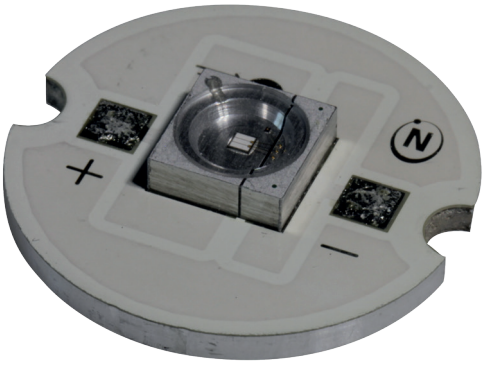
UV-LED-Modul – 365nm



Description

- High power UV LED series are designed for high current operation, narrow angle and high power output applications.
- It incorporates state of the art SMD design and low thermal resistant material.
- SOPN-MUAAP120 LED is ideal UV light source for curing, printing, and detecting applications.

Features and Benefits

- High power output
- Designed for high current operation
- Low thermal resistance
- SMT type
- Lead Free product
- RoHS compliant

Key Applications

- UV Curing
- Printing
- Coating
- Adhesive
- Counterfeit Detection/ Security
- UV Torch
- Fluorescence
- Photography
- Dental Curing
- Crime Inspection
- Oil leak Detection

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Performance Characteristics

Table 1. Electro -Optical characteristic at 500mA (Ta=25 , RH=30%)

Parameter	Symbol	Value	Unit
Peak wavelength[1]	λp	365	nm
Radiant Flux[2]	φe[3]	820	mW
Forward Voltage[4]	VF	3.8	V
Spectrum Half Width	Δλ	9	nm
View Angle	2Θ1/2	110	deg.

Table 2. Absolute Maximum Rating

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Forward Current	I_F	-	-	700	mA
Junction Temperature	T_j	-	-	125	°C
Operating Temperature	T_{opr}	-10	-	85	°C
Storage Temperature	T_{stg}	-40	-	100	°C
Thermal resistance (J to B) [5]	$R\Theta_{J-B}$	-	5.6	-	°C/W

Notes :
1. Peak Wavelength Measurement tolerance : ±3nm
2. Radiant Flux Measurement tolerance : ±10%
3. eis the Total Radiant Flux as measured with an integrated sphere.
4. Forward Voltage Measurement tolerance : ±3%
5. R J-Bis the thermal resistance between chip junction to PCB board bottom.
The PCB is made of aluminum and the size of PCB is 3.5cm by 3.5cm

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Characteristics Graph

Fig 1. Spectrum, Ta=25 ,IF=500mA

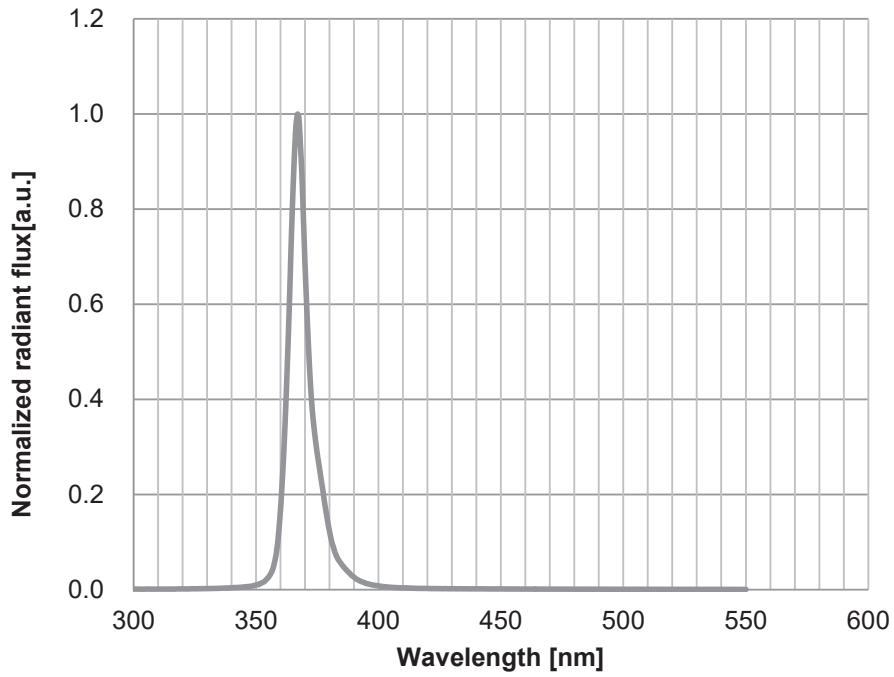

Fig 2. Forward Voltage vs.Forward Current, Ta=25

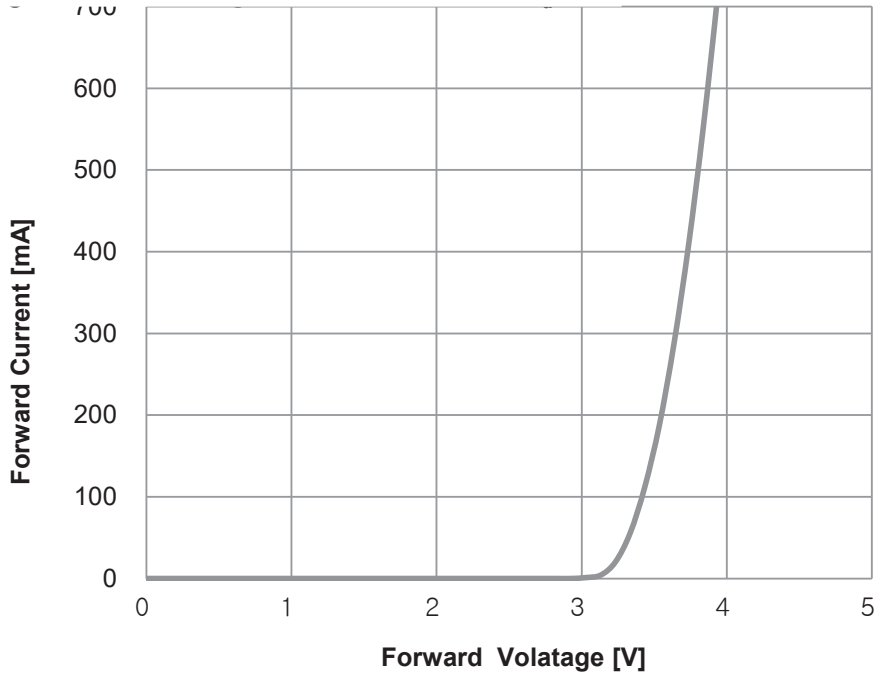

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Fig 3. Forward Current vs. Relative Radiant Flux, Ta=25

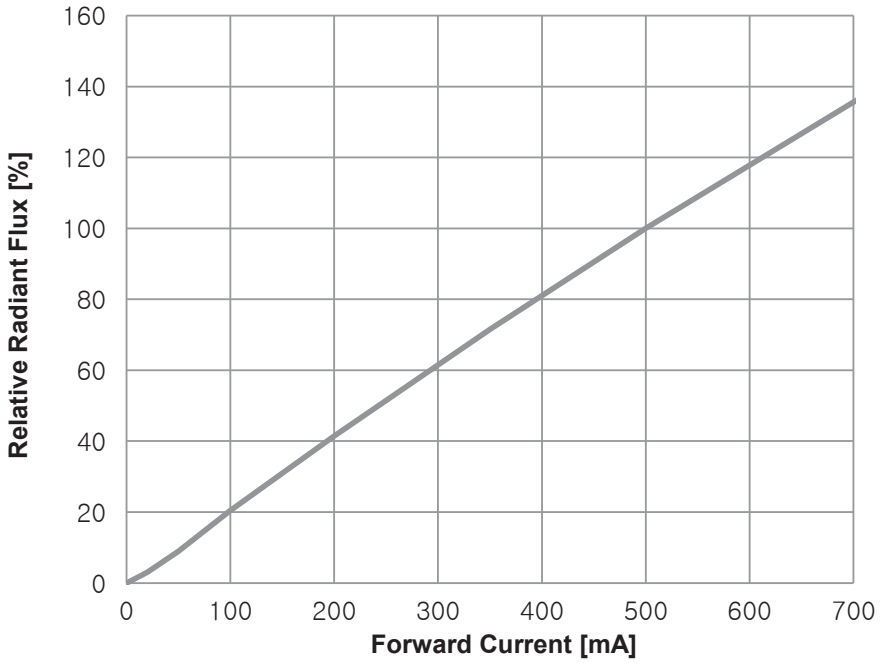

Fig 4. Forward Current vs. Peak Wavelength, Ta=25

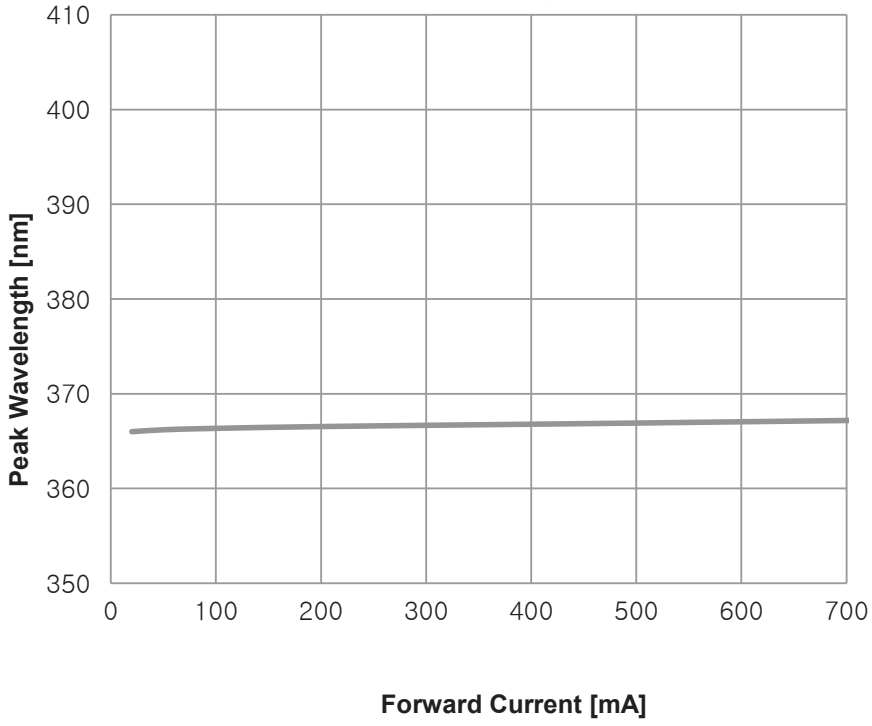

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Fig 5. Ambient Temperature vs. Relative Radiant Flux, IF=500mA

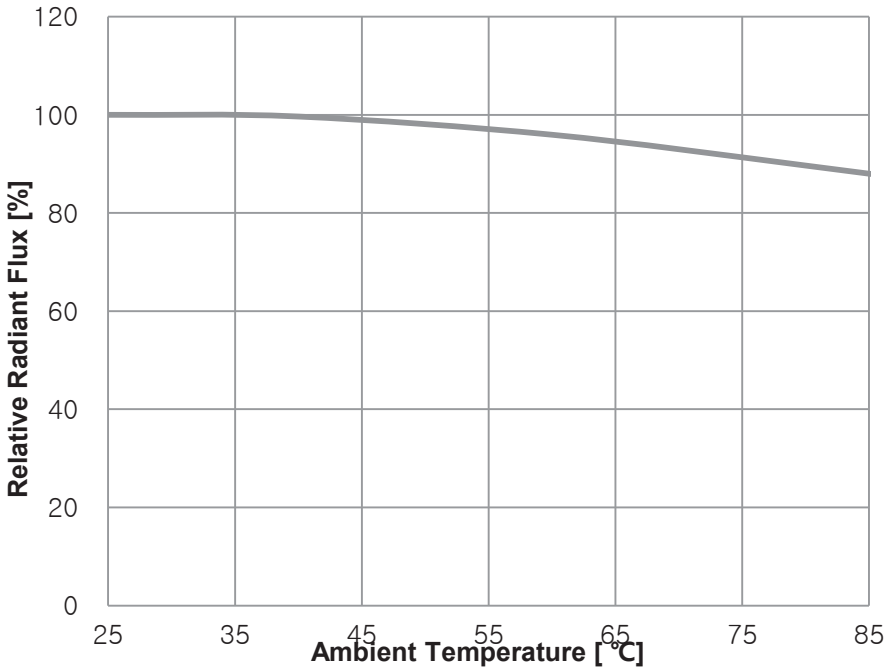

Fig 6. Ambient Temperature vs.Peak Wavelength, IF=500mA

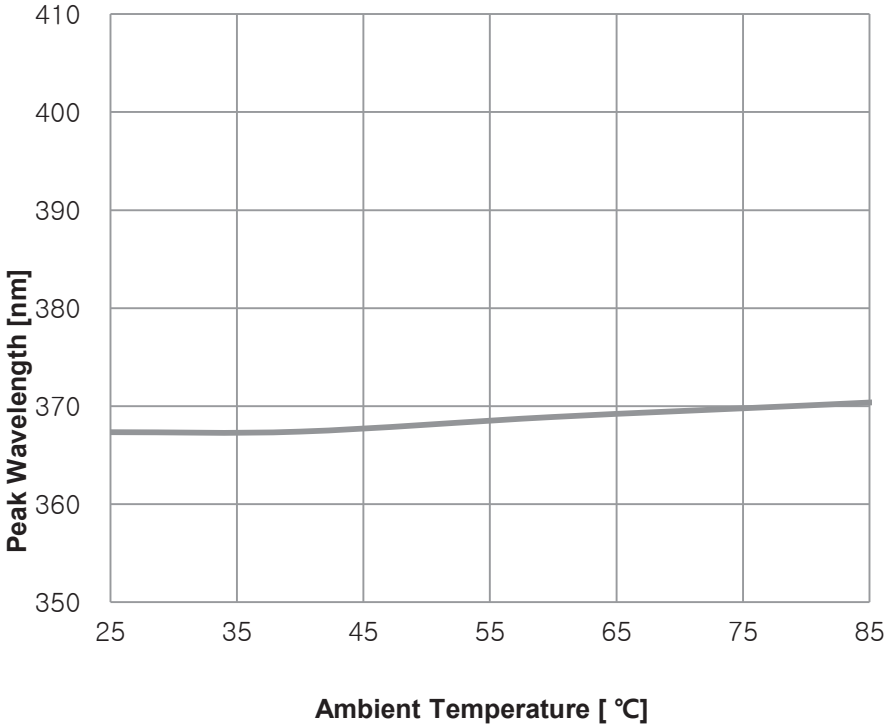

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Fig 7. Ambient Temperature vs. Forward Voltage, IF=500mA

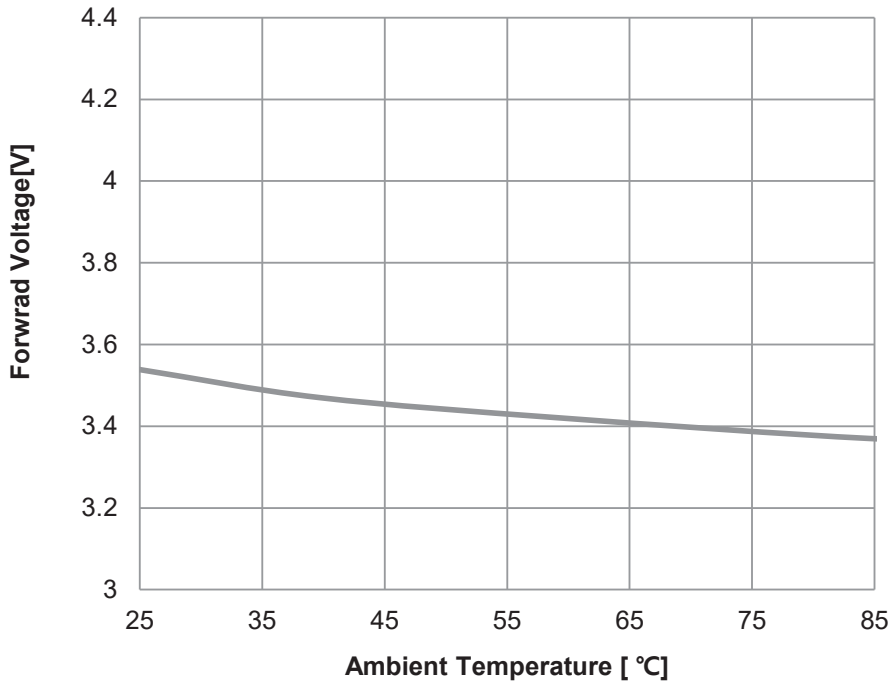

Fig 8. Radiation pattern

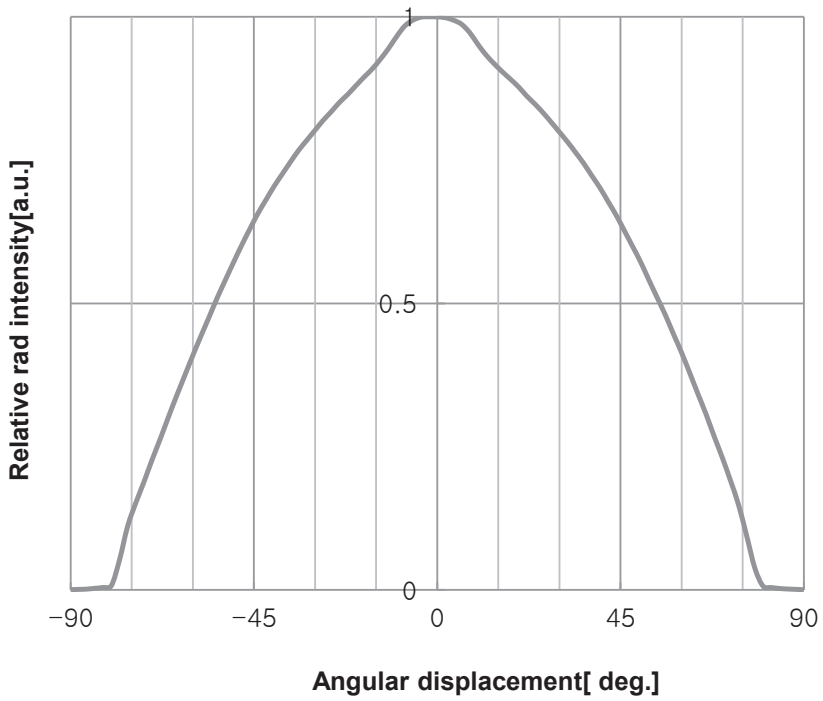

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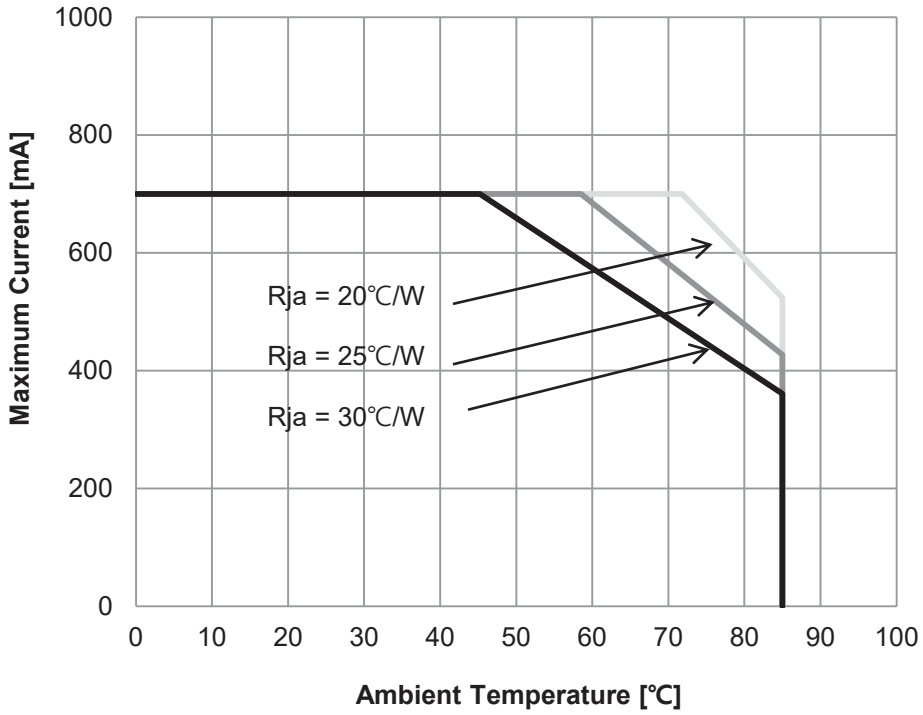
Fig 9. Maximum Forward Current vs. Ambient Temperature, Tjmax= 125



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Binning Structure

Table 3. Binning Structure, IF=500mA

Y_1			Y_2 Y_3			Y_4		
Wp [nm]			Radiant Flux [mW]			Vf [V]		
BIN	MIN	MAX	BIN	MIN	MAX	BIN	MIN	MAX
			I5	520	570	**a**	3.0	3.4
			J1	570	630	**b**	3.4	3.8
			J2	630	690	**c**	3.8	4.2
j	360	370	**J3**	690	760	**d**	4.2	4.6
			J4	760	840			

Table 4. Ranks :

Binning Code	Description	Unit
Y_1	Peak Wavelength	nm
Y_2Y_3	Radiant Flux	mW
Y_4	Forward Voltage	V

Notes :
1. Peak Wavelength Measurement tolerance : ±3nm
2. Radiant Flux Measurement tolerance : ±10%
3. Forward Voltage Measurement tolerance : ±3%

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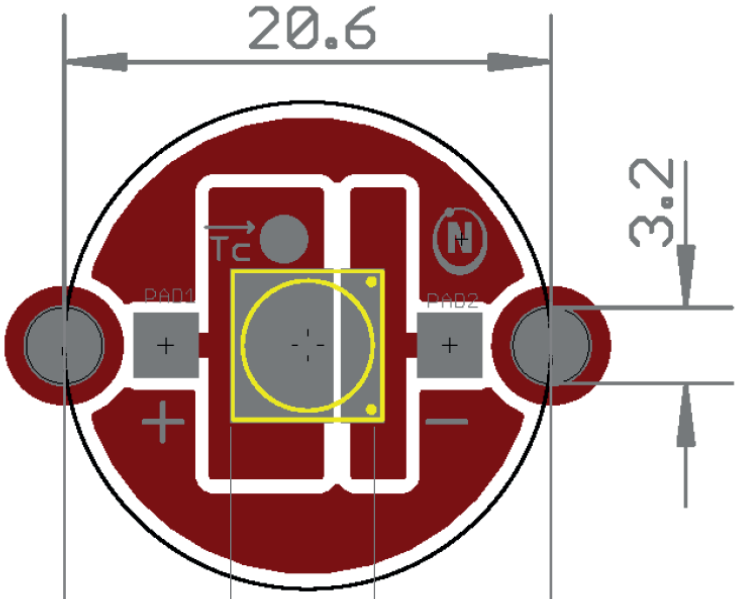
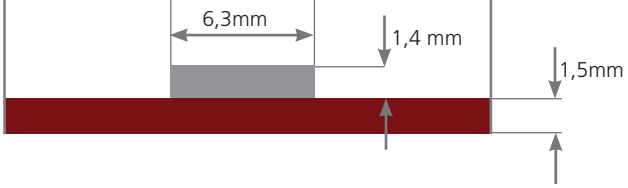
Dimensions Modul

PCB material: 1,5mm aluminium, white solder resist

Top View



Side View



(1) All dimensions are in millimeters.
(2) Scale : none
(3) Undefined tolerance is ±0.2mm

CAUTION / ACHTUNG

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation. This can be harmful to your eyes and skin
- Wear procective eyewear to avoid exposure to UV light.
- Attach caution labels to your products which contain UV LEDs

Avoid direct eye and skin exposure to UV light.
Keep out of reach of children.

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Hinweise

- According to DIN EN 62031, the modules have to be evaluated as integrated modules and need to be tested in the lamp / application.
- Transient overvoltage can damage the module.
- The electrical safety of the module has to be evaluated in the application.
- A conformity test must be carried out after installation in the application.
- The components on the LED module are sensitive to electrostatic discharge (ESD)
- and electrical overstress (EOS).
- LEDs are encapsulated with silicon for a high optic efficiency.
- Do not touch the silicon with sharp or pointy objects such as tweezers.
- Fingerprints on the silicon may affect the optical characteristics.
- UV or sunlight may affect/discolor the silicon socketing.
- Do not use dissolver-containing glue.
- Do not modify the module.
- Only use tools specified for the voltage.
- Do not touch any parts, components or connectors on the PCB while the product is in operation.
- Do not change or modify the connecting cable while the module is in operation.
- Avoid solder beads, flux remains etc. to avoid short-circuits.
- Please store the LEDs in vacuum sealed bags to avoid dust.
- Do not exert mechanical pressure on the module since even low application of force can damage the components. Do not expose the module to high temperature, high humidity and direct sunlight.
- Do not cover or pot the LEDs with a different potting material such as Epoxy, Urethan.
- Any additional molding of the LED module is not recommended as the LED might be damaged by unqualified potting materials or methods. The optical characteristics of the LEDs might be changed by any kind of molding.
- Do not use sulfur-containing materials in the environment of the modules.
- Do not operate or mount the module in an environment with high humidity or gases such as CI, H2S, NH3, SO2, NOX, etc.
- Corrosion damage resulting from contact of the LED module with moisture and condensation water cannot be acknowledged as defect.
- The correct thermal management of the LED application has to be ensured by the customer. Insufficient thermal management may cause damage to the LED or to other components. A sufficient heat transfer has to be ensured by using a heat sink or similar.
- Only operate the LED module using power supply in accordance to the technical specification.
- Be aware of the correct polarity
- The start-up of the LED modules (with power supply) must be carried out according to instructions of an electrically skilled person.
- Due to the physical characteristics of the PCB, twisting and warping in the following dimensions may occur:
  - » ≤ 1,5% at ≥ 1,5 mm base material
  - » ≤ 2% at 1,0 mm base material
  - » (% referring to the length resp. width of the LED module)

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