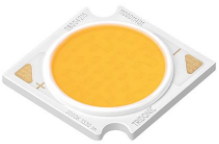
TRIDONIC

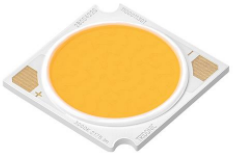
Module SLE SNC8

Modules SLE essence

LES06



LES09



LES15

Product description
_ For spotlights and downlights
_ For operating with SELV Driver suitable
_ Excellent thermal management by COB technology
_ Uniform radiation with Dam&Fill technology
_ Cooling required
_ Flexible operating mode
_ HE ... High Efficiency, NM ... Nominal Mode, HO ... High Output
_ Long lifetime: 60,000 hours
_ 5 years guarantee (conditions at https://www.tridonic.com/manufacturer-guarantee-conditions)

Optical properties
_ Colour temperatures 3,000, 3,500 and 4,000 K
_ Useful luminous flux 3,200 lm at Irated and tp = 25 °C
_ Efficacy of the LED module 176 lm/W at Irated and tp = 25 °C
_ High colour rendering index CRI > 80 and CRI > 90
_ Small colour tolerance (MacAdam 3)

Mechanical properties
_ Module dimension LES06, LES09 and LES15
_ Fixing holes for M2 or M3 screws

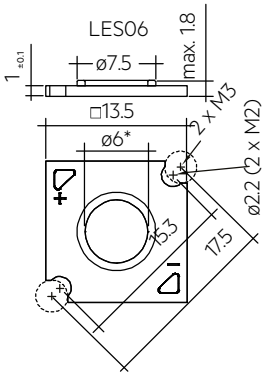
System solution
_ Combine Tridonic's LED modules and dimmable drivers to achieve an outstanding system efficacy (configuration possible via https://setbuilder.tridonic.com/)

Website
http://www.tridonic.com/28004223

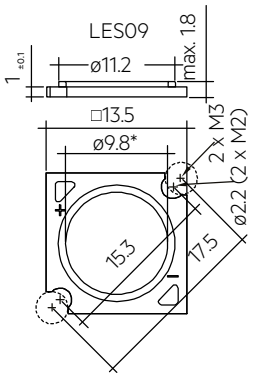
Spotlights | Downlights | Linear | Area | Floor | Wall | Free-standing | Street | Decorative | High bay

Module SLE SNC8

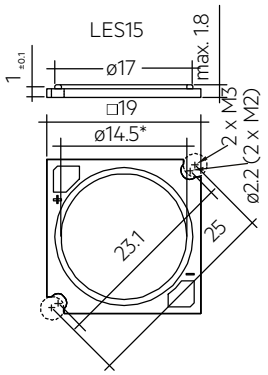
Modules SLE essence



Dimensions in mm, *optical LES



Dimensions in mm, *optical LES



Dimensions in mm, *optical LES

Ordering data

Type	Article number	Colour temperature	Colour rendering index CRI	Packaging, carton	Weight per pc.
SLE 06mm – 1000lm					
SLE 06mm 1000lm 830 R SNC8	**28004223**	3,000 K	>80	250 pc(s).	–
SLE 06mm 1000lm 840 R SNC8	**28004224**	4,000 K	>80	250 pc(s).	0.001 kg
SLE 06mm 1000lm 930 R SNC8	**28004225**	3,000 K	>90	250 pc(s).	0.001 kg
SLE 06mm 1000lm 935 R SNC8	**28004226**	3,500 K	>90	250 pc(s).	–
SLE 06mm 1000lm 940 R SNC8	**28004227**	4,000 K	>90	250 pc(s).	0.450 kg
SLE 09mm – 1500lm					
SLE 09mm 1500lm 830 R SNC8	**28004213**	3,000 K	>80	250 pc(s).	–
SLE 09mm 1500lm 840 R SNC8	**28004214**	4,000 K	>80	250 pc(s).	0.001 kg
SLE 09mm 1500lm 930 R SNC8	**28004215**	3,000 K	>90	250 pc(s).	0.001 kg
SLE 09mm 1500lm 935 R SNC8	**28004216**	3,500 K	>90	250 pc(s).	–
SLE 09mm 1500lm 940 R SNC8	**28004217**	4,000 K	>90	250 pc(s).	–
SLE 09mm – 2000lm					
SLE 09mm 2000lm 830 R SNC8	**28004228**	3,000 K	>80	250 pc(s).	0.001 kg
SLE 09mm 2000lm 840 R SNC8	**28004229**	4,000 K	>80	250 pc(s).	0.001 kg
SLE 09mm 2000lm 930 R SNC8	**28004230**	3,000 K	>90	250 pc(s).	0.001 kg
SLE 09mm 2000lm 935 R SNC8	**28004231**	3,500 K	>90	250 pc(s).	–
SLE 09mm 2000lm 940 R SNC8	**28004232**	4,000 K	>90	250 pc(s).	0.480 kg
SLE 15mm – 2000lm					
SLE 15mm 2000lm 830 R SNC8	**28004218**	3,000 K	>80	125 pc(s).	0.001 kg
SLE 15mm 2000lm 840 R SNC8	**28004219**	4,000 K	>80	125 pc(s).	0.001 kg
SLE 15mm 2000lm 930 R SNC8	**28004220**	3,000 K	>90	125 pc(s).	0.001 kg
SLE 15mm 2000lm 935 R SNC8	**28004221**	3,500 K	>90	125 pc(s).	0.001 kg
SLE 15mm 2000lm 940 R SNC8	**28004222**	4,000 K	>90	125 pc(s).	0.001 kg
SLE 15mm – 3000lm					
SLE 15mm 3000lm 830 R SNC8	**28004208**	3,000 K	>80	125 pc(s).	0.001 kg
SLE 15mm 3000lm 840 R SNC8	**28004209**	4,000 K	>80	125 pc(s).	0.001 kg
SLE 15mm 3000lm 930 R SNC8	**28004210**	3,000 K	>90	125 pc(s).	0.001 kg
SLE 15mm 3000lm 935 R SNC8	**28004211**	3,500 K	>90	125 pc(s).	0.001 kg
SLE 15mm 3000lm 940 R SNC8	**28004212**	4,000 K	>90	125 pc(s).	0.001 kg

Technical data

Beam characteristic	115°
Ambient temperature ta	-40 … +105 °C
tp rated	85 °C
tc for LES06 ①	105 °C
tc for LES09/15 ①	115 °C
Irated for LES06 1000lm	300 mA
Irated for LES09 1500lm	270 mA
Irated for LES09 2000lm	360 mA
Irated for LES15 2000lm	450 mA
Irated for LES15 3000lm	540 mA
Imax for LES06 1000lm ①	380 mA
Imax for LES09 1500lm ①	540 mA
Imax for LES09 2000lm ①	720 mA
Imax for LES15 2000lm ①	900 mA
Imax for LES15 3000lm ①	1,080 mA
Max. permissible LF current ripple for LES06 1000lm	420 mA
Max. permissible LF current ripple for LES09 1500lm	600 mA
Max. permissible LF current ripple for LES09 2000lm	800 mA
Max. permissible LF current ripple for LES15 2000lm	1,000 mA
Max. permissible LF current ripple for LES15 3000lm	1,200 mA
Max. permissible peak current for LES06 1000lm	760 mA / max. 8 ms
Max. permissible peak current for LES09 1500lm	1,080 mA / max. 8 ms
Max. permissible peak current for LES09 2000lm	1,440 mA / max. 8 ms
Max. permissible peak current for LES15 2000lm	1,800 mA / max. 8 ms
Max. permissible peak current for LES15 3000lm	2,160 mA / max. 8 ms
Max. working voltage for insulation SELV ②	< 60 V
Insulation test voltage	0.5 kV
CTI of the printed circuit board	≤ 600
Colour tolerance	3 SDCM
ESD classification	Severity level 1
Risk group (IEC 62471) for LES06 (1000lm) at Imax	RG2 (Ethr = 1880 lx, RG1 at d ≥ 580 mm)
Risk group (IEC 62471) for LES06 (1000lm) at I ≤ 328 mA	RG1
Risk group (IEC 62471) for LES09 (1500lm) at Imax	RG1
Risk group (IEC 62471) for LES09 (2000lm) at Imax	RG2 (Ethr = 1660 lx, RG1 at d ≥ 880 mm)
Risk group (IEC 62471) for LES09 (2000lm) at I ≤ 674 mA	RG1
Risk group (IEC 62471) for LES15 (2000lm) at Imax	RG1
Risk group (IEC 62471) for LES15 (3000lm) at Imax	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

RoHS

Standards

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

Specific technical data

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C[3]	Expected luminous flux at tp rated[4]	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C[5]	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
SLE 06mm 1000lm – Operating mode HE at 250 mA											
SLE 06mm 1000lm 830 R SNC8	**28004223**	830/359	–	1,083 lm	250 mA	31.3 V	38.3 V	–	–	126 lm/W	>80
SLE 06mm 1000lm 840 R SNC8	**28004224**	840/359	–	1,068 lm	250 mA	31.3 V	38.3 V	–	–	133 lm/W	>80
SLE 06mm 1000lm 930 R SNC8	**28004225**	930/359	–	871 lm	250 mA	31.3 V	38.3 V	–	–	108 lm/W	>90
SLE 06mm 1000lm 935 R SNC8	**28004226**	935/359	–	898 lm	250 mA	31.3 V	38.3 V	–	–	111 lm/W	>90
SLE 06mm 1000lm 940 R SNC8	**28004227**	940/359	–	917 lm	250 mA	31.3 V	38.3 V	–	–	114 lm/W	>90
SLE 06mm 1000lm – Operating mode NM at 300 mA											
SLE 06mm 1000lm 830 R SNC8	**28004223**	830/359	1,431 lm	1,274 lm	300 mA	32.0 V	39.0 V	10.8 W	133 lm/W	121 lm/W	>80
SLE 06mm 1000lm 840 R SNC8	**28004224**	840/359	1,502 lm	1,337 lm	300 mA	32.0 V	39.0 V	10.8 W	139 lm/W	127 lm/W	>80
SLE 06mm 1000lm 930 R SNC8	**28004225**	930/359	1,212 lm	1,091 lm	300 mA	32.0 V	39.0 V	10.8 W	112 lm/W	104 lm/W	>90
SLE 06mm 1000lm 935 R SNC8	**28004226**	935/359	1,248 lm	1,123 lm	300 mA	32.0 V	39.0 V	10.8 W	116 lm/W	107 lm/W	>90
SLE 06mm 1000lm 940 R SNC8	**28004227**	940/359	1,274 lm	1,147 lm	300 mA	32.0 V	39.0 V	10.8 W	118 lm/W	109 lm/W	>90
SLE 06mm 1000lm – Operating mode HO at 350 mA											
SLE 06mm 1000lm 830 R SNC8	**28004223**	830/359	–	1,440 lm	350 mA	32.7 V	39.7 V	–	–	115 lm/W	>80
SLE 06mm 1000lm 840 R SNC8	**28004224**	840/359	–	1,511 lm	350 mA	32.7 V	39.7 V	–	–	121 lm/W	>80
SLE 06mm 1000lm 930 R SNC8	**28004225**	930/359	–	1,233 lm	350 mA	32.7 V	39.7 V	–	–	99 lm/W	>90
SLE 06mm 1000lm 935 R SNC8	**28004226**	935/359	–	1,269 lm	350 mA	32.7 V	39.7 V	–	–	102 lm/W	>90
SLE 06mm 1000lm 940 R SNC8	**28004227**	940/359	–	1,296 lm	350 mA	32.7 V	39.7 V	–	–	104 lm/W	>90
SLE 09mm 1500lm – Operating mode HE at 200 mA											
SLE 09mm 1500lm 830 R SNC8	**28004213**	830/359	–	1,083 lm	200 mA	30.4 V	36.9 V	–	–	163 lm/W	>80
SLE 09mm 1500lm 840 R SNC8	**28004214**	840/359	–	1,142 lm	200 mA	30.4 V	36.9 V	–	–	171 lm/W	>80
SLE 09mm 1500lm 930 R SNC8	**28004215**	930/359	–	921 lm	200 mA	30.4 V	36.9 V	–	–	138 lm/W	>90
SLE 09mm 1500lm 935 R SNC8	**28004216**	935/359	–	955 lm	200 mA	30.4 V	36.9 V	–	–	143 lm/W	>90
SLE 09mm 1500lm 940 R SNC8	**28004217**	940/359	–	977 lm	200 mA	30.4 V	36.9 V	–	–	147 lm/W	>90
SLE 09mm 1500lm – Operating mode NM at 270 mA											
SLE 09mm 1500lm 830 R SNC8	**28004213**	830/359	1,566 lm	1,425 lm	270 mA	31.2 V	37.8 V	9.4 W	166 lm/W	155 lm/W	>80
SLE 09mm 1500lm 840 R SNC8	**28004214**	840/359	1,651 lm	1,502 lm	270 mA	31.2 V	37.8 V	9.4 W	175 lm/W	164 lm/W	>80
SLE 09mm 1500lm 930 R SNC8	**28004215**	930/359	1,330 lm	1,212 lm	270 mA	31.2 V	37.8 V	9.4 W	141 lm/W	132 lm/W	>90
SLE 09mm 1500lm 935 R SNC8	**28004216**	935/359	1,380 lm	1,257 lm	270 mA	31.2 V	37.8 V	9.4 W	146 lm/W	137 lm/W	>90
SLE 09mm 1500lm 940 R SNC8	**28004217**	940/359	1,411 lm	1,285 lm	270 mA	31.2 V	37.8 V	9.4 W	150 lm/W	140 lm/W	>90
SLE 09mm 1500lm – Operating mode HO at 400 mA											
SLE 09mm 1500lm 830 R SNC8	**28004213**	830/359	–	1,995 lm	400 mA	32.9 V	39.5 V	–	–	141 lm/W	>80
SLE 09mm 1500lm 840 R SNC8	**28004214**	840/359	–	2,103 lm	400 mA	32.9 V	39.5 V	–	–	149 lm/W	>80
SLE 09mm 1500lm 930 R SNC8	**28004215**	930/359	–	1,697 lm	400 mA	32.9 V	39.5 V	–	–	120 lm/W	>90
SLE 09mm 1500lm 935 R SNC8	**28004216**	935/359	–	1,760 lm	400 mA	32.9 V	39.5 V	–	–	124 lm/W	>90
SLE 09mm 1500lm 940 R SNC8	**28004217**	940/359	–	1,799 lm	400 mA	32.9 V	39.5 V	–	–	127 lm/W	>90
SLE 09mm 2000lm – Operating mode HE at 250 mA											
SLE 09mm 2000lm 830 R SNC8	**28004228**	830/359	–	1,318 lm	250 mA	30.4 V	36.9 V	–	–	160 lm/W	>80
SLE 09mm 2000lm 840 R SNC8	**28004229**	840/359	–	1,370 lm	250 mA	30.4 V	36.9 V	–	–	166 lm/W	>80
SLE 09mm 2000lm 930 R SNC8	**28004230**	930/359	–	1,105 lm	250 mA	30.4 V	36.9 V	–	–	134 lm/W	>90
SLE 09mm 2000lm 935 R SNC8	**28004231**	935/359	–	1,161 lm	250 mA	30.4 V	36.9 V	–	–	141 lm/W	>90
SLE 09mm 2000lm 940 R SNC8	**28004232**	940/359	–	1,186 lm	250 mA	30.4 V	36.9 V	–	–	144 lm/W	>90
SLE 09mm 2000lm – Operating mode NM at 360 mA											
SLE 09mm 2000lm 830 R SNC8	**28004228**	830/359	2,041 lm	1,857 lm	360 mA	31.2 V	37.8 V	12.6 W	162 lm/W	152 lm/W	>80
SLE 09mm 2000lm 840 R SNC8	**28004229**	840/359	2,121 lm	1,930 lm	360 mA	31.2 V	37.8 V	12.6 W	169 lm/W	158 lm/W	>80
SLE 09mm 2000lm 930 R SNC8	**28004230**	930/359	1,708 lm	1,556 lm	360 mA	31.2 V	37.8 V	12.6 W	136 lm/W	127 lm/W	>90
SLE 09mm 2000lm 935 R SNC8	**28004231**	935/359	1,795 lm	1,635 lm	360 mA	31.2 V	37.8 V	12.6 W	143 lm/W	134 lm/W	>90
SLE 09mm 2000lm 940 R SNC8	**28004232**	940/359	1,833 lm	1,670 lm	360 mA	31.2 V	37.8 V	12.6 W	146 lm/W	136 lm/W	>90
SLE 09mm 2000lm – Operating mode HO at 600 mA											
SLE 09mm 2000lm 830 R SNC8	**28004228**	830/359	–	2,878 lm	600 mA	32.9 V	39.5 V	–	–	134 lm/W	>80
SLE 09mm 2000lm 840 R SNC8	**28004229**	840/359	–	2,992 lm	600 mA	32.9 V	39.5 V	–	–	140 lm/W	>80
SLE 09mm 2000lm 930 R SNC8	**28004230**	930/359	–	2,412 lm	600 mA	32.9 V	39.5 V	–	–	113 lm/W	>90
SLE 09mm 2000lm 935 R SNC8	**28004231**	935/359	–	2,534 lm	600 mA	32.9 V	39.5 V	–	–	118 lm/W	>90
SLE 09mm 2000lm 940 R SNC8	**28004232**	940/359	–	2,589 lm	600 mA	32.9 V	39.5 V	–	–	121 lm/W	>90
SLE 15mm 2000lm – Operating mode HE at 350 mA											
SLE 15mm 2000lm 830 R SNC8	**28004218**	830/359	–	1,895 lm	350 mA	30.4 V	36.9 V	–	–	163 lm/W	>80
SLE 15mm 2000lm 840 R SNC8	**28004219**	840/359	–	1,991 lm	350 mA	30.4 V	36.9 V	–	–	171 lm/W	>80
SLE 15mm 2000lm 930 R SNC8	**28004220**	930/359	–	1,569 lm	350 mA	30.4 V	36.9 V	–	–	135 lm/W	>90
SLE 15mm 2000lm 935 R SNC8	**28004221**	935/359	–	1,654 lm	350 mA	30.4 V	36.9 V	–	–	142 lm/W	>90
SLE 15mm 2000lm 940 R SNC8	**28004222**	940/359	–	1,703 lm	350 mA	30.4 V	36.9 V	–	–	146 lm/W	>90
SLE 15mm 2000lm – Operating mode NM at 450 mA											
SLE 15mm 2000lm 830 R SNC8	**28004218**	830/359	2,630 lm	2,399 lm	450 mA	31.2 V	37.8 V	15.7 W	167 lm/W	157 lm/W	>80
SLE 15mm 2000lm 840 R SNC8	**28004219**	840/359	2,763 lm	2,520 lm	450 mA	31.2 V	37.8 V	15.7 W	176 lm/W	165 lm/W	>80
SLE 15mm 2000lm 930 R SNC8	**28004220**	930/359	2,175 lm	1,986 lm	450 mA	31.2 V	37.8 V	15.7 W	138 lm/W	130 lm/W	>90
SLE 15mm 2000lm 935 R SNC8	**28004221**	935/359	2,294 lm	2,094 lm	450 mA	31.2 V	37.8 V	15.7 W	146 lm/W	137 lm/W	>90
SLE 15mm 2000lm 940 R SNC8	**28004222**	940/359	2,361 lm	2,156 lm	450 mA	31.2 V	37.8 V	15.7 W	150 lm/W	141 lm/W	>90
SLE 15mm 2000lm – Operating mode HO at 800 mA											
SLE 15mm 2000lm 830 R SNC8	**28004218**	830/359	–	3,958 lm	800 mA	32.9 V	39.5 V	–	–	139 lm/W	>80

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C③	Expected luminous flux at tp rated④	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C⑤	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
SLE 15mm 2000lm 840 R SNC8	**28004219**	840/359	–	4,158 lm	800 mA	32.9 V	39.5 V	–	–	146 lm/W	>80
SLE 15mm 2000lm 930 R SNC8	**28004220**	930/359	–	3,277 lm	800 mA	32.9 V	39.5 V	–	–	115 lm/W	>90
SLE 15mm 2000lm 935 R SNC8	**28004221**	935/359	–	3,455 lm	800 mA	32.9 V	39.5 V	–	–	121 lm/W	>90
SLE 15mm 2000lm 940 R SNC8	**28004222**	940/359	–	3,557 lm	800 mA	32.9 V	39.5 V	–	–	125 lm/W	>90
SLE 15mm 3000lm – Operating mode HE at 400 mA											
SLE 15mm 3000lm 830 R SNC8	**28004208**	830/359	–	2,187 lm	400 mA	30.4 V	36.9 V	–	–	164 lm/W	>80
SLE 15mm 3000lm 840 R SNC8	**28004209**	840/359	–	2,277 lm	400 mA	30.4 V	36.9 V	–	–	171 lm/W	>80
SLE 15mm 3000lm 930 R SNC8	**28004210**	930/359	–	1,834 lm	400 mA	30.4 V	36.9 V	–	–	138 lm/W	>90
SLE 15mm 3000lm 935 R SNC8	**28004211**	935/359	–	1,920 lm	400 mA	30.4 V	36.9 V	–	–	144 lm/W	>90
SLE 15mm 3000lm 940 R SNC8	**28004212**	940/359	–	1,962 lm	400 mA	30.4 V	36.9 V	–	–	147 lm/W	>90
SLE 15mm 3000lm – Operating mode NM at 540 mA											
SLE 15mm 3000lm 830 R SNC8	**28004208**	830/359	3,155 lm	2,877 lm	540 mA	31.2 V	37.8 V	18.8 W	167 lm/W	157 lm/W	>80
SLE 15mm 3000lm 840 R SNC8	**28004209**	840/359	3,285 lm	2,996 lm	540 mA	31.2 V	37.8 V	18.8 W	174 lm/W	163 lm/W	>80
SLE 15mm 3000lm 930 R SNC8	**28004210**	930/359	2,643 lm	2,413 lm	540 mA	31.2 V	37.8 V	18.8 W	140 lm/W	131 lm/W	>90
SLE 15mm 3000lm 935 R SNC8	**28004211**	935/359	2,767 lm	2,526 lm	540 mA	31.2 V	37.8 V	18.8 W	147 lm/W	138 lm/W	>90
SLE 15mm 3000lm 940 R SNC8	**28004212**	940/359	2,581 lm	2,827 lm	540 mA	31.2 V	37.8 V	18.8 W	150 lm/W	141 lm/W	>90
SLE 15mm 3000lm – Operating mode HO at 900 mA											
SLE 15mm 3000lm 830 R SNC8	**28004208**	830/359	–	4,459 lm	900 mA	32.9 V	39.5 V	–	–	139 lm/W	>80
SLE 15mm 3000lm 840 R SNC8	**28004209**	840/359	–	4,644 lm	900 mA	32.9 V	39.5 V	–	–	145 lm/W	>80
SLE 15mm 3000lm 930 R SNC8	**28004210**	930/359	–	3,740 lm	900 mA	32.9 V	39.5 V	–	–	116 lm/W	>90
SLE 15mm 3000lm 935 R SNC8	**28004211**	935/359	–	3,915 lm	900 mA	32.9 V	39.5 V	–	–	122 lm/W	>90
SLE 15mm 3000lm 940 R SNC8	**28004212**	940/359	–	4,001 lm	900 mA	32.9 V	39.5 V	–	–	125 lm/W	>90

① See derating curves in data sheet section 2.3.
② The detailed explanation, see data sheet section 3.1.
③ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.
④ Tolerance of expected light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %. Based on calculation.
⑤ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

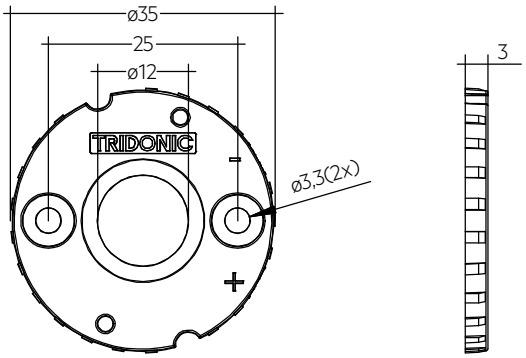
Housing for SLE

Accessory

LES09

Product description
_ Housing for SLE
_ Diameter: 35 mm
_ Material: Lexan Resin 943
_ M3 screws with flat head, max. head diameter of 6 mm and max. torque for fixing is 0.5 Nm

Website
http://www.tridonic.com/28003024



SLE G7 HOUSING LES09

Ordering data

Type	Article number	Packaging, bag	Weight per pc.
SLE G7 HOUSING LES 09	**28003024**	500 pc(s).	0.002 kg

1. Standards

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

1.2 Photometric code

Key for photometric code, e. g. 830 / 359

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

1.3 Energy classification

Type	Colour tempera-ture	Forward current	Energy classifi-cation	Energy consumption
SLE 06mm – 1000lm				
SLE 06mm 1000lm 830 R SNC8	3,000 K	300 mA	E	11 kWh / 1,000 h
SLE 06mm 1000lm 840 R SNC8	4,000 K	300 mA	D	11 kWh / 1,000 h
SLE 06mm 1000lm 930 R SNC8	3,000 K	300 mA	E	11 kWh / 1,000 h
SLE 06mm 1000lm 935 R SNC8	3,500 K	300 mA	E	11 kWh / 1,000 h
SLE 06mm 1000lm 940 R SNC8	4,000 K	300 mA	E	11 kWh / 1,000 h
SLE 09mm – 1500lm				
SLE 09mm 1500lm 830 R SNC8	3,000 K	270 mA	C	10 kWh / 1,000 h
SLE 09mm 1500lm 840 R SNC8	4,000 K	270 mA	C	10 kWh / 1,000 h
SLE 09mm 1500lm 930 R SNC8	3,000 K	270 mA	D	10 kWh / 1,000 h
SLE 09mm 1500lm 935 R SNC8	3,500 K	270 mA	D	10 kWh / 1,000 h
SLE 09mm 1500lm 940 R SNC8	4,000 K	270 mA	D	10 kWh / 1,000 h
SLE 09mm – 2000lm				
SLE 09mm 2000lm 830 R SNC8	3,000 K	360 mA	C	13 kWh / 1,000 h
SLE 09mm 2000lm 840 R SNC8	4,000 K	360 mA	C	13 kWh / 1,000 h
SLE 09mm 2000lm 930 R SNC8	3,000 K	360 mA	D	13 kWh / 1,000 h
SLE 09mm 2000lm 935 R SNC8	3,500 K	360 mA	D	13 kWh / 1,000 h
SLE 09mm 2000lm 940 R SNC8	4,000 K	360 mA	D	13 kWh / 1,000 h
SLE 15mm – 2000lm				
SLE 15mm 2000lm 830 R SNC8	3,000 K	450 mA	C	16 kWh / 1,000 h
SLE 15mm 2000lm 840 R SNC8	4,000 K	450 mA	C	16 kWh / 1,000 h
SLE 15mm 2000lm 930 R SNC8	3,000 K	450 mA	D	16 kWh / 1,000 h
SLE 15mm 2000lm 935 R SNC8	3,500 K	450 mA	D	16 kWh / 1,000 h
SLE 15mm 2000lm 940 R SNC8	4,000 K	450 mA	D	16 kWh / 1,000 h
SLE 15mm – 3000lm				
SLE 15mm 3000lm 830 R SNC8	3,000 K	540 mA	C	19 kWh / 1,000 h
SLE 15mm 3000lm 840 R SNC8	4,000 K	540 mA	C	19 kWh / 1,000 h
SLE 15mm 3000lm 930 R SNC8	3,000 K	540 mA	D	19 kWh / 1,000 h
SLE 15mm 3000lm 935 R SNC8	3,500 K	540 mA	D	19 kWh / 1,000 h
SLE 15mm 3000lm 940 R SNC8	4,000 K	540 mA	D	19 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. Thermical details

2.1 tp point, ambient temperature and lifetime

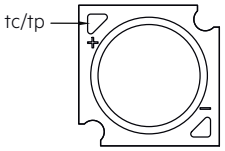
The temperature at tp reference point is crucial for the light output and lifetime of a LED product.

For SLE SNC8 a tp temperature of 85 °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 tp 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.

To check the tc / tp temperature, the temperature sensor has to be mounted on one of both contact pads at the marked position as stated in the drawing.



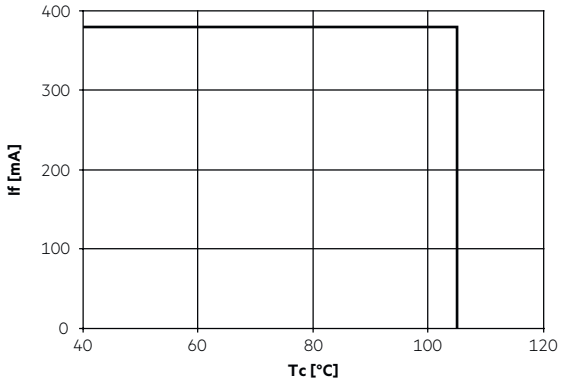
2.2 Storage and humidity

storage temperature	-40 … +120 °C

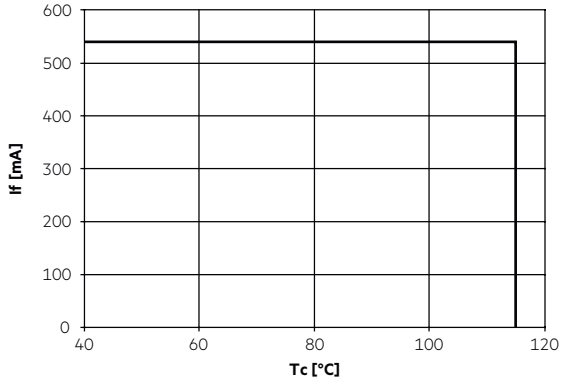
Operation only in non condensing environment.
Humidity during processing of the module should be between 0 to 85 %.

2.3 Derating curves

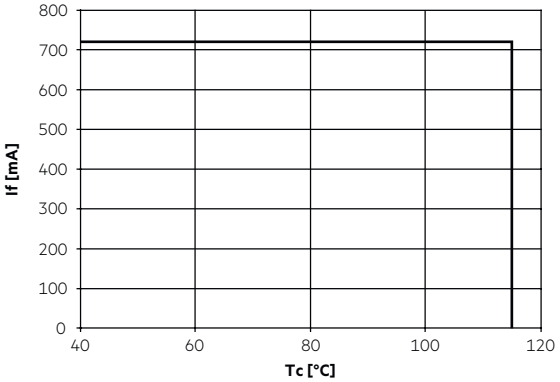
SLE 06mm 1000lm



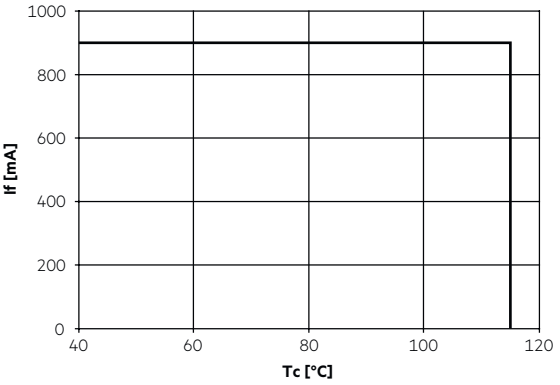
SLE 09mm 1500lm



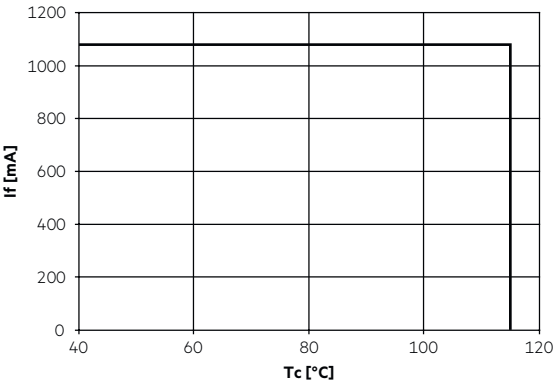
SLE 09mm 2000lm



SLE 15mm 2000lm



SLE 15mm 3000lm



2.4 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 SLE will be greatly reduced or the SLE may be destroyed.

2.5 Heat sink values

SLE 06mm 1000lm

ta	tp	Operating current	$R_{th, hs-a}$
25 °C	85 °C	300 mA	8.89 K/W
35 °C	85 °C		7.40 K/W
40 °C	85 °C		6.66 K/W
45 °C	85 °C		5.91 K/W
50 °C	85 °C		5.17 K/W
55 °C	85 °C		4.42 K/W

SLE 09mm 1500lm

ta	tp	Operating current	$R_{th, hs-a}$
25 °C	85 °C	270 mA	11.54 K/W
35 °C	85 °C		9.61 K/W
40 °C	85 °C		8.65 K/W
45 °C	85 °C		7.68 K/W
50 °C	85 °C		6.71 K/W
55 °C	85 °C		5.75 K/W

SLE 09mm 2000lm

ta	tp	Operating current	$R_{th, hs-a}$
25 °C	85 °C	360 mA	8.46 K/W
35 °C	85 °C		7.04 K/W
40 °C	85 °C		6.33 K/W
45 °C	85 °C		5.62 K/W
50 °C	85 °C		4.91 K/W
55 °C	85 °C		4.21 K/W

SLE 15mm 2000lm

ta	tp	Operating current	$R_{th, hs-a}$
25 °C	85 °C	450 mA	6.83 K/W
35 °C	85 °C		5.69 K/W
40 °C	85 °C		5.11 K/W
45 °C	85 °C		4.54 K/W
50 °C	85 °C		3.97 K/W
55 °C	85 °C		3.39 K/W

SLE 15mm 3000lm

ta	tp	Operating current	$R_{th, hs-a}$
25 °C	85 °C	400 mA	4.65 K/W
35 °C	85 °C		3.87 K/W
40 °C	85 °C		3.48 K/W
45 °C	85 °C		3.09 K/W
50 °C	85 °C		2.70 K/W
55 °C	85 °C		2.31 K/W

Notes
The actual cooling can differ because of the material, the structural shape, outside influences and the installation situation. A thermal connection between SLE and heat sink with heat-conducting paste or heat conducting adhesive film is absolutely necessary.
Additionally the SLE has to be fixed on the heat sink with M3 screws to optimise the thermal connection.
Use of thermal interface material with thermal conductivity of λ > 1 W/mK and layer thickness of interface material with max. 50 µm or a similar interface material where the quotient of layer thickness and thermal conductivity b < 50 µmmK/W.

3. Installation / wiring

3.1 Electrical supply/choice of LED driver

SLE 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 drivers from Tridonic in combination with SLE guarantees the necessary protection for safe and reliable operation.

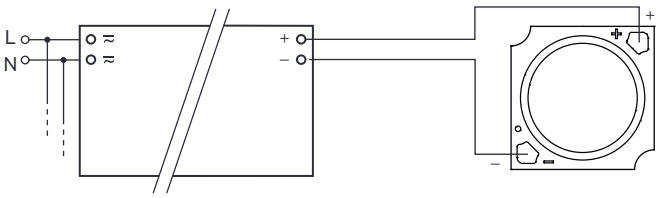
If a LED driver other than Tridonic is used, it must provide the following protection:
- Short-circuit protection
- Overload protection
- Overtemperature protection

SLE 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 SLE.

SLE must not be operated with nonSELV LED driver.

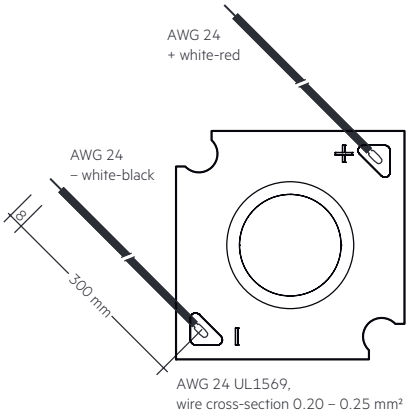
SLE are basic insulated up to 60 V SELV against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED driver (also against earth) is above 60 V SELV, an additional insulation between LED module and heat sink is required (for example by insulated 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

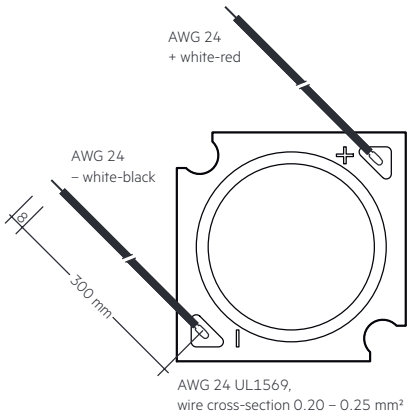


Driver LC ...

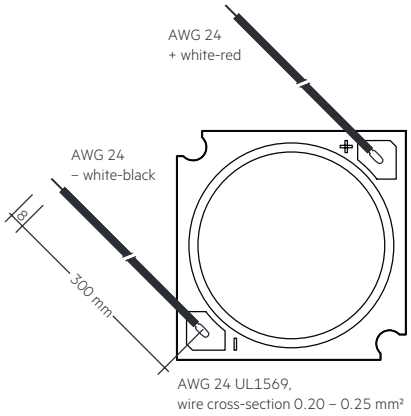
LES06



LES09



LES15



3.3 Soldering guidelines

The modules are suitable only for manual soldering (max. 275 °C, 5 seconds).

3.4 Mounting instruction

SLE from Tridonic which have to be installed on a heat sink have to be connected with heat-conducting paste or heat conducting adhesive film and fixed with M2 screws and washer or M3 screws.
The fixing/cooling surface must be cleaned by removing all dirt, dust and grease before installing the LED modules.

None of the components of the SLE (substrate, LED, electronic components etc.) may be exposed to tensile or compressive stresses.

Torque for fixing: 0.3 – 0.5 Nm

The LED modules are mounted with 2 screws per module. In order not to damage the modules only rounded head screws and an additional washer for M2 (notice working temperature) or rounded head screw with collar (ISO 7380-2) with head diameter ≤ 6 mm must be used.

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.
For further information for EOS/ESD safety guidlines and the ESD classification please refer to the brochure entitled 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

Lifetime declarations are informative and represent no warranty claim. Preliminary calculated lifetime data until LM80 test reports are available

SLE 06mm 1000lm

Operating current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
250 mA	60 °C	36k h	42k h	>60k h	>60k h	>60k h	>60k h
	70 °C	34k h	40k h	>60k h	>60k h	>60k h	>60k h
	85 °C	32k h	36k h	>60k h	>60k h	>60k h	>60k h
	95 °C	31k h	36k h	>60k h	>60k h	>60k h	>60k h
	105 °C	26k h	29k h	>57k h	>60k h	>60k h	>60k h
300 mA	60 °C	35k h	41k h	>60k h	>60k h	>60k h	>60k h
	70 °C	33k h	38k h	>60k h	>60k h	>60k h	>60k h
	85 °C	31k h	35k h	>60k h	>60k h	>60k h	>60k h
	95 °C	28k h	32k h	>60k h	>60k h	>60k h	>60k h
	105 °C	23k h	27k h	51k h	60k h	>60k h	>60k h
350 mA	60 °C	34k h	39k h	>60k h	>60k h	>60k h	>60k h
	70 °C	32k h	37k h	>60k h	>60k h	>60k h	>60k h
	85 °C	30k h	34k h	>60k h	>60k h	>60k h	>60k h
	95 °C	25k h	29k h	56k h	>60k h	>60k h	>60k h
	105 °C	21k h	24k h	45k h	54k h	>60k h	>60k h

SLE 09mm 1500lm

Operating current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
200 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	43k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	41k h	>60k h	>60k h	>60k h	>60k h
	95 °C	32k h	40k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
270 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	42k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	40k h	>60k h	>60k h	>60k h	>60k h
	95 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
400 mA	60 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	85 °C	31k h	38k h	>60k h	>60k h	>60k h	>60k h
	95 °C	28k h	36k h	>60k h	>60k h	>60k h	>60k h
	105 °C	25k h	33k h	55k h	>60k h	>60k h	>60k h

SLE 09mm 2000lm

Operating current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
250 mA	60 °C	35k h	45k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	43k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	41k h	>60k h	>60k h	>60k h	>60k h
	95 °C	32k h	40k h	>60k h	>60k h	>60k h	>60k h
	105 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
360 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	42k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	40k h	>60k h	>60k h	>60k h	>60k h
	95 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
600 mA	60 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	85 °C	31k h	38k h	>60k h	>60k h	>60k h	>60k h
	95 °C	28k h	35k h	59k h	>60k h	>60k h	>60k h
	105 °C	25k h	33k h	53k h	>60k h	>60k h	>60k h

SLE 15mm 2000lm

Operating current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
350 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	43k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	41k h	>60k h	>60k h	>60k h	>60k h
	95 °C	32k h	40k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
450 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	42k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	40k h	>60k h	>60k h	>60k h	>60k h
	95 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
800 mA	60 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	85 °C	32k h	38k h	>60k h	>60k h	>60k h	>60k h
	95 °C	27k h	35k h	59k h	>60k h	>60k h	>60k h
	105 °C	24k h	33k h	53k h	>60k h	>60k h	>60k h

SLE 15mm 3000lm

Operating current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
400 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	43k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	41k h	>60k h	>60k h	>60k h	>60k h
	95 °C	32k h	39k h	>60k h	>60k h	>60k h	>60k h
	105 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
540 mA	60 °C	35k h	44k h	>60k h	>60k h	>60k h	>60k h
	70 °C	35k h	42k h	>60k h	>60k h	>60k h	>60k h
	85 °C	34k h	40k h	>60k h	>60k h	>60k h	>60k h
	95 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	105 °C	29k h	39k h	>60k h	>60k h	>60k h	>60k h
900 mA	60 °C	30k h	39k h	>60k h	>60k h	>60k h	>60k h
	70 °C	31k h	39k h	>60k h	>60k h	>60k h	>60k h
	85 °C	31k h	38k h	>60k h	>60k h	>60k h	>60k h
	95 °C	28k h	35k h	59k h	>60k h	>60k h	>60k h
	105 °C	25k h	33k h	53k h	>60k h	>60k h	>60k h

L0C10 >49 kh. At Irated and tp rated, based on 10 swichting cycles per day.

4.3 Switching capability

50,000 cycles

Test according to IEC 62717 Cl 10.3.3
30 s on / 30 s off at Imax

5. Electrical values

5.1 Declaration of electrical parameters

Irated … Nominal operating current the module is designed for.

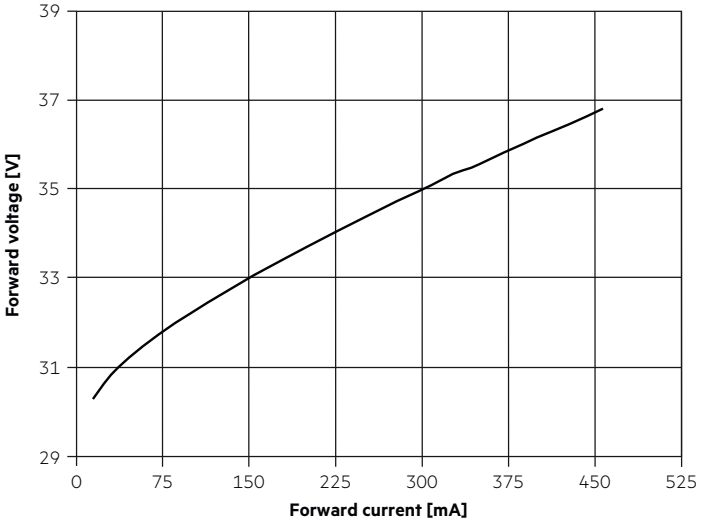
Imax … Max. permissible continuous operating current incl. The tolerances of the LED driver.

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

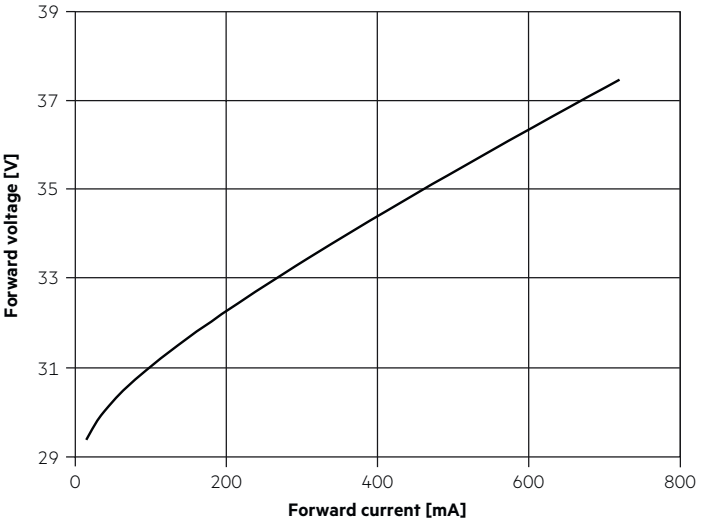
Max. permissible peak current … The max. output peak current of the LED driver must not exceed this value.

5.2 Typ. forward voltage vs. forward current

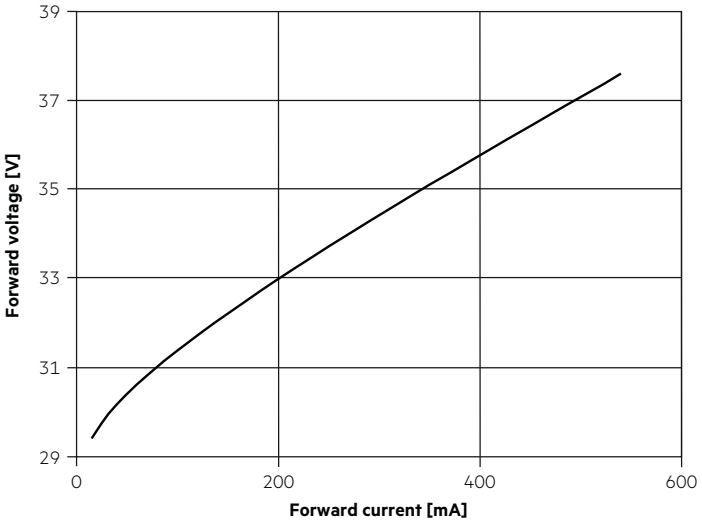
SLE 06mm 1000lm



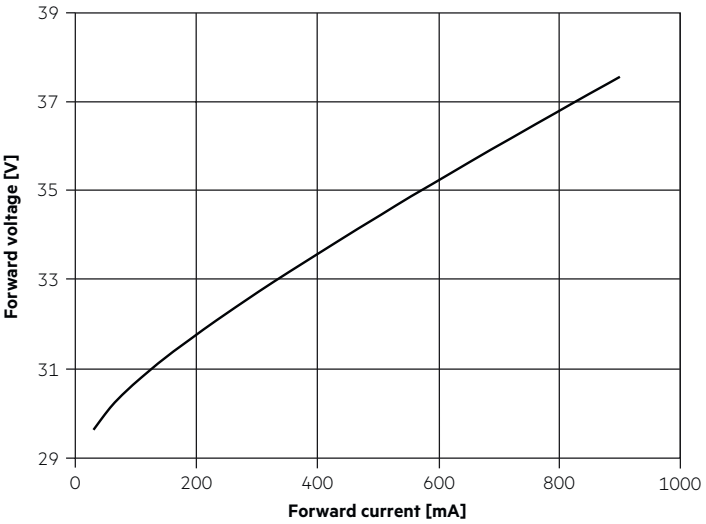
SLE 09mm 2000lm



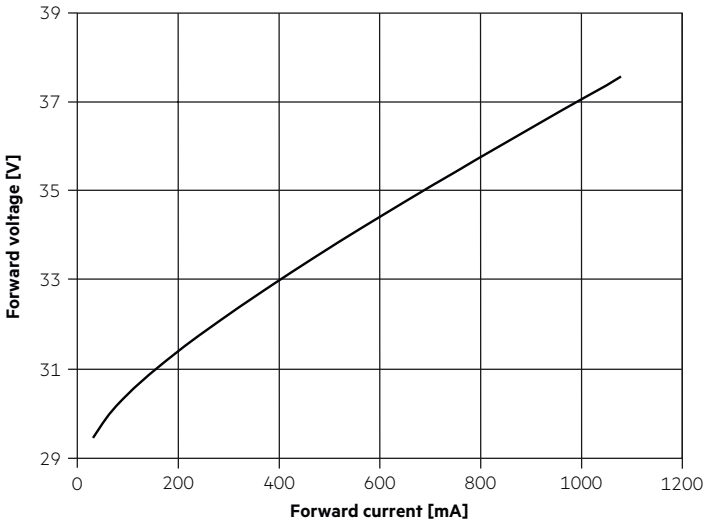
SLE 09mm 1500lm



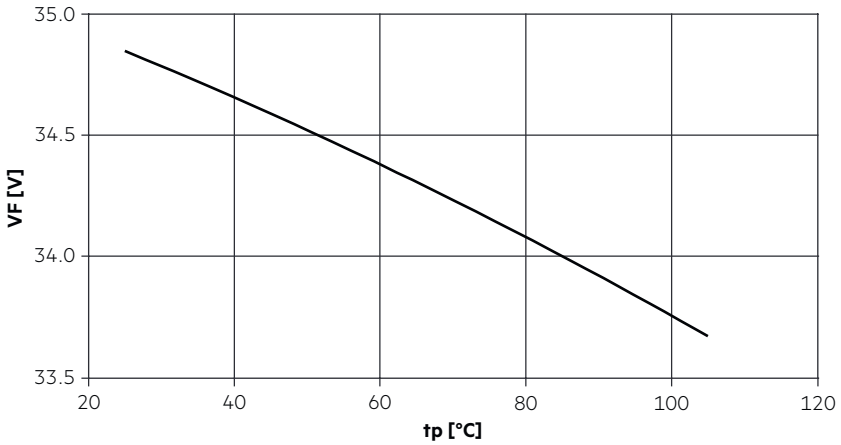
SLE 15mm 2000lm



SLE 15mm 3000lm



5.3 Forward voltage vs. tp temperature



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

6. Photometric characteristics

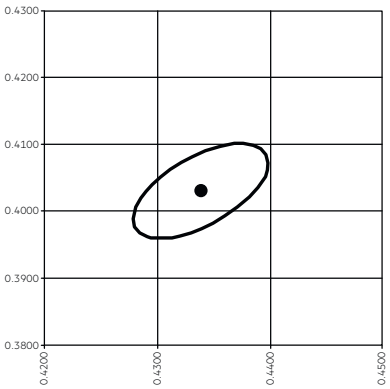
6.1 Coordinates and tolerances according to CIE 1931 and colour rendering

The specified colour coordinates are integral measured at a temperature of tc = 85 °C with a current impulse of 10 ms.
The current impuls depends on the module type. The measurement tolerance of the colour coordinates are ± 0.005.

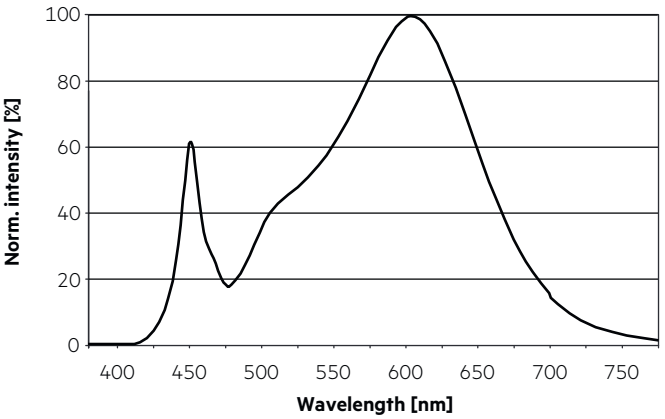
Module type	Current impulse
SLE 06mm 1000lm	300 mA
SLE 09mm 1500lm	270 mA
SLE 09mm 2000lm	360 mA
SLE 15mm 2000lm	450 mA
SLE 15mm 3000lm	540 mA

3,000 K – CRI80 – SLE 06mm

	x0	y0
Centre	0.4338	0.4030

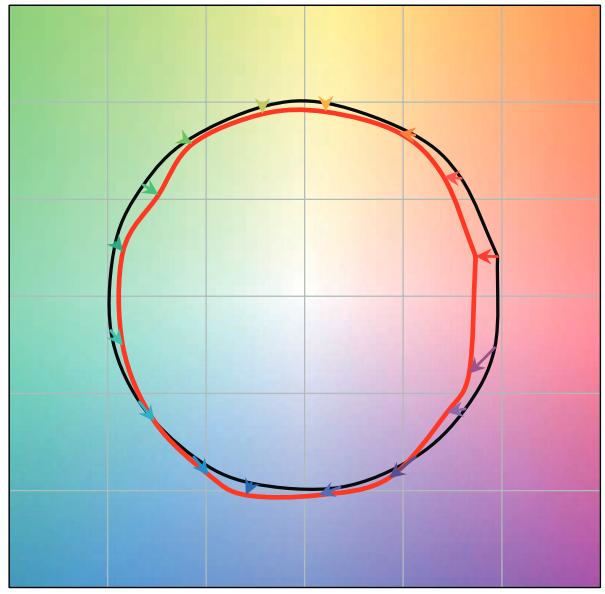


MacAdam ellipse: 3SDCM

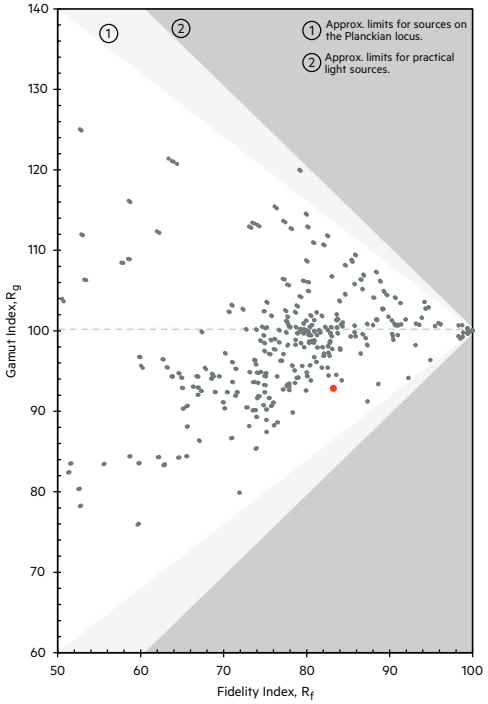


TM30		CRI	
Rf	Rg	Ra	R9
83	93	84	13

Colour vector graphic

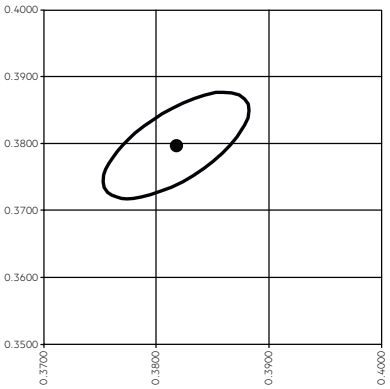


Reference source
Test source

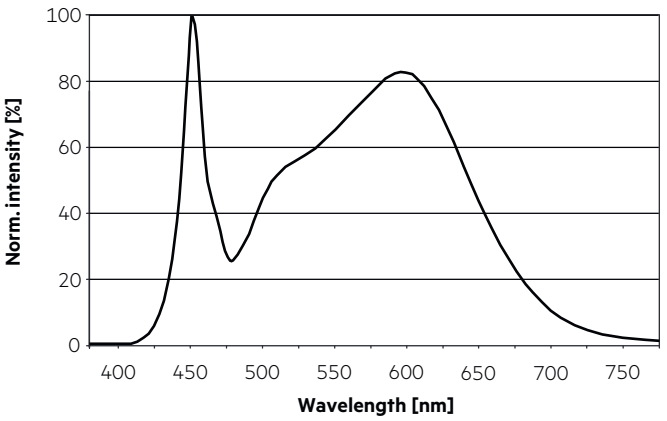


4,000 K – CRI80 – SLE 06mm

	x0	y0
Centre	0.3818	0.3797

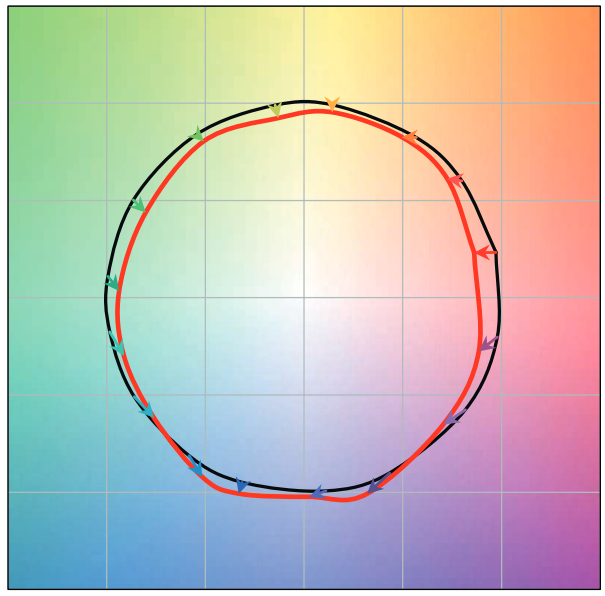


MacAdam ellipse: 3SDCM

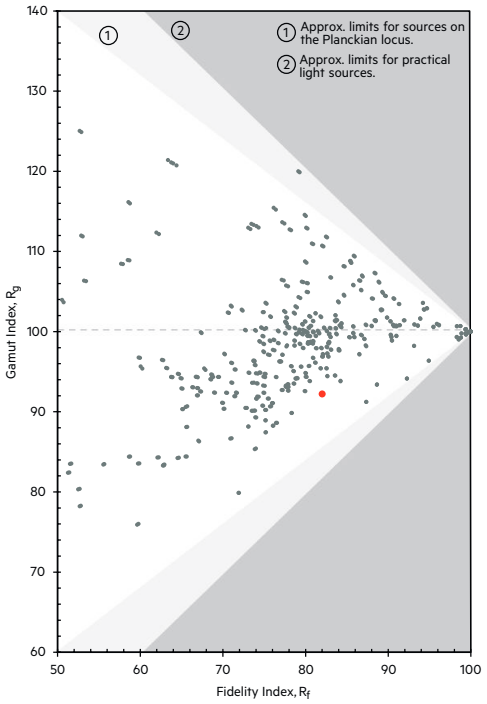


TM30		CRI	
Rf	Rg	Ra	R9
82	92	85	19

Colour vector graphic

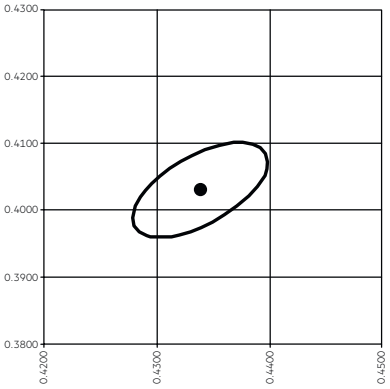


Reference source
Test source

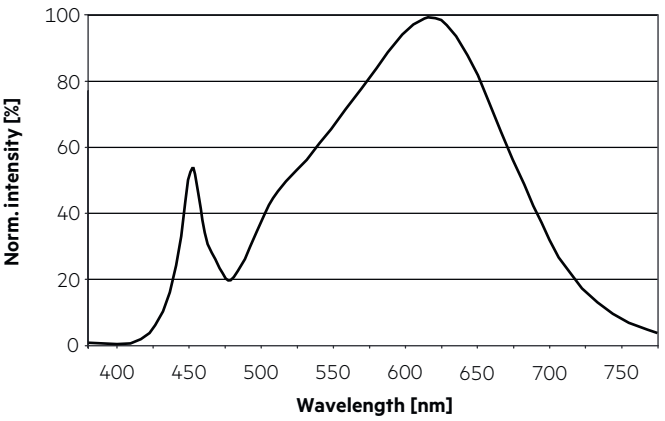


3,000 K – CRI90 – SLE 06mm

	x0	y0
Centre	0.4338	0.4030

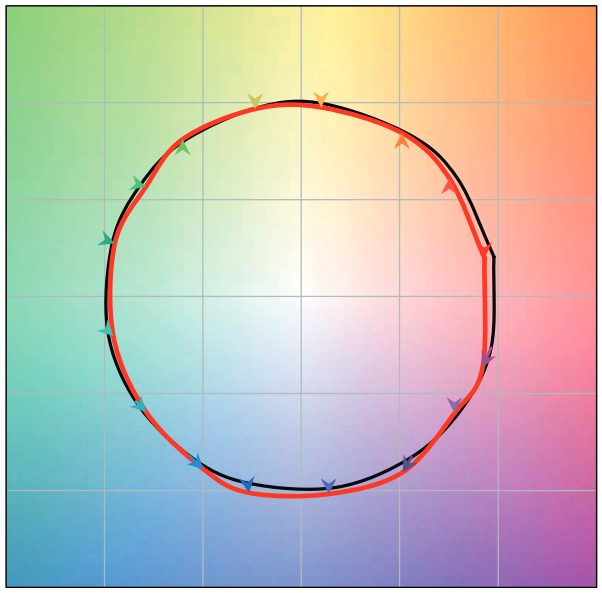


MacAdam ellipse: 3SDCM

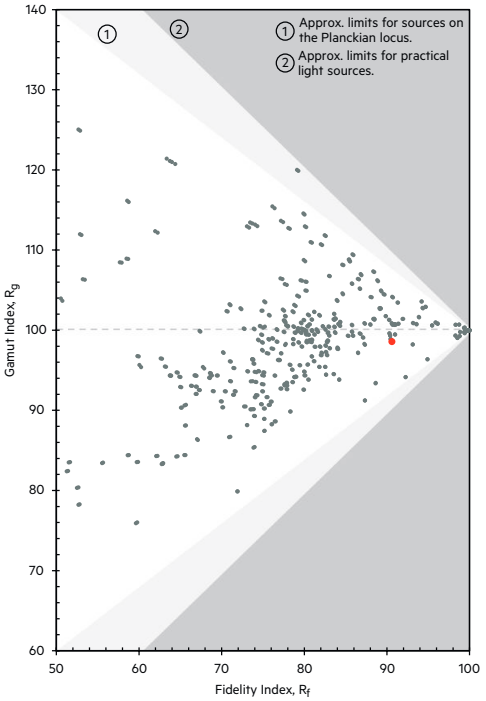


TM30		CRI	
Rf	Rg	Ra	R9
91	99	93	60

Colour vector graphic

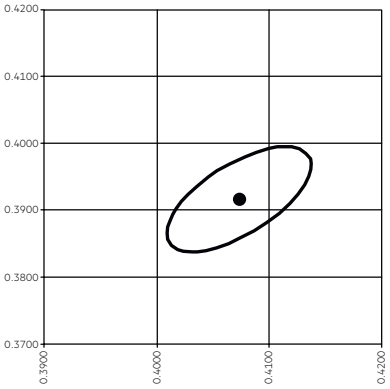


Reference source
Test source

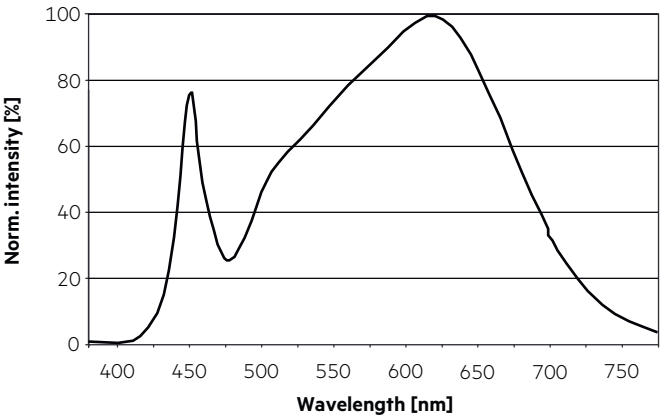


3,500 K – CRI90 – SLE 06mm

	x0	y0
Centre	0.4073	0.3917

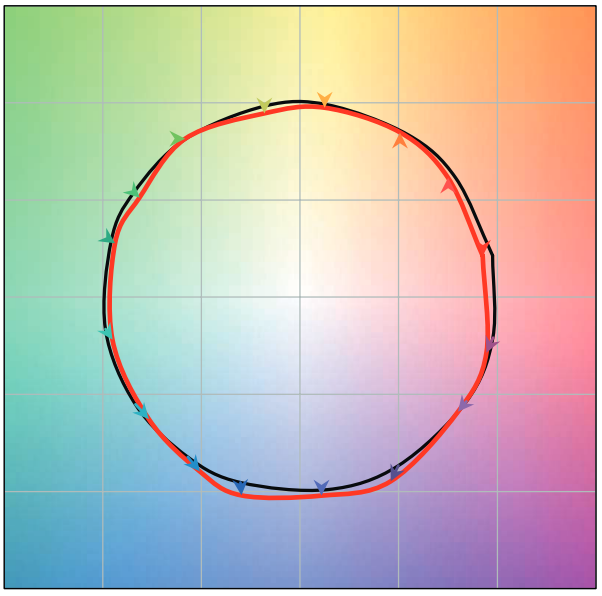


MacAdam ellipse: 3SDCM

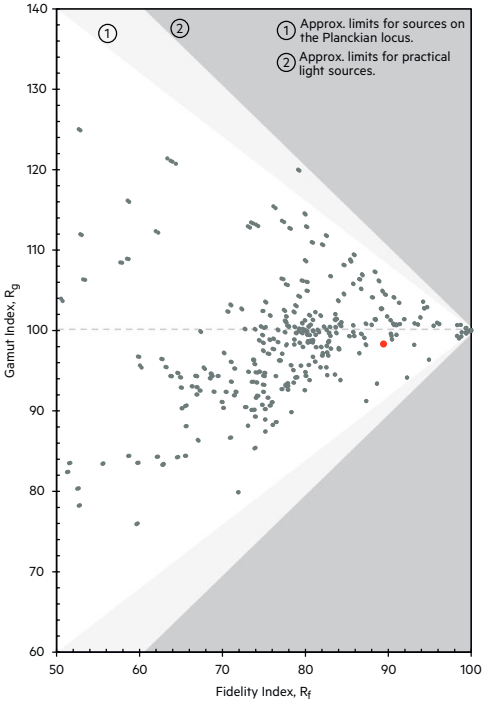


TM30		CRI	
Rf	Rg	Ra	R9
89	98	93	63

Colour vector graphic

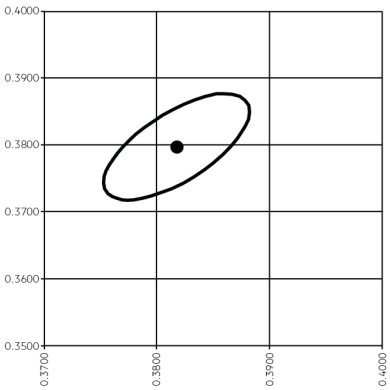


Reference source
Test source

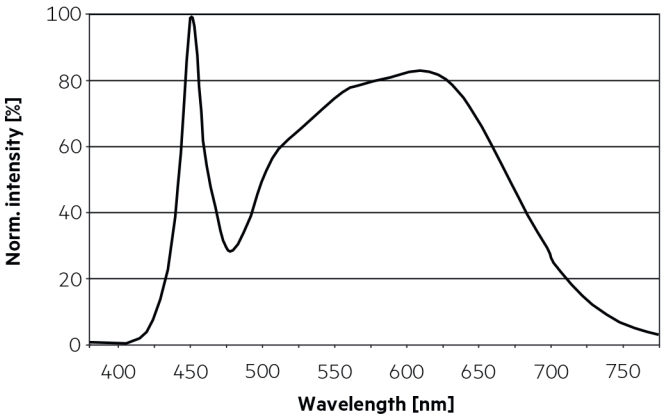


4,000 K – CRI90 – SLE 06mm

	x0	y0
Centre	0.3818	0.3797

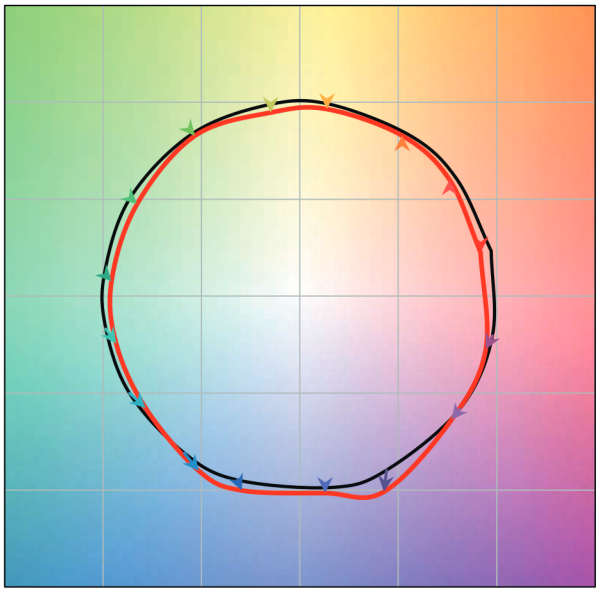


MacAdam ellipse: 3SDCM

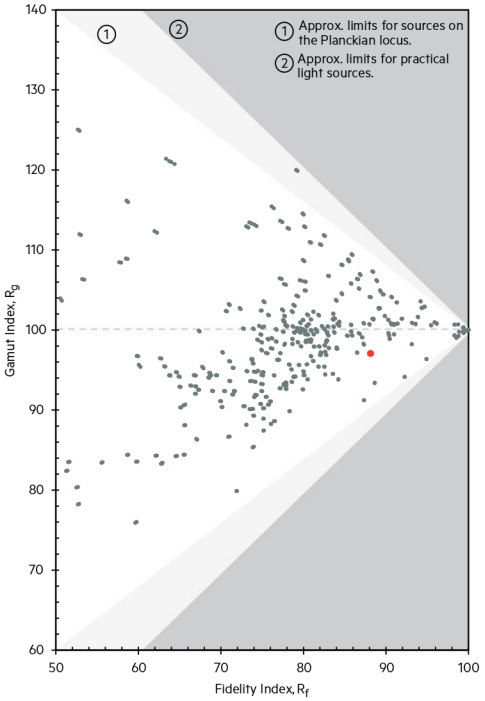


TM30		CRI	
Rf	Rg	Ra	R9
88	97	92	60

Colour vector graphic

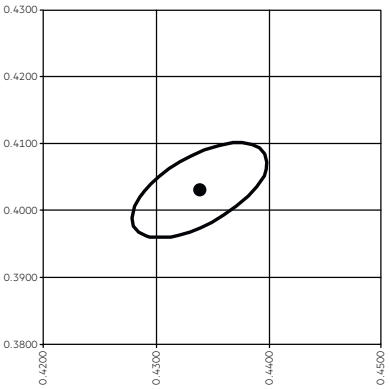


Reference source
Test source

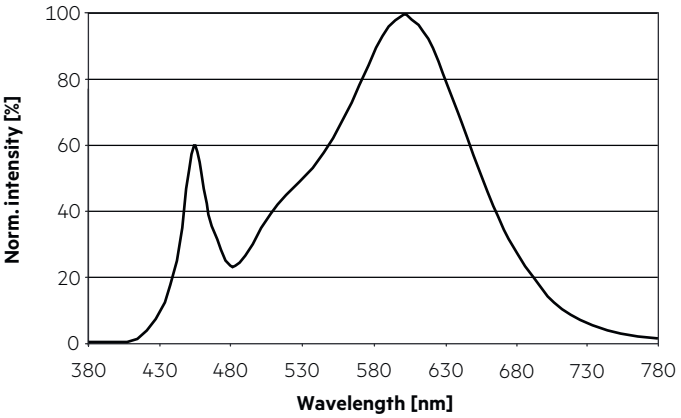


3,000 K – CRI80 – SLE 09/15mm

	x0	y0
Centre	0.4338	0.4030

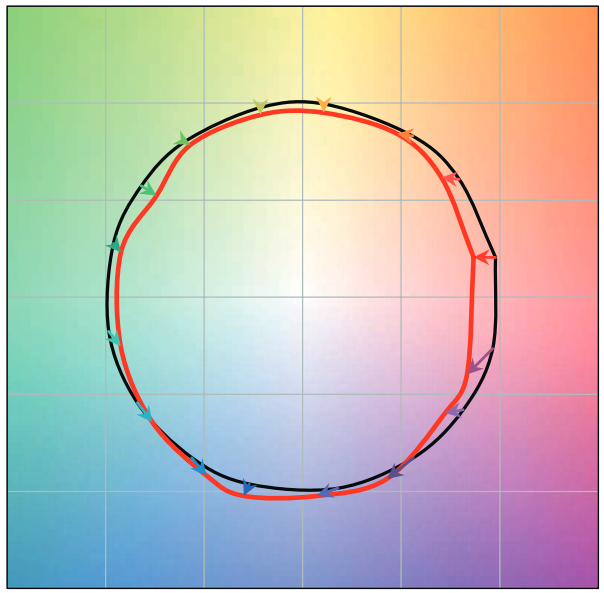


MacAdam ellipse: 3SDCM

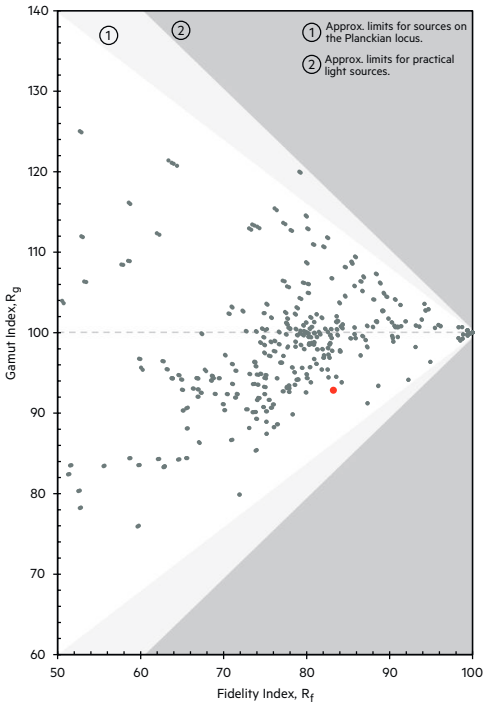


TM30		CRI	
Rf	Rg	Ra	R9
83	93	84	13

Colour vector graphic

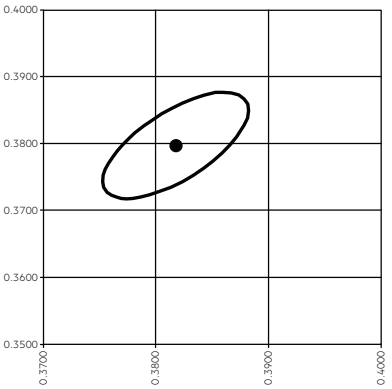


Reference source
Test source

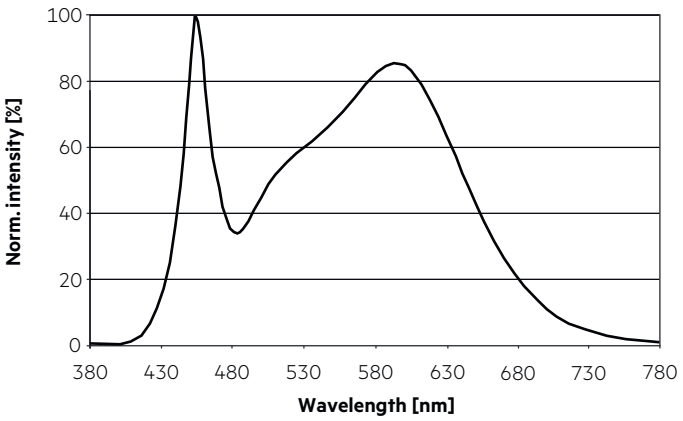


4,000 K – CRI80 – SLE 09/15mm

	x0	y0
Centre	0.3818	0.3797

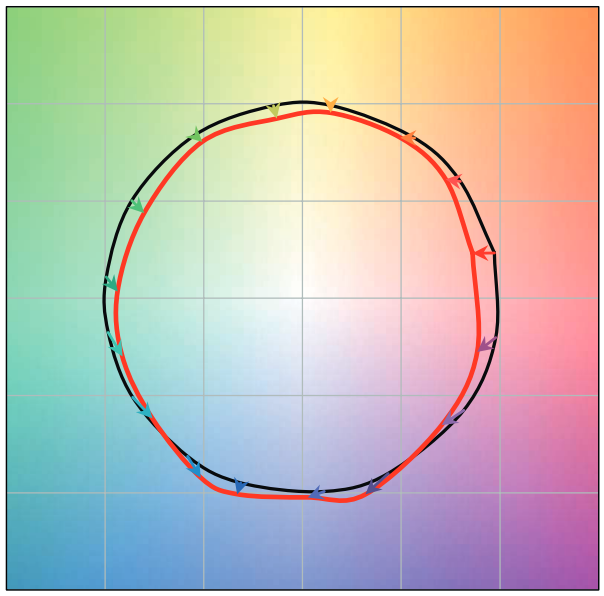


MacAdam ellipse: 3SDCM

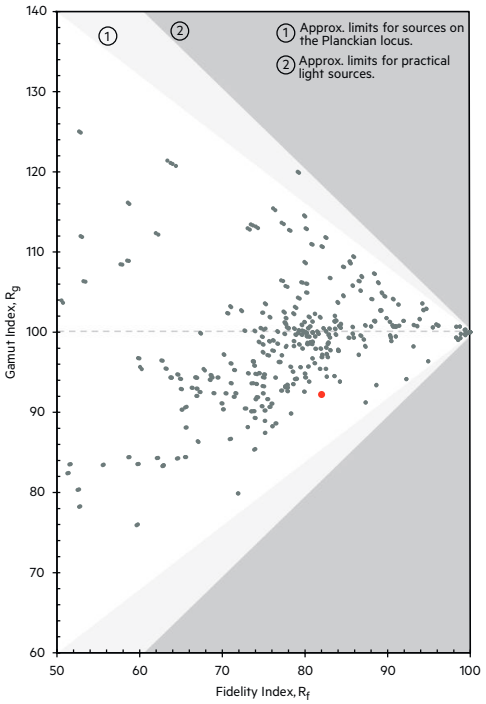


TM30		CRI	
Rf	Rg	Ra	R9
82	92	85	19

Colour vector graphic

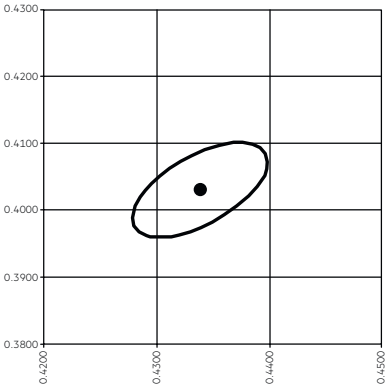


Reference source
Test source

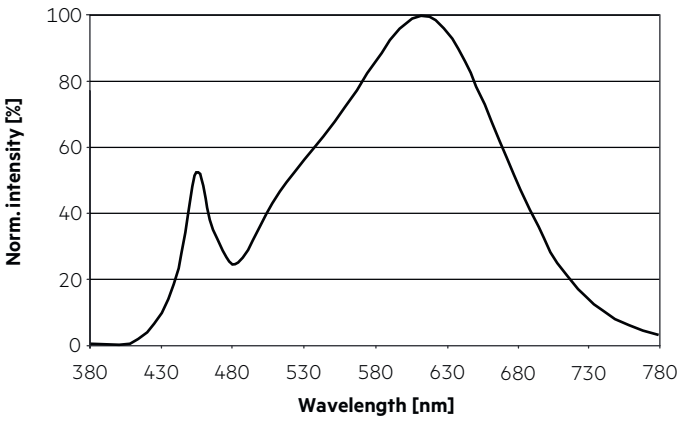


3,000 K – CRI90 – SLE 09/15mm

	x0	y0
Centre	0.4338	0.4030

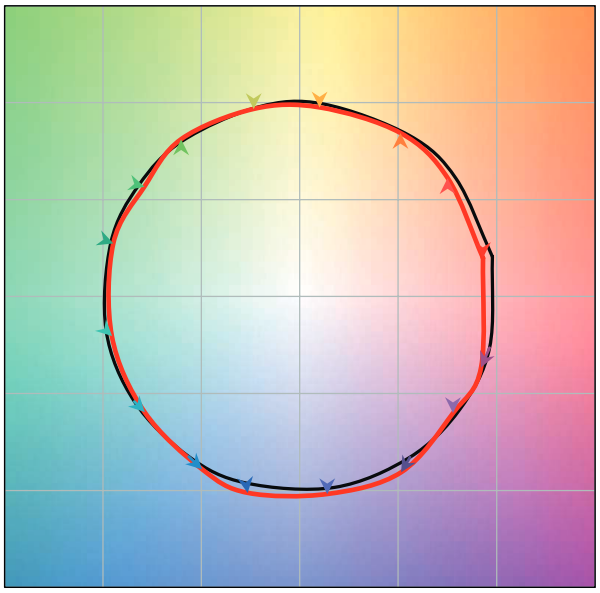


MacAdam ellipse: 3SDCM

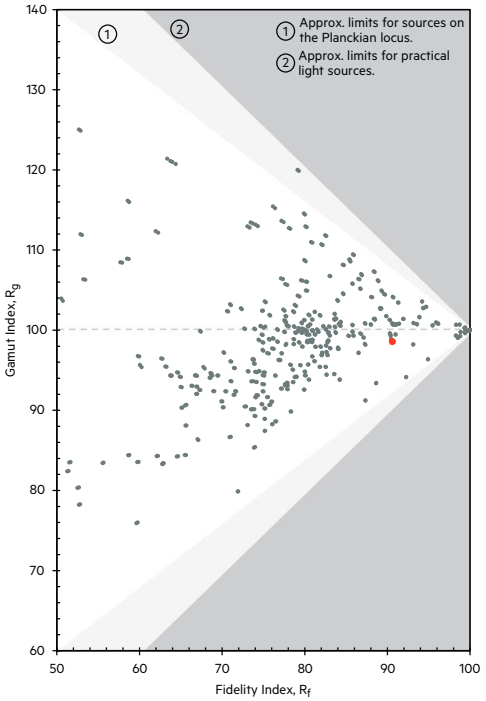


TM30		CRI	
Rf	Rg	Ra	R9
91	99	93	60

Colour vector graphic

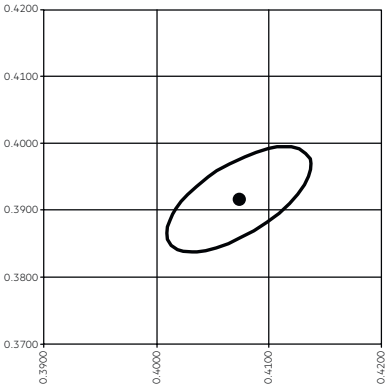


Reference source
Test source

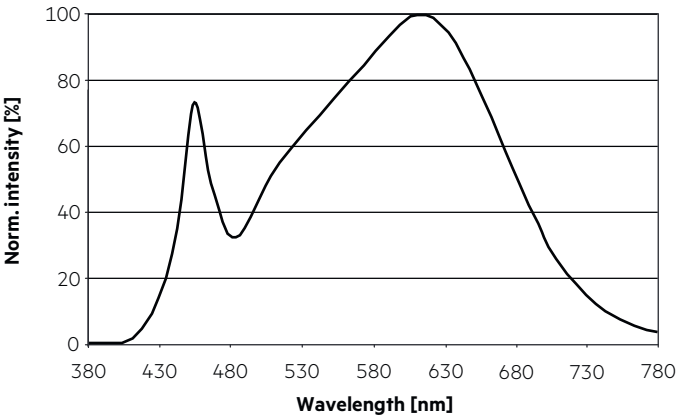


3,500 K – CRI90 – SLE 09/15mm

	x0	y0
Centre	0.4073	0.3917

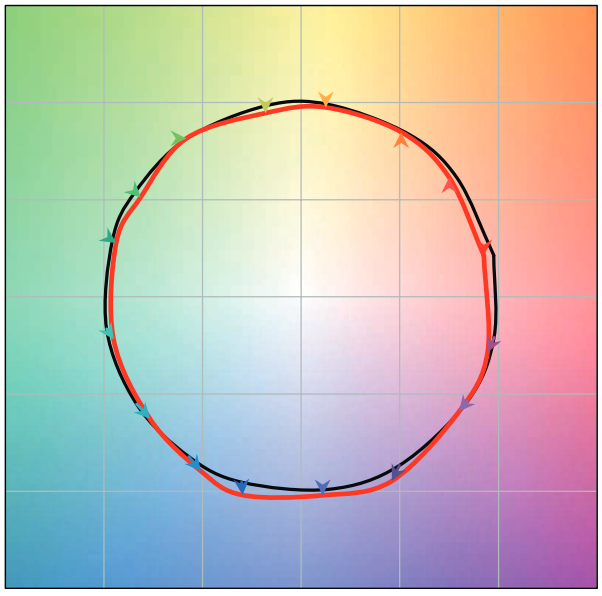


MacAdam ellipse: 3SDCM



TM30		CRI	
Rf	Rg	Ra	R9
89	98	93	63

Colour vector graphic



Reference source
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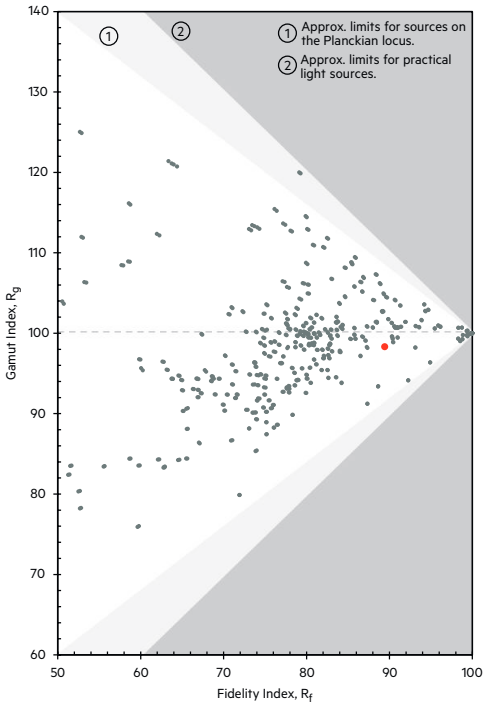
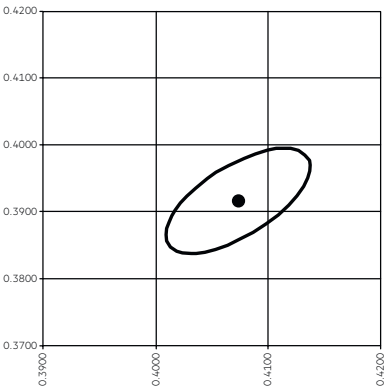
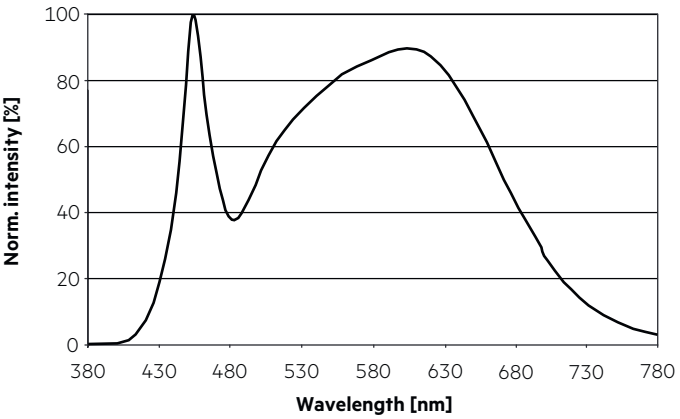


4,000 K – CRI90 – SLE 09/15mm

	x0	y0
Centre	0.3818	0.3797

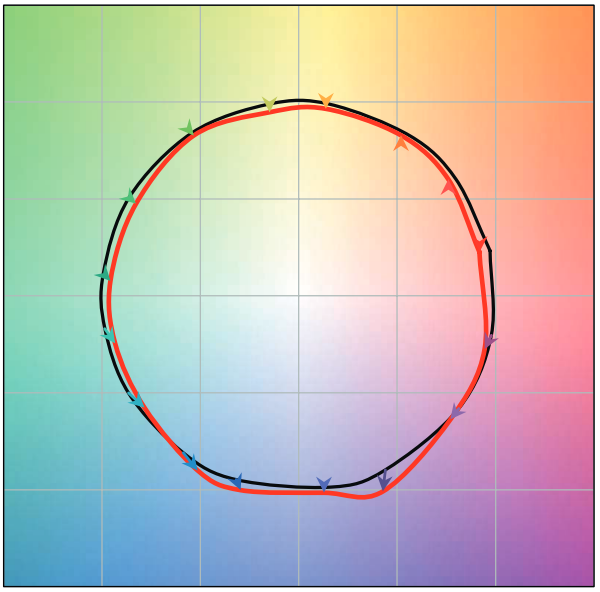


MacAdam ellipse: 3SDCM

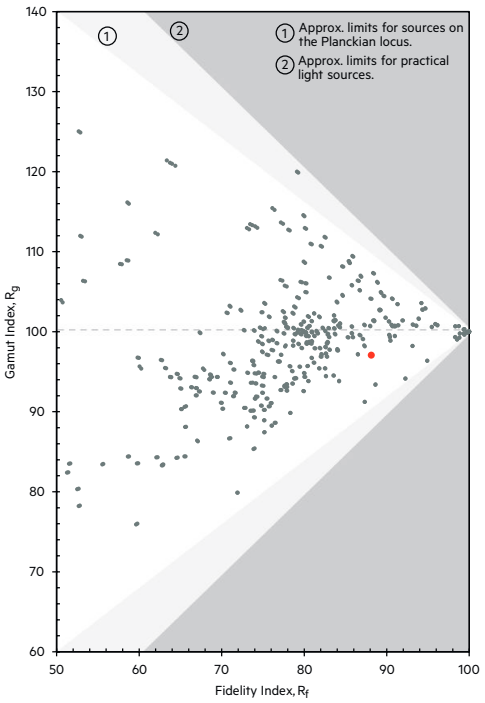


TM30		CRI	
Rf	Rg	Ra	R9
88	97	92	60

Colour vector graphic

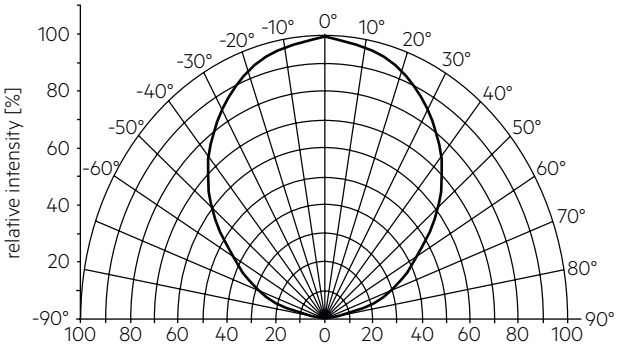


Reference source
Test source

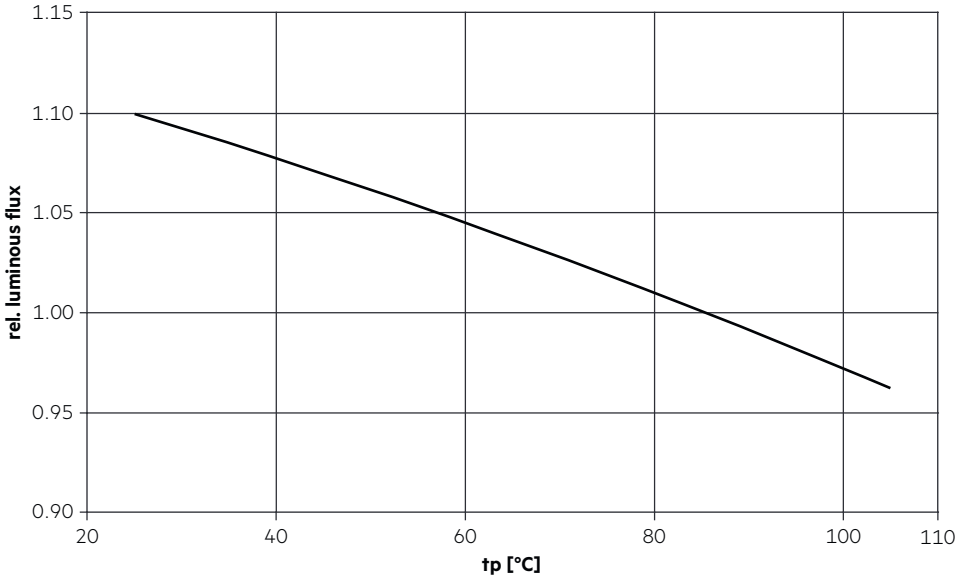


6.2 Light distribution

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

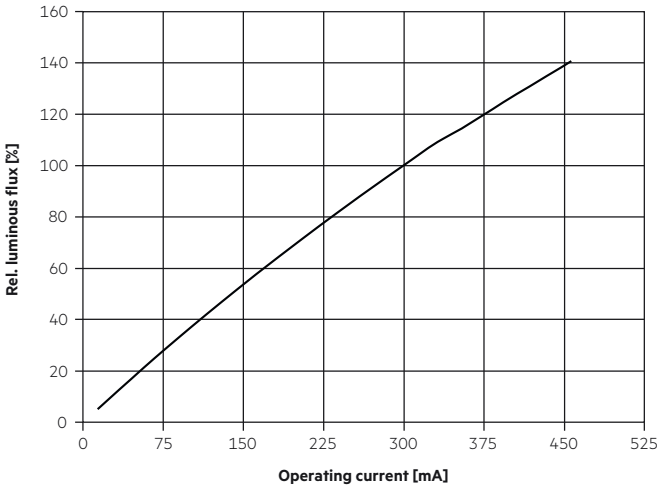


6.3 Relative luminous flux vs. tp temperature

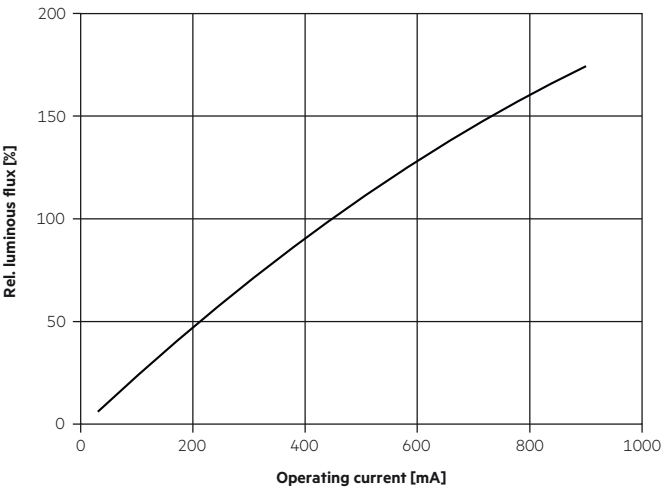


6.4 Relative luminous flux vs. operating current

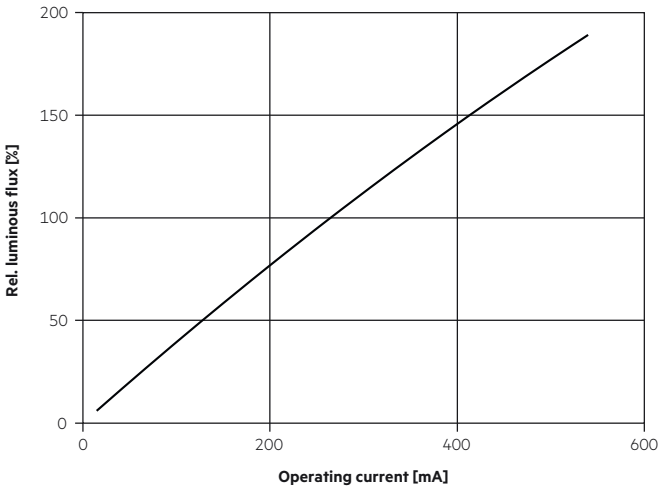
SLE 06mm 1000lm



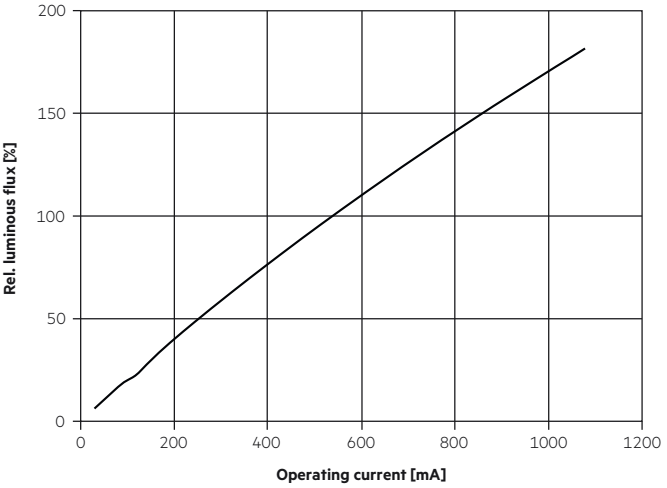
SLE 15mm 2000lm



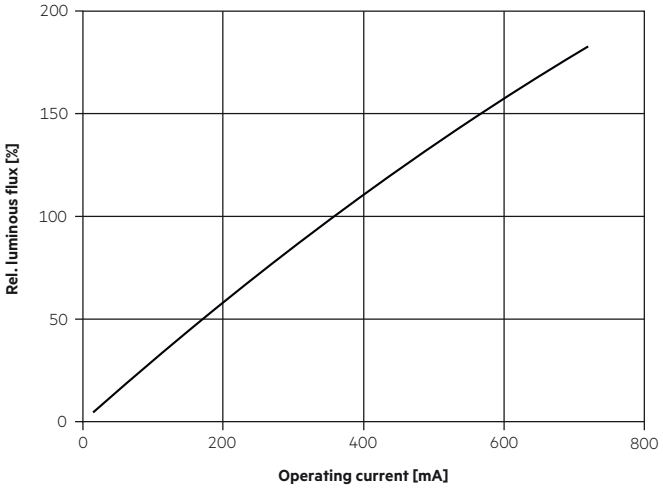
SLE 09mm 1500lm



SLE 15mm 3000lm



SLE 09mm 2000lm



7. Miscellaneous

7.1 Additional information

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

Guarantee conditions at www.tridonic.com → Services

Lifetime declarations are informative and represent no warranty claim.

Colour rendering information are typical values and represent no warranty claim.