



Module LLE FLEX G1 8mm EXC

Modules LLE FLEX excite

Product description

- Dimmable 24 V constant voltage LED flextape (SELV)
- Ideal for application on aluminum extrusions but also for various decorative lighting applications such as cove lighting, façade accent lighting etc.

Features and benefits

- Extremely narrow pitch distance enables short distance to diffuser and outstanding homogeneity
- Small colour tolerance (MacAdam 3), CRI 90
- Luminous flux range of 600, 1,200, 1,800 and 2,500 lm/m
- Colour temperature 2,700, 3,000, 4,000 and 6,500 K with SDCM 3[®]
- High design freedom due to 5 cm cut-options
- Self-adhesive 3M tape at the backside for simple mounting on different surfaces
- PCB to PCB and wire to PCB connectors for toolless handling and connection
- Small colour tolerance (MacAdam 3)
- Life-time 50,000 hours
- 5-year guarantee
- System solution in combination with Tridonic constant voltage LED Driver (fixed output and dimmable)



Standards, page 7

Colour temperatures and tolerances, page 9

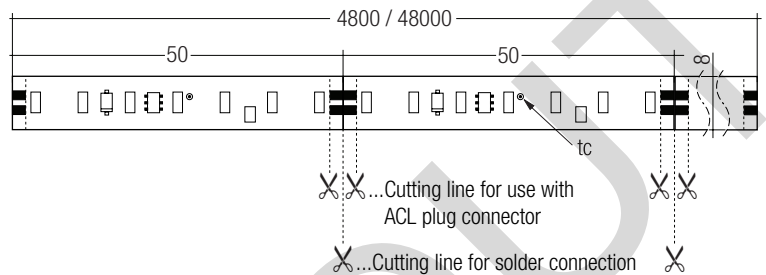


Module LLE FLEX G1 8mm EXC

Modules LLE FLEX excite

Technical data

Beam characteristic	120°
Ambient temperature range	-35 ... +50 °C
tp rated	65 °C
tc	75 °C
DC supply voltage	24 V
DC supply voltage range®	21.5 – 26.4 V
Insulation test voltage	0.5 kV
ESD classification	severity level 1
Risk group (EN 62471:2008)	0
Classification acc. to IEC 62031	Built-in
Type of protection	IP00



Ordering data

Type	Article number	Colour temperature	Packaging carton	Weight per pc.
4,800 mm reel				
LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	87500524	2,700 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	87500525	3,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	87500526	4,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	87500527	6,500 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 11W-1200lm/m 927 EXC	87500528	2,700 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 11W-1200lm/m 930 EXC	87500529	3,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 11W-1200lm/m 940 EXC	87500530	4,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	87500531	6,500 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 18W-1800lm/m 927 EXC	87500532	2,700 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 18W-1800lm/m 930 EXC	87500533	3,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 16W-1800lm/m 940 EXC	87500534	4,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	87500535	6,500 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 26W-2500lm/m 927 EXC	87500536	2,700 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 26W-2500lm/m 930 EXC	87500537	3,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 23W-2500lm/m 940 EXC	87500538	4,000 K	15 pc(s).	0.055 kg
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	87500539	6,500 K	15 pc(s).	0.055 kg
48,000 mm reel				
LLE FLEX G1 8x48000 11W-1200lm/m 927 EXC	87500540	2,700 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 11W-1200lm/m 930 EXC	87500541	3,000 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 11W-1200lm/m 940 EXC	87500542	4,000 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 18W-1800lm/m 927 EXC	87500556	2,700 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 18W-1800lm/m 930 EXC	87500557	3,000 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 16W-1800lm/m 940 EXC	87500558	4,000 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 26W-2500lm/m 927 EXC	87500543	2,700 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 26W-2500lm/m 930 EXC	87500544	3,000 K	5 pc(s).	0.500 kg
LLE FLEX G1 8x48000 23W-2500lm/m 940 EXC	87500545	4,000 K	5 pc(s).	0.500 kg

Specific technical data

Type [®]	Photometric code	Typ. luminous flux at tp = 25 °C [®]	Typ. luminous flux at tp = 65 °C [®]	Typ. current consumption at tp = 65 °C [®]	Typ. power consumption at tp = 65 °C [®]	Efficacy of the module at tp = 25 °C	Efficacy of the module at tp = 65 °C	Colour rendering index CRI
LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	927/359	670 lm/m	600 lm/m	256 mA/m	6.2 W/m	100 lm/W	90 lm/W	> 90
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	930/359	670 lm/m	600 lm/m	256 mA/m	6.2 W/m	100 lm/W	90 lm/W	> 90
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	940/359	685 lm/m	615 lm/m	236 mA/m	5.6 W/m	111 lm/W	100 lm/W	> 90
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	965/359	685 lm/m	615 lm/m	236 mA/m	5.6 W/m	111 lm/W	100 lm/W	> 90
LLE FLEX G1 8x4800(O) 11W-1200lm/m 927 EXC	927/359	1,320 lm/m	1,190 lm/m	470 mA/m	11.2 W/m	107 lm/W	96 lm/W	> 90
LLE FLEX G1 8x4800(O) 11W-1200lm/m 930 EXC	930/359	1,320 lm/m	1,190 lm/m	470 mA/m	11.2 W/m	107 lm/W	96 lm/W	> 90
LLE FLEX G1 8x4800(O) 11W-1200lm/m 940 EXC	940/359	1,360 lm/m	1,220 lm/m	446 mA/m	10.8 W/m	116 lm/W	105 lm/W	> 90
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	965/359	1,360 lm/m	1,220 lm/m	446 mA/m	10.8 W/m	116 lm/W	105 lm/W	> 90
LLE FLEX G1 8x4800(O) 18W-1800lm/m 927 EXC	927/359	1,960 lm/m	1,770 lm/m	751 mA/m	18.0 W/m	100 lm/W	90 lm/W	> 90
LLE FLEX G1 8x4800(O) 18W-1800lm/m 930 EXC	930/359	1,960 lm/m	1,770 lm/m	751 mA/m	18.0 W/m	100 lm/W	90 lm/W	> 90
LLE FLEX G1 8x4800(O) 16W-1800lm/m 940 EXC	940/359	1,980 lm/m	1,780 lm/m	662 mA/m	15.8 W/m	114 lm/W	103 lm/W	> 90
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	965/359	1,980 lm/m	1,780 lm/m	662 mA/m	15.8 W/m	114 lm/W	103 lm/W	> 90
LLE FLEX G1 8x4800(O) 26W-2500lm/m 927 EXC	927/359	2,750 lm/m	2,470 lm/m	1,120 mA/m	26.0 W/m	94 lm/W	85 lm/W	> 90
LLE FLEX G1 8x4800(O) 26W-2500lm/m 930 EXC	930/359	2,750 lm/m	2,470 lm/m	1,120 mA/m	26.0 W/m	94 lm/W	85 lm/W	> 90
LLE FLEX G1 8x4800(O) 23W-2500lm/m 940 EXC	940/359	2,720 lm/m	2,440 lm/m	944 mA/m	22.6 W/m	110 lm/W	99 lm/W	> 90
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	965/359	2,720 lm/m	2,440 lm/m	944 mA/m	22.6 W/m	110 lm/W	99 lm/W	> 90

[®] Tolerance range for optical and electrical data: ±10 %. Values given for 1 m LLE FLEX.

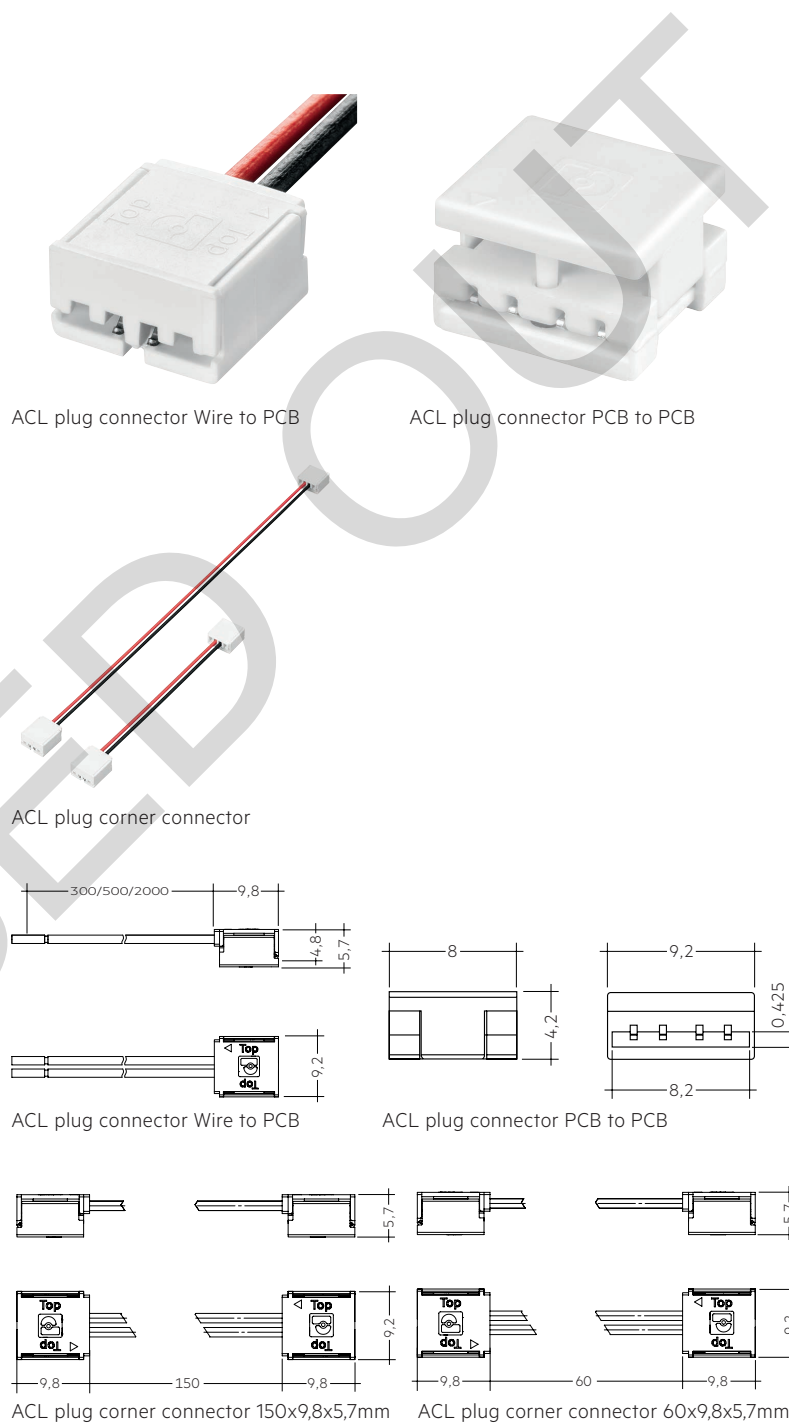
[®] Exceeding the max. operating voltage leads to an overload on the LLE FLEX. This may in turn result in a reduction in life-time or even in destruction.

[®] Integral measurement over the complete module.

Connector for LLE FLEX

Product description

- For connection of LLE FLEX modules
- Easy assembly: remove adhesive 3M tape on the backside of the LLE FLEX in the connection area, insert the LLE FLEX into the connector and lock it by pressing down the top of the connector
- The insertion length of the LLE FLEX must be at least 4 mm (cut the LLE FLEX at the dotted lines)
- Glow wire test according to IEC 60695-2-11: 650 °C
- Irated = 5 A
- Urated = 29,9 V
- Wire cross section AWG 20



Ordering data

Type	Article number	Cable length	Packaging carton	Packaging bag	Weight per pc.
ACL plug connector Wire to PCB 9x4.2mm	28000994	300 mm	250 pc(s).	20 pc(s).	0.004 kg
ACL plug connector Wire-PCB 500x9x5.7mm	28001657	500 mm	20 pc(s).	–	0.008 kg
ACL plug connector Wire-PCB 2000x9x5.7mm	28001656	2,000 mm	10 pc(s).	–	0.018 kg
ACL plug connector PCB to PCB 8x4.2mm	28000995	–	25 pc(s).	25 pc(s).	0.001 kg
ACL plug corner connector 150x9.8x5.7mm	28001654	–	10 pc(s).	–	0.002 kg
ACL plug corner connector 60x9.8x5.7mm	28001655	–	20 pc(s).	–	0.002 kg

LED Driver matrix – Dimmable – LLE FLEX G1 8mm EXC

Type	LCA 35W 24V one4all SC PRE	LCA 60W 24V one4all SC PRE	LCA 100W 24V one4all SC PRE	LCA 100W 24V one4all Ip PRE	LCA 150W 24V one4all SC PRE
Article number	28001662	28001663	28001253	28001436	28001437
LLE FLEX UL certificated	class 2	class 2	no	no	no

Type	Assignable LED Driver				
LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	65–510 cm	105–880 cm	175–1465 cm	175–1465 cm	260–2,200 cm
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	65–510 cm	105–880 cm	175–1465 cm	175–1465 cm	260–2,200 cm
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	70–555 cm	115–955 cm	190–1,595 cm	190–1,595 cm	285–2,390 cm
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	70–555 cm	115–955 cm	190–1,595 cm	190–1,595 cm	285–2,390 cm
LLE FLEX G1 8x4800 11W-1200lm/m 927 EXC	35–275 cm	60–480 cm	95–800 cm	95–800 cm	145–1,200 cm
LLE FLEX G1 8x4800 11W-1200lm/m 930 EXC	35–275 cm	60–480 cm	95–800 cm	95–800 cm	145–1,200 cm
LLE FLEX G1 8x4800 11W-1200lm/m 940 EXC	35–290 cm	60–505 cm	100–845 cm	100–845 cm	150–1,265 cm
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	35–290 cm	60–505 cm	100–845 cm	100–845 cm	150–1,265 cm
LLE FLEX G1 8x4800 18W-1800lm/m 927 EXC	25–175 cm	40–300 cm	60–500 cm	60–500 cm	90–750 cm
LLE FLEX G1 8x4800 18W-1800lm/m 930 EXC	25–175 cm	40–300 cm	60–500 cm	60–500 cm	90–750 cm
LLE FLEX G1 8x4800 16W-1800lm/m 940 EXC	25–195 cm	45–340 cm	70–565 cm	70–565 cm	105–850 cm
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	25–195 cm	45–340 cm	70–565 cm	70–565 cm	105–850 cm
LLE FLEX G1 8x4800 26W-2500lm/m 927 EXC	15–115 cm	25–200 cm	40–335 cm	40–335 cm	60–505 cm
LLE FLEX G1 8x4800 26W-2500lm/m 930 EXC	15–115 cm	25–200 cm	40–335 cm	40–335 cm	60–505 cm
LLE FLEX G1 8x4800 23W-2500lm/m 940 EXC	20–135 cm	30–235 cm	50–395 cm	50–395 cm	75–595 cm
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	20–135 cm	30–235 cm	50–395 cm	50–395 cm	75–595 cm

LED Driver matrix – Fixed output TOP – LLE FLEX G1 8mm EXC

Type	LCU 35W 24V TOP SR	LCU 60W 24V TOP SR	LCU 96W 24V TOP SR	LCU 180W 24V TOP SR
Article number	28000411	28000412	28000413	28000414
LLE FLEX UL certificated	class 2	class 2	class 2	no

Type	Assignable LED Driver			
LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	60–505 cm	80–865 cm	160–1,380 cm	295–2,595 cm
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	60–505 cm	80–865 cm	160–1,380 cm	295–2,595 cm
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	65–545 cm	85–935 cm	170–1,500 cm	320–2,815 cm
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	65–545 cm	85–935 cm	170–1,500 cm	320–2,815 cm
LLE FLEX G1 8x4800 11W-1200lm/m 927 EXC	35–275 cm	45–470 cm	90–755 cm	160–1,415 cm
LLE FLEX G1 8x4800 11W-1200lm/m 930 EXC	35–275 cm	45–470 cm	90–755 cm	160–1,415 cm
LLE FLEX G1 8x4800 11W-1200lm/m 940 EXC	35–290 cm	45–495 cm	90–795 cm	170–1,490 cm
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	35–290 cm	45–495 cm	90–795 cm	170–1,490 cm
LLE FLEX G1 8x4800 18W-1800lm/m 927 EXC	20–170 cm	30–295 cm	55–470 cm	100–885 cm
LLE FLEX G1 8x4800 18W-1800lm/m 930 EXC	20–170 cm	30–295 cm	55–470 cm	100–885 cm
LLE FLEX G1 8x4800 16W-1800lm/m 940 EXC	25–195 cm	35–335 cm	65–535 cm	115–1005 cm
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	25–195 cm	35–335 cm	65–535 cm	115–1005 cm
LLE FLEX G1 8x4800 26W-2500lm/m 927 EXC	15–115 cm	20–195 cm	40–315 cm	70–595 cm
LLE FLEX G1 8x4800 26W-2500lm/m 930 EXC	15–115 cm	20–195 cm	40–315 cm	70–595 cm
LLE FLEX G1 8x4800 23W-2500lm/m 940 EXC	20–135 cm	25–235 cm	45–375 cm	80–705 cm
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	20–135 cm	25–235 cm	45–375 cm	80–705 cm

LED Driver matrix – Fixed output SNC – LLE FLEX G1 8mm EXC

Type	LC 60W 24V SC SNC	LC 60W 24V Ip SNC	LC 100W 24V SC SNC	LC 100W 24V Ip SNC
Article number	87500665	87500669	87500666	87500670
LLE FLEX UL certificated	class 2	class 2	no	no

Type

Assignable LED Driver

LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	315–880 cm	315–880 cm	520–1,465 cm	520–1,465 cm
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	315–880 cm	315–880 cm	520–1,465 cm	520–1,465 cm
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	340–955 cm	340–955 cm	565–1,595 cm	565–1,595 cm
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	340–955 cm	340–955 cm	565–1,595 cm	565–1,595 cm
LLE FLEX G1 8x4800 11W-1200lm/m 927 EXC	170–480 cm	170–480 cm	285–800 cm	285–800 cm
LLE FLEX G1 8x4800 11W-1200lm/m 930 EXC	170–480 cm	170–480 cm	285–800 cm	285–800 cm
LLE FLEX G1 8x4800 11W-1200lm/m 940 EXC	180–505 cm	180–505 cm	300–845 cm	300–845 cm
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	180–505 cm	180–505 cm	300–845 cm	300–845 cm
LLE FLEX G1 8x4800 18W-1800lm/m 927 EXC	110–300 cm	110–300 cm	180–500 cm	180–500 cm
LLE FLEX G1 8x4800 18W-1800lm/m 930 EXC	110–300 cm	110–300 cm	180–500 cm	180–500 cm
LLE FLEX G1 8x4800 16W-1800lm/m 940 EXC	125–340 cm	125–340 cm	205–565 cm	205–565 cm
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	125–340 cm	125–340 cm	205–565 cm	205–565 cm
LLE FLEX G1 8x4800 26W-2500lm/m 927 EXC	75–200 cm	75–200 cm	120–335 cm	120–335 cm
LLE FLEX G1 8x4800 26W-2500lm/m 930 EXC	75–200 cm	75–200 cm	120–335 cm	120–335 cm
LLE FLEX G1 8x4800 23W-2500lm/m 940 EXC	85–235 cm	85–235 cm	145–395 cm	145–395 cm
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	85–235 cm	85–235 cm	145–395 cm	145–395 cm

1. Standards

IEC 62031
IEC 62471
IEC 62717
IEC 61000-4-2

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

1.2 Energy classification

Type	Energy classification
LLE FLEX G1 8x4800 6W-600lm/m 927 EXC	A+
LLE FLEX G1 8x4800 6W-600lm/m 930 EXC	A+
LLE FLEX G1 8x4800 6W-600lm/m 940 EXC	A+
LLE FLEX G1 8x4800 6W-600lm/m 965 EXC	A+
LLE FLEX G1 8x4800(O) 11W-1200lm/m 927 EXC	A+
LLE FLEX G1 8x4800(O) 11W-1200lm/m 930 EXC	A+
LLE FLEX G1 8x4800(O) 11W-1200lm/m 940 EXC	A+
LLE FLEX G1 8x4800 11W-1200lm/m 965 EXC	A+
LLE FLEX G1 8x4800(O) 18W-1800lm/m 927 EXC	A+
LLE FLEX G1 8x4800(O) 18W-1800lm/m 930 EXC	A+
LLE FLEX G1 8x4800(O) 16W-1800lm/m 940 EXC	A+
LLE FLEX G1 8x4800 16W-1800lm/m 965 EXC	A+
LLE FLEX G1 8x4800(O) 26W-2500lm/m 927 EXC	A+
LLE FLEX G1 8x4800(O) 26W-2500lm/m 930 EXC	A+
LLE FLEX G1 8x4800(O) 23W-2500lm/m 940 EXC	A+
LLE FLEX G1 8x4800 23W-2500lm/m 965 EXC	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 65°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	-35 ... +80 °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 G1 8x4800 6W-600lm/m 9xx EXC

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	–	self cooling
35 °C	65 °C	–	self cooling
45 °C	65 °C	–	self cooling
50 °C	65 °C	–	self cooling

LLE FLEX G1 8x4800(O) 11W-1200lm/m 9xx EXC

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	–	self cooling
35 °C	65 °C	–	self cooling
45 °C	65 °C	–	self cooling
50 °C	65 °C	–	self cooling

LLE FLEX G1 8x4800(O) 18/16W-1800lm/m 9xx EXC

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	–	self cooling
35 °C	65 °C	27.3 K/W	24.4 cm²
45 °C	65 °C	17.2 K/W	38.8 cm²
50 °C	65 °C	12.2 K/W	45.6 cm²

LLE FLEX G1 8x4800(O) 26/23W-2500lm/m 9xx EXC

ta	tp	R _{th, hs-a} ^①	Cooling area ^①
25 °C	65 °C	24.1 K/W	27.7 cm²
35 °C	65 °C	17.3 K/W	38.5 cm²
45 °C	65 °C	10.5 K/W	63.5 cm²
50 °C	65 °C	7.1 K/W	93.9 cm²

^① Values for a single segment of the LLE FLEX (50 mm).

Notes

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation.

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 the connector ACL).

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 3 cm.



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. 260 °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. 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 FLEX G1 8mm EXC

Supply voltage	tp temperature	L90/F10	L90/F50	L80/F10	L80/F50	L70/F10	L70/F50
24 V	40 °C	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h
24 V	45 °C	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h
24 V	55 °C	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h
24 V	65 °C	60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h
24 V	75 °C	45,000 h	50,000 h	>60,000 h	>60,000 h	>60,000 h	>60,000 h

6. Photometric characteristics

6.1 Coordinates and tolerances according to CIE 1931

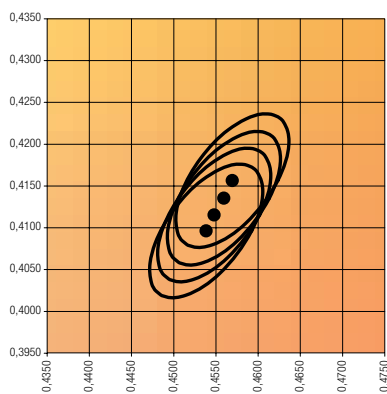
The specified colour coordinates are measured integral by a current impulse with typical values of module and a duration of 100 ms.

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

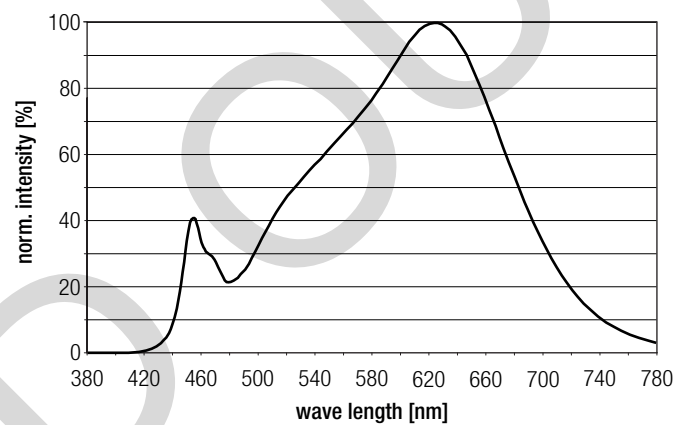
The measurement tolerance of the colour coordinates are ± 0.01 .

2,700 K

	x0	y0
Centre 600 lm/m	0.4544	0.4097
Centre 1,200 lm/m	0.4549	0.4115
Centre 1,800 lm/m	0.4556	0.4134
Centre 2,500 lm/m	0.4563	0.4154

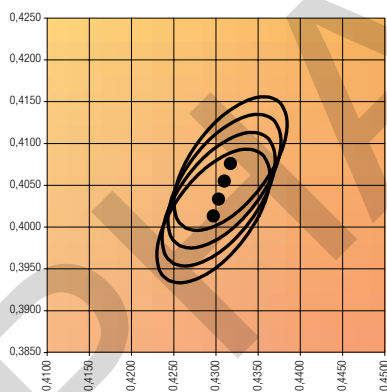


MacAdam Ellipse: 3SDCM

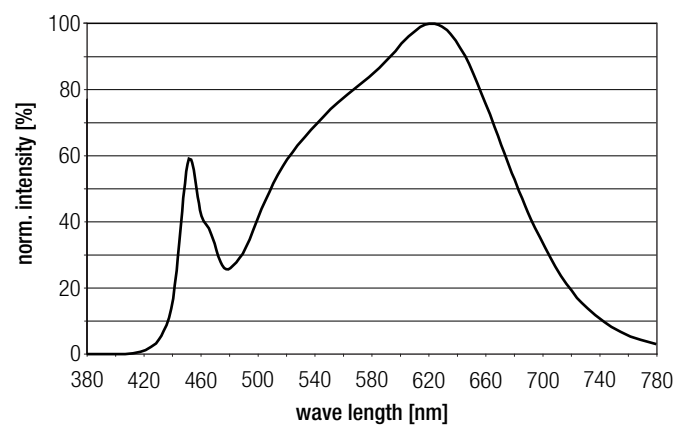


3,000 K

	x0	y0
Mittelpunkt 600 lm/m	0.4292	0.4010
Mittelpunkt 1,200 lm/m	0.4300	0.4033
Mittelpunkt 1,800 lm/m	0.4306	0.4050
Mittelpunkt 2,500 lm/m	0.4315	0.4072

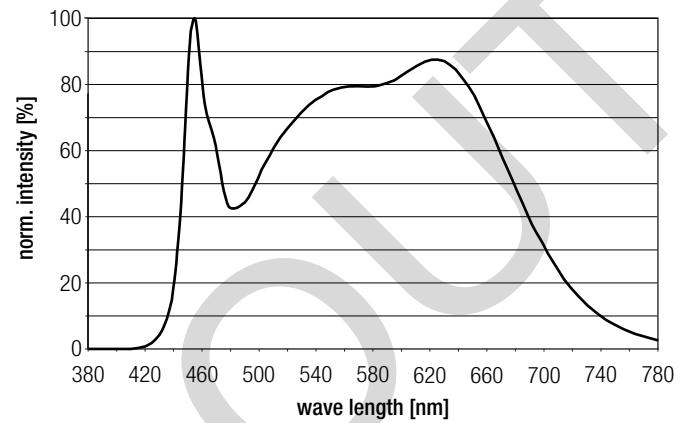
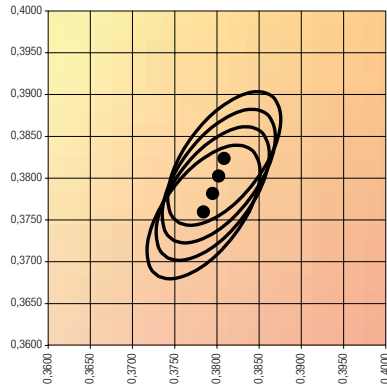


MacAdam Ellipse: 3SDCM

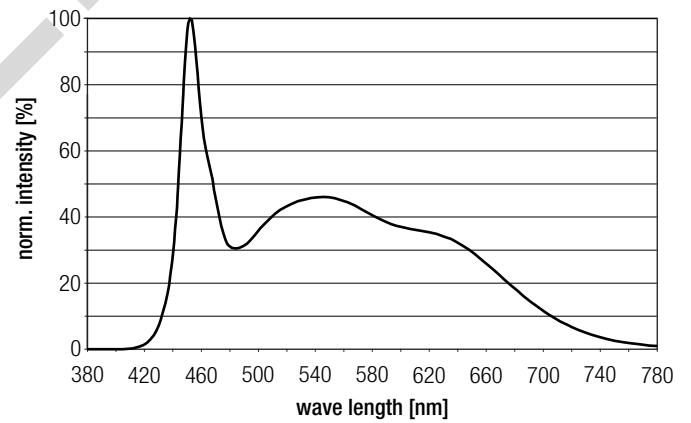
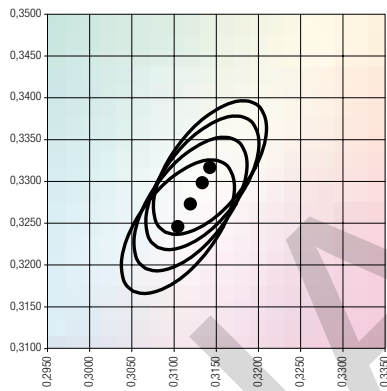


4,000 K

	x0	y0
Centre 600 lm/m	0.3778	0.3753
Centre 1,200 lm/m	0.3788	0.3779
Centre 1,800 lm/m	0.3795	0.3798
Centre 2,500 lm/m	0.3804	0.3821

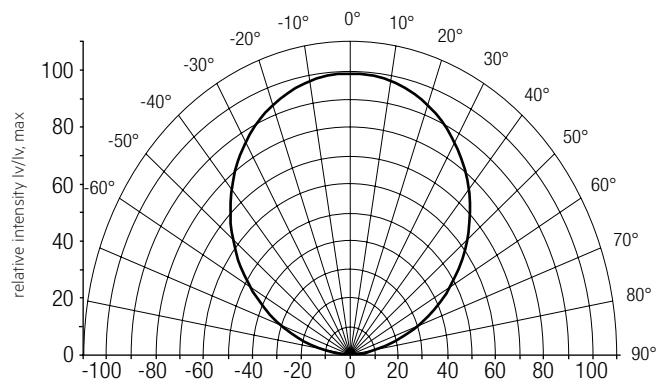
**6,500 K**

	x0	y0
Centre 600 lm/m	0.3102	0.3243
Centre 1,200 lm/m	0.3116	0.3273
Centre 1,800 lm/m	0.3128	0.3297
Centre 2,500 lm/m	0.3138	0.3316



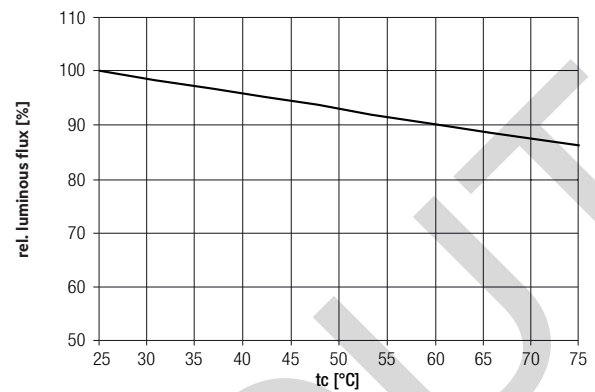
6.2 Light distribution

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



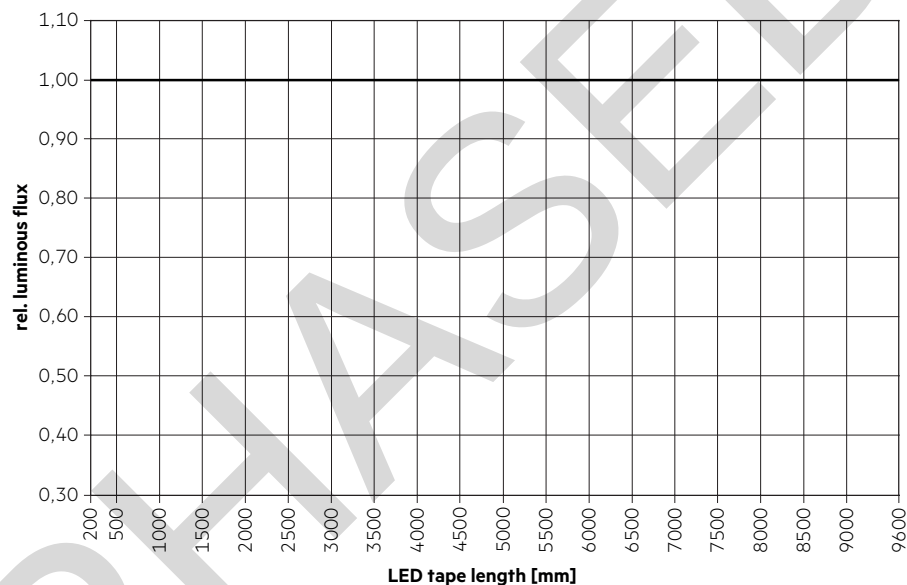
The colour temperature is measured over the complete module. The single LED light points can be outside of 5SDCM. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 5 cm) should be used.

6.3 Relative luminous flux vs. tc temperature

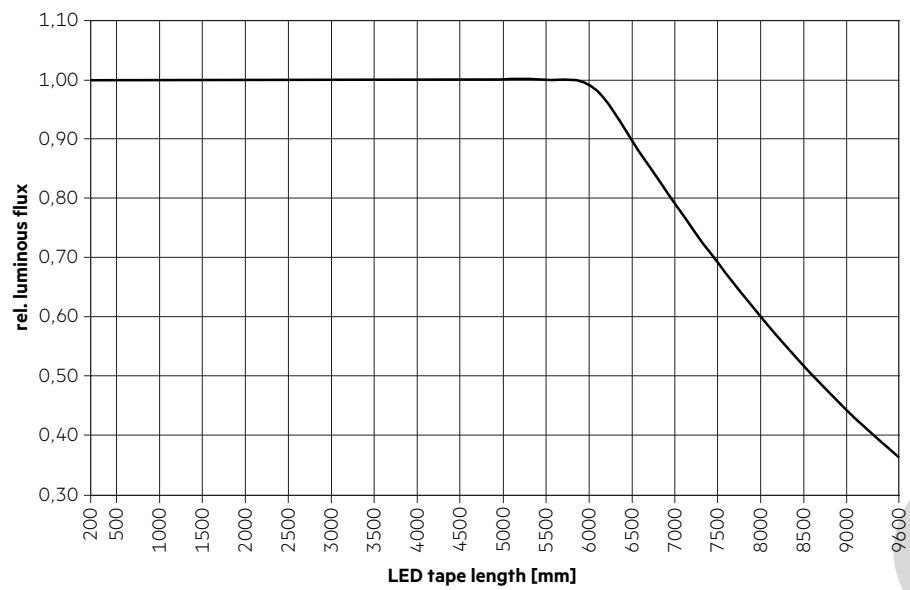


6.4 Relative luminous flux vs. LED tape length

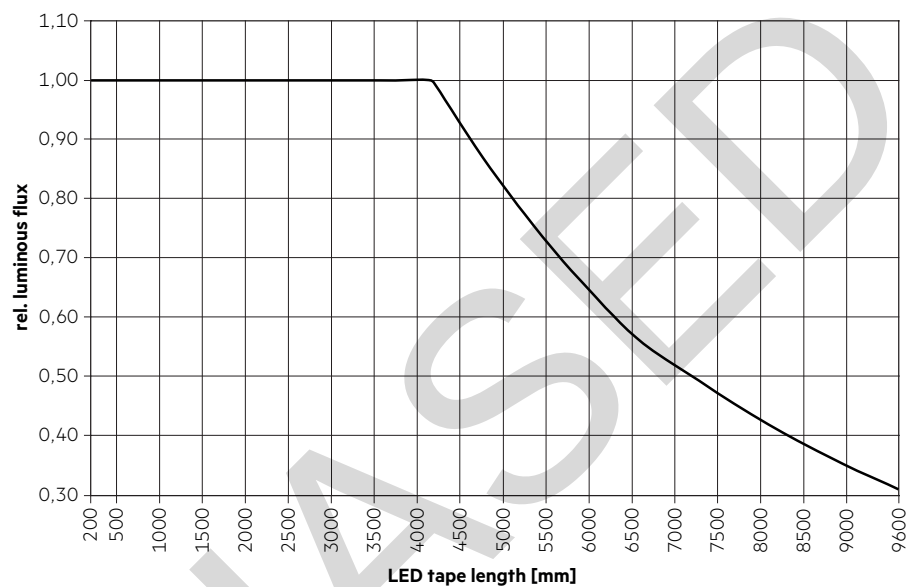
LLE FLEX G1 EXC 600lm:



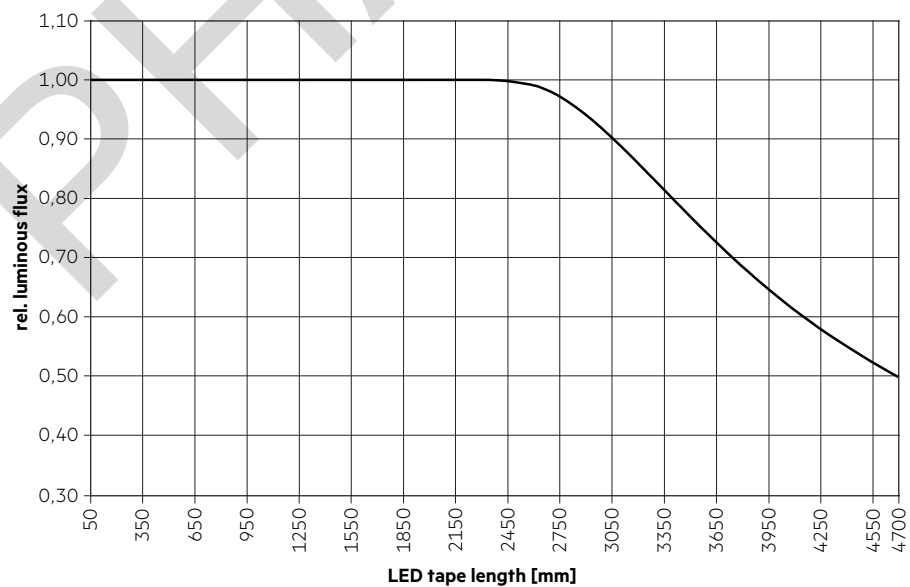
LLE FLEX G1 EXC 1200lm:



LLE FLEX G1 EXC 1800lm:



LLE FLEX G1 EXC 2500lm:



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.