



### Module ELA G1 SNC

Modules ELA ESSENCE

#### Product description

- Edgelit panel for direct recessed mount and surface or suspended mount with accessories
- Two luminous flux range variants 2,800 or 3,800 lm
- For suspended ceiling grid measure of 600 and 625 mm
- LED system solution with outstanding system efficacy up to 101 lm/W
- Efficacy of the module up to 120 lm/W
- High colour rendering index CRI > 80
- Small colour tolerance MacAdam 4<sup>®</sup>
- UGR < 19
- Small luminous flux tolerances
- Colour temperatures 3,000, 4,000 and 6,500 K
- Diffusor material standard article: PS, diffusor material TPA article: PC
- Lightguide material: PMMA
- Long life-time: 50,000 hours
- 5-year guarantee



**Standards**, page 5

**Colour temperatures and tolerances**, page 8

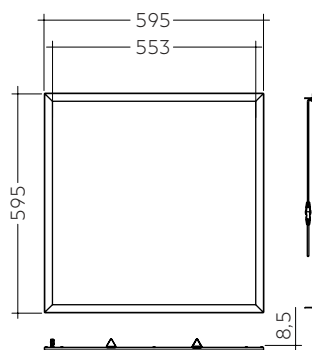


#### Module ELA G1 SNC

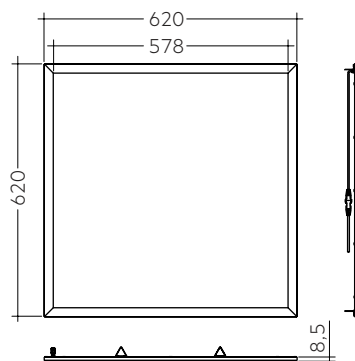
Modules ELA ESSENCE

#### Technical data

Beam characteristic	106°
Beam characteristic TPA	88°
Ambient temperature range	-20 ... +40 °C
tp rated	45 °C
tc	60 °C
Irated for 2,800 lm	700 mA
Irated for 3,800 lm	800 mA
I <sub>max</sub> for 2,800 lm	800 mA
I <sub>max</sub> for 3,800 lm	900 mA
Max. permissible LF current ripple for 2,800 lm	1,200 mA
Max. permissible LF current ripple for 3,800 lm	1,200 mA
Max. permissible peak current for 2,800 lm	1,500 mA / max. 10 ms
Max. permissible peak current for 3,800 lm	1,500 mA / max. 10 ms
Max. working voltage for insulation SELV	60 V
Insulation test voltage	0.5 kV
ESD classification	severity level 2
Risk group (IEC 62471:2008) <sup>®</sup>	RG1
Classification acc. to IEC 62031	Independent
Type of protection	IP20



ELA G1 600x600mm SNC



ELA G1 625x625mm SNC

#### Ordering data

Type	Article number	Colour temperature	Packaging carton	Weight per pc.
ELA G1 600x600mm 2800lm 830 SNC	28002338	3,000 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 2800lm 840 SNC	28002339	4,000 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 2800lm 865 SNC	28002340	6,500 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 3800lm 830 SNC	28002341	3,000 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 3800lm 840 SNC	28002342	4,000 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 3800lm 865 SNC	28002343	6,500 K	5 pc(s).	2.33 kg
ELA G1 600x600mm 3800lm 830 SNC TPA	28002423	3,000 K	5 pc(s).	2.52 kg
ELA G1 600x600mm 3800lm 840 SNC TPA	28002424	4,000 K	5 pc(s).	2.52 kg
ELA G1 625x625mm 2800lm 830 SNC	28002344	3,000 K	5 pc(s).	2.52 kg
ELA G1 625x625mm 2800lm 840 SNC	28002345	4,000 K	5 pc(s).	2.52 kg
ELA G1 625x625mm 3800lm 830 SNC	28002346	3,000 K	5 pc(s).	2.52 kg
ELA G1 625x625mm 3800lm 840 SNC	28002347	4,000 K	5 pc(s).	2.52 kg

## Specific technical data

Type <sup>①</sup>	Photo-metric code	Typ. luminous flux at tp = 25 °C <sup>②</sup>	Typ. luminous flux at tp = 45 °C <sup>②</sup>	Typ. forward current	Min. forward voltage at tp = 45 °C	Max. forward voltage at tp = 25 °C	Typ. power consumption at tp = 45 °C <sup>②</sup>	Efficacy of the module at tp = 25 °C	Efficacy of the module at tp = 45 °C	Efficacy of the system at tp = 45 °C	Colour rendering index CRI
<b>ELA G1 600x600mm 2800lm 830 SNC</b>	830/459	2,710 lm	2,660 lm	700 mA	33.0 V	36.6 V	23.8 W	113 lm/W	112 lm/W	96 lm/W	> 80
<b>ELA G1 600x600mm 2800lm 840 SNC</b>	840/459	2,860 lm	2,800 lm	700 mA	33.0 V	36.6 V	23.8 W	120 lm/W	118 lm/W	101 lm/W	> 80
<b>ELA G1 600x600mm 2800lm 865 SNC</b>	865/459	2,860 lm	2,800 lm	700 mA	33.0 V	36.6 V	23.8 W	120 lm/W	118 lm/W	101 lm/W	> 80
<b>ELA G1 600x600mm 3800lm 830 SNC (TPA)</b>	830/459	3,620 lm	3,550 lm	800 mA	35.7 V	43.0 V	32.4 W	111 lm/W	108 lm/W	93 lm/W	> 80
<b>ELA G1 600x600mm 3800lm 840 SNC (TPA)</b>	840/459	3,870 lm	3,800 lm	800 mA	35.7 V	43.0 V	32.4 W	119 lm/W	117 lm/W	101 lm/W	> 80
<b>ELA G1 600x600mm 3800lm 865 SNC</b>	865/459	3,870 lm	3,800 lm	800 mA	35.7 V	43.0 V	32.4 W	119 lm/W	117 lm/W	101 lm/W	> 80
<b>ELA G1 625x625mm 2800lm 830 SNC</b>	830/459	2,710 lm	2,660 lm	700 mA	33.0 V	36.6 V	23.8 W	113 lm/W	112 lm/W	96 lm/W	> 80
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<sup>①</sup> Integral measurement over the complete module.

<sup>②</sup> Tolerance range for optical and electrical data: ±10 %.

<sup>③</sup> Measured at Imax.

## ELA mounting accessories

**Product description ACE Surface mount kit**

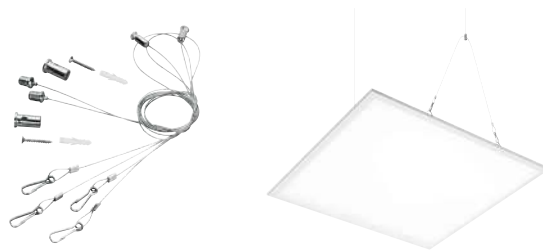
- Aluminum frame for easy surface mounting

**Product description ACE Suspension kit**

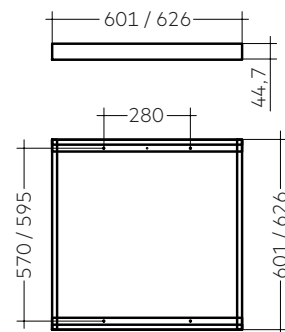
- Steel wire system for suspended mounting
- Suspension height up to 1.2 m



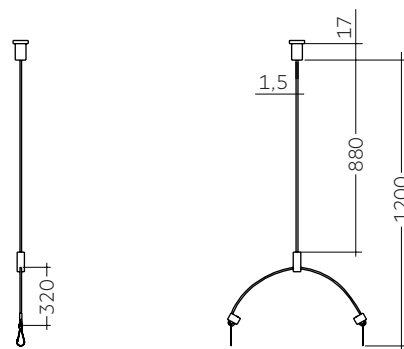
ACE Surface mount kit Al white



ACE Suspension kit Steel silver



ACE Surface mount kit Al white



ACE Suspension kit Steel silver

**Ordering data**

Type	Article number	Colour	Packaging	Weight per pc.
ACE 600 Surface mount kit Al white	28002368	White	20 pc(s).	0.69 kg
ACE 625 Surface mount kit Al white	28002376	White	20 pc(s).	0.72 kg
ACE Suspension kit Steel silver	28002369	Silver	100 pc(s).	0.12 kg

## 1. Standards

IEC 62031  
IEC 62471  
IEC 61000-4-2  
IEC 62717

### 1.1 Photometric code

Key for photometric code, e. g. 830 / 359

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

### 1.2 Energy classification

Type	Energy classification
ELA G1 SNC	A+

## 2. Thermal details

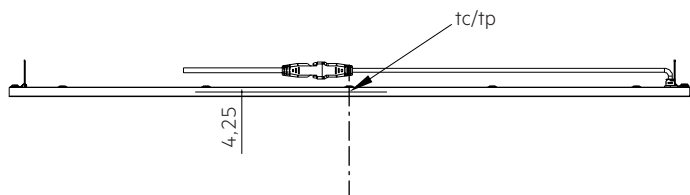
### 2.1 tc point, ambient temperature and life-time

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

For ELA a tp temperature of 45 °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 tc 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.

The tc and tp temperature of LED modules from Tridonic are measured at the same reference point.



### 2.2 Storage and humidity

Storage temperature	-20 ... +50 °C
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Operation only in non condensing environment.

Humidity during processing of the module should be between 0 to 70 %.

### 2.3 Thermal design and heat sink

The rated life of LED products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the ELA will be greatly reduced or the ELA may be destroyed.

## 3. Installation / wiring

### 3.1 Electrical supply/choice of LED Driver

ELA modules 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 LED Driver from Tridonic in combination with ELA modules guarantees the necessary protection for safe and reliable operation.

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

- Short-circuit protection
- Overload protection
- Overtemperature protection



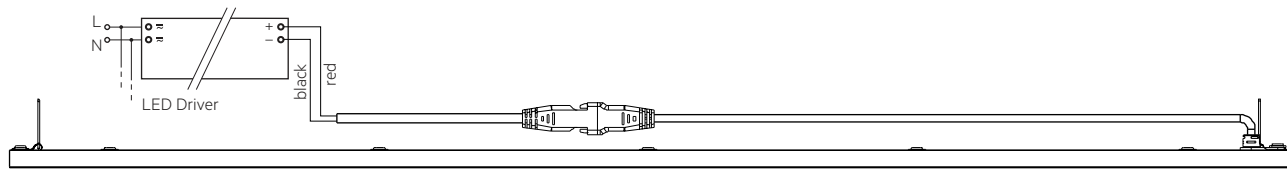
ELA modules must be supplied by a constant current LED Driver. Operation with a constant voltage LED Driver will lead to an irreversible damage of the module.

Wrong polarity can damage the ELA.



ELA modules must be operated with SELV LED Drivers.

### 3.2 Wiring



### 3.4 Mounting instruction



None of the components of the ELA (substrate, LED, electronic components etc.) may be exposed to tensile or compressive stresses.

Recessed mounting for suspended ceilings with grid measure of 600 or 625 mm.

For surface mounted applications use the ACE Surface mount kit and for suspended mounting the ACE Suspension kit.

For more details see mounting instructions.



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. Life-time

### 4.1 Life-time, lumen maintenance and failure rate

The light output of an LED Module decreases over the life-time, this is characterized with the L value.

L70 means that the LED module will give 70 % of its initial luminous flux. This value is always related to the number of operation hours and therefore defines the life-time of an LED module.

As the L value is a statistical value and the lumen maintenance may vary over the delivered LED modules.

The B value defines the amount of modules which are below the specific L value, e.g. L70B10 means 10 % of the LED modules are below 70 % of the initial luminous flux, respectively 90 % will be above 70 % of the initial value. In addition the percentage of failed modules (fatal failure) is characterized by the C value.

The F value is the combination of the B and C value. That means for F degradation and complete failures are considered, e.g. L70F10 means 10 % of the LED modules may fail or be below 70 % of the initial luminous flux.

### 4.2 Lumen maintenance for ELA

ELA G1 2800lm SNC:

Forward current	tp temperature	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
700 mA	45 °C	11,000 h	13,000 h	22,000 h	26,000 h	46,000 h	> 50,000 h
	55 °C	10,000 h	12,000 h	20,000 h	23,000 h	44,000 h	> 50,000 h
	66 °C	9,000 h	10,000 h	18,000 h	21,000 h	43,000 h	> 50,000 h

ELA G1 3800lm SNC:

Forward current	tp temperature	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
800 mA	45 °C	11,000 h	13,000 h	22,000 h	26,000 h	46,000 h	> 50,000 h
	55 °C	10,000 h	12,000 h	20,000 h	23,000 h	44,000 h	> 50,000 h
	66 °C	9,000 h	10,000 h	18,000 h	21,000 h	43,000 h	> 50,000 h

Lumen maintenance values are based on LM80 data. Table may be updated when more recent results are available.

### 4.3 Switching capability

25,000 cycles

Tridonic test according to IEC 62717 Cl 10.3.3  
30 s on / 30 s off at Imax

## 5. Electrical values

### 5.1 Declaration of electrical parameters

$I_{rated}$  ... Nominal operating current the module is designed for.

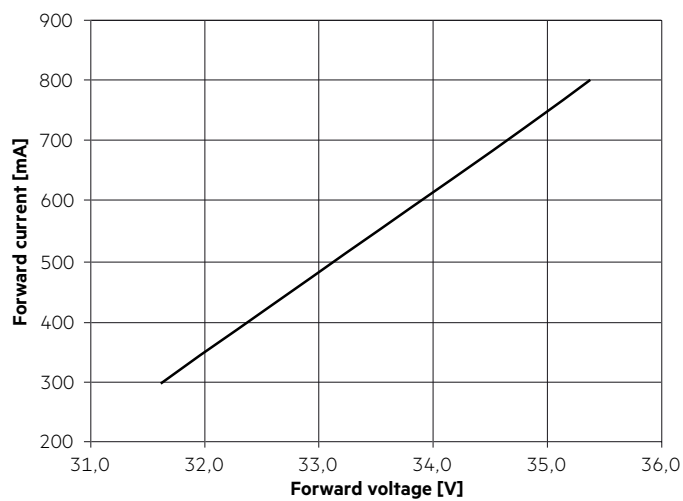
$I_{max}$  ... Max. permissible continuous operating current incl. the tolerances of the LED Driver.

Max. permissible LF current ripple ... Max. output current of the LED driver incl. Tolerances and LF current ripple must not exceed this value.

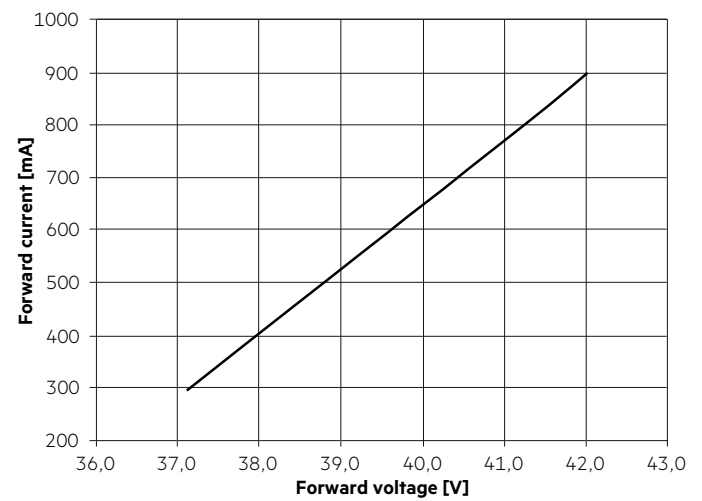
Max. permissible peak current ... The max. output peak current of the LED driver must not exceed this value.

### 5.2 Typ. forward voltage vs. forward current

ELA G1 2800lm SNC:

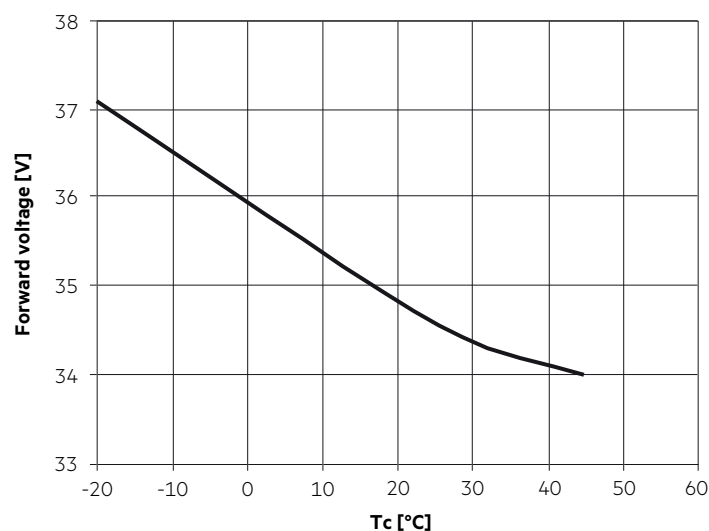


ELA G1 3800lm SNC:

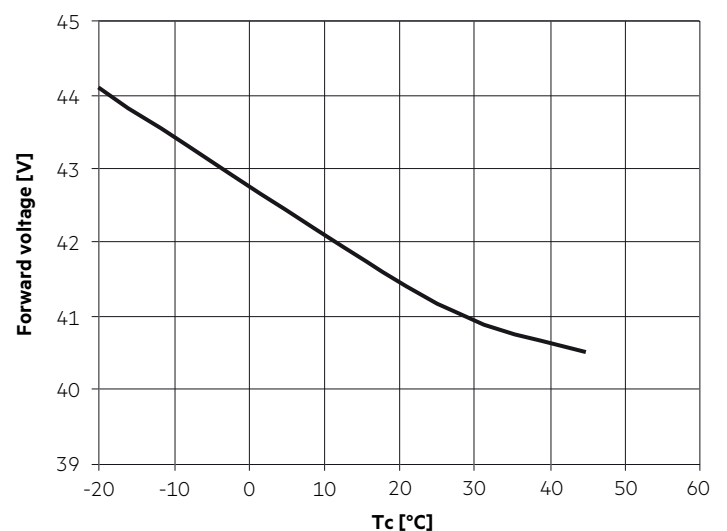


### 5.2 Forward voltage vs. tp temperature

ELA G1 2800lm SNC:



ELA G1 3800lm SNC:



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

## 6. Photometric characteristics

### 6.1 Coordinates and tolerances according to CIE 1931

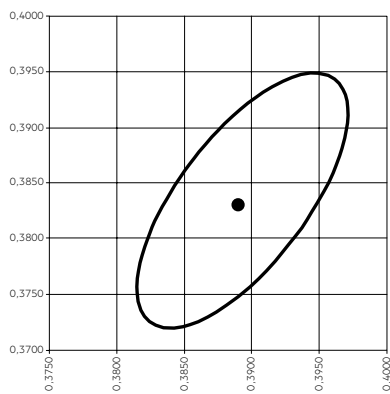
The specified colour coordinates are measured integral by a steady state at the rated current. Integration time is 100 ms.

The ambient temperature of the measurement is  $t_a = 25^\circ\text{C}$ .

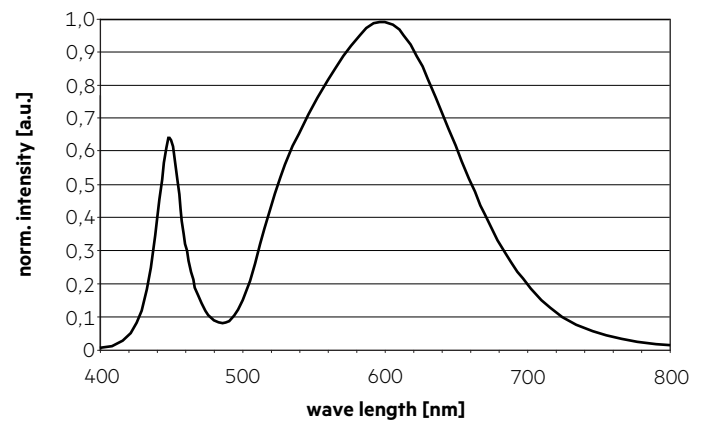
The measurement tolerance of the colour coordinates are  $\pm 0.01$ .

#### 3,000 K

	x0	y0
Centre	0.4390	0.4060

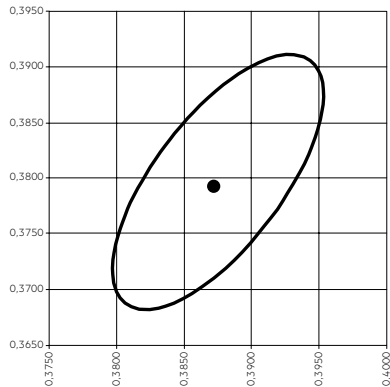


— MacAdam Ellipse: 4SDCM

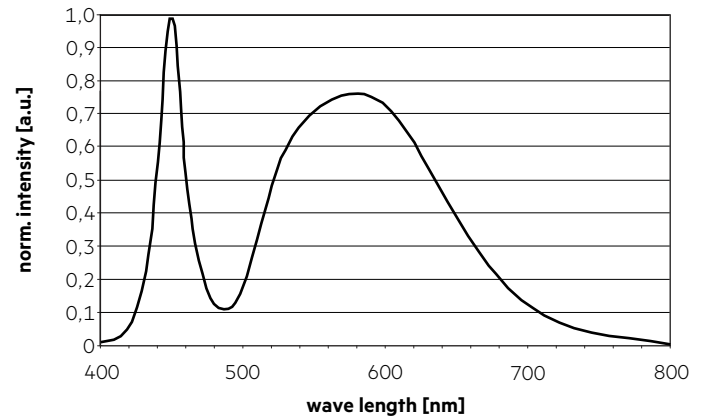


#### 4,000 K

	x0	y0
Centre	0.3880	0.3830

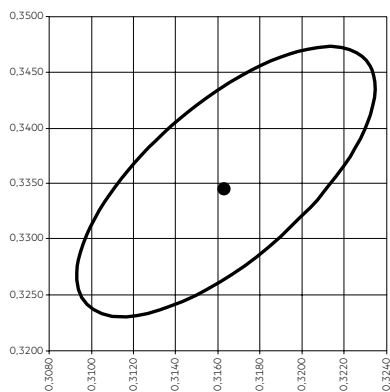


— MacAdam Ellipse: 4SDCM

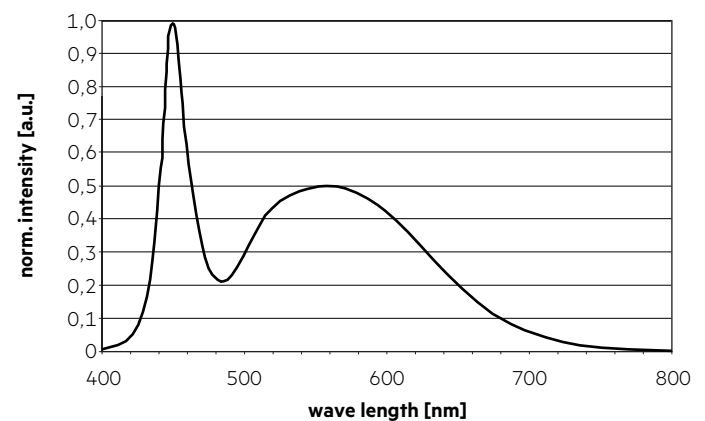


#### 6,500 K

	x0	y0
Centre	0.3163	0.3345



— MacAdam Ellipse: 4SDCM

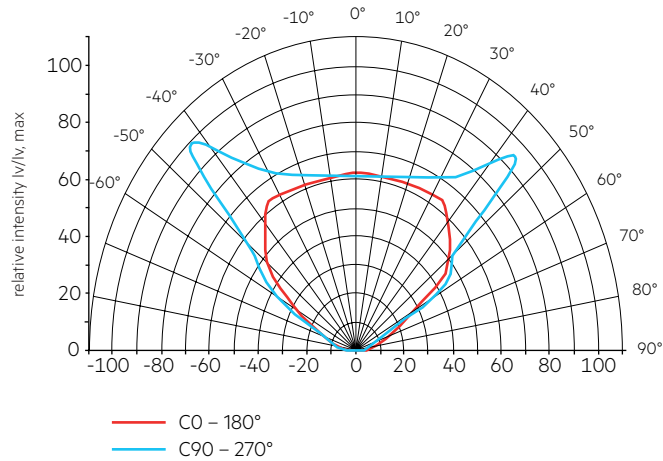




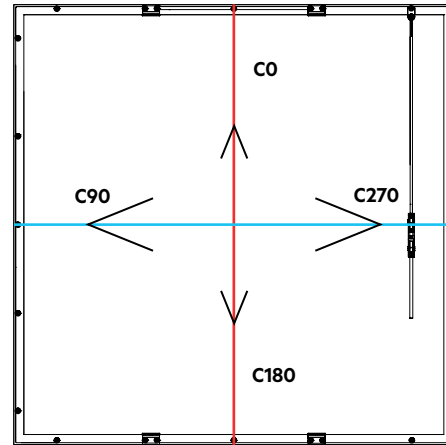
## 6.2 Light distribution

The optical design of the ELA product line ensures optimum homogeneity for the light distribution.

ELA G1 SNC:



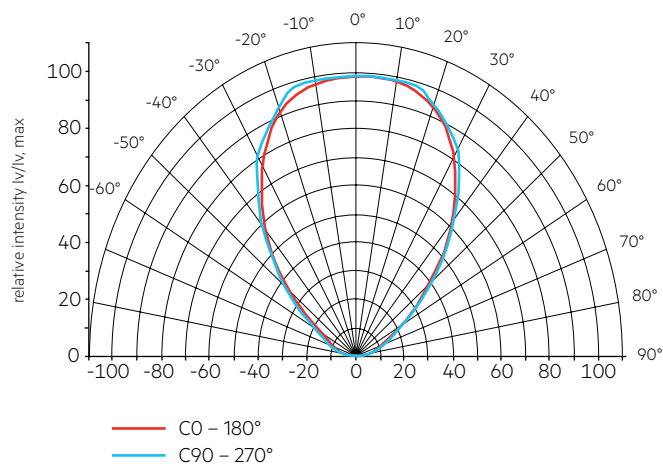
Orientation:



— C0 – 180°  
— C90 – 270°

The picture describes both C-planes (C0 – 180° / C90 – 270°) of the module.

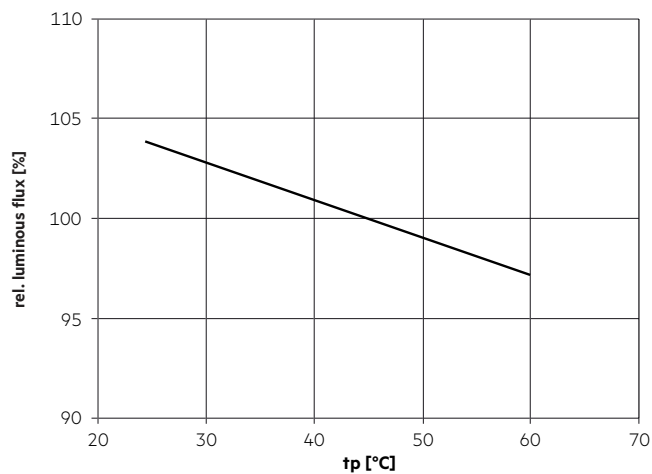
ELA G1 SNC TPA:



The colour temperature is measured integral over the complete module. The single LED light points can have deviations in the colour coordinates.

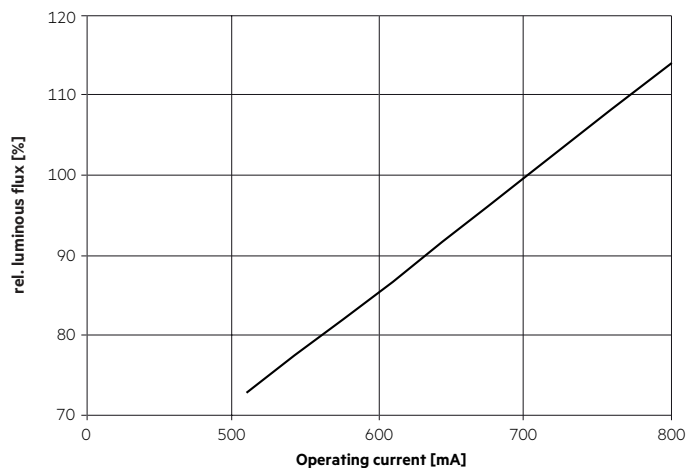
The random appearance of minor shining dots is state of the art and technologically inevitable. This does not qualify for returns or warranty claims.

### 6.3 Relative luminous flux vs. $t_p$ temperature

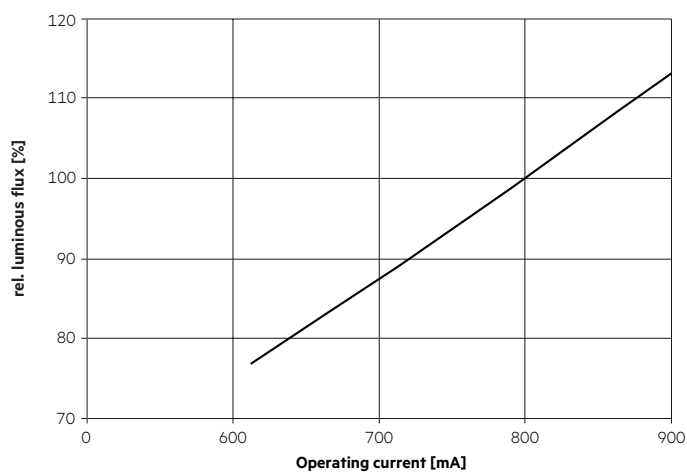


### 6.4 Relative luminous flux vs. operating current

ELA G1 2800lm SNC:



ELA G1 3800lm SNC:



## 7. Miscellaneous

### 7.1 Additional information

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://www.tridonic.com) → Services

Life-time declarations are informative and represent no warranty claim.