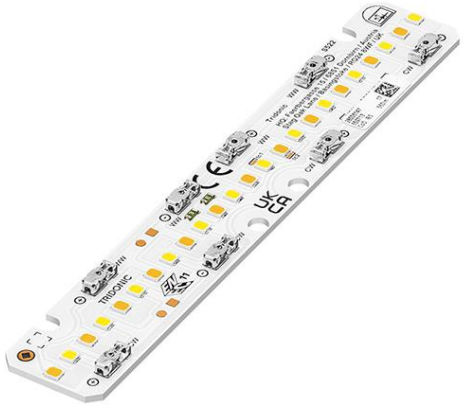
TRIDONIC

Module LLE 24mm 1100lm CRI90 LV PRE4

Modules LLE premium



LLE 24x140mm 550lm 927-965 LV PRE4



LLE 24x280mm 1100lm 927-965 LV PRE4



LLE 24x560mm 2200lm 927-965 LV PRE4

Product description
_ Ideal for linear and panel lights
_ Optimal solution for Tunable White applications together with LCA PRE DT8 or 2 channel low profile LED drivers
_ SELV module – the single module has a forward voltage < 60 V
_ Push terminals for quick and simple wiring
_ Excellent thermal management
_ 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
_ Linear Tunable White LED module with 2,700 and 6,500 K SMT packages
_ Efficacy up to 183 lm/W
_ High colour rendering index CRI > 90
_ Small colour tolerance (MacAdam 3)
_ Low tolerances for luminous flux

Mechanical properties
_ Module dimension 24 x 140 mm, 24 x 280 mm and 24 x 560 mm (ZHAGA compliant)
_ Simple installation (e.g ACL push fix)

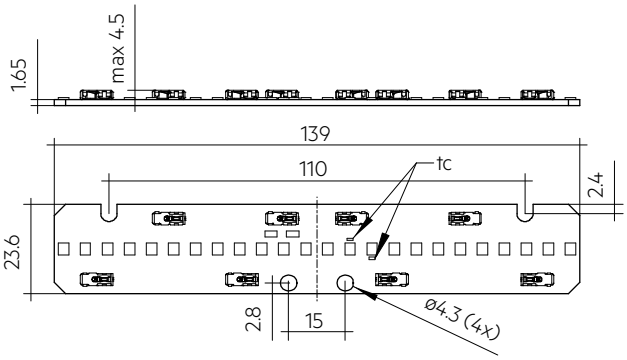
Website
http://www.tridonic.com/28006150



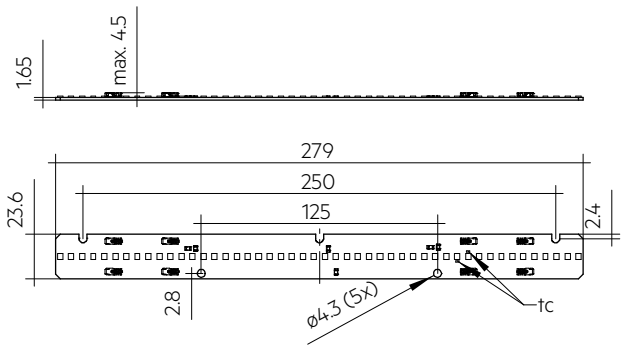
Linear | High bay | Decorative | Downlights | Spotlights | Free-standing | Area | Floor | Wall | Street

Module LLE 24mm 1100lm CRI90 LV PRE4

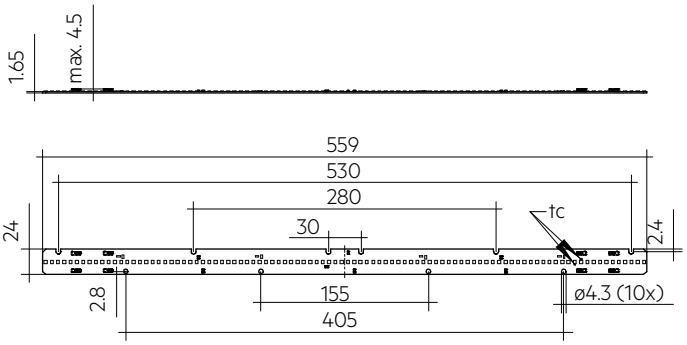
Modules LLE premium



LLE 24x140mm 550lm 927-965 LV PRE4



LLE 24x280mm 1100lm 927-965 LV PRE4



LLE 24x560mm 2200lm 927-965 LV PRE4

Ordering data

Type	Article number	Colour temperature	Packaging, carton	Weight per pc.
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	2,700 – 6,500 K	108 pc(s).	0.012 kg
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	2,700 – 6,500 K	108 pc(s).	0.023 kg
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	2,700 – 6,500 K	108 pc(s).	0.045 kg

Technical data

Beam characteristic	120°
Ambient temperature ta	-25 … +50 °C
tp rated	50 °C
tc	85 °C
Irated for 550 lm	105 mA
Irated for 1,100 lm	210 mA
Irated for 2,200 lm	420 mA
Imax for 550 lm	200 mA
Imax for 1,100 lm	400 mA
Imax for 2,200 lm	800 mA
Max. permissible LF current ripple for 550 lm	368 mA
Max. permissible LF current ripple for 1,100 lm	736 mA
Max. permissible LF current ripple for 2,200 lm	1,472 mA
Max. permissible peak current for 550 lm	480 mA / max. 10 ms
Max. permissible peak current for 1,100 lm	960 mA / max. 10 ms
Max. permissible peak current for 2,200 lm	1,920 mA / max. 10 ms
Max. working voltage for insulation SELV ①	60 V
Insulation test voltage	1.12 kV
CTI of the printed circuit board	≥ 600
ESD classification	Severity level 2
Risk group (IEC 62471) for 550 lm	RG1 (at Imax), RG0 (I ≤ 72 mA)
Risk group (IEC 62471) for 1,100 lm	RG1 (at Imax), RG0 (I ≤ 144 mA)
Risk group (IEC 62471) for 2,200 lm	RG1 (at Imax), RG0 (I ≤ 288 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

RoHS

Standards

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

Specific technical data

Type	Article number	Colour temperature	Photometric code	Useful luminous flux at tp = 25 °C ②	Expected luminous flux at tp rated ③	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C ④	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
Operating mode HE at 100 mA per feet (280 mm module length)												
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	2,700 K	927/359	–	270 lm	50 mA	30.8 V	33.5 V	–	–	167 lm/W	>90
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	6,500 K	965/359	–	290 lm	50 mA	30.8 V	33.5 V	–	–	182 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	2,700 K	927/359	–	530 lm	100 mA	30.8 V	33.5 V	–	–	168 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	6,500 K	965/359	–	580 lm	100 mA	30.8 V	33.5 V	–	–	183 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	2,700 K	927/359	–	1,060 lm	200 mA	30.8 V	33.5 V	–	–	168 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	6,500 K	965/359	–	1,160 lm	200 mA	30.8 V	33.5 V	–	–	182 lm/W	>90
Operating mode NM at 210 mA per feet (280 mm module length)												
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	2,700 K	927/359	560 lm	550 lm	105 mA	31.8 V	34.6 V	3.5 W	160 lm/W	160 lm/W	>90
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	6,500 K	965/359	610 lm	600 lm	105 mA	31.8 V	34.6 V	3.5 W	174 lm/W	174 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	2,700 K	927/359	1,130 lm	1,100 lm	210 mA	31.8 V	34.6 V	7.0 W	161 lm/W	160 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	6,500 K	965/359	1,230 lm	1,200 lm	210 mA	31.8 V	34.6 V	7.0 W	176 lm/W	174 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	2,700 K	927/359	2,260 lm	2,200 lm	420 mA	31.8 V	34.6 V	13.9 W	163 lm/W	160 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	6,500 K	965/359	2,460 lm	2,390 lm	420 mA	31.8 V	34.6 V	13.9 W	177 lm/W	174 lm/W	>90
Operating mode HO at 370 mA per feet (280 mm module length)												
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	2,700 K	927/359	–	930 lm	185 mA	33.1 V	35.8 V	–	–	148 lm/W	>90
LLE 24x140mm 550lm 927-965 LV PRE4	**28006150**	6,500 K	965/359	–	1,010 lm	185 mA	33.1 V	35.8 V	–	–	161 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	2,700 K	927/359	–	1,870 lm	370 mA	33.1 V	35.8 V	–	–	148 lm/W	>90
LLE 24x280mm 1100lm 927-965 LV PRE4	**28006151**	6,500 K	965/359	–	2,030 lm	370 mA	33.1 V	35.8 V	–	–	161 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	2,700 K	927/359	–	3,730 lm	740 mA	33.1 V	35.8 V	–	–	148 lm/W	>90
LLE 24x560mm 2200lm 927-965 LV PRE4	**28006152**	6,500 K	965/359	–	4,060 lm	740 mA	33.1 V	35.8 V	–	–	161 lm/W	>90

① For details see 3.1 Electrical supply/choice of LED driver in data sheet.
② Tolerance of useful light flux - 10 % / + 10 %. Measurement uncertainty ± 10 %.
③ Tolerance of expected light flux - 10 % / + 10 %. Measurement uncertainty ± 10 %. Based on calculation.
④ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

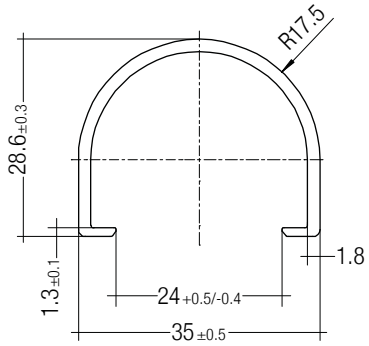
LINEAR COVER LLE

Accessory

Product description

_ LINEAR COVER for LLE
_ Protection against direct touch for non-SELV applications (recommendation LLE 20: use all fixing points and screwed Endcap, recommendation LLE 24: use all fixing points)
_ Fast snap on mounting on to LLE 20: with M4 screws and plastic washers, to LLE 24: with clips or plastic washers
_ High transmission: transparent, semi-transparent and diffuse
_ Material: PMMA
_ Tolerances: ± 1 mm for 597 mm length (ends finished), + 10 mm from length 1,150 mm (ends raw)

Website
http://www.tridonic.com/28000338



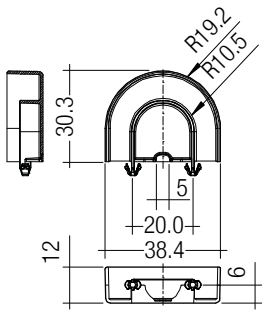
Ordering data

Type	Article number	Colour	Length L	Efficiency	Packaging, carton	Weight per pc.
LINEAR COVER SY Transparent 1600mm	**28000338**	Transparent	1,600 mm	94 %	12 pc(s).	0.272 kg
LINEAR COVER SY Frosted 1800mm	**28000437**	Semi-transparent	1,800 mm	87 %	12 pc(s).	0.308 kg
LINEAR COVER SY Frosted 1600mm	**28000339**	Semi-transparent	1,600 mm	87 %	12 pc(s).	0.272 kg
LINEAR COVER SY Frosted 1500mm	**28000435**	Semi-transparent	1,500 mm	87 %	12 pc(s).	0.244 kg
LINEAR COVER SY Frosted 1200mm	**28000422**	Semi-transparent	1,200 mm	87 %	12 pc(s).	0.205 kg
LINEAR COVER SY Frosted 597mm	**28000340**	Semi-transparent	597 mm	87 %	12 pc(s).	0.102 kg
LINEAR COVER SY Diffuse 1800mm	**28000438**	Diffuse	1,800 mm	76 %	12 pc(s).	0.308 kg
LINEAR COVER SY Diffuse 1600mm	**28000341**	Diffuse	1,600 mm	76 %	12 pc(s).	0.272 kg
LINEAR COVER SY Diffuse 1500mm	**28000436**	Diffuse	1,500 mm	76 %	12 pc(s).	0.257 kg
LINEAR COVER SY Diffuse 1200mm	**28000434**	Diffuse	1,200 mm	76 %	12 pc(s).	0.205 kg
LINEAR COVER SY Diffuse 597mm	**28000342**	Diffuse	597 mm	76 %	12 pc(s).	0.102 kg

ACL ENDCAP LLE

Accessory





Product description

_ ENDCAP for LLE
_ PUSH-FIX: Fast snap on mounting (sheet thickness 0.5 – 1.0 mm), for drilling hole 4 mm
_ SCREW-FIX: Screw mounting with EJOT Delta PT WN 5451 30x8 (not included), tightening torque 0.7 Nm
_ Clip made of polycarbonate

Website

http://www.tridonic.com/28001037

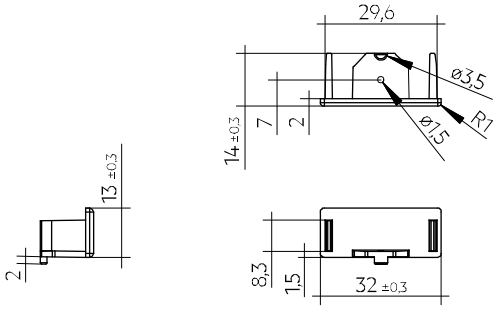
Ordering data

Type	Article number	Colour	Packaging, carton	Weight per pc.
ACL ENDCAP LLE24 PUSH-FIX	**28001037**	White	480 pc(s).	0.003 kg
ACL ENDCAP LLE24 SCREW-FIX	**28002315**	White	480 pc(s).	0.003 kg

ACL LINEAR LENS 24mm

Accessory





Product description LINEAR LENS

_ Linear lens for LLE 20 / 24
_ Available with different beam characteristics
_ Protection against direct touch for non-SELV applications (recommendation: use all fixing points)
_ Fast snap on mounting on to LLE 20: with M4 screws and plastic washers, to LLE 24: with clips or plastic washers
_ Recommendation: Fastening with screws and plastic washers, see 2.3 Heat sink specifications in data sheet
_ Material: PMMA
_ Available lengths: 1,200, 1,500 and 1,800 mm, Tolerance: + 10 mm (ends raw)
_ Max. permissible temperature 80 °C
_ Photometric data available on website

Product description Endcap

_ ENDCAP for LINEAR LENS 24mm INTENSE, ASY and DASY
_ Mounting by clipping in and screwing from below using screw EJOT Delta PT WN 5451 20x4, tightening torque 0.7 Nm
_ Made of Polyamide UL94 V0

Website

http://www.tridonic.com/28001428

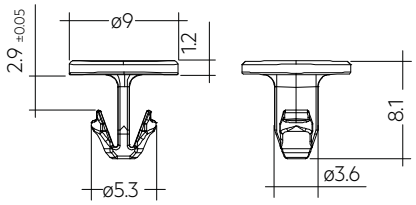
Ordering data

Type	Article number	Length L	Beam characteristic	Efficiency	Packaging, carton	Weight per pc.
ACL LINEAR LENS 24x1200mm 60°	**28001428**	1,200 mm	60°	97 %	21 pc(s).	0.196 kg
ACL LINEAR LENS 24x1200mm 90°	**28001429**	1,200 mm	90°	97 %	21 pc(s).	0.165 kg
ACL LINEAR LENS 24x1500mm 60°	**28000953**	1,500 mm	60°	97 %	21 pc(s).	0.261 kg
ACL LINEAR LENS 24x1500mm 90°	**28000955**	1,500 mm	90°	97 %	21 pc(s).	0.221 kg
ACL LINEAR LENS 24x1200mm INTENSE	**28002024**	1,200 mm	40°	95 %	18 pc(s).	0.261 kg
ACL LINEAR LENS 24x1500mm INTENSE	**28002025**	1,500 mm	40°	95 %	18 pc(s).	0.326 kg
ACL LINEAR LENS 24x1800mm INTENSE	**28002026**	1,800 mm	40°	95 %	18 pc(s).	0.392 kg
ACL LINEAR LENS 24x1200mm BATWING	**28002027**	1,200 mm	batwing	95 %	18 pc(s).	0.275 kg
ACL LINEAR LENS 24x1500mm BATWING	**28002028**	1,500 mm	batwing	95 %	18 pc(s).	0.344 kg
ACL LINEAR LENS 24x1800mm BATWING	**28002029**	1,800 mm	batwing	95 %	18 pc(s).	0.412 kg
ACL LINEAR LENS 24x1200mm ASY	**28002030**	1,200 mm	asymmetric	95 %	18 pc(s).	0.250 kg
ACL LINEAR LENS 24x1500mm ASY	**28002031**	1,500 mm	asymmetric	95 %	18 pc(s).	0.312 kg
ACL LINEAR LENS 24x1800mm ASY	**28002032**	1,800 mm	asymmetric	95 %	18 pc(s).	0.375 kg
ACL LINEAR LENS 24x1200mm DASY	**28002033**	1,200 mm	double asymmetric	92 %	18 pc(s).	0.249 kg
ACL LINEAR LENS 24x1500mm DASY	**28002034**	1,500 mm	double asymmetric	92 %	18 pc(s).	0.311 kg
ACL LINEAR LENS 24x1800mm DASY	**28002035**	1,800 mm	double asymmetric	92 %	18 pc(s).	0.373 kg
ACL Endcap LENS 24mm PSF	**28002669**	–	–	–	3,600 pc(s).	0.003 kg

ACL CLIP 4.3mm

Accessory





Product description

_ Clip for fixation of LED modules with 4.3 mm holes
_ Fast snap on mounting (sheet thickness 0.5 – 1.0 mm for PUSH-FIX and 1 – 2 mm for PUSH-FIX Long)
_ For drilling hole 4 mm
_ Clip made of polycarbonate
_ Minimum sales quantity 500 pcs.

Website

http://www.tridonic.com/28001036

Ordering data

Type	Article number	Colour	Packaging, bag ①	Weight per pc.
ACL CLIP 4.3mm PUSH-FIX	**28001036**	White	500 pc(s).	0.001 kg
ACL CLIP 4,3mm PUSH-FIX Long	**28002314**	Transparent	500 pc(s).	0.001 kg

① Minimum sales quantity 500 pcs.

1. Standards

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

1.1 Photometric code

Key for photometric code, e. g. 930 / 349

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

1.2 Energy classification

Type	Colour temperature	Forward current	Energy classification	Energy consumption
LLE 24x140mm 550lm 927-965 LV PRE4	2,700 K	105 mA	D	4 kWh / 1,000 h
LLE 24x280mm 1100lm 927-965 LV PRE4	2,700 K	210 mA	D	7 kWh / 1,000 h
LLE 24x560mm 2200lm 927-965 LV PRE4	2,700 K	420 mA	D	14 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 … +80 °C

Operation only in non condensing environment.
Humidity during processing of the module should be between 30 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 LLE will be greatly reduced or the LLE may be destroyed.

Therefore the LLE needs to be mounted onto a heat sink.

Tridonic's excellent thermal design for the LED products provides the lowest thermal resistance and therefore allowing new compact designs without sacrificing quality, safety and lifetime.

2.4 Heat sink values

LLE 24x140mm 550lm 927-965 LV PRE4

ta	tp	Forward current	$R_{th, hs-a}$	Cooling area
25 °C	50 °C	105 mA	6.16 K/W	108 cm²
35 °C	50 °C	105 mA	3.11 K/W	214 cm²
40 °C	50 °C	105 mA	1.59 K/W	420 cm²
45 °C	50 °C	105 mA	0.06 K/W	10,390 cm²

LLE 24x280mm 1100lm 927-965 LV PRE4

ta	tp	Forward current	$R_{th, hs-a}$	Cooling area
25 °C	50 °C	210 mA	3.11 K/W	214 cm²
35 °C	50 °C	210 mA	1.58 K/W	423 cm²
40 °C	50 °C	210 mA	0.81 K/W	825 cm²
45 °C	50 °C	210 mA	0.04 K/W	16,655 cm²

LLE 24x560mm 2200lm 927-965 LV PRE4

ta	tp	Forward current	$R_{th, hs-a}$	Cooling area
25 °C	50 °C	420 mA	1.54 K/W	432 cm²
35 °C	50 °C	420 mA	0.78 K/W	854 cm²
40 °C	50 °C	420 mA	0.40 K/W	1,669 cm²
45 °C	50 °C	420 mA	0.02 K/W	37,191 cm²

Notes
These values apply to a single LED module.
The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. The LED modules must rest flat on the heat sink.

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.

If a wire breaks or a complete module fails then the current passing through the other module increases. This may reduce its life considerably.

The max. permissible output current of the LED driver for parallel wiring is 1.8 A.

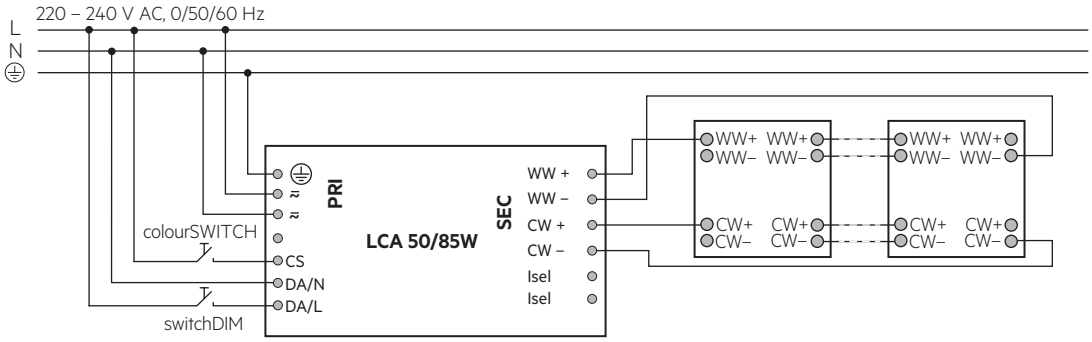
LLE have to be operated with SELV LED drivers.

LLE are basic insulated up to 60 V SELV (if mounted with M4 screws with head diameter 8 mm) 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 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.

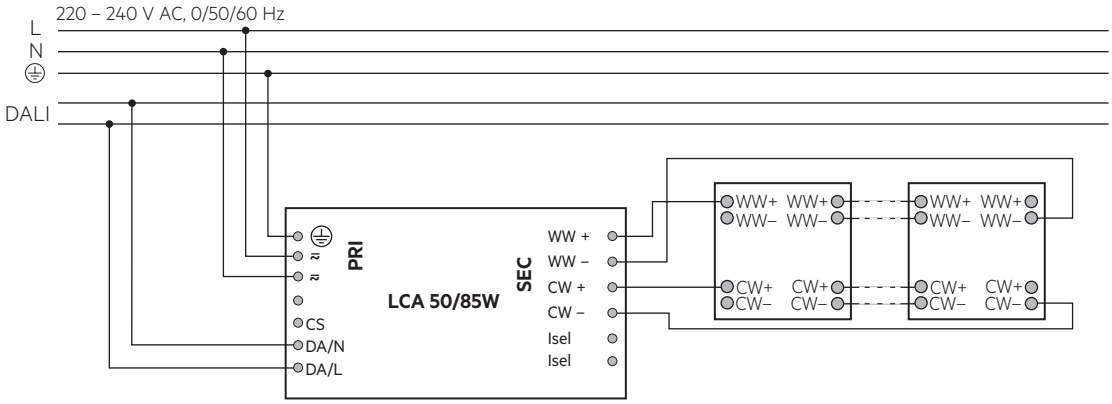
Protection against accidental contact of live parts and compliance with clearances and creepage distances must be ensured in the final application.

3.2 Wiring

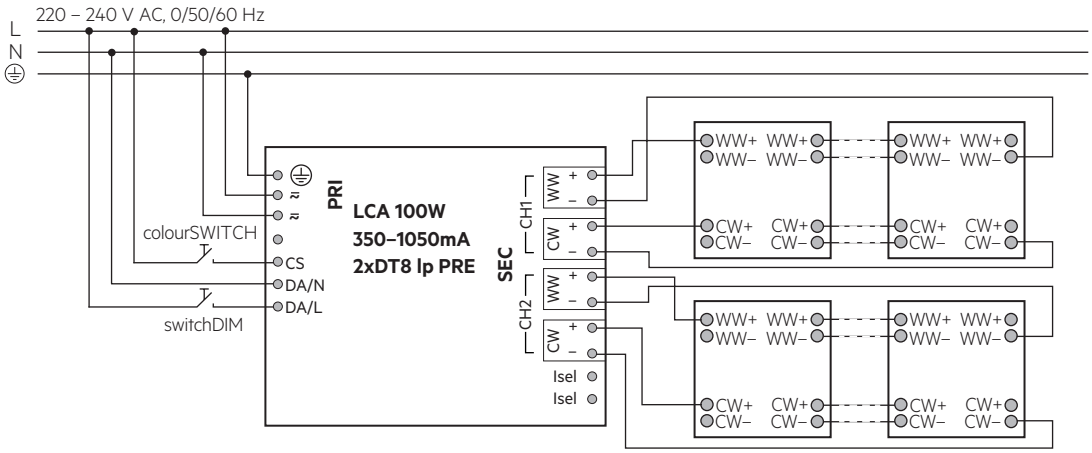
Wiring diagram for switchDIM and colourSWITCH for LLE premium



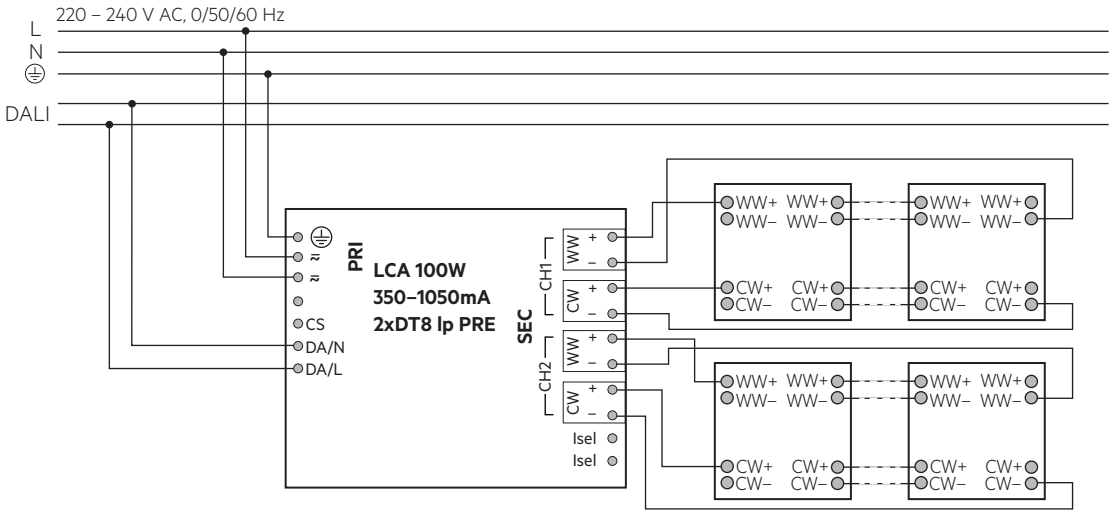
Wiring diagram for DALI for LLE premium



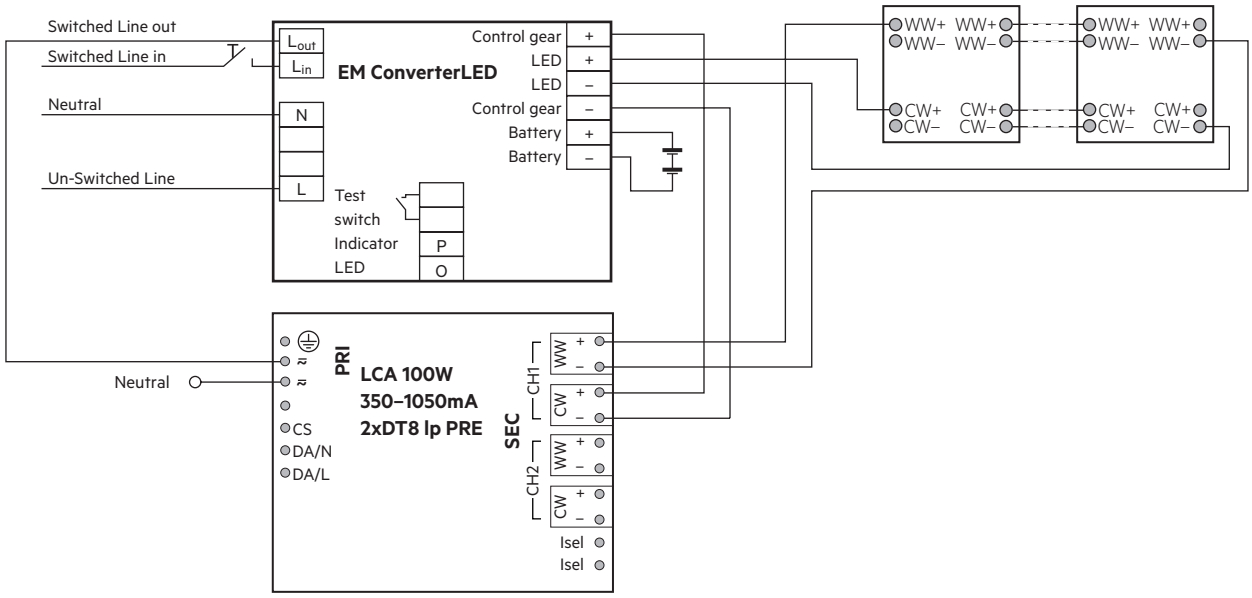
Wiring diagram for switchDIM and colourSWITCH for LLE premium



Wiring diagram for DALI for LLE premium

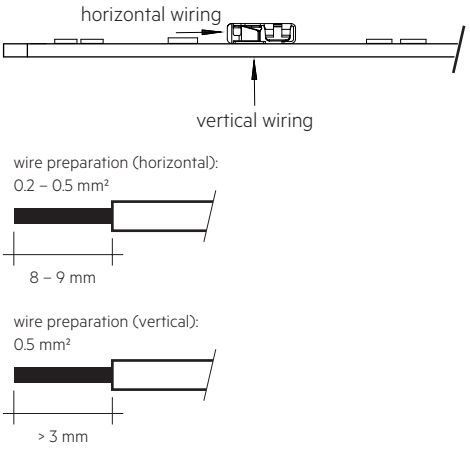


Wiring diagram for emergency



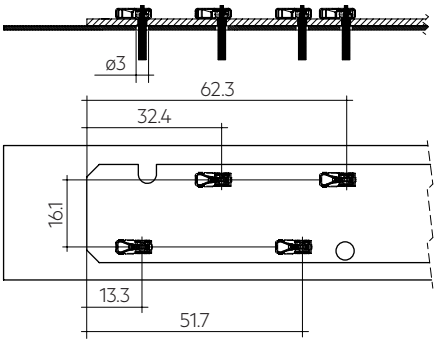
3.3 Wiring type and cross section

For horizontal wiring use stranded wire of 0.5 mm² or solid wire from 0.2 to 0.5 mm² (stripping length 8 - 9 mm) and for vertical wiring solid wire with 0.5 mm² (stripping length > 3 mm).
Only one wire per terminal allowed.

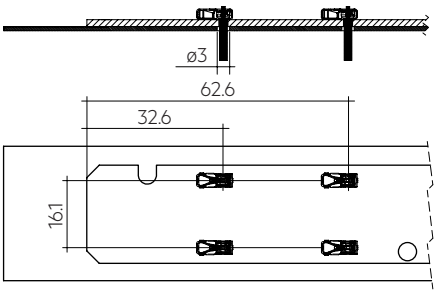


Removing the wires through wist and pull.

Cut-out for vertical wiring of LLE 24x140mm PRE4:



Cut-out for vertical wiring of LLE 24x280mm PRE4 and LLE 24x560mm PRE4:



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 min. 3 screws per module or ACL CLIP 4.3mm.

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 have 70 % of its initial luminous flux after the stated operating time. 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 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 premium

Lifetime declarations are informative and represent no warranty claim.

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
90 - 420 mA	55 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	60 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	65 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	70 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	75 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	80 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h
	85 °C	52.6k h	52.3k h	>102k h	>102k h	>102k h	>102k h

L0C10 >102k h. At tp 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 Imax

5. Electrical values

5.1 Declaration of electrical parameters

Irated … Nominal operating current the module is designed for.

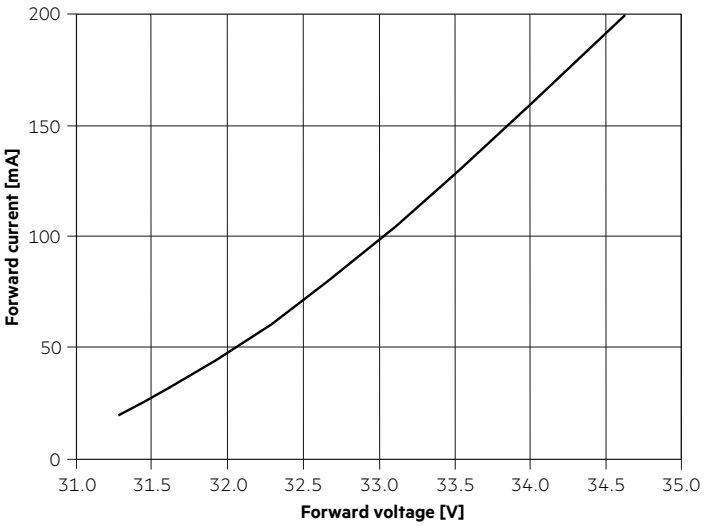
Imax … Max. permissible continuous operating current incl. The tolerances of the LED driver.

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

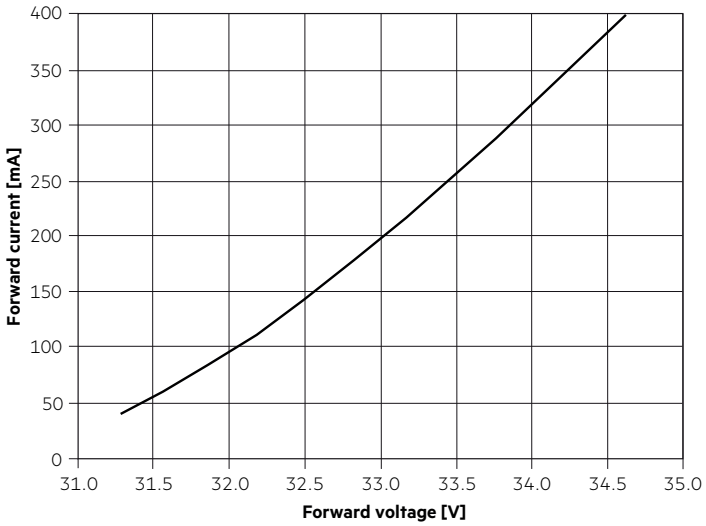
Max. permissible peak current … The max. output peak current of the LED driver must not exceed this value.

5.2 Typ. forward voltage vs. forward current

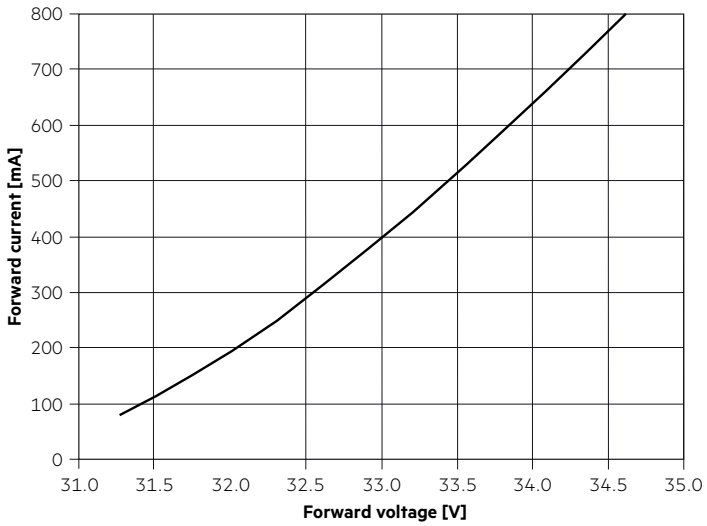
LLE 24x140mm 550lm 927-965 LV PRE4



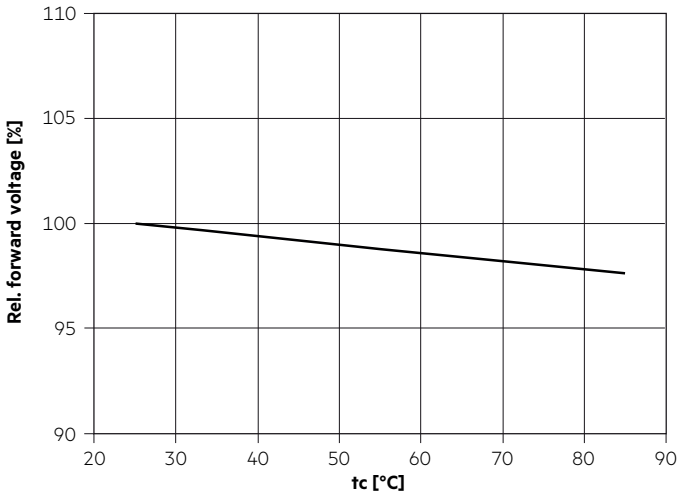
LLE 24x280mm 1100lm 927-965 LV PRE4



LLE 24x560mm 2200lm 927-965 LV PRE4



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

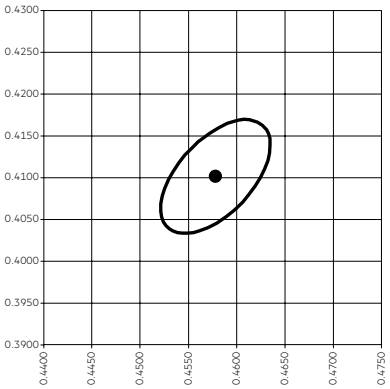
The specified colour coordinates are integral measured by a current impulse with typical values of module and a duration of 100 ms.
The ambient temperature of the measurement is ta = 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

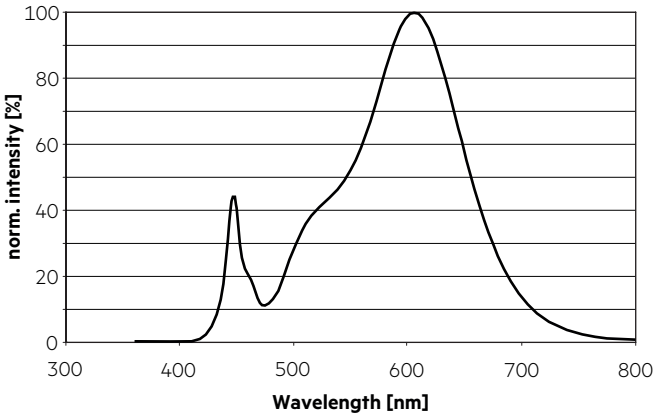
Module type	Current impulse
LLE 24x140mm 550lm 927-965 LV PRE4	55 mA
LLE 24x280mm 1100lm 927-965 LV PRE4	110 mA
LLE 24x560mm 2200lm 927-965 LV PRE4	220 mA

2,700 K

	x0	y0
Centre	0.4578	0.4101

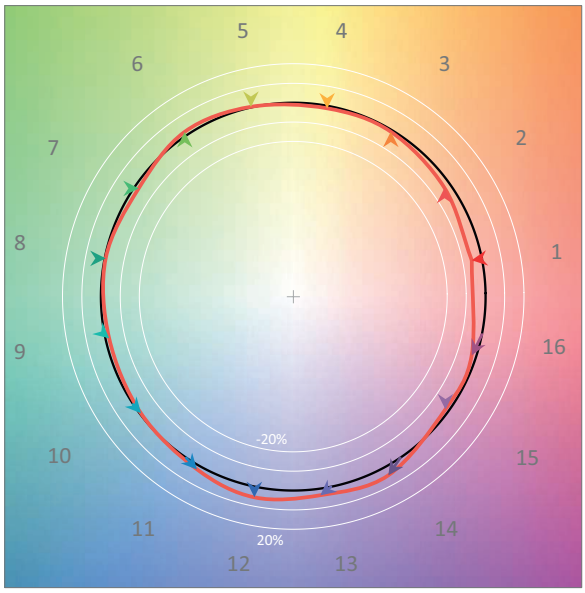
MacAdam ellipse: 3SDCM





TM30		CRI	
Rf	Rg	Ra	R9
91	99	93	56

Colour vector graphic

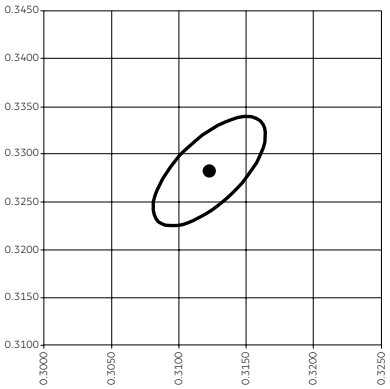


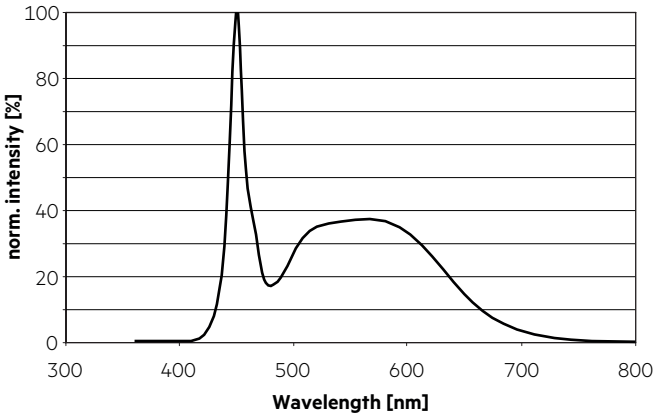
Reference source
Test source

6,500 K

	x0	y0
Centre	0.3123	0.3282

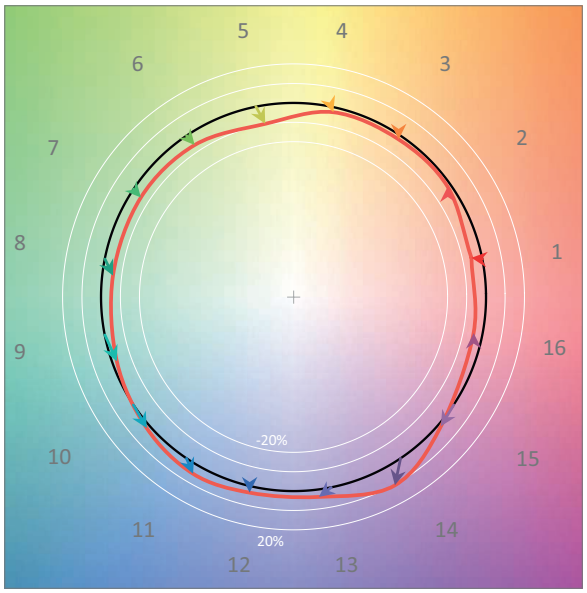
MacAdam ellipse: 3SDCM





TM30		CRI	
Rf	Rg	Ra	R9
87	96	93	67

Colour vector graphic

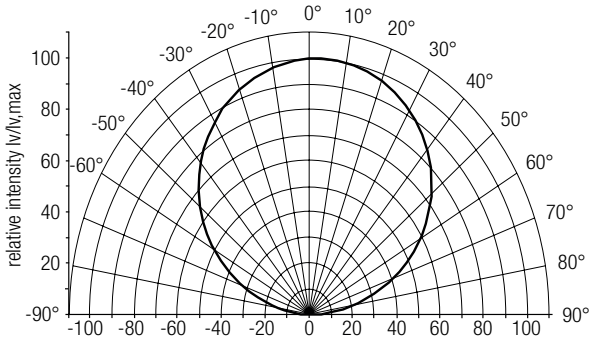


Reference source
Test source

6.2 Light distribution

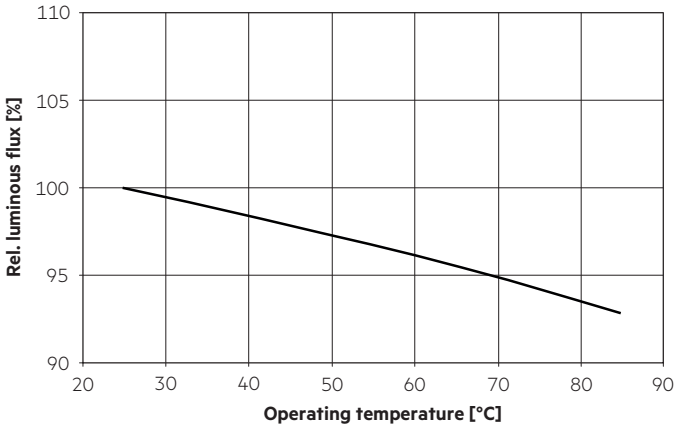
The optical design of the LLE product line ensures optimum homogeneity for the light distribution.

The colour temperature is measured integral over the complete module.
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. 6 cm) should be used.



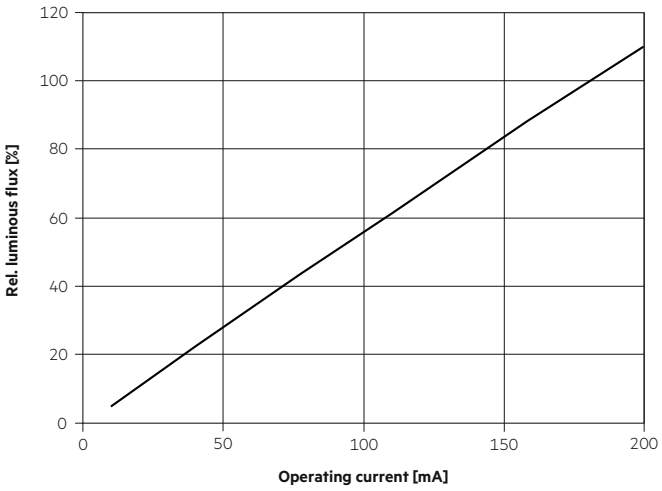
The diagrams are based on statistic values.

6.3 Relative luminous flux vs. operating temperature

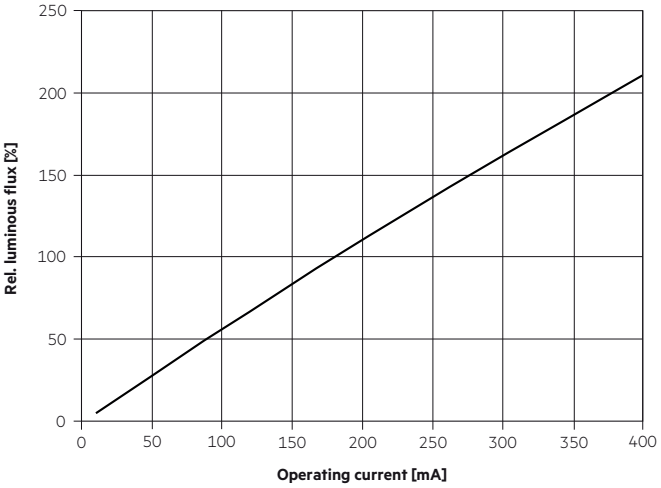


6.4 Relative luminous flux vs. operating current

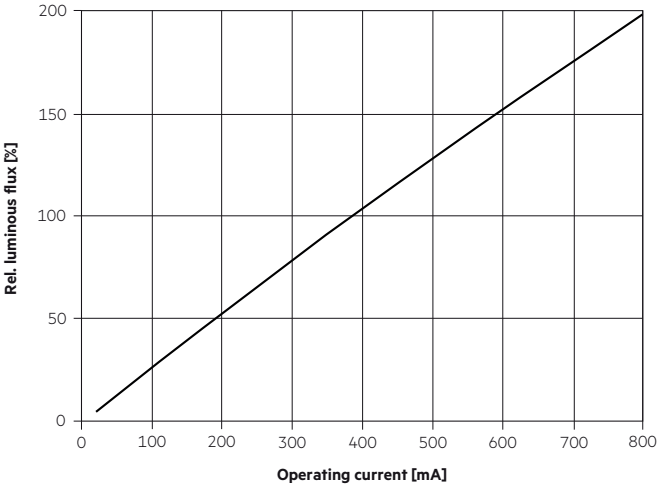
LLE 24x140mm 550lm 927-965 LV PRE4



LLE 24x280mm 1100lm 927-965 LV PRE4



LLE 24x560mm 2200lm 927-965 LV PRE4



7. Miscellaneous

7.1 Additional information

Additional technical information Design-in Guide, 3D data, photometric data and Guarantee conditions at www.tridonic.com

Guarantee conditions at www.tridonic.com → Services

Lifetime declarations are informative and represent no warranty claim.