

**Module CLE ADV5**

Modules CLE advanced



CLE 50mm 1000lm ADV5



CLE 80mm 2000lm ADV5



CLE 120mm 2500lm ADV5

**Product description**

- \_ Ideal for ceiling-mounted and wallmounted luminaires
- \_ SO version is compatible with SWITCH Sensor HF 5BP
- \_ Integrated separate emergency LEDs with CLE 190/220/315/370mm controlled by EM powerLED
- \_ Push terminals for quick and simple wiring
- \_ HE ... High Efficiency, NM ... Nominal Mode, HO ... High Output
- \_ UL 8750 certification for CLE 120mm 2500lm ADV5 articles
- \_ Min. order quantity for CLE 50mm is 10 pcs. and for CLE 80 and 120mm 20 pcs.
- \_ Long lifetime up to 72,000 hours
- \_ 5 years guarantee (conditions at <https://www.tridonic.com/manufacture-guarantee-conditions>)

**Optical properties**

- \_ Colour temperatures 2,700, 3,000 and 4,000 K
- \_ Useful luminous flux up to 4,531 lm at Irated and tp = 25 °C
- \_ Efficacy of the LED module 199 lm/W at Irated and tp = 25 °C
- \_ High colour rendering index CRI > 80 and CRI > 90
- \_ Small colour tolerance (MacAdam 3) <sup>①</sup>
- \_ Small luminous flux tolerances

**Mechanical properties**

- \_ Module dimension ø50, ø80, ø120, ø160, ø190, ø220, ø315 and ø370 mm
- \_ Simple installation (e.g. screws)

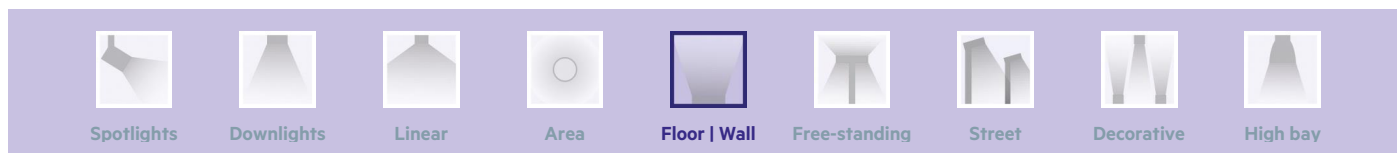
**System solution**

- \_ LED system solution consisting of the LED module, the LED driver with integrated emergency function and SWITCH sensor

<sup>①</sup> Integral measurement over the complete module.

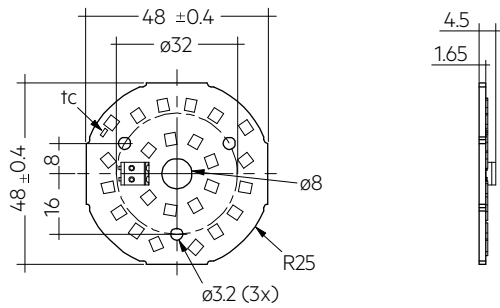
**Website**

<http://www.tridonic.com/28004155>

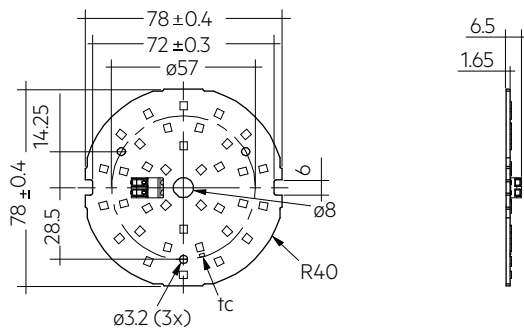


**Module CLE ADV5**

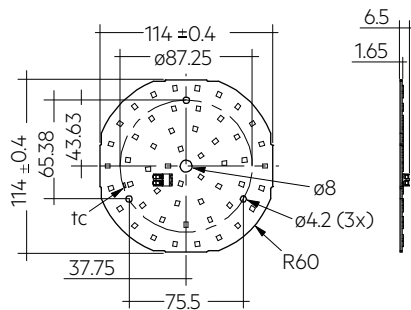
Modules CLE advanced



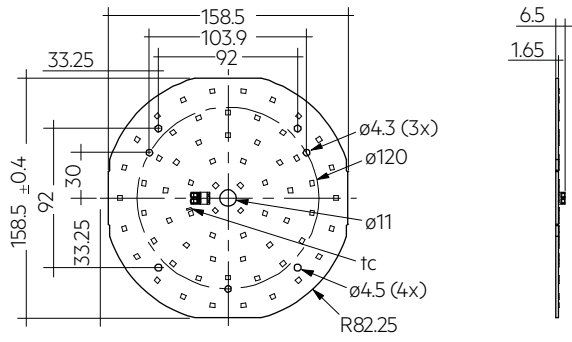
CLE 50mm 1000lm ADV5



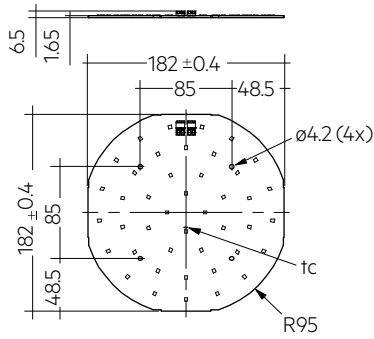
CLE 80mm 2000lm ADV5



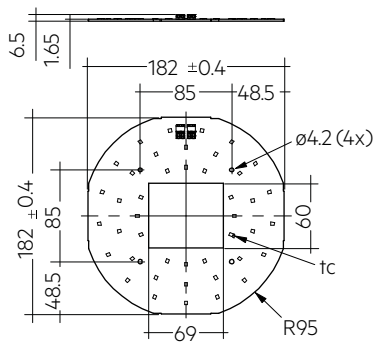
CLE 120mm 2500lm ADV5



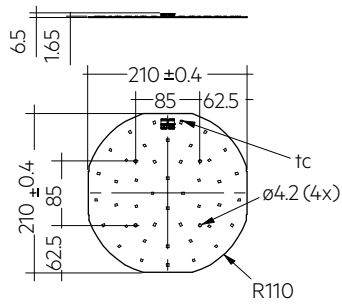
CLE 160mm 3000lm ADV5



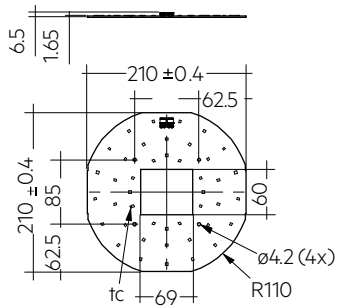
CLE 190mm 2500lm ADV5 EM



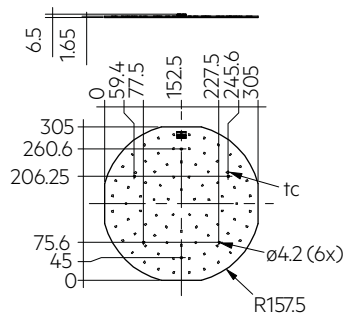
CLE 190mm 2500lm ADV5 EM SO



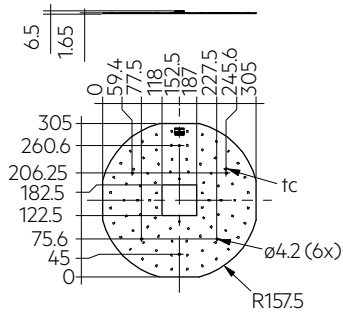
CLE 220mm 2500lm ADV5 EM



CLE 220mm 2500lm ADV5 EM SO



CLE 315mm 4000lm ADV5 EM



CLE 315mm 4000lm ADV5 EM SO

## Ordering data

Type	Article number	Article status	Colour temperature	Colour rendering index CRI	Packaging, carton	Weight per pc.
<b>CLE 50mm 1000lm</b>						
CLE 50mm 1000lm 827 ADV5	28004155	On demand	2,700 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 830 ADV5	28004157	Standard	3,000 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 840 ADV5	28004159	Standard	4,000 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 927 ADV5	28004156	On demand	2,700 K	>90	180 pc(s).	0.006 kg
CLE 50mm 1000lm 930 ADV5	28004158	On demand	3,000 K	>90	180 pc(s).	0.006 kg
CLE 50mm 1000lm 940 ADV5	28004160	On demand	4,000 K	>90	180 pc(s).	0.006 kg
<b>CLE 80mm 2000lm</b>						
CLE 80mm 2000lm 827 ADV5	28004161	On demand	2,700 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 830 ADV5	28004163	Standard	3,000 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 840 ADV5	28004165	Standard	4,000 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 927 ADV5	28004162	On demand	2,700 K	>90	30 pc(s).	0.015 kg
CLE 80mm 2000lm 930 ADV5	28004164	On demand	3,000 K	>90	30 pc(s).	0.015 kg
CLE 80mm 2000lm 940 ADV5	28004166	On demand	4,000 K	>90	30 pc(s).	0.015 kg
<b>CLE 120mm 2500lm</b>						
CLE 120mm 2500lm 827 ADV5	28004167	On demand	2,700 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 830 ADV5	28004169	Standard	3,000 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 840 ADV5	28004171	Standard	4,000 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 927 ADV5	28004168	On demand	2,700 K	>90	360 pc(s).	0.031 kg
CLE 120mm 2500lm 930 ADV5	28004170	On demand	3,000 K	>90	360 pc(s).	0.031 kg
CLE 120mm 2500lm 940 ADV5	28004172	On demand	4,000 K	>90	360 pc(s).	0.031 kg
<b>CLE 160mm 3000lm</b>						
CLE 160mm 3000lm 827 ADV5	28004173	On demand	2,700 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 830 ADV5	28004175	Standard	3,000 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 840 ADV5	28004177	Standard	4,000 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 927 ADV5	28004174	On demand	2,700 K	>90	20 pc(s).	0.057 kg
CLE 160mm 3000lm 930 ADV5	28004176	On demand	3,000 K	>90	20 pc(s).	0.057 kg
CLE 160mm 3000lm 940 ADV5	28004178	On demand	4,000 K	>90	20 pc(s).	0.057 kg
<b>CLE 190mm 2500lm</b>						
CLE 190mm 2500lm 827 ADV5 EM	28004179	On demand	2,700 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	On demand	2,700 K	>80	20 pc(s).	0.065 kg
CLE 190mm 2500lm 830 ADV5 EM	28004181	Standard	3,000 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	Standard	3,000 K	>80	20 pc(s).	0.065 kg
CLE 190mm 2500lm 840 ADV5 EM	28004183	Standard	4,000 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	Standard	4,000 K	>80	20 pc(s).	0.065 kg
<b>CLE 220mm 2500lm</b>						
CLE 220mm 2500lm 827 ADV5 EM	28004185	On demand	2,700 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	On demand	2,700 K	>80	20 pc(s).	0.091 kg
CLE 220mm 2500lm 830 ADV5 EM	28004187	Standard	3,000 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	Standard	3,000 K	>80	20 pc(s).	0.091 kg
CLE 220mm 2500lm 840 ADV5 EM	28004189	Standard	4,000 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	Standard	4,000 K	>80	20 pc(s).	0.091 kg
<b>CLE 315mm 4000lm</b>						
CLE 315mm 4000lm 827 ADV5 EM	28004191	On demand	2,700 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	On demand	2,700 K	>80	10 pc(s).	0.199 kg
CLE 315mm 4000lm 830 ADV5 EM	28004193	Standard	3,000 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	Standard	3,000 K	>80	10 pc(s).	0.199 kg
CLE 315mm 4000lm 840 ADV5 EM	28004195	Standard	4,000 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	Standard	4,000 K	>80	10 pc(s).	0.199 kg
<b>CLE 370mm 4500lm</b>						
CLE 370mm 4500lm 827 ADV5 EM	28004197	On demand	2,700 K	>80	10 pc(s).	0.271 kg
CLE 370mm 4500lm 830 ADV5 EM	28004198	Standard	3,000 K	>80	10 pc(s).	0.271 kg
CLE 370mm 4500lm 840 ADV5 EM	28004199	Standard	4,000 K	>80	10 pc(s).	0.271 kg

**Technical data**

Beam characteristic	120°
Ambient temperature $t_a$	-25 ... +45 °C
$t_p$ rated	65 °C
$t_c$	85 °C
Irated for CLE 50mm	180 mA
Irated for CLE 80mm	350 mA
Irated for CLE 120mm	350 mA
Irated for CLE 160mm	500 mA
Irated for CLE 190/220mm	350 mA
Irated for CLE 315/370mm	600 mA
I <sub>max</sub> for CLE 50mm	300 mA
I <sub>max</sub> for CLE 80mm	650 mA
I <sub>max</sub> for CLE 120mm	645 mA
I <sub>max</sub> for CLE 160mm	850 mA
I <sub>max</sub> for CLE 190/220mm	700 mA
I <sub>max</sub> for CLE 315/370mm	1200 mA
Max. permissible LF current ripple for CLE 50mm	330 mA
Max. permissible LF current ripple for CLE 80mm	715 mA
Max. permissible LF current ripple for CLE 120mm	710 mA
Max. permissible LF current ripple for CLE 160mm	935 mA
Max. permissible LF current ripple for CLE 190/220mm	770 mA
Max. permissible LF current ripple for CLE 315/370mm	1,320 mA
Max. permissible peak current for CLE 50mm	900 mA / max. 10 ms
Max. permissible peak current for CLE 80mm	1,350 mA / max. 10 ms
Max. permissible peak current for CLE 120mm	1,800 mA / max. 10 ms
Max. permissible peak current for CLE 160mm	2,250 mA / max. 10 ms
Max. permissible peak current for CLE 190/220mm	1,350 mA / max. 10 ms
Max. permissible peak current for CLE 315mm	2,700 mA / max. 10 ms
Max. permissible peak current for CLE 370mm	4,500 mA / max. 10 ms
Max. working voltage for insulation <sup>®</sup>	200 V
Insulation test voltage	1.4 kV
Colour tolerance	3 SDCM
ESD classification	Severity level 2
Risk group (IEC 62471)	RG1
Type of protection	IP00
Lumen maintenance L70B50	72,000 h
Guarantee (conditions at <a href="http://www.tridonic.com">www.tridonic.com</a> )	5 Year(s)

**Approval marks****Standards**

IEC 62031, IEC 62471, IEC 62778, IEC 61547

## Specific technical data

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C	Expected luminous flux at tp rated	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption Pon at tp = 25 °C	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
<b>CLE 50mm – Operating mode NM at 180 mA</b>											
CLE 50mm 1000lm 827 ADV5	28004155	827/359	1,074 lm	1,000 lm	180 mA	30.8 V	34.3 V	5.9 W	181 lm/W	171 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28004157	830/359	1,083 lm	1,010 lm	180 mA	30.8 V	34.3 V	5.9 W	182 lm/W	172 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28004159	840/359	1,164 lm	1,080 lm	180 mA	30.8 V	34.3 V	5.9 W	196 lm/W	184 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28004156	927/359	865 lm	800 lm	180 mA	30.8 V	34.3 V	5.9 W	146 lm/W	137 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28004158	930/359	913 lm	850 lm	180 mA	30.8 V	34.3 V	5.9 W	154 lm/W	145 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28004160	940/359	946 lm	880 lm	180 mA	30.8 V	34.3 V	5.9 W	159 lm/W	150 lm/W	>90
<b>CLE 50mm – Operating mode HO at 200 mA</b>											
CLE 50mm 1000lm 827 ADV5	28004155	827/359	-	1,100 lm	200 mA	30.9 V	34.5 V	-	-	168 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28004157	830/359	-	1,110 lm	200 mA	30.9 V	34.5 V	-	-	170 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28004159	840/359	-	1,200 lm	200 mA	30.9 V	34.5 V	-	-	184 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28004156	927/359	-	890 lm	200 mA	30.9 V	34.5 V	-	-	136 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28004158	930/359	-	940 lm	200 mA	30.9 V	34.5 V	-	-	144 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28004160	940/359	-	940 lm	200 mA	30.9 V	34.5 V	-	-	148 lm/W	>90
<b>CLE 50mm – Operating mode HO at 250 mA</b>											
CLE 50mm 1000lm 827 ADV5	28004155	827/359	-	1,360 lm	250 mA	31.3 V	34.9 V	-	-	164 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28004157	830/359	-	1,380 lm	250 mA	31.3 V	34.9 V	-	-	167 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28004159	840/359	-	1,480 lm	250 mA	31.3 V	34.9 V	-	-	179 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28004156	927/359	-	1,100 lm	250 mA	31.3 V	34.9 V	-	-	133 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28004158	930/359	-	1,160 lm	250 mA	31.3 V	34.9 V	-	-	140 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28004160	940/359	-	1,200 lm	250 mA	31.3 V	34.9 V	-	-	145 lm/W	>90
<b>CLE 80mm – Operating mode HE at 200 mA</b>											
CLE 80mm 2000lm 827 ADV5	28004161	827/359	-	1,120 lm	200 mA	30.4 V	34.0 V	-	-	174 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28004163	830/359	-	1,150 lm	200 mA	30.4 V	34.0 V	-	-	179 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28004165	840/359	-	1,210 lm	200 mA	30.4 V	34.0 V	-	-	188 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28004162	927/359	-	1,120 lm	250 mA	30.7 V	34.2 V	-	-	140 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28004164	930/359	-	950 lm	200 mA	30.4 V	34.0 V	-	-	148 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28004166	940/359	-	980 lm	200 mA	30.4 V	34.0 V	-	-	152 lm/W	>90
<b>CLE 80mm – Operating mode HE at 250 mA</b>											
CLE 80mm 2000lm 827 ADV5	28004161	827/359	-	1,390 lm	250 mA	30.7 V	34.2 V	-	-	171 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28004163	830/359	-	1,430 lm	250 mA	30.7 V	34.2 V	-	-	176 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28004165	840/359	-	1,500 lm	250 mA	30.7 V	34.2 V	-	-	185 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28004162	927/359	-	1,120 lm	250 mA	30.7 V	34.2 V	-	-	138 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28004164	930/359	-	1,180 lm	250 mA	30.7 V	34.2 V	-	-	146 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28004166	940/359	-	1,220 lm	250 mA	30.7 V	34.2 V	-	-	150 lm/W	>90
<b>CLE 80mm – Operating mode NM at 350 mA</b>											
CLE 80mm 2000lm 827 ADV5	28004161	827/359	2,064 lm	1,920 lm	350 mA	31.2 V	34.8 V	11.7 W	176 lm/W	167 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28004163	830/359	2,125 lm	1,980 lm	350 mA	31.2 V	34.8 V	11.7 W	182 lm/W	172 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28004165	840/359	2,231 lm	2,080 lm	350 mA	31.2 V	34.8 V	11.7 W	191 lm/W	180 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28004162	927/359	1,663 lm	1,550 lm	350 mA	31.2 V	34.8 V	11.7 W	142 lm/W	134 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28004164	930/359	1,756 lm	1,630 lm	350 mA	31.2 V	34.8 V	11.7 W	150 lm/W	141 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28004166	940/359	1,817 lm	1,690 lm	350 mA	31.2 V	34.8 V	11.7 W	155 lm/W	147 lm/W	>90
<b>CLE 120mm – Operating mode HE at 250 mA</b>											
CLE 120mm 2500lm 827 ADV5	28004167	827/359	-	1,520 lm	250 mA	32.9 V	36.7 V	-	-	175 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28004169	830/359	-	1,570 lm	250 mA	32.9 V	36.7 V	-	-	181 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28004171	840/359	-	1,640 lm	250 mA	32.9 V	36.7 V	-	-	189 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28004168	927/359	-	1,230 lm	250 mA	32.9 V	36.7 V	-	-	149 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28004170	930/359	-	1,290 lm	250 mA	32.9 V	36.7 V	-	-	158 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28004172	940/359	-	1,340 lm	250 mA	32.9 V	36.7 V	-	-	163 lm/W	>90
<b>CLE 120mm – Operating mode NM at 350 mA</b>											
CLE 120mm 2500lm 827 ADV5	28004167	827/359	2,265 lm	2,110 lm	350 mA	33.3 V	37.1 V	12.5 W	181 lm/W	171 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28004169	830/359	2,333 lm	2,170 lm	350 mA	33.3 V	37.1 V	12.5 W	187 lm/W	176 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28004171	840/359	2,448 lm	2,280 lm	350 mA	33.3 V	37.1 V	12.5 W	196 lm/W	185 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28004168	927/359	1,820 lm	1,690 lm	350 mA	33.3 V	37.1 V	12.5 W	146 lm/W	137 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28004170	930/359	1,927 lm	1,790 lm	350 mA	33.3 V	37.1 V	12.5 W	154 lm/W	145 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28004172	940/359	1,994 lm	1,860 lm	350 mA	33.3 V	37.1 V	12.5 W	159 lm/W	151 lm/W	>90
<b>CLE 120mm – Operating mode HO at 500 mA</b>											
CLE 120mm 2500lm 827 ADV5	28004167	827/359	-	2,960 lm	500 mA	33.9 V	37.8 V	-	-	165 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28004169	830/359	-	3,050 lm	500 mA	33.9 V	37.8 V	-	-	170 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28004171	840/359	-	3,200 lm	500 mA	33.9 V	37.8 V	-	-	179 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28004168	927/359	-	2,390 lm	500 mA	33.9 V	37.8 V	-	-	141 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28004170	930/359	-	2,520 lm	500 mA	33.9 V	37.8 V	-	-	149 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28004172	940/359	-	2,610 lm	500 mA	33.9 V	37.8 V	-	-	154 lm/W	>90
<b>CLE 160mm – Operating mode HE at 350 mA</b>											
CLE 160mm 3000lm 827 ADV5	28004173	827/359	-	2,120 lm	350 mA	33.3 V	36.5 V	-	-	174 lm/W	>80
CLE 160mm 3000lm 830 ADV5	28004175	830/359	-	2,190 lm	350 mA	33.3 V	36.5 V	-	-	179 lm/W	>80
CLE 160mm 3000lm 840 ADV5	28004177	840/359	-	2,300 lm	350 mA	33.3 V	36.5 V	-	-	188 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28004174	927/359	-	1,710 lm	350 mA	33.3 V	36.5 V	-	-	140 lm/W	>90

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C	Expected luminous flux at tp rated	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption P <sub>on</sub> at tp = 25 °C	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
CLE 160mm 3000lm 930 ADV5	28004176	930/359	-	1,800 lm	350 mA	33.3 V	36.5 V	-	-	147 lm/W	>90
CLE 160mm 3000lm 940 ADV5	28004178	940/359	-	1,870 lm	350 mA	33.3 V	36.5 V	-	-	153 lm/W	>90
<b>CLE 160mm – Operating mode NM at 500 mA</b>											
CLE 160mm 3000lm 827 ADV5	28004173	827/359	3,218 lm	3,000 lm	500 mA	33.9 V	37.0 V	18.0 W	179 lm/W	170 lm/W	>80
CLE 160mm 3000lm 830 ADV5	28004175	830/359	3,314 lm	3,090 lm	500 mA	33.9 V	37.0 V	18.0 W	184 lm/W	175 lm/W	>80
CLE 160mm 3000lm 840 ADV5	28004177	840/359	3,487 lm	3,250 lm	500 mA	33.9 V	37.0 V	18.0 W	194 lm/W	184 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28004174	927/359	2,594 lm	2,420 lm	500 mA	33.9 V	37.0 V	18.0 W	144 lm/W	137 lm/W	>90
CLE 160mm 3000lm 930 ADV5	28004176	930/359	2,738 lm	2,550 lm	500 mA	33.9 V	37.0 V	18.0 W	152 lm/W	144 lm/W	>90
CLE 160mm 3000lm 940 ADV5	28004178	940/359	2,834 lm	2,640 lm	500 mA	33.9 V	37.0 V	18.0 W	158 lm/W	149 lm/W	>90
<b>CLE 160mm – Operating mode HO at 600 mA</b>											
CLE 160mm 3000lm 827 ADV5	28004173	827/359	-	3,560 lm	600 mA	34.2 V	37.3 V	-	-	166 lm/W	>80
CLE 160mm 3000lm 830 ADV5	28004175	830/359	-	3,670 lm	600 mA	34.2 V	37.3 V	-	-	171 lm/W	>80
CLE 160mm 3000lm 840 ADV5	28004177	840/359	-	3,860 lm	600 mA	34.2 V	37.3 V	-	-	180 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28004174	927/359	-	2,870 lm	600 mA	34.2 V	37.3 V	-	-	134 lm/W	>90
CLE 160mm 3000lm 930 ADV5	28004176	930/359	-	3,030 lm	600 mA	34.2 V	37.3 V	-	-	141 lm/W	>90
CLE 160mm 3000lm 940 ADV5	28004178	940/359	-	3,140 lm	600 mA	34.2 V	37.3 V	-	-	147 lm/W	>90
<b>CLE 190/220mm – Operating mode HE at 250 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28004179	827/359	-	1,510 lm	250 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	827/359	-	1,510 lm	250 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28004181	830/359	-	1,550 lm	250 mA	33.6 V	36.7 V	-	-	176 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	830/359	-	1,550 lm	250 mA	33.6 V	36.7 V	-	-	176 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28004183	840/359	-	1,630 lm	250 mA	33.6 V	36.7 V	-	-	185 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	840/359	-	1,630 lm	250 mA	33.6 V	36.7 V	-	-	185 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28004185	827/359	-	1,510 lm	250 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	827/359	-	1,510 lm	250 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28004187	830/359	-	1,550 lm	250 mA	33.6 V	36.7 V	-	-	176 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	830/359	-	1,550 lm	250 mA	33.6 V	36.7 V	-	-	176 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28004189	840/359	-	1,630 lm	250 mA	33.6 V	36.7 V	-	-	185 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	840/359	-	1,630 lm	250 mA	33.6 V	36.7 V	-	-	185 lm/W	>80
<b>CLE 190/220mm – Operating mode NM at 350 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28004179	827/359	2,236 lm	2,080 lm	350 mA	34.2 V	37.3 V	12.7 W	176 lm/W	167 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	827/359	2,236 lm	2,080 lm	350 mA	34.2 V	37.3 V	12.7 W	176 lm/W	167 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28004181	830/359	2,302 lm	2,140 lm	350 mA	34.2 V	37.3 V	12.7 W	182 lm/W	171 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	830/359	2,302 lm	2,140 lm	350 mA	34.2 V	37.3 V	12.7 W	182 lm/W	171 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28004183	840/359	2,423 lm	2,260 lm	350 mA	34.2 V	37.3 V	12.7 W	191 lm/W	181 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	840/359	2,423 lm	2,260 lm	350 mA	34.2 V	37.3 V	12.7 W	191 lm/W	181 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28004185	827/359	2,236 lm	2,080 lm	350 mA	34.2 V	37.3 V	12.7 W	176 lm/W	167 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	827/359	2,236 lm	2,080 lm	350 mA	34.2 V	37.3 V	12.7 W	176 lm/W	167 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28004187	830/359	2,302 lm	2,140 lm	350 mA	34.2 V	37.3 V	12.7 W	182 lm/W	171 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	830/359	2,302 lm	2,140 lm	350 mA	34.2 V	37.3 V	12.7 W	182 lm/W	171 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28004189	840/359	2,423 lm	2,260 lm	350 mA	34.2 V	37.3 V	12.7 W	191 lm/W	181 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	840/359	2,423 lm	2,260 lm	350 mA	34.2 V	37.3 V	12.7 W	191 lm/W	181 lm/W	>80
<b>CLE 190/220mm – Operating mode HO at 500 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28004179	827/359	-	2,900 lm	500 mA	34.9 V	38.1 V	-	-	159 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	827/359	-	2,900 lm	500 mA	34.9 V	38.1 V	-	-	159 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28004181	830/359	-	2,980 lm	500 mA	34.9 V	38.1 V	-	-	163 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	830/359	-	2,980 lm	500 mA	34.9 V	38.1 V	-	-	163 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28004183	840/359	-	3,140 lm	500 mA	34.9 V	38.1 V	-	-	172 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	840/359	-	3,140 lm	500 mA	34.9 V	38.1 V	-	-	172 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28004185	827/359	-	2,900 lm	500 mA	34.9 V	38.1 V	-	-	159 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	827/359	-	2,900 lm	500 mA	34.9 V	38.1 V	-	-	159 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28004187	830/359	-	2,980 lm	500 mA	34.9 V	38.1 V	-	-	163 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	830/359	-	2,980 lm	500 mA	34.9 V	38.1 V	-	-	163 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28004189	840/359	-	3,140 lm	500 mA	34.9 V	38.1 V	-	-	172 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	840/359	-	3,140 lm	500 mA	34.9 V	38.1 V	-	-	172 lm/W	>80
<b>CLE 190/220mm – Emergency operation at 350 mA (EM powerLED 1 W)</b>											
CLE 190mm 2500lm 827 ADV5 EM	28004179	827/359	-	163 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	827/359	-	163 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM	28004181	830/359	-	168 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	830/359	-	168 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM	28004183	840/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	840/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM	28004185	827/359	-	163 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	827/359	-	163 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM	28004187	830/359	-	168 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	830/359	-	168 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM	28004189	840/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	840/359	-	176 lm	350 mA	-	-	-	-	-	>80
<b>CLE 190/220mm – Emergency operation at 600 mA (EM powerLED 2 W)</b>											

Type	Article number	Photometric code	Useful luminous flux at tp = 25 °C	Expected luminous flux at tp rated	Typ. forward current	Min. forward voltage at tp rated	Max. forward voltage at tp = 25 °C	Power consumption P <sub>on</sub> at tp = 25 °C	Efficacy of the module at tp = 25 °C	Expected efficacy of the module at tp rated	Colour rendering index CRI
CLE 190mm 2500lm 827 ADV5 EM	28004179	827/359	-	271 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28004180	827/359	-	271 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM	28004181	830/359	-	280 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28004182	830/359	-	280 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM	28004183	840/359	-	294 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28004184	840/359	-	294 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM	28004185	827/359	-	271 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28004186	827/359	-	271 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM	28004187	830/359	-	280 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28004188	830/359	-	280 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM	28004189	840/359	-	294 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28004190	840/359	-	294 lm	600 mA	-	-	-	-	-	>80
<b>CLE 315mm – Operating mode HE at 500 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28004191	827/359	-	3,020 lm	500 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	827/359	-	3,020 lm	500 mA	33.6 V	36.7 V	-	-	172 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28004193	830/359	-	3,060 lm	500 mA	33.6 V	36.7 V	-	-	174 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	830/359	-	3,060 lm	500 mA	33.6 V	36.7 V	-	-	174 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28004195	840/359	-	3,220 lm	500 mA	33.6 V	36.7 V	-	-	183 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	840/359	-	3,220 lm	500 mA	33.6 V	36.7 V	-	-	183 lm/W	>80
<b>CLE 315mm – Operating mode NM at 600 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28004191	827/359	3,862 lm	3,600 lm	600 mA	33.9 V	37.0 V	21.6 W	179 lm/W	170 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	827/359	3,862 lm	3,600 lm	600 mA	33.9 V	37.0 V	21.6 W	179 lm/W	170 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28004193	830/359	3,917 lm	3,650 lm	600 mA	33.9 V	37.0 V	21.6 W	182 lm/W	172 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	830/359	3,917 lm	3,650 lm	600 mA	33.9 V	37.0 V	21.6 W	182 lm/W	172 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28004195	840/359	4,113 lm	3,830 lm	600 mA	33.9 V	37.0 V	21.6 W	191 lm/W	180 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	840/359	4,113 lm	3,830 lm	600 mA	33.9 V	37.0 V	21.6 W	191 lm/W	180 lm/W	>80
<b>CLE 315mm – Operating mode HO at 700 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28004191	827/359	-	4,170 lm	700 mA	34.2 V	37.3 V	-	-	167 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	827/359	-	4,170 lm	700 mA	34.2 V	37.3 V	-	-	167 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28004193	830/359	-	4,230 lm	700 mA	34.2 V	37.3 V	-	-	169 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	830/359	-	4,230 lm	700 mA	34.2 V	37.3 V	-	-	169 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28004195	840/359	-	4,440 lm	700 mA	34.2 V	37.3 V	-	-	178 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	840/359	-	4,440 lm	700 mA	34.2 V	37.3 V	-	-	178 lm/W	>80
<b>CLE 315mm – Emergency operation at 600 mA (EM powerLED 2 W)</b>											
CLE 315mm 4000lm 827 ADV5 EM	28004191	827/359	-	277 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	827/359	-	277 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM	28004193	830/359	-	287 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	830/359	-	287 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM	28004195	840/359	-	301 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	840/359	-	301 lm	600 mA	-	-	-	-	-	>80
<b>CLE 315mm – Emergency operation at 1,000 mA (EM powerLED 4 W)</b>											
CLE 315mm 4000lm 827 ADV5 EM	28004191	827/359	-	446 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28004192	827/359	-	446 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM	28004193	830/359	-	460 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28004194	830/359	-	460 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM	28004195	840/359	-	484 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28004196	840/359	-	484 lm	1,000 mA	-	-	-	-	-	>80
<b>CLE 370mm – Operating mode HE at 500 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28004197	827/359	-	3,310 lm	500 mA	35.1 V	39.2 V	-	-	178 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28004198	830/359	-	3,420 lm	500 mA	35.1 V	39.2 V	-	-	184 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28004199	840/359	-	3,530 lm	500 mA	35.1 V	39.2 V	-	-	190 lm/W	>80
<b>CLE 370mm – Operating mode NM at 600 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28004197	827/359	4,236 lm	3,950 lm	600 mA	35.4 V	39.5 V	22.8 W	186 lm/W	176 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28004198	830/359	4,363 lm	4,070 lm	600 mA	35.4 V	39.5 V	22.8 W	192 lm/W	181 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28004199	840/359	4,531 lm	4,220 lm	600 mA	35.4 V	39.5 V	22.8 W	199 lm/W	188 lm/W	>80
<b>CLE 370mm – Operating mode HO at 700 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28004197	827/359	-	4,580 lm	700 mA	35.5 V	39.6 V	-	-	174 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28004198	830/359	-	4,710 lm	700 mA	35.5 V	39.6 V	-	-	174 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28004199	840/359	-	4,910 lm	700 mA	35.5 V	39.6 V	-	-	187 lm/W	>80
<b>CLE 370mm – Emergency operation at 600 mA (EM powerLED 2 W)</b>											
CLE 370mm 4500lm 827 ADV5 EM	28004197	827/359	-	277 lm	600 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 830 ADV5 EM	28004198	830/359	-	286 lm	600 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 840 ADV5 EM	28004199	840/359	-	301 lm	600 mA	-	-	-	-	-	>80
<b>CLE 370mm – Emergency operation at 1,000 mA (EM powerLED 4 W)</b>											
CLE 370mm 4500lm 827 ADV5 EM	28004197	827/359	-	446 lm	1,000 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 830 ADV5 EM	28004198	830/359	-	460 lm	1,000 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 840 ADV5 EM	28004199	840/359	-	484 lm	1,000 mA	-	-	-	-	-	>80

② If mounted with recommended screws see chapter 3.1 Electrical supply / choice of LED driver in data sheet.

③ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.

- ④ Tolerance of expected light flux - 0 % / + 15 %. Measurement uncertainty  $\pm$  10 %. Based on calculation.
- ⑤ Tolerance of power consumption  $P_{on}$   $\pm$  10 %. Measurement uncertainty  $\pm$  5 %.

## 1. Standards

IEC 62031  
 IEC 62471  
 IEC 62778  
 IEC 61547  
 UL 8750 (for dry and damp locations) for CLE 120mm 2500lm ADV5

### 1.1 Photometric code

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

1 <sup>st</sup> digit	2 <sup>nd</sup> + 3 <sup>rd</sup> digit	4 <sup>th</sup> digit	5 <sup>th</sup> digit	6 <sup>th</sup> 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 %		

### 1.2 Energy classification

Type	Colour temperature	Forward current	Energy classification	Energy consumption
<b>CLE 50mm 1000lm</b>				
CLE 50mm 1000lm 827 ADV5	2,700 K	180 mA	C	6 kWh / 1,000 h
CLE 50mm 1000lm 830 ADV5	3,000 K	180 mA	C	6 kWh / 1,000 h
CLE 50mm 1000lm 840 ADV5	4,000 K	180 mA	C	6 kWh / 1,000 h
CLE 50mm 1000lm 927 ADV5	2,700 K	180 mA	E	6 kWh / 1,000 h
CLE 50mm 1000lm 930 ADV5	3,000 K	180 mA	D	6 kWh / 1,000 h
CLE 50mm 1000lm 940 ADV5	4,000 K	180 mA	D	6 kWh / 1,000 h
<b>CLE 80mm 2000lm</b>				
CLE 80mm 2000lm 827 ADV5	2,700 K	350 mA	C	12 kWh / 1,000 h
CLE 80mm 2000lm 830 ADV5	3,000 K	350 mA	C	12 kWh / 1,000 h
CLE 80mm 2000lm 840 ADV5	4,000 K	350 mA	C	12 kWh / 1,000 h
CLE 80mm 2000lm 927 ADV5	2,700 K	350 mA	E	12 kWh / 1,000 h
CLE 80mm 2000lm 930 ADV5	3,000 K	350 mA	D	12 kWh / 1,000 h
CLE 80mm 2000lm 940 ADV5	4,000 K	350 mA	D	12 kWh / 1,000 h
<b>CLE 120mm 2500lm</b>				
CLE 120mm 2500lm 827 ADV5	2,700 K	350 mA	C	13 kWh / 1,000 h
CLE 120mm 2500lm 830 ADV5	3,000 K	350 mA	C	13 kWh / 1,000 h
CLE 120mm 2500lm 840 ADV5	4,000 K	350 mA	C	13 kWh / 1,000 h
CLE 120mm 2500lm 927 ADV5	2,700 K	350 mA	E	13 kWh / 1,000 h
CLE 120mm 2500lm 930 ADV5	3,000 K	350 mA	D	13 kWh / 1,000 h
CLE 120mm 2500lm 940 ADV5	4,000 K	350 mA	D	13 kWh / 1,000 h
<b>CLE 160mm 3000lm</b>				
CLE 160mm 3000lm 827 ADV5	2,700 K	500 mA	C	18 kWh / 1,000 h
CLE 160mm 3000lm 830 ADV5	3,000 K	500 mA	C	18 kWh / 1,000 h
CLE 160mm 3000lm 840 ADV5	4,000 K	500 mA	C	18 kWh / 1,000 h
CLE 160mm 3000lm 927 ADV5	2,700 K	500 mA	E	18 kWh / 1,000 h
CLE 160mm 3000lm 930 ADV5	3,000 K	500 mA	D	18 kWh / 1,000 h
CLE 160mm 3000lm 940 ADV5	4,000 K	500 mA	D	18 kWh / 1,000 h

Type	Colour temperature	Forward current	Energy classification	Energy consumption
<b>CLE 190mm 2500lm</b>				
CLE 190mm 2500lm 827 ADV5 EM	2,700 K	350 mA	C	13 kWh / 1,000 h
CLE 190mm 2500lm 827 ADV5 EM SO	2,700 K	350 mA	C	13 kWh / 1,000 h
CLE 190mm 2500lm 830 ADV5 EM	3,000 K	350 mA	C	13 kWh / 1,000 h
CLE 190mm 2500lm 830 ADV5 EM SO	3,000 K	350 mA	C	13 kWh / 1,000 h
CLE 190mm 2500lm 840 ADV5 EM	4,000 K	350 mA	C	13 kWh / 1,000 h
CLE 190mm 2500lm 840 ADV5 EM SO	4,000 K	350 mA	C	13 kWh / 1,000 h
<b>CLE 220mm 2500lm</b>				
CLE 220mm 2500lm 827 ADV5 EM	2,700 K	350 mA	C	13 kWh / 1,000 h
CLE 220mm 2500lm 827 ADV5 EM SO	2,700 K	350 mA	C	13 kWh / 1,000 h
CLE 220mm 2500lm 830 ADV5 EM	3,000 K	350 mA	C	13 kWh / 1,000 h
CLE 220mm 2500lm 830 ADV5 EM SO	3,000 K	350 mA	C	13 kWh / 1,000 h
CLE 220mm 2500lm 840 ADV5 EM	4,000 K	350 mA	C	13 kWh / 1,000 h
CLE 220mm 2500lm 840 ADV5 EM SO	4,000 K	350 mA	C	13 kWh / 1,000 h
<b>CLE 315mm 4000lm</b>				
CLE 315mm 4000lm 827 ADV5 EM	2,700 K	350 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 827 ADV5 EM SO	2,700 K	350 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 830 ADV5 EM	3,000 K	350 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 830 ADV5 EM SO	3,000 K	350 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 840 ADV5 EM	4,000 K	350 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 840 ADV5 EM SO	4,000 K	350 mA	C	22 kWh / 1,000 h
<b>CLE 370mm 4500lm</b>				
CLE 370mm 4500lm 827 ADV5 EM	2,700 K	600 mA	C	23 kWh / 1,000 h
CLE 370mm 4500lm 830 ADV5 EM	3,000 K	600 mA	C	23 kWh / 1,000 h
CLE 370mm 4500lm 840 ADV5 EM	4,000 K	600 mA	C	23 kWh / 1,000 h

Energy label and further information at [www.tridonic.com](http://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 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 CLE a tp temperature of 65 °C has to be complied in order to achieve an optimum between 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	-40 ... +85 °C
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Operation only in non condensing environment.

Humidity during processing of the module should be between 30 to 70 %.

### 2.3 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 CLE will be greatly reduced or the CLE may be destroyed.

## 2.4 Heat sink values

CLE 50mm 1000lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	180 mA	12.74 K/W	52 cm <sup>2</sup>
35°C	65°C	180 mA	8.95 K/W	75 cm <sup>2</sup>
40°C	65°C	180 mA	7.05 K/W	95 cm <sup>2</sup>
45°C	65°C	180 mA	5.15 K/W	129 cm <sup>2</sup>
25°C	65°C	200 mA	9.80 K/W	68 cm <sup>2</sup>
35°C	65°C	200 mA	6.74 K/W	99 cm <sup>2</sup>
40°C	65°C	200 mA	5.21 K/W	128 cm <sup>2</sup>
45°C	65°C	200 mA	3.68 K/W	181 cm <sup>2</sup>
25°C	65°C	250 mA	6.83 K/W	98 cm <sup>2</sup>
35°C	65°C	250 mA	4.51 K/W	148 cm <sup>2</sup>
40°C	65°C	250 mA	3.35 K/W	199 cm <sup>2</sup>
45°C	65°C	250 mA	2.19 K/W	304 cm <sup>2</sup>

CLE 80mm 2000lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	200 mA	10.66 K/W	63 cm <sup>2</sup>
35°C	65°C	200 mA	7.76 K/W	86 cm <sup>2</sup>
40°C	65°C	200 mA	6.31 K/W	106 cm <sup>2</sup>
45°C	65°C	200 mA	4.85 K/W	137 cm <sup>2</sup>
25°C	65°C	250 mA	8.57 K/W	78 cm <sup>2</sup>
35°C	65°C	250 mA	6.19 K/W	108 cm <sup>2</sup>
40°C	65°C	250 mA	5.00 K/W	133 cm <sup>2</sup>
45°C	65°C	250 mA	3.81 K/W	175 cm <sup>2</sup>
25°C	65°C	350 mA	6.21 K/W	107 cm <sup>2</sup>
35°C	65°C	350 mA	4.39 K/W	152 cm <sup>2</sup>
40°C	65°C	350 mA	3.48 K/W	191 cm <sup>2</sup>
45°C	65°C	350 mA	2.57 K/W	259 cm <sup>2</sup>

CLE 120mm 2500lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	250 mA		self-cooling
35°C	65°C	250 mA		self-cooling
40°C	65°C	250 mA	5.83 K/W	114 cm <sup>2</sup>
45°C	65°C	250 mA	4.58 K/W	146 cm <sup>2</sup>
25°C	65°C	350 mA		self-cooling
35°C	65°C	350 mA	4.62 K/W	130 cm <sup>2</sup>
40°C	65°C	350 mA	3.78 K/W	159 cm <sup>2</sup>
45°C	65°C	350 mA	2.94 K/W	204 cm <sup>2</sup>
25°C	65°C	500 mA	4.01 K/W	166 cm <sup>2</sup>
35°C	65°C	500 mA	2.90 K/W	230 cm <sup>2</sup>
40°C	65°C	500 mA	2.35 K/W	284 cm <sup>2</sup>
45°C	65°C	500 mA	1.79 K/W	372 cm <sup>2</sup>

CLE 160mm 3000lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	350 mA		self-cooling
35°C	65°C	350 mA		self-cooling
40°C	65°C	350 mA		self-cooling
45°C	65°C	350 mA	2.97 K/W	224 cm <sup>2</sup>
25°C	65°C	500 mA		self-cooling
35°C	65°C	500 mA		self-cooling
40°C	65°C	500 mA	2.74 K/W	243 cm <sup>2</sup>
45°C	65°C	500 mA	2.14 K/W	311 cm <sup>2</sup>
25°C	65°C	600 mA		self-cooling
35°C	65°C	600 mA		self-cooling
40°C	65°C	600 mA	3.17 K/W	210 cm <sup>2</sup>
45°C	65°C	600 mA	2.49 K/W	268 cm <sup>2</sup>

CLE 190mm 2500lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	350 mA		self-cooling
35°C	65°C	350 mA		self-cooling
40°C	65°C	350 mA		self-cooling
45°C	65°C	350 mA		self-cooling
25°C	65°C	500 mA		self-cooling
35°C	65°C	500 mA		self-cooling
40°C	65°C	500 mA		self-cooling
45°C	65°C	500 mA		self-cooling
25°C	65°C	600 mA		self-cooling
35°C	65°C	600 mA		self-cooling
40°C	65°C	600 mA		self-cooling
45°C	65°C	600 mA	1.99 K/W	334 cm <sup>2</sup>

CLE 220mm 2500lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	350 mA		self-cooling
35°C	65°C	350 mA		self-cooling
40°C	65°C	350 mA		self-cooling
45°C	65°C	350 mA		self-cooling
25°C	65°C	500 mA		self-cooling
35°C	65°C	500 mA		self-cooling
40°C	65°C	500 mA		self-cooling
45°C	65°C	500 mA		self-cooling
25°C	65°C	600 mA		self-cooling
35°C	65°C	600 mA		self-cooling
40°C	65°C	600 mA		self-cooling
45°C	65°C	600 mA		self-cooling

CLE 315mm 4000lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	500 mA		self-cooling
35°C	65°C	500 mA		self-cooling
40°C	65°C	500 mA		self-cooling
45°C	65°C	500 mA		self-cooling
25°C	65°C	600 mA		self-cooling
35°C	65°C	600 mA		self-cooling
40°C	65°C	600 mA		self-cooling
45°C	65°C	600 mA		self-cooling
25°C	65°C	700 mA		self-cooling
35°C	65°C	700 mA		self-cooling
40°C	65°C	700 mA		self-cooling
45°C	65°C	700 mA		self-cooling

CLE 370mm 4500lm

ta	tp	Forward current	R <sub>th, hs-a</sub>	Cooling area
25°C	65°C	500 mA		self-cooling
35°C	65°C	500 mA		self-cooling
40°C	65°C	500 mA		self-cooling
45°C	65°C	500 mA		self-cooling
25°C	65°C	600 mA		self-cooling
35°C	65°C	600 mA		self-cooling
40°C	65°C	600 mA		self-cooling
45°C	65°C	600 mA		self-cooling
25°C	65°C	700 mA		self-cooling
35°C	65°C	700 mA		self-cooling
40°C	65°C	700 mA		self-cooling
45°C	65°C	700 mA		self-cooling

## Notes

The actual cooling can differ because of the material, the structural shape, outside influences and the installation situation. A thermal connection between CLE and heat sink with heat-conducting paste or heat conducting adhesive film is absolutely necessary.

Additionally the CLE 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  $\lambda > 1 \text{ W/mK}$  and layer thickness of interface material with max.  $50 \mu\text{m}$  or a similar interface material where the quotient of layer thickness and thermal conductivity  $b < 50 \mu\text{mK/W}$ .

## 3. Installation / wiring

### 3.1 Electrical supply/choice of LED driver

CLE 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 CLE 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



CLE 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 CLE.

CLE can be operated either from SELV LED drivers or from LED drivers with LV output voltage.

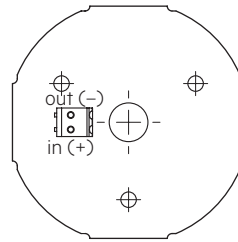


CLE 50, 80mm are basic insulated up to 200 V (if mounted with M3 screws with head diameter 6 mm) against ground and can be mounted directly on earthed metal parts of the luminaire. CLE 120, 160, 190, 220, 315 and 370mm are basic insulated up to 200 V (if mounted with M4 screws with head diameter 8 mm) 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 200 V, an additional insulation between LED module and heat sink is required (for example by insulated thermal pads) or by a suitable luminaire construction.

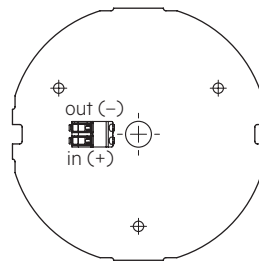
At voltages  $> 60 \text{ V}$  an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

### 3.2 Wiring

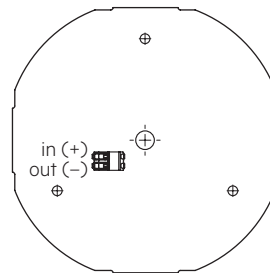
CLE 50mm



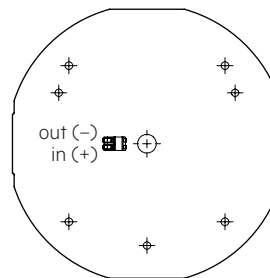
CLE 80mm



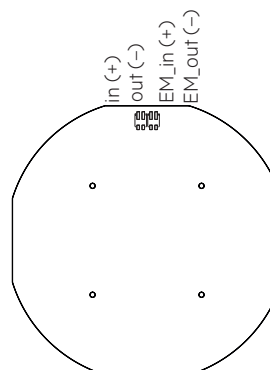
CLE 120mm



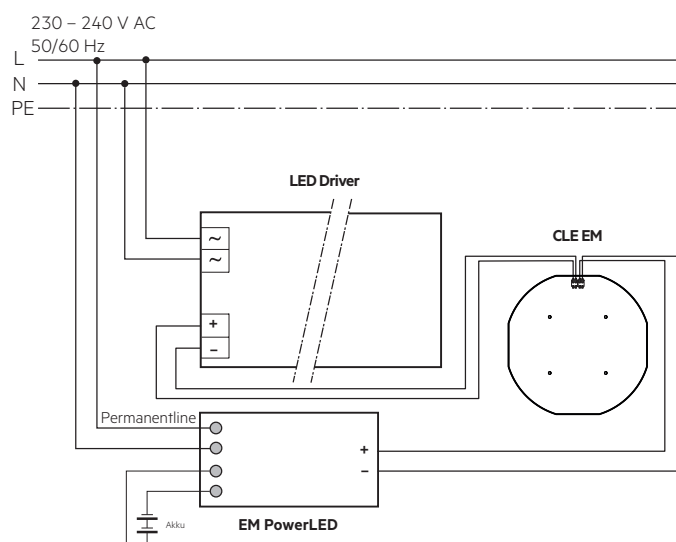
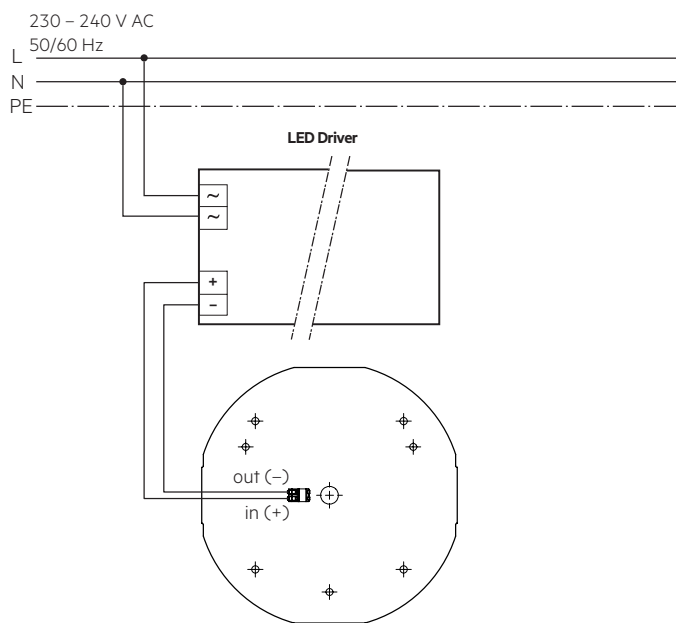
CLE 160mm



CLE 190/220/315/370mm



## Wiring example



## 3.3 Wiring type and cross section

CLE 50mm:

For wiring use solid wire from 0.14 to 0.5 mm<sup>2</sup>.For the push-wire connection you have to strip the insulation 4–5.5 mm for 0.14 to 0.34 mm<sup>2</sup> and 6–7.5 mm for 0.5 mm<sup>2</sup>.

Loosen wire through twisting and pulling.

4 – 5.5 mm with 0.14 – 0.34 mm<sup>2</sup>  
6 – 7.5 mm with 0.5 mm<sup>2</sup>

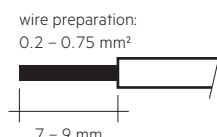
Press down the “push button” and remove the wire from front.

CLE 80, 120, 160, 190, 220, 315, 370mm:

For wiring use stranded wire with ferrules or solid wire from 0.2 to 0.75 mm<sup>2</sup>.

For the push-wire connection you have to strip the insulation (7–9 mm).

Loosen wire through twisting and pulling.

wire preparation:  
0.2 – 0.75 mm<sup>2</sup>

7 – 9 mm

Press down the “push button” and remove the wire from front.

## 3.4 Mounting instruction



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

Max. torque for fixing: 0.5 Nm.

The LED modules are mounted with 3 or 4 screws per module. In order not to damage the modules only rounded head screws and an additional plastic flat washer should 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. Please note the requirements set out in the document EOS / ESD guidelines (Guideline\_EOS\_ESD.pdf) at: <http://www.tridonic.com/esd-protection>

## 4. Lifetime

### 4.1 Lifetime, lumen maintenance and failure rate

The light output of an LED module decreases over the lifetime, this is characterized with the L value.

L70 means that the LED module will give 70 % of its initial luminous flux. This value is always related to the number of operation hours and therefore defines the lifetime of an LED module.

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

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

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

### 4.2 Lumen maintenance

#### CLE 50mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		61k h	>72k h	>72k h	>72k h	>72k h	>72k h
180 mA	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
200 mA	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
250 mA	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
350 mA	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h

#### CLE 80mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		63k h	>72k h	>72k h	>72k h	>72k h	>72k h
200 mA	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
250 mA	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h
	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
350 mA	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
500 mA	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h

#### CLE 120mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		63k h	>72k h	>72k h	>72k h	>72k h	>72k h
250 mA	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
350 mA	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h
	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
500 mA	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
500 mA	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h

#### CLE 160mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		63k h	>72k h	>72k h	>72k h	>72k h	>72k h
250 mA	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
350 mA	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h
	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
500 mA	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
500 mA	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h

#### CLE 190/220mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		61k h	>72k h	>72k h	>72k h	>72k h	>72k h
250 mA	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
350 mA	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
500 mA	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h
	40 °C	56k h	>72k h	>72k h	>72k h	>72k h	>72k h
	50 °C	49k h	65k h	>72k h	>72k h	>72k h	>72k h
500 mA	60 °C	42k h	57k h	>72k h	>72k h	>72k h	>72k h
	70 °C	37k h	50k h	>72k h	>72k h	>72k h	>72k h
	80 °C	32k h	44k h	66k h	>72k h	>72k h	>72k h
	80 °C	32k h	44k h	66k h	>72k h	>72k h	>72k h

## CLE 315mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		40 °C	61k h	>72k h	>72k h	>72k h	>72k h
500 mA	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	61k h	>72k h	>72k h	>72k h	>72k h	>72k h
600 mA	50 °C	53k h	71k h	>72k h	>72k h	>72k h	>72k h
	60 °C	46k h	62k h	>72k h	>72k h	>72k h	>72k h
	70 °C	40k h	54k h	>72k h	>72k h	>72k h	>72k h
	80 °C	35k h	47k h	>72k h	>72k h	>72k h	>72k h
	40 °C	59k h	>72k h	>72k h	>72k h	>72k h	>72k h
700 mA	50 °C	51k h	69k h	>72k h	>72k h	>72k h	>72k h
	60 °C	45k h	60k h	>72k h	>72k h	>72k h	>72k h
	70 °C	39k h	53k h	>72k h	>72k h	>72k h	>72k h
	80 °C	34k h	46k h	70k h	>72k h	>72k h	>72k h

## CLE 370mm

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
		40 °C	>72k h	>72k h	>72k h	>72k h	>72k h
500 mA	50 °C	>72k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	>72k h	>72k h	>72k h	>72k h	>72k h	>72k h
	70 °C	>72k h	>72k h	>72k h	>72k h	>72k h	>72k h
	80 °C	>72k h	>72k h	>72k h	>72k h	>72k h	>72k h
	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
600 mA	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h
	40 °C	63k h	>72k h	>72k h	>72k h	>72k h	>72k h
700 mA	50 °C	54k h	>72k h	>72k h	>72k h	>72k h	>72k h
	60 °C	47k h	63k h	>72k h	>72k h	>72k h	>72k h
	70 °C	41k h	55k h	>72k h	>72k h	>72k h	>72k h
	80 °C	36k h	48k h	>72k h	>72k h	>72k h	>72k h

LOC10 >72k h. At tp rated, based on 10 swichting cycles per day.

### 4.3 Switching capability

100,000 cycles

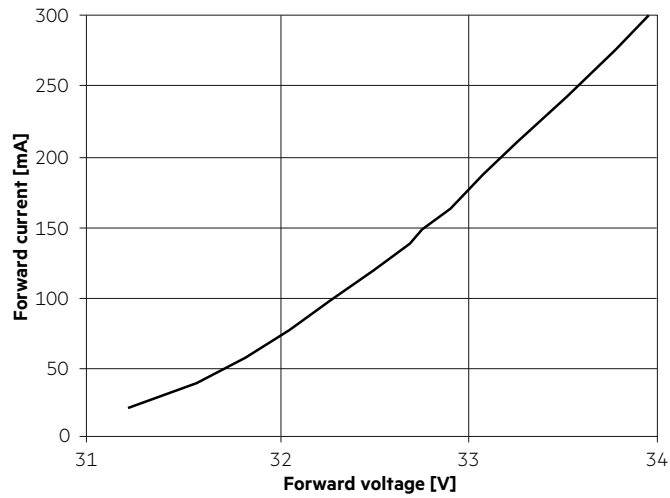
Tridonic test according to IEC 62717 Cl 10.3.3

30 s on / 30 s off at I<sub>max</sub>

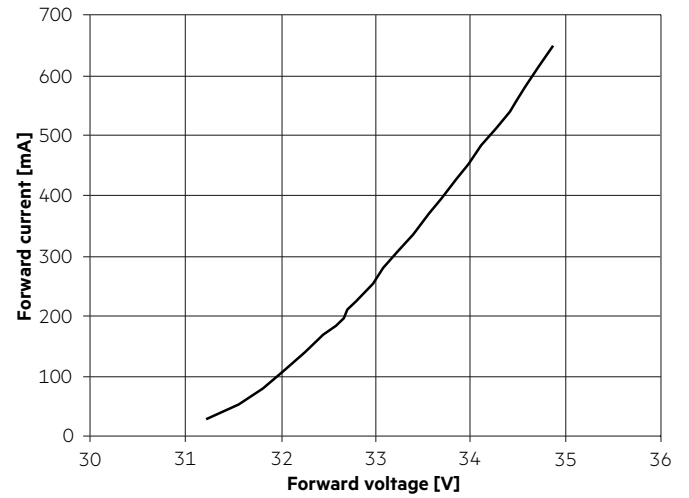
## 5. Electrical values

### 5.1 Typ. forward voltage vs. forward current at $t_p = 25\text{ }^\circ\text{C}$

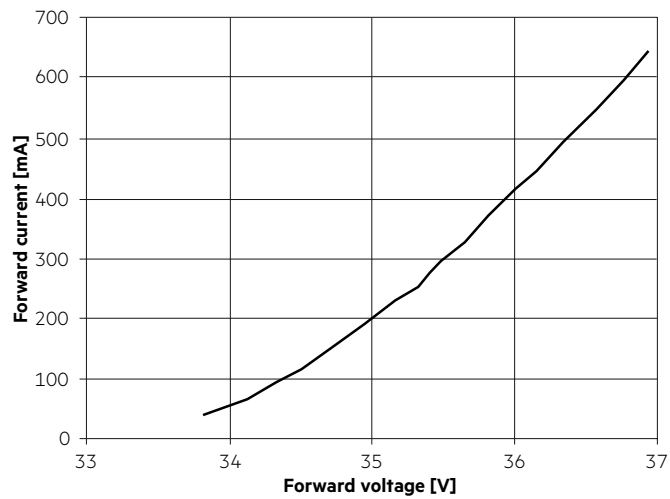
CLE 50mm



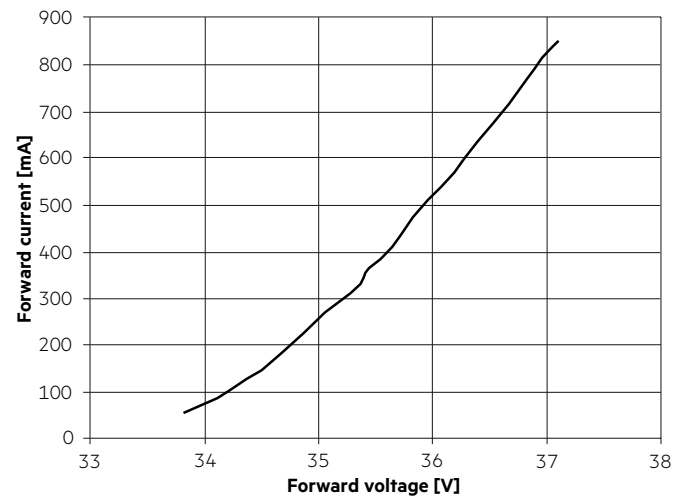
CLE 80mm



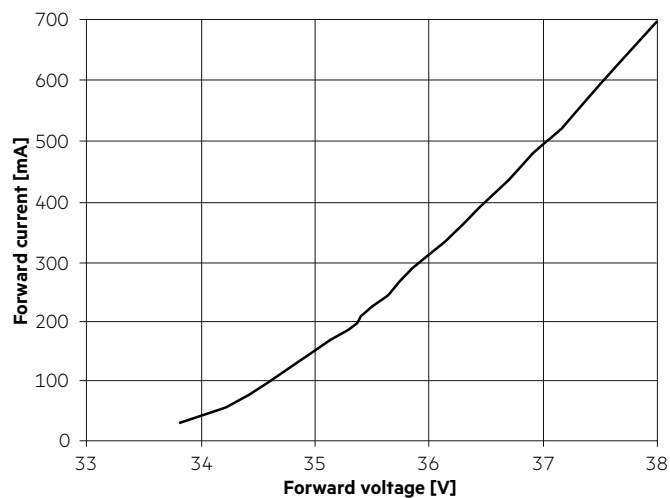
CLE 120mm



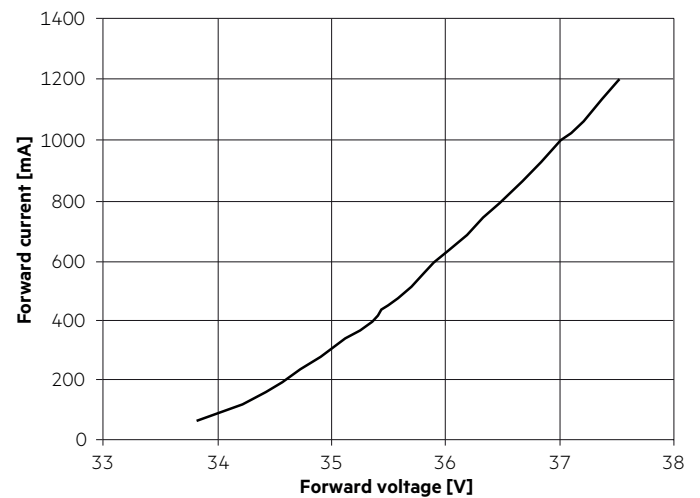
CLE 160 mm



CLE 190/220mm

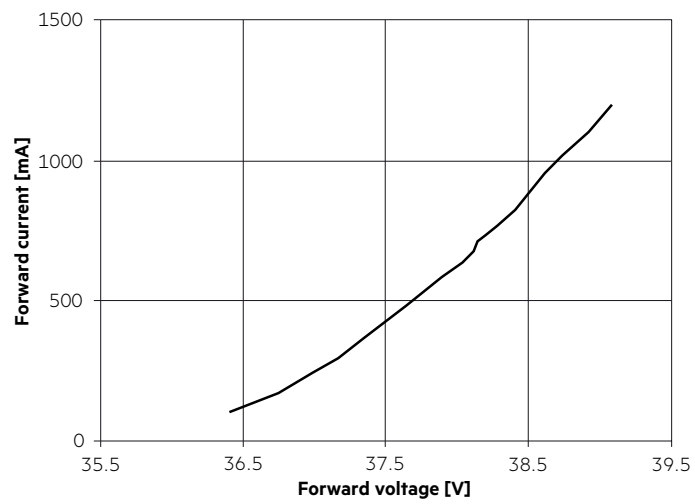


CLE 315mm

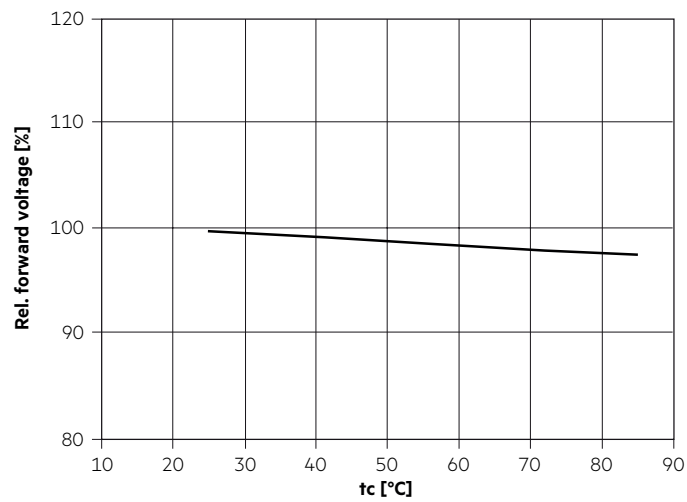


The diagrams based on statistic values. The real values can be different.

CLE 370mm



### 5.2 Forward voltage vs. $t_c$ 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

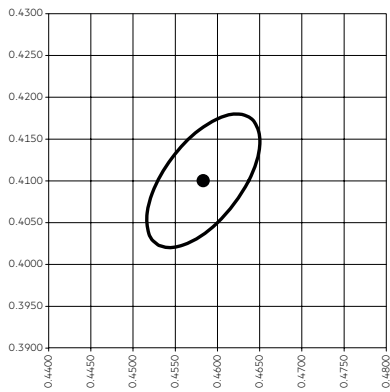
The specified colour coordinates are measured integral by a current impulse with Irated of the module and a duration of 100 ms.

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

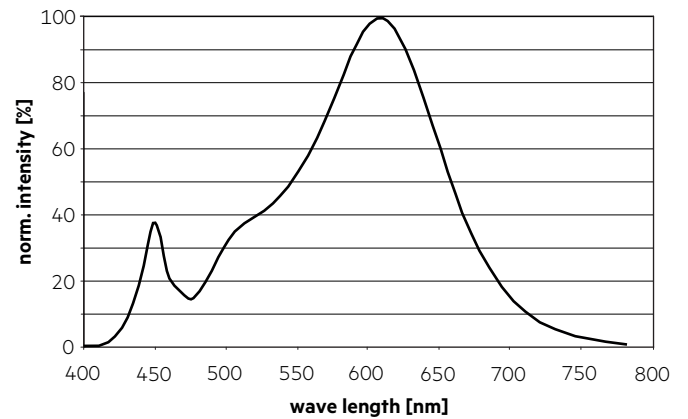
The measurement tolerance of the colour coordinates are  $\pm 0.01$ .

#### 2,700 K – CRI80

	x0	y0
Centre	0.4578	0.4101

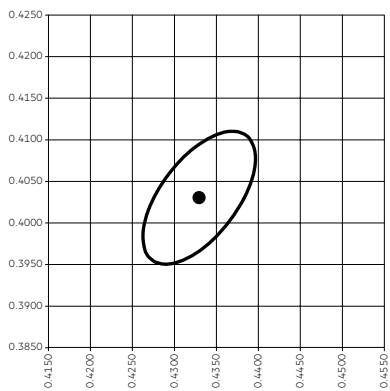


— MacAdam Ellipse: 3SDCM

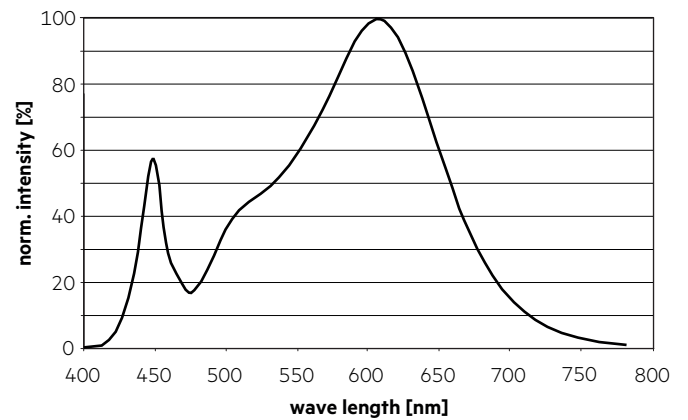


#### 3,000 K – CRI80

	x0	y0
Centre	0.4338	0.4030

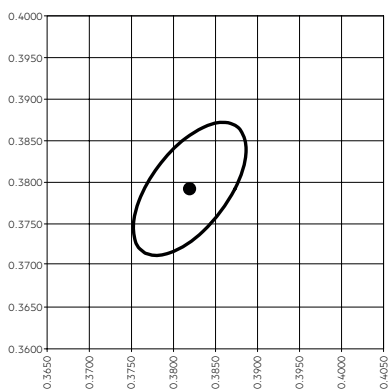


— MacAdam Ellipse: 3SDCM

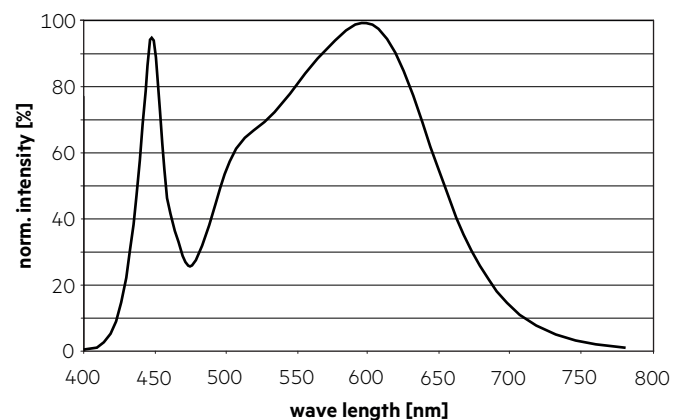


#### 4,000 K – CRI80

	x0	y0
Centre	0.3818	0.3797

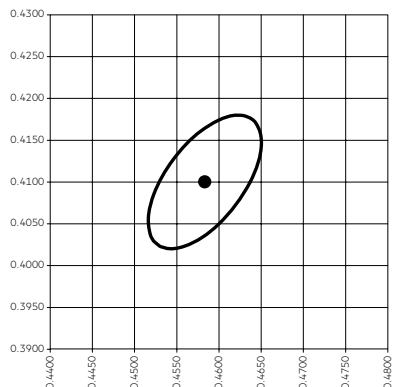


— MacAdam Ellipse: 3SDCM

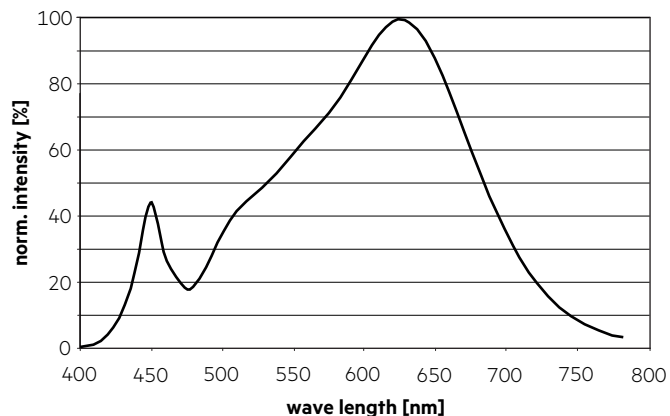


**2,700 K – CRI90**

	x0	y0
Centre	0.4578	0.4101

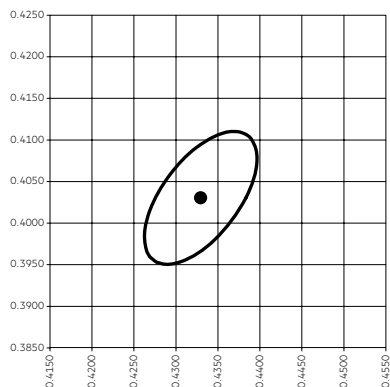


— MacAdam Ellipse: 3SDCM

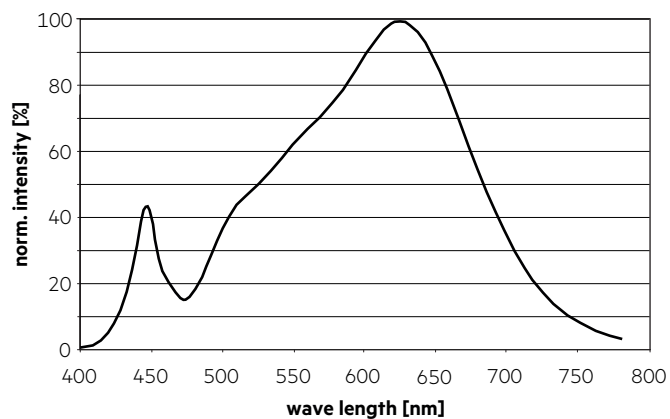


**3,000 K – CRI90**

	x0	y0
Centre	0.4338	0.4030

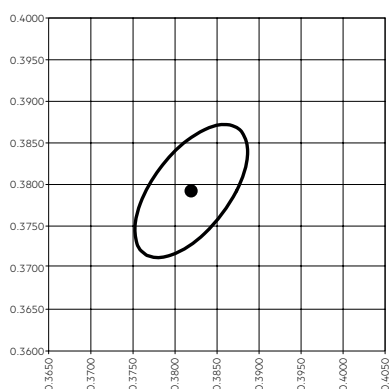


— MacAdam Ellipse: 3SDCM

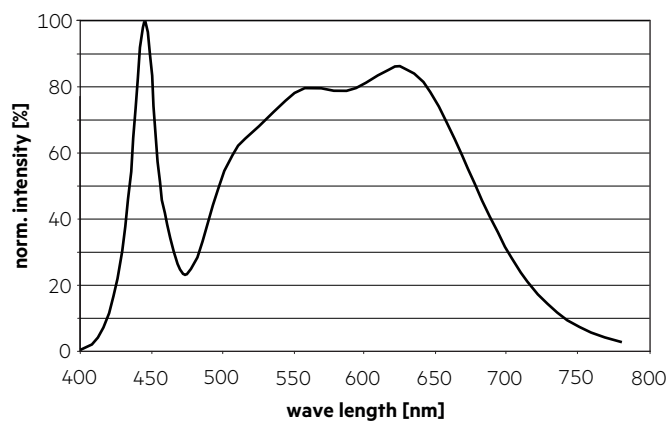


**4,000 K – CRI90**

	x0	y0
Centre	0.3818	0.3797

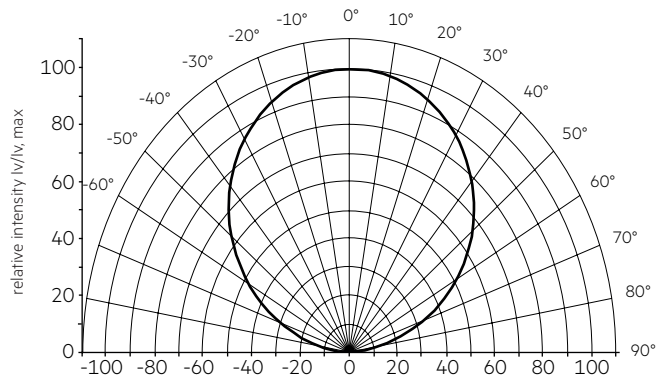


— MacAdam Ellipse: 3SDCM



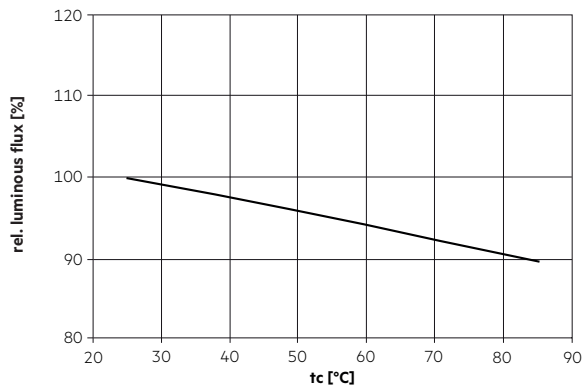
### 6.2 Light distribution

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



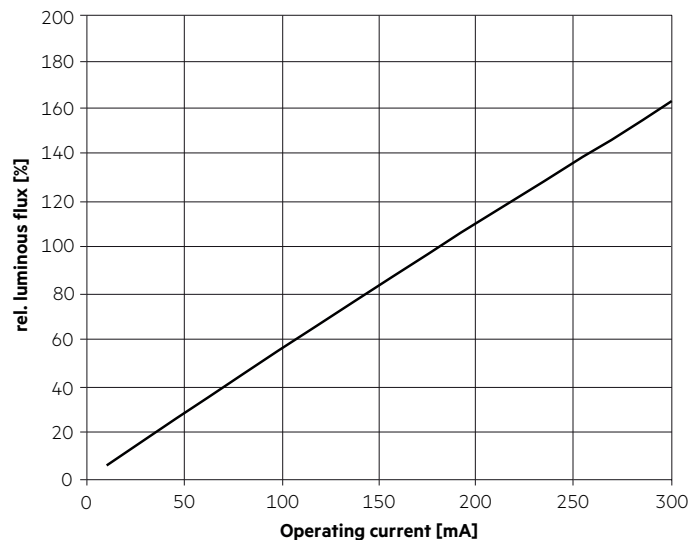
**!** The colour temperature is measured over the complete module. The single LED light points can be outside of 3SDCM. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 5 cm) should be used.

### 6.3 Relative luminous flux vs. tc temperature

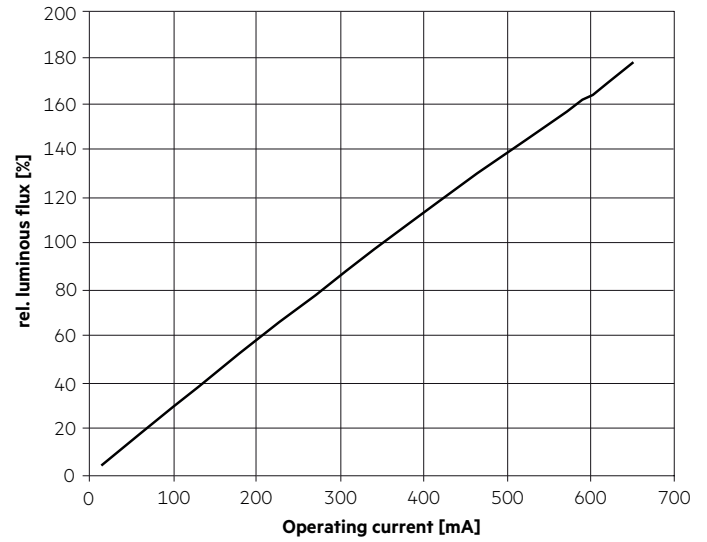


### 6.4 Relative luminous flux vs. operating current

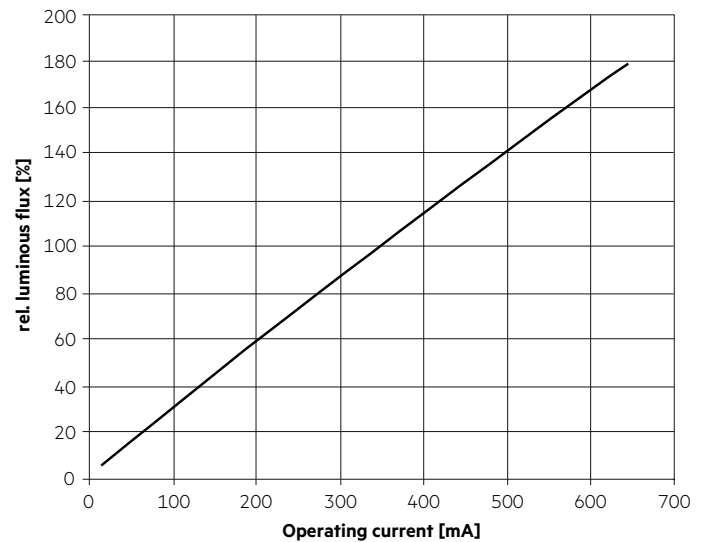
CLE 50mm



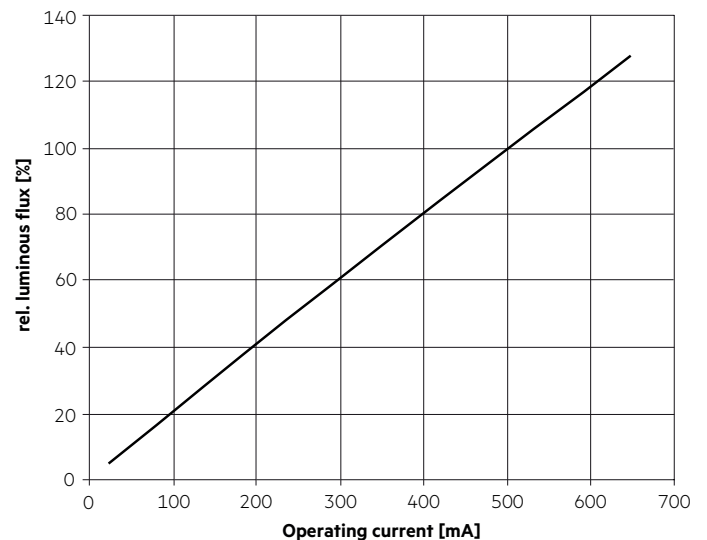
CLE 80mm



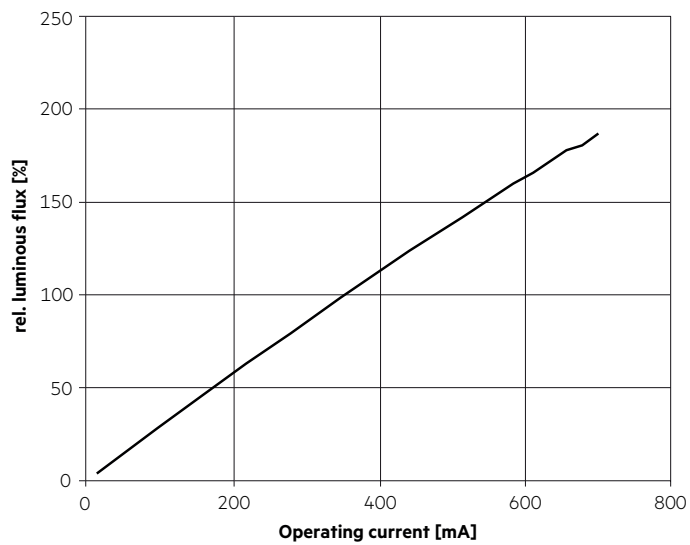
CLE 120mm



CLE 160mm



CLE 190/220mm



## 7. Miscellaneous

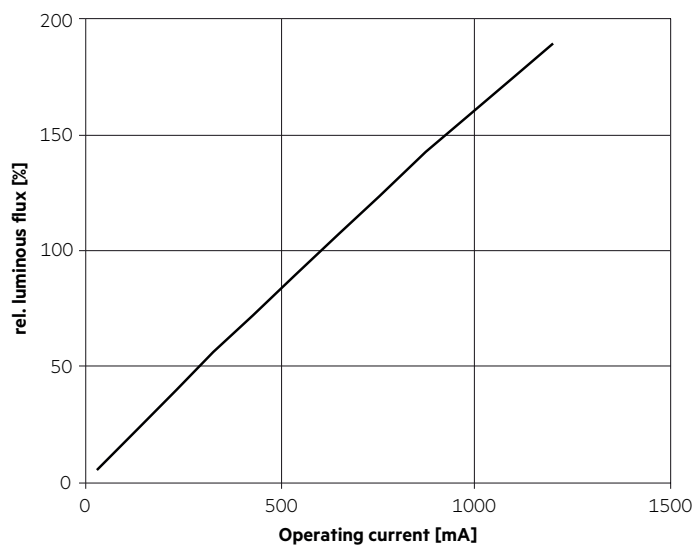
### 7.1 Additional information

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://www.tridonic.com) → Services

Lifetime declarations are informative and represent no warranty claim.

CLE 315mm



CLE 370mm

