



Module LLE 55x280/566mm 2000/4000lm LV ADV5

Modules LLE advanced

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
- Long life-time: 72,000 hours
- 5-year guarantee

Optical properties

- Colour temperature 3,000 K, 4,000 K and 5,000 K
- Typ. luminous flux 2,000 and 4,000 lm
- Efficacy of the module up to 203 lm/W
- High colour rendering index CRI > 80
- High colour consistency (MacAdam 3)[®]
- Small luminous flux tolerances

Mechanical properties

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

System solution

- LED system solution with outstanding system efficiency up to 183 lm/W, consisting of linear LED modules and dimmable LED Driver LCA 50W 350-1050mA one4all Ip PRE



LLE 55x280mm 2000lm LV ADV5

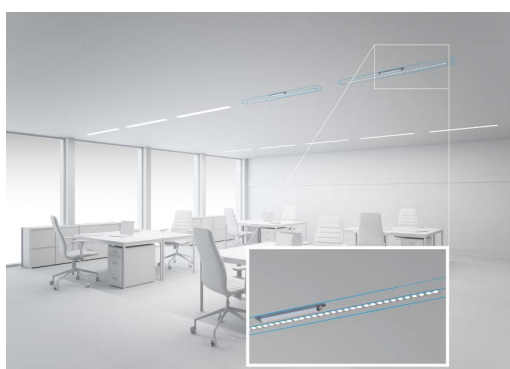


LLE 55x566mm 4000lm LV ADV5



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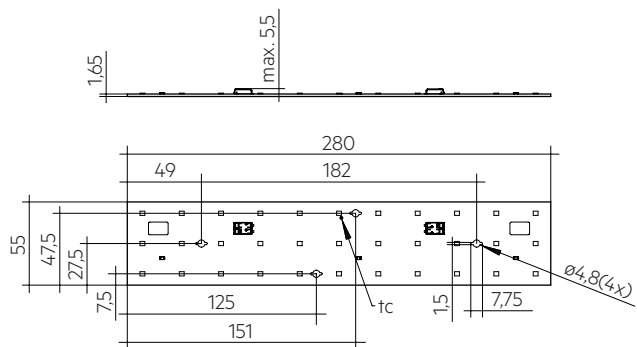


Module LLE 55x280/566mm 2000lm LV ADV5

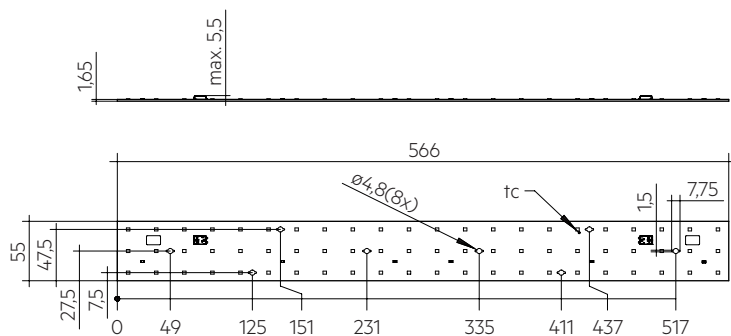
Modules LLE advanced

Technical data

Beam characteristic	120°
Ambient temperature range	-40 ... +65 °C
tp rated	50 °C
tc	95 °C
Irated for 2000lm	375 mA
Irated for 4000lm	750 mA
I _{max} for 2000lm	540 mA
I _{max} for 4000lm	1,080 mA
Max. permissible LF current ripple for 2000lm	595 mA
Max. permissible LF current ripple for 4000lm	1,190 mA
Max. permissible peak current for 2000lm	900 mA / max. 8 ms
Max. permissible peak current for 4000lm	1,800 mA / max. 8 ms
Max. working voltage for insulation ²⁾	450 V
Insulation test voltage	19 kV
CTI of the printed circuit board	≥ 600
ESD classification	severity level 4
Risk group (IEC 62471:2008) ³⁾	RGO
Classification acc. to IEC 62031	Built-in
Type of protection	IP00



LLE 55x280mm 2000lm LV ADV5



LLE 55x566mm 4000lm LV ADV5

Ordering data

Type	Article number	Colour temperature	Packaging carton	Weight per pc.
LLE 55x280mm 2000lm 830 LV ADV5	89603417	3,000 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 840 LV ADV5	89603419	4,000 K	128 pc(s).	0.049 kg
LLE 55x280mm 2000lm 850 LV ADV5	89603420	5,000 K	128 pc(s).	0.049 kg
LLE 55x566mm 4000lm 840 LV ADV5	89603424	4,000 K	96 pc(s).	0.099 kg
LLE 55x566mm 4000lm 850 LV ADV5	89603425	5,000 K	96 pc(s).	0.099 kg

Specific technical data

Type [®]	Photo-metric code	Typ. luminous flux at tp = 25 °C [®]	Typ. luminous flux at tp = 50 °C [®]	Typ. forward current	Min. forward voltage at tp = 50 °C	Max. forward voltage at tp = 25 °C	Typ. power consumption at tp = 50 °C [®]	Efficacy of the module at tp = 25 °C	Efficacy of the module at tp = 50 °C	Efficacy of the system at tp = 50 °C	Colour rendering index CRI
Operating mode HE at 200 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	830 / 359	1,140 lm	1,110 lm	200 mA	28.1 V	31.2 V	5.9 W	191 lm/W	187 lm/W	172 lm/W	> 80
LLE 55x280mm 2000lm 840 LV ADV5	840 / 359	1,200 lm	1,170 lm	200 mA	28.1 V	31.2 V	5.9 W	200 lm/W	196 lm/W	180 lm/W	> 80
LLE 55x280mm 2000lm 850 LV ADV5	850 / 359	1,220 lm	1,180 lm	200 mA	28.1 V	31.2 V	5.9 W	203 lm/W	199 lm/W	183 lm/W	> 80
LLE 55x566mm 4000lm 840 LV ADV5	840 / 359	2,400 lm	2,330 lm	400 mA	28.1 V	31.2 V	11.9 W	200 lm/W	196 lm/W	180 lm/W	> 80
LLE 55x566mm 4000lm 850 LV ADV5	850 / 359	2,430 lm	2,370 lm	400 mA	28.1 V	31.2 V	11.9 W	203 lm/W	199 lm/W	183 lm/W	> 80
Operating mode NM at 375 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	830 / 359	2,040 lm	1,990 lm	375 mA	29.0 V	32.2 V	11.5 W	176 lm/W	173 lm/W	159 lm/W	> 80
LLE 55x280mm 2000lm 840 LV ADV5	840 / 359	2,140 lm	2,080 lm	375 mA	29.0 V	32.2 V	11.5 W	184 lm/W	181 lm/W	167 lm/W	> 80
LLE 55x280mm 2000lm 850 LV ADV5	850 / 359	2,170 lm	2,110 lm	375 mA	29.0 V	32.2 V	11.5 W	187 lm/W	183 lm/W	168 lm/W	> 80
LLE 55x566mm 4000lm 840 LV ADV5	840 / 359	4,270 lm	4,160 lm	750 mA	29.0 V	32.2 V	23.0 W	184 lm/W	181 lm/W	167 lm/W	> 80
LLE 55x566mm 4000lm 850 LV ADV5	850 / 359	4,330 lm	4,220 lm	750 mA	29.0 V	32.2 V	23.0 W	187 lm/W	183 lm/W	168 lm/W	> 80
Operating mode HO at 500 mA per feet (280 mm module length)											
LLE 55x280mm 2000lm 830 LV ADV5	830 / 359	2,660 lm	2,590 lm	500 mA	29.6 V	32.7 V	15.6 W	169 lm/W	165 lm/W	152 lm/W	> 80
LLE 55x280mm 2000lm 840 LV ADV5	840 / 359	2,780 lm	2,710 lm	500 mA	29.6 V	32.7 V	15.6 W	177 lm/W	173 lm/W	159 lm/W	> 80
LLE 55x280mm 2000lm 850 LV ADV5	850 / 359	2,820 lm	2,740 lm	500 mA	29.6 V	32.7 V	15.6 W	179 lm/W	175 lm/W	161 lm/W	> 80
LLE 55x566mm 4000lm 840 LV ADV5	840 / 359	5,560 lm	5,410 lm	1,000 mA	29.6 V	32.7 V	31.3 W	177 lm/W	173 lm/W	159 lm/W	> 80
LLE 55x566mm 4000lm 850 LV ADV5	850 / 359	5,640 lm	5,490 lm	1,000 mA	29.6 V	32.7 V	31.3 W	179 lm/W	175 lm/W	161 lm/W	> 80

[®] Integral measurement over the complete module.

[®] If mounted with M4 screws and plastic washers.

[®] Measured at operating mode HO.

[®] HE ... high efficiency, NM ... nominal mode, HO ... high output.

[®] Tolerance range for optical and electrical data: ±10 %.

Product description

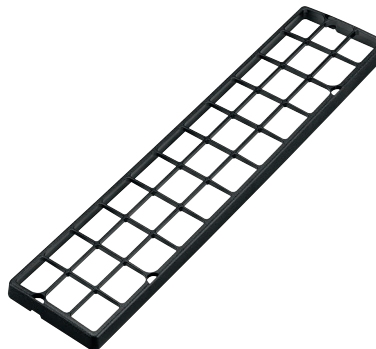
- ACL LENS for LLE 55x280mm
- Available with different beam characteristics
- For SELV applications only
- Easy mounting with M4 screws
- ACL SHADE to reduce UGR
- ACL LENS made of PMMA, ACL SHADE made of ABS
- Max. permissible temperature 80 °C
- Photometric data available on website



ACL LENS 55x280mm 60°

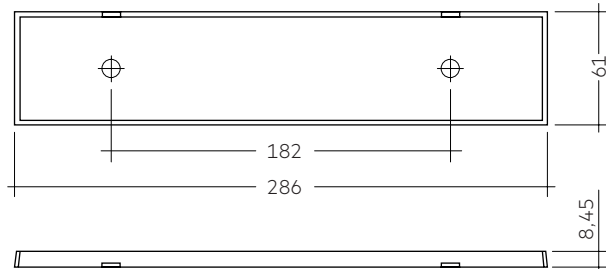


ACL LENS 55x280mm DA25°

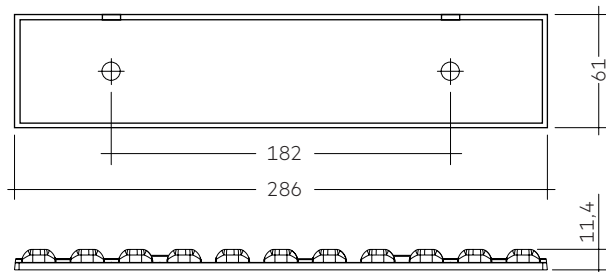


ACL SHADE 55x280mm UGR

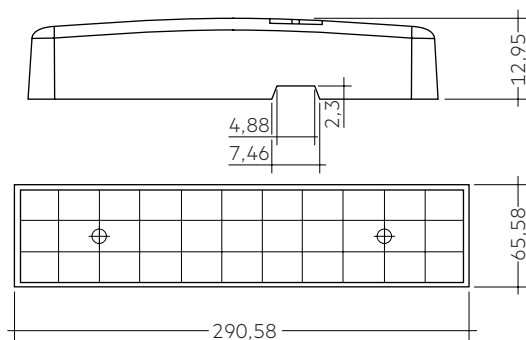
ACL LENS 55x280mm



ACL LENS (28002206, 28002207, 28002208)



ACL LENS (28002209, 28002210)



ACL SHADE (28002211)

Ordering data

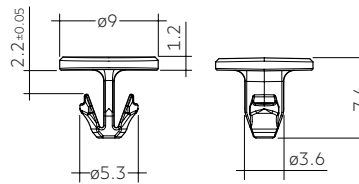
Type	Article number	Beam characteristic	Efficiency	Packaging carton	Weight per pc.
ACL LENS 55x280mm 60°	28002206	60°	91 %	72 pc(s).	0.088 kg
ACL LENS 55x280mm 90°	28002207	90°	90 %	72 pc(s).	0.092 kg
ACL LENS 55x280mm 90x45°	28002208	90x45°	90 %	72 pc(s).	0.091 kg
ACL LENS 55x280mm DA25°	28002209	double asymmetric 25°	94 %	60 pc(s).	0.072 kg
ACL LENS 55x280mm A20°	28002210	asymmetric 20°	93 %	60 pc(s).	0.058 kg
ACL SHADE 55x280mm UGR	28002211	UGR improving	–	60 pc(s).	0.027 kg

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 Polycarbonat



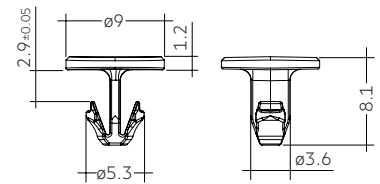
ACL CLIP 4.3mm PUSH-FIX



ACL CLIP 4.3mm PUSH-FIX



ACL CLIP 4.3mm PUSH-FIX Long



ACL CLIP 4.3mm PUSH-FIX Long

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

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

1.2 Energy classification

Typ	Energieklassifizierung
LLE 55mm LV ADV5	A++

2. Thermal details

2.1 tc point, ambient temperature and life-time

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

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

Compliance with the maximum permissible reference temperature at the tc point must be checked under operating conditions in a thermally stable state. The maximum value must be determined under worst-case conditions for the relevant application.

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

2.2 Storage and humidity

Storage temperature	-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 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.

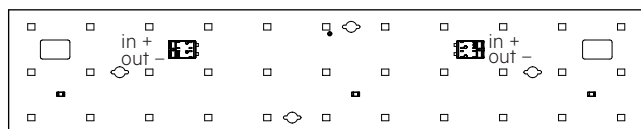
LLE can be operated either from SELV LED Drivers or from LED Drivers with LV output voltage.



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.

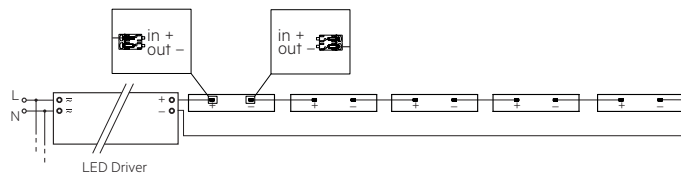
At voltages > 60 V an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

3.2 Wiring



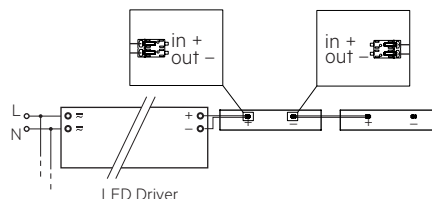
Wiring examples

Serial wiring:



Only with modules with the same length possible.

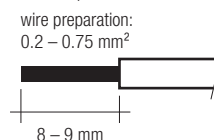
Parallel wiring:



3.3 Wiring type and cross section

The wiring can be in stranded wires or solid with a cross section of 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 suitable tool (e.g. Microcon release pin) or through twist and pull.

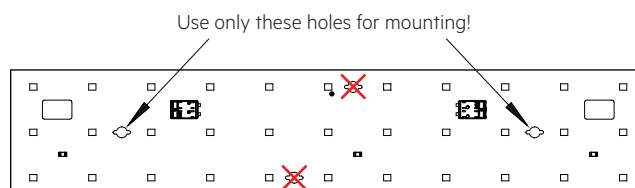
3.4 Mounting instruction



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. Life-time

4.1 Life-time, lumen maintenance and failure rate

The light output of an LED Module decreases over the life-time, this is characterized with the L value.
L70 means that the LED module will give 70 % of its initial luminous flux. This value is always related to the number of operation hours and therefore defines the life-time of an LED module.

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

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

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

4.2 Lumen maintenance for LLE 55mm HV ADV5

Forward current	tp tempera- ture	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
	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
200 mA	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
	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
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

Forward current	tp tempera- ture	L90 / F10	L90 / F50	L80 / F10	L80 / F50	L70 / F10	L70 / F50
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
	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
450 mA	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
	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

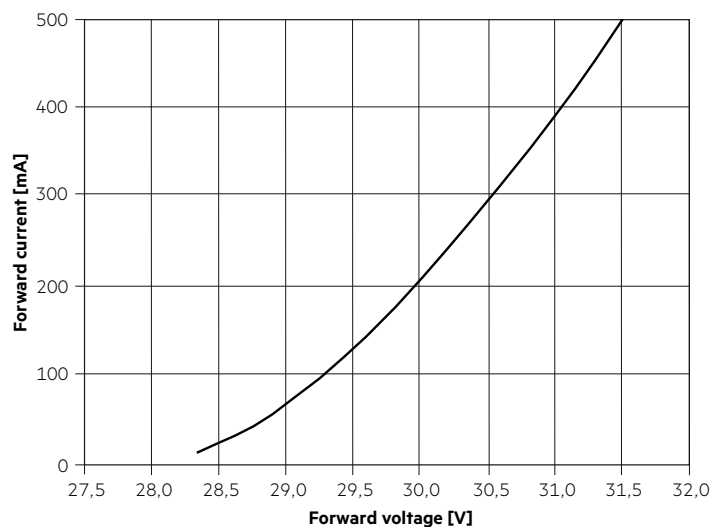
I_{rated} ... Nominal operating current the module is designed for.

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

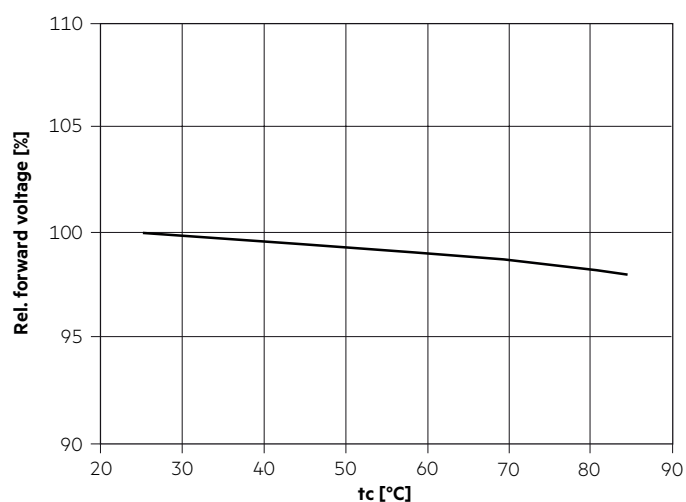
Max. permissible LF current ripple ... Max. output current of the LED driver incl. Tolerances and LF current ripple must not exceed this value.

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



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

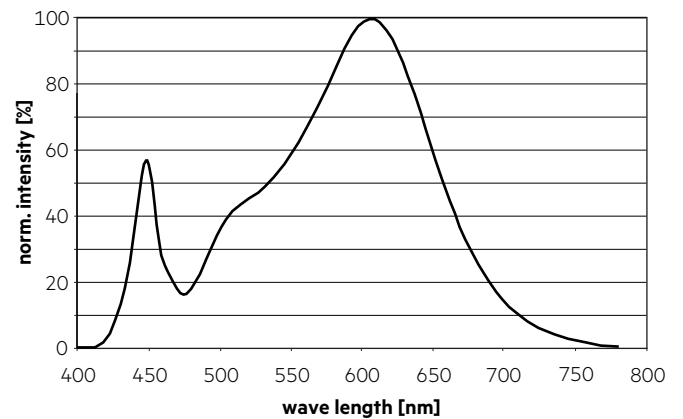
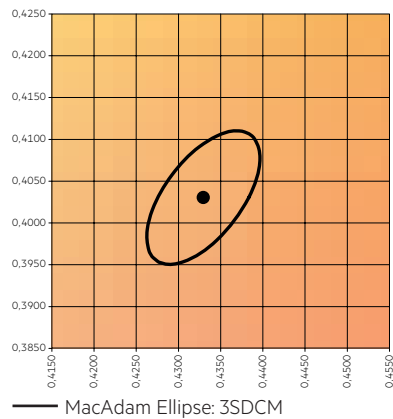
The specified colour coordinates are integral measured by current impulse of 195 mA and a duration of 100 ms.

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

The measurement tolerance of the colour coordinates are ± 0.01 .

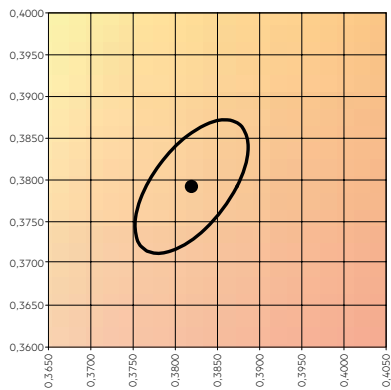
3,000 K

	x0	y0
Centre	0.4338	0.4030

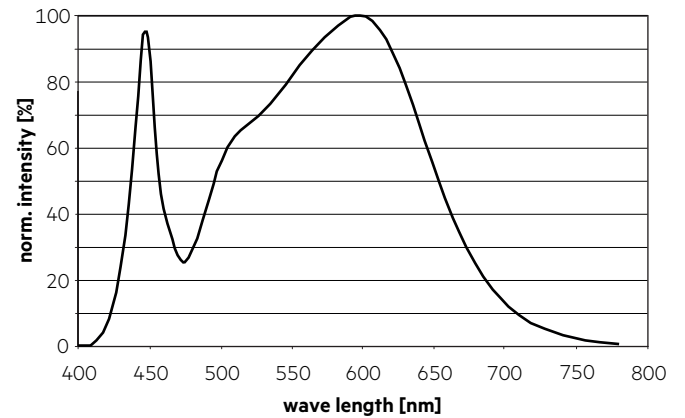


4,000 K

	x0	y0
Center	0.3818	0.3797

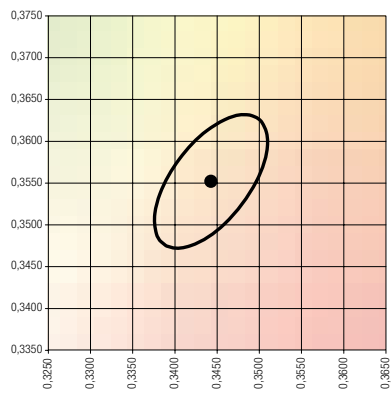


— MacAdam Ellipse: 3SDCM

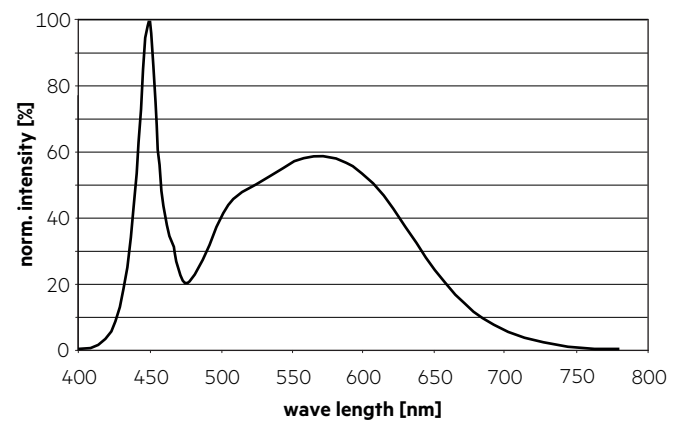


5,000 K

	x0	y0
Center	0.3447	0.3553

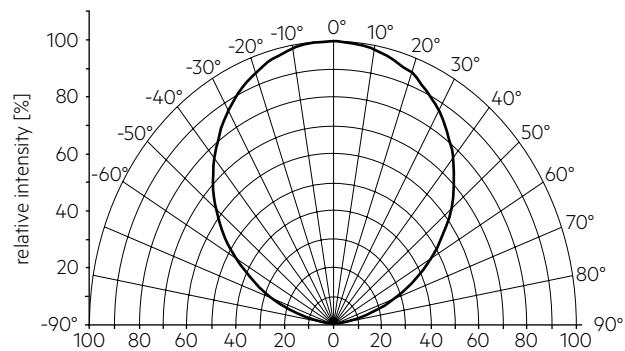


— MacAdam Ellipse: 3SDCM



6.2 Light distribution

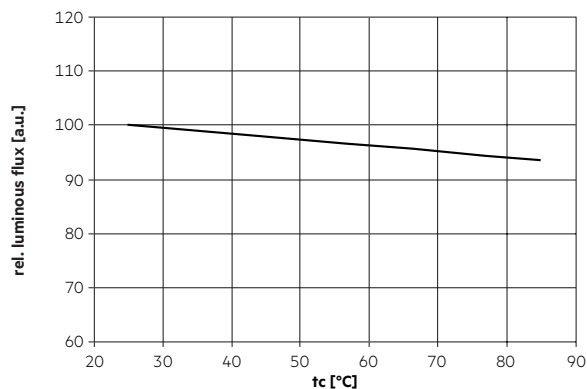
The optical design of the LLE product line ensures optimum homogeneity for the light distribution.



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.

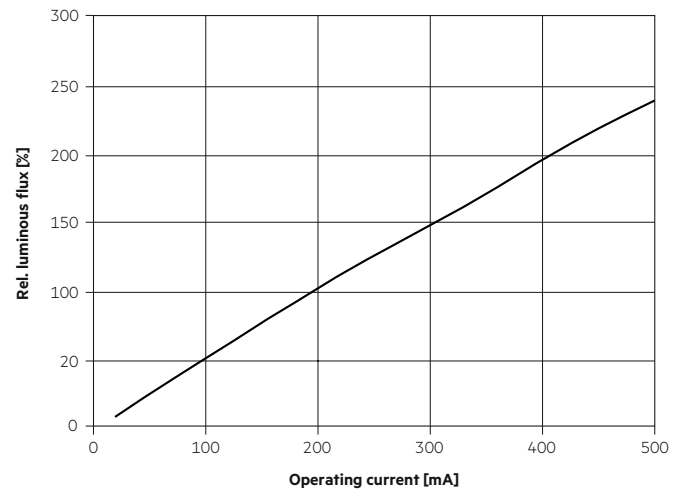
To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 4 cm) should be used.

6.3 Relative luminous flux vs. tc temperature

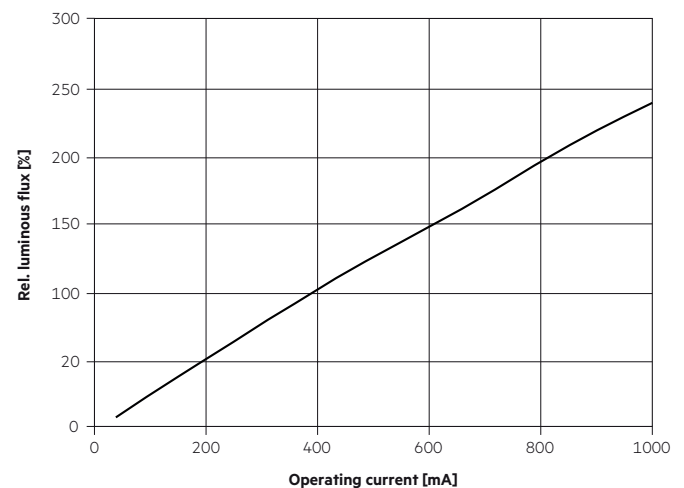


6.4 Relative luminous flux vs. operating current

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

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