



Module LLE FLEX 8mm 24V SNC4

Modules LLE FLEX essence

Product description

- Dimmable 24 V constant voltage LED flextape (SELV)
- Ideal for various lighting applications:
indirect, accent and decorative lighting, ceiling integration, cove lighting and aluminium extrusions
- 1 reel = 5 m
- Made in Europe
- Long lifetime: 60,000 hours
- 5 years guarantee (conditions at www.tridonic.com)

Optical properties

- Colour temperature 2,700, 3,000, 4,000 K (6,500 K on demand)
- Useful luminous flux up to 2,694 lm/m at $t_p = 25^\circ\text{C}$
- Efficacy of the LED module up to 159 lm/W at $t_p = 25^\circ\text{C}$
- High colour rendering index CRI > 80 and CRI > 90
- Small colour tolerance (MacAdam 3)

Mechanical properties

- High design freedom due to 5 cm cut-options and 140 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[®]

System solution

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



Standards, page 6

Colour temperatures and tolerances, page 8





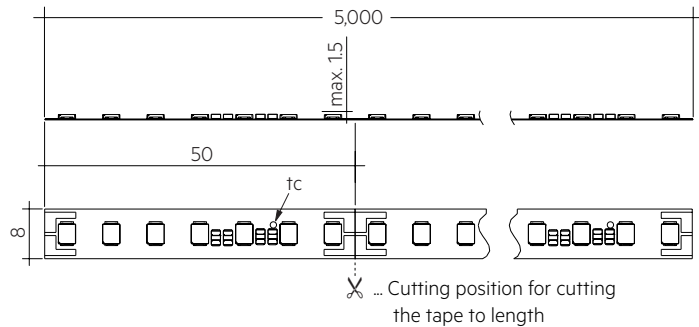
Module LLE FLEX 8mm 24V SNC4

Modules LLE FLEX essence

Technical data

Colour consistency [®]	3 SDCM
ESD classification	severity level 1
Classification acc. to IEC 62031	Built-in
Type of protection	IP00
Lumen maintenance L70B50	60,000 h
Guarantee (conditions at www.tridonic.com)	5 years

[®] Integral measurement over the complete module.



Ordering data

Type	Article number	Packaging carton	Weight per pc.
LLE FLEX 8mm 24V 3W 300lm 827 SNC4 R05	28005200	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 3W 300lm 830 SNC4 R05	28005201	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 3W 300lm 840 SNC4 R05	28005202	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 3W 300lm 865 SNC4 R05	28005203	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 5W 600lm 827 SNC4 R05	28005204	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 5W 600lm 830 SNC4 R05	28005205	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 5W 600lm 840 SNC4 R05	28005206	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 5W 600lm 865 SNC4 R05	28005207	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 9W 1200lm 827 SNC4 R05	28005208	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 9W 1200lm 830 SNC4 R05	28005209	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 9W 1200lm 840 SNC4 R05	28005210	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 9W 1200lm 865 SNC4 R05	28005211	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 13W 1800lm 827 SNC4 R05	28005212	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 13W 1800lm 830 SNC4 R05	28005213	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 13W 1800lm 840 SNC4 R05	28005214	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 13W 1800lm 865 SNC4 R05	28005215	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 19W 2500lm 827 SNC4 R05	28005216	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 19W 2500lm 830 SNC4 R05	28005217	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 19W 2500lm 840 SNC4 R05	28005218	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 19W 2500lm 865 SNC4 R05	28005219	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 6W 600lm 930 SNC4 R05	28005225	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 6W 600lm 940 SNC4 R05	28005226	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 11W 1200lm 930 SNC4 R05	28005229	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 11W 1200lm 940 SNC4 R05	28005230	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 16W 1800lm 930 SNC4 R05	28005233	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 16W 1800lm 940 SNC4 R05	28005234	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 22W 2500lm 930 SNC4 R05	28005237	1 pc(s).	0.084 kg
LLE FLEX 8mm 24V 22W 2500lm 940 SNC4 R05	28005238	1 pc(s).	0.084 kg

Photometric data

Type	Colour temperature	Photometric code	Useful luminous flux at tp = 25 °C [®]	Luminous flux at tp rated [®]			Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Beam characteristic	Colour rendering index CRI
				Min.	Typ.	Max.				
LLE FLEX 8mm 24V 3W 300lm 827 SNC4 R05	2,700 K	827/359	336 lm/m	278 lm/m	327 lm/m	376 lm/m	147 lm/W	136 lm/W	120°	> 80
LLE FLEX 8mm 24V 3W 300lm 830 SNC4 R05	3,000 K	830/359	348 lm/m	288 lm/m	339 lm/m	390 lm/m	153 lm/W	141 lm/W	120°	> 80
LLE FLEX 8mm 24V 3W 300lm 840 SNC4 R05	4,000 K	840/359	362 lm/m	300 lm/m	353 lm/m	406 lm/m	159 lm/W	147 lm/W	120°	> 80
LLE FLEX 8mm 24V 3W 300lm 865 SNC4 R05	6,500 K	865/359	359 lm/m	298 lm/m	350 lm/m	403 lm/m	157 lm/W	146 lm/W	120°	> 80
LLE FLEX 8mm 24V 5W 600lm 827 SNC4 R05	2,700 K	827/359	678 lm/m	565 lm/m	665 lm/m	765 lm/m	145 lm/W	134 lm/W	120°	> 80
LLE FLEX 8mm 24V 5W 600lm 830 SNC4 R05	3,000 K	830/359	702 lm/m	587 lm/m	690 lm/m	794 lm/m	150 lm/W	139 lm/W	120°	> 80
LLE FLEX 8mm 24V 5W 600lm 840 SNC4 R05	4,000 K	840/359	730 lm/m	609 lm/m	717 lm/m	825 lm/m	156 lm/W	145 lm/W	120°	> 80
LLE FLEX 8mm 24V 5W 600lm 865 SNC4 R05	6,500 K	865/359	725 lm/m	605 lm/m	712 lm/m	819 lm/m	155 lm/W	144 lm/W	120°	> 80
LLE FLEX 8mm 24V 9W 1200lm 827 SNC4 R05	2,700 K	827/359	1,222 lm/m	1,022 lm/m	1,202 lm/m	1,382 lm/m	144 lm/W	133 lm/W	120°	> 80
LLE FLEX 8mm 24V 9W 1200lm 830 SNC4 R05	3,000 K	830/359	1,267 lm/m	1,059 lm/m	1,246 lm/m	1,433 lm/m	149 lm/W	138 lm/W	120°	> 80
LLE FLEX 8mm 24V 9W 1200lm 840 SNC4 R05	4,000 K	840/359	1,316 lm/m	1,101 lm/m	1,295 lm/m	1,489 lm/m	155 lm/W	144 lm/W	120°	> 80
LLE FLEX 8mm 24V 9W 1200lm 865 SNC4 R05	6,500 K	865/359	1,307 lm/m	1,093 lm/m	1,286 lm/m	1,479 lm/m	154 lm/W	143 lm/W	120°	> 80
LLE FLEX 8mm 24V 13W 1800lm 827 SNC4 R05	2,700 K	827/359	1,743 lm/m	1,459 lm/m	1,716 lm/m	1,973 lm/m	142 lm/W	131 lm/W	120°	> 80
LLE FLEX 8mm 24V 13W 1800lm 830 SNC4 R05	3,000 K	830/359	1,808 lm/m	1,512 lm/m	1,779 lm/m	2,046 lm/m	147 lm/W	136 lm/W	120°	> 80
LLE FLEX 8mm 24V 13W 1800lm 840 SNC4 R05	4,000 K	840/359	1,878 lm/m	1,572 lm/m	1,849 lm/m	2,126 lm/m	153 lm/W	141 lm/W	120°	> 80
LLE FLEX 8mm 24V 13W 1800lm 865 SNC4 R05	6,500 K	865/359	1,865 lm/m	1,561 lm/m	1,836 lm/m	2,111 lm/m	152 lm/W	140 lm/W	120°	> 80
LLE FLEX 8mm 24V 19W 2500lm 827 SNC4 R05	2,700 K	827/359	2,501 lm/m	2,098 lm/m	2,468 lm/m	2,838 lm/m	138 lm/W	128 lm/W	120°	> 80
LLE FLEX 8mm 24V 19W 2500lm 830 SNC4 R05	3,000 K	830/359	2,593 lm/m	2,174 lm/m	2,558 lm/m	2,942 lm/m	143 lm/W	132 lm/W	120°	> 80
LLE FLEX 8mm 24V 19W 2500lm 840 SNC4 R05	4,000 K	840/359	2,694 lm/m	2,258 lm/m	2,656 lm/m	3,054 lm/m	149 lm/W	137 lm/W	120°	> 80
LLE FLEX 8mm 24V 19W 2500lm 865 SNC4 R05	6,500 K	865/359	2,675 lm/m	2,244 lm/m	2,640 lm/m	3,036 lm/m	148 lm/W	136 lm/W	120°	> 80
LLE FLEX 8mm 24V 6W 600lm 930 SNC4 R05	3,000 K	930/359	643 lm/m	536 lm/m	631 lm/m	726 lm/m	126 lm/W	117 lm/W	120°	> 90
LLE FLEX 8mm 24V 6W 600lm 940 SNC4 R05	4,000 K	940/359	665 lm/m	555 lm/m	653 lm/m	751 lm/m	130 lm/W	121 lm/W	120°	> 90
LLE FLEX 8mm 24V 11W 1200lm 930 SNC4 R05	3,000 K	930/359	1,321 lm/m	1,105 lm/m	1,300 lm/m	1,495 lm/m	124 lm/W	115 lm/W	120°	> 90
LLE FLEX 8mm 24V 11W 1200lm 940 SNC4 R05	4,000 K	940/359	1,368 lm/m	1,055 lm/m	1,241 lm/m	1,427 lm/m	129 lm/W	110 lm/W	120°	> 90
LLE FLEX 8mm 24V 16W 1800lm 930 SNC4 R05	3,000 K	930/359	1,804 lm/m	1,511 lm/m	1,778 lm/m	2,045 lm/m	122 lm/W	113 lm/W	120°	> 90
LLE FLEX 8mm 24V 16W 1800lm 940 SNC4 R05	4,000 K	940/359	1,868 lm/m	1,565 lm/m	1,841 lm/m	2,117 lm/m	127 lm/W	117 lm/W	120°	> 90
LLE FLEX 8mm 24V 22W 2500lm 930 SNC4 R05	3,000 K	930/359	2,475 lm/m	2,104 lm/m	2,475 lm/m	2,846 lm/m	118 lm/W	110 lm/W	120°	> 90
LLE FLEX 8mm 24V 22W 2500lm 940 SNC4 R05	4,000 K	940/359	2,596 lm/m	2,178 lm/m	2,562 lm/m	2,946 lm/m	123 lm/W	114 lm/W	120°	> 90

[®] Integral measurement over the complete module.

[®] For 5 m reel max. 2 solder joints.

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

[®] Measurement uncertainty ± 10 %. Values given for 1 m LLE FLEX. Based on calculation.

Electrical data

Type	Typ. current consumption at tp rated	Supply voltage DC ^①	Supply voltage range DC	Power consumption Pon at tp = 25 °C ^②	Energy classification	Energy consumption	Type of light source
LLE FLEX 8mm 24V 3W 300lm 827 SNC4 R05	100 mA/m	24.0 V	21.6 - 26.4 V	2.3 W	D	3 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 3W 300lm 830 SNC4 R05	100 mA/m	24.0 V	21.6 - 26.4 V	2.3 W	D	3 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 3W 300lm 840 SNC4 R05	100 mA/m	24.0 V	21.6 - 26.4 V	2.3 W	D	3 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 3W 300lm 865 SNC4 R05	100 mA/m	24.0 V	21.6 - 26.4 V	2.3 W	D	3 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 5W 600lm 827 SNC4 R05	206 mA/m	24.0 V	21.6 - 26.4 V	4.7 W	E	5 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 5W 600lm 830 SNC4 R05	206 mA/m	24.0 V	21.6 - 26.4 V	4.7 W	D	5 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 5W 600lm 840 SNC4 R05	206 mA/m	24.0 V	21.6 - 26.4 V	4.7 W	D	5 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 5W 600lm 865 SNC4 R05	206 mA/m	24.0 V	21.6 - 26.4 V	4.7 W	D	5 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 9W 1200lm 827 SNC4 R05	376 mA/m	24.0 V	21.6 - 26.4 V	8.5 W	E	9 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 9W 1200lm 830 SNC4 R05	376 mA/m	24.0 V	21.6 - 26.4 V	8.5 W	D	9 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 9W 1200lm 840 SNC4 R05	376 mA/m	24.0 V	21.6 - 26.4 V	8.5 W	D	9 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 9W 1200lm 865 SNC4 R05	376 mA/m	24.0 V	21.6 - 26.4 V	8.5 W	D	9 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 13W 1800lm 827 SNC4 R05	545 mA/m	24.0 V	21.6 - 26.4 V	12.3 W	E	13 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 13W 1800lm 830 SNC4 R05	545 mA/m	24.0 V	21.6 - 26.4 V	12.3 W	D	13 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 13W 1800lm 840 SNC4 R05	545 mA/m	24.0 V	21.6 - 26.4 V	12.3 W	D	13 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 13W 1800lm 865 SNC4 R05	545 mA/m	24.0 V	21.6 - 26.4 V	12.3 W	D	13 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 19W 2500lm 827 SNC4 R05	806 mA/m	24.0 V	21.6 - 26.4 V	18.2 W	E	19 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 19W 2500lm 830 SNC4 R05	806 mA/m	24.0 V	21.6 - 26.4 V	18.2 W	E	19 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 19W 2500lm 840 SNC4 R05	806 mA/m	24.0 V	21.6 - 26.4 V	18.2 W	D	19 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 19W 2500lm 865 SNC4 R05	806 mA/m	24.0 V	21.6 - 26.4 V	18.2 W	D	19 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 6W 600lm 930 SNC4 R05	225 mA/m	24.0 V	21.6 - 26.4 V	5.2 W	E	6 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 6W 600lm 940 SNC4 R05	225 mA/m	24.0 V	21.6 - 26.4 V	5.2 W	E	6 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 11W 1200lm 930 SNC4 R05	470 mA/m	24.0 V	21.6 - 26.4 V	10.7 W	E	11 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 11W 1200lm 940 SNC4 R05	470 mA/m	24.0 V	21.6 - 26.4 V	10.7 W	E	11 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 16W 1800lm 930 SNC4 R05	656 mA/m	24.0 V	21.6 - 26.4 V	14.8 W	E	15 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 16W 1800lm 940 SNC4 R05	656 mA/m	24.0 V	21.6 - 26.4 V	14.8 W	E	15 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 22W 2500lm 930 SNC4 R05	937 mA/m	24.0 V	21.6 - 26.4 V	21.1 W	F	22 kWh / 1,000 h	Non-directional
LLE FLEX 8mm 24V 22W 2500lm 940 SNC4 R05	937 mA/m	24.0 V	21.6 - 26.4 V	21.1 W	E	22 kWh / 1,000 h	Non-directional

^① Exceeding the max. operating voltage leads to an overload on the LLE FLEX. This may in turn result in a reduction in lifetime or even in destruction.

^② Tolerance of power consumption Pon ± 15 %. Measurement uncertainty ± 5 %. Values given for 1 m LLE FLEX.

Specific technical data

Type	Max. working voltage for insulation SELV	Electrical strength	ta	tp rated	tc
LLE FLEX 8mm 24V 3W 300lm 827 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 3W 300lm 830 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 3W 300lm 840 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 3W 300lm 865 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 5W 600lm 827 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 5W 600lm 830 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 5W 600lm 840 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 5W 600lm 865 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 9W 1200lm 827 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 9W 1200lm 830 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 9W 1200lm 840 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 9W 1200lm 865 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 13W 1800lm 827 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 13W 1800lm 830 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 13W 1800lm 840 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 13W 1800lm 865 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 19W 2500lm 827 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 19W 2500lm 830 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 19W 2500lm 840 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 19W 2500lm 865 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 6W 600lm 930 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 6W 600lm 940 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 11W 1200lm 930 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 11W 1200lm 940 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 16W 1800lm 930 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 16W 1800lm 940 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 22W 2500lm 930 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C
LLE FLEX 8mm 24V 22W 2500lm 940 SNC4 R05	60 V	0.5 kV	-25 ... +50 °C	65 °C	75 °C

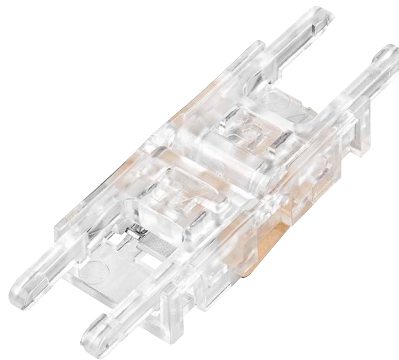
Connector for LLE FLEX

Product description

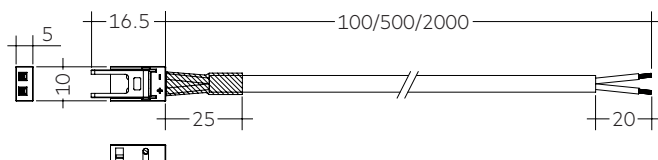
- For connection of LLE FLEX modules
- For internal wiring only (no strain relief functionality)
- Connector can be closed and re-opened easily:
For assembly instructions see application note available at www.tridonic.com
- Glow wire test according to IEC 60695-2-11
- Max. 5 A in connection with LLE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



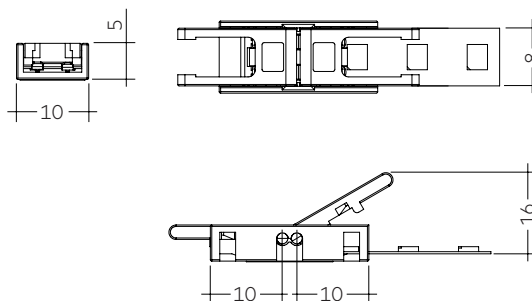
ACL connector Wire-PCB



ACL connector PCB-PCB



ACL connector Wire-PCB



ACL connector PCB-PCB

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

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

1.2 Risk group

Type	Risk group
LLE FLEX 8mm 24V SNC4	RGO

1.3 Energy classification

Type	Colour temperature	Energy classification	Energy consumption
LLE FLEX 8mm 24V 3W 300lm 827 SNC4 R05	2,700 K	D	3 kWh / 1,000 h
LLE FLEX 8mm 24V 3W 300lm 830 SNC4 R05	3,000 K	D	3 kWh / 1,000 h
LLE FLEX 8mm 24V 3W 300lm 840 SNC4 R05	4,000 K	D	3 kWh / 1,000 h
LLE FLEX 8mm 24V 3W 300lm 865 SNC4 R05	6,500 K	D	3 kWh / 1,000 h
LLE FLEX 8mm 24V 5W 600lm 827 SNC4 R05	2,700 K	E	5 kWh / 1,000 h
LLE FLEX 8mm 24V 5W 600lm 830 SNC4 R05	3,000 K	D	5 kWh / 1,000 h
LLE FLEX 8mm 24V 5W 600lm 840 SNC4 R05	4,000 K	D	5 kWh / 1,000 h
LLE FLEX 8mm 24V 5W 600lm 865 SNC4 R05	6,500 K	D	5 kWh / 1,000 h
LLE FLEX 8mm 24V 9W 1200lm 827 SNC4 R05	2,700 K	E	9 kWh / 1,000 h
LLE FLEX 8mm 24V 9W 1200lm 830 SNC4 R05	3,000 K	D	9 kWh / 1,000 h
LLE FLEX 8mm 24V 9W 1200lm 840 SNC4 R05	4,000 K	D	9 kWh / 1,000 h
LLE FLEX 8mm 24V 9W 1200lm 865 SNC4 R05	6,500 K	D	9 kWh / 1,000 h
LLE FLEX 8mm 24V 13W 1800lm 827 SNC4 R05	2,700 K	E	13 kWh / 1,000 h
LLE FLEX 8mm 24V 13W 1800lm 830 SNC4 R05	3,000 K	D	13 kWh / 1,000 h
LLE FLEX 8mm 24V 13W 1800lm 840 SNC4 R05	4,000 K	D	13 kWh / 1,000 h
LLE FLEX 8mm 24V 13W 1800lm 865 SNC4 R05	6,500 K	D	13 kWh / 1,000 h
LLE FLEX 8mm 24V 19W 2500lm 827 SNC4 R05	2,700 K	E	19 kWh / 1,000 h
LLE FLEX 8mm 24V 19W 2500lm 830 SNC4 R05	3,000 K	E	19 kWh / 1,000 h
LLE FLEX 8mm 24V 19W 2500lm 840 SNC4 R05	4,000 K	D	19 kWh / 1,000 h
LLE FLEX 8mm 24V 19W 2500lm 865 SNC4 R05	6,500 K	D	19 kWh / 1,000 h
LLE FLEX 8mm 24V 6W 600lm 930 SNC4 R05	3,000 K	E	6 kWh / 1,000 h
LLE FLEX 8mm 24V 6W 600lm 940 SNC4 R05	4,000 K	E	6 kWh / 1,000 h
LLE FLEX 8mm 24V 11W 1200lm 930 SNC4 R05	3,000 K	E	11 kWh / 1,000 h
LLE FLEX 8mm 24V 11W 1200lm 940 SNC4 R05	4,000 K	E	11 kWh / 1,000 h
LLE FLEX 8mm 24V 16W 1800lm 930 SNC4 R05	3,000 K	E	15 kWh / 1,000 h
LLE FLEX 8mm 24V 16W 1800lm 940 SNC4 R05	4,000 K	E	15 kWh / 1,000 h
LLE FLEX 8mm 24V 22W 2500lm 930 SNC4 R05	3,000 K	F	22 kWh / 1,000 h
LLE FLEX 8mm 24V 22W 2500lm 940 SNC4 R05	4,000 K	E	22 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
---------------------	----------------

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 300lm 24V 8xx SNC4

ta	tp	R _{th, hs-a} ①	Cooling area ①
25 °C	65 °C	744.00 K/W	self cooling
35 °C	65 °C	557.95 K/W	self cooling
40 °C	65 °C	464.93 K/W	self cooling
45 °C	65 °C	371.91 K/W	self cooling
50 °C	65 °C	278.88 K/W	self cooling

LLE FLEX 8mm 600lm 24V 8xx SNC4

ta	tp	R _{th, hs-a} ①	Cooling area ①
25 °C	65 °C	242.39	self cooling
35 °C	65 °C	181.76	self cooling
40 °C	65 °C	151.44	4 cm²
45 °C	65 °C	121.13	6 cm²
50 °C	65 °C	90.81	7 cm²

LLE FLEX 8mm 1200lm 24V 8xx SNC4

ta	tp	R _{th, hs-a} ①	Cooling area ①
25 °C	65 °C	204.94 K/W	self cooling
35 °C	65 °C	153.66 K/W	4 cm²
40 °C	65 °C	128.02 K/W	5 cm²
45 °C	65 °C	102.38 K/W	7 cm²
50 °C	65 °C	76.74 K/W	9 cm²

LLE FLEX 8mm 1800lm 24V 8xx SNC4

ta	tp	R _{th, hs-a} ①	Cooling area ①
25 °C	65 °C	146.60 K/W	5 cm²
35 °C	65 °C	109.90 K/W	6 cm²
40 °C	65 °C	91.56 K/W	7 cm²
45 °C	65 °C	73.21 K/W	9 cm²
50 °C	65 °C	54.86 K/W	12 cm²

LLE FLEX 8mm 2500lm 24V 8xx SNC4

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	90.46 K/W	7 cm²
35 °C	65 °C	67.80 K/W	10 cm²
40 °C	65 °C	56.47 K/W	12 cm²
45 °C	65 °C	45.14 K/W	15 cm²
50 °C	65 °C	33.81 K/W	20 cm²

LLE FLEX 8mm 600lm 24V 9xx SNC4

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	313.54 K/W	self cooling
35 °C	65 °C	235.11 K/W	self cooling
40 °C	65 °C	195.89 K/W	self cooling
45 °C	65 °C	156.68 K/W	4 cm²
50 °C	65 °C	117.46 K/W	6 cm²

LLE FLEX 8mm 1200lm 24V 9xx SNC4

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	130.96 K/W	5 cm²
35 °C	65 °C	98.17 K/W	7 cm²
40 °C	65 °C	81.78 K/W	8 cm²
45 °C	65 °C	65.39 K/W	10 cm²
50 °C	65 °C	48.99 K/W	14 cm²

LLE FLEX 8mm 1800lm 24V 9xx SNC4

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	123.84 K/W	5 cm²
35 °C	65 °C	92.84 K/W	7 cm²
40 °C	65 °C	77.33 K/W	9 cm²
45 °C	65 °C	61.83 K/W	11 cm²
50 °C	65 °C	46.32 K/W	14 cm²

LLE FLEX 8mm 2500lm 24V 9xx SNC4

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	82.93 K/W	8 cm²
35 °C	65 °C	62.15 K/W	11 cm²
40 °C	65 °C	51.76 K/W	13 cm²
45 °C	65 °C	41.37 K/W	16 cm²
50 °C	65 °C	30.98 K/W	22 cm²

① Values for a single segment of the LLE FLEX (50 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 50 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>

4.3 Switching capability

100,000 cycles

Tridonic test according to IEC 62717 Cl 10.3.3
30 s on / 30 s off at I_{max}

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 24V 300lm SNC4

LLE FLEX 8mm 24V 600lm SNC4

LLE FLEX 8mm 24V 1200lm SNC4

Supply voltage	tp temperature	L90/B10	L90/B50	L80/B10	L80/B50	L70/B10	L70/B50
24 V	40 °C	30k h	44k h	60k h	>60k h	>60k h	>60k h
	45 °C	29k h	43k h	59k h	>60k h	>60k h	>60k h
	50 °C	28k h	41k h	57k h	>60k h	>60k h	>60k h
	55 °C	28k h	41k h	56k h	>60k h	>60k h	>60k h
	60 °C	27k h	39k h	55k h	>60k h	>60k h	>60k h
	65 °C	26k h	38k h	54k h	>60k h	>60k h	>60k h
	70 °C	26k h	37k h	52k h	>60k h	>60k h	>60k h
	75 °C	25k h	36k h	51k h	>60k h	>60k h	>60k h

LLE FLEX 8mm 24V 1800lm SNC4

LLE FLEX 8mm 24V 2500lm SNC4

Supply voltage	tp temperature	L90/B10	L90/B50	L80/B10	L80/B50	L70/B10	L70/B50
24 V	40 °C	30k h	44k h	60k h	>60k h	>60k h	>60k h
	45 °C	29k h	43k h	59k h	>60k h	>60k h	>60k h
	50 °C	28k h	41k h	57k h	>60k h	>60k h	>60k h
	55 °C	28k h	40k h	56k h	>60k h	>60k h	>60k h
	60 °C	27k h	39k h	55k h	>60k h	>60k h	>60k h
	65 °C	26k h	37k h	53k h	>60k h	>60k h	>60k h
	70 °C	26k h	36k h	52k h	>60k h	>60k h	>60k h
	75 °C	25k h	35k h	50k h	>60k h	>60k h	>60k h

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

6. Photometric characteristics

6.1 Coordinates and tolerances according to CIE 1931

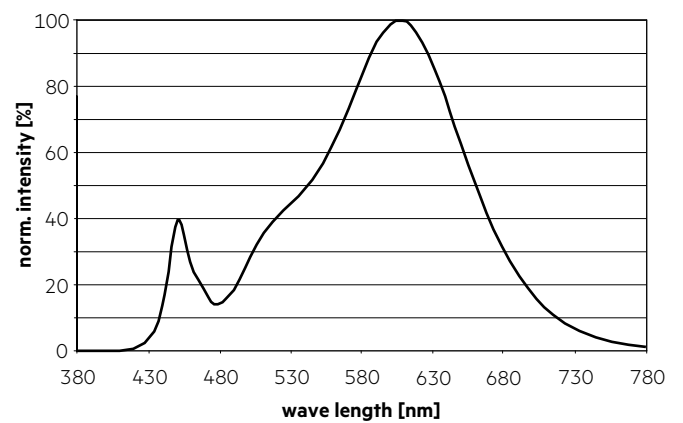
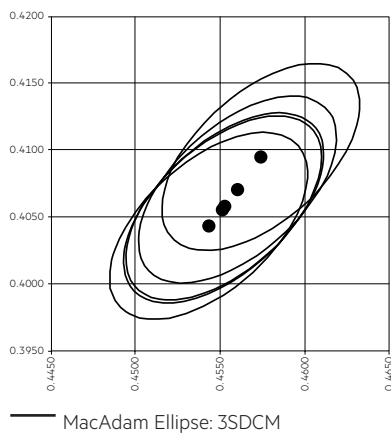
The specified colour coordinates are measured integral by a current impulse with typical values of module and a duration of 100 ms.

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

The measurement tolerance of the colour coordinates are ± 0.01 .

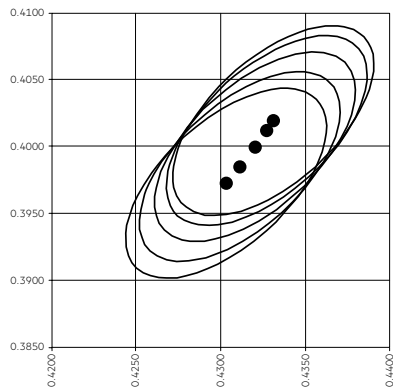
2,700 K – CRI80

	x0	y0
Centre 300 lm/m	0.4543	0.4044
Centre 600 lm/m	0.4551	0.4056
Centre 1,200 lm/m	0.4560	0.4071
Centre 1,800 lm/m	0.4566	0.4081
Centre 2,500 lm/m	0.4571	0.4090

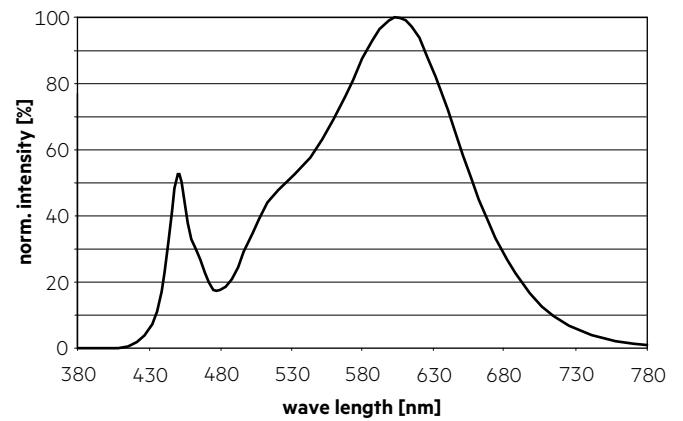


3,000 K – CRI80

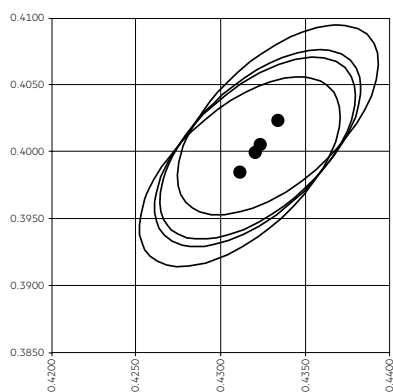
	x0	y0
Centre 300 lm/m	0.4303	0.3973
Centre 600 lm/m	0.4311	0.3985
Centre 1,200 lm/m	0.4320	0.4000
Centre 1,800 lm/m	0.4327	0.4012
Centre 2,500 lm/m	0.4331	0.4019



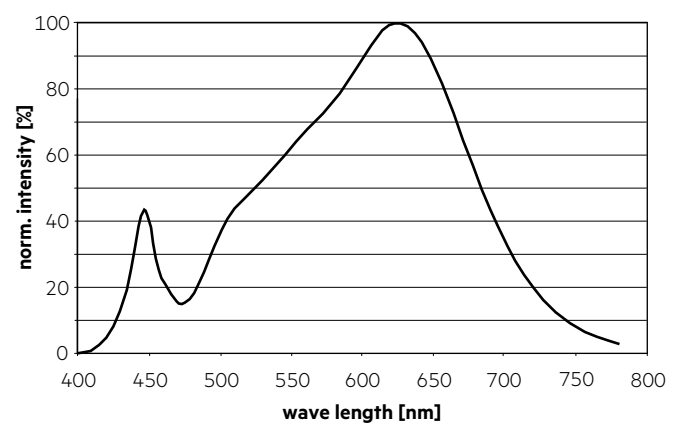
— MacAdam Ellipse: 3SDCM

**3,000 K – CRI90**

	x0	y0
Centre 600 lm/m	0.4311	0.3985
Centre 1,200 lm/m	0.4323	0.4005
Centre 1,800 lm/m	0.4327	0.4012
Centre 2,500 lm/m	0.4334	0.4024



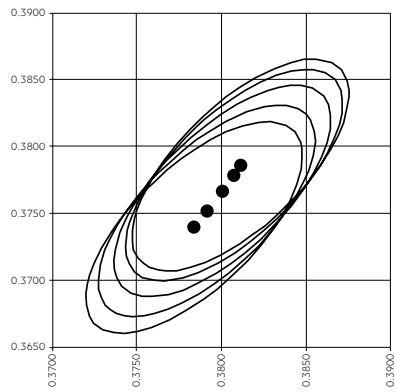
— MacAdam Ellipse: 3SDCM



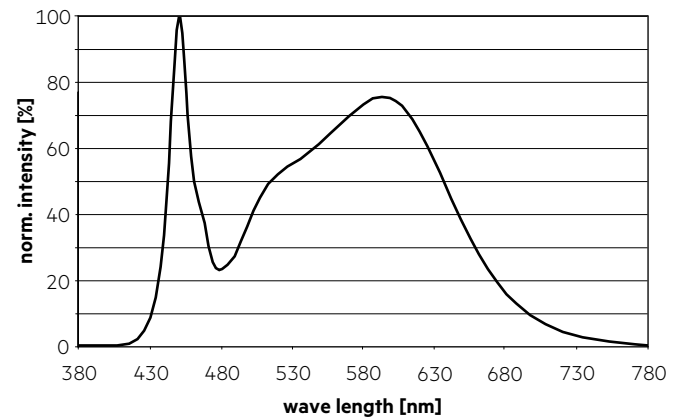
— MacAdam Ellipse: 3SDCM

4,000 K – CRI80

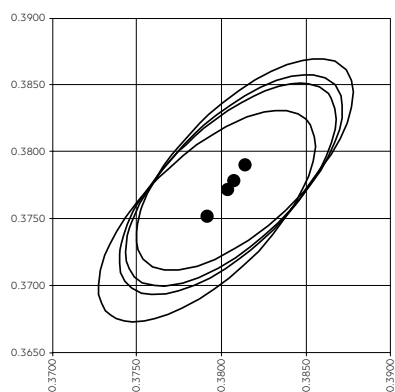
	x0	y0
Centre 300 lm/m	0.3783	0.3740
Centre 600 lm/m	0.3791	0.3752
Centre 1,200 lm/m	0.3800	0.3767
Centre 1,800 lm/m	0.3807	0.3779
Centre 2,500 lm/m	0.3811	0.3786



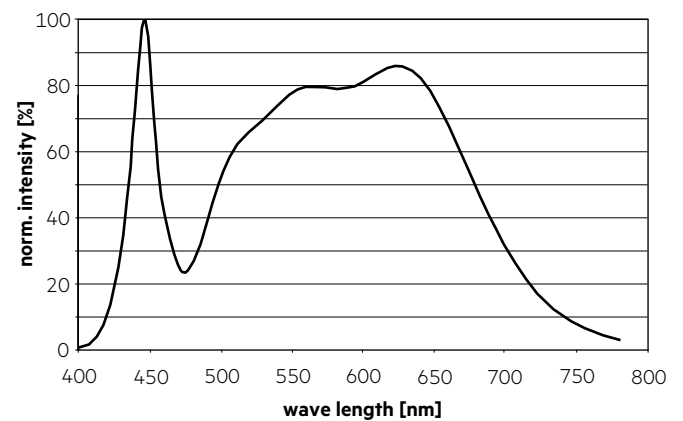
— MacAdam Ellipse: 3SDCM

**4,000 K – CRI90**

	x0	y0
Centre 600 lm/m	0.3791	0.3752
Centre 1,200 lm/m	0.3803	0.3772
Centre 1,800 lm/m	0.3807	0.3779
Centre 2,500 lm/m	0.3814	0.3791

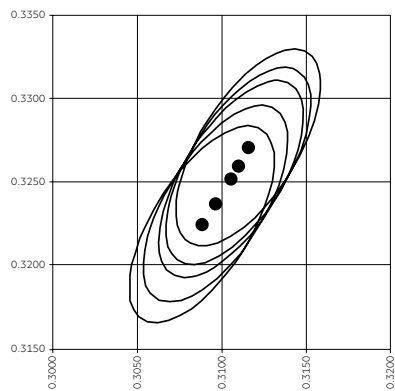


— MacAdam Ellipse: 3SDCM

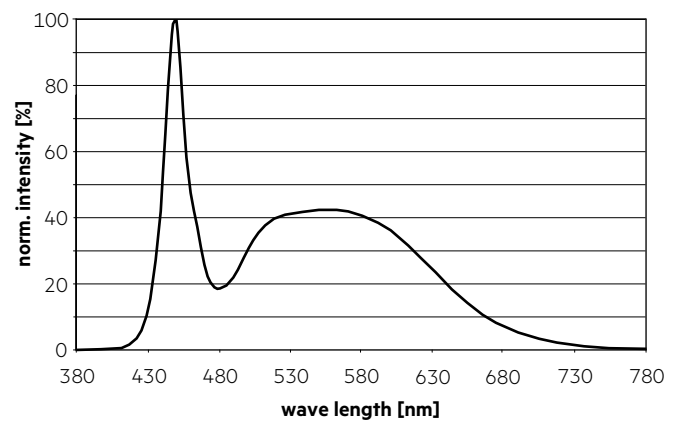


6,500 K – CRI80

	x0	y0
Centre 300 lm/m	0.3088	0.3225
Centre 600 lm/m	0.3096	0.3237
Centre 1,200 lm/m	0.3105	0.3252
Centre 1,800 lm/m	0.3110	0.3260
Centre 2,500 lm/m	0.3116	0.3271

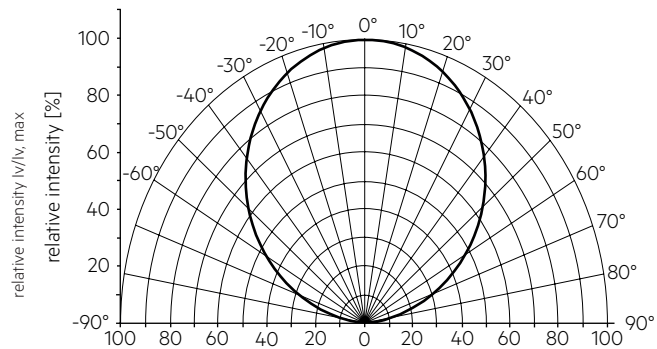


— MacAdam Ellipse: 3SDCM



6.2 Light distribution

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

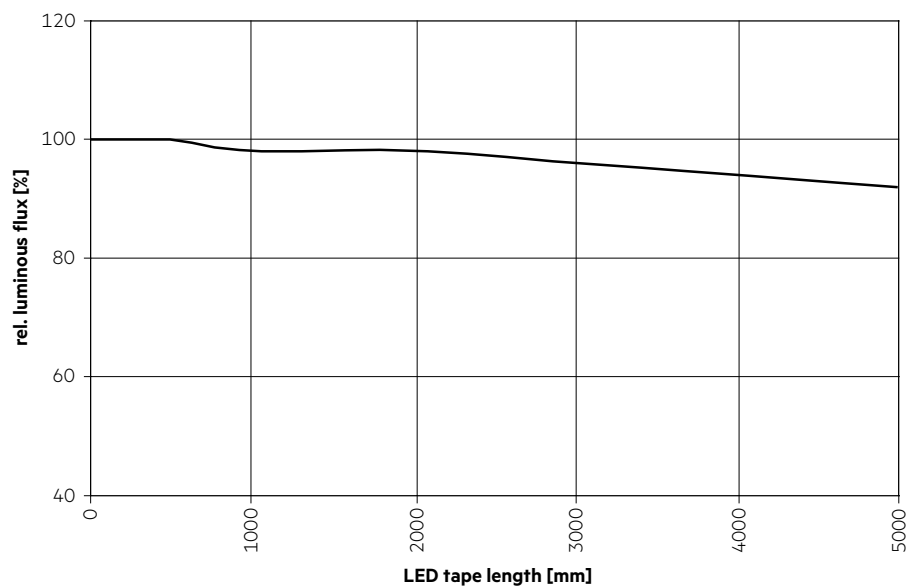


The colour temperature is measured over the complete module. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 1.5 cm) should be used.

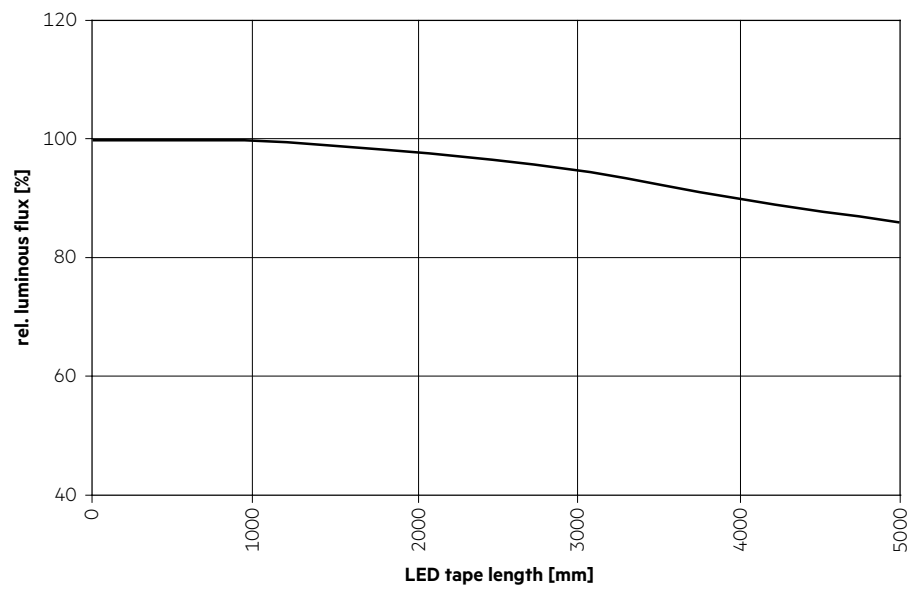
6.4 Relative luminous flux vs. LED tape length

The graphs show the luminous flux drop of the first compare to the last segment over the used tape length.

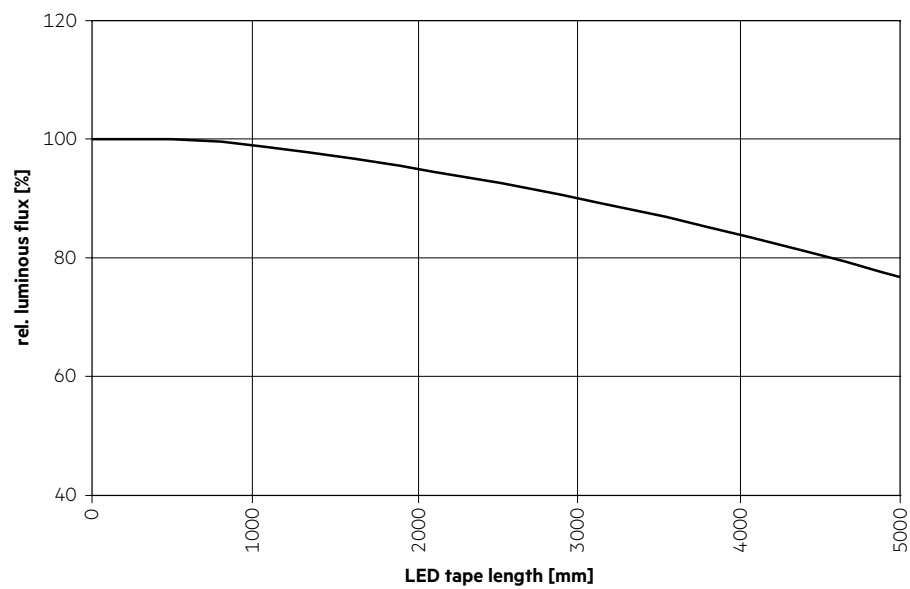
LLE FLEX 8mm 24V 300lm 8xx SNC4



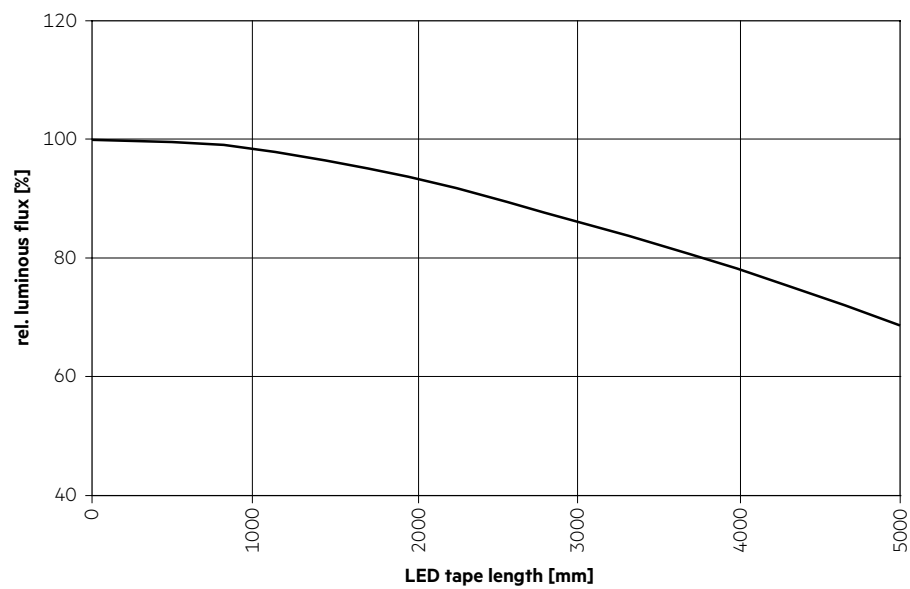
LLE FLEX 8mm 24V 600lm 8xx SNC4



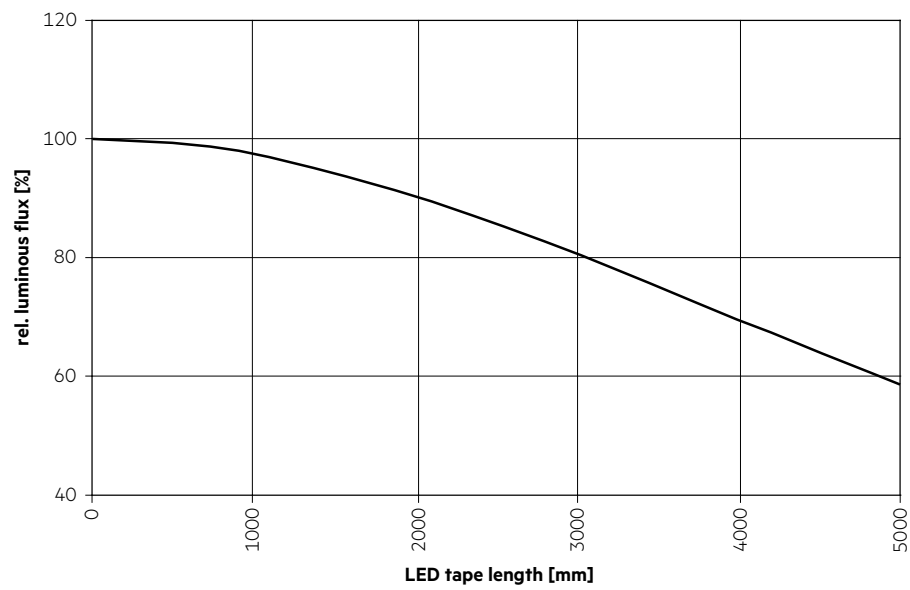
LLE FLEX 8mm 24V 1200lm 8xx SNC4



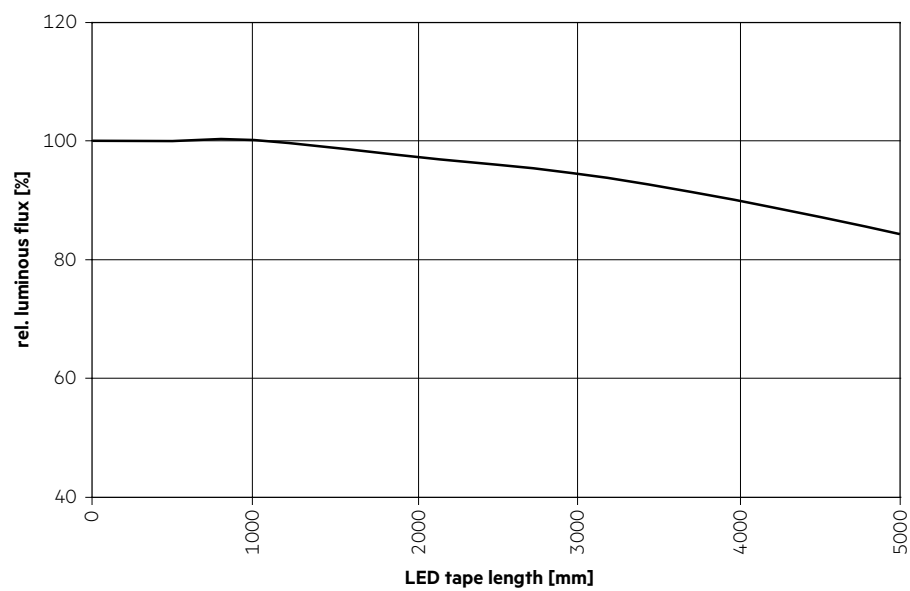
LLE FLEX 8mm 24V 1800lm 8xx SNC4



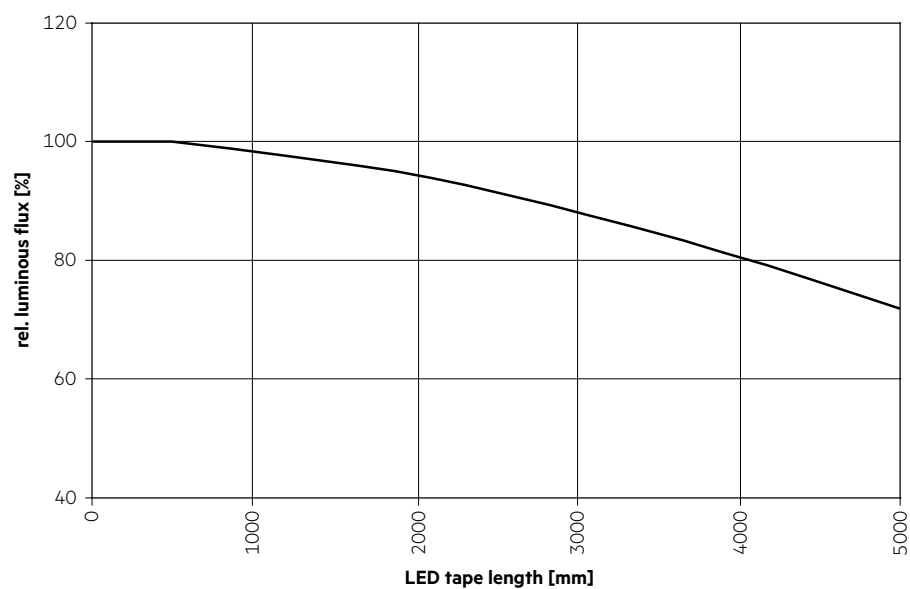
LLE FLEX 8mm 24V 2500lm 8xx SNC4



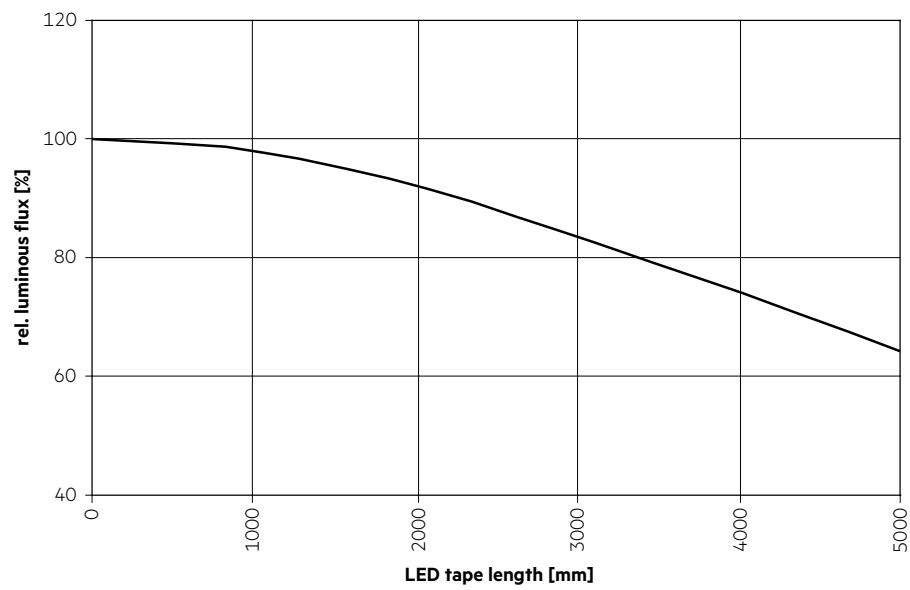
LLE FLEX 8mm 24V 600lm 9xx SNC4



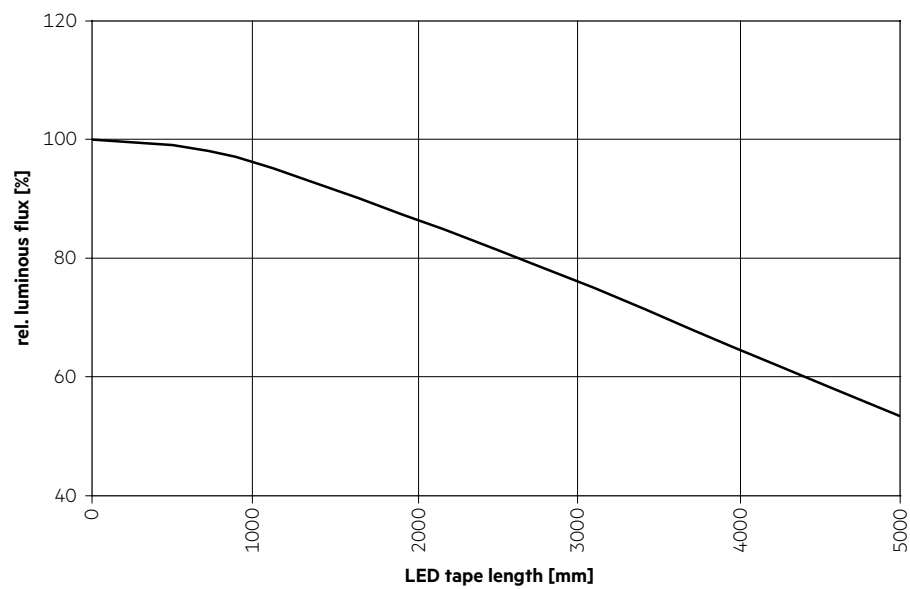
LLE FLEX 8mm 24V 1200lm 9xx SNC4



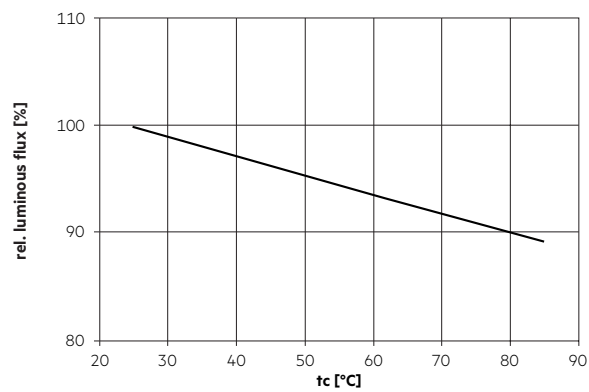
LLE FLEX 8mm 24V 1800lm 9xx SNC4



LLE FLEX 8mm 24V 2500lm 9xx SNC4



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.