



TALEXmodule SLE G4 6mm R SNC, SLE G4 10mm R SNC
TALEXmodule SLE ESSENCE

Product description

- For general lighting application
- Typ. luminous flux category: 300/600/800/1,200 lm
- High efficacy up to 133 lm/W for the LED module at $t_p = 25^\circ\text{C}$
- Small LES (light emitting surface) diameter enables narrow beam angle for spotlights
- Excellent thermal management by COB technology
- Uniform radiation with Dam&Fill technology
- Housing for LES10 is available as an option
- Cooling required
- Flexible operating modes



Standards, page 4

Colour temperatures and tolerances, page 9 and 10

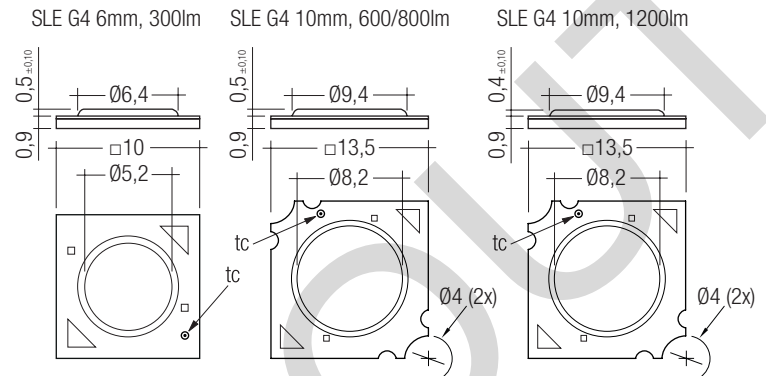




TALEXmodule SLE G4 6mm R SNC, SLE G4 10mm R SNC TALEXmodule SLE ESSENCE

Technical data

Beam characteristic	115°
Ambient temperature t_a	-30 ... +75 °C
t_{p_rated} temperature ^①	65 °C
Max. t_c point temperature ^①	up to 100 °C
Risk group (EN 62471:2008)	1
Type of protection	IP00



Dimensions in mm

Ordering data

Type	Article number	Colour temperature	Connection cable	Packaging	Weight per pc.
SLE G4 6mm 300lm 827 R SNC	28000817	2,700 K	no	50 pc(s).	0.001 kg
SLE G4 6mm 300lm 830 R SNC	28000818	3,000 K	no	50 pc(s).	0.001 kg
SLE G4 10mm 600lm 827 R SNC	28000821	2,700 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 600lm 830 R SNC	28000822	3,000 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 800lm 827 R SNC	28000825	2,700 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 800lm 830 R SNC	28000826	3,000 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 800lm 840 R SNC	28001217	4,000 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 1200lm 827 R SNC	28000829	2,700 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 1200lm 830 R SNC	28000830	3,000 K	no	36 pc(s).	0.001 kg
SLE G4 10mm 1200lm 840 R SNC	28000831	4,000 K	no	36 pc(s).	0.001 kg

Specific technical data

Type	Photo-metric code	Forward current ^{② ④ ⑤}	Luminous flux at $t_p = 25\text{ °C}$ ^②	Luminous flux at $t_p = 65\text{ °C}$ ^②	Power consumption ^⑥	Min. forward voltage at $t_p = 65\text{ °C}$	Max. forward voltage at $t_p = 25\text{ °C}$	Luminous efficacy module at $t_p = 25\text{ °C}$	Luminous efficacy module at $t_p = 65\text{ °C}$	Colour rendering index CRI	Energy classification
SLE G4 6mm 300lm 827 R SNC	827/349	350 mA	414 lm	362 lm	3.07 W	8.11 V	9.64 V	129 lm/W	116 lm/W	82	A+
SLE G4 6mm 300lm 830 R SNC	831/349	350 mA	427 lm	374 lm	3.07 W	8.11 V	9.64 V	133 lm/W	120 lm/W	82	A+
SLE G4 10mm 600lm 827 R SNC	827/349	700 mA	798 lm	705 lm	6.36 W	8.43 V	9.96 V	122 lm/W	110 lm/W	82	A+
SLE G4 10mm 600lm 830 R SNC	831/349	700 mA	830 lm	737 lm	6.36 W	8.43 V	9.96 V	128 lm/W	115 lm/W	82	A+
SLE G4 10mm 800lm 827 R SNC	827/349	250 mA	1,081 lm	944 lm	9.11 W	33.93 V	39.91 V	115 lm/W	105 lm/W	82	A+
SLE G4 10mm 800lm 830 R SNC	831/349	250 mA	1,109 lm	980 lm	9.11 W	33.93 V	39.91 V	118 lm/W	109 lm/W	82	A+
SLE G4 10mm 800lm 840 R SNC	841/349	250 mA	1,210 lm	1,050 lm	9.11 W	33.93 V	39.91 V	127 lm/W	116 lm/W	82	A+
SLE G4 10mm 1200lm 827 R SNC	827/349	350 mA	1,480 lm	1,274 lm	12.66 W	33.53 V	39.63 V	112 lm/W	102 lm/W	82	A+
SLE G4 10mm 1200lm 830 R SNC	831/349	350 mA	1,535 lm	1,349 lm	12.66 W	33.53 V	39.63 V	117 lm/W	108 lm/W	82	A+
SLE G4 10mm 1200lm 840 R SNC	841/349	350 mA	1,593 lm	1,374 lm	12.66 W	33.53 V	39.63 V	122 lm/W	110 lm/W	82	A+

^① If the max. temperature limits are exceeded, the life of the system will be greatly reduced or the system may be damaged.

The temperature of the TALEXmodule at the t_p -point is to be measured in the thermally stable state with a temperature sensor or temperature-sensitive sticker as per EN 60598-1. For the precise position of the t_p point see the drawing above.

^② Tolerance range for optical data: $\pm 10\%$.

^③ Exceeding the max. operating current leads to an overload on the TALEXmodule. This may in turn result in a significant reduction in life-time or even destruction of the TALEXmodule.

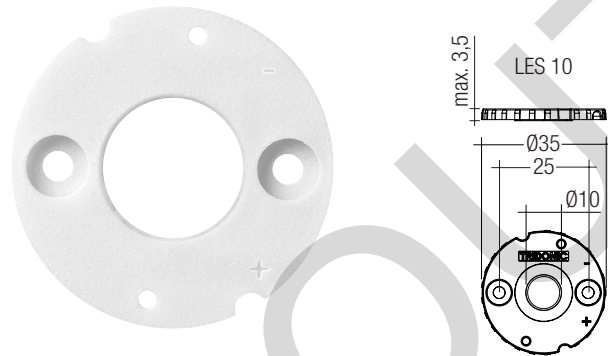
^④ Max. permissible surge current for SLE G4 6mm 300lm xxx R SNC: 1.44 A, duration max. 10 ms. Max. permissible surge current for SLE G4 10mm 600lm xxx R SNC: 2.4 A, duration max. 10 ms. Max. permissible surge current for SLE G4 10mm 800lm xxx R SNC: 0.8 A, duration max. 10 ms. Max. permissible surge current for SLE G4 10mm 1200lm xxx R SNC: 1.2 A, duration max. 10 ms.

^⑤ Max. permissible repetitive peak current for SLE G4 6mm 300lm xxx R SNC: 720 mA. Max. permissible repetitive peak current for SLE G4 10mm 600lm xxx R SNC: 1,200 mA. Max. permissible repetitive peak current for SLE G4 10mm 800lm xxx R SNC: 400 mA. Max. permissible repetitive peak current for SLE G4 10mm 1200lm xxx R SNC: 600 mA.

^⑥ All values at $t_p = 65\text{ °C}$.

Product description

- Housing for LES 10
- Diameter: 35 mm



Ordering data

Type	Article number	Packaging bag	Weight per pc.
SLE G4 HOUSING LES 10	28001038	100 pc(s).	0.002 kg

1. Standards

EN 62031
EN 62471
EN 61547
EN 55015
IEC 62717

1.1 Photometric code

Key for photometric code, e. g. 830 / 469

1 st digit	2 nd + 3 rd digit	4 th digit	5 th digit	6 th digit
Code	CRI	Colour temperature in Kelvin x 100	McAdam after 25% of the life-time (max.6000h)	Luminous flux after 25% of the life-time (max.6000h)
7	70 – 79	initial	(max.6000h)	Code
8	80 – 89			Luminous flux
9	≥90			
				7 ≥ 70 %
				8 ≥ 80 %
				9 ≥ 90 %

2. Thermal details

2.1 tp point, ambient temperature and life-time

The temperature at tp reference point is crucial for the light output and life-time of a TALEX product.

The operating temperature of a TALEX product is crucial for the light output, the product life-time but also for the product safety.

The thermal limits can be checked at the tp/tc point and at tr.

In chapter 5.3 the lumen maintenance is shown in relation to the temperature at tp. tp,rated shows the temperature at which the rated values are reached.

tc shows the thermal limit for safety reason und must never be exceeded under normal conditions.

For the interchangeability with other Zhaga products, tr,max is specified directly at the thermal interface to the heatsink of the luminaire.

For TALEXmodule SLE G4 R SNC a tp temperature of 65 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and life-time.

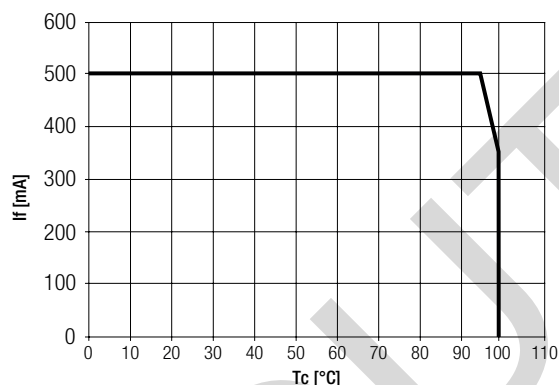
Compliance with the maximum permissible reference temperature at the tp point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.

2.2 Thermal behaviour

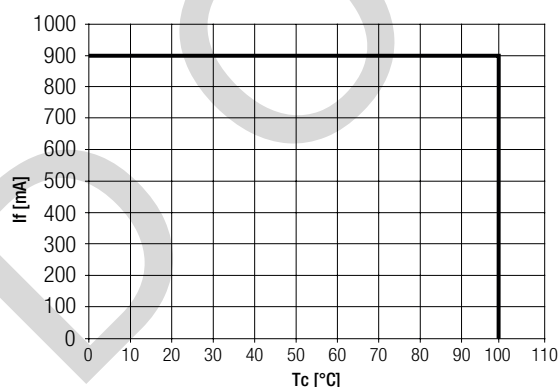
storage temperature	-30 ... +80 °C
operating temperature ta	-30 ... +75 °C
tp (at typ. current)	65 °C
tc temperature as a function of the current	acc. to the derating curves

2.3 Derating curves

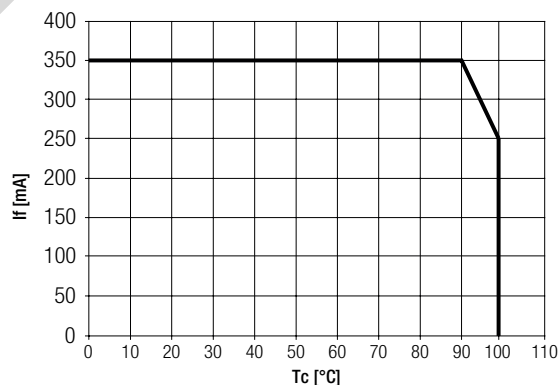
SLE G4 6mm 300lm xxx R SNC



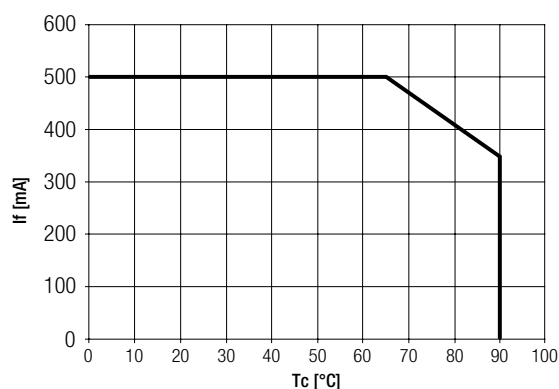
SLE G4 10mm 600lm xxx R SNC



SLE G4 10mm 800lm xxx R SNC



SLE G4 10mm 1200lm xxx R SNC



2.4 Thermal design and heat sink

The rated life of TALEX products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the TALEXmodule SLE G4 R SNC will be greatly reduced or the TALEXmodule SLE G4 R SNC may be destroyed.

Therefore the TALEXmodule SLE G4 R SNC needs to be mounted onto a heat sink heat sink which does not exceed the value for $R_{th,max}$.

Tridonic's excellent thermal design for the TALEXmodule SLE G4 R SNC products provides the lowest thermal resistance and therefore allowing new compact designs without sacrificing quality, safety and life-time.

2.5 Heat sink values

SLE G4 6mm 300lm xxx R SNC

ta	tp	Operating current	$R_{th,hs-a}$	Cooling area
25 °C	65 °C	350 mA	18.31 K/W	36 cm ²
30 °C	65 °C	350 mA	15.96 K/W	42 cm ²
40 °C	65 °C	350 mA	11.26 K/W	59 cm ²
50 °C	65 °C	350 mA	6.56 K/W	102 cm ²

SLE G4 10mm 600lm xxx R SNC

ta	tp	Operating current	$R_{th,hs-a}$	Cooling area
25 °C	65 °C	700 mA	8.71 K/W	77 cm ²
30 °C	65 °C	700 mA	7.59 K/W	88 cm ²
40 °C	65 °C	700 mA	5.34 K/W	125 cm ²
50 °C	65 °C	700 mA	3.10 K/W	215 cm ²

SLE G4 10mm 800lm xxx R SNC

ta	tp	Operating current	$R_{th,hs-a}$	Cooling area
25 °C	65 °C	250 mA	5.92 K/W	113 cm ²
30 °C	65 °C	250 mA	5.15 K/W	130 cm ²
40 °C	65 °C	250 mA	3.60 K/W	185 cm ²
50 °C	65 °C	250 mA	2.05 K/W	325 cm ²

SLE G4 10mm 1200lm xxx R SNC

ta	tp	Operating current	$R_{th,hs-a}$	Cooling area
25 °C	65 °C	350 mA	4.14 K/W	165 cm ²
30 °C	65 °C	350 mA	3.59 K/W	190 cm ²
40 °C	65 °C	350 mA	2.49 K/W	274 cm ²
50 °C	65 °C	350 mA	1.38 K/W	495 cm ²

Thermal resistance $R_{th,j-p}$

Luminous flux	$R_{th,j-p}$
300 lm	4.74 K/W
600 lm	2.89 K/W
800 lm	2.61 K/W
1,200 lm	2.02 K/W

Notes

The actual cooling can differ because of the material, the structural shape, outside influences and the installation situation. A thermal connection between TALEXmodule SLE G4 R SNC and heat sink with heat-conducting paste or heat conducting adhesive film is absolutely necessary.

Additionally the TALEXmodule SLE G4 R SNC has to be fixed on the heat sink with M3 screws to optimise the thermal connection.

Use of thermal interface material with thermal conductivity of $\lambda > 1 \text{ W/mK}$ and layer thickness of interface material with max. 50 μm or a similar interface material where the quotient of layer thickness and thermal conductivity $b < 50 \mu\text{mmK/W}$.

3. Installation / wiring

3.1 Electrical supply/choice of LED Driver

TALEXmodule SLE G4 R SNC from Tridonic are not protected against overvoltages, overcurrents, overloads or short-circuit currents. Safe and reliable operation can only be guaranteed in conjunction with a LED Driver which complies with the relevant standards. The use of TALEX LED Drivers from Tridonic in combination with TALEXmodule SLE G4 R SNC guarantees the necessary protection for safe and reliable operation.



TALEXmodule SLE G4 R SNC are basic isolated up to 50 V against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED Driver (also against earth) is above 50 V, an additional isolation between LED module and heat sink is required (for example by isolated thermal pads) or by a suitable luminaire construction.

At voltages > 60 V an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

If a LED Driver other than Tridonic TALEXconverter is used, it must provide the following protection:

- Short-circuit protection
- Overload protection
- Overtemperature protection

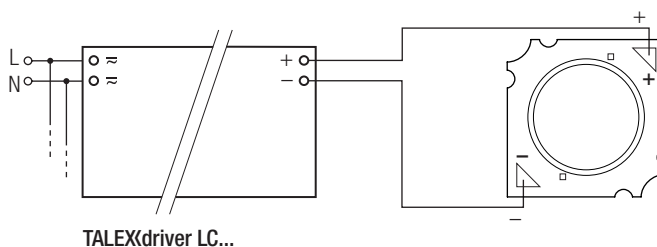


TALEXmodule SLE G4 R SNC must be supplied by a constant current LED Driver.

Operation with a constant voltage LED Driver will lead to an irreversible damage of the module.

Wrong polarity can damage the TALEXmodule SLE G4 R SNC.

3.2 Wiring example



3.3 Wiring type and cross section

The wiring has to be solid cable with a cross section of 0.5 to 0.75 mm² or with stranded wire with soldered ends with a cross section of 0.5 mm².

3.4 Mounting instruction



TALEXmodule SLE G4 R SNC from Tridonic which have to be installed on a heat sink have to be connected with heat-conducting paste or heat conducting adhesive film and fixed with M3 screws.

The fixing/cooling surface must be cleaned by removing all dirt, dust and grease before installing the TALEX modules.



None of the components of the TALEXmodule SLE G4 R SNC (substrate, LED, electronic components etc.) may be exposed to tensile or compressive stresses.

Max. torque for fixing: 0.5 Nm.

The TALEXmodule SLE G4 R SNC modules are mounted with 2 screws per module. In order not to damage the modules only rounded head screws and an additional plastic flat washer should be used.

For further information please refer to the brochure entitled "Technical Design-In-Guide SLE GEN4".



Chemical substance may harm the LED module. Chemical reactions could lead to colour shift, reduced luminous flux or a total failure of the module caused by corrosion of electrical connections.

Materials which are used in LED applications (e.g. sealings, adhesives) must not produce dissolver gas. They must not be condensation curing based, acetate curing based or contain sulfur, chlorine or phthalate. Avoid corrosive atmosphere during usage and storage.

3.5 EOS/ESD safety guidelines

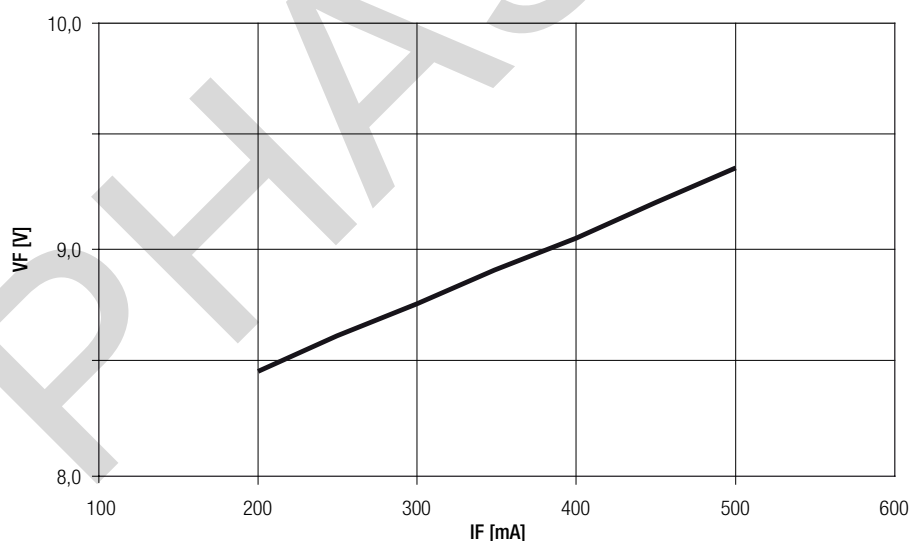


The device / module contains components that are sensitive to electrostatic discharge and may only be installed in the factory and on site if appropriate EOS/ESD protection measures have been taken. No special measures need be taken for devices/modules with enclosed casings (contact with the pc board not possible), just normal installation practice. Please note the requirements set out in the document EOS / ESD guidelines (Guideline_EOS_ESD.pdf) at: <http://www.tridonic.com/esd-protection>

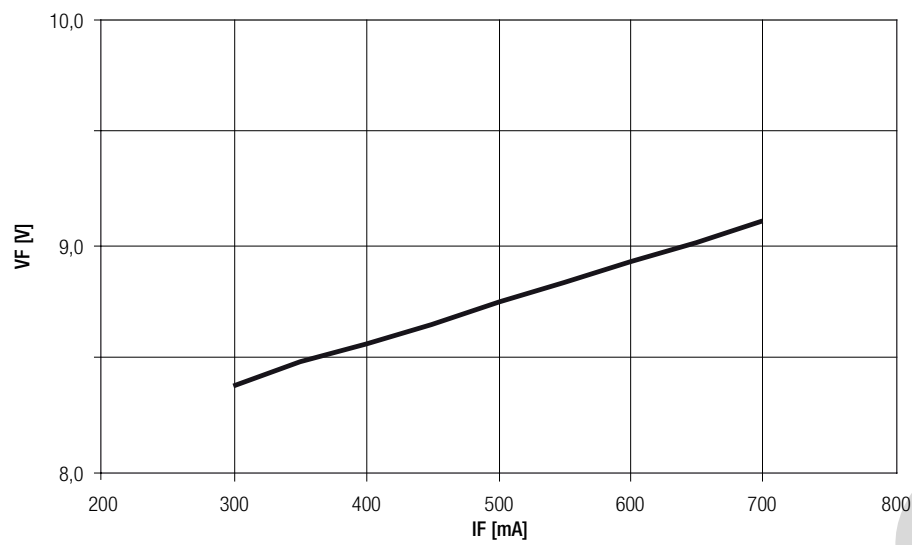
4. Electrical values

4.1 Forward voltage vs. forward current

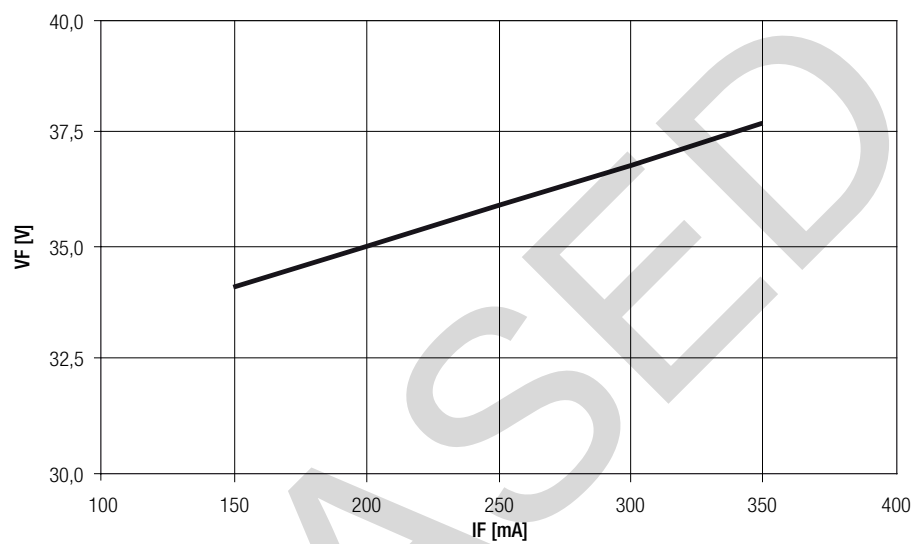
300 lm:



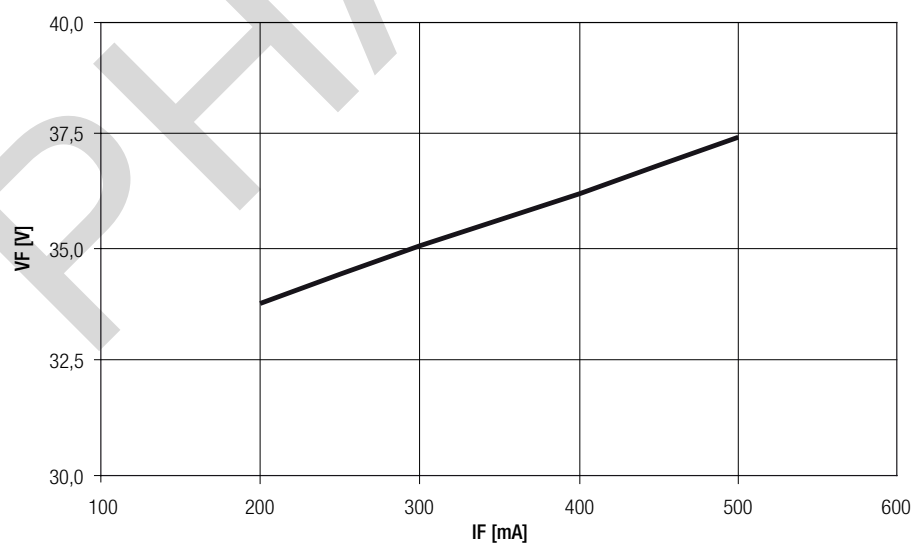
600 lm:



800 lm:

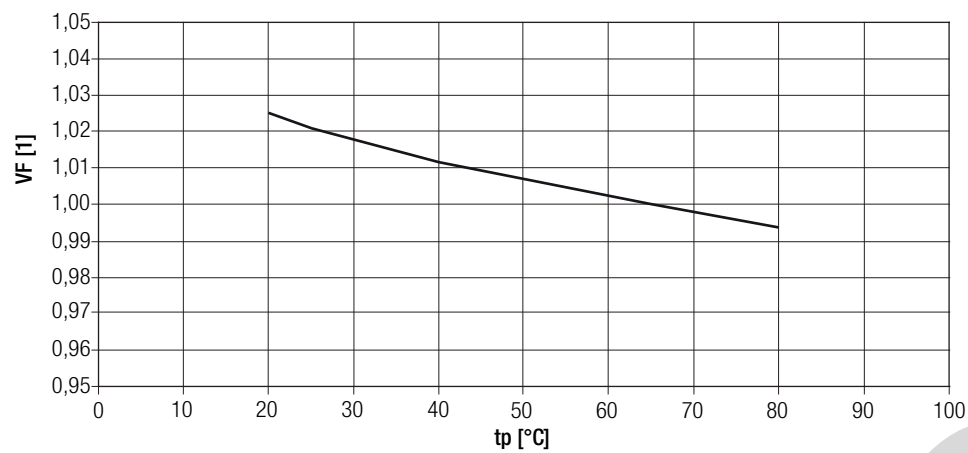


1200 lm:



The diagrams based on statistic values.
The real values can be different.

4.2 Forward voltage vs. T_p temperature



The diagrams based on statistic values.
The real values can be different.

5. Photometric characteristics

5.1 Coordinates and tolerances according to CIE 1931

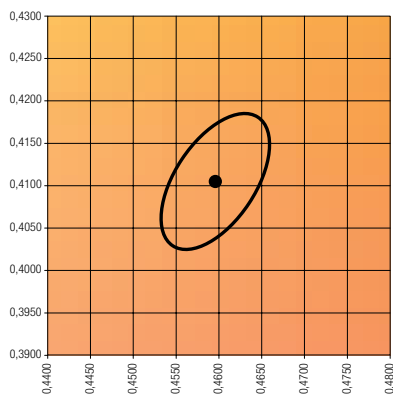
The specified colour coordinates are measured integral after a settling time of 100 ms. The current impuls depends on the module type.

Module type	Current impulse
SLE G4 6mm 300lm xxx R SNC	350 mA
SLE G4 10mm 600lm xxx R SNC	700 mA
SLE G4 10mm 800lm xxx R SNC	250 mA
SLE G4 10mm 1200lm xxx R SNC	350 mA

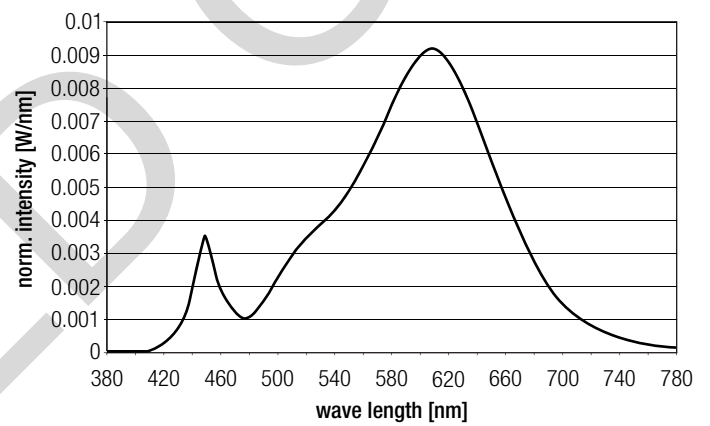
The ambient temperature of the measurement is $t_a = 25^\circ\text{C}$.
The measurement tolerance of the colour coordinates are ± 0.01 .

2,700 K

	x0	y0
Centre	0.4599	0.4106

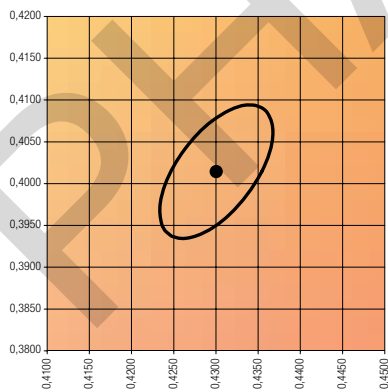


MacAdam ellipse: 3SDCM

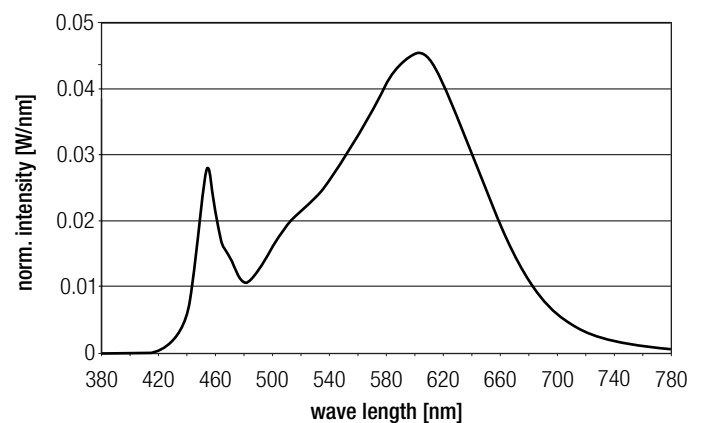


3,000 K

	x0	y0
Centre	0.4300	0.4016

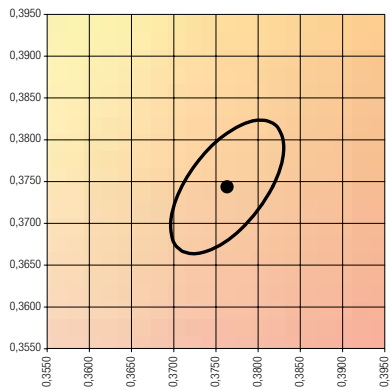


MacAdam ellipse: 3SDCM

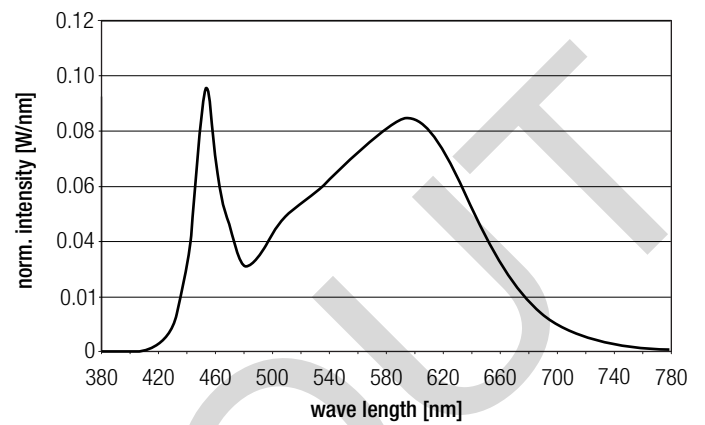


4,000 K

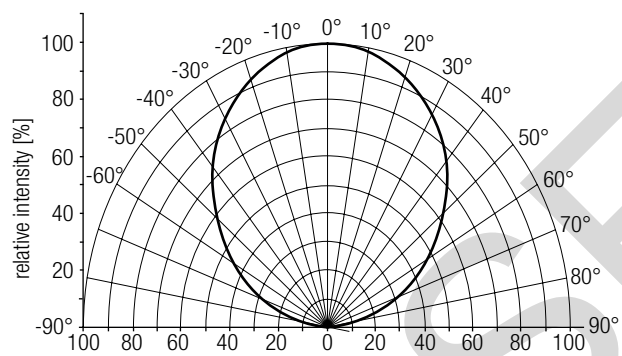
	x0	y0
Centre	0.3761	0.3740



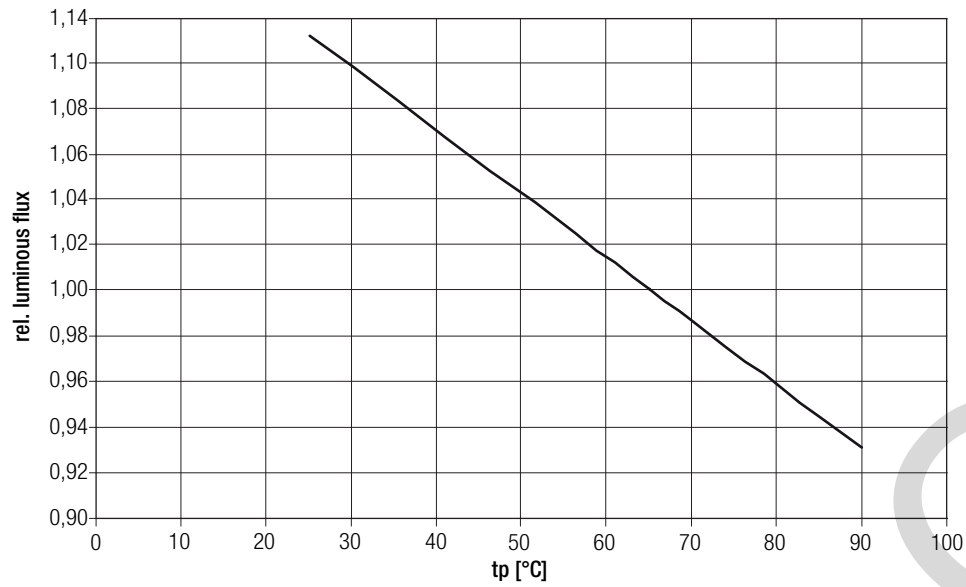
MacAdam ellipse: 3SDCM



5.2 Light distribution



5.3 Relative luminous flux vs. tp temperature



5.4 Relative luminous flux vs. forward current

