



Module LLE FLEX CC 14mm 1250lm ADV2

Modules LLE FLEX CC advanced (constant current)

Product description

- Ideal for profile and linear luminaires made of extruded aluminium or sheet metal
- Simplified logistic through flexible cut option – every 140 mm cuttable
- 16 LEDs per 140 mm segment provide a very homogeneous light image, which remains uniform with a total length of 3 m when fed in from both sides
- Two wiring options available – for soldering only and with pre-mounted WAGO low-profile terminals for easy and shadow-free wiring every 280 mm
- Long lifetime: 72,000 hours
- 5 years guarantee (conditions at www.tridonic.com)

Optical properties

- Colour temperatures 2,700 K, 3,000 K, 3,500 K and 4,000 K
- Useful luminous flux 648 lm/m at Irated and tp = 25 °C
- Efficacy of the LED module 185 lm/W at Irated and tp = 25 °C
- High colour rendering index CRI > 80 and CRI > 90
- Small colour tolerance MacAdam 3rd
- Small luminous flux tolerances

Mechanical properties

- The LLE FLEX CC is 14 mm wide, one tape is up to 25 m long and can be divided every 140 mm
- The 3M 93015LE adhesive tape ensures simple installation and optimum heat dissipation, it is long-term stable and weather-proof

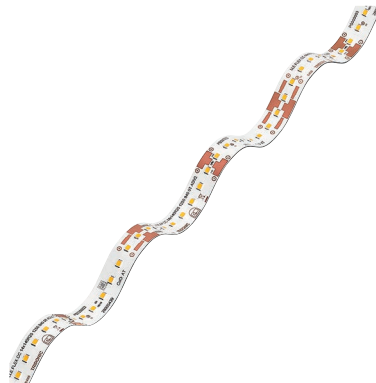
System solution

- Combine Tridonic`s LED modules and dimmable drivers to achieve an outstanding system efficacy (configuration possible via <https://setbuilder.tridonic.com/>)

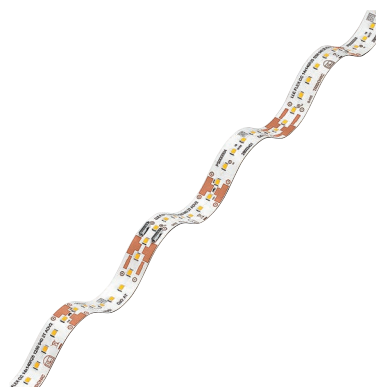


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Without terminals



With terminals



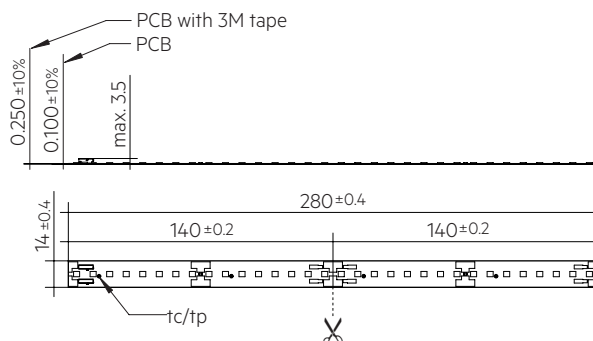


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Technical data

Beam characteristic	120°
Ambient temperature range	-35 ... +50 °C
tp rated	55 °C
tc	80 °C
Irated [®]	75 mA
I _{max} [®]	180 mA
Max. permissible LF current ripple [®]	220 mA
Max. permissible peak current [®]	300 mA / max. 10 ms
Max. working voltage for insulation SELV	< 60 V
Insulation test voltage	0.5 kV
CTI of the printed circuit board	< 600
ESD classification	severity level 2
Risk group (IEC 62471) [®]	RG1
Classification acc. to IEC 62031	Built-in
Type of protection	IP00
Lumen maintenance L70B50	72,000 h
Guarantee (conditions at www.tridonic.com)	5 years



Ordering data

Type	Article number	Colour temperature	Tape length	Packaging carton	Weight per pc.
Without terminals					
LLE FLEX CC 14x140R5 1250 827 0T ADV2	28003593	2,700 K	5 m	1 pc(s).	0.286 kg
LLE FLEX CC 14x140R25 1250 830 0T ADV2	28003437	3,000 K	25.20 m	1 pc(s).	0.501 kg
LLE FLEX CC 14x140R5 1250 835 0T ADV2	28003594	3,500 K	5 m	1 pc(s).	0.286 kg
LLE FLEX CC 14x140R25 1250 840 0T ADV2	28003439	4,000 K	25.20 m	1 pc(s).	0.501 kg
LLE FLEX CC 14x140R5 1250 927 0T ADV2	28003595	2,700 K	5 m	1 pc(s).	0.286 kg
LLE FLEX CC 14x140R25 1250 930 0T ADV2	28003441	3,000 K	25.20 m	1 pc(s).	0.501 kg
LLE FLEX CC 14x140R5 1250 935 0T ADV2	28003596	3,500 K	5 m	1 pc(s).	0.286 kg
LLE FLEX CC 14x140R25 1250 940 0T ADV2	28003443	4,000 K	25.20 m	1 pc(s).	0.501 kg
With terminals					
LLE FLEX CC 14x140R5 1250 827 2T ADV2	28003597	2,700 K	5 m	1 pc(s).	0.296 kg
LLE FLEX CC 14x140R25 1250 830 2T ADV2	28003445	3,000 K	25.20 m	1 pc(s).	0.526 kg
LLE FLEX CC 14x140R5 1250 835 2T ADV2	28003598	3,500 K	5 m	1 pc(s).	0.296 kg
LLE FLEX CC 14x140R25 1250 840 2T ADV2	28003447	4,000 K	25.20 m	1 pc(s).	0.526 kg
LLE FLEX CC 14x140R5 1250 927 2T ADV2	28003599	2,700 K	5 m	1 pc(s).	0.296 kg
LLE FLEX CC 14x140R25 1250 930 2T ADV2	28003449	3,000 K	25.20 m	1 pc(s).	0.526 kg
LLE FLEX CC 14x140R5 1250 935 2T ADV2	28003600	3,500 K	5 m	1 pc(s).	0.296 kg
LLE FLEX CC 14x140R25 1250 940 2T ADV2	28003451	4,000 K	25.20 m	1 pc(s).	0.526 kg

Specific technical data

Type ^①	Photo-metric code	Useful luminous flux at tp = 25 °C ^②	Expected luminous flux at tp rated ^③	Typ. forward current ^④	Min. forward voltage at tp = 55 °C ^⑤	Max. forward voltage at tp = 25 °C ^⑥	Power consumption Pon at tp = 25 °C ^⑦	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
Operating mode HE at 25 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	–	194 lm	25 mA	39.7 V	44.2 V	–	–	185 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	–	205 lm	25 mA	39.7 V	44.2 V	–	–	193 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	–	211 lm	25 mA	39.7 V	44.2 V	–	–	198 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	–	214 lm	25 mA	39.7 V	44.2 V	–	–	204 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	–	168 lm	25 mA	39.7 V	44.2 V	–	–	159 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	–	175 lm	25 mA	39.7 V	44.2 V	–	–	164 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	–	174 lm	25 mA	39.7 V	44.2 V	–	–	167 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	–	178 lm	25 mA	39.7 V	44.2 V	–	–	172 lm/W	> 90
Operating mode HE at 50 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	–	379 lm	50 mA	40.8 V	45.3 V	–	–	174 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	–	390 lm	50 mA	40.8 V	45.3 V	–	–	181 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	–	406 lm	50 mA	40.8 V	45.3 V	–	–	186 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	–	414 lm	50 mA	40.8 V	45.3 V	–	–	192 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	–	321 lm	50 mA	40.8 V	45.3 V	–	–	150 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	–	335 lm	50 mA	40.8 V	45.3 V	–	–	154 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	–	339 lm	50 mA	40.8 V	45.3 V	–	–	157 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	–	347 lm	50 mA	40.8 V	45.3 V	–	–	162 lm/W	> 90
Operating mode NM at 75 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	588 lm	558 lm	75 mA	41.7 V	46.2 V	3.4 W	175 lm/W	168 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	610 lm	580 lm	75 mA	41.7 V	46.2 V	3.4 W	182 lm/W	175 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	627 lm	597 lm	75 mA	41.7 V	46.2 V	3.4 W	187 lm/W	180 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	648 lm	613 lm	75 mA	41.7 V	46.2 V	3.4 W	193 lm/W	185 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	504 lm	479 lm	75 mA	41.7 V	46.2 V	3.4 W	150 lm/W	144 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	520 lm	495 lm	75 mA	41.7 V	46.2 V	3.4 W	155 lm/W	149 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	528 lm	498 lm	75 mA	41.7 V	46.2 V	3.4 W	157 lm/W	151 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	545 lm	515 lm	75 mA	41.7 V	46.2 V	3.4 W	162 lm/W	156 lm/W	> 90
Operating mode HO at 100 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	–	728 lm	100 mA	42.5 V	47.0 V	–	–	162 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	–	760 lm	100 mA	42.5 V	47.0 V	–	–	169 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	–	782 lm	100 mA	42.5 V	47.0 V	–	–	174 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	–	803 lm	100 mA	42.5 V	47.0 V	–	–	179 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	–	623 lm	100 mA	42.5 V	47.0 V	–	–	139 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	–	650 lm	100 mA	42.5 V	47.0 V	–	–	144 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	–	653 lm	100 mA	42.5 V	47.0 V	–	–	146 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	–	674 lm	100 mA	42.5 V	47.0 V	–	–	151 lm/W	> 90
Operating mode HO at 125 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	–	897 lm	125 mA	43.2 V	47.7 V	–	–	157 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	–	935 lm	125 mA	43.2 V	47.7 V	–	–	164 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	–	963 lm	125 mA	43.2 V	47.7 V	–	–	169 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	–	992 lm	125 mA	43.2 V	47.7 V	–	–	173 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	–	771 lm	125 mA	43.2 V	47.7 V	–	–	135 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	–	795 lm	125 mA	43.2 V	47.7 V	–	–	140 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	–	807 lm	125 mA	43.2 V	47.7 V	–	–	142 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	–	827 lm	125 mA	43.2 V	47.7 V	–	–	146 lm/W	> 90
Operating mode HO at 150 mA – values per segment (140 mm)										
LLE FLEX CC 14x140 1250 827 ADV2	827/359	–	1056 lm	150 mA	43.9 V	48.5 V	–	–	152 lm/W	> 80
LLE FLEX CC 14x140 1250 830 ADV2	830/359	–	1100 lm	150 mA	43.9 V	48.5 V	–	–	158 lm/W	> 80
LLE FLEX CC 14x140 1250 835 ADV2	835/359	–	1134 lm	150 mA	43.9 V	48.5 V	–	–	162 lm/W	> 80
LLE FLEX CC 14x140 1250 840 ADV2	840/359	–	1166 lm	150 mA	43.9 V	48.5 V	–	–	167 lm/W	> 80
LLE FLEX CC 14x140 1250 927 ADV2	927/359	–	899 lm	150 mA	43.9 V	48.5 V	–	–	130 lm/W	> 90
LLE FLEX CC 14x140 1250 930 ADV2	930/359	–	935 lm	150 mA	43.9 V	48.5 V	–	–	135 lm/W	> 90
LLE FLEX CC 14x140 1250 935 ADV2	935/359	–	946 lm	150 mA	43.9 V	48.5 V	–	–	136 lm/W	> 90
LLE FLEX CC 14x140 1250 940 ADV2	940/359	–	971 lm	150 mA	43.9 V	48.5 V	–	–	141 lm/W	> 90

① Integral measurement over 1 segment (140 mm).

② Measured at Imax.

③ Value for 1 segment (140 mm).

④ HE ... high efficiency, NM ... nominal mode, HO ... high output.

⑤ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.

⑥ Tolerance of expected light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %. Based on calculation.

⑦ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

1. Standards

IEC 62031
IEC 62471
IEC 61000-4-2
IEC 62778
IEC 61547
UL 8750 (for CLASS2 circuits and dry locations)

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

1.2 Energy classification

Type	Colour temperature	Forward current	Energy classification	Energy consumption
LLE FLEX CC 14x140R5 1250 827 ADV2	2,700 K	150 mA	C	4 kWh / 1,000 h
LLE FLEX CC 14x140R25 1250 830 ADV2	3,000 K	150 mA	C	4 kWh / 1,000 h
LLE FLEX CC 14x140R5 1250 835 ADV2	3,500 K	150 mA	C	4 kWh / 1,000 h
LLE FLEX CC 14x140R25 1250 840 ADV2	4,000 K	150 mA	C	4 kWh / 1,000 h
LLE FLEX CC 14x140R5 1250 927 ADV2	2,700 K	150 mA	D	4 kWh / 1,000 h
LLE FLEX CC 14x140R25 1250 930 ADV2	3,000 K	150 mA	D	4 kWh / 1,000 h
LLE FLEX CC 14x140R5 1250 935 ADV2	3,500 K	150 mA	D	4 kWh / 1,000 h
LLE FLEX CC 14x140R25 1250 940 ADV2	4,000 K	150 mA	D	4 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 55 °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	-35 ... +80 °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 FLEX CC ADV2

ta	tp	Forward current	R _{th, hs-a} *	Cooling area*
25 °C	55 °C	25 mA	60.54 K/W	self cooling
35 °C	55 °C	25 mA	40.36 K/W	self cooling
40 °C	55 °C	25 mA	30.26 K/W	22 cm²
45 °C	55 °C	25 mA	20.16 K/W	33 cm²
50 °C	55 °C	25 mA	10.06 K/W	66 cm²
25 °C	55 °C	50 mA	27.19 K/W	25 cm²
35 °C	55 °C	50 mA	18.12 K/W	37 cm²
40 °C	55 °C	50 mA	13.58 K/W	49 cm²
45 °C	55 °C	50 mA	9.04 K/W	74 cm²
50 °C	55 °C	50 mA	4.51 K/W	148 cm²
25 °C	55 °C	75 mA	17.06 K/W	39 cm²
35 °C	55 °C	75 mA	11.36 K/W	59 cm²
40 °C	55 °C	75 mA	8.51 K/W	79 cm²
45 °C	55 °C	75 mA	5.67 K/W	118 cm²
50 °C	55 °C	75 mA	2.82 K/W	236 cm²
25 °C	55 °C	100 mA	12.11 K/W	55 cm²
35 °C	55 °C	100 mA	8.06 K/W	83 cm²
40 °C	55 °C	100 mA	6.04 K/W	110 cm²
45 °C	55 °C	100 mA	4.02 K/W	166 cm²
50 °C	55 °C	100 mA	1.99 K/W	334 cm²
25 °C	55 °C	125 mA	9.25 K/W	72 cm²
35 °C	55 °C	125 mA	6.16 K/W	109 cm²
40 °C	55 °C	125 mA	4.61 K/W	145 cm²
45 °C	55 °C	125 mA	3.06 K/W	218 cm²
50 °C	55 °C	125 mA	1.52 K/W	439 cm²
25 °C	55 °C	150 mA	7.32 K/W	91 cm²
35 °C	55 °C	150 mA	4.87 K/W	137 cm²
40 °C	55 °C	150 mA	3.64 K/W	183 cm²
45 °C	55 °C	150 mA	2.42 K/W	275 cm²
50 °C	55 °C	150 mA	1.20 K/W	557 cm²

* Values for each segment (140 mm).

Notes

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation.

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.

With parallel wiring tolerance-related differences in output are possible (thermal stress of the module) and can cause differences in brightness.

The max. permissible output current of the LED driver for parallel wiring is 1,900 mA.

When combining different reels, make sure that they use the same forward voltage rank.

The forward voltage rank can be found on the labels of the packaging and the reel.

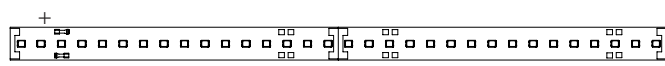


LLE have to be operated with SELV LED drivers.



LLE are basic insulated up to 60 V SELV against ground and can be mounted directly on earthed metal parts of the luminaire. Insulation must be ensured at both ends of the applied LLE FLEX (> 500 V AC). If the max. output voltage of the LED driver (also against earth) is above 60 V SELV, an additional insulation between LED module and heat sink is required (for example by insulated thermal pads) or by a suitable luminaire construction.

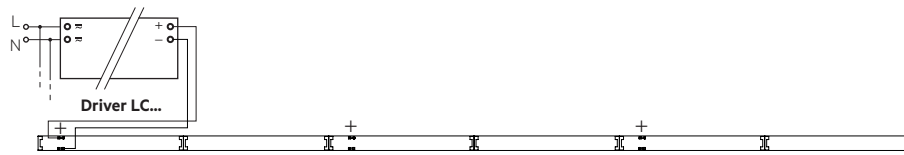
3.2 Wiring



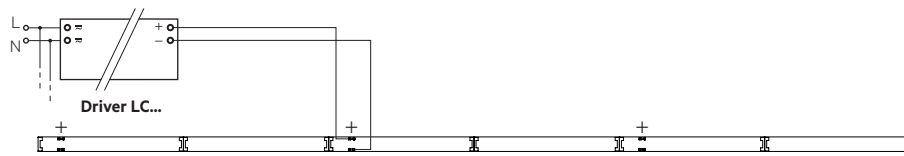
Terminal at each 2nd segment.

Wiring examples

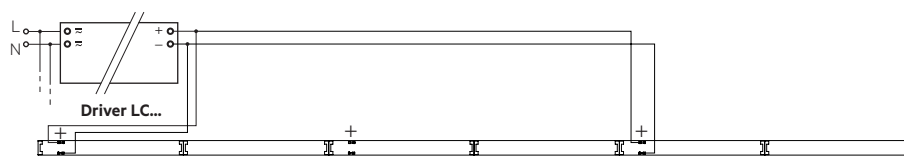
Connection at one side



Connection at middle



Connection at both sides

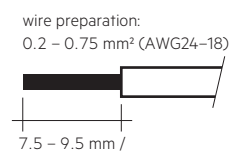


Current per segment	Connection at one side	Connection at middle	Connection at both sides
Max. number of segments to keep the reduction of luminous flux below 5 %.			
25 mA	11 segments	22 segments	22 segments
50 mA	10 segments	20 segments	20 segments
75 mA	10 segments	20 segments	20 segments
100 mA	9 segments	18 segments	18 segments
125 mA	9 segments	18 segments	18 segments
150 mA	9 segments	18 segments	18 segments
Max. number of segments to keep the reduction of luminous flux below 15 %.			
25 mA	25 segments	50 segments	50 segments
50 mA	25 segments	38 segments	38 segments
75 mA	20 segments	25 segments	25 segments
100 mA	19 segments	19 segments	19 segments
125 mA	18 segments	–	–
150 mA	17 segments	–	–

The max. permissible output current of the LED driver is 1,900 mA.

3.3 Wiring type and cross section

The wiring must be solid with a cross section of 0.2 – 0.75 mm² (AWG24–18).
For the push-wire connection you have to strip the insulation (7.5–9.5 mm).



Remove the wires 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.

The LLE FLEX is separable each 140 mm with the full function of each segment.

Insulation must be ensured at both ends of the applied LLE FLEX (> 500 V AC).

The fixing/cooling surface must be cleaned before installing the LLE FLEX modules to remove all dirt, dust and grease.

Prevent shear- or peel forces

Min. bending radius of the LLE FLEX is 50 mm.



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.

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

LLE FLEX CC ADV2 CRI80

Forward current*	tp tempera- ture	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
25 mA	40 °C	66k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	57k h	>72k h	>72k h	>72k h	>72k h	>72k h
	55 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	50k h	67k h	>72k h	>72k h	>72k h	>72k h
	65 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	70 °C	43k h	58k h	>72k h	>72k h	>72k h	>72k h
	75 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	37k h	51k h	>72k h	>72k h	>72k h	>72k h
50 mA	40 °C	64k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	60k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	56k h	>72k h	>72k h	>72k h	>72k h	>72k h
	55 °C	52k h	70k h	>72k h	>72k h	>72k h	>72k h
	60 °C	48k h	65k h	>72k h	>72k h	>72k h	>72k h
	65 °C	45k h	61k h	>72k h	>72k h	>72k h	>72k h
	70 °C	42k h	57k h	>72k h	>72k h	>72k h	>72k h
	75 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	37k h	50k h	>72k h	>72k h	>72k h	>72k h
75 mA	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	58k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	55 °C	51k h	68k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	65 °C	44k h	59k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
	75 °C	38k h	52k h	>72k h	>72k h	>72k h	>72k h
	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h
100 mA	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	57k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	55 °C	49k h	66k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	65 °C	43k h	58k h	>72k h	>72k h	>72k h	>72k h
	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	75 °C	37k h	50k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
125 mA	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	55k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
	55 °C	48k h	64k h	>72k h	>72k h	>72k h	>72k h
	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	65 °C	42k h	56k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	75 °C	36k h	49k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
150 mA	40 °C	58k h	>72k h	>72k h	>72k h	>72k h	>72k h
	45 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	50k h	67k h	>72k h	>72k h	>72k h	>72k h
	55 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	60 °C	44k h	59k h	>72k h	>72k h	>72k h	>72k h
	65 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
	70 °C	38k h	51k h	>72k h	>72k h	>72k h	>72k h
	75 °C	35k h	48k h	>72k h	>72k h	>72k h	>72k h
	80 °C	33k h	45k h	68k h	>72k h	>72k h	>72k h

* Values for each segment (140 mm).

LLE FLEX CC ADV2 CRI90

Forward current*	tp tempera- ture	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
25 mA	40 °C	42k h	52k h	>72k h	>72k h	>72k h	>72k h
	45 °C	40k h	50k h	>72k h	>72k h	>72k h	>72k h
	50 °C	39k h	49k h	>72k h	>72k h	>72k h	>72k h
	55 °C	37k h	47k h	>72k h	>72k h	>72k h	>72k h
	60 °C	35k h	45k h	>72k h	>72k h	>72k h	>72k h
	65 °C	34k h	44k h	69k h	>72k h	>72k h	>72k h
	70 °C	33k h	42k h	66k h	>72k h	>72k h	>72k h
	75 °C	31k h	41k h	63k h	>72k h	>72k h	>72k h
	80 °C	30k h	39k h	61k h	>72k h	>72k h	>72k h
50 mA	40 °C	41k h	51k h	>72k h	>72k h	>72k h	>72k h
	45 °C	40k h	50k h	>72k h	>72k h	>72k h	>72k h
	50 °C	38k h	48k h	>72k h	>72k h	>72k h	>72k h
	55 °C	36k h	46k h	>72k h	>72k h	>72k h	>72k h
	60 °C	35k h	45k h	71k h	>72k h	>72k h	>72k h
	65 °C	34k h	43k h	68k h	>72k h	>72k h	>72k h
	70 °C	32k h	42k h	65k h	>72k h	>72k h	>72k h
	75 °C	31k h	40k h	63k h	>72k h	>72k h	>72k h
	80 °C	30k h	39k h	60k h	>72k h	>72k h	>72k h
75 mA	40 °C	41k h	51k h	>72k h	>72k h	>72k h	>72k h
	45 °C	39k h	49k h	>72k h	>72k h	>72k h	>72k h
	50 °C	37k h	47k h	>72k h	>72k h	>72k h	>72k h
	55 °C	36k h	46k h	>72k h	>72k h	>72k h	>72k h
	60 °C	34k h	44k h	70k h	>72k h	>72k h	>72k h
	65 °C	33k h	43k h	67k h	>72k h	>72k h	>72k h
	70 °C	32k h	41k h	64k h	>72k h	>72k h	>72k h
	75 °C	30k h	40k h	62k h	>72k h	>72k h	>72k h
	80 °C	29k h	38k h	59k h	>72k h	>72k h	>72k h
100 mA	40 °C	40k h	50k h	>72k h	>72k h	>72k h	>72k h
	45 °C	38k h	48k h	>72k h	>72k h	>72k h	>72k h
	50 °C	37k h	47k h	>72k h	>72k h	>72k h	>72k h
	55 °C	35k h	45k h	>72k h	>72k h	>72k h	>72k h
	60 °C	34k h	44k h	69k h	>72k h	>72k h	>72k h
	65 °C	33k h	42k h	66k h	>72k h	>72k h	>72k h
	70 °C	31k h	41k h	63k h	>72k h	>72k h	>72k h
	75 °C	30k h	39k h	61k h	>72k h	>72k h	>72k h
	80 °C	29k h	38k h	58k h	>72k h	>72k h	>72k h
125 mA	40 °C	39k h	49k h	>72k h	>72k h	>72k h	>72k h
	45 °C	38k h	48k h	>72k h	>72k h	>72k h	>72k h
	50 °C	36k h	46k h	>72k h	>72k h	>72k h	>72k h
	55 °C	35k h	45k h	70k h	>72k h	>72k h	>72k h
	60 °C	33k h	43k h	68k h	>72k h	>72k h	>72k h
	65 °C	32k h	42k h	65k h	>72k h	>72k h	>72k h
	70 °C	31k h	40k h	62k h	>72k h	>72k h	>72k h
	75 °C	30k h	39k h	60k h	>72k h	>72k h	>72k h
	80 °C	28k h	37k h	57k h	>72k h	>72k h	>72k h
150 mA	40 °C	39k h	49k h	>72k h	>72k h	>72k h	>72k h
	45 °C	37k h	47k h	>72k h	>72k h	>72k h	>72k h
	50 °C	36k h	46k h	>72k h	>72k h	>72k h	>72k h
	55 °C	34k h	44k h	69k h	>72k h	>72k h	>72k h
	60 °C	33k h	42k h	67k h	>72k h	>72k h	>72k h
	65 °C	32k h	41k h	64k h	>72k h	>72k h	>72k h
	70 °C	30k h	40k h	61k h	>72k h	>72k h	>72k h
	75 °C	29k h	38k h	59k h	>72k h	>72k h	>72k h
	80 °C	28k h	37k h	56k h	>72k h	>72k h	>72k h

* Values for each segment (140 mm).

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

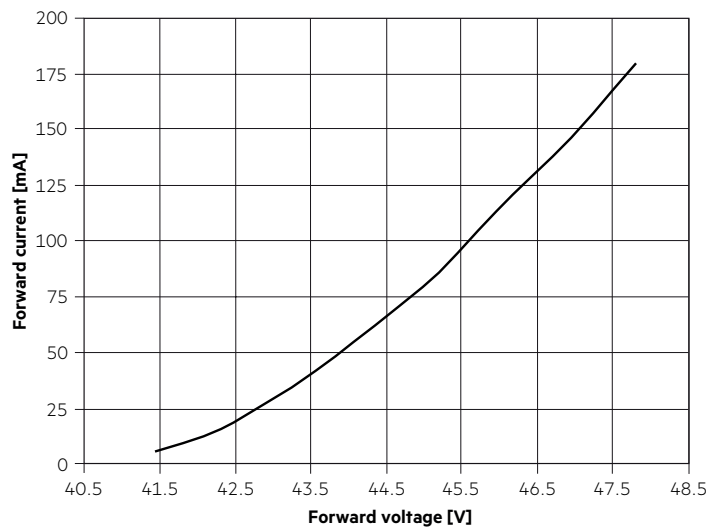
I_{rated} ... Nominal operating current the module is designed for.

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

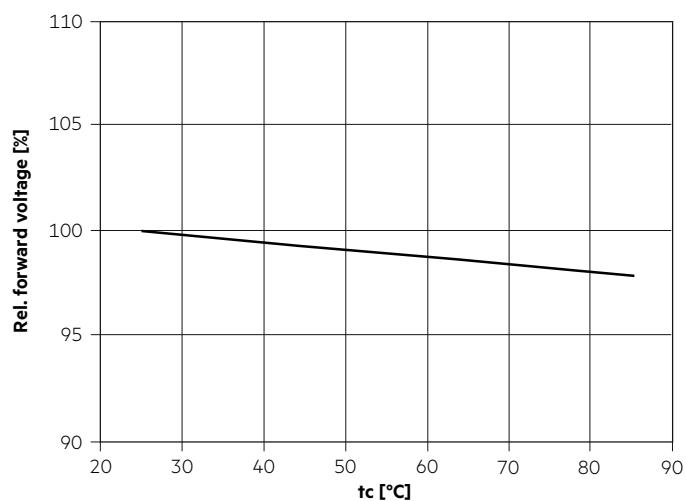
Max. permissible LF current ripple ... Max. output current of the LED driver incl. Tolerances and LF current ripple must not exceed this value.

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 for one segment (140 mm)



5.3 Forward voltage vs. t_c 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

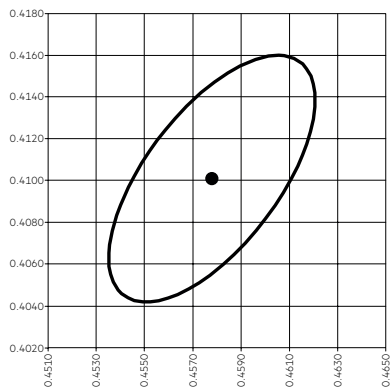
The specified colour coordinates are integral measured by current impulse of 150 mA and a duration of 100 ms.

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

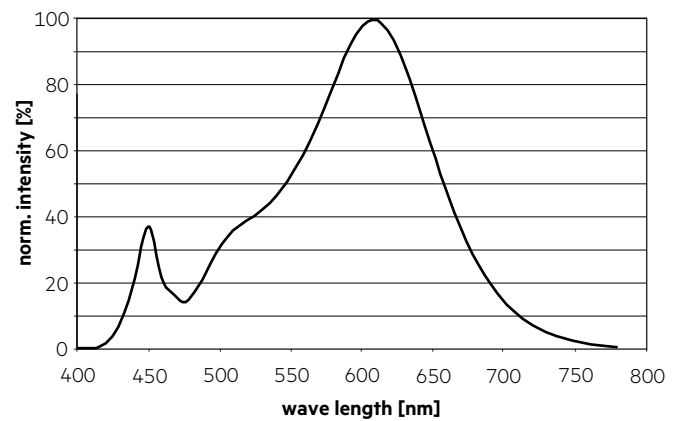
The measurement tolerance of the colour coordinates are ± 0.01 .

2,700 K – CRI80

	x0	y0
Centre	0.4568	0.4071

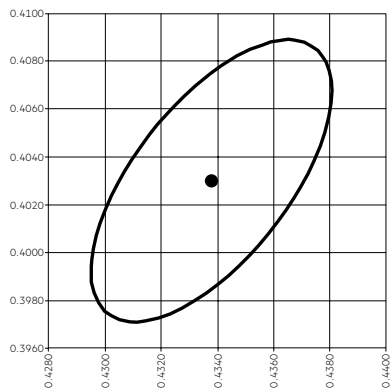


— MacAdam Ellipse: 3SDCM

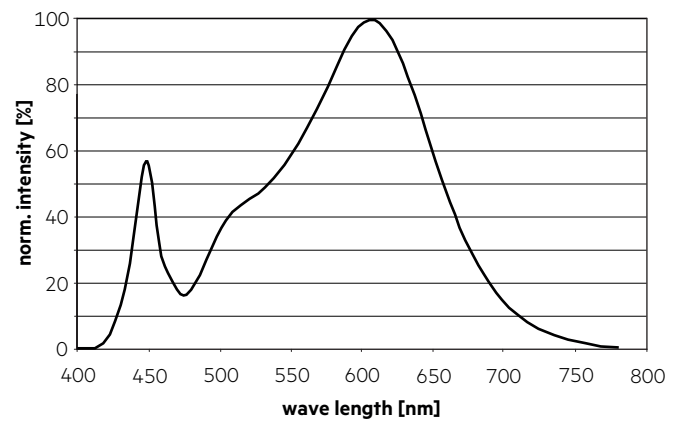


3,000 K – CRI80

	x0	y0
Centre	0.4328	0.4000

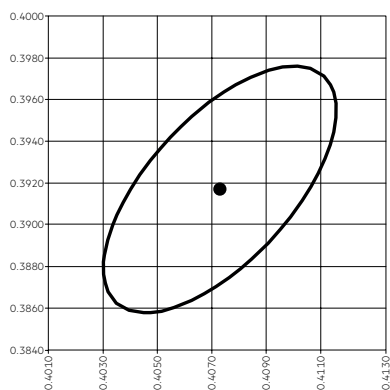


— MacAdam Ellipse: 3SDCM

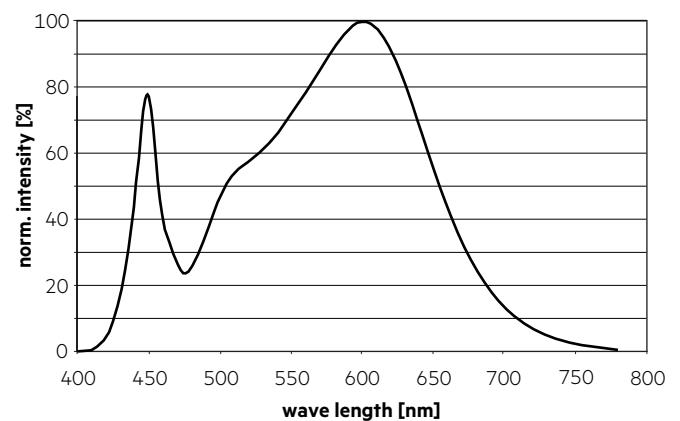


3,5500 K – CRI80

	x0	y0
Centre	0.4063	0.3887

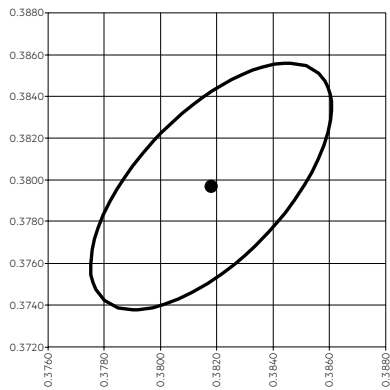


— MacAdam Ellipse: 3SDCM

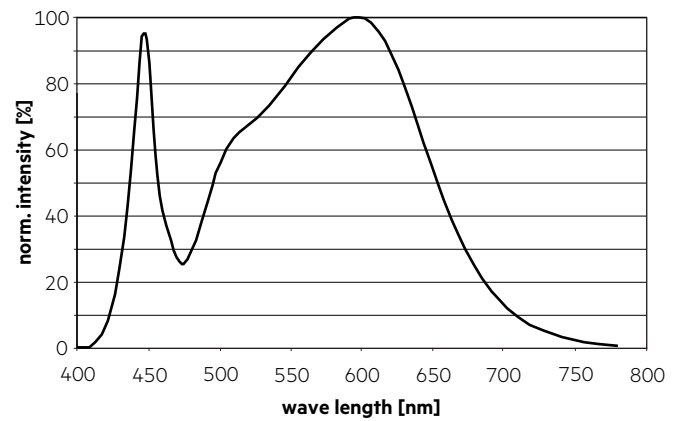


4,000 K – CRI80

	x0	y0
Center	0.3808	0.3767

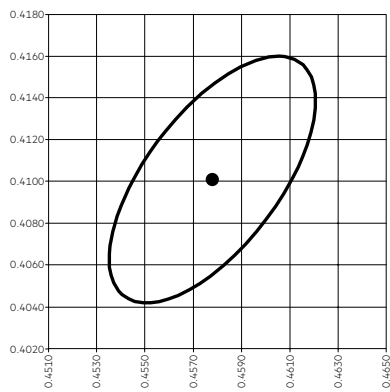


— MacAdam Ellipse: 3SDCM

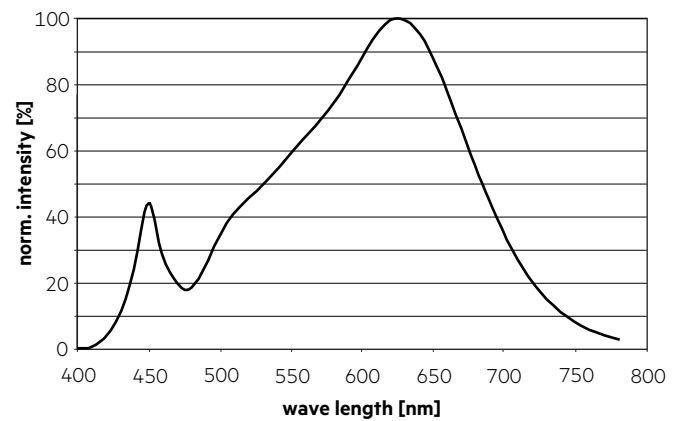


2,700 K – CRI90

	x0	y0
Centre	0.4568	0.4071

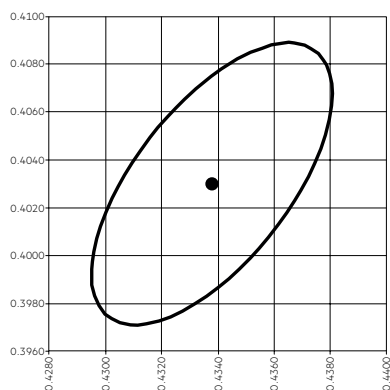


— MacAdam Ellipse: 3SDCM

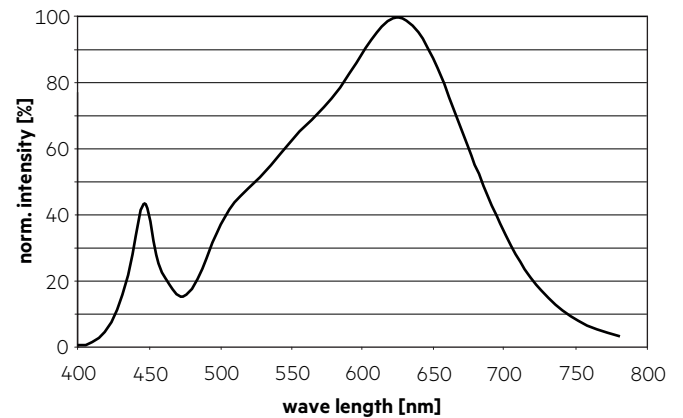


3,000 K – CRI90

	x0	y0
Centre	0.4328	0.4000

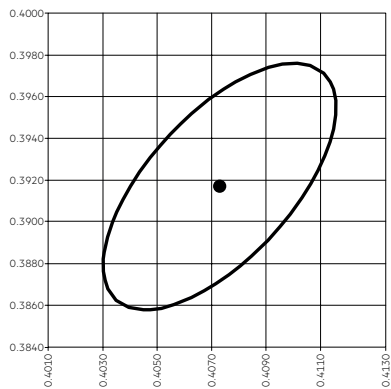


— MacAdam Ellipse: 3SDCM

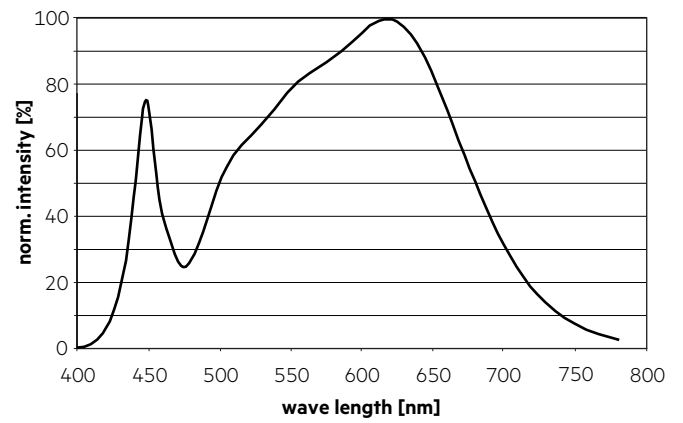


3,500 K – CRI80

	x0	y0
Centre	0.4063	0.3887

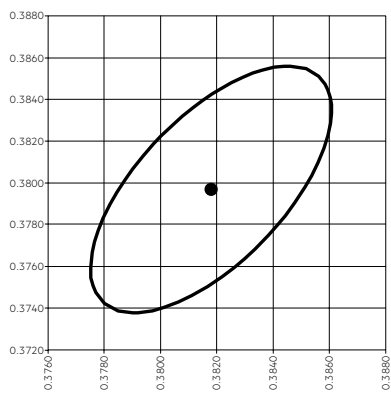


— MacAdam Ellipse: 3SDCM

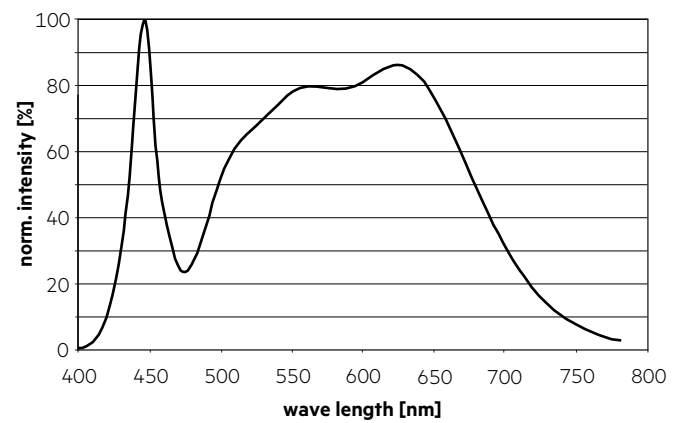


4,000 K – CRI90

	x0	y0
Center	0.3808	0.3767

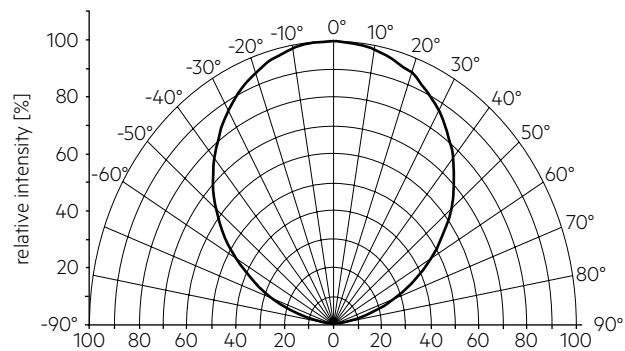


— MacAdam Ellipse: 3SDCM



6.2 Light distribution

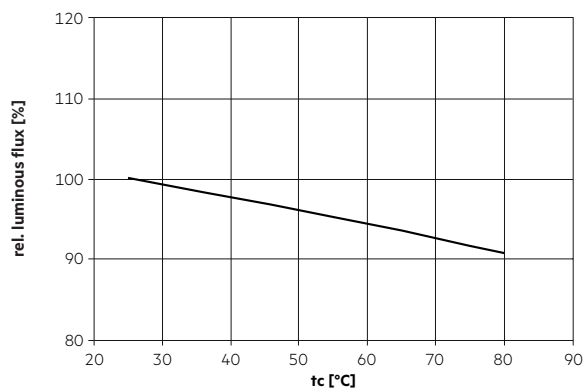
The optical design of the LLE product line ensures optimum homogeneity for the light distribution.



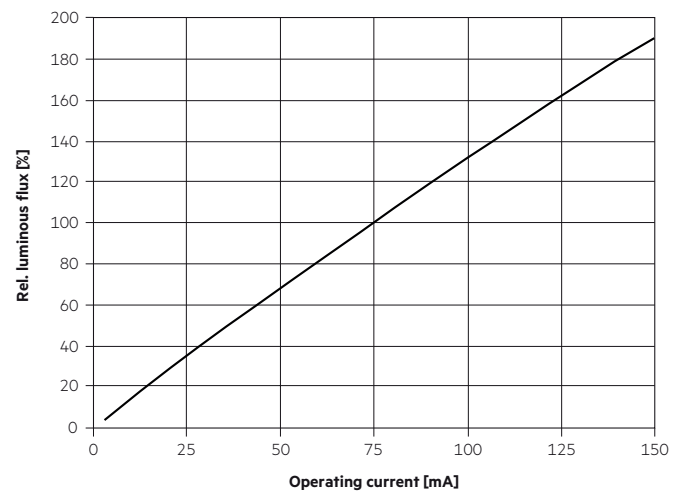
The colour temperature is measured integral over the complete module. The single LED light points can have deviations in the colour coordinates within MacAdam 3.

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 for one segment (140 mm)



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.