TRIDONIC

Module LLE 55mm 2000lm LV ADV5

Modules LLE advanced

LLE 55x280mm 2000lm LV ADV5

LLE 55x566mm 4000lm LV ADV5

For articles manufactured at Tridonic SRB d.o.o.

Product description

_ Ideal for linear and panel lights
_ 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 72,000 hours
_ 5 years guarantee (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)

Optical properties

_ Colour temperature 3,000, 3,500, 4,000, 5,000 and 6,500 K
_ Useful luminous flux 4,350 lm at Irated and tp = 25 °C
_ Efficacy of the LED module 195 lm/W at Irated and tp = 25 °C
_ High colour rendering index CRI > 80
_ High colour consistency (MacAdam 3) ①
_ Small luminous flux tolerances

Mechanical properties

_ Module dimension 55 x 280 mm and 55 x 566 mm
_ Simple installation (e.g. screws)

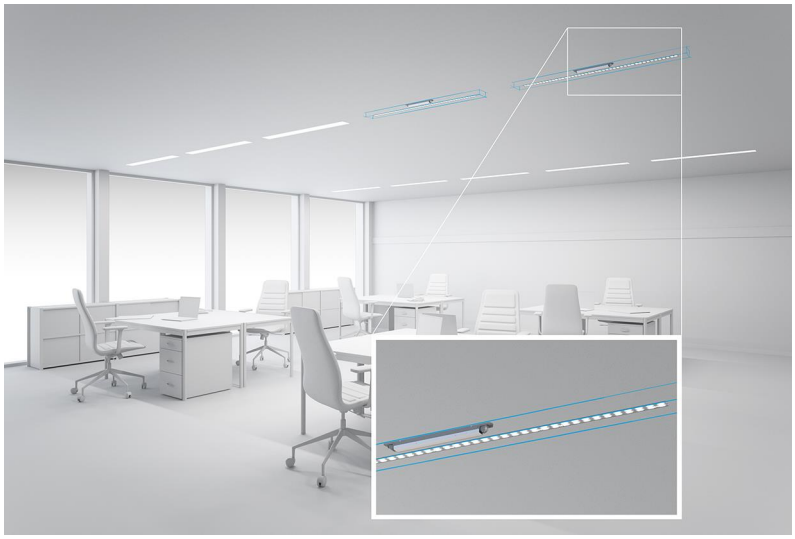
System solution

_ 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

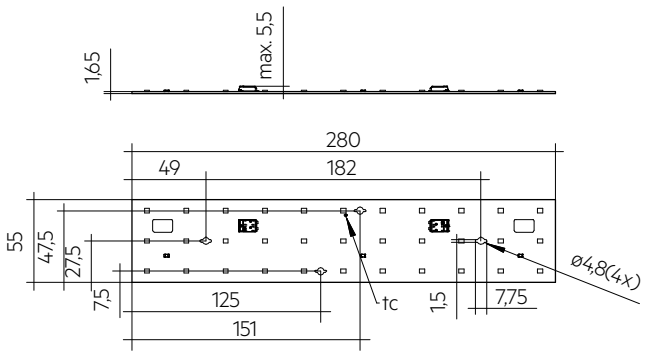
http://www.tridonic.com/89603417



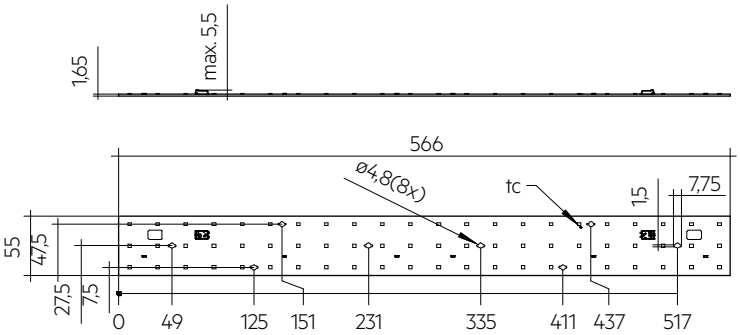
Linear | High bay | Decorative | Downlights | Spotlights | Free-standing | Area | Floor | Wall | Street

Module LLE 55mm 2000lm LV ADV5

Modules LLE advanced



LLE 55x280mm 2000lm LV ADV5



LLE 55x566mm 4000lm LV ADV5

Ordering data

Type	Article number	Article status	Colour temperature	Packaging, carton	Weight per pc.
LLE 55x280mm 2000lm 830 LV ADV5	**89603417**	Standard	3,000 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 835 LV ADV5	**89603418**	On demand	3,500 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 840 LV ADV5	**89603419**	Standard	4,000 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 850 LV ADV5	**89603420**	Standard	5,000 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 865 LV ADV5	**89603421**	On demand	6,500 K	128 pc(s).	0.049 kg
LLE 55x566mm 4000lm 830 LV ADV5	**89603422**	On demand	3,000 K	96 pc(s).	0.099 kg
LLE 55x566mm 4000lm 835 LV ADV5	**89603423**	On demand	3,500 K	96 pc(s).	0.099 kg
LLE 55x566mm 4000lm 840 LV ADV5	**89603424**	Standard	4,000 K	96 pc(s).	0.099 kg
LLE 55x566mm 4000lm 850 LV ADV5	**89603425**	Standard	5,000 K	96 pc(s).	0.099 kg
LLE 55x566mm 4000lm 865 LV ADV5	**89603426**	On demand	6,500 K	96 pc(s).	0.099 kg

Technical data

Beam characteristic	120°
Ambient temperature ta	-40 … +65 °C
tp rated	50 °C
tc	95 °C
Irated for 2,000 lm	375 mA
Irated for 4,000 lm	750 mA
Imax for 2,000 lm	540 mA
Imax for 4,000 lm	1,080 mA
Max. permissible LF current ripple for 2,000 lm	595 mA
Max. permissible LF current ripple for 4,000 lm	1,190 mA
Max. permissible peak current for 2,000 lm	900 mA / max. 8 ms
Max. zul. Stoßstrom für 4.000 lm	1,800 mA / max. 8 ms
Max. working voltage for insulation ②	450 V
Insulation test voltage	1.9 kV
CTI of the printed circuit board	≥ 600
Colour tolerance	3 SDCM
ESD classification	Severity level 4
Risk group (IEC 62471) for 2,000lm at ≤ 470 mA	RG0
Risk group (IEC 62471) for 2,000lm at Imax	RG1
Risk group (IEC 62471) for 4,000lm at ≤ 940 mA	RG0
Risk group (IEC 62471) for 4,000lm at Imax	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 Year(s)

Approval marks

RoHS

Standards

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

Specific technical data

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C[3]	Expected luminous flux at tp rated[4]	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C[5]	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
Operating mode HE at 200 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	**89603417**	830/359	–	1,141 lm	200 mA	28.1 V	31.2 V	–	–	192 lm/W	> >80
LLE 55x280mm 2000lm 835 LV ADV5	**89603418**	835/359	–	1,153 lm	200 mA	28.1 V	31.2 V	–	–	195 lm/W	> >80
LLE 55x280mm 2000lm 840 LV ADV5	**89603419**	840/359	–	1,212 lm	200 mA	28.1 V	31.2 V	–	–	202 lm/W	> >80
LLE 55x280mm 2000lm 850 LV ADV5	**89603420**	850/359	–	1,228 lm	200 mA	28.1 V	31.2 V	–	–	207 lm/W	> >80
LLE 55x280mm 2000lm 865 LV ADV5	**89603421**	865/359	–	1,182 lm	200 mA	28.1 V	31.2 V	–	–	200 lm/W	> >80
LLE 55x566mm 4000lm 830 LV ADV5	**89603422**	830/359	–	2,286 lm	400 mA	28.1 V	31.2 V	–	–	192 lm/W	> >80
LLE 55x566mm 4000lm 835 LV ADV5	**89603423**	835/359	–	2,309 lm	400 mA	28.1 V	31.2 V	–	–	194 lm/W	> >80
LLE 55x566mm 4000lm 840 LV ADV5	**89603424**	840/359	–	2,378 lm	400 mA	28.1 V	31.2 V	–	–	200 lm/W	> >80
LLE 55x566mm 4000lm 850 LV ADV5	**89603425**	850/359	–	2,377 lm	400 mA	28.1 V	31.2 V	–	–	198 lm/W	> >80
LLE 55x566mm 4000lm 865 LV ADV5	**89603426**	865/359	–	2,380 lm	400 mA	28.1 V	31.2 V	–	–	200 lm/W	> >80
Operating mode NM at 375 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	**89603417**	830/359	2,091 lm	2,041 lm	375 mA	29.0 V	32.2 V	11.6 W	180 lm/W	177 lm/W	> >80
LLE 55x280mm 2000lm 835 LV ADV5	**89603418**	835/359	2,111 lm	2,060 lm	375 mA	29.0 V	32.2 V	11.6 W	182 lm/W	179 lm/W	> >80
LLE 55x280mm 2000lm 840 LV ADV5	**89603419**	840/359	2,204 lm	2,144 lm	375 mA	29.0 V	32.2 V	11.6 W	190 lm/W	186 lm/W	> >80
LLE 55x280mm 2000lm 850 LV ADV5	**89603420**	850/359	2,257 lm	2,187 lm	375 mA	29.0 V	32.2 V	11.6 W	195 lm/W	191 lm/W	> >80
LLE 55x280mm 2000lm 865 LV ADV5	**89603421**	865/359	2,175 lm	2,114 lm	375 mA	29.0 V	32.2 V	11.6 W	188 lm/W	184 lm/W	> >80
LLE 55x566mm 4000lm 830 LV ADV5	**89603422**	830/359	4,182 lm	4,069 lm	750 mA	29.0 V	32.2 V	23.2 W	180 lm/W	177 lm/W	> >80
LLE 55x566mm 4000lm 835 LV ADV5	**89603423**	835/359	4,223 lm	4,111 lm	750 mA	29.0 V	32.2 V	23.2 W	182 lm/W	179 lm/W	> >80
LLE 55x566mm 4000lm 840 LV ADV5	**89603424**	840/359	4,360 lm	4,251 lm	750 mA	29.0 V	32.2 V	23.2 W	188 lm/W	184 lm/W	> >80
LLE 55x566mm 4000lm 850 LV ADV5	**89603425**	850/359	4,330 lm	4,224 lm	750 mA	29.0 V	32.2 V	23.2 W	187 lm/W	183 lm/W	> >80
LLE 55x566mm 4000lm 865 LV ADV5	**89603426**	865/359	4,350 lm	4,239 lm	750 mA	29.0 V	32.2 V	23.2 W	188 lm/W	184 lm/W	> >80
Operating mode HO at 500 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	**89603417**	830/359	–	2,661 lm	500 mA	29.6 V	32.7 V	–	–	170 lm/W	> >80
LLE 55x280mm 2000lm 835 LV ADV5	**89603418**	835/359	–	2,683 lm	500 mA	29.6 V	32.7 V	–	–	172 lm/W	> >80
LLE 55x280mm 2000lm 840 LV ADV5	**89603419**	840/359	–	2,795 lm	500 mA	29.6 V	32.7 V	–	–	178 lm/W	> >80
LLE 55x280mm 2000lm 850 LV ADV5	**89603420**	850/359	–	2,846 lm	500 mA	29.6 V	32.7 V	–	–	182 lm/W	> >80
LLE 55x280mm 2000lm 865 LV ADV5	**89603421**	865/359	–	2,746 lm	500 mA	29.6 V	32.7 V	–	–	176 lm/W	> >80
LLE 55x566mm 4000lm 830 LV ADV5	**89603422**	830/359	–	5,299 lm	1,000 mA	29.6 V	32.7 V	–	–	169 lm/W	> >80
LLE 55x566mm 4000lm 835 LV ADV5	**89603423**	835/359	–	5,352 lm	1,000 mA	29.6 V	32.7 V	–	–	171 lm/W	> >80
LLE 55x566mm 4000lm 840 LV ADV5	**89603424**	840/359	–	5,519 lm	1,000 mA	29.6 V	32.7 V	–	–	176 lm/W	> >80
LLE 55x566mm 4000lm 850 LV ADV5	**89603425**	850/359	–	5,494 lm	1,000 mA	29.6 V	32.7 V	–	–	174 lm/W	> >80
LLE 55x566mm 4000lm 865 LV ADV5	**89603426**	865/359	–	5,515 lm	1,000 mA	29.6 V	32.7 V	–	–	176 lm/W	> >80

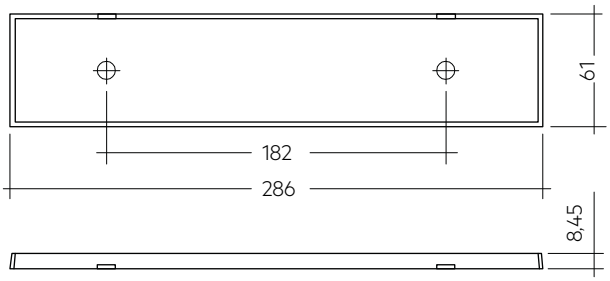
② If mounted with M4 screws and plastic washers.
③ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.
④ Tolerance of expected light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %. Based on calculation.
⑤ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

ACL LENS 55x280mm

Accessory

Product description
_ ACL LENS for LLE 55x280mm
_ Available with different beam characteristics
_ Easy mounting with M4 screws
_ ACL SHADE to reduce UGR
_ ACL LENS made of PMMA, ACL SHADE made of ABS
_ Max. permissible temperature 80 °C
_ Max. permissible tc temperature 75 °C at the LED module
_ Photometric data available on website

Website
http://www.tridonic.com/28002206

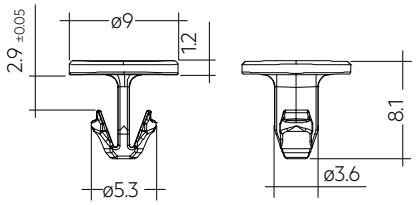


Ordering data

Type	Article number	Length L	Beam characteristic	Efficiency	Packaging, carton	Weight per pc.
ACL LENS 55X280mm 60°	**28002206**	286.00 mm	60°	91 %	72 pc(s).	0.088 kg
ACL LENS 55X280mm 90°	**28002207**	286.00 mm	90°	90 %	72 pc(s).	0.092 kg
ACL LENS 55X280mm 90x45°	**28002208**	286.00 mm	90x45°	90 %	72 pc(s).	0.091 kg
ACL LENS 55X280mm DA25°	**28002209**	286.00 mm	double asymmetric 25°	94 %	60 pc(s).	0.072 kg
ACL LENS 55X280mm A20°	**28002210**	286.00 mm	asymmetric 20°	93 %	60 pc(s).	0.058 kg
ACL SHADE 55X280mm UGR	**28002211**	290.58 mm	UGR improving	–	60 pc(s).	0.027 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. 830 / 349

1st digit		2nd + 3rd digit	4th digit	5th digit	6th 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)	
					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 55x280mm 2000lm 830 LV ADV5	3,000 K	375 mA	C	12 kWh / 1,000 h
LLE 55x280mm 2000lm 835 LV ADV5	3,500 K	375 mA	C	12 kWh / 1,000 h
LLE 55x280mm 2000lm 840 LV ADV5	4,000 K	375 mA	C	12 kWh / 1,000 h
LLE 55x280mm 2000lm 850 LV ADV5	5,000 K	375 mA	C	12 kWh / 1,000 h
LLE 55x280mm 2000lm 865 LV ADV5	6,500 K	375 mA	C	12 kWh / 1,000 h
LLE 55x566mm 4000lm 830 LV ADV5	3,000 K	750 mA	C	24 kWh / 1,000 h
LLE 55x566mm 4000lm 835 LV ADV5	3,500 K	750 mA	C	24 kWh / 1,000 h
LLE 55x566mm 4000lm 840 LV ADV5	4,000 K	750 mA	C	24 kWh / 1,000 h
LLE 55x566mm 4000lm 850 LV ADV5	5,000 K	750 mA	C	24 kWh / 1,000 h
LLE 55x566mm 4000lm 865 LV ADV5	6,500 K	750 mA	C	24 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

Operation only in non condensing environment.
Humidity during processing of the module should be between 30 to 70 %.

2.3 Heat sink values

LLE 55x280mm 2000lm ADV5

ta	tp	Forward current	$R_{th, hs-a}$	Cooling area
25 °C	50 °C	375 mA	4.26 K/W	156 cm²
25 °C	50 °C	500 mA	2.99 K/W	223 cm²
35 °C	50 °C	375 mA	2.56 K/W	261 cm²
35 °C	50 °C	500 mA	1.79 K/W	372 cm²
40 °C	50 °C	375 mA	1.70 K/W	391 cm²
40 °C	50 °C	500 mA	1.19 K/W	558 cm²
45 °C	50 °C	375 mA	0.85 K/W	784 cm²
45 °C	50 °C	500 mA	0.60 K/W	1,120 cm²

LLE 55x560mm 4000lm ADV5

ta	tp	Forward current	$R_{th, hs-a}$	Cooling area
25 °C	50 °C	750 mA	2.15 K/W	309 cm²
25 °C	50 °C	1,000 mA	1.51 K/W	441 cm²
35 °C	50 °C	750 mA	1.29 K/W	516 cm²
35 °C	50 °C	1,000 mA	0.91 K/W	735 cm²
40 °C	50 °C	750 mA	0.86 K/W	774 cm²
40 °C	50 °C	1,000 mA	0.60 K/W	1,103 cm²
45 °C	50 °C	750 mA	0.43 K/W	1,551 cm²
45 °C	50 °C	1,000 mA	0.30 K/W	2,211 cm²

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.

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.

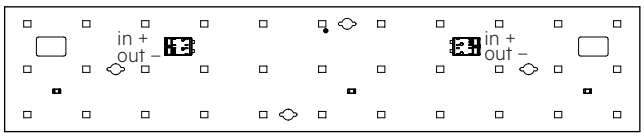
If a wire breaks or a complete module fails then the current passing through the other module increases. This may reduce its life considerably.

The max. permissible output current of the LED driver for parallel wiring is 3 A.

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

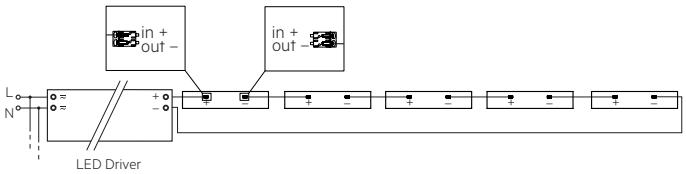
LLE are basic insulated up to 450 V (if mounted with M4 screws with head diameter 7 mm in combination with plastic washers) against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED driver (also against earth) is above 450 V, an additional 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



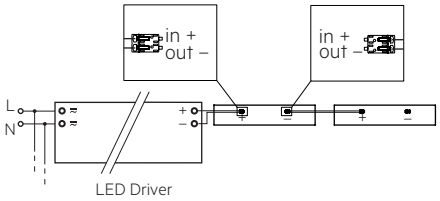
Wiring examples

Serial wiring:



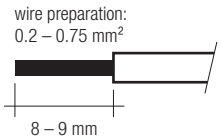
Only with modules with the same length possible.

Parallel wiring:



3.3 Wiring type and cross section

For wiring use stranded wire with ferrules or solid wire from 0.2 to 0.75 mm². For the push-wire connection you have to strip the insulation (8–9 mm).



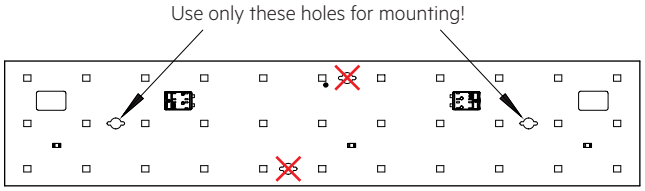
To remove the wires use a suitabel tool (e.g. Microcon release pin) or through twist and pull .

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 min. 2 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 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 for LLE 55mm LV ADV5

Forward current	tp temperature	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
150 mA	40 °C	43,000 h	59,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	42,000 h	57,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	41,000 h	55,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	40,000 h	54,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	39,000 h	52,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	38,000 h	50,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	38,000 h	49,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	37,000 h	47,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	36,000 h	46,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	35,000 h	45,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
200 mA	40 °C	43,000 h	58,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	42,000 h	57,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	41,000 h	55,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	40,000 h	53,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	39,000 h	51,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	38,000 h	50,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	37,000 h	48,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	36,000 h	47,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	36,000 h	45,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	35,000 h	44,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
300 mA	40 °C	42,000 h	58,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	41,000 h	56,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	40,000 h	54,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	40,000 h	52,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	39,000 h	51,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	38,000 h	49,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	37,000 h	48,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	36,000 h	46,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	35,000 h	45,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	34,000 h	44,000 h	70,000 h	>72,000 h	>72,000 h	>72,000 h
375 mA	40 °C	42,000 h	57,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	41,000 h	55,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	40,000 h	54,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	39,000 h	52,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	38,000 h	50,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	37,000 h	49,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	37,000 h	47,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	36,000 h	46,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	35,000 h	44,000 h	71,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	34,000 h	43,000 h	69,000 h	>72,000 h	>72,000 h	>72,000 h
450 mA	40 °C	42,000 h	56,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	41,000 h	55,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	40,000 h	53,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	39,000 h	51,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	38,000 h	50,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	37,000 h	48,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	36,000 h	47,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	35,000 h	45,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	35,000 h	44,000 h	70,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	34,000 h	43,000 h	69,000 h	>72,000 h	>72,000 h	>72,000 h
500 mA	40 °C	41,000 h	56,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	45 °C	40,000 h	54,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	50 °C	39,000 h	52,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	55 °C	38,000 h	51,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	60 °C	38,000 h	49,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	65 °C	37,000 h	48,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	70 °C	36,000 h	46,000 h	>72,000 h	>72,000 h	>72,000 h	>72,000 h
	75 °C	35,000 h	45,000 h	71,000 h	>72,000 h	>72,000 h	>72,000 h
	80 °C	34,000 h	43,000 h	70,000 h	>72,000 h	>72,000 h	>72,000 h
	85 °C	34,000 h	42,000 h	68,000 h	>72,000 h	>72,000 h	>72,000 h

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

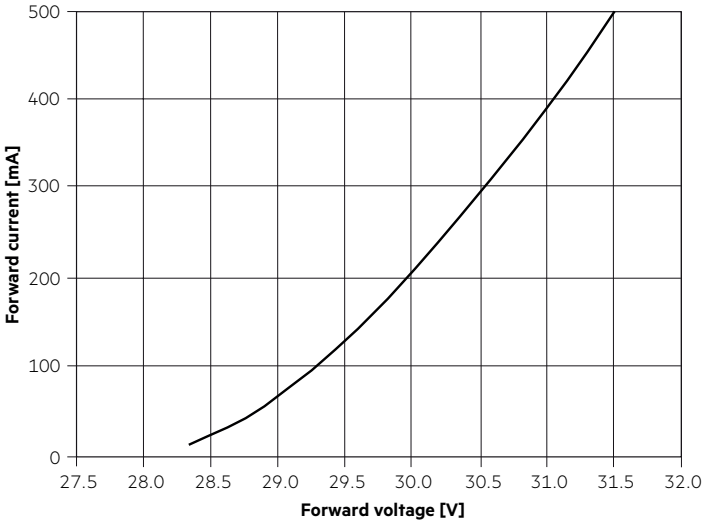
Irated … Nominal operating current the module is designed for.

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

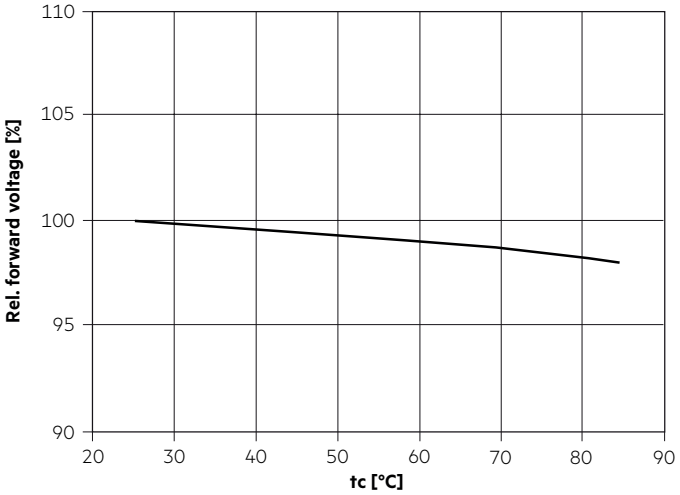
Max. permissible LF current ripple … Max. output current of the LED driver incl. Tolerances and LF current ripple must not exceed this value.

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



5.3 Forward voltage vs. tc temperature



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

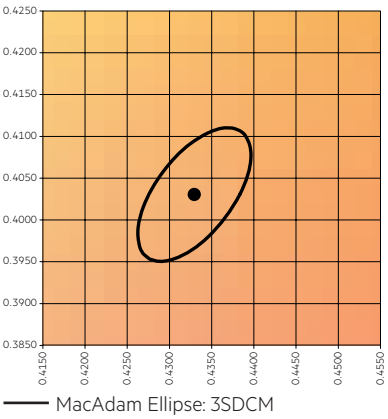
6. Photometric characteristics

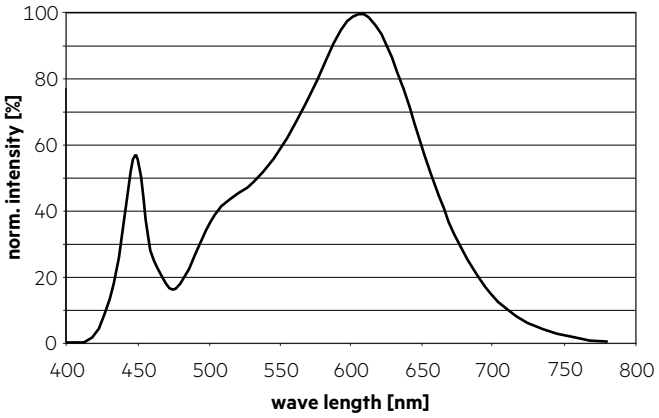
6.1 Coordinates and tolerances according to CIE 1931

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 ta = 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

3,000 K

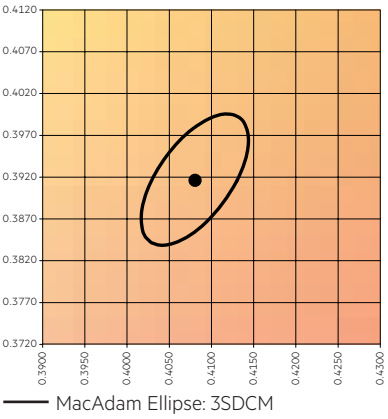
	x0	y0
Centre	0.4338	0.4030

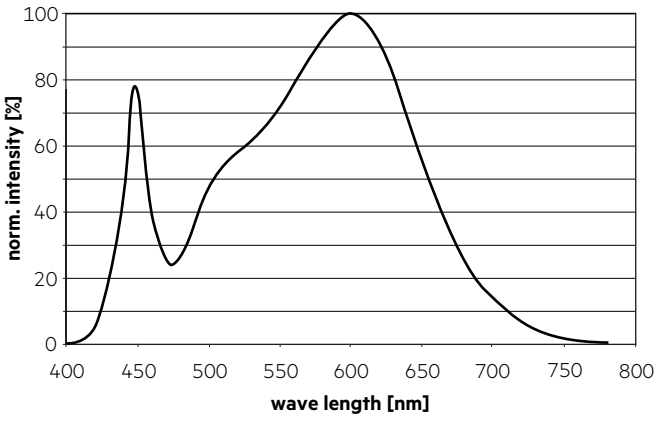




3,500 K

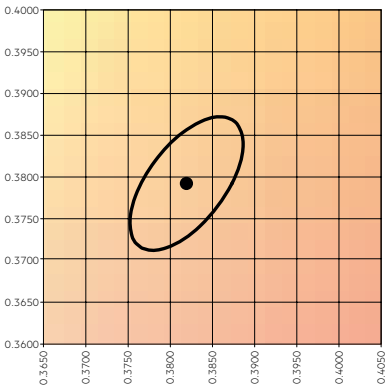
	x0	y0
Centre	0.4073	0.3917



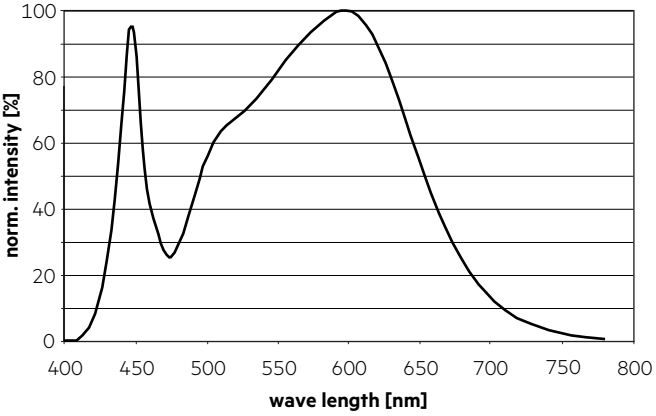


4,000 K

	x0	y0
Center	0.3818	0.3797

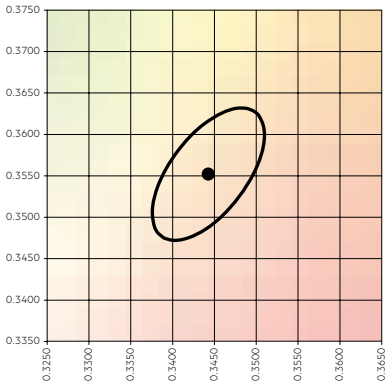


MacAdam Ellipse: 3SDCM

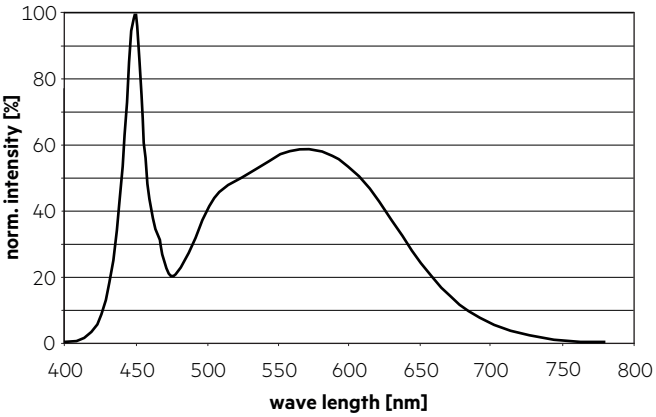


5,000 K

	x0	y0
Center	0.3447	0.3553

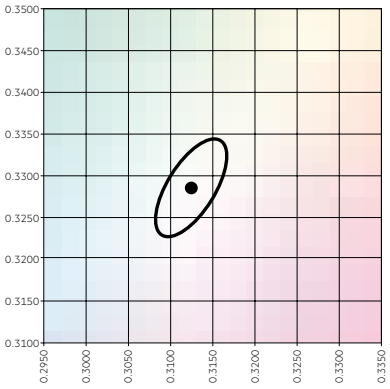


MacAdam Ellipse: 3SDCM

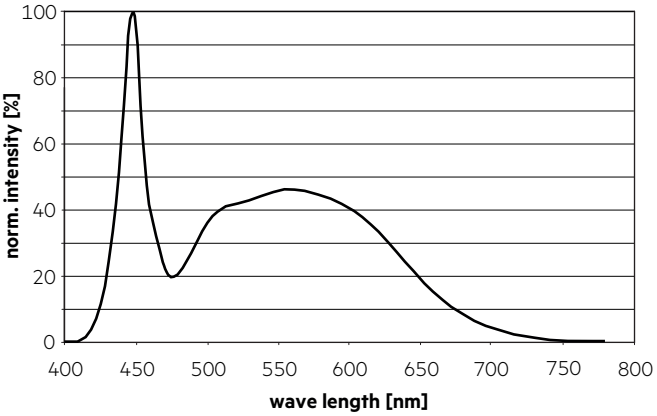


6,500 K

	x0	y0
Center	0.3123	0.3282

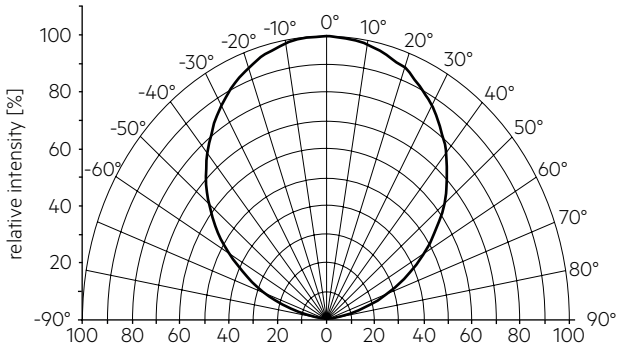


MacAdam Ellipse: 3SDCM



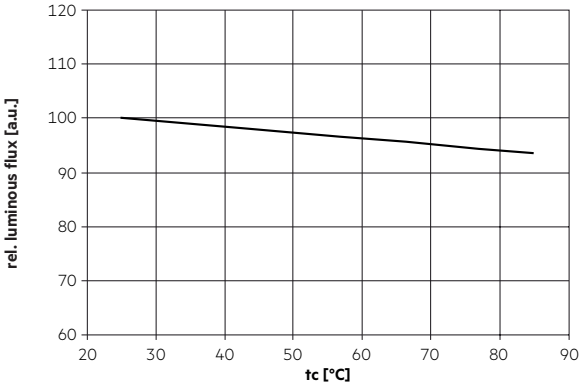
6.2 Light distribution

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



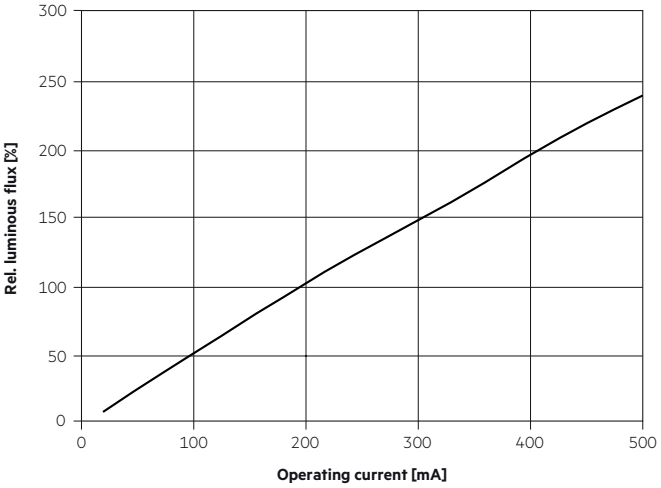
The colour temperature is measured integral over the complete module. The single LED light points can have deviations in the colour coordinates within MacAdam 5.
To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 4 cm) should be used.

6.3 Relative luminous flux vs. tc temperature

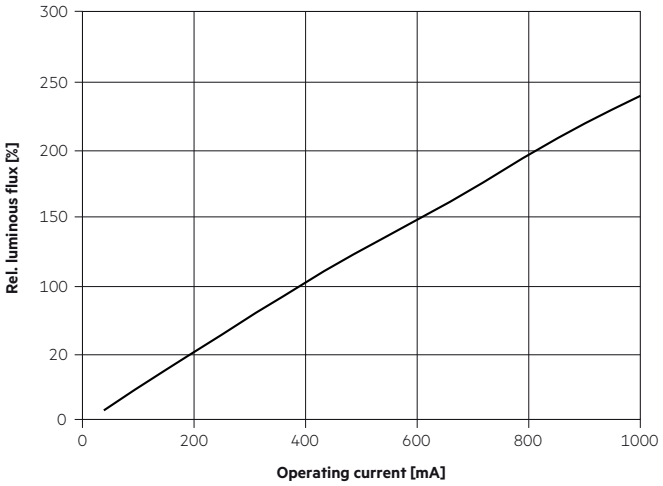


6.4 Relative luminous flux vs. operating current

LLE 55x280mm 2000lm LV ADV5



LLE 55x566mm 4000lm LV ADV5



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

Guarantee conditions at www.tridonic.com → Services

Lifetime declarations are informative and represent no warranty claim.