

## 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>



Spotlights



Downlights



Linear



Area



Floor | Wall



Free-standing



Street



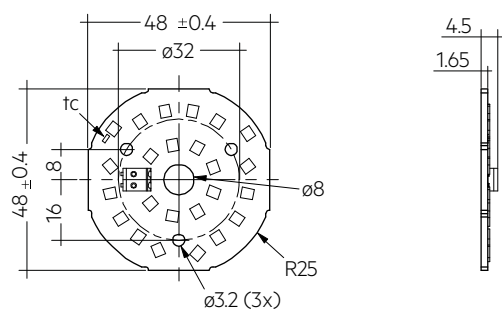
Decorative



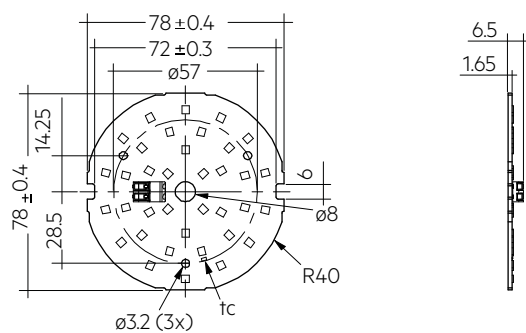
High bay

**Module CLE ADV5**

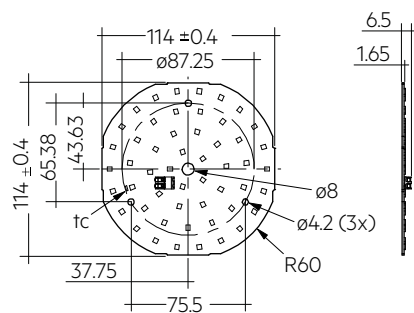
Modules CLE advanced



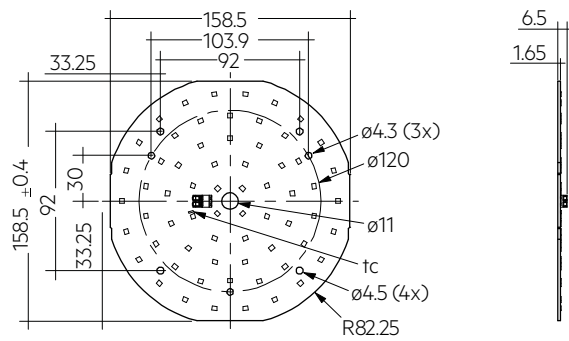
CLE 50mm 1000lm ADV5



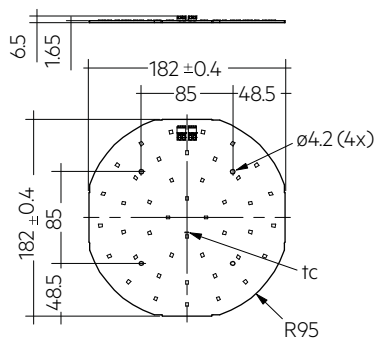
CLE 80mm 2000lm ADV5



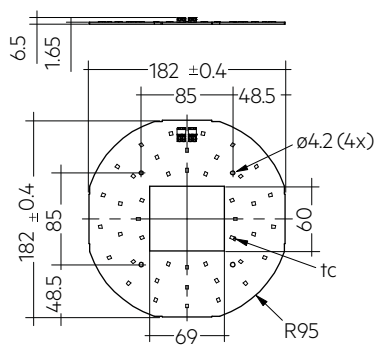
CLE 120mm 2500lm ADV5



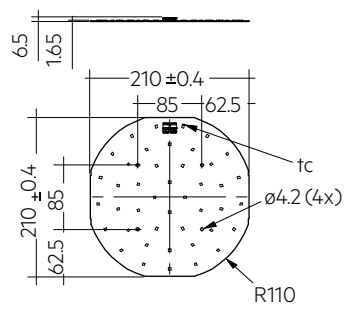
CLE 160mm 3000lm ADV5



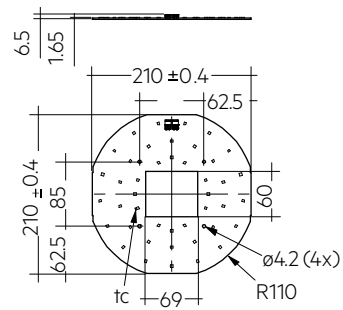
CLE 190mm 2500lm ADV5 EM



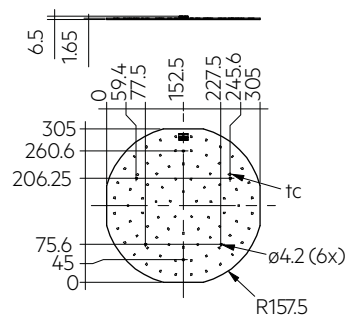
CLE 190mm 2500lm ADV5 EM SO



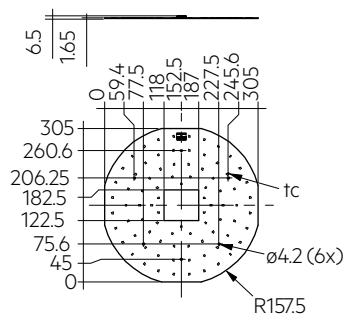
CLE 220mm 2500lm ADV5 EM



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                 |
| 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                                        | 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 $t_p = 25^\circ\text{C}$ | Expected luminous flux at $t_p$ rated | Typ. forward current | Min. forward voltage at $t_p$ rated | Max. forward voltage at $t_p = 25^\circ\text{C}$ | Power consumption $P_{\text{on}}$ at $t_p = 25^\circ\text{C}$ | Efficacy of the module at $t_p = 25^\circ\text{C}$ | Expected efficacy of the module at $t_p$ 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 $t_p = 25^\circ\text{C}$ | Expected luminous flux at $t_p$ rated | Typ. forward current | Min. forward voltage at $t_p$ rated | Max. forward voltage at $t_p = 25^\circ\text{C}$ | Power consumption $P_{\text{on}}$ at $t_p = 25^\circ\text{C}$ | Efficacy of the module at $t_p = 25^\circ\text{C}$ | Expected efficacy of the module at $t_p$ 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 $T_p = 25^\circ\text{C}$ | Expected luminous flux at $T_p$ rated | Typ. forward current | Min. forward voltage at $T_p$ rated | Max. forward voltage at $T_p = 25^\circ\text{C}$ | Power consumption $P_{\text{on}}$ at $T_p = 25^\circ\text{C}$ | Efficacy of the module at $T_p = 25^\circ\text{C}$ | Expected efficacy of the module at $T_p$ 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  $\pm 10\%$ .

- 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 after 25% of the lifetime (max.6000h) | Luminous flux after 25% of the lifetime (max.6000h) |
| 7                     | 70 – 79                                 | MacAdam initial                    | (max.6000h)                                   | Code                                                |
| 8                     | 80 – 89                                 |                                    |                                               | Luminous flux                                       |
| 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 |
|---------------------|----------------|

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 cm²       |
| 35 °C | 65 °C | 180 mA          | 8.95 K/W              | 75 cm²       |
| 40 °C | 65 °C | 180 mA          | 7.05 K/W              | 95 cm²       |
| 45 °C | 65 °C | 180 mA          | 5.15 K/W              | 129 cm²      |
| 25 °C | 65 °C | 200 mA          | 9.80 K/W              | 68 cm²       |
| 35 °C | 65 °C | 200 mA          | 6.74 K/W              | 99 cm²       |
| 40 °C | 65 °C | 200 mA          | 5.21 K/W              | 128 cm²      |
| 45 °C | 65 °C | 200 mA          | 3.68 K/W              | 181 cm²      |
| 25 °C | 65 °C | 250 mA          | 6.83 K/W              | 98 cm²       |
| 35 °C | 65 °C | 250 mA          | 4.51 K/W              | 148 cm²      |
| 40 °C | 65 °C | 250 mA          | 3.35 K/W              | 199 cm²      |
| 45 °C | 65 °C | 250 mA          | 2.19 K/W              | 304 cm²      |

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 cm²       |
| 35 °C | 65 °C | 200 mA          | 7.76 K/W              | 86 cm²       |
| 40 °C | 65 °C | 200 mA          | 6.31 K/W              | 106 cm²      |
| 45 °C | 65 °C | 200 mA          | 4.85 K/W              | 137 cm²      |
| 25 °C | 65 °C | 250 mA          | 8.57 K/W              | 78 cm²       |
| 35 °C | 65 °C | 250 mA          | 6.19 K/W              | 108 cm²      |
| 40 °C | 65 °C | 250 mA          | 5.00 K/W              | 133 cm²      |
| 45 °C | 65 °C | 250 mA          | 3.81 K/W              | 175 cm²      |
| 25 °C | 65 °C | 350 mA          | 6.21 K/W              | 107 cm²      |
| 35 °C | 65 °C | 350 mA          | 4.39 K/W              | 152 cm²      |
| 40 °C | 65 °C | 350 mA          | 3.48 K/W              | 191 cm²      |
| 45 °C | 65 °C | 350 mA          | 2.57 K/W              | 259 cm²      |

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 cm²      |
| 45 °C | 65 °C | 250 mA          | 4.58 K/W              | 146 cm²      |
| 25 °C | 65 °C | 350 mA          | self-cooling          |              |
| 35 °C | 65 °C | 350 mA          | 4.62 K/W              | 130 cm²      |
| 40 °C | 65 °C | 350 mA          | 3.78 K/W              | 159 cm²      |
| 45 °C | 65 °C | 350 mA          | 2.94 K/W              | 204 cm²      |
| 25 °C | 65 °C | 500 mA          | 4.01 K/W              | 166 cm²      |
| 35 °C | 65 °C | 500 mA          | 2.90 K/W              | 230 cm²      |
| 40 °C | 65 °C | 500 mA          | 2.35 K/W              | 284 cm²      |
| 45 °C | 65 °C | 500 mA          | 1.79 K/W              | 372 cm²      |

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 cm²      |
| 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 cm²      |
| 45 °C | 65 °C | 500 mA          | 2.14 K/W              | 311 cm²      |
| 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 cm²      |
| 45 °C | 65 °C | 600 mA          | 2.49 K/W              | 268 cm²      |

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 cm²      |

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  $b < 50 \mu\text{mmK/W}$ .

## 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.

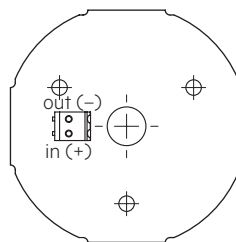


CLE 50, 80mm are basic insulated up to 200 V (if mounted with M3 screws with head diameter 6 mm) against ground and can be mounted directly on earthed metal parts of the luminaire. CLE 120, 160, 190, 220, 315 and 370mm are basic insulated up to 200 V (if mounted with M4 screws with head diameter 8 mm)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

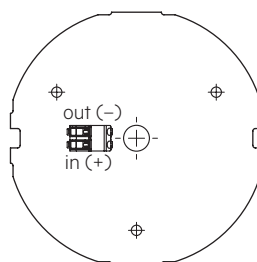
At voltages  $> 60 \text{ V}$  an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

### 3.2 Wiring

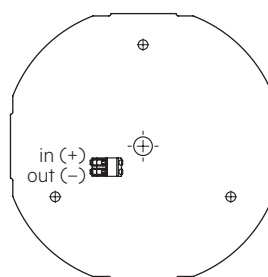
CLE 50mm



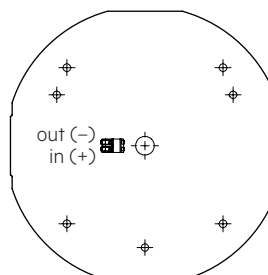
CLE 80mm



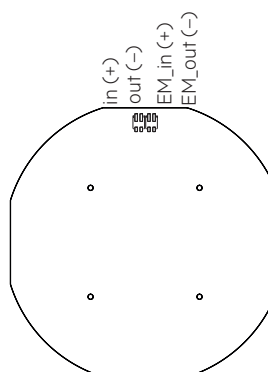
CLE 120mm



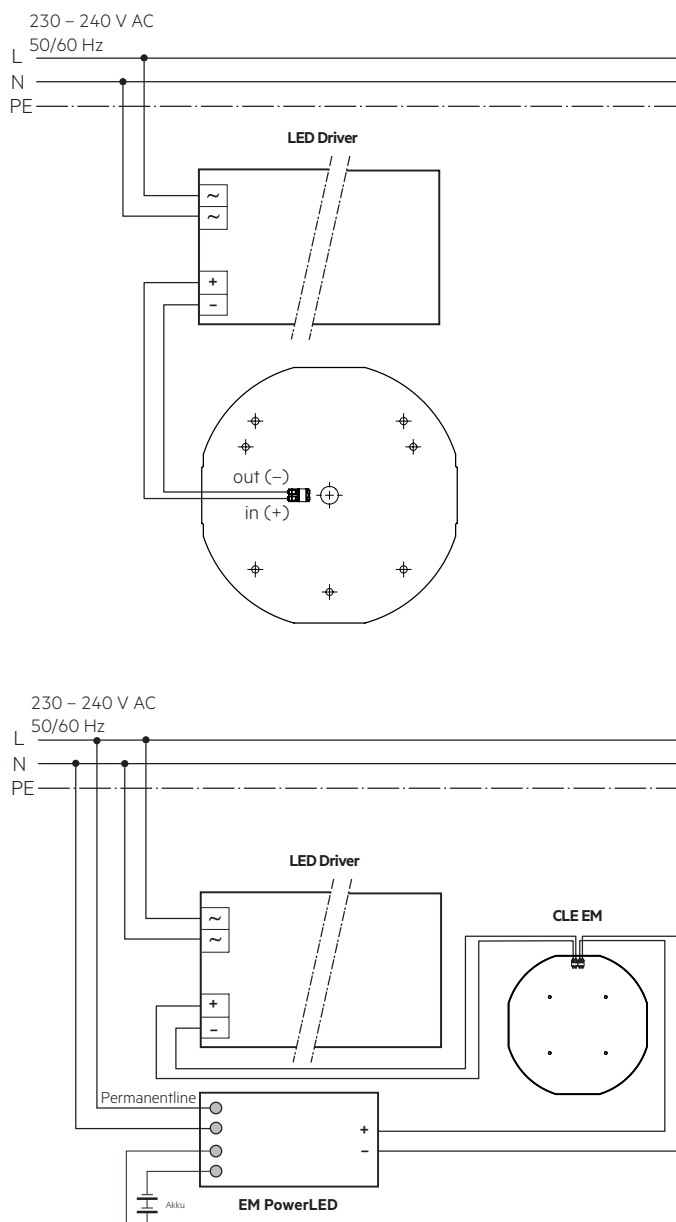
CLE 160mm



CLE 190/220/315/370mm



## Wiring example

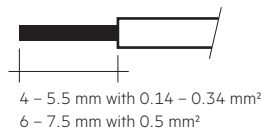


## 3.3 Wiring type and cross section

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.



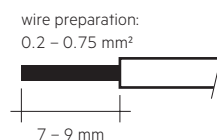
Press down the "push button" and remove the wire from front.

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 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 |
|-----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 200 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 250 mA          | 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    |
|                 | 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 80mm

| Forward current | tp temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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    |
|                 | 80 °C          | 36k h     | 48k 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 350 mA          | 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    |
|                 | 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 120mm

| Forward current | tp temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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    |
|                 | 80 °C          | 36k h     | 48k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 350 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 500 mA          | 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    |
|                 | 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 160mm

| Forward current | tp temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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    |
|                 | 80 °C          | 36k h     | 48k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 350 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 500 mA          | 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    |
|                 | 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 190/220mm

| Forward current | tp temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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    |
|                 | 80 °C          | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 350 mA          | 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    |
|                 | 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    |
| 500 mA          | 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    |
|                 | 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    |

## CLE 315mm

| Forward current | tp<br>temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 500 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    |
|                 | 80 °C             | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 600 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    |
|                 | 80 °C             | 35k h     | 47k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 700 mA          | 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    |
|                 | 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<br>temperature | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 500 mA          | 40 °C             | >72k h    | >72k h    | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 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    |
| 600 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    |
|                 | 80 °C             | 36k h     | 48k h     | >72k h    | >72k h    | >72k h    | >72k h    |
| 700 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    |
|                 | 80 °C             | 36k h     | 48k h     | >72k h    | >72k h    | >72k h    | >72k h    |

L0C10 >72k h. At tp rated, based on 10 swichting cycles per day.

### 4.3 Switching capability

100,000 cycles

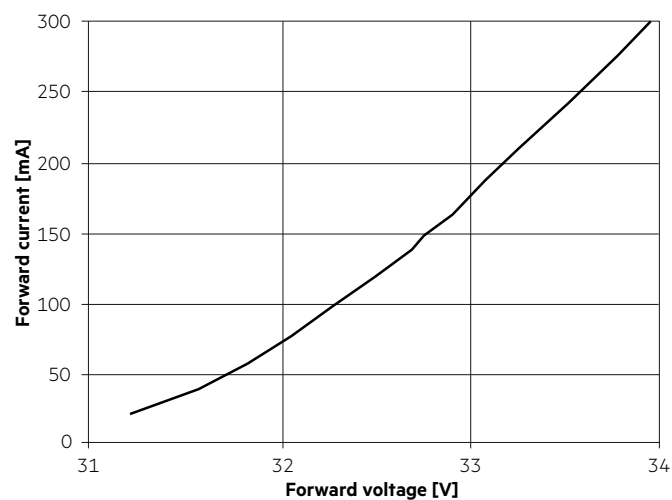
Tridonic test according to IEC 62717 Cl 10.3.3

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

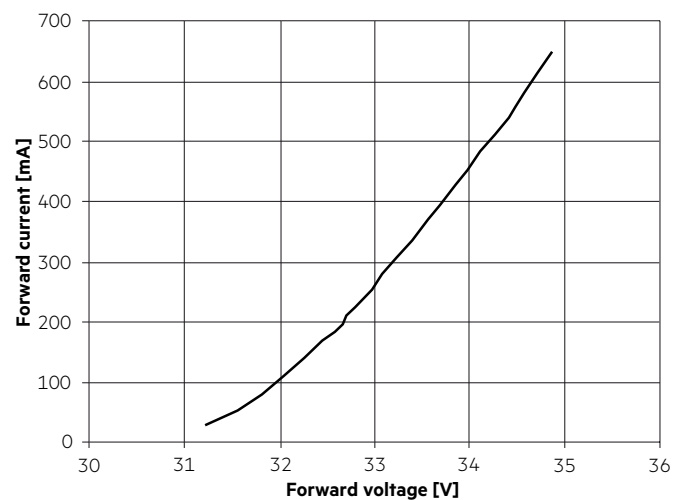
## 5. Electrical values

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

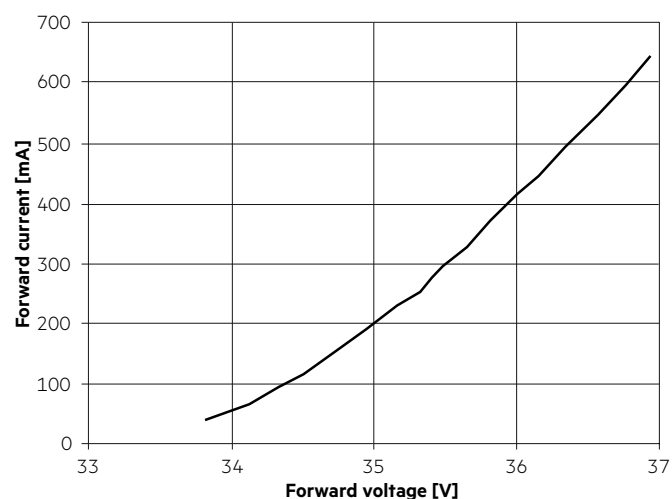
CLE 50mm



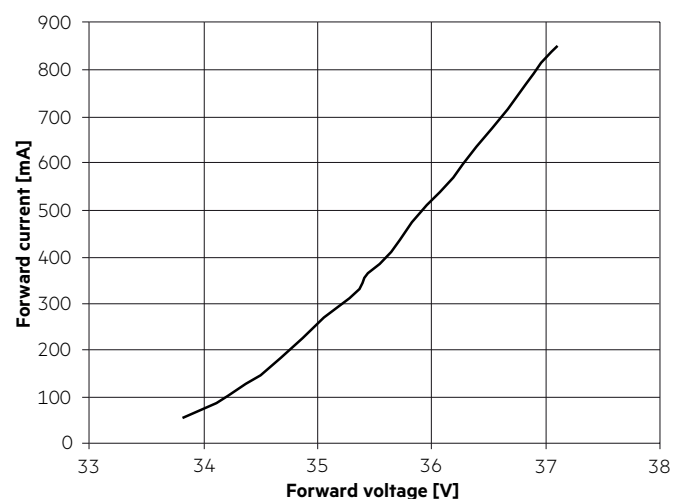
CLE 80mm



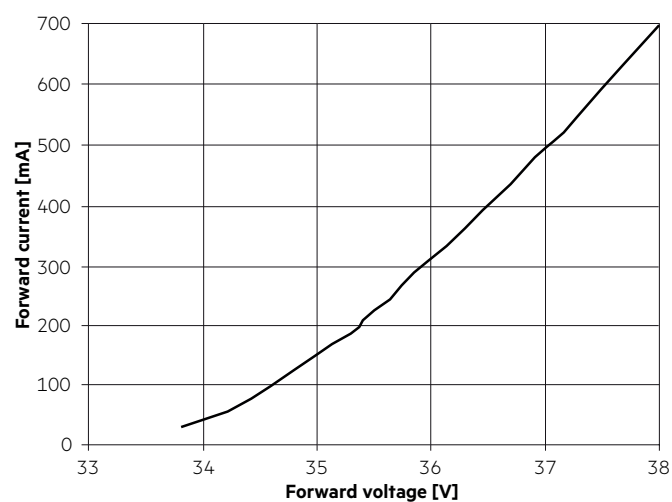
CLE 120mm



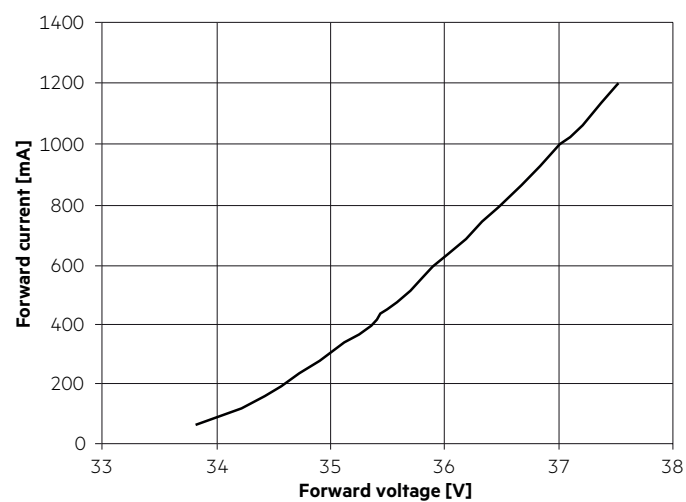
CLE 160 mm



CLE 190/220mm

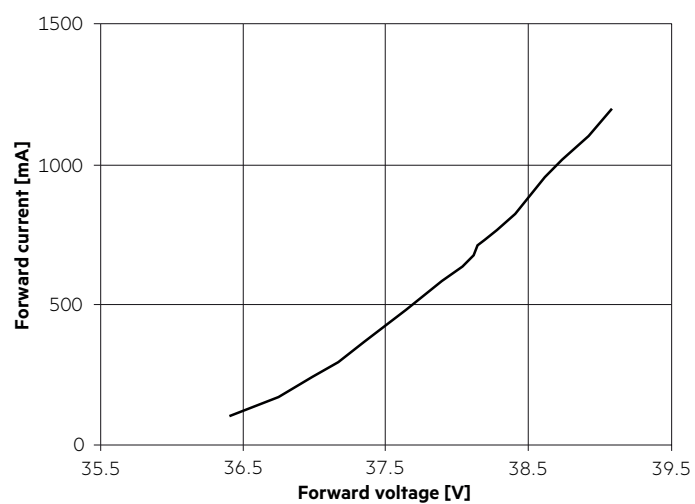


CLE 315mm

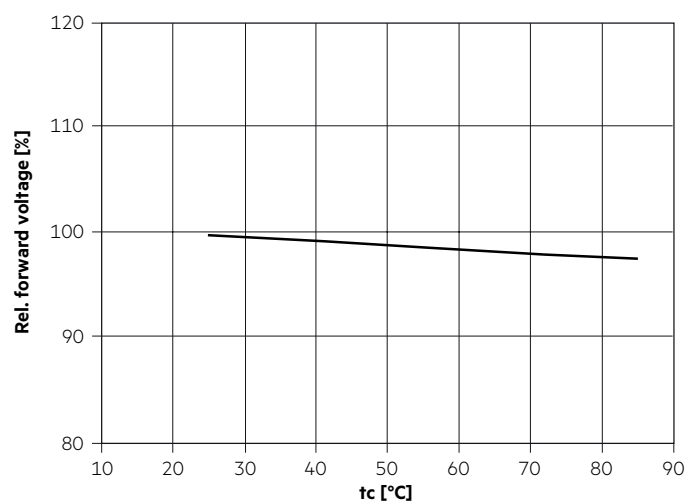


The diagrams based on statistic values. The real values can be different.

CLE 370mm



### 5.2 Forward voltage vs. $t_p$ 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

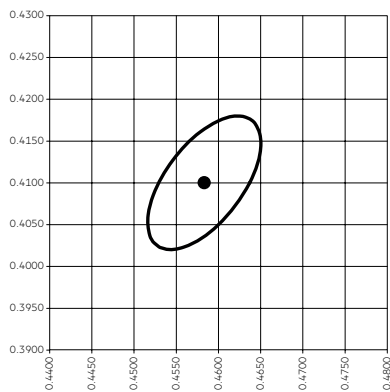
The specified colour coordinates are measured integral by a current impulse with Irated of the module and a duration of 100 ms.

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

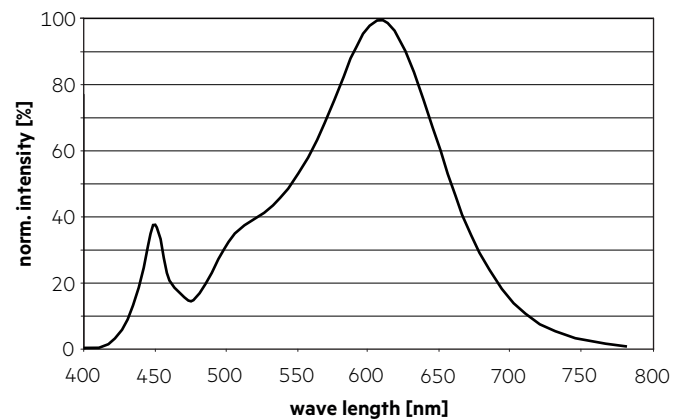
The measurement tolerance of the colour coordinates are  $\pm 0.01$ .

#### 2,700 K – CRI80

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4578 | 0.4101 |

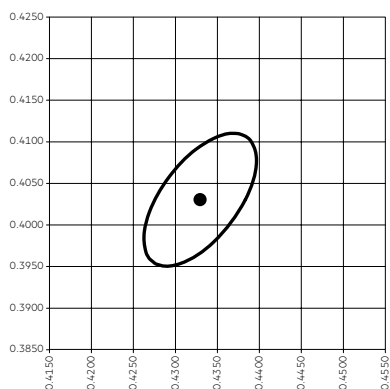


MacAdam Ellipse: 3SDCM

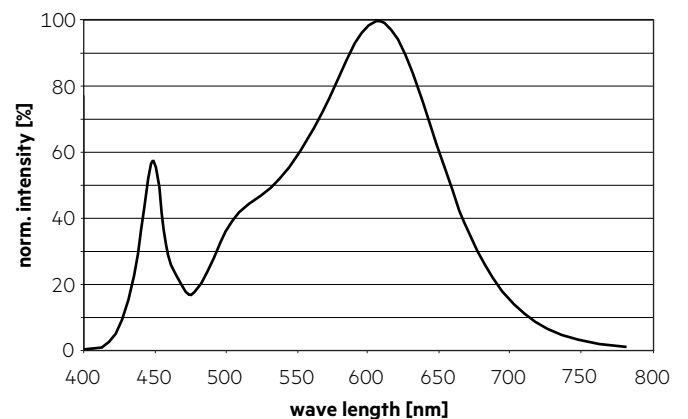


#### 3,000 K – CRI80

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4338 | 0.4030 |

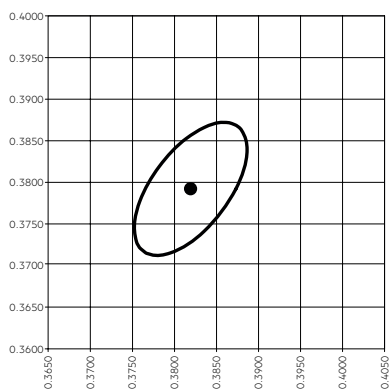


MacAdam Ellipse: 3SDCM

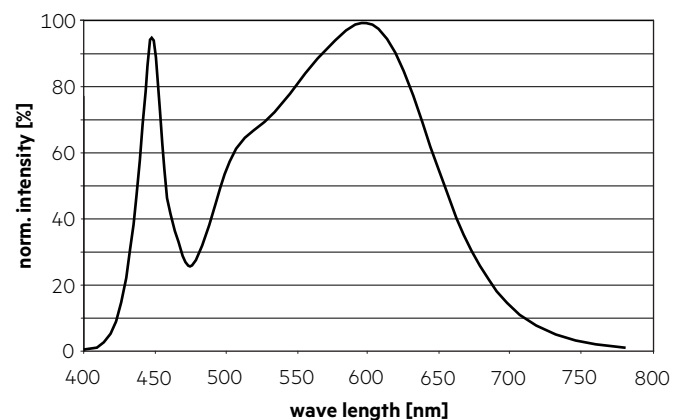


#### 4,000 K – CRI80

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.3818 | 0.3797 |

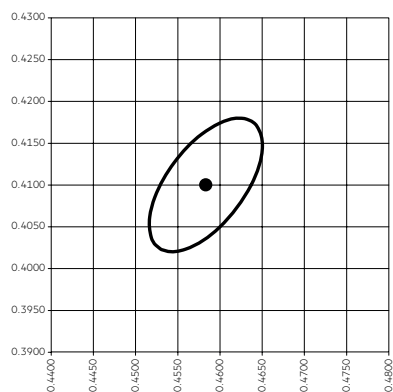


MacAdam Ellipse: 3SDCM



**2,700 K – CRI90**

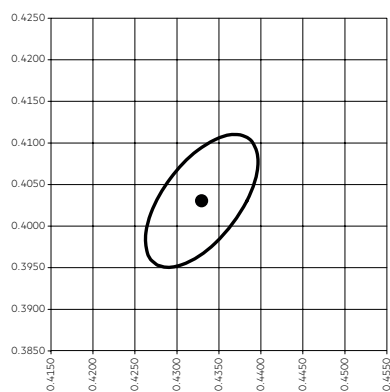
|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4578 | 0.4101 |



MacAdam Ellipse: 3SDCM

**3,000 K – CRI90**

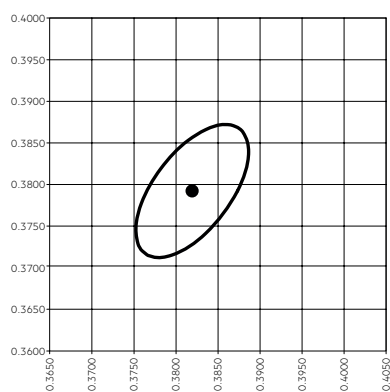
|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4338 | 0.4030 |



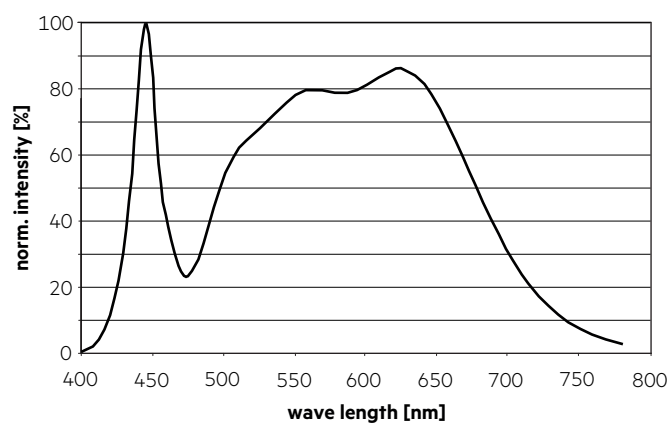
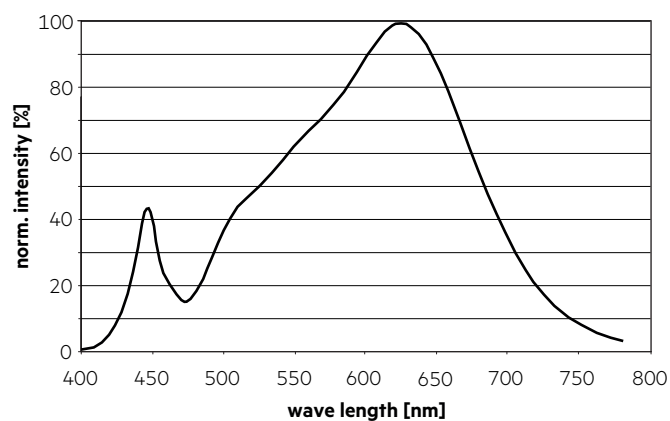
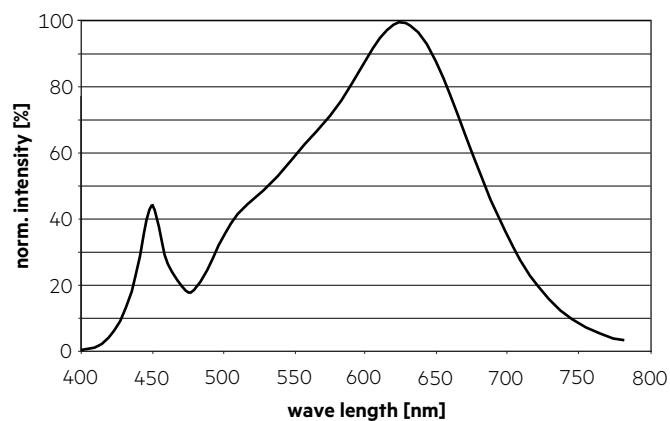
MacAdam Ellipse: 3SDCM

**4,000 K – CRI90**

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.3818 | 0.3797 |

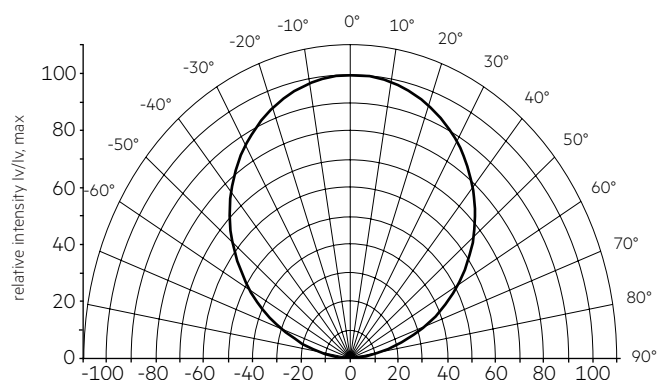


MacAdam Ellipse: 3SDCM



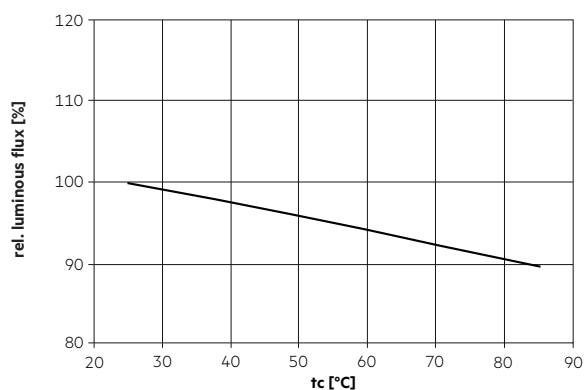
## 6.2 Light distribution

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



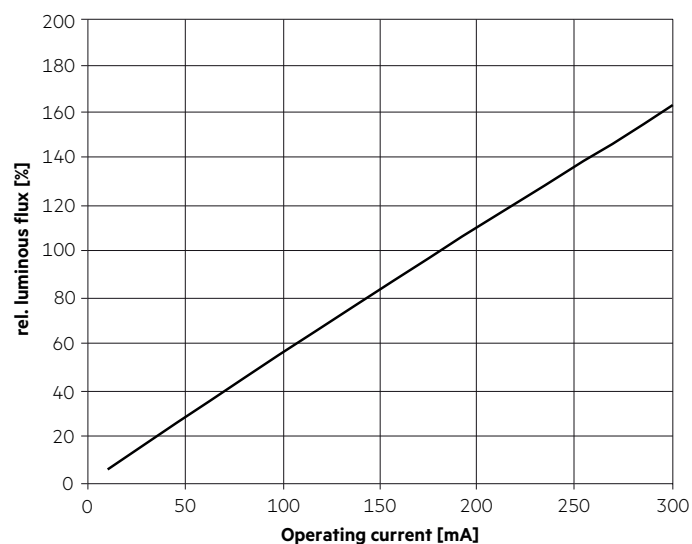
The colour temperature is measured over the complete module. The single LED light points can be outside of 3SDCM. To ensure an ideal mixture of colours and a homogeneous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 5 cm) should be used.

## 6.3 Relative luminous flux vs. tc temperature

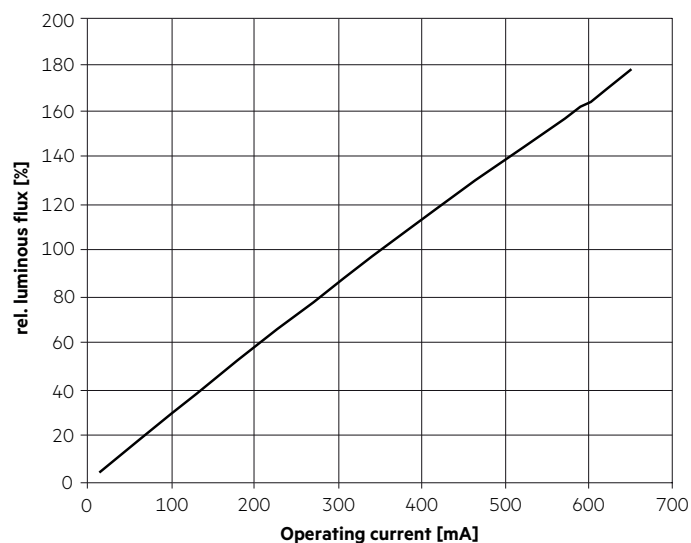


## 6.4 Relative luminous flux vs. operating current

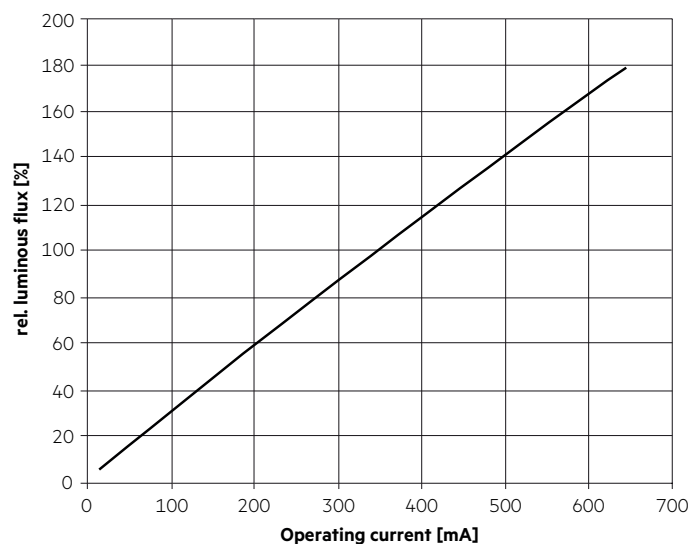
CLE 50mm



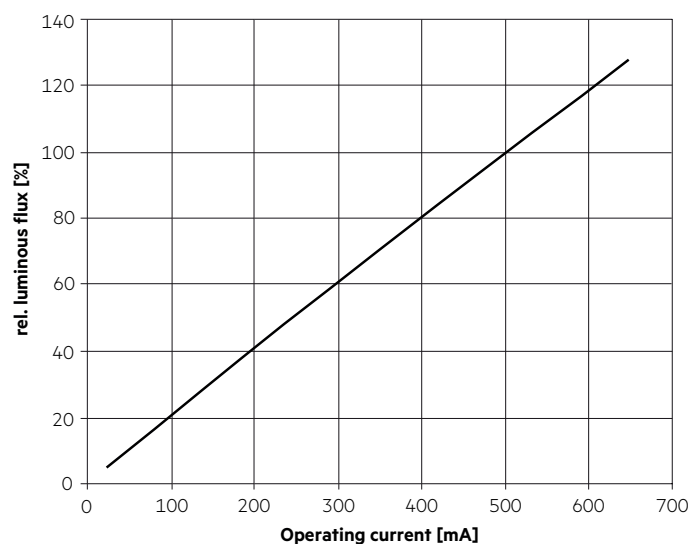
CLE 80mm



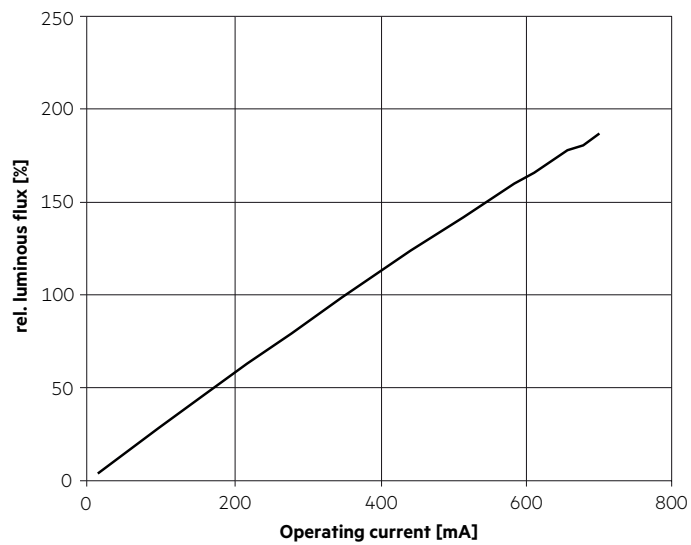
CLE 120mm



CLE 160mm



CLE 190/220mm



## 7. Miscellaneous

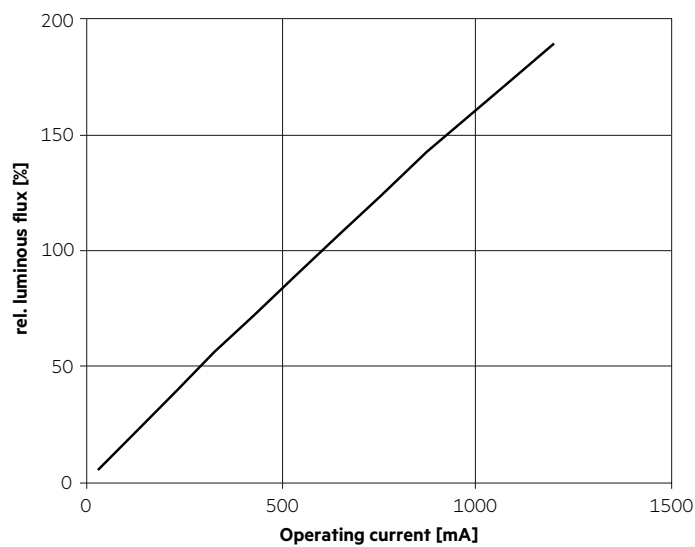
### 7.1 Additional information

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

