

Module LLE 16mm 650lm CRI90 HV ADV6

Modules LLE advanced



LLE 16x140mm 325lm HV ADV6



LLE 16x280mm 650lm HV ADV6



LLE 16x560mm 1300lm HV ADV6

Product description

- _ Ideal for compact linear luminaire designs
- _ Homogenous illumination thanks to small package distance
- _ 2 terminals for serial wiring
- _ Perfectly uniform light, even if several LED modules are used together in a line
- _ Push terminals for quick and simple wiring of LED module to LED module
- _ HE ... High Efficiency, NM ... Nominal Mode, HO ... High Output
- _ Long lifetime up to 102,000 hours
- _ 5 years guarantee (Conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Optical properties

- _ Colour temperatures 2,700, 3,000, 3,500 and 4,000 K
- _ Efficacy of the LED module 177 lm/W at Irated and tp = 25 °C
- _ High colour rendering index CRI > 90
- _ High colour consistency (MacAdam 3) ^①
- _ Small luminous flux tolerances

Mechanical properties

- _ Module dimension 16 x 140 mm, 16 x 280 mm and 16 x 560 mm
- _ Simple installation via clips or screws

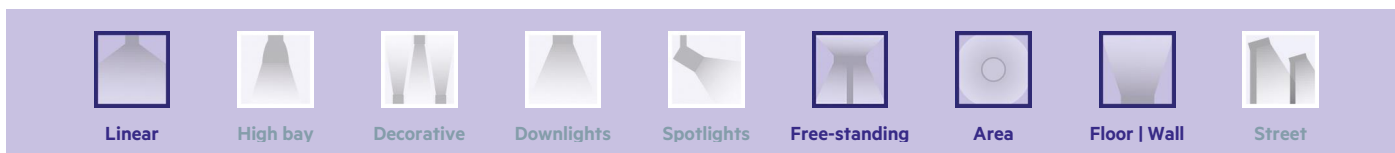
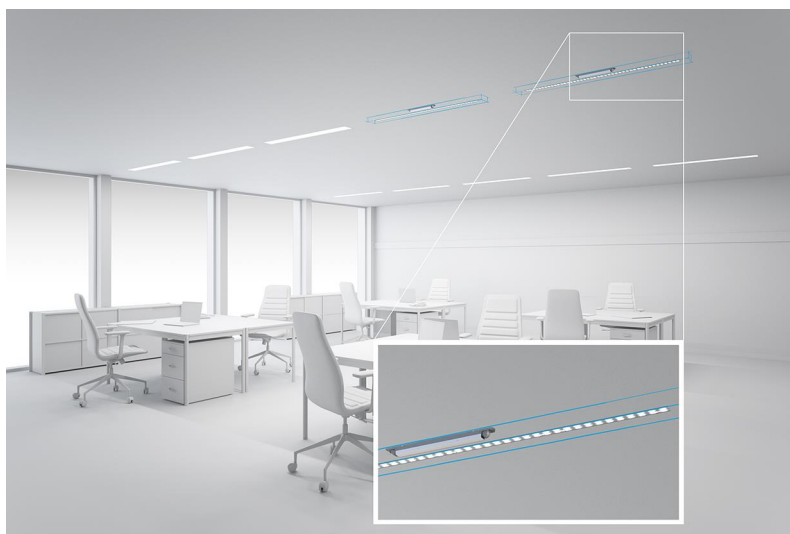
System solution

- _ Integrate compatible partner products into your final system solution:
<https://www.tridonic.com/en/int/products/accessories#partner>
- _ Combine Tridonic's LED modules and dimmable drivers to achieve an outstanding system efficacy (configuration possible via <https://setbuilder.tridonic.com/>)

^① Integral measurement over the complete module.

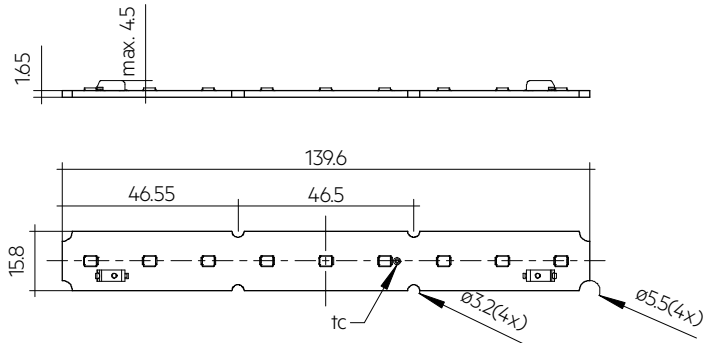
Website

<http://www.tridonic.com/28004953>

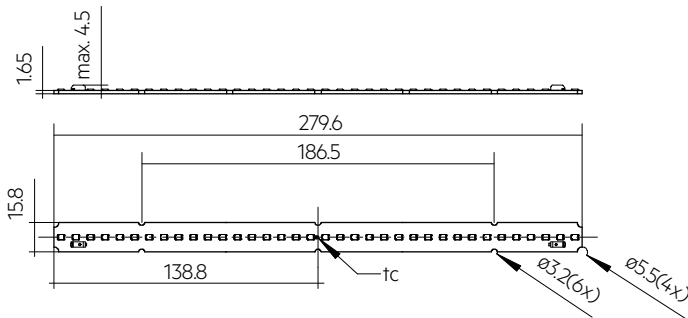


Module LLE 16mm 650lm CRI90 HV ADV6

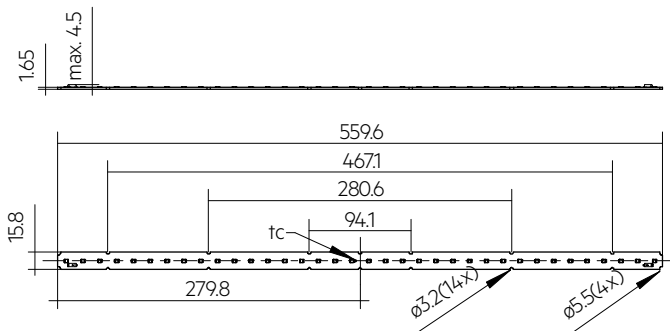
Modules LLE advanced



LLE 16x140mm 325lm HV ADV6



LLE 16x280mm 650lm HV ADV6



LLE 16x560mm 1300lm HV ADV6

Ordering data

Type	Article number	Colour temperature	Packaging, carton	Weight per pc.
LLE 16x140mm 325lm 927 HV ADV6	28004953	2,700 K	144 pc(s).	0.007 kg
LLE 16x140mm 325lm 930 HV ADV6	28004954	3,000 K	144 pc(s).	0.007 kg
LLE 16x140mm 325lm 935 HV ADV6	28004955	3,500 K	144 pc(s).	0.007 kg
LLE 16x140mm 325lm 940 HV ADV6	28004956	4,000 K	144 pc(s).	0.007 kg
LLE 16x280mm 650lm 927 HV ADV6	28004963	2,700 K	144 pc(s).	0.014 kg
LLE 16x280mm 650lm 930 HV ADV6	28004964	3,000 K	144 pc(s).	0.014 kg
LLE 16x280mm 650lm 935 HV ADV6	28004965	3,500 K	144 pc(s).	0.014 kg
LLE 16x280mm 650lm 940 HV ADV6	28004966	4,000 K	144 pc(s).	0.014 kg
LLE 16x560mm 1300lm 927 HV ADV6	28004976	2,700 K	144 pc(s).	0.028 kg
LLE 16x560mm 1300lm 930 HV ADV6	28004977	3,000 K	144 pc(s).	0.028 kg
LLE 16x560mm 1300lm 935 HV ADV6	28004978	3,500 K	144 pc(s).	0.028 kg
LLE 16x560mm 1300lm 940 HV ADV6	28004979	4,000 K	144 pc(s).	0.028 kg

Technical data

Beam characteristic	360°
Ambient temperature t_a	-40 ... +65 °C
t_p rated	50 °C
t_c	85 °C
I_{rated}	200 mA
I_{max}	700 mA
Max. permissible LF current ripple	800 mA
Max. permissible peak current	1,350 mA / max. 10 ms
Max. working voltage for insulation [®]	440 V
Insulation test voltage	1.88 kV
Colour tolerance	3 SDCM
ESD classification	Severity level 2
Risk group (IEC 62471)	RG1 (> 280 – 700 mA (I_{max})), RGO (\leq 280 mA)
Classification acc. to IEC 62031	Built-in
Type of protection	IP00
Lumen maintenance L70B50	102,000 h
Guarantee (conditions at www.tridonic.com)	5 Year(s)

Approval marks**Standards**

IEC 62031, IEC 62471, IEC 61000-4-2, IEC 62778, IEC 61547

Specific technical data

Type	Article number	Photometric code ^②	Useful luminous flux at tp = 25 °C ^④	Expected luminous flux at tp rated ^⑤	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C ^⑥	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
Operating mode HE											
LLE 16x140mm 325lm 927 HV ADV6	28004953	927/359	-	130 lm	100 mA	7.6 V	8.2 V	-	-	164 lm/W	>90
LLE 16x140mm 325lm 930 HV ADV6	28004954	930/359	-	134 lm	100 mA	7.6 V	8.2 V	-	-	169 lm/W	>90
LLE 16x140mm 325lm 935 HV ADV6	28004955	935/359	-	137 lm	100 mA	7.6 V	8.2 V	-	-	173 lm/W	>90
LLE 16x140mm 325lm 940 HV ADV6	28004956	940/359	-	139 lm	100 mA	7.6 V	8.2 V	-	-	175 lm/W	>90
LLE 16x280mm 650lm 927 HV ADV6	28004963	927/359	-	259 lm	100 mA	15.1 V	16.5 V	-	-	164 lm/W	>90
LLE 16x280mm 650lm 930 HV ADV6	28004964	930/359	-	267 lm	100 mA	15.1 V	16.5 V	-	-	169 lm/W	>90
LLE 16x280mm 650lm 935 HV ADV6	28004965	935/359	-	274 lm	100 mA	15.1 V	16.5 V	-	-	173 lm/W	>90
LLE 16x280mm 650lm 940 HV ADV6	28004966	940/359	-	278 lm	100 mA	15.1 V	16.5 V	-	-	175 lm/W	>90
LLE 16x560mm 1300lm 927 HV ADV6	28004976	927/359	-	518 lm	100 mA	30.2 V	32.9 V	-	-	164 lm/W	>90
LLE 16x560mm 1300lm 930 HV ADV6	28004977	930/359	-	534 lm	100 mA	30.2 V	32.9 V	-	-	169 lm/W	>90
LLE 16x560mm 1300lm 935 HV ADV6	28004978	935/359	-	548 lm	100 mA	30.2 V	32.9 V	-	-	173 lm/W	>90
LLE 16x560mm 1300lm 940 HV ADV6	28004979	940/359	-	555 lm	100 mA	30.2 V	32.9 V	-	-	175 lm/W	>90
Operating mode NM											
LLE 16x140mm 325lm 927 HV ADV6	28004953	927/359	270 lm	259 lm	200 mA	7.7 V	8.4 V	1.6 W	165 lm/W	160 lm/W	>90
LLE 16x140mm 325lm 930 HV ADV6	28004954	930/359	279 lm	267 lm	200 mA	7.7 V	8.4 V	1.6 W	170 lm/W	165 lm/W	>90
LLE 16x140mm 325lm 935 HV ADV6	28004955	935/359	286 lm	274 lm	200 mA	7.7 V	8.4 V	1.6 W	175 lm/W	170 lm/W	>90
LLE 16x140mm 325lm 940 HV ADV6	28004956	940/359	290 lm	278 lm	200 mA	7.7 V	8.4 V	1.6 W	177 lm/W	172 lm/W	>90
LLE 16x280mm 650lm 927 HV ADV6	28004963	927/359	540 lm	519 lm	200 mA	15.5 V	16.8 V	3.3 W	165 lm/W	160 lm/W	>90
LLE 16x280mm 650lm 930 HV ADV6	28004964	930/359	557 lm	535 lm	200 mA	15.5 V	16.8 V	3.3 W	170 lm/W	165 lm/W	>90
LLE 16x280mm 650lm 935 HV ADV6	28004965	935/359	572 lm	549 lm	200 mA	15.5 V	16.8 V	3.3 W	175 lm/W	169 lm/W	>90
LLE 16x280mm 650lm 940 HV ADV6	28004966	940/359	579 lm	556 lm	200 mA	15.5 V	16.8 V	3.3 W	177 lm/W	172 lm/W	>90
LLE 16x560mm 1300lm 927 HV ADV6	28004976	927/359	1,081 lm	1,037 lm	200 mA	30.9 V	33.6 V	6.5 W	165 lm/W	160 lm/W	>90
LLE 16x560mm 1300lm 930 HV ADV6	28004977	930/359	1,114 lm	1,069 lm	200 mA	30.9 V	33.6 V	6.5 W	170 lm/W	165 lm/W	>90
LLE 16x560mm 1300lm 935 HV ADV6	28004978	935/359	1,144 lm	1,098 lm	200 mA	30.9 V	33.6 V	6.5 W	175 lm/W	170 lm/W	>90
LLE 16x560mm 1300lm 940 HV ADV6	28004979	940/359	1,158 lm	1,112 lm	200 mA	30.9 V	33.6 V	6.5 W	177 lm/W	172 lm/W	>90
Operating mode HO											
LLE 16x140mm 325lm 927 HV ADV6	28004953	927/359	-	726 lm	600 mA	8.2 V	8.9 V	-	-	141 lm/W	>90
LLE 16x140mm 325lm 930 HV ADV6	28004954	930/359	-	748 lm	600 mA	8.2 V	8.9 V	-	-	145 lm/W	>90
LLE 16x140mm 325lm 935 HV ADV6	28004955	935/359	-	768 lm	600 mA	8.2 V	8.9 V	-	-	149 lm/W	>90
LLE 16x140mm 325lm 940 HV ADV6	28004956	940/359	-	778 lm	600 mA	8.2 V	8.9 V	-	-	151 lm/W	>90
LLE 16x280mm 650lm 927 HV ADV6	28004963	927/359	-	1,452 lm	600 mA	16.5 V	17.8 V	-	-	141 lm/W	>90
LLE 16x280mm 650lm 930 HV ADV6	28004964	930/359	-	1,497 lm	600 mA	16.5 V	17.8 V	-	-	145 lm/W	>90
LLE 16x280mm 650lm 935 HV ADV6	28004965	935/359	-	1,536 lm	600 mA	16.5 V	17.8 V	-	-	149 lm/W	>90
LLE 16x280mm 650lm 940 HV ADV6	28004966	940/359	-	1,556 lm	600 mA	16.5 V	17.8 V	-	-	151 lm/W	>90
LLE 16x560mm 1300lm 927 HV ADV6	28004976	927/359	-	2,904 lm	600 mA	32.9 V	35.6 V	-	-	141 lm/W	>90
LLE 16x560mm 1300lm 930 HV ADV6	28004977	930/359	-	2,994 lm	600 mA	32.9 V	35.6 V	-	-	145 lm/W	>90
LLE 16x560mm 1300lm 935 HV ADV6	28004978	935/359	-	3,073 lm	600 mA	32.9 V	35.6 V	-	-	149 lm/W	>90
LLE 16x560mm 1300lm 940 HV ADV6	28004979	940/359	-	3,113 lm	600 mA	32.9 V	35.6 V	-	-	151 lm/W	>90

② If mounted with M3 screws with 6 mm head diameter and plastic washer.

③ The detailed explanation, see data sheet section 1.1.

④ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.

⑤ Measurement uncertainty ± 10 %. Based on calculation.

⑥ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

ACL BRIDGE LLE16

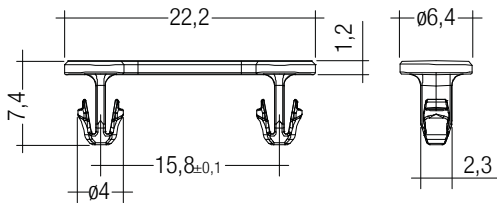
Accessory

**Product description**

- _ Clip for fixation for LLE16
- _ Fast snap on mounting (for sheet thickness 0.5 – 1.0 mm)
- _ For drilling hole 3 mm
- _ Clip made of polycarbonate
- _ Minimum sales quantity 200 pcs.

Website

<http://www.tridonic.com/28001035>

**Ordering data**

Type	Article number	Colour	Packaging, bag	Weight per pc.
ACL BRIDGE LLE16 PUSH-FIX	28001035	White	200 pc(s).	0.001 kg

ACL LINEAR COVER 16mm

Accessory

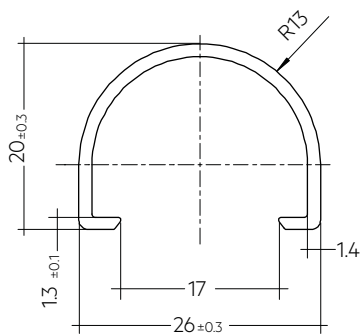
**Product description**

- _ LINEAR COVER for LLE 16
- _ Protection against direct touch for non-SELV applications (recommendation: use all fixing points) ^①
- _ Fast snap on mounting on to LLE 16 with clips or plastic washers
- _ High transmission: transparent, semi-transparent and diffuse
- _ Linear lense made of PMMA
- _ Tolerances LINEAR COVER: + 10 mm for 1,600 / 1,200 mm length (ends raw)

① Ends must be covered by the luminaire construction.

Website

<http://www.tridonic.com/28000950>

**Ordering data**

Type	Article number	Colour	Length L	Packaging, carton	Weight per pc.
ACL LINEAR COVER 16x1600mm FROSTED	28000950	Semi-transparent	1,600 mm	24 pc(s).	0.147 kg
ACL LINEAR COVER 16x1200mm FROSTED	28002827	Semi-transparent	1,200 mm	24 pc(s).	0.100 kg
ACL LINEAR COVER 16x1600mm DIFFUSE	28000951	Diffuse	1,600 mm	24 pc(s).	0.147 kg
ACL LINEAR COVER 16x1200mm DIFFUSE	28002828	Diffuse	1,200 mm	24 pc(s).	0.100 kg

1. Standards

IEC 62031
IEC 62471
IEC 61000-4-2
IEC 62778
IEC 61547

1.1 Photometric code

Key for photometric code, e. g. 830 / 349

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	MacAdam initial	MacAdam after 25% of the lifetime (max.6000h)	Luminous flux after 25% of the lifetime (max.6000h)
7 70 – 79				Code Luminous flux
8 80 – 89				7 ≥ 70 %
9 ≥ 90				8 ≥ 80 %
				9 ≥ 90 %

1.2 Risk group

Forward current	Risk group (IEC 62471)
≤ 280 mA	RG0
$> 280 - 700$ mA (Imax)	RG1

1.3 Energy classification

Type	Colour temperature	Forward current	Energy classification	Energy consumption
LLE 16x140mm 325lm 927 HV ADV6	2,700 K	200 mA	D	2 kWh / 1,000 h
LLE 16x140mm 325lm 930 HV ADV6	3,000 K	200 mA	C	2 kWh / 1,000 h
LLE 16x140mm 325lm 935 HV ADV6	3,500 K	200 mA	C	2 kWh / 1,000 h
LLE 16x140mm 325lm 940 HV ADV6	4,000 K	200 mA	C	2 kWh / 1,000 h
LLE 16x280mm 650lm 927 HV ADV6	2,700 K	200 mA	D	4 kWh / 1,000 h
LLE 16x280mm 650lm 930 HV ADV6	3,000 K	200 mA	D	4 kWh / 1,000 h
LLE 16x280mm 650lm 935 HV ADV6	3,500 K	200 mA	C	4 kWh / 1,000 h
LLE 16x280mm 650lm 940 HV ADV6	4,000 K	200 mA	C	4 kWh / 1,000 h
LLE 16x560mm 1300lm 927 HV ADV6	2,700 K	200 mA	D	7 kWh / 1,000 h
LLE 16x560mm 1300lm 930 HV ADV6	3,000 K	200 mA	D	7 kWh / 1,000 h
LLE 16x560mm 1300lm 935 HV ADV6	3,500 K	200 mA	C	7 kWh / 1,000 h
LLE 16x560mm 1300lm 940 HV ADV6	4,000 K	200 mA	C	7 kWh / 1,000 h

Energy label and further information at www.tridonic.com in the certificates tab of the corresponding product page and at the EPREL data base <https://eprel.ec.europa.eu/>

2. Thermal details

2.1 tc point, ambient temperature and lifetime

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

For LLE a tp temperature of 50 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and lifetime.

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	-40 ... +85 °C
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Operation only in non condensing environment.

Humidity during processing of the module should be between 30 to 70 %.

2.3 Heat sink values

LLE 16x140mm 325lm ADV6

ta	tp	Forward current	R _{th, hs-a}	Cooling area
25 °C	50 °C	200 mA		self cooling
25 °C	50 °C	600 mA	8.10 K/W	82 cm ²
35 °C	50 °C	200 mA	22.40 K/W	30 cm ²
35 °C	50 °C	600 mA	4.00 K/W	167 cm ²
40 °C	50 °C	200 mA	14.22 K/W	47 cm ²
40 °C	50 °C	600 mA	1.95 K/W	341 cm ²
45 °C	50 °C	200 mA	6.04 K/W	110 cm ²

LLE 16x280mm 650lm ADV6

ta	tp	Forward current	R _{th, hs-a}	Cooling area
25 °C	50 °C	200 mA		self cooling
25 °C	50 °C	600 mA	4.05 K/W	165 cm ²
35 °C	50 °C	200 mA	11.20 K/W	60 cm ²
35 °C	50 °C	600 mA	2.00 K/W	333 cm ²
40 °C	50 °C	200 mA	7.11 K/W	94 cm ²
40 °C	50 °C	600 mA	0.98 K/W	683 cm ²
45 °C	50 °C	200 mA	3.02 K/W	221 cm ²

LLE 16x560mm 1300lm ADV6

ta	tp	Forward current	R _{th, hs-a}	Cooling area
25 °C	50 °C	225 mA		self cooling
25 °C	50 °C	600 mA	2.02 K/W	329 cm ²
35 °C	50 °C	200 mA	5.60 K/W	119 cm ²
35 °C	50 °C	600 mA	1.00 K/W	666 cm ²
40 °C	50 °C	200 mA	3.56 K/W	188 cm ²
40 °C	50 °C	600 mA	0.49 K/W	1365 cm ²
45 °C	50 °C	200 mA	1.51 K/W	442 cm ²

Notes

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. Depending on the heat sink a heat conducting paste or heat conducting film might be necessary to keep the specified tp temperature.

For applications with a small distance between LED module and lens or operating currents higher than 500 mA, screw mounting is recommended to ensure a reliable thermal connection between LED module and cooling surface.

3. Installation / wiring

3.1 Electrical supply/choice of LED driver

LLE 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 LLE 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



LLE 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 LLE.

The LLE module is designed for serial wiring.

LLE can be operated either from SELV LED drivers or from LED drivers with LV output voltage.



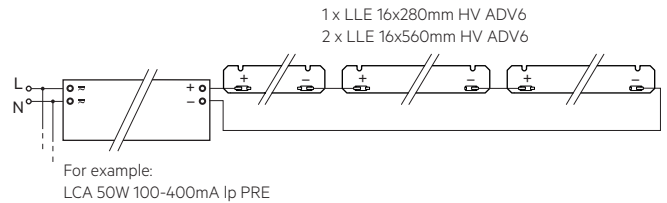
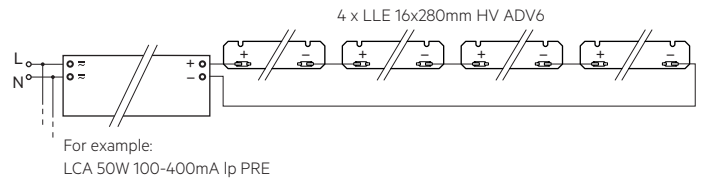
LLE are basic insulated up to 440 V (if mounted with M3 screws with head diameter 6 mm in combination with plastic washers) against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED driver (also against earth) is above 440 V, an additional insulation between LED module and heat sink is required (for example by insulated 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.

3.2 Wiring



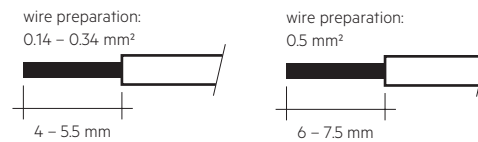
Wiring examples for serial wiring



3.3 Wiring type and cross section

For wiring use solid wire from 0.14 to 0.5 mm².

No reconnection with smaller diameters possible if used with >0.34 mm².



To remove the wires use a suitabel tool (Wago 206-859) or through twist and pull.

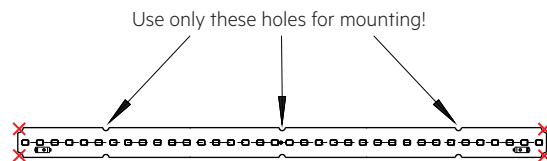
3.4 Mounting instruction



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

Max. torque for fixing: 0.5 Nm.

The LED modules are mounted onto a heat sink with M3 screws with plastic washers or ACL BRIDGE LLE16 PUSH-FIX. All fastening point must be used for mounting. The cut-outs on the end faces must not be used for fastening.



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. Lifetime

4.1 Lifetime, lumen maintenance and failure rate

The light output of an LED module decreases over the lifetime, 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 lifetime 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.

4.2 Lumen maintenance for LLE 16mm HV ADV6

Forward current	tp	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
	tempera- ture						
700 mA	55 °C	52k h	52k h	> 102k h	> 102k h	> 102k h	> 102k h
	85 °C	52k h	52k h	> 102k h	> 102k h	> 102k h	> 102k h

L00C03 > 102k h. At tp rated and I rated, based on 10 swichting cycles per day.

4.3 Switching capability

100,000 cycles

Tridonic test according to IEC 62717 Cl 10.3.3

30 s on / 30 s off at I_{max}

5. Electrical values

5.1 Declaration of electrical parameters

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

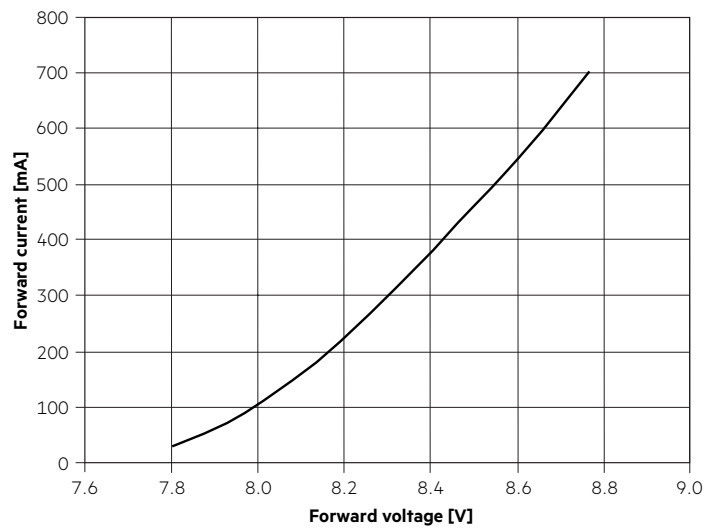
I_{max} ... Max. permissible continuous operating current incl. The tolerances of the LED driver.

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

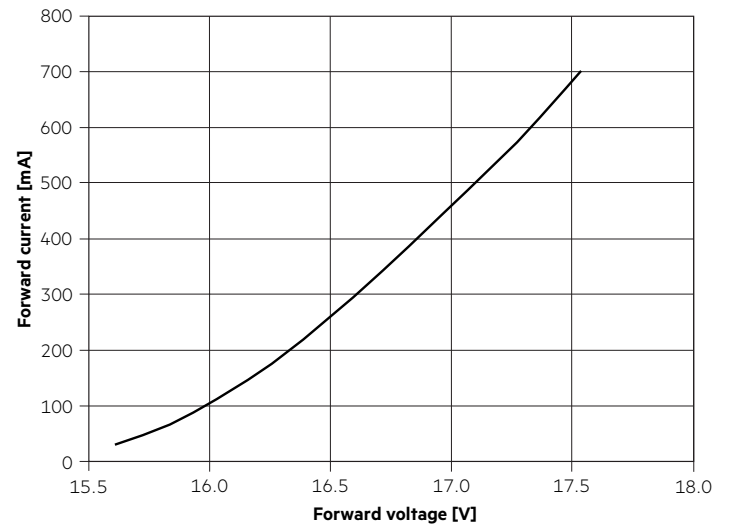
Max. permissible peak current ... The max. output peak current of the LED driver must not exceed this value.

5.2 Typ. forward voltage vs. forward current

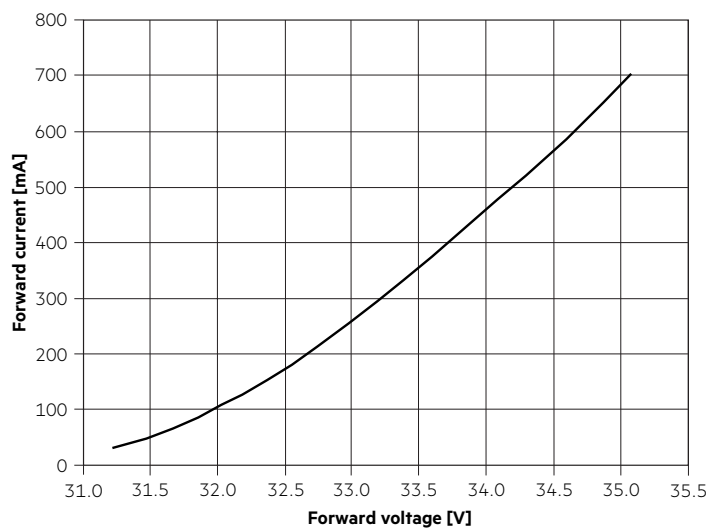
LLE 16x140mm 325lm 9xx HV ADV6



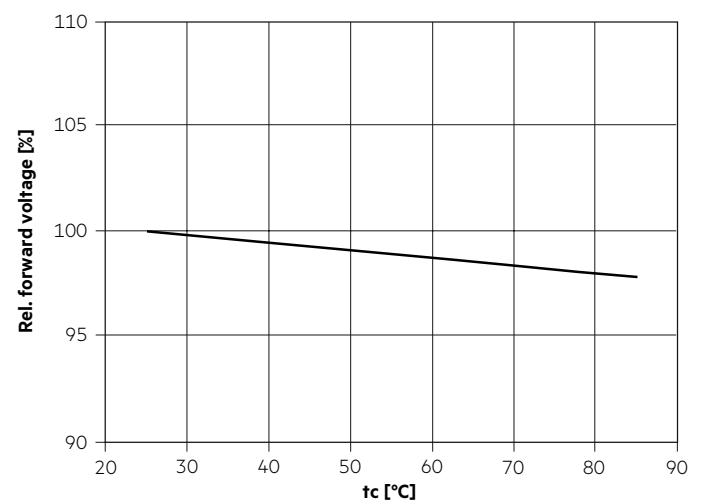
LLE 16x280mm 650lm 9xx HV ADV6



LLE 16x560mm 1300lm 9xx HV ADV6



5.3 Forward voltage vs. tc temperature



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

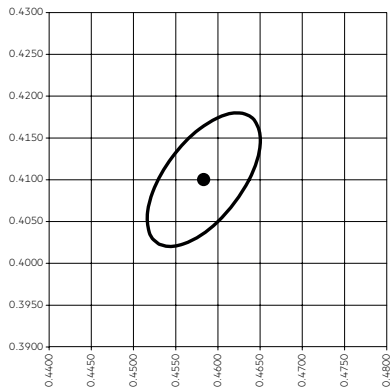
6. Photometric characteristics

6.1 Coordinates and tolerances according to CIE 1931

The specified colour coordinates are integral measured by current impulse of 195 mA and a duration of 100 ms.
 The ambient temperature of the measurement is $t_a = 25^\circ\text{C}$.
 The measurement tolerance of the colour coordinates are ± 0.01 .

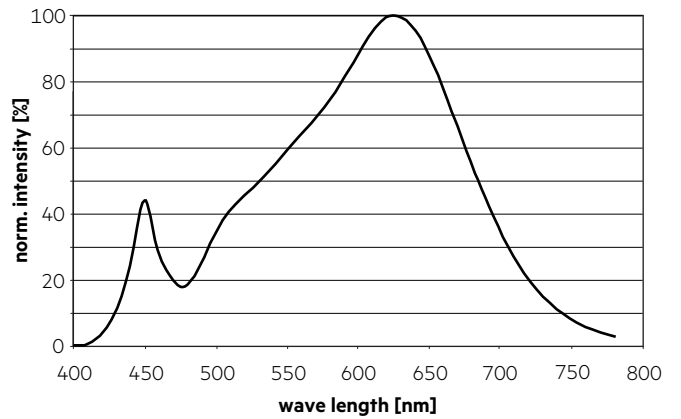
2,700 K

	x0	y0
Centre	0.4578	0.4101

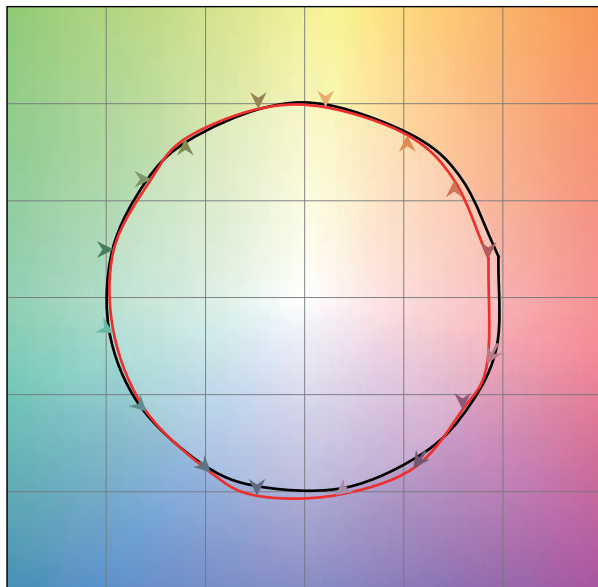


— MacAdam Ellipse: 3SDCM

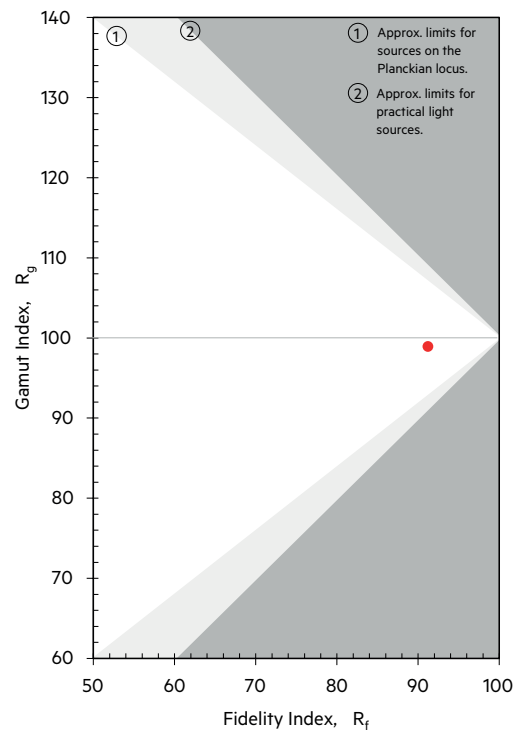
TM30		CRI	
Rf	Rg	Ra	R9
91	99	93	57



Colour vector graphic



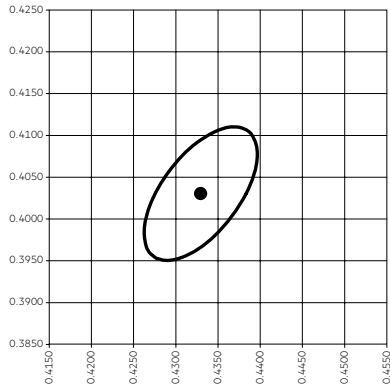
— Reference source
 — Test source



— MacAdam Ellipse: 3SDCM

3,000 K

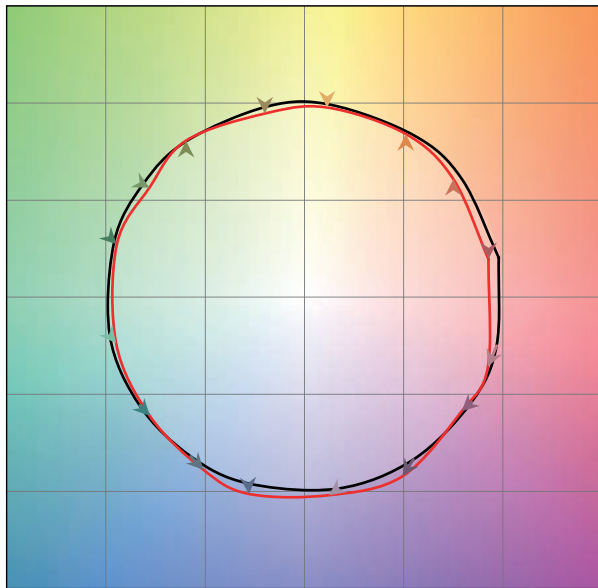
	x0	y0
Centre	0.4338	0.4030



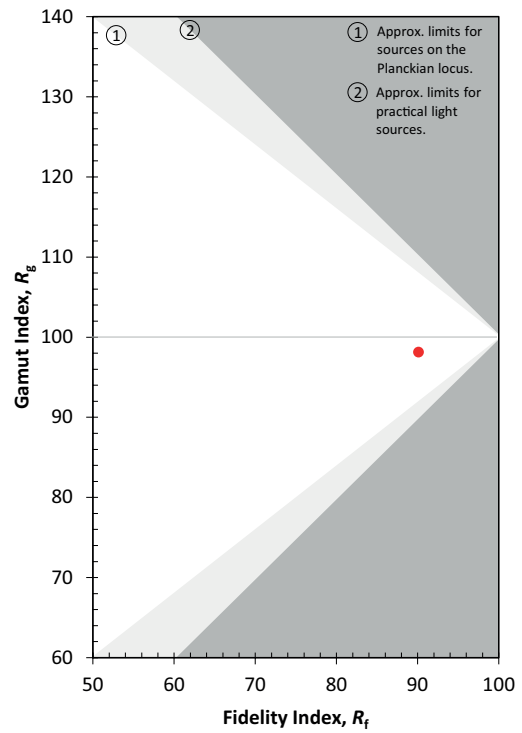
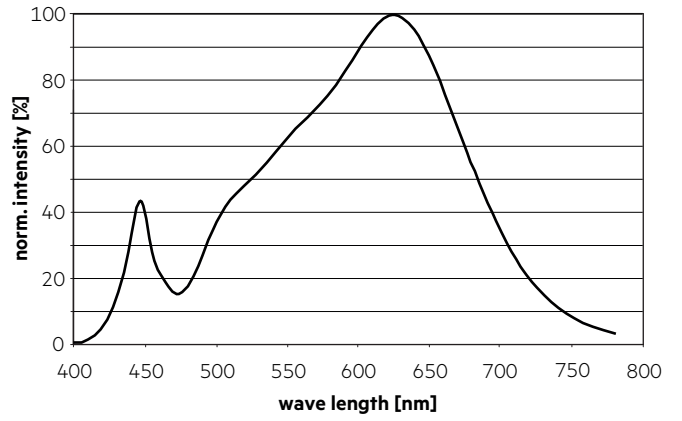
— MacAdam Ellipse: 3SDCM

TM30		CRI	
Rf	Rg	Ra	R9
90	98	92	57

Colour vector graphic

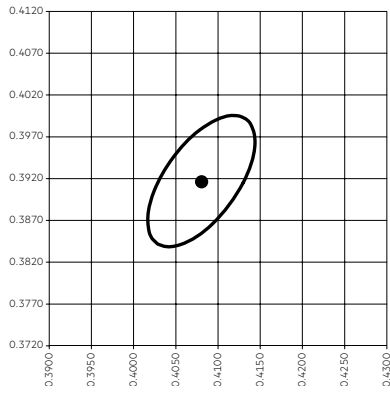


— Reference source
— Test source



3,500 K

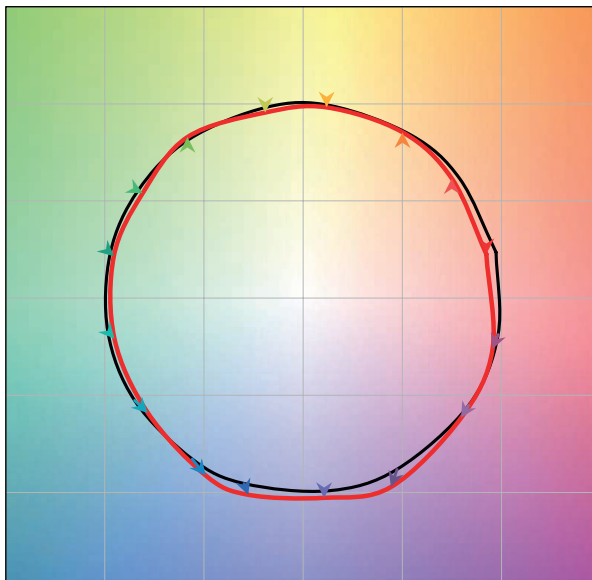
	x0	y0
Centre	0.4073	0.3917



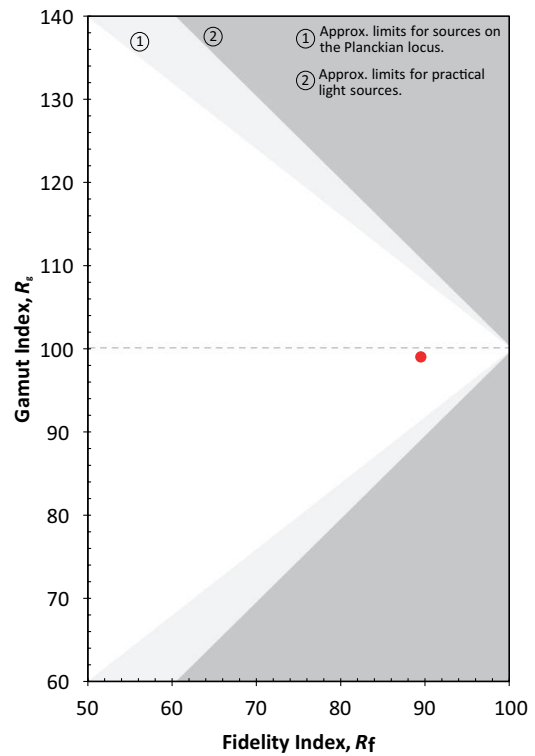
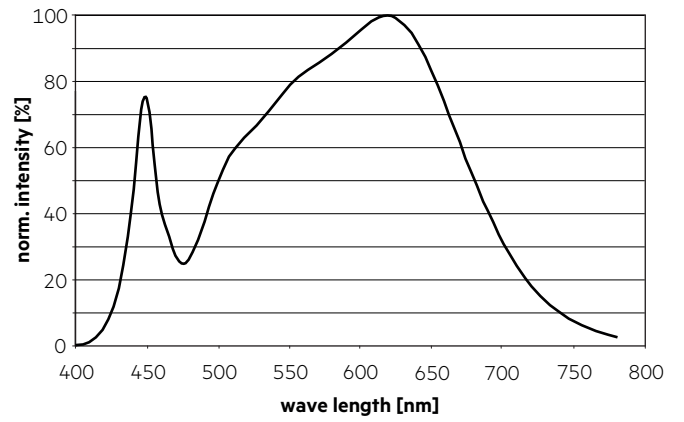
— MacAdam Ellipse: 3SDCM

TM30		CRI	
Rf	Rg	Ra	R9
90	99	93	63

Colour vector graphic

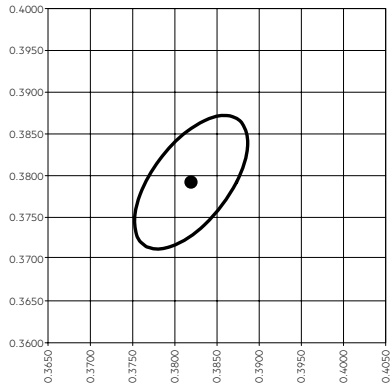


— Reference source
— Test source



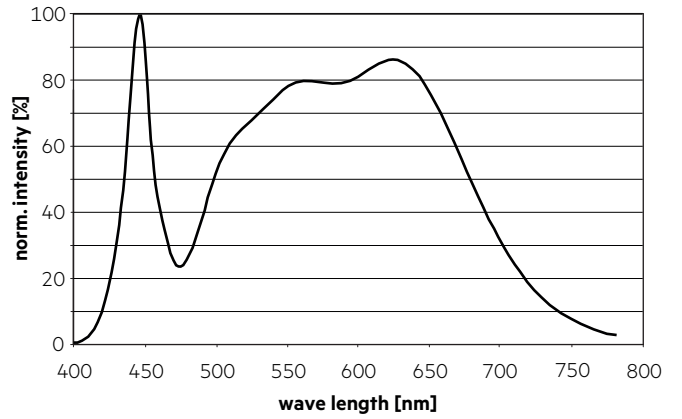
4,000 K

	x0	y0
Center	0.3818	0.3797

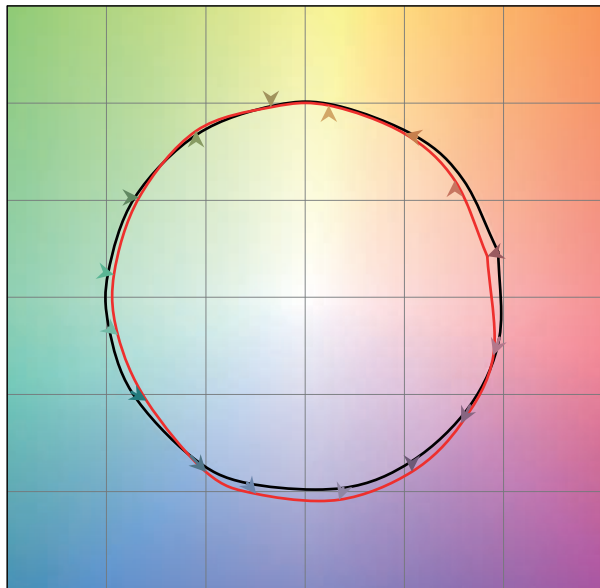


— MacAdam Ellipse: 3SDCM

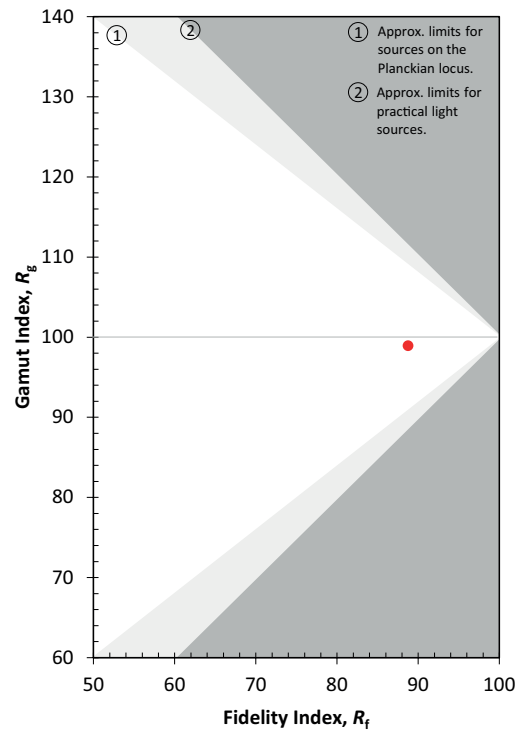
TM30		CRI	
Rf	Rg	Ra	R9
89	99	91	54



Colour vector graphic

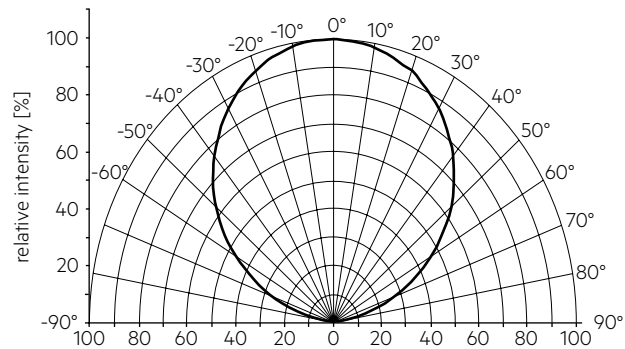


— Reference source
— Test source



6.2 Light distribution

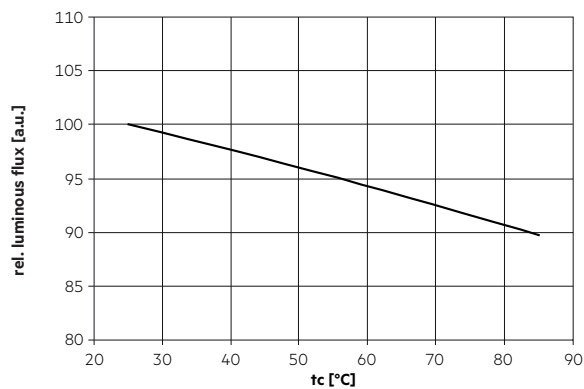
The optical design of the LLE product line ensures optimum homogeneity for the light distribution.



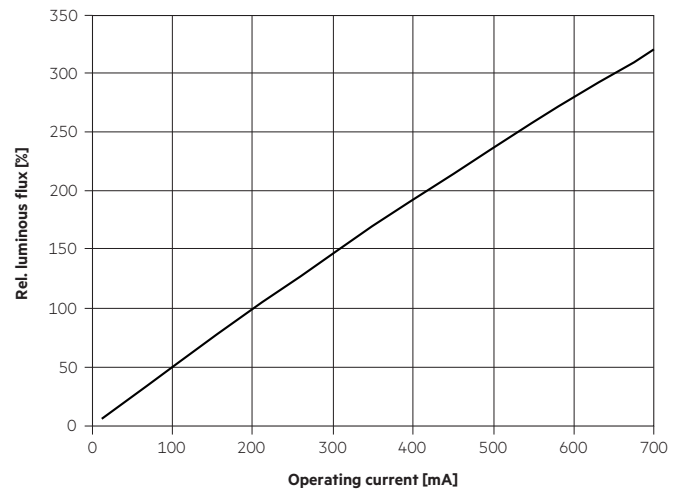
The colour temperature is measured integral over the complete module. The single LED light points can have deviations in the colour coordinates within MacAdam 5.

To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 4 cm) should be used.

6.3 Relative luminous flux vs. tc temperature



6.4 Relative luminous flux vs. operating current



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

7. Miscellaneous

7.1 Additional information

Additional technical information at www.tridonic.com → Technical Data

Lifetime declarations are informative and represent no warranty claim.