

**Modul CLE ADV5 new variant**

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 102,000 hours
- \_ 5 years guarantee (conditions at <https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions>)

**Optical properties**

- \_ Colour temperatures 2,700, 3,000 and 4,000 K
- \_ Efficacy of the LED module up to 204 lm/W
- \_ 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)

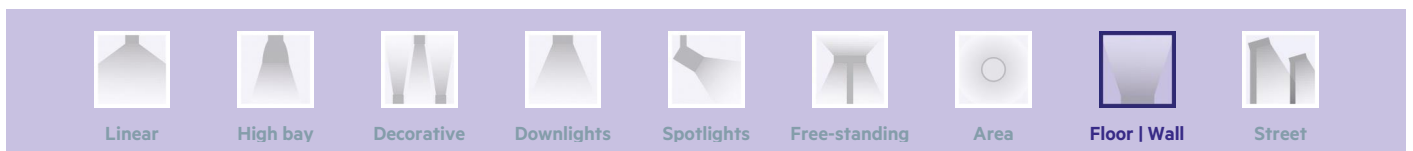
**System solution**

- \_ 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.

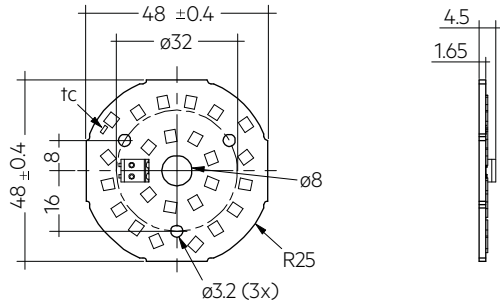
**Website**

<http://www.tridonic.com/28006604>

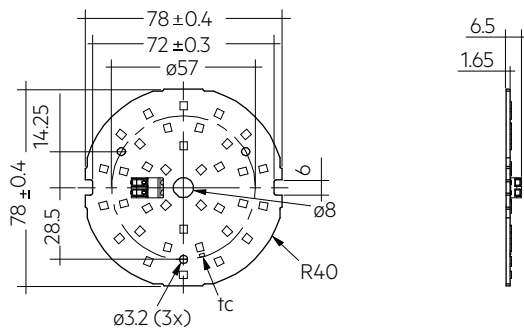


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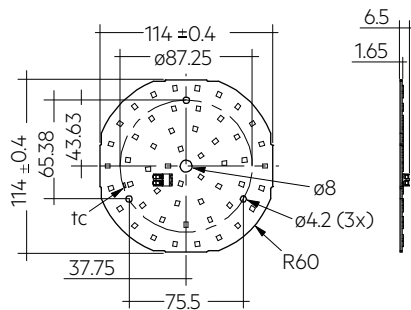
Modules CLE advanced



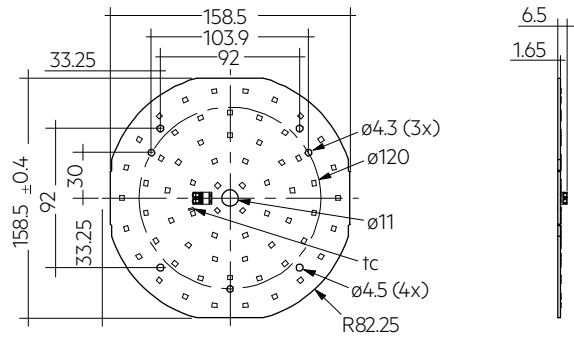
CLE 50mm 1000lm ADV5



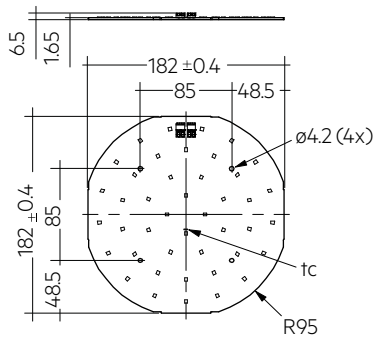
CLE 80mm 2000lm ADV5



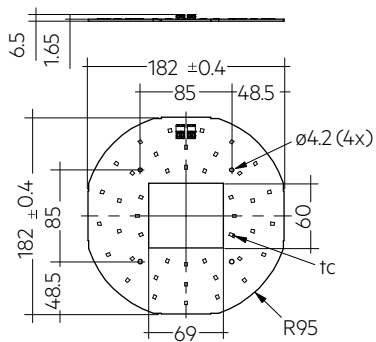
CLE 120mm 2500lm ADV5



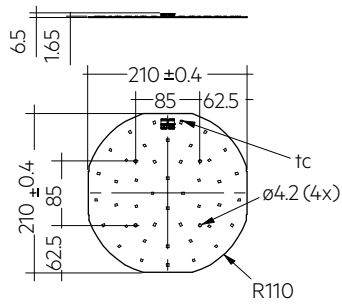
CLE 160mm 3000lm ADV5



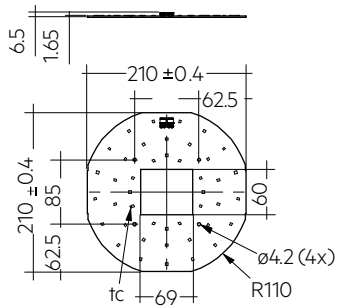
CLE 190mm 2500lm ADV5 EM



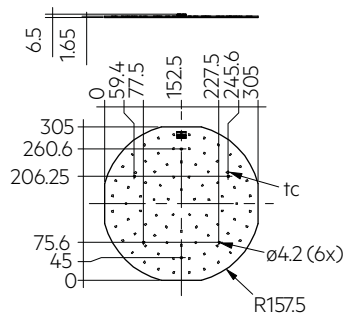
CLE 190mm 2500lm ADV5 EM SO



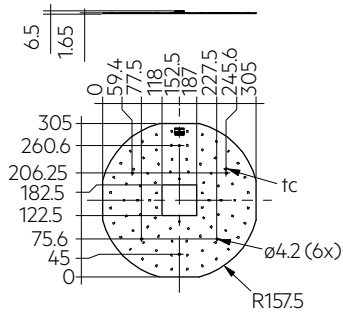
CLE 220mm 2500lm ADV5 EM



CLE 220mm 2500lm ADV5 EM SO



CLE 315mm 4000lm ADV5 EM



CLE 315mm 4000lm ADV5 EM SO

## Ordering data

Type	Article number	Colour temperature	Colour rendering index CRI	Packaging, carton	Weight per pc.
<b>CLE 50mm 1000lm</b>					
CLE 50mm 1000lm 827 ADV5	28006604	2,700 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 830 ADV5	28006606	3,000 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 840 ADV5	28006608	4,000 K	>80	180 pc(s).	0.006 kg
CLE 50mm 1000lm 927 ADV5	28006605	2,700 K	>90	180 pc(s).	0.006 kg
CLE 50mm 1000lm 930 ADV5	28006607	3,000 K	>90	180 pc(s).	0.006 kg
CLE 50mm 1000lm 940 ADV5	28006609	4,000 K	>90	180 pc(s).	0.006 kg
<b>CLE 80mm 2000lm</b>					
CLE 80mm 2000lm 827 ADV5	28006610	2,700 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 830 ADV5	28006612	3,000 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 840 ADV5	28006614	4,000 K	>80	30 pc(s).	0.015 kg
CLE 80mm 2000lm 927 ADV5	28006611	2,700 K	>90	30 pc(s).	0.015 kg
CLE 80mm 2000lm 930 ADV5	28006613	3,000 K	>90	30 pc(s).	0.015 kg
CLE 80mm 2000lm 940 ADV5	28006615	4,000 K	>90	30 pc(s).	0.015 kg
<b>CLE 120mm 2500lm</b>					
CLE 120mm 2500lm 827 ADV5	28006616	2,700 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 830 ADV5	28006618	3,000 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 840 ADV5	28006620	4,000 K	>80	360 pc(s).	0.031 kg
CLE 120mm 2500lm 927 ADV5	28006617	2,700 K	>90	360 pc(s).	0.031 kg
CLE 120mm 2500lm 930 ADV5	28006619	3,000 K	>90	360 pc(s).	0.031 kg
CLE 120mm 2500lm 940 ADV5	28006621	4,000 K	>90	360 pc(s).	0.031 kg
<b>CLE 160mm 3000lm</b>					
CLE 160mm 3000lm 827 ADV5	28006622	2,700 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 927 ADV5	28006623	2,700 K	>90	20 pc(s).	0.057 kg
CLE 160mm 3000lm 830 ADV5	28006624	4,000 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 930 ADV5	28006625	3,000 K	>90	20 pc(s).	0.057 kg
CLE 160mm 3000lm 840 ADV5	28006626	4,000 K	>80	20 pc(s).	0.057 kg
CLE 160mm 3000lm 940 ADV5	28006627	4,000 K	>90	20 pc(s).	0.057 kg
<b>CLE 190mm 2500lm</b>					
CLE 190mm 2500lm 827 ADV5 EM	28006628	2,700 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	2,700 K	>80	20 pc(s).	0.065 kg
CLE 190mm 2500lm 830 ADV5 EM	28006630	3,000 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	3,000 K	>80	20 pc(s).	0.065 kg
CLE 190mm 2500lm 840 ADV5 EM	28006626	4,000 K	>80	20 pc(s).	0.077 kg
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	4,000 K	>80	20 pc(s).	0.065 kg
<b>CLE 220mm 2500lm</b>					
CLE 220mm 2500lm 827 ADV5 EM	28006634	2,700 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	2,700 K	>80	20 pc(s).	0.091 kg
CLE 220mm 2500lm 830 ADV5 EM	28006636	3,000 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	3,000 K	>80	20 pc(s).	0.091 kg
CLE 220mm 2500lm 840 ADV5 EM	28006638	4,000 K	>80	20 pc(s).	0.103 kg
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	4,000 K	>80	20 pc(s).	0.091 kg
<b>CLE 315mm 4000lm</b>					
CLE 315mm 4000lm 827 ADV5 EM	28006640	2,700 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	2,700 K	>80	10 pc(s).	0.199 kg
CLE 315mm 4000lm 830 ADV5 EM	28006642	3,000 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	3,000 K	>80	10 pc(s).	0.199 kg
CLE 315mm 4000lm 840 ADV5 EM	28006263	4,000 K	>80	10 pc(s).	0.211 kg
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	4,000 K	>80	10 pc(s).	0.199 kg
<b>CLE 370mm 4500lm</b>					
CLE 370mm 4500lm 827 ADV5 EM	28006646	2,700 K	>80	10 pc(s).	0.271 kg
CLE 370mm 4500lm 830 ADV5 EM	28006647	3,000 K	>80	10 pc(s).	0.271 kg
CLE 370mm 4500lm 840 ADV5 EM	28006648	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
I <sub>rated</sub> for CLE 50mm	180 mA
I <sub>rated</sub> for CLE 80mm	350 mA
I <sub>rated</sub> for CLE 120mm	350 mA
I <sub>rated</sub> for CLE 160mm	500 mA
I <sub>rated</sub> for CLE 190/220mm	350 mA
I <sub>rated</sub> 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	1.200 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	1,350 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	1.800 mA / max. 10 ms
Max. permissible peak current for CLE 370mm	3,000 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) for CLE 50mm	RG0
Risk group (IEC 62471) for CLE 80mm	RG1 (> 633 – 650 mA (I <sub>max</sub> )), RG0 (= 633 mA)
Risk group (IEC 62471) for CLE 120mm	RG0
Risk group (IEC 62471) for CLE 160mm	RG0
Risk group (IEC 62471) for CLE 190mm	RG1 (> 633 – 700 mA (I <sub>max</sub> )), RG0 (= 633 mA)
Risk group (IEC 62471) for CLE 220mm	RG1 (> 633 – 700 mA (I <sub>max</sub> )), RG0 (= 633 mA)
Risk group (IEC 62471) for CLE 315mm	RG0
Risk group (IEC 62471) for CLE 370mm	RG0
Type of protection	IP00
Lumen maintenance L70B50	102,000 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, IEC 61000-4-2

## 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	28006604	827/359	1,079 lm	952 lm	180 mA	31.3 V	34.2 V	6.0 W	180 lm/W	162 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28006606	830/359	1,085 lm	1,010 lm	180 mA	31.3 V	34.2 V	6.0 W	181 lm/W	172 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28006608	840/359	1,162 lm	1,082 lm	180 mA	31.3 V	34.2 V	6.0 W	194 lm/W	184 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28006605	927/359	892 lm	807 lm	180 mA	31.3 V	34.2 V	6.0 W	149 lm/W	137 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28006607	930/359	945 lm	841 lm	180 mA	31.3 V	34.2 V	6.0 W	158 lm/W	143 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28006609	940/359	998 lm	930 lm	180 mA	31.3 V	34.2 V	6.0 W	166 lm/W	158 lm/W	>90
<b>CLE 50mm – Operating mode HO at 200 mA</b>											
CLE 50mm 1000lm 827 ADV5	28006604	827/359	-	1,052 lm	200 mA	31.6 V	34.5 V	-	-	160 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28006606	830/359	-	1,116 lm	200 mA	31.6 V	34.5 V	-	-	169 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28006608	840/359	-	1,196 lm	200 mA	31.6 V	34.5 V	-	-	181 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28006605	927/359	-	891 lm	200 mA	31.6 V	34.5 V	-	-	135 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28006607	930/359	-	930 lm	200 mA	31.6 V	34.5 V	-	-	141 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28006609	940/359	-	1,028 lm	200 mA	31.6 V	34.5 V	-	-	156 lm/W	>90
<b>CLE 50mm – Operating mode HO at 250 mA</b>											
CLE 50mm 1000lm 827 ADV5	28006604	827/359	-	1,297 lm	250 mA	32.4 V	35.3 V	-	-	154 lm/W	>80
CLE 50mm 1000lm 830 ADV5	28006606	830/359	-	1,376 lm	250 mA	32.4 V	35.3 V	-	-	164 lm/W	>80
CLE 50mm 1000lm 840 ADV5	28006608	840/359	-	1,474 lm	250 mA	32.4 V	35.3 V	-	-	175 lm/W	>80
CLE 50mm 1000lm 927 ADV5	28006605	927/359	-	1,099 lm	250 mA	32.4 V	35.3 V	-	-	131 lm/W	>90
CLE 50mm 1000lm 930 ADV5	28006607	930/359	-	1,146 lm	250 mA	32.4 V	35.3 V	-	-	136 lm/W	>90
CLE 50mm 1000lm 940 ADV5	28006609	940/359	-	1,267 lm	250 mA	32.4 V	35.3 V	-	-	151 lm/W	>90
<b>CLE 80mm – Operating mode HE at 200 mA</b>											
CLE 80mm 2000lm 827 ADV5	28006610	827/359	-	1,073 lm	200 mA	30.7 V	33.5 V	-	-	168 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28006612	830/359	-	1,139 lm	200 mA	30.7 V	33.5 V	-	-	178 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28006614	840/359	-	1,219 lm	200 mA	30.7 V	33.5 V	-	-	191 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28006611	927/359	-	909 lm	200 mA	30.7 V	33.5 V	-	-	142 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28006613	930/359	-	909 lm	200 mA	30.7 V	33.5 V	-	-	142 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28006615	940/359	-	1,048 lm	200 mA	30.7 V	33.5 V	-	-	164 lm/W	>90
<b>CLE 80mm – Operating mode HE at 250 mA</b>											
CLE 80mm 2000lm 827 ADV5	28006610	827/359	-	1,328 lm	250 mA	31.2 V	34.0 V	-	-	164 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28006612	830/359	-	1,409 lm	250 mA	31.2 V	34.0 V	-	-	174 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28006614	840/359	-	1,509 lm	250 mA	31.2 V	34.0 V	-	-	186 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28006611	927/359	-	1,125 lm	250 mA	31.2 V	34.0 V	-	-	139 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28006613	930/359	-	1,125 lm	250 mA	31.2 V	34.0 V	-	-	139 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28006615	940/359	-	1,297 lm	250 mA	31.2 V	34.0 V	-	-	160 lm/W	>90
<b>CLE 80mm – Operating mode NM at 350 mA</b>											
CLE 80mm 2000lm 827 ADV5	28006610	827/359	2,063 lm	1,823 lm	350 mA	32.1 V	35.0 V	11.9 W	173 lm/W	156 lm/W	>80
CLE 80mm 2000lm 830 ADV5	28006612	830/359	2,077 lm	1,935 lm	350 mA	32.1 V	35.0 V	11.9 W	175 lm/W	166 lm/W	>80
CLE 80mm 2000lm 840 ADV5	28006614	840/359	2,225 lm	2,072 lm	350 mA	32.1 V	35.0 V	11.9 W	187 lm/W	177 lm/W	>80
CLE 80mm 2000lm 927 ADV5	28006611	927/359	1,706 lm	1,545 lm	350 mA	32.1 V	35.0 V	11.9 W	143 lm/W	132 lm/W	>90
CLE 80mm 2000lm 930 ADV5	28006613	930/359	1,810 lm	1,545 lm	350 mA	32.1 V	35.0 V	11.9 W	152 lm/W	132 lm/W	>90
CLE 80mm 2000lm 940 ADV5	28006615	940/359	1,911 lm	1,781 lm	350 mA	32.1 V	35.0 V	11.9 W	161 lm/W	152 lm/W	>90
<b>CLE 120mm – Operating mode HE at 250 mA</b>											
CLE 120mm 2500lm 827 ADV5	28006616	827/359	-	1,456 lm	250 mA	33.1 V	36.2 V	-	-	169 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28006618	830/359	-	1,545 lm	250 mA	33.1 V	36.2 V	-	-	179 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28006620	840/359	-	1,655 lm	250 mA	33.1 V	36.2 V	-	-	192 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28006617	927/359	-	1,234 lm	250 mA	33.1 V	36.2 V	-	-	143 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28006619	930/359	-	1,287 lm	250 mA	33.1 V	36.2 V	-	-	149 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28006621	940/359	-	1,423 lm	250 mA	33.1 V	36.2 V	-	-	165 lm/W	>90
<b>CLE 120mm – Operating mode NM at 350 mA</b>											
CLE 120mm 2500lm 827 ADV5	28006616	827/359	2,277 lm	2,009 lm	350 mA	33.9 V	37.0 V	12.5 W	182 lm/W	163 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28006618	830/359	2,288 lm	2,131 lm	350 mA	33.9 V	37.0 V	12.5 W	183 lm/W	172 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28006620	840/359	2,451 lm	2,283 lm	350 mA	33.9 V	37.0 V	12.5 W	196 lm/W	185 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28006617	927/359	1,881 lm	1,702 lm	350 mA	33.9 V	37.0 V	12.5 W	150 lm/W	138 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28006619	930/359	1,995 lm	1,775 lm	350 mA	33.9 V	37.0 V	12.5 W	160 lm/W	144 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28006621	940/359	2,106 lm	1,962 lm	350 mA	33.9 V	37.0 V	12.5 W	168 lm/W	159 lm/W	>90
<b>CLE 120mm – Operating mode HO at 500 mA</b>											
CLE 120mm 2500lm 827 ADV5	28006616	827/359	-	3,091 lm	500 mA	35.0 V	38.2 V	-	-	154 lm/W	>80
CLE 120mm 2500lm 830 ADV5	28006618	830/359	-	2,981 lm	500 mA	35.0 V	38.2 V	-	-	164 lm/W	>80
CLE 120mm 2500lm 840 ADV5	28006620	840/359	-	3,193 lm	500 mA	35.0 V	38.2 V	-	-	175 lm/W	>80
CLE 120mm 2500lm 927 ADV5	28006617	927/359	-	2,381 lm	500 mA	35.0 V	38.2 V	-	-	131 lm/W	>90
CLE 120mm 2500lm 930 ADV5	28006619	930/359	-	2,483 lm	500 mA	35.0 V	38.2 V	-	-	136 lm/W	>90
CLE 120mm 2500lm 940 ADV5	28006621	940/359	-	2,744 lm	500 mA	35.0 V	38.2 V	-	-	151 lm/W	>90
<b>CLE 160mm – Operating mode HE at 350 mA</b>											
CLE 160mm 3000lm 827 ADV5	28006622	827/359	-	2,030 lm	350 mA	33.3 V	36.4 V	-	-	167 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28006623	927/359	-	1,721 lm	350 mA	33.3 V	36.4 V	-	-	142 lm/W	>90
CLE 160mm 3000lm 830 ADV5	28006624	840/359	-	2,308 lm	350 mA	33.3 V	36.4 V	-	-	177 lm/W	>80
CLE 160mm 3000lm 930 ADV5	28006625	930/359	-	1,794 lm	350 mA	33.3 V	36.4 V	-	-	148 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 on 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 840 ADV5	28006626	840/359	-	2,308 lm	350 mA	33.3 V	36.4 V	-	-	190 lm/W	>80
CLE 160mm 3000lm 940 ADV5	28006627	940/359	-	1,983 lm	350 mA	33.3 V	36.4 V	-	-	163 lm/W	>90
<b>CLE 160mm – Operating mode NM at 500 mA</b>											
CLE 160mm 3000lm 827 ADV5	28006622	827/359	3,277 lm	2,849 lm	500 mA	34.3 V	37.4 V	18.1 W	181 lm/W	160 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28006623	927/359	2,666 lm	2,414 lm	500 mA	34.3 V	37.4 V	18.1 W	147 lm/W	135 lm/W	>90
CLE 160mm 3000lm 830 ADV5	28006624	840/359	3,477 lm	3,238 lm	500 mA	34.3 V	37.4 V	18.1 W	179 lm/W	170 lm/W	>80
CLE 160mm 3000lm 930 ADV5	28006625	930/359	2,828 lm	2,518 lm	500 mA	34.3 V	37.4 V	18.1 W	156 lm/W	141 lm/W	>90
CLE 160mm 3000lm 840 ADV5	28006626	840/359	3,477 lm	3,238 lm	500 mA	34.3 V	37.4 V	18.1 W	192 lm/W	182 lm/W	>80
CLE 160mm 3000lm 940 ADV5	28006627	940/359	2,984 lm	2,783 lm	500 mA	34.3 V	37.4 V	18.1 W	165 lm/W	156 lm/W	>90
<b>CLE 160mm – Operating mode HO at 600 mA</b>											
CLE 160mm 3000lm 827 ADV5	28006622	827/359	-	3,380 lm	600 mA	34.9 V	38.0 V	-	-	155 lm/W	>80
CLE 160mm 3000lm 927 ADV5	28006623	927/359	-	2,864 lm	600 mA	34.9 V	38.0 V	-	-	132 lm/W	>90
CLE 160mm 3000lm 830 ADV5	28006624	840/359	-	3,842 lm	600 mA	34.9 V	38.0 V	-	-	165 lm/W	>80
CLE 160mm 3000lm 930 ADV5	28006625	930/359	-	2,987 lm	600 mA	34.9 V	38.0 V	-	-	137 lm/W	>90
CLE 160mm 3000lm 840 ADV5	28006626	840/359	-	3,842 lm	600 mA	34.9 V	38.0 V	-	-	176 lm/W	>80
CLE 160mm 3000lm 940 ADV5	28006627	940/359	-	3,302 lm	600 mA	34.9 V	38.0 V	-	-	152 lm/W	>90
<b>CLE 190/220mm – Operating mode HE at 250 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28006628	827/359	-	1,438 lm	250 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	827/359	-	1,438 lm	250 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28006630	830/359	-	1,526 lm	250 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	830/359	-	1,526 lm	250 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28006626	840/359	-	1,635 lm	250 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	840/359	-	1,635 lm	250 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28006634	827/359	-	1,438 lm	250 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	827/359	-	1,438 lm	250 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28006636	830/359	-	1,526 lm	250 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	830/359	-	1,526 lm	250 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28006638	840/359	-	1,635 lm	250 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	840/359	-	1,635 lm	250 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
<b>CLE 190/220mm – Operating mode NM at 350 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28006628	827/359	2,235 lm	1,975 lm	350 mA	34.8 V	37.9 V	12.9 W	173 lm/W	156 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	827/359	2,235 lm	1,975 lm	350 mA	34.8 V	37.9 V	12.9 W	173 lm/W	156 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28006630	830/359	2,250 lm	2,096 lm	350 mA	34.8 V	37.9 V	12.9 W	174 lm/W	165 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	830/359	2,250 lm	2,096 lm	350 mA	34.8 V	37.9 V	12.9 W	174 lm/W	165 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28006626	840/359	2,410 lm	2,245 lm	350 mA	34.8 V	37.9 V	12.9 W	187 lm/W	177 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	840/359	2,410 lm	2,245 lm	350 mA	34.8 V	37.9 V	12.9 W	187 lm/W	177 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28006634	827/359	2,235 lm	1,975 lm	350 mA	34.8 V	37.9 V	12.9 W	173 lm/W	156 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	827/359	2,235 lm	1,975 lm	350 mA	34.8 V	37.9 V	12.9 W	173 lm/W	156 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28006636	830/359	2,250 lm	2,096 lm	350 mA	34.8 V	37.9 V	12.9 W	174 lm/W	165 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	830/359	2,250 lm	2,096 lm	350 mA	34.8 V	37.9 V	12.9 W	174 lm/W	165 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28006638	840/359	2,410 lm	2,245 lm	350 mA	34.8 V	37.9 V	12.9 W	187 lm/W	177 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	840/359	2,410 lm	2,245 lm	350 mA	34.8 V	37.9 V	12.9 W	187 lm/W	177 lm/W	>80
<b>CLE 190/220mm – Operating mode HO at 500 mA</b>											
CLE 190mm 2500lm 827 ADV5 EM	28006628	827/359	-	2,746 lm	500 mA	36.3 V	39.5 V	-	-	145 lm/W	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	827/359	-	2,746 lm	500 mA	36.3 V	39.5 V	-	-	145 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM	28006630	830/359	-	2,914 lm	500 mA	36.3 V	39.5 V	-	-	154 lm/W	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	830/359	-	2,914 lm	500 mA	36.3 V	39.5 V	-	-	154 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM	28006626	840/359	-	3,121 lm	500 mA	36.3 V	39.5 V	-	-	165 lm/W	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	840/359	-	3,121 lm	500 mA	36.3 V	39.5 V	-	-	165 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM	28006634	827/359	-	2,746 lm	500 mA	36.3 V	39.5 V	-	-	145 lm/W	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	827/359	-	2,746 lm	500 mA	36.3 V	39.5 V	-	-	145 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM	28006636	830/359	-	2,914 lm	500 mA	36.3 V	39.5 V	-	-	154 lm/W	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	830/359	-	2,914 lm	500 mA	36.3 V	39.5 V	-	-	154 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM	28006638	840/359	-	3,121 lm	500 mA	36.3 V	39.5 V	-	-	165 lm/W	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	840/359	-	3,121 lm	500 mA	36.3 V	39.5 V	-	-	165 lm/W	>80
<b>CLE 190/220mm – Emergency operation at 350 mA (EM powerLED 1 W)</b>											
CLE 190mm 2500lm 827 ADV5 EM	28006628	827/359	-	166 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	827/359	-	166 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM	28006630	830/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	830/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM	28006626	840/359	-	189 lm	350 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	840/359	-	189 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM	28006634	827/359	-	166 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	827/359	-	166 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM	28006636	830/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	830/359	-	176 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM	28006638	840/359	-	189 lm	350 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	840/359	-	189 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	28006628	827/359	-	276 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 827 ADV5 EM SO	28006629	827/359	-	276 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM	28006630	830/359	-	292 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 830 ADV5 EM SO	28006631	830/359	-	292 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM	28006626	840/359	-	313 lm	600 mA	-	-	-	-	-	>80
CLE 190mm 2500lm 840 ADV5 EM SO	28006633	840/359	-	313 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM	28006634	827/359	-	276 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 827 ADV5 EM SO	28006635	827/359	-	276 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM	28006636	830/359	-	292 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 830 ADV5 EM SO	28006637	830/359	-	292 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM	28006638	840/359	-	313 lm	600 mA	-	-	-	-	-	>80
CLE 220mm 2500lm 840 ADV5 EM SO	28006639	840/359	-	313 lm	600 mA	-	-	-	-	-	>80
<b>CLE 315mm – Operating mode HE at 500 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28006640	827/359	-	2,885 lm	500 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	827/359	-	2,885 lm	500 mA	33.8 V	36.9 V	-	-	164 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28006642	830/359	-	3,052 lm	500 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	830/359	-	3,052 lm	500 mA	33.8 V	36.9 V	-	-	174 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28006263	840/359	-	3,269 lm	500 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	840/359	-	3,269 lm	500 mA	33.8 V	36.9 V	-	-	186 lm/W	>80
<b>CLE 315mm – Operating mode NM at 600 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28006640	827/359	3,872 lm	3,429 lm	600 mA	34.3 V	37.4 V	21.7 W	178 lm/W	160 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	827/359	3,872 lm	3,429 lm	600 mA	34.3 V	37.4 V	21.7 W	178 lm/W	160 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28006642	830/359	3,895 lm	3,628 lm	600 mA	34.3 V	37.4 V	21.7 W	179 lm/W	169 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	830/359	3,895 lm	3,628 lm	600 mA	34.3 V	37.4 V	21.7 W	179 lm/W	169 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28006263	840/359	4,172 lm	3,886 lm	600 mA	34.3 V	37.4 V	21.7 W	192 lm/W	182 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	840/359	4,172 lm	3,886 lm	600 mA	34.3 V	37.4 V	21.7 W	192 lm/W	182 lm/W	>80
<b>CLE 315mm – Operating mode HO at 700 mA</b>											
CLE 315mm 4000lm 827 ADV5 EM	28006640	827/359	-	3,962 lm	700 mA	34.8 V	37.9 V	-	-	156 lm/W	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	827/359	-	3,962 lm	700 mA	34.8 V	37.9 V	-	-	156 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM	28006642	830/359	-	4,192 lm	700 mA	34.8 V	37.9 V	-	-	165 lm/W	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	830/359	-	4,192 lm	700 mA	34.8 V	37.9 V	-	-	165 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM	28006263	840/359	-	4,490 lm	700 mA	34.8 V	37.9 V	-	-	177 lm/W	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	840/359	-	4,490 lm	700 mA	34.8 V	37.9 V	-	-	177 lm/W	>80
<b>CLE 315mm – Emergency operation at 600 mA (EM powerLED 2 W)</b>											
CLE 315mm 4000lm 827 ADV5 EM	28006640	827/359	-	283 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	827/359	-	283 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM	28006642	830/359	-	300 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	830/359	-	300 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM	28006263	840/359	-	321 lm	600 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	840/359	-	321 lm	600 mA	-	-	-	-	-	>80
<b>CLE 315mm – Emergency operation at 1,000 mA (EM powerLED 4 W)</b>											
CLE 315mm 4000lm 827 ADV5 EM	28006640	827/359	-	455 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 827 ADV5 EM SO	28006641	827/359	-	455 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM	28006642	830/359	-	481 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 830 ADV5 EM SO	28006643	830/359	-	481 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM	28006263	840/359	-	515 lm	1,000 mA	-	-	-	-	-	>80
CLE 315mm 4000lm 840 ADV5 EM SO	28006645	840/359	-	515 lm	1,000 mA	-	-	-	-	-	>80
<b>CLE 370mm – Operating mode HE at 500 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28006646	827/359	-	3,168 lm	500 mA	35.1 V	38.5 V	-	-	173 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28006647	830/359	-	3,352 lm	500 mA	35.1 V	38.5 V	-	-	183 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28006648	840/359	-	3,590 lm	500 mA	35.1 V	38.5 V	-	-	196 lm/W	>80
<b>CLE 370mm – Operating mode NM at 600 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28006646	827/359	4,282 lm	3,780 lm	600 mA	35.6 V	38.9 V	22.6 W	189 lm/W	170 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28006647	830/359	4,294 lm	3,999 lm	600 mA	35.6 V	38.9 V	22.6 W	190 lm/W	180 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28006648	840/359	4,600 lm	4,284 lm	600 mA	35.6 V	38.9 V	22.6 W	204 lm/W	193 lm/W	>80
<b>CLE 370mm – Operating mode HO at 700 mA</b>											
CLE 370mm 4500lm 827 ADV5 EM	28006646	827/359	-	4,386 lm	700 mA	35.9 V	39.3 V	-	-	168 lm/W	>80
CLE 370mm 4500lm 830 ADV5 EM	28006647	830/359	-	4,640 lm	700 mA	35.9 V	39.3 V	-	-	177 lm/W	>80
CLE 370mm 4500lm 840 ADV5 EM	28006648	840/359	-	4,970 lm	700 mA	35.9 V	39.3 V	-	-	190 lm/W	>80
<b>CLE 370mm – Emergency operation at 600 mA (EM powerLED 2 W)</b>											
CLE 370mm 4500lm 827 ADV5 EM	28006646	827/359	-	283 lm	600 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 830 ADV5 EM	28006647	830/359	-	300 lm	600 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 840 ADV5 EM	28006648	840/359	-	321 lm	600 mA	-	-	-	-	-	>80
<b>CLE 370mm – Emergency operation at 1,000 mA (EM powerLED 4 W)</b>											
CLE 370mm 4500lm 827 ADV5 EM	28006646	827/359	-	455 lm	1,000 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 830 ADV5 EM	28006647	830/359	-	481 lm	1,000 mA	-	-	-	-	-	>80
CLE 370mm 4500lm 840 ADV5 EM	28006648	840/359	-	515 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  
 IEC 61000-4-2  
 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)	
7	70 – 79				Code	Luminous flux
8	80 – 89				7	≥ 70 %
9	≥90				8	≥ 80 %
				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	D	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	D	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	19 kWh / 1,000 h
CLE 160mm 3000lm 830 ADV5	3,000 K	500 mA	C	19 kWh / 1,000 h
CLE 160mm 3000lm 840 ADV5	4,000 K	500 mA	C	19 kWh / 1,000 h
CLE 160mm 3000lm 927 ADV5	2,700 K	500 mA	D	19 kWh / 1,000 h
CLE 160mm 3000lm 930 ADV5	3,000 K	500 mA	D	19 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	600 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 827 ADV5 EM SO	2,700 K	600 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 830 ADV5 EM	3,000 K	600 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 830 ADV5 EM SO	3,000 K	600 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 840 ADV5 EM	4,000 K	600 mA	C	22 kWh / 1,000 h
CLE 315mm 4000lm 840 ADV5 EM SO	4,000 K	600 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	B	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
---------------------	---------------

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 / M4 screws to optimise the thermal connection.

**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.

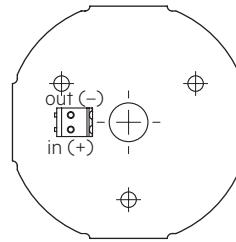


CLE 50, 80mm are basic insulated up to 200 V (if mounted with M3 screws with head diameter 6 mm) against ground and can be mounted directly on earthed metal parts of the luminaire. CLE 120, 160, 190, 220, 315 and 370mm are basic insulated up to 200 V (if mounted with M4 screws with head diameter 8 mm) 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.

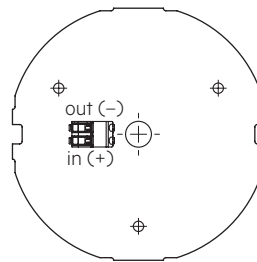
At voltages > 60 V an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

**3.2 Wiring**

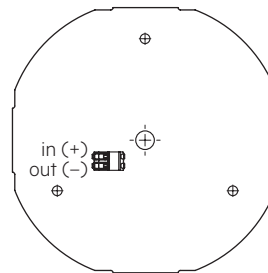
CLE 50mm



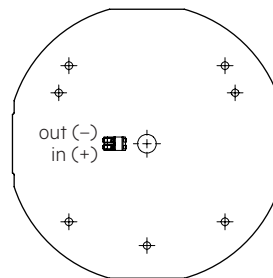
CLE 80mm



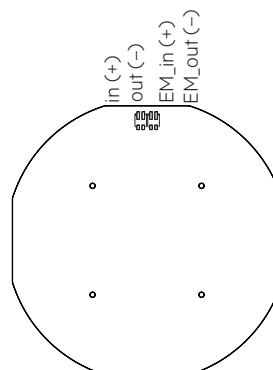
CLE 120mm



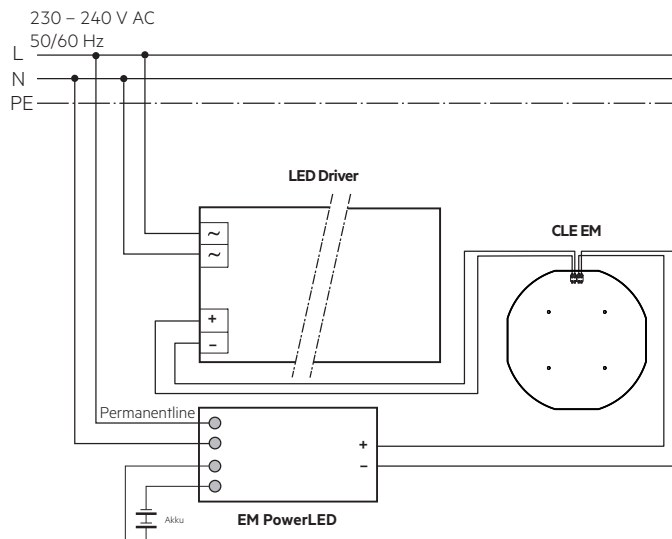
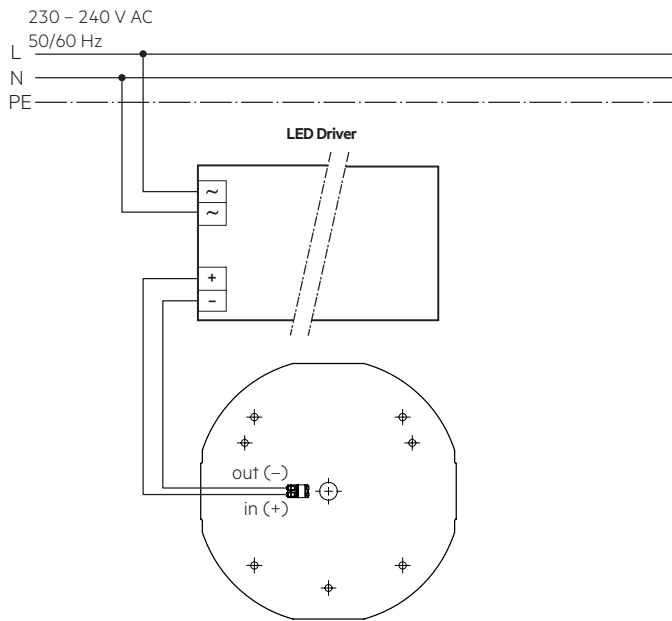
CLE 160mm



CLE 190/220/315/370mm



## Wiring example

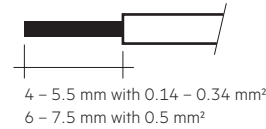


## 3.3 Wiring type and cross section

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.



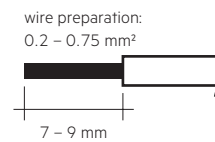
Press down the “push button” and remove the wire from front.

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.



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 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.

### 4.2 Lumen maintenance

Forward current	tp temperature	L90 / B10	L90 / B50	L80 / B10	L80 / B50	L70 / B10	L70 / B50
1200 mA	40 °C	40k h	47k h	82k h	100k h	>102k h	>102k h
	50 °C	40k h	47k h	82k h	100k h	>102k h	>102k h
	60 °C	35k h	39k h	69k h	85k h	>102k h	>102k h
	70 °C	35k h	39k h	69k h	85k h	>102k h	>102k h
	80 °C	35k h	39k h	69k h	85k h	>102k h	>102k h
	85 °C	35k h	39k h	69k h	85k h	>102k h	>102k h

LOC10 >102k h. At tp rated, based on 10 switching cycles per day.

### 4.3 Switching capability

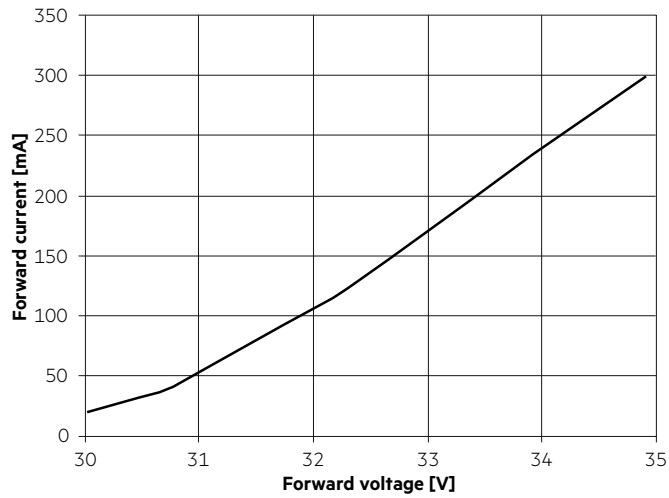
100,000 cycles

Tridonic test according to IEC 62717 Cl 10.3.3  
30 s on / 30 s off at I<sub>max</sub>

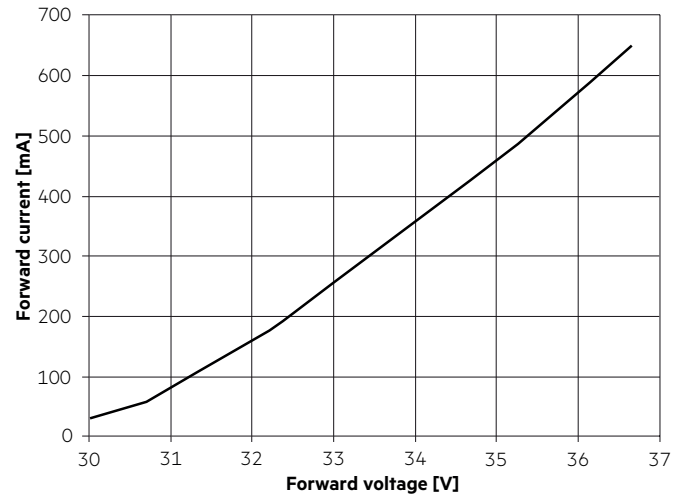
## 5. Electrical values

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

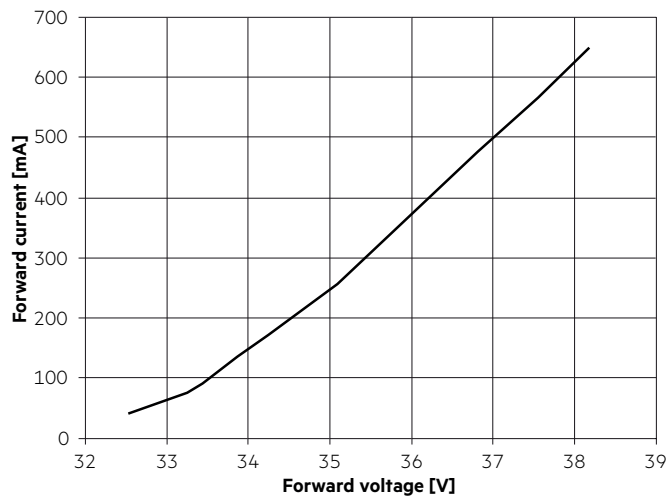
CLE 50mm



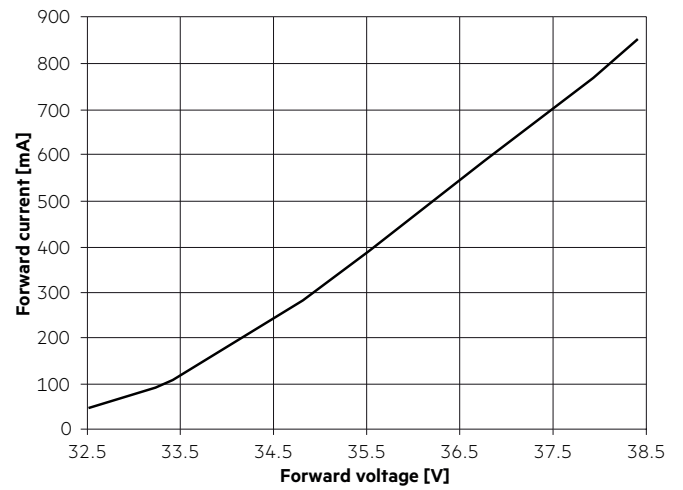
CLE 80mm



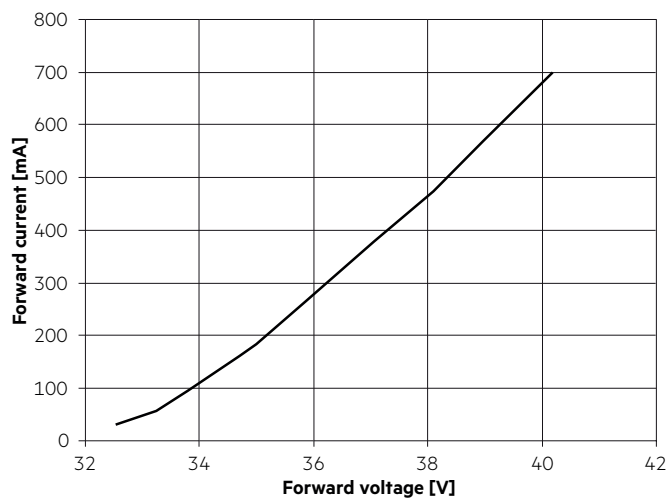
CLE 120mm



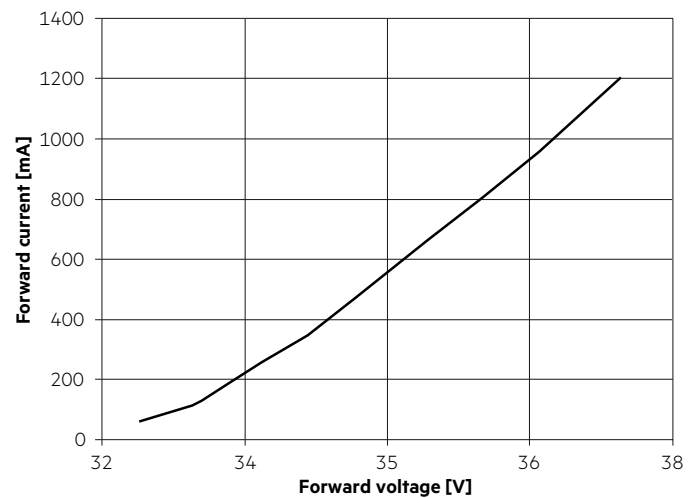
CLE 160 mm



CLE 190/220mm

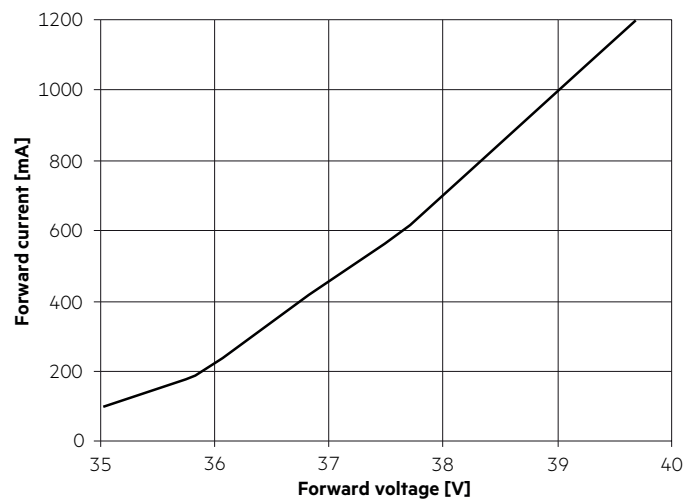


CLE 315mm

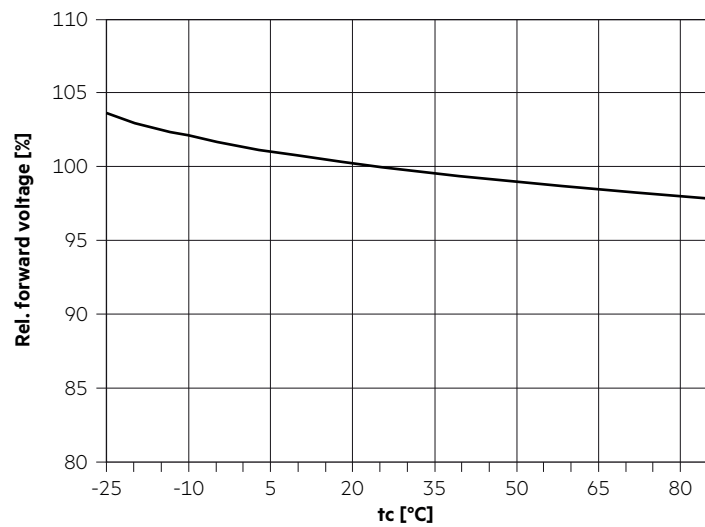


The diagrams based on statistic values. The real values can be different.

CLE 370mm



### 5.2 Forward voltage vs. 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

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

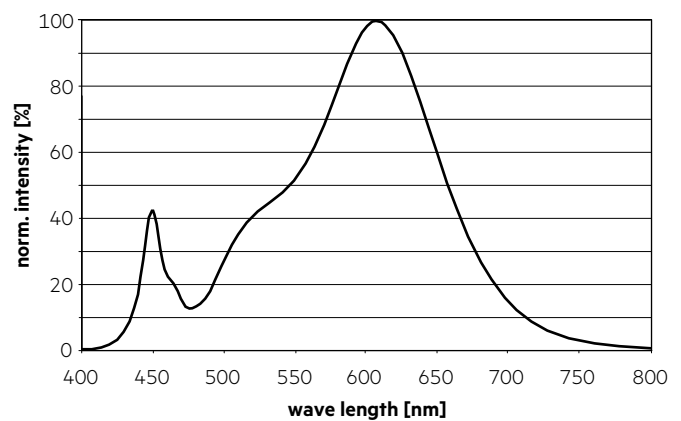
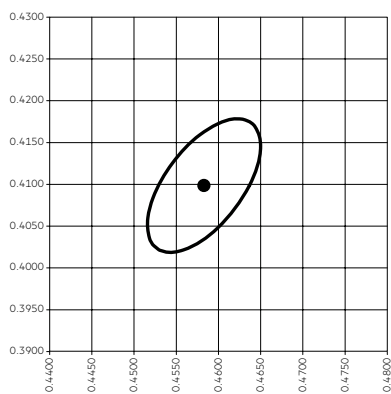
The ambient temperature of the measurement is  $t_a = 25^\circ\text{C}$ .

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

Module type	Current impulse
CLE 50mm 1000lm xxx ADV5	300 mA
CLE 80mm 2000lm xxx ADV5	450 mA
CLE 120mm 2500lm xxx ADV5	600 mA
CLE 160mm 3000lm xxx ADV5	750 mA
CLE 190mm 2500lm xxx ADV5	450 mA
CLE 315mm 4000lm xxx ADV5	900 mA
CLE 370mm 4500lm xxx ADV5	1,500 mA

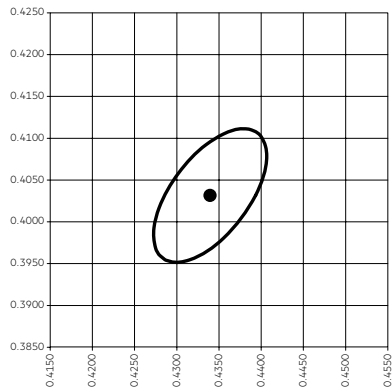
#### 2,700 K – CRI80

	x0	y0
Centre	0.4577	0.4098

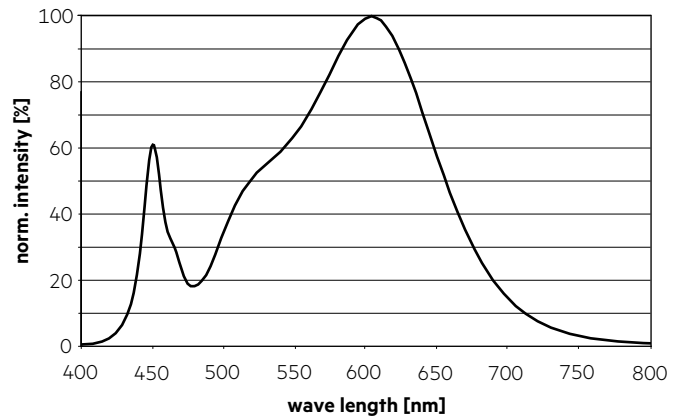


**3,000 K – CRI80**

	x0	y0
Centre	0.4339	0.4032

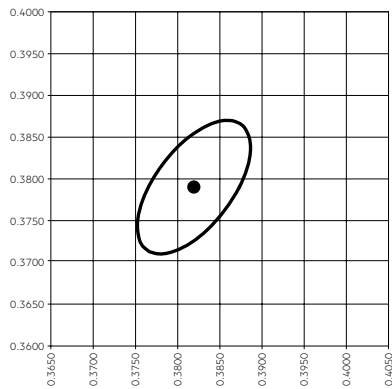


— MacAdam Ellipse: 3SDCM

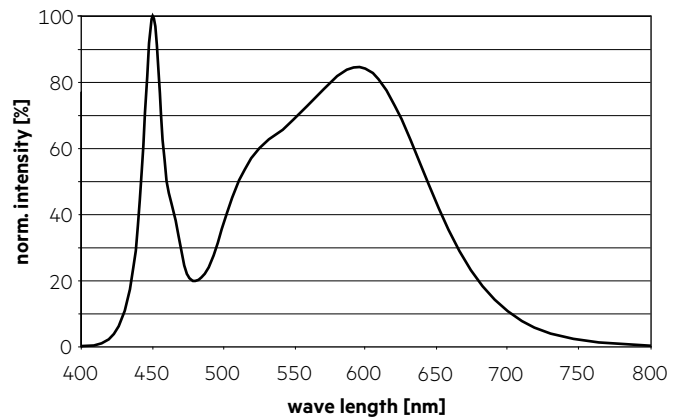


**4,000 K – CRI80**

	x0	y0
Centre	0.3818	0.3796

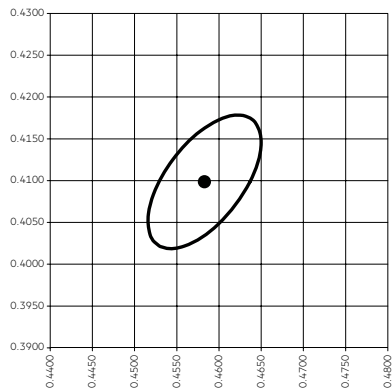


— MacAdam Ellipse: 3SDCM

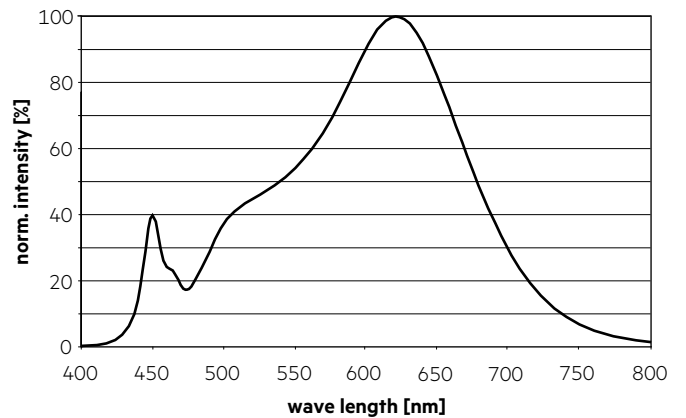


**2,700 K – CRI90**

	x0	y0
Centre	0.4577	0.4098

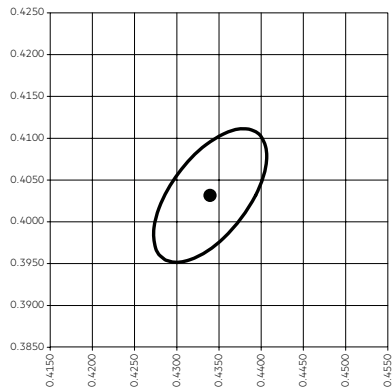


— MacAdam Ellipse: 3SDCM

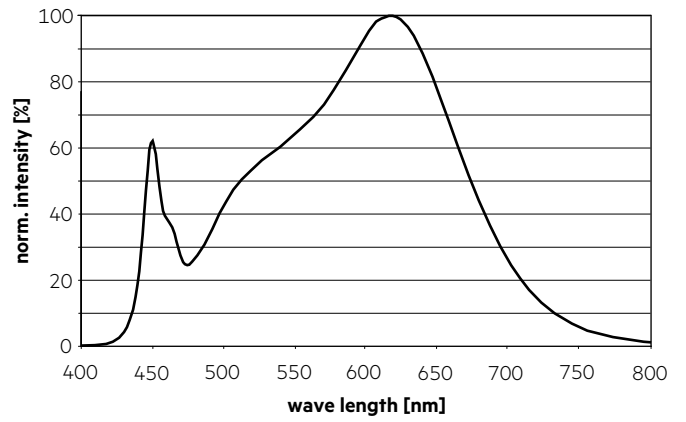


**3,000 K – CRI90**

	x0	y0
Centre	0.4339	0.4032

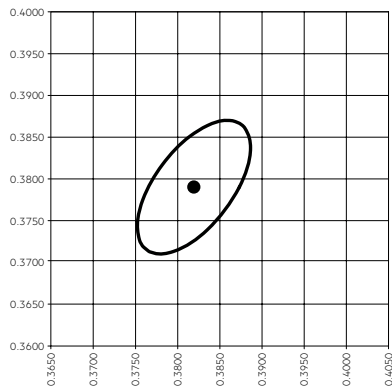


— MacAdam Ellipse: 3SDCM

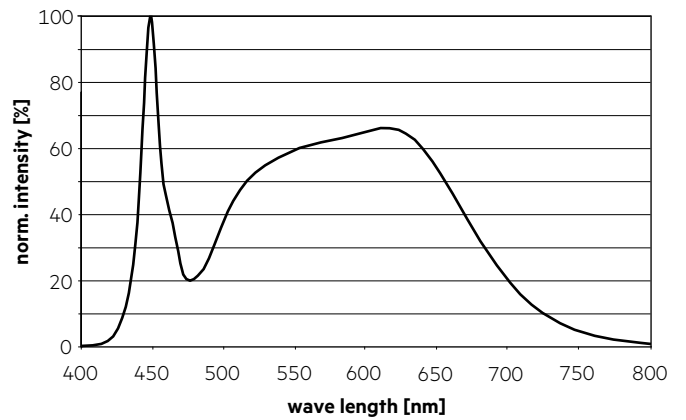


**4,000 K – CRI90**

	x0	y0
Centre	0.3818	0.3796

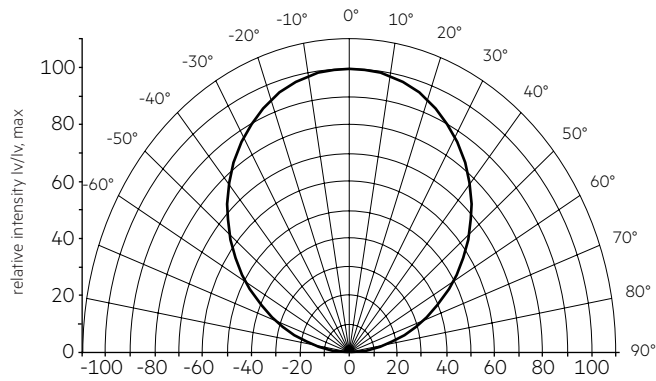


— MacAdam Ellipse: 3SDCM



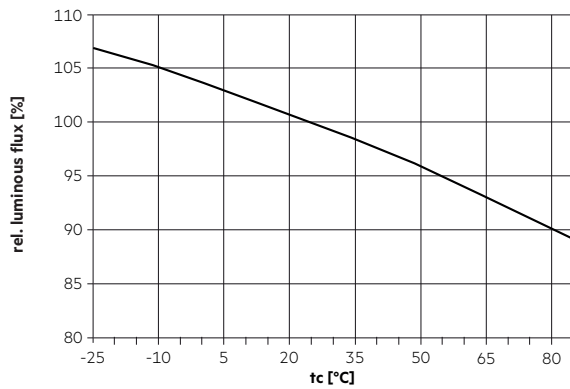
### 6.2 Light distribution

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



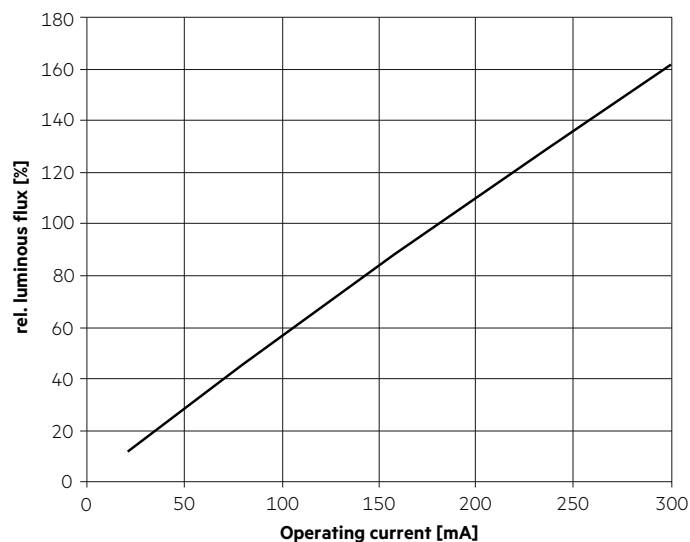
**!** The colour temperature is measured over the complete module. The single LED light points can be outside of 3SDCM. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 5 cm) should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

### 6.3 Relative luminous flux vs. tc temperature

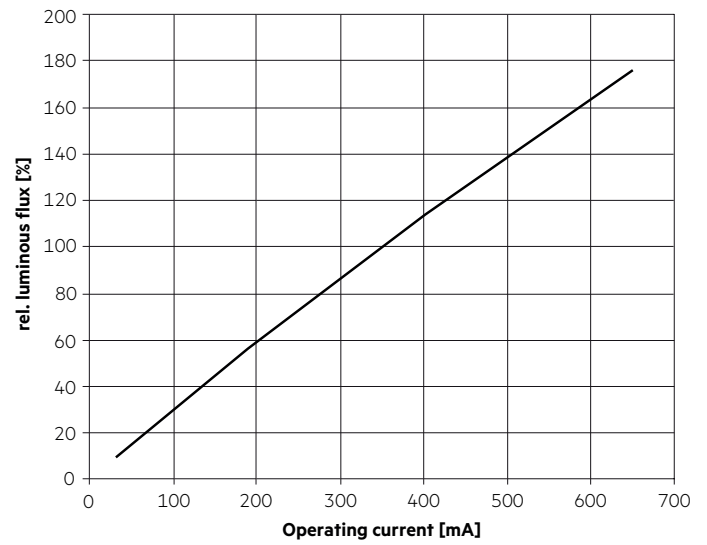


### 6.4 Relative luminous flux vs. operating current

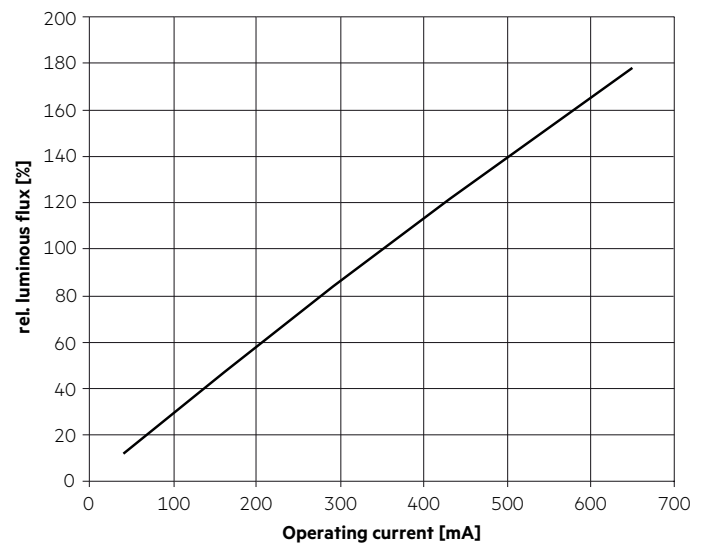
CLE 50mm



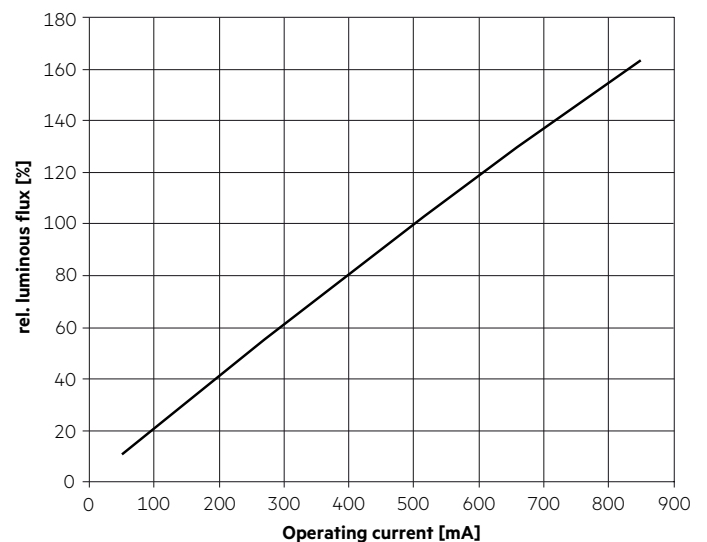
CLE 80mm



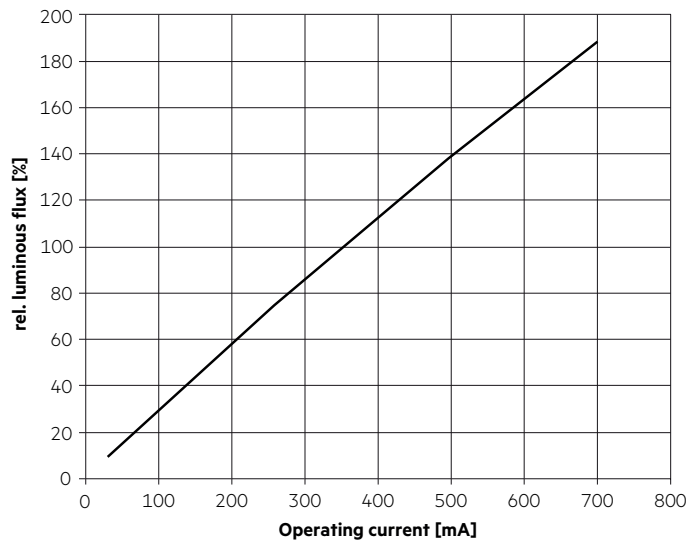
CLE 120mm



CLE 160mm



CLE 190/220mm



## 7. Miscellaneous

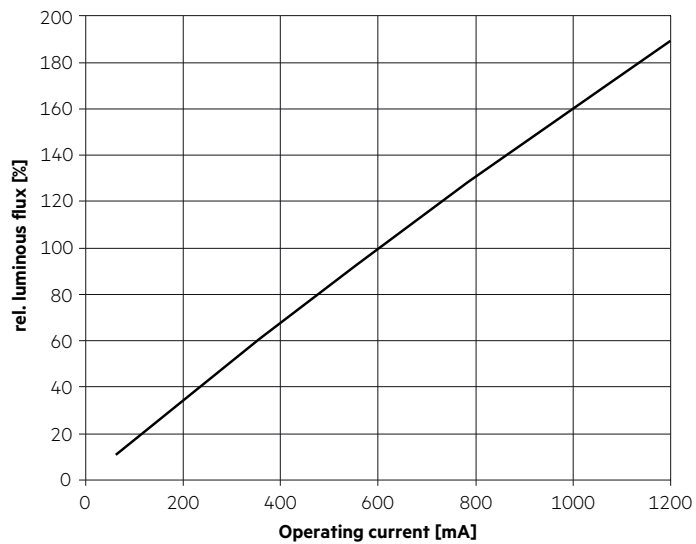
### 7.1 Additional information

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

