

Module LLE FLEX 8mm 48V SNC2

Modules LLE FLEX essence



TRIDONIC LLE FLEX 8mm 48V SNC2

Product description

- _ Dimmable 48 V constant voltage LED flextape (SELV)
- _ Ideal for applications on aluminium extrusions but also for various decorative and ambient lighting solutions
- _ 1 reel = 10 m
- _ Made in Europe
- _ Long lifetime: 60,000 hours
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Optical properties

- _ Colour temperature 3,000 and 4,000 K (2,700 K on demand)
- _ Useful luminous flux up to 4,240 lm/m at $t_p = 25\text{ °C}$
- _ Efficacy of the LED module up to 173 lm/W at $t_p = 25\text{ °C}$
- _ High colour rendering index CRI > 80 and CRI > 90
- _ Low colour temperature tolerances (MacAdam 3)

Mechanical properties

- _ High design freedom due to 6.25 cm cut-options and 128 LED light points per meter
- _ Self-adhesive 3M tape at the backside for simple mounting on different surfaces
- _ Available PCB to PCB and wire to PCB connectors for toolless handling and connection
- _ reel2reel – No solder joints on the tape, easy to separate and low length tolerances ^①

System solution

- _ System solution in combination with Tridonic constant voltage LED driver (fixed output and dimmable)

① For 10 m reel max. 2 solder joints.

Website

<http://www.tridonic.com/28005272>



Linear



High bay



Decorative



Downlights



Spotlights



Free-standing



Area



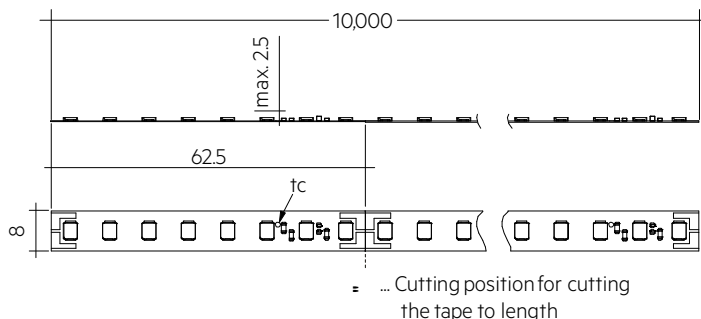
Floor | Wall



Street

Module LLE FLEX 8mm 48V SNC2

Modules LLE FLEX essence



Ordering data

Type	Article number	Colour temperature	Packaging, carton	Weight per pc.
LLE FLEX 8mm 48V 8W 1200lm 827 SNC2 R10	28005272	2,700 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 8W 1200lm 830 SNC2 R10	28005273	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 8W 1200lm 840 SNC2 R10	28005274	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 12W 1800lm 827 SNC2 R10	28005276	2,700 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 12W 1800lm 830 SNC2 R10	28005277	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 12W 1800lm 840 SNC2 R10	28005278	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 17W 2500lm 827 SNC2 R10	28005280	2,700 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 17W 2500lm 830 SNC2 R10	28005281	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 17W 2500lm 840 SNC2 R10	28005282	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 20W 3000lm 827 SNC2 R10	28005284	2,700 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 20W 3000lm 830 SNC2 R10	28005285	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 20W 3000lm 840 SNC2 R10	28005286	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 26W 4000lm 827 SNC2 R10	28005288	2,700 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 26W 4000lm 830 SNC2 R10	28005289	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 26W 4000lm 840 SNC2 R10	28005290	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 10W 1200lm 930 SNC2 R10	28005293	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 10W 1200lm 940 SNC2 R10	28005294	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 14W 1800lm 930 SNC2 R10	28005297	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 14W 1800lm 940 SNC2 R10	28005298	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 20W 2500lm 930 SNC2 R10	28005301	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 20W 2500lm 940 SNC2 R10	28005302	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 22W 3000lm 930 SNC2 R10	28005305	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 22W 3000lm 940 SNC2 R10	28005306	4,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 30W 4000lm 930 SNC2 R10	28005309	3,000 K	1 pc(s).	0.153 kg
LLE FLEX 8mm 48V 30W 4000lm 940 SNC2 R10	28005310	4,000 K	1 pc(s).	0.153 kg

Technical data

Beam characteristic	120°
Ambient temperature ta	-25 ... +50 °C
tp rated	65 °C
tc	75 °C
Supply voltage DC	48 V
Supply voltage range DC [®]	45 – 51 V
Insulation test voltage	0.5 kV
Colour tolerance	3 SDCM
ESD classification	Severity level 1
Risk group (IEC 62471)	RG1
Classification acc. to IEC 62031	Built-in
Type of protection	IP00
Lumen maintenance L70B50	60,000 h
Guarantee (conditions at www.tridonic.com)	5 Year(s)

Approval marks



Standards

IEC 62031, IEC 62471, IEC 62778, IEC 61000-4-2, UL 8750

Specific technical data

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C ^②	Expected luminous flux at tp rated ^③	Typ. current consumption at tp rated	Power consumption P _{on} 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
LLE FLEX 8mm 48V 8W 1200lm 827 SNC2 R10	28005272	827/359	1,210 lm/m	1,200 lm/m	168 mA/m	8 W/m	159 lm/W	149 lm/W	>80
LLE FLEX 8mm 48V 8W 1200lm 830 SNC2 R10	28005273	830/359	1,250 lm/m	1,230 lm/m	168 mA/m	8 W/m	165 lm/W	153 lm/W	>80
LLE FLEX 8mm 48V 8W 1200lm 840 SNC2 R10	28005274	840/359	1,310 lm/m	1,290 lm/m	168 mA/m	8 W/m	173 lm/W	160 lm/W	>80
LLE FLEX 8mm 48V 12W 1800lm 827 SNC2 R10	28005276	827/359	1,800 lm/m	1,790 lm/m	251 mA/m	12 W/m	159 lm/W	148 lm/W	>80
LLE FLEX 8mm 48V 12W 1800lm 830 SNC2 R10	28005277	830/359	1,850 lm/m	1,840 lm/m	251 mA/m	12 W/m	164 lm/W	153 lm/W	>80
LLE FLEX 8mm 48V 12W 1800lm 840 SNC2 R10	28005278	840/359	1,940 lm/m	1,930 lm/m	251 mA/m	12 W/m	172 lm/W	160 lm/W	>80
LLE FLEX 8mm 48V 17W 2500lm 827 SNC2 R10	28005280	827/359	2,620 lm/m	2,610 lm/m	368 mA/m	17 W/m	159 lm/W	148 lm/W	>80
LLE FLEX 8mm 48V 17W 2500lm 830 SNC2 R10	28005281	830/359	2,700 lm/m	2,690 lm/m	368 mA/m	17 W/m	164 lm/W	152 lm/W	>80
LLE FLEX 8mm 48V 17W 2500lm 840 SNC2 R10	28005282	840/359	2,820 lm/m	2,810 lm/m	368 mA/m	17 W/m	171 lm/W	159 lm/W	>80
LLE FLEX 8mm 48V 20W 3000lm 827 SNC2 R10	28005284	827/359	3,020 lm/m	3,010 lm/m	426 mA/m	20 W/m	158 lm/W	147 lm/W	>80
LLE FLEX 8mm 48V 20W 3000lm 830 SNC2 R10	28005285	830/359	3,120 lm/m	3,100 lm/m	426 mA/m	20 W/m	163 lm/W	152 lm/W	>80
LLE FLEX 8mm 48V 20W 3000lm 840 SNC2 R10	28005286	840/359	3,260 lm/m	3,240 lm/m	426 mA/m	20 W/m	170 lm/W	159 lm/W	>80
LLE FLEX 8mm 48V 26W 4000lm 827 SNC2 R10	28005288	827/359	3,930 lm/m	3,930 lm/m	560 mA/m	26 W/m	157 lm/W	146 lm/W	>80
LLE FLEX 8mm 48V 26W 4000lm 830 SNC2 R10	28005289	830/359	4,060 lm/m	4,050 lm/m	560 mA/m	26 W/m	162 lm/W	151 lm/W	>80
LLE FLEX 8mm 48V 26W 4000lm 840 SNC2 R10	28005290	840/359	4,240 lm/m	4,230 lm/m	560 mA/m	26 W/m	169 lm/W	157 lm/W	>80
LLE FLEX 8mm 48V 10W 1200lm 930 SNC2 R10	28005293	930/359	1,220 lm/m	1,210 lm/m	192 mA/m	9 W/m	141 lm/W	131 lm/W	>90
LLE FLEX 8mm 48V 10W 1200lm 940 SNC2 R10	28005294	940/359	1,300 lm/m	1,290 lm/m	192 mA/m	9 W/m	150 lm/W	140 lm/W	>90
LLE FLEX 8mm 48V 14W 1800lm 930 SNC2 R10	28005297	930/359	1,840 lm/m	1,830 lm/m	291 mA/m	14 W/m	141 lm/W	131 lm/W	>90
LLE FLEX 8mm 48V 14W 1800lm 940 SNC2 R10	28005298	940/359	1,950 lm/m	1,940 lm/m	291 mA/m	14 W/m	149 lm/W	139 lm/W	>90
LLE FLEX 8mm 48V 20W 2500lm 930 SNC2 R10	28005301	930/359	2,480 lm/m	2,470 lm/m	395 mA/m	18 W/m	140 lm/W	130 lm/W	>90
LLE FLEX 8mm 48V 20W 2500lm 940 SNC2 R10	28005302	940/359	2,640 lm/m	2,630 lm/m	395 mA/m	18 W/m	149 lm/W	139 lm/W	>90
LLE FLEX 8mm 48V 22W 3000lm 930 SNC2 R10	28005305	930/359	3,020 lm/m	3,020 lm/m	485 mA/m	22 W/m	139 lm/W	130 lm/W	>90
LLE FLEX 8mm 48V 22W 3000lm 940 SNC2 R10	28005306	940/359	3,210 lm/m	3,210 lm/m	485 mA/m	22 W/m	148 lm/W	138 lm/W	>90
LLE FLEX 8mm 48V 30W 4000lm 930 SNC2 R10	28005309	930/359	3,900 lm/m	3,970 lm/m	640 mA/m	29 W/m	139 lm/W	129 lm/W	>90
LLE FLEX 8mm 48V 30W 4000lm 940 SNC2 R10	28005310	940/359	4,140 lm/m	4,220 lm/m	640 mA/m	29 W/m	147 lm/W	137 lm/W	>90

② Exceeding the max. operating voltage leads to an overload on the LLE FLEX. This may in turn result in a significant reduction in lifetime or even in destruction.

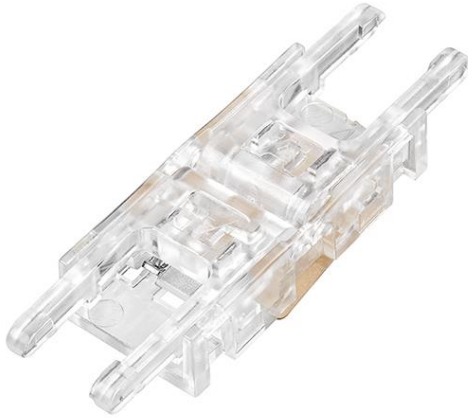
③ Tolerance of useful light flux - 0 / + 15 %. Measurement uncertainty 10 %. Values given for 1 m LLE FLEX.

④ Measurement uncertainty 10 %. Values given for 1 m LLE FLEX. Based on calculation.

⑤ Tolerance of power consumption P_{on} ± 15 %. Measurement uncertainty ± 5 %. Values given for 1 m LLE FLEX.

Connector for LLE FLEX

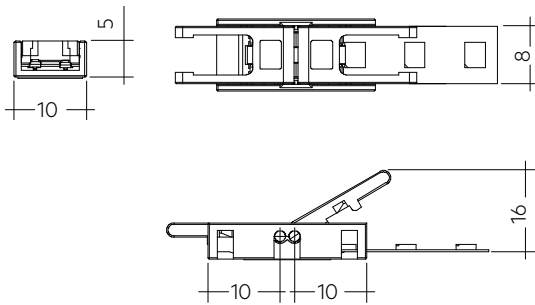
Accessory

**Product description**

- _ For connection of LLE FLEX module
- _ For internal wiring only (no strain relief functionality)
- _ Connector can be closed and re-opened easily: For assembly instructions see application note available at www.tridonic.com
- _ Glow wire test according to IEC 60695-2-11
- _ Max. 5 A in connection with LLE FLEX
- _ Urated = 24 – 48 V
- _ Wire cross section AWG 18

Website

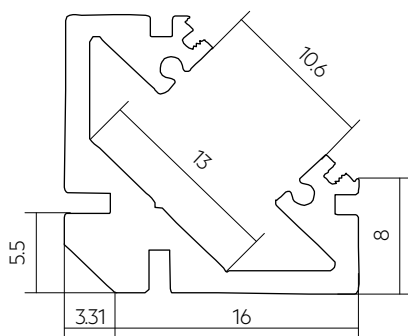
<http://www.tridonic.com/28004985>

**Ordering data**

Type	Article number	Packaging, carton	Weight per pc.
ACL flex connector Wire - PCB 100mm	28004985	20 pc(s).	0.004 kg
ACL flex connector Wire - PCB 500mm	28004986	20 pc(s).	0.020 kg
ACL flex connector Wire - PCB 2000mm	28004987	10 pc(s).	0.072 kg
ACL flex connector PCB - PCB	28004988	25 pc(s).	0.001 kg

ACL ALU PROFILE

Accessory

**Product description**

- _ Aluminum LED profile in anodized silver color
- _ Ideal for surface mounting installation
- _ Easy to assembly and install with compatible covers and mounting accessories available
- _ Suitable for up to 8 mm width flexible strips
- _ Up to 30 W/m
- _ Made in Europe
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Mechanical properties

- _ Available profile length 2 m
- _ Compatible Tridonic covers

System solution

- _ System solution in combination with Tridonic LLE FLEX modules
- _ Fully system with Tridonic constant voltage drivers

Website

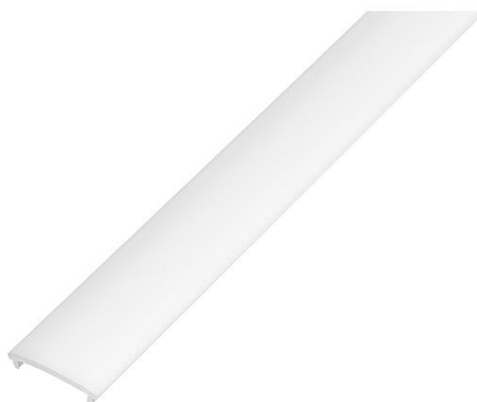
<http://www.tridonic.com/28005790>

**Ordering data**

Type	Article number	Colour	Length L	Maximum power	Packaging, carton	Weight per pc.
ACL ALU-PROFILE SURFACE 16x7MM L=2M	28005790	Silver	2,000 mm	20 W/m	72 pc(s).	0.238 kg
ACL ALU-PROFILE SURFACE 16X11MM L=2M	28005791	Silver	2,000 mm	30 W/m	96 pc(s).	0.284 kg
ACL ALU-PROFILE RECESSED 16X7.5MM L=2M	28005792	Silver	2,000 mm	15 W/m	128 pc(s).	0.276 kg
ACL ALU-PROFILE RECESSED 16X12MM L=2M	28005793	Silver	2,000 mm	20 W/m	96 pc(s).	0.332 kg
ACL ALU-PROFILE CORNER 16x18.5MM L=2M	28005794	Silver	2,000 mm	30 W/m	40 pc(s).	0.674 kg
ACL ALU-PROFILE FLEXIBLE 16X4MM L=2M	28005795	Silver	2,000 mm	15 W/m	270 pc(s).	0.118 kg

ACL PC COVER

Accessory

**Product description**

- _ Polycarbonate cover in transparent or frosted finished surface
- _ Suitable for all Tridonic aluminum profiles
- _ Easy to assembly with click-on system
- _ Made in Europe
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Mechanical properties

- _ Available profile length 2 m
- _ Compatible Tridonic profiles

System solution

- _ System solution in combination with Tridonic LLE FLEX modules
- _ Fully system with Tridonic constant voltage drivers

Website

<http://www.tridonic.com/28005770>

**Ordering data**

Type	Article number	Colour	Length L	Packaging, carton	Weight per pc.
ACL PC-COVER OPAL L=2M	28005770	Opal	2,000 mm	1 pc(s).	0.044 kg
ACL PC-COVER TRANSPARENT L=2M	28005775	Transparent	2,000 mm	250 pc(s).	0.100 kg

ACL ENDCAP

Accessory

**Product description**

- _ Polycarbonate endcap with and without cable holes
- _ Suitable for Tridonic aluminum profiles
- _ Easy to assembly with click-on system
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Mechanical properties

- _ Compatible Tridonic profiles

System solution

- _ System solution in combination with Tridonic LLE FLEX modules
- _ Fully system with Tridonic constant voltage drivers

Website

<http://www.tridonic.com/28005776>



Ordering data

Type	Article number	Colour	Packaging, bag	Weight per pc.
ACL ENDCAP SURFACE 16X7MM	28005776	Grey	10 pc(s).	0.001 kg
ACL ENDCAP SURFACE WITH HOLE16X7MM	28005777	Grey	10 pc(s).	0.001 kg
ACL ENDCAP SURFACE 16X11MM	28005778	Grey	10 pc(s).	0.001 kg
ACL ENDCAP SURFACE WITH HOLE 16X11MM	28005779	Grey	10 pc(s).	0.001 kg
ACL ENDCAP RECESSED 16X7.5MM	28005780	Grey	10 pc(s).	0.001 kg
ACL ENDCAP RECESSED 16X12MM	28005781	Grey	10 pc(s).	0.001 kg
ACL ENDCAP CORNER	28005782	Grey	10 pc(s).	0.001 kg
ACL ENDCAP CORNER WITH HOLE	28005783	Grey	10 pc(s).	0.001 kg
ACL ENDCAP FLEXIBLE	28005784	Grey	10 pc(s).	0.001 kg
ACL ENDCAP FLEXIBLE WITH HOLE	28005785	Grey	10 pc(s).	0.001 kg

ACL MOUNTING CLIP

Accessory



Product description

- _ Suitable mounting clips for Tridonic aluminum profiles
- _ Easy to assembly with screws and click-on to the profile
- _ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

Mechanical properties

- _ Compatible Tridonic profiles

System solution

- _ System solution in combination with Tridonic LLE FLEX modules
- _ Fully system with Tridonic constant voltage drivers

Website

<http://www.tridonic.com/28005786>



Ordering data

Type	Article number	Colour	Packaging, bag	Weight per pc.
ACL MOUNTING CLIP 16X7/7.5MM	28005786	Stainless steel	10 pc(s).	0.002 kg
ACL MOUNTING CLIP 16X11/12MM	28005787	Stainless steel	10 pc(s).	0.001 kg
ACL MOUNTING CLIP CORNER	28005788	Stainless steel	10 pc(s).	0.001 kg
ACL MOUNTING CLIP FLEXIBLE	28005789	Transparent	10 pc(s).	0.001 kg

1. Standards

IEC 62031
IEC 62471
IEC 62778
IEC 61000-4-2
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 initial	MacAdam after 25% of the lifetime (max.6000h)	Luminous flux after 25% of the lifetime (max.6000h)	
7 70 – 79				Code	Luminous flux
8 80 – 89				7	≥ 70 %
9 ≥90				8	≥ 80 %
				9	≥ 90 %

1.2 Risk group

Type	Risk group
LLE FLEX 8mm 48V SNC2	RG1

1.3 Energy classification

Type	Colour temperature	Energy classification	Energy consumption
LLE FLEX 8mm 48V 8W 1200lm 827 SNC2 R10	2,700 K	D	8 kWh / 1,000 h
LLE FLEX 8mm 48V 8W 1200lm 830 SNC2 R10	3,000 K	D	8 kWh / 1,000 h
LLE FLEX 8mm 48V 8W 1200lm 840 SNC2 R10	4,000 K	D	8 kWh / 1,000 h
LLE FLEX 8mm 48V 12W 1800lm 827 SNC2 R10	2,700 K	D	12 kWh / 1,000 h
LLE FLEX 8mm 48V 12W 1800lm 830 SNC2 R10	3,000 K	D	12 kWh / 1,000 h
LLE FLEX 8mm 48V 12W 1800lm 840 SNC2 R10	4,000 K	D	12 kWh / 1,000 h
LLE FLEX 8mm 48V 17W 2500lm 827 SNC2 R10	2,700 K	D	17 kWh / 1,000 h
LLE FLEX 8mm 48V 17W 2500lm 830 SNC2 R10	3,000 K	D	17 kWh / 1,000 h
LLE FLEX 8mm 48V 17W 2500lm 840 SNC2 R10	4,000 K	D	17 kWh / 1,000 h
LLE FLEX 8mm 48V 20W 3000lm 827 SNC2 R10	2,700 K	D	20 kWh / 1,000 h
LLE FLEX 8mm 48V 20W 3000lm 830 SNC2 R10	3,000 K	D	20 kWh / 1,000 h
LLE FLEX 8mm 48V 20W 3000lm 840 SNC2 R10	4,000 K	D	20 kWh / 1,000 h
LLE FLEX 8mm 48V 26W 4000lm 827 SNC2 R10	2,700 K	D	26 kWh / 1,000 h
LLE FLEX 8mm 48V 26W 4000lm 830 SNC2 R10	3,000 K	D	26 kWh / 1,000 h
LLE FLEX 8mm 48V 26W 4000lm 840 SNC2 R10	4,000 K	D	26 kWh / 1,000 h
LLE FLEX 8mm 48V 10W 1200lm 930 SNC2 R10	3,000 K	E	9 kWh / 1,000 h
LLE FLEX 8mm 48V 10W 1200lm 940 SNC2 R10	4,000 K	D	9 kWh / 1,000 h
LLE FLEX 8mm 48V 14W 1800lm 930 SNC2 R10	3,000 K	E	14 kWh / 1,000 h
LLE FLEX 8mm 48V 14W 1800lm 940 SNC2 R10	4,000 K	D	14 kWh / 1,000 h
LLE FLEX 8mm 48V 20W 2500lm 930 SNC2 R10	3,000 K	E	18 kWh / 1,000 h
LLE FLEX 8mm 48V 20W 2500lm 940 SNC2 R10	4,000 K	D	18 kWh / 1,000 h
LLE FLEX 8mm 48V 22W 3000lm 930 SNC2 R10	3,000 K	E	22 kWh / 1,000 h
LLE FLEX 8mm 48V 22W 3000lm 940 SNC2 R10	4,000 K	D	22 kWh / 1,000 h
LLE FLEX 8mm 48V 30W 4000lm 930 SNC2 R10	3,000 K	E	29 kWh / 1,000 h
LLE FLEX 8mm 48V 30W 4000lm 940 SNC2 R10	4,000 K	D	29 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 65°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	-25...+75°C
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Operation only in non condensing environment.

Humidity during processing of the module should be between 0 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.

2.4 Heat sink values

LLE FLEX 8mm 48V 1200lm 8xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	169.30 K/W	self cooling
35°C	65°C	126.94 K/W	5 cm ²
40°C	65°C	105.76 K/W	6 cm ²
45°C	65°C	84.58 K/W	8 cm ²
50°C	65°C	63.40 K/W	11 cm ²

LLE FLEX 8mm 48V 1800lm 8xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	108.32 K/W	6 cm ²
35°C	65°C	81.21 K/W	8 cm ²
40°C	65°C	67.65 K/W	10 cm ²
45°C	65°C	54.09 K/W	12 cm ²
50°C	65°C	40.53 K/W	16 cm ²

LLE FLEX 8mm 48V 2500lm 8xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	85.02 K/W	8 cm ²
35°C	65°C	63.73 K/W	10 cm ²
40°C	65°C	53.08 K/W	13 cm ²
45°C	65°C	42.44 K/W	16 cm ²
50°C	65°C	31.79 K/W	21 cm ²

LLE FLEX 8mm 48V 3000lm 8xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	71.55 K/W	9 cm ²
35°C	65°C	53.64 K/W	12 cm ²
40°C	65°C	44.69 K/W	15 cm ²
45°C	65°C	35.73 K/W	19 cm ²
50°C	65°C	26.78 K/W	25 cm ²

LLE FLEX 8mm 48V 4000lm 8xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	5312 K/W	13 cm ²
35°C	65°C	39.80 K/W	17 cm ²
40°C	65°C	3314 K/W	20 cm ²
45°C	65°C	26.49 K/W	25 cm ²
50°C	65°C	19.83 K/W	34 cm ²

LLE FLEX 8mm 48V 1200lm 9xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	122.82 K/W	5 cm ²
35°C	65°C	92.08 K/W	7 cm ²
40°C	65°C	76.71 K/W	9 cm ²
45°C	65°C	61.34 K/W	11 cm ²
50°C	65°C	45.97 K/W	15 cm ²

LLE FLEX 8mm 48V 1800lm 9xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	83.21 K/W	8 cm ²
35°C	65°C	62.37 K/W	11 cm ²
40°C	65°C	51.95 K/W	13 cm ²
45°C	65°C	41.54 K/W	16 cm ²
50°C	65°C	31.12 K/W	21 cm ²

LLE FLEX 8mm 48V 2500lm 9xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	64.26 K/W	10 cm ²
35°C	65°C	48.16 K/W	14 cm ²
40°C	65°C	40.11 K/W	17 cm ²
45°C	65°C	32.06 K/W	21 cm ²
50°C	65°C	24.00 K/W	28 cm ²

LLE FLEX 8mm 48V 3000lm 9xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	50.33 K/W	13 cm ²
35°C	65°C	37.71 K/W	18 cm ²
40°C	65°C	31.40 K/W	21 cm ²
45°C	65°C	25.09 K/W	27 cm ²
50°C	65°C	18.78 K/W	35 cm ²

LLE FLEX 8mm 48V 4000lm 9xx SNC2

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25°C	65°C	4110 K/W	16 cm ²
35°C	65°C	30.79 K/W	22 cm ²
40°C	65°C	25.63 K/W	26 cm ²
45°C	65°C	20.48 K/W	33 cm ²
50°C	65°C	15.32 K/W	44 cm ²

^① Values for a single segment of the LLE FLEX (62.5 mm).

Notes

The module has to be mounted on a heat sink and operated within the specified temperature range.

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation.
A heat transfer coefficient of 0,0015 is used for the calculation.

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:

- SELV
- Short-circuit protection
- Overload protection
- Overtemperature protection



LLE modules must be supplied by a constant voltage LED driver. Operation with a constant current LED driver will lead to an irreversible damage of the module.

Wrong polarity can damage the LLE FLEX.

3.2 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 62.5 mm with the full function of each segment.

Insulation must be ensured at the contact area of the segments (e. g. by using additional insulation in the area of the solder connection).

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 2 cm.

For details see Application Note: www.tridonic.com



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.

3.3 Soldering guidelines



The modules are suitable only for manual soldering (max. 275 °C, 2 seconds).

3.3 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 8mm 48V 1200lm SNC2

LLE FLEX 8mm 48V 1800lm SNC2

Supply voltage	tp temperature	L90/B10	L90/B50	L80/B10	L80/B50	L70/B10	L70/B50
48 V	40 °C	34k h	52k h	>60k h	>60k h	>60k h	>60k h
	45 °C	34k h	50k h	>60k h	>60k h	>60k h	>60k h
	50 °C	33k h	48k h	>60k h	>60k h	>60k h	>60k h
	55 °C	33k h	47k h	>60k h	>60k h	>60k h	>60k h
	60 °C	32k h	45k h	>60k h	>60k h	>60k h	>60k h
	65 °C	32k h	43k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	42k h	>60k h	>60k h	>60k h	>60k h
	75 °C	31k h	40k h	>60k h	>60k h	>60k h	>60k h

LLE FLEX 8mm 48V 2500lm SNC2

LLE FLEX 8mm 48V 3000lm SNC2

LLE FLEX 8mm 48V 4000lm SNC2

Supply voltage	tp temperature	L90/B10	L90/B50	L80/B10	L80/B50	L70/B10	L70/B50
48 V	40 °C	34k h	51k h	>60k h	>60k h	>60k h	>60k h
	45 °C	34k h	50k h	>60k h	>60k h	>60k h	>60k h
	50 °C	33k h	48k h	>60k h	>60k h	>60k h	>60k h
	55 °C	32k h	46k h	>60k h	>60k h	>60k h	>60k h
	60 °C	32k h	44k h	>60k h	>60k h	>60k h	>60k h
	65 °C	31k h	43k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	41k h	>60k h	>60k h	>60k h	>60k h
	75 °C	30k h	40k h	>60k h	>60k h	>60k h	>60k h

LOC10 >60 kh. At tp rated, based on 10 switching 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

6. Photometric characteristics

6.1 Coordinates and tolerances according to CIE 1931

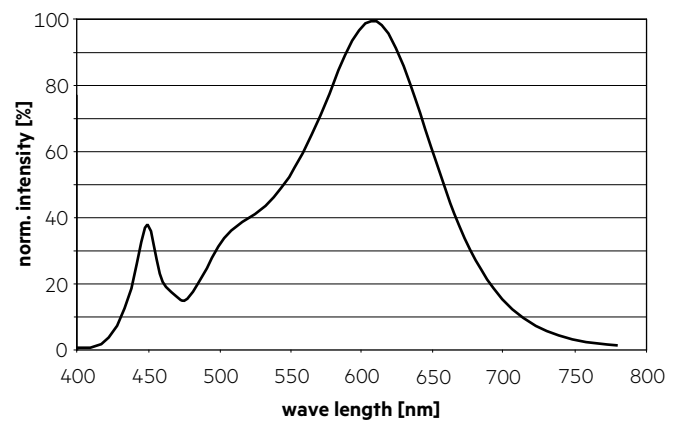
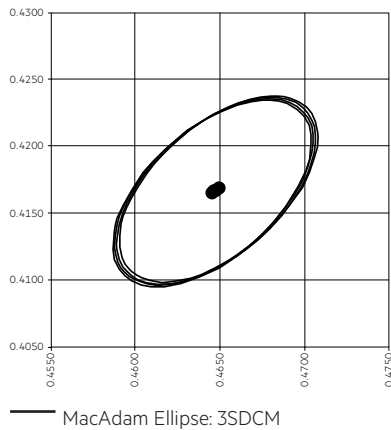
The specified colour coordinates are measured integral by a current impulse with typical values of module and a duration of 100 ms.

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

The measurement tolerance of the colour coordinates are ± 0.01 .

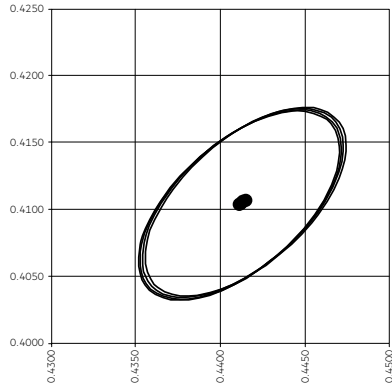
2,700 K – CRI80

	x0	y0
Centre 1,200 lm/m	0.4650	0.4168
Centre 1,800 lm/m	0.4650	0.4168
Centre 2,500 lm/m	0.4648	0.4167
Centre 3,000 lm/m	0.4647	0.4166
Centre 4,000 lm/m	0.4646	0.4165

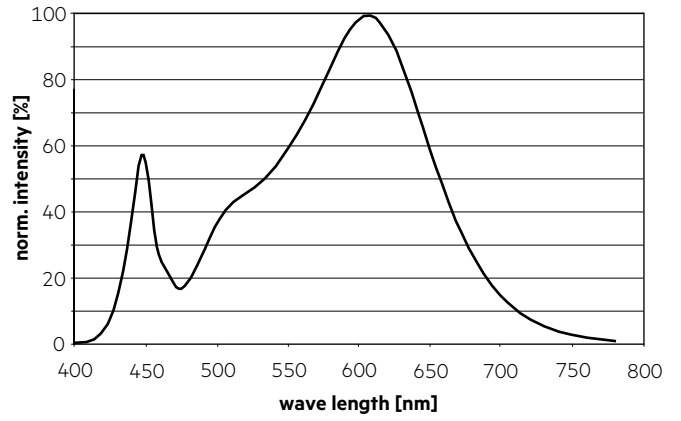


3,000 K – CRI80

	x0	y0
Centre 1,200 lm/m	0.4416	0.4106
Centre 1,800 lm/m	0.4416	0.4106
Centre 2,500 lm/m	0.4414	0.4105
Centre 3,000 lm/m	0.4413	0.4104
Centre 4,000 lm/m	0.4412	0.4103

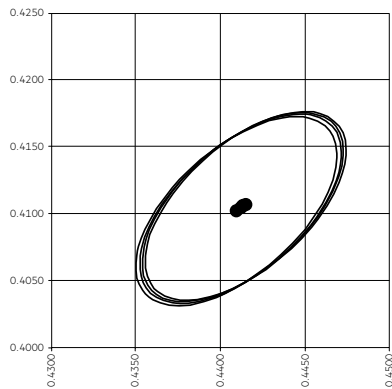


MacAdam Ellipse: 3SDCM

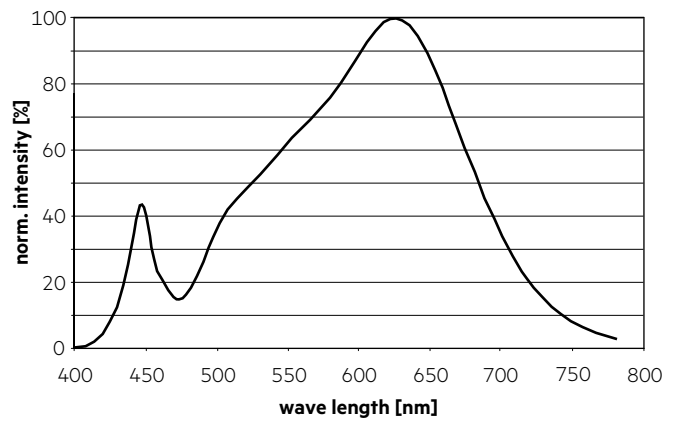


3,000 K – CRI90

	x0	y0
Centre 1,200 lm/m	0.4416	0.4106
Centre 1,800 lm/m	0.4414	0.4105
Centre 2,500 lm/m	0.4414	0.4105
Centre 3,000 lm/m	0.4413	0.4104
Centre 4,000 lm/m	0.4410	0.4102

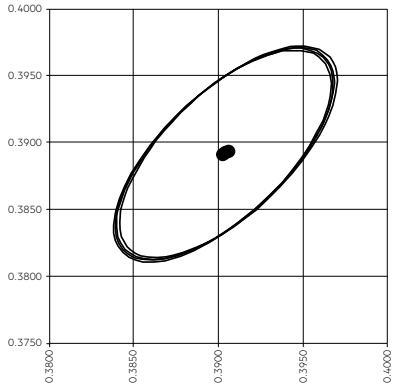


MacAdam Ellipse: 3SDCM

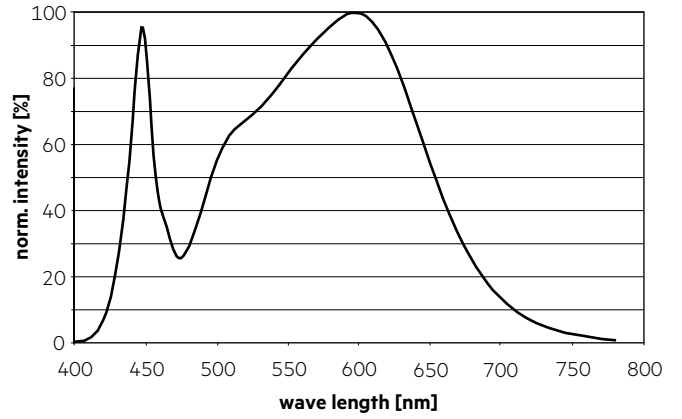


4,000 K – CRI80

	x0	y0
Centre 1,200 lm/m	0.3907	0.3893
Centre 1,800 lm/m	0.3907	0.3893
Centre 2,500 lm/m	0.3905	0.3892
Centre 3,000 lm/m	0.3904	0.3891
Centre 4,000 lm/m	0.3903	0.3890

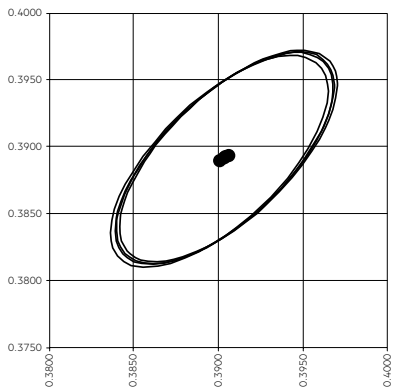


— MacAdam Ellipse: 3SDCM

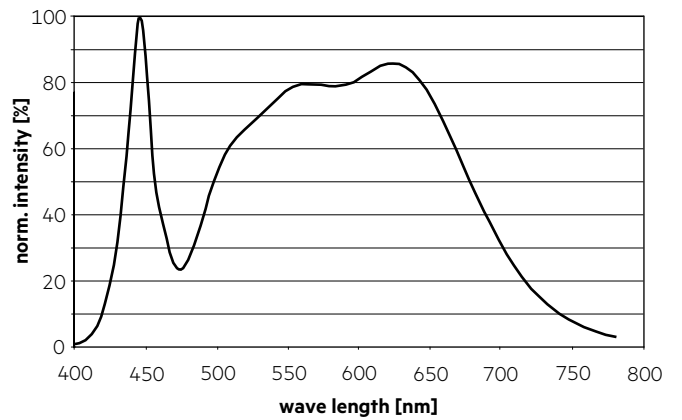


4,000 K – CRI90

	x0	y0
Centre 1,200 lm/m	0.3907	0.3893
Centre 1,800 lm/m	0.3905	0.3892
Centre 2,500 lm/m	0.3905	0.3892
Centre 3,000 lm/m	0.3904	0.3891
Centre 4,000 lm/m	0.3901	0.3889

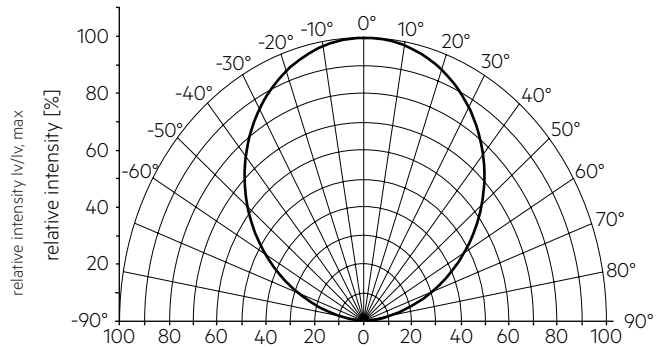


— MacAdam Ellipse: 3SDCM



6.2 Light distribution

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

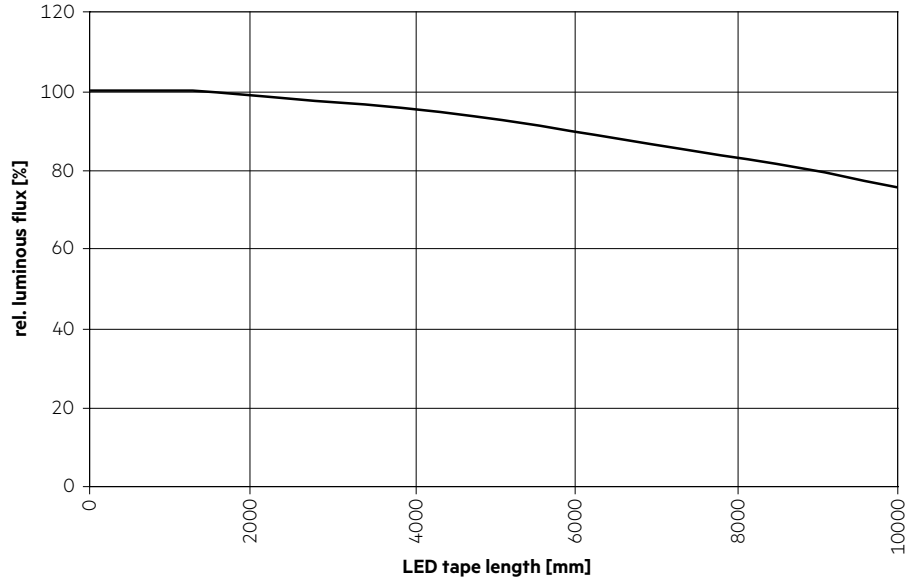


The colour temperature is measured over the complete module. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 1.5 cm) should be used.

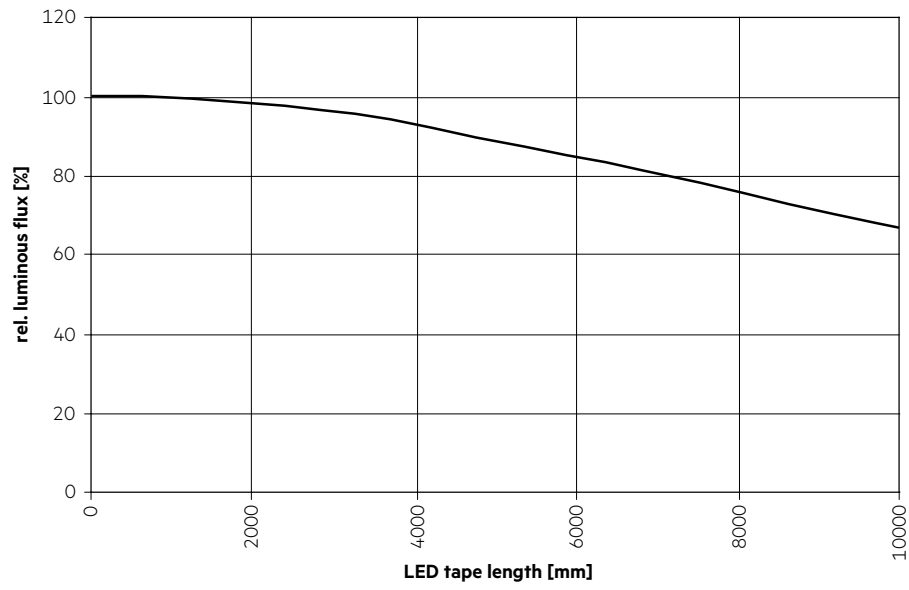
6.4 Relative luminous flux vs. LED tape length

The graphs show the luminous flux drop of the first compare to the last segment over the used tape length. Statistical values based on nominal supply voltage and tp rated.

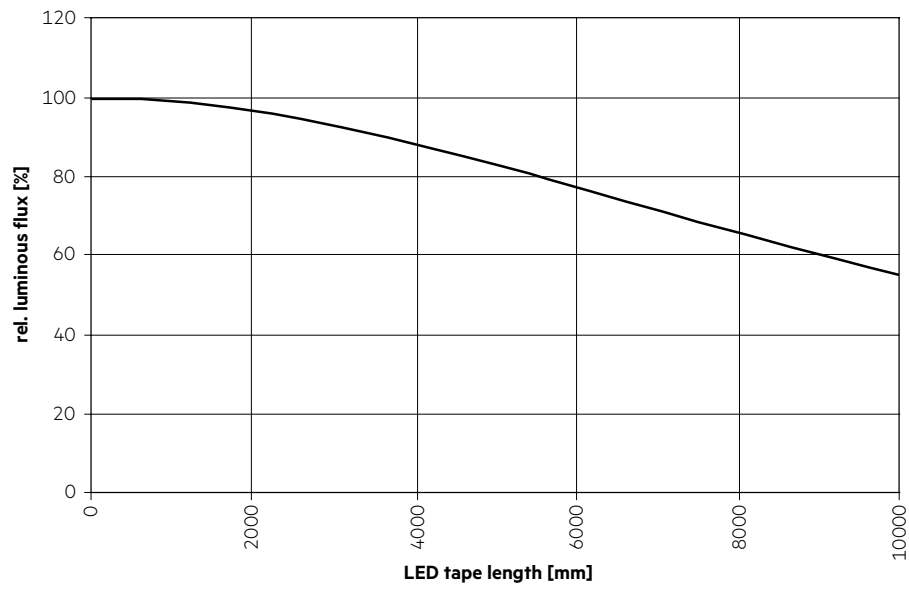
LLE FLEX 8mm 48V 1200lm SNC2



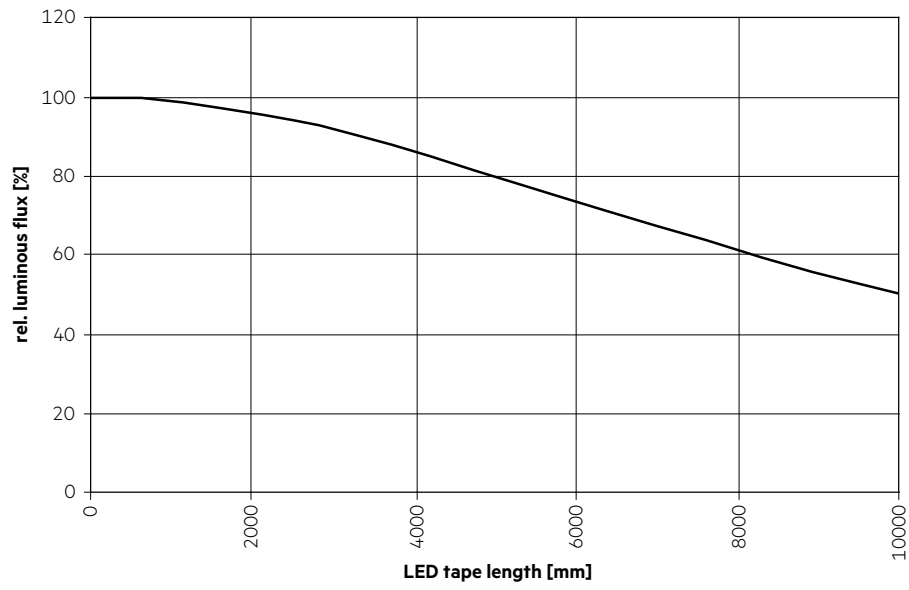
LLE FLEX 8mm 48V 1800lm SNC2



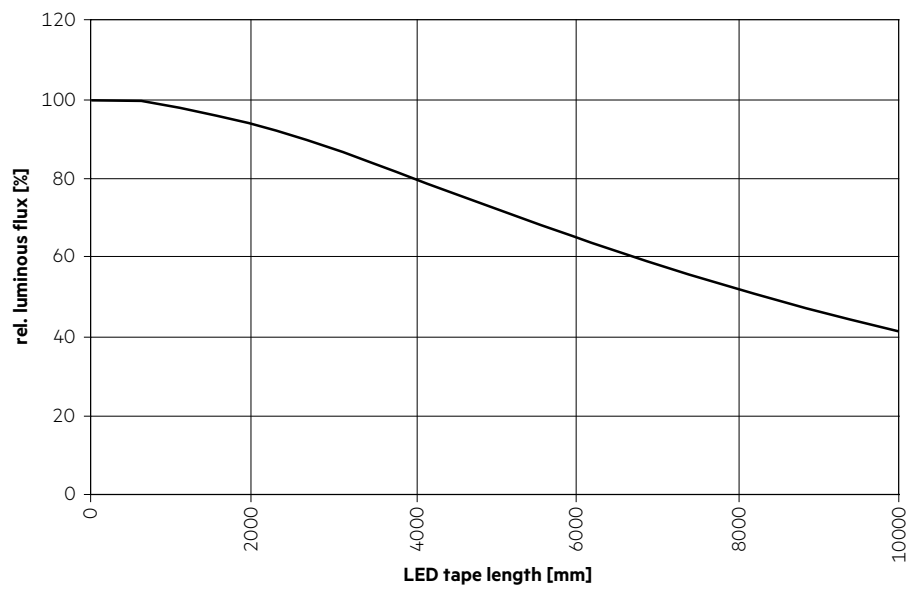
LLE FLEX 8mm 48V 2500lm SNC2



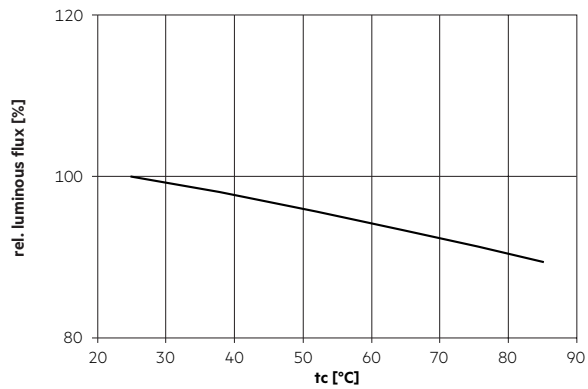
LLE FLEX 8mm 48V 3000lm SNC2



LLE FLEX 8mm 48V 4000lm SNC2



6.3 Relative luminous flux vs. tc temperature



7. Miscellaneous

7.1 Additional information

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

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/>

Lifetime declarations are informative and represent no warranty claim.