

**Module LLE 24mm 1250lm HV ADV6**

Modules LLE advanced



LLE 24x70mm 325lm HV ADV6



LLE 24x140mm 650lm HV ADV6



LLE 24x280mm 1250lm HV ADV6

**Product description**

- \_ Ideal for linear and panel lights
- \_ 2 terminals for serial wiring
- \_ Perfectly uniform light, even if several LED modules are used together in a line
- \_ Push terminals for quick and simple wiring of LED module to LED module
- \_ Broad portfolio from extruded lenses and covers available
- \_ HE ... High Efficiency, NM ... Nominal Mode, HO ... High Output
- \_ Min. order quantity LLE 24x70mm QTY4: 36 pcs. The LLE 24x70mm QTY4 module contains 4 single 24x70mm modules which have to be separated
- \_ 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, 4,000, 5,000 and 6,500 K
- \_ Useful luminous flux 2,482 lm at Irated and tp = 25 °C
- \_ Efficacy of the LED module 205 lm/W at Irated and tp = 25 °C
- \_ High colour rendering index CRI > 80
- \_ High colour consistency (MacAdam 3) <sup>①</sup>
- \_ Small luminous flux tolerances

**Mechanical properties**

- \_ Module dimension 24 x 70 mm, 24 x 140 mm, 24 x 280 mm and 24 x 560 mm (ZHAGA compliant)
- \_ Simple installation via clips or screws

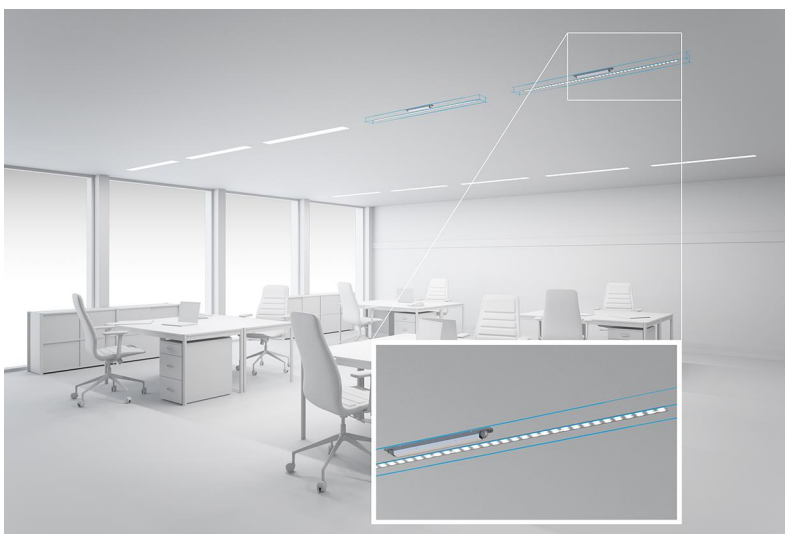
**System solution**

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

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

**Website**

<http://www.tridonic.com/28004724>



Spotlights



Downlights



Linear



Area



Floor | Wall



Free-standing



Street



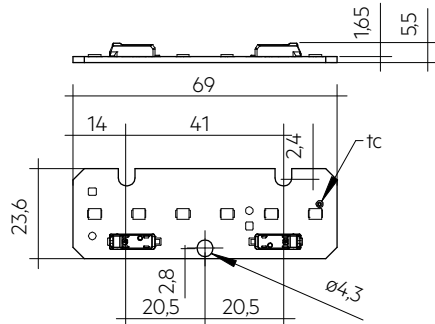
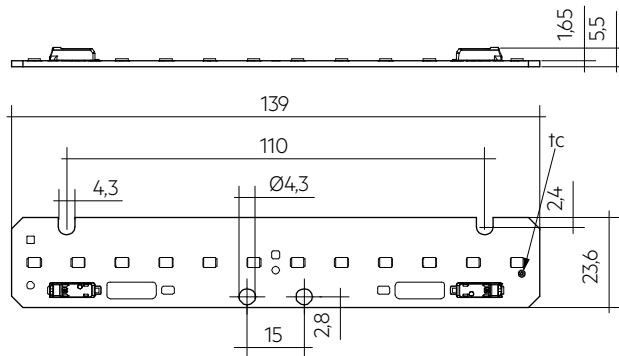
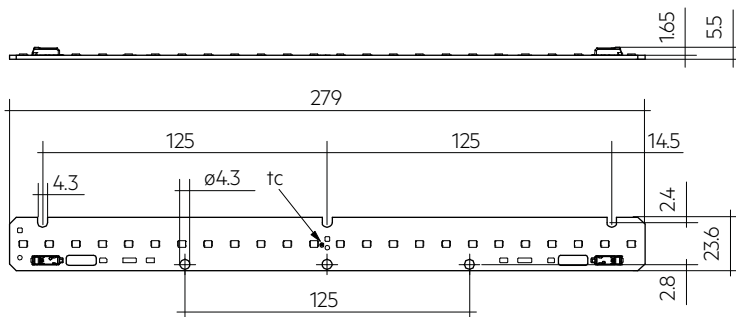
Decorative

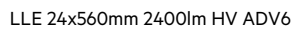


High bay

**Module LLE 24mm 1250lm HV ADV6**

Modules LLE advanced

**LLE 24x70mm 325lm HV ADV6****LLE 24x140mm 650lm HV ADV6****LLE 24x280mm 1250lm HV ADV6**



| Type                               | Article number | Colour temperature | Packaging, carton | Weight per pc. |
|------------------------------------|----------------|--------------------|-------------------|----------------|
| LLE 24x70mm 325lm 827 HV ADV6 QTY4 | 28004724       | 2,700 K            | 108 pc(s).        | 0.022 kg       |
| LLE 24x70mm 325lm 830 HV ADV6 QTY4 | 28004725       | 3,000 K            | 108 pc(s).        | 0.022 kg       |
| LLE 24x70mm 325lm 835 HV ADV6 QTY4 | 28004726       | 3,500 K            | 36 pc(s).         | 0.022 kg       |
| LLE 24x70mm 325lm 840 HV ADV6 QTY4 | 28004727       | 4,000 K            | 108 pc(s).        | 0.022 kg       |
| LLE 24x70mm 325lm 850 HV ADV6 QTY4 | 28004729       | 5,000 K            | 108 pc(s).        | 0.022 kg       |
| LLE 24x70mm 325lm 865 HV ADV6 QTY4 | 28004730       | 6,500 K            | 108 pc(s).        | 0.022 kg       |
| LLE 24x140mm 650lm 827 HV ADV6     | 28004750       | 2,700 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x140mm 650lm 830 HV ADV6     | 28004751       | 3,000 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x140mm 650lm 835 HV ADV6     | 28004752       | 3,500 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x140mm 650lm 840 HV ADV6     | 28004753       | 4,000 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x140mm 650lm 850 HV ADV6     | 28004754       | 5,000 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x140mm 650lm 865 HV ADV6     | 28004755       | 6,500 K            | 108 pc(s).        | 0.011 kg       |
| LLE 24x280mm 1250lm 827 HV ADV6    | 28004760       | 2,700 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 830 HV ADV6    | 28004761       | 3,000 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 835 HV ADV6    | 28004762       | 3,500 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 840 HV ADV6    | 28004763       | 4,000 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 840 HV ADV6 BT | 28004764       | 4,000 K            | 210 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 850 HV ADV6    | 28004765       | 5,000 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x280mm 1250lm 865 HV ADV6    | 28004766       | 6,500 K            | 108 pc(s).        | 0.023 kg       |
| LLE 24x560mm 2400lm 827 HV ADV6    | 28004771       | 2,700 K            | 108 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 830 HV ADV6    | 28004772       | 3,000 K            | 108 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 835 HV ADV6    | 28004773       | 3,500 K            | 108 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 840 HV ADV6    | 28004774       | 4,000 K            | 108 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 840 HV ADV6 BT | 28004775       | 4,000 K            | 144 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 850 HV ADV6    | 28004776       | 5,000 K            | 108 pc(s).        | 0.041 kg       |
| LLE 24x560mm 2400lm 865 HV ADV6    | 28004777       | 6,500 K            | 108 pc(s).        | 0.041 kg       |

|                                                                                   |                                             |
|-----------------------------------------------------------------------------------|---------------------------------------------|
| Beam characteristic                                                               | 120°                                        |
| Ambient temperature ta                                                            | -40 ... +65 °C                              |
| tp rated                                                                          | 50 °C                                       |
| tc                                                                                | 85 °C                                       |
| Irated                                                                            | 275 mA                                      |
| Imax                                                                              | 800 mA                                      |
| Max. permissible LF current ripple                                                | 900 mA                                      |
| Max. permissible peak current                                                     | 1,350 mA / max. 10 ms                       |
| Max. working voltage for insulation ®                                             | 440 V                                       |
| Insulation test voltage                                                           | 1.88 kV                                     |
| Colour tolerance                                                                  | 3 SDCM                                      |
| ESD classification                                                                | Severity level 2                            |
| Risk group (IEC 62471)                                                            | RG1 (> 280 – 800 mA (Imax)), RGO (≤ 280 mA) |
| Classification acc. to IEC 62031                                                  | Built-in                                    |
| 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)                                   |

## 3

**Standards**

IEC 62031, IEC 62471, IEC 61000-4-2, IEC 62778, IEC 61547

## Specific technical data

| Type                               | Article number | Photometric code | Useful luminous flux at tp = 25 °C | Expected luminous flux at tp rated | Typ. forward current | Min. forward voltage at tp rated | Max. forward voltage at tp = 25 °C | Power consumption Pon at tp = 25 °C | Efficacy of the module at tp = 25 °C | Expected efficacy of the module at tp rated | Colour rendering index CRI |
|------------------------------------|----------------|------------------|------------------------------------|------------------------------------|----------------------|----------------------------------|------------------------------------|-------------------------------------|--------------------------------------|---------------------------------------------|----------------------------|
| <b>Operating mode HE</b>           |                |                  |                                    |                                    |                      |                                  |                                    |                                     |                                      |                                             |                            |
| LLE 24x70mm 325lm 827 HV ADV6 QTY4 | 28004724       | 827/359          | –                                  | 102 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 193 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 830 HV ADV6 QTY4 | 28004725       | 830/359          | –                                  | 104 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 197 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 835 HV ADV6 QTY4 | 28004726       | 835/359          | –                                  | 108 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 204 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 840 HV ADV6 QTY4 | 28004727       | 840/359          | –                                  | 110 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 850 HV ADV6 QTY4 | 28004729       | 850/359          | –                                  | 110 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 208 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 865 HV ADV6 QTY4 | 28004730       | 865/359          | –                                  | 108 lm                             | 100 mA               | 5.0 V                            | 5.5 V                              | –                                   | –                                    | 205 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 827 HV ADV6     | 28004750       | 827/359          | –                                  | 203 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 193 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 830 HV ADV6     | 28004751       | 830/359          | –                                  | 208 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 197 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 835 HV ADV6     | 28004752       | 835/359          | –                                  | 215 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 204 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 840 HV ADV6     | 28004753       | 840/359          | –                                  | 221 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 850 HV ADV6     | 28004754       | 850/359          | –                                  | 219 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 208 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 865 HV ADV6     | 28004755       | 865/359          | –                                  | 216 lm                             | 100 mA               | 10.1 V                           | 11.0 V                             | –                                   | –                                    | 205 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 827 HV ADV6    | 28004760       | 827/359          | –                                  | 407 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 193 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 830 HV ADV6    | 28004761       | 830/359          | –                                  | 416 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 197 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 835 HV ADV6    | 28004762       | 835/359          | –                                  | 430 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 204 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6    | 28004763       | 840/359          | –                                  | 442 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6 BT | 28004764       | 840/359          | –                                  | 442 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 850 HV ADV6    | 28004765       | 850/359          | –                                  | 439 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 208 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 865 HV ADV6    | 28004766       | 865/359          | –                                  | 433 lm                             | 100 mA               | 20.2 V                           | 22.0 V                             | –                                   | –                                    | 205 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 827 HV ADV6    | 28004771       | 827/359          | –                                  | 814 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 193 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 830 HV ADV6    | 28004772       | 830/359          | –                                  | 832 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 197 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 835 HV ADV6    | 28004773       | 835/359          | –                                  | 861 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 204 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6    | 28004774       | 840/359          | –                                  | 883 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6 BT | 28004775       | 840/359          | –                                  | 883 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 209 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 850 HV ADV6    | 28004776       | 850/359          | –                                  | 877 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 208 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 865 HV ADV6    | 28004777       | 865/359          | –                                  | 866 lm                             | 100 mA               | 40.3 V                           | 43.9 V                             | –                                   | –                                    | 205 lm/W                                    | >80                        |
| <b>Operating mode NM</b>           |                |                  |                                    |                                    |                      |                                  |                                    |                                     |                                      |                                             |                            |
| LLE 24x70mm 325lm 827 HV ADV6 QTY4 | 28004724       | 827/359          | 286 lm                             | 274 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 189 lm/W                             | 183 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 830 HV ADV6 QTY4 | 28004725       | 830/359          | 293 lm                             | 281 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 193 lm/W                             | 187 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 835 HV ADV6 QTY4 | 28004726       | 835/359          | 302 lm                             | 290 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 200 lm/W                             | 193 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 840 HV ADV6 QTY4 | 28004727       | 840/359          | 310 lm                             | 298 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 850 HV ADV6 QTY4 | 28004729       | 850/359          | 308 lm                             | 296 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 203 lm/W                             | 197 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 865 HV ADV6 QTY4 | 28004730       | 865/359          | 304 lm                             | 292 lm                             | 275 mA               | 5.2 V                            | 5.7 V                              | 1.5 W                               | 201 lm/W                             | 194 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 827 HV ADV6     | 28004750       | 827/359          | 572 lm                             | 549 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 188 lm/W                             | 183 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 830 HV ADV6     | 28004751       | 830/359          | 585 lm                             | 562 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 193 lm/W                             | 187 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 835 HV ADV6     | 28004752       | 835/359          | 605 lm                             | 581 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 199 lm/W                             | 193 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 840 HV ADV6     | 28004753       | 840/359          | 621 lm                             | 596 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 850 HV ADV6     | 28004754       | 850/359          | 617 lm                             | 592 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 203 lm/W                             | 197 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 865 HV ADV6     | 28004755       | 865/359          | 608 lm                             | 584 lm                             | 275 mA               | 10.4 V                           | 11.4 V                             | 3.0 W                               | 201 lm/W                             | 194 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 827 HV ADV6    | 28004760       | 827/359          | 1,144 lm                           | 1,098 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 188 lm/W                             | 183 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 830 HV ADV6    | 28004761       | 830/359          | 1,170 lm                           | 1,123 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 193 lm/W                             | 187 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 835 HV ADV6    | 28004762       | 835/359          | 1,210 lm                           | 1,161 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 199 lm/W                             | 193 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6    | 28004763       | 840/359          | 1,241 lm                           | 1,191 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6 BT | 28004764       | 840/359          | 1,241 lm                           | 1,191 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 850 HV ADV6    | 28004765       | 850/359          | 1,233 lm                           | 1,183 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 203 lm/W                             | 197 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 865 HV ADV6    | 28004766       | 865/359          | 1,216 lm                           | 1,168 lm                           | 275 mA               | 20.9 V                           | 22.7 V                             | 6.1 W                               | 201 lm/W                             | 194 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 827 HV ADV6    | 28004771       | 827/359          | 2,287 lm                           | 2,195 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 189 lm/W                             | 183 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 830 HV ADV6    | 28004772       | 830/359          | 2,340 lm                           | 2,246 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 193 lm/W                             | 187 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 835 HV ADV6    | 28004773       | 835/359          | 2,420 lm                           | 2,322 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 199 lm/W                             | 193 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6    | 28004774       | 840/359          | 2,482 lm                           | 2,382 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6 BT | 28004775       | 840/359          | 2,482 lm                           | 2,382 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 205 lm/W                             | 198 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 850 HV ADV6    | 28004776       | 850/359          | 2,466 lm                           | 2,367 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 203 lm/W                             | 197 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 865 HV ADV6    | 28004777       | 865/359          | 2,433 lm                           | 2,335 lm                           | 275 mA               | 41.8 V                           | 45.4 V                             | 12.1 W                              | 201 lm/W                             | 194 lm/W                                    | >80                        |
| <b>Operating mode HO</b>           |                |                  |                                    |                                    |                      |                                  |                                    |                                     |                                      |                                             |                            |
| LLE 24x70mm 325lm 827 HV ADV6 QTY4 | 28004724       | 827/359          | –                                  | 651 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 160 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 830 HV ADV6 QTY4 | 28004725       | 830/359          | –                                  | 667 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 164 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 835 HV ADV6 QTY4 | 28004726       | 835/359          | –                                  | 689 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 170 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 840 HV ADV6 QTY4 | 28004727       | 840/359          | –                                  | 707 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 850 HV ADV6 QTY4 | 28004729       | 850/359          | –                                  | 702 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 173 lm/W                                    | >80                        |
| LLE 24x70mm 325lm 865 HV ADV6 QTY4 | 28004730       | 865/359          | –                                  | 693 lm                             | 700 mA               | 5.5 V                            | 6.0 V                              | –                                   | –                                    | 171 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 827 HV ADV6     | 28004750       | 827/359          | –                                  | 1,303 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 161 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 830 HV ADV6     | 28004751       | 830/359          | –                                  | 1,333 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 164 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 835 HV ADV6     | 28004752       | 835/359          | –                                  | 1,378 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 170 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 840 HV ADV6     | 28004753       | 840/359          | –                                  | 1,414 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 850 HV ADV6     | 28004754       | 850/359          | –                                  | 1,405 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 173 lm/W                                    | >80                        |
| LLE 24x140mm 650lm 865 HV ADV6     | 28004755       | 865/359          | –                                  | 1,386 lm                           | 700 mA               | 11.1 V                           | 12.0 V                             | –                                   | –                                    | 171 lm/W                                    | >80                        |

| Type                               | Article number | Photometric code <sup>②</sup> | Useful luminous flux at tp = 25 °C <sup>④</sup> | Expected luminous flux at tp rated <sup>⑤</sup> | Typ. forward current | Min. forward voltage at tp rated <sup>⑥</sup> | Max. forward voltage at tp = 25 °C <sup>⑦</sup> | Power consumption Pon at tp = 25 °C <sup>⑦</sup> | Efficacy of the module at tp = 25 °C | Expected efficacy of the module at tp rated | Colour rendering index CRI |
|------------------------------------|----------------|-------------------------------|-------------------------------------------------|-------------------------------------------------|----------------------|-----------------------------------------------|-------------------------------------------------|--------------------------------------------------|--------------------------------------|---------------------------------------------|----------------------------|
| LLE 24x280mm 1250lm 827 HV ADV6    | 28004760       | 827/359                       | –                                               | 2,606 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 161 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 830 HV ADV6    | 28004761       | 830/359                       | –                                               | 2,666 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 164 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 835 HV ADV6    | 28004762       | 835/359                       | –                                               | 2,757 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 170 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6    | 28004763       | 840/359                       | –                                               | 2,828 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 840 HV ADV6 BT | 28004764       | 840/359                       | –                                               | 2,828 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 850 HV ADV6    | 28004765       | 850/359                       | –                                               | 2,809 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 173 lm/W                                    | >80                        |
| LLE 24x280mm 1250lm 865 HV ADV6    | 28004766       | 865/359                       | –                                               | 2,772 lm                                        | 700 mA               | 22.2 V                                        | 24.0 V                                          | –                                                | –                                    | 171 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 827 HV ADV6    | 28004771       | 827/359                       | –                                               | 5,211 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 161 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 830 HV ADV6    | 28004772       | 830/359                       | –                                               | 5,332 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 164 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 835 HV ADV6    | 28004773       | 835/359                       | –                                               | 5,513 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 170 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6    | 28004774       | 840/359                       | –                                               | 5,655 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 840 HV ADV6 BT | 28004775       | 840/359                       | –                                               | 5,655 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 174 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 850 HV ADV6    | 28004776       | 850/359                       | –                                               | 5,619 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 173 lm/W                                    | >80                        |
| LLE 24x560mm 2400lm 865 HV ADV6    | 28004777       | 865/359                       | –                                               | 5,543 lm                                        | 700 mA               | 44.4 V                                        | 48.1 V                                          | –                                                | –                                    | 171 lm/W                                    | >80                        |

② If mounted with M4 screws with 7 mm head diameter.

③ The detailed explanation, see data sheet section 1.1.

④ Tolerance of useful light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %.

⑤ Tolerance of expected light flux - 0 % / + 15 %. Measurement uncertainty ± 10 %. Based on calculation.

⑥ Measurement tolerance forward voltage: ±0.1 V.

⑦ Tolerance of power consumption Pon ± 10 %. Measurement uncertainty ± 5 %.

## LINEAR COVER LLE

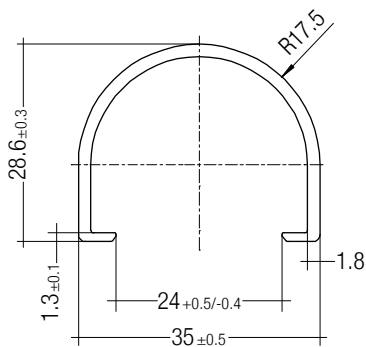
Accessory



## Product description

- \_ LINEAR COVER for LLE
- \_ Protection against direct touch for non-SELV applications (recommendation LLE 20: use all fixing points and screwed Endcap, recommendation LLE 24: use all fixing points)
- \_ Fast snap on mounting on to LLE 20: with M4 screws and plastic washers, to LLE 24: with clips or plastic washers
- \_ High transmission: transparent, semi-transparent and diffuse
- \_ Material: PMMA
- \_ Tolerances:  $\pm 1$  mm for 597 mm length (ends finished), + 10 mm from length 1,150 mm (ends raw)

## Website

<http://www.tridonic.com/28000338>


## Ordering data

| Type                               | Article number | Colour           | Length L | Efficiency | Packaging, carton | Weight per pc. |
|------------------------------------|----------------|------------------|----------|------------|-------------------|----------------|
| LINEAR COVER SY Transparent 1600mm | 28000338       | Transparent      | 1,600 mm | 94 %       | 12 pc(s).         | 0.272 kg       |
| LINEAR COVER SY Frosted 1800mm     | 28000437       | Semi-transparent | 1,800 mm | 87 %       | 12 pc(s).         | 0.308 kg       |
| LINEAR COVER SY Frosted 1600mm     | 28000339       | Semi-transparent | 1,600 mm | 87 %       | 12 pc(s).         | 0.272 kg       |
| LINEAR COVER SY Frosted 1500mm     | 28000435       | Semi-transparent | 1,500 mm | 87 %       | 12 pc(s).         | 0.244 kg       |
| LINEAR COVER SY Frosted 1200mm     | 28000422       | Semi-transparent | 1,200 mm | 87 %       | 12 pc(s).         | 0.205 kg       |
| LINEAR COVER SY Frosted 597mm      | 28000340       | Semi-transparent | 597 mm   | 87 %       | 12 pc(s).         | 0.102 kg       |
| LINEAR COVER SY Diffuse 1800mm     | 28000438       | Diffuse          | 1,800 mm | 76 %       | 12 pc(s).         | 0.308 kg       |
| LINEAR COVER SY Diffuse 1600mm     | 28000341       | Diffuse          | 1,600 mm | 76 %       | 12 pc(s).         | 0.272 kg       |
| LINEAR COVER SY Diffuse 1500mm     | 28000436       | Diffuse          | 1,500 mm | 76 %       | 12 pc(s).         | 0.257 kg       |
| LINEAR COVER SY Diffuse 1200mm     | 28000434       | Diffuse          | 1,200 mm | 76 %       | 12 pc(s).         | 0.205 kg       |
| LINEAR COVER SY Diffuse 597mm      | 28000342       | Diffuse          | 597 mm   | 76 %       | 12 pc(s).         | 0.102 kg       |

## ACL ENDCAP LLE

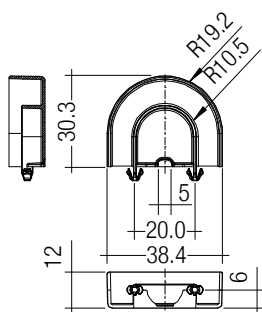
Accessory



## Product description

- \_ ENDCAP for LLE
- \_ PUSH-FIX: Fast snap on mounting (sheet thickness 0.5 – 1.0 mm), for drilling hole 4 mm
- \_ SCREW-FIX: Screw mounting with EJOT Delta PT WN 5451 30x8 (not included), tightening torque 0.7 Nm
- \_ Clip made of polycarbonate

## Website

<http://www.tridonic.com/28001037>


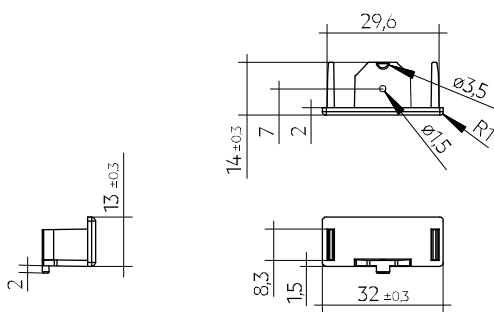
## Ordering data

| Type                       | Article number | Colour | Packaging, carton | Weight per pc. |
|----------------------------|----------------|--------|-------------------|----------------|
| ACL ENDCAP LLE24 PUSH-FIX  | 28001037       | White  | 480 pc(s).        | 0.003 kg       |
| ACL ENDCAP LLE24 SCREW-FIX | 28002315       | White  | 480 pc(s).        | 0.003 kg       |



## ACL LINEAR LENS 24mm

Accessory



## Product description LINEAR LENS

- \_ Linear lens for LLE 20 / 24
- \_ Available with different beam characteristics
- \_ Protection against direct touch for non-SELV applications (recommendation: use all fixing points)
- \_ Fast snap on mounting on to LLE 20: with M4 screws and plastic washers, to LLE 24: with clips or plastic washers
- \_ Recommendation: Fastening with screws and plastic washers, see 2.3 Heat sink specifications in data sheet
- \_ Material: PMMA
- \_ Available lengths: 1,200, 1,500 and 1,800 mm, Tolerance: + 10 mm (ends raw)
- \_ Max. permissible temperature 80 °C
- \_ Photometric data available on website

## Product description Endcap

- \_ ENDCAP for LINEAR LENS 24mm INTENSE, ASY and DASY
- \_ Mounting by clipping in and screwing from below using screw EJOT Delta PT WN 5451 20x4, tightening torque 0.7 Nm
- \_ Made of Polyamide UL94 V0

## Website

<http://www.tridonic.com/28001428>


## Ordering data

| Type                              | Article number | Length L | Beam characteristic | Efficiency | Packaging, carton | Weight per pc. |
|-----------------------------------|----------------|----------|---------------------|------------|-------------------|----------------|
| ACL LINEAR LENS 24x1200mm 60°     | 28001428       | 1,200 mm | 60°                 | 97 %       | 21 pc(s).         | 0.196 kg       |
| ACL LINEAR LENS 24x1200mm 90°     | 28001429       | 1,200 mm | 90°                 | 97 %       | 21 pc(s).         | 0.165 kg       |
| ACL LINEAR LENS 24x1500mm 60°     | 28000953       | 1,500 mm | 60°                 | 97 %       | 21 pc(s).         | 0.261 kg       |
| ACL LINEAR LENS 24x1500mm 90°     | 28000955       | 1,500 mm | 90°                 | 97 %       | 21 pc(s).         | 0.221 kg       |
| ACL LINEAR LENS 24x1200mm INTENSE | 28002024       | 1,200 mm | 40°                 | 95 %       | 18 pc(s).         | 0.261 kg       |
| ACL LINEAR LENS 24x1500mm INTENSE | 28002025       | 1,500 mm | 40°                 | 95 %       | 18 pc(s).         | 0.326 kg       |
| ACL LINEAR LENS 24x1800mm INTENSE | 28002026       | 1,800 mm | 40°                 | 95 %       | 18 pc(s).         | 0.392 kg       |
| ACL LINEAR LENS 24x1200mm BATWING | 28002027       | 1,200 mm | batwing             | 95 %       | 18 pc(s).         | 0.275 kg       |
| ACL LINEAR LENS 24x1500mm BATWING | 28002028       | 1,500 mm | batwing             | 95 %       | 18 pc(s).         | 0.344 kg       |
| ACL LINEAR LENS 24x1800mm BATWING | 28002029       | 1,800 mm | batwing             | 95 %       | 18 pc(s).         | 0.412 kg       |
| ACL LINEAR LENS 24x1200mm ASY     | 28002030       | 1,200 mm | asymmetric          | 95 %       | 18 pc(s).         | 0.250 kg       |
| ACL LINEAR LENS 24x1500mm ASY     | 28002031       | 1,500 mm | asymmetric          | 95 %       | 18 pc(s).         | 0.312 kg       |
| ACL LINEAR LENS 24x1800mm ASY     | 28002032       | 1,800 mm | asymmetric          | 95 %       | 18 pc(s).         | 0.375 kg       |
| ACL LINEAR LENS 24x1200mm DASY    | 28002033       | 1,200 mm | double asymmetric   | 92 %       | 18 pc(s).         | 0.249 kg       |
| ACL LINEAR LENS 24x1500mm DASY    | 28002034       | 1,500 mm | double asymmetric   | 92 %       | 18 pc(s).         | 0.311 kg       |
| ACL LINEAR LENS 24x1800mm DASY    | 28002035       | 1,800 mm | double asymmetric   | 92 %       | 18 pc(s).         | 0.373 kg       |
| ACL Endcap LENS 24mm PSF          | 28002669       | –        | –                   | –          | 3,600 pc(s).      | 0.003 kg       |

## ACL CLIP 4.3mm

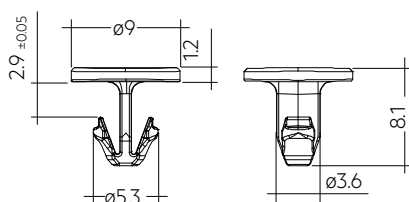
Accessory



## Product description

- \_ Clip for fixation of LED modules with 4.3 mm holes
- \_ Fast snap on mounting (sheet thickness 0.5 – 1.0 mm for PUSH-FIX and 1 – 2 mm for PUSH-FIX Long)
- \_ For drilling hole 4 mm
- \_ Clip made of polycarbonate
- \_ Minimum sales quantity 500 pcs.

## Website

<http://www.tridonic.com/28001036>


## Ordering data

| Type                         | Article number | Colour      | Packaging, bag <sup>①</sup> | Weight per pc. |
|------------------------------|----------------|-------------|-----------------------------|----------------|
| ACL CLIP 4.3mm PUSH-FIX      | 28001036       | White       | 500 pc(s).                  | 0.001 kg       |
| ACL CLIP 4.3mm PUSH-FIX Long | 28002314       | Transparent | 500 pc(s).                  | 0.001 kg       |

<sup>①</sup> Minimum sales quantity 500 pcs.

## ACL BRIDGE LLE24/40

Accessory



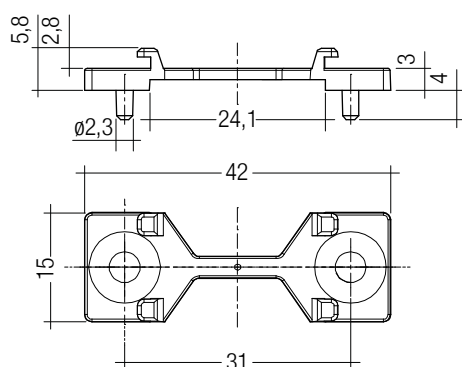
## Product description

- \_ Enables the fixation of 24 mm wide Tridonic LED modules to fixtures made for 40 mm wide modules
- \_ Ideal for extruded aluminium gear trays made for 40 mm modules with pre-alignment knobs
- \_ Clip-on for LINEAR COVER and LINEAR LENS <sup>①</sup>
- \_ For LLE 24 with 280 mm module minimum 2 bridges required
- \_ For LLE 24 with 560 mm module minimum 3 bridges required
- \_ Fixation via M3 or M4 countersunk screw, max. tightening torque 0.5 Nm
- \_ Material: white polycarbonate
- \_ Minimum sales quantity 600 pcs.

<sup>①</sup> Beam characteristics will change due to the elevated fixation (see photometric files for details).

## Website

<http://www.tridonic.com/28001205>



## Ordering data

| Type                          | Article number | Colour | Packaging, carton | Weight per pc. |
|-------------------------------|----------------|--------|-------------------|----------------|
| ACL BRIDGE LLE24/40 SCREW-FIX | 28001205       | White  | 600 pc(s).        | 0.001 kg       |

## 1. Standards

IEC 62031  
IEC 62471  
IEC 61000-4-2  
IEC 62778  
IEC 61547

### 1.1 Photometric code

Key for photometric code, e. g. 830 / 349

| 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                  | Colour temperature in Kelvin x 100      | MacAdam initial       | MacAdam after 25% of the lifetime (max.6000h) | Luminous flux after 25% of the lifetime (max.6000h) |
| 7                     | 70 – 79                                 |                       |                                               | Code                                                |
| 8                     | 80 – 89                                 |                       |                                               | Luminous flux                                       |
| 9                     | ≥90                                     |                       |                                               | 7                                                   |
|                       |                                         |                       |                                               | 8                                                   |
|                       |                                         |                       |                                               | 9                                                   |

### 1.2 Risk group

| Forward current       | Risk group (IEC 62471) |
|-----------------------|------------------------|
| ≤ 280 mA              | RG0                    |
| > 280 – 800 mA (Imax) | RG1                    |

### 1.3 Energy classification

| Type                               | Colour temperature | Forward current | Energy classification | Energy consumption |
|------------------------------------|--------------------|-----------------|-----------------------|--------------------|
| LLE 24x70mm 325lm 827 HV ADV6 QTY4 | 2,700 K            | 275 mA          | C                     | 2 kWh / 1,000 h    |
| LLE 24x70mm 325lm 830 HV ADV6 QTY4 | 3,000 K            | 275 mA          | C                     | 2 kWh / 1,000 h    |
| LLE 24x70mm 325lm 835 HV ADV6 QTY4 | 3,500 K            | 275 mA          | C                     | 2 kWh / 1,000 h    |
| LLE 24x70mm 325lm 840 HV ADV6 QTY4 | 4,000 K            | 275 mA          | B                     | 2 kWh / 1,000 h    |
| LLE 24x70mm 325lm 850 HV ADV6 QTY4 | 5,000 K            | 275 mA          | B                     | 2 kWh / 1,000 h    |
| LLE 24x70mm 325lm 865 HV ADV6 QTY4 | 6,500 K            | 275 mA          | B                     | 2 kWh / 1,000 h    |
| LLE 24x140mm 650lm 827 HV ADV6     | 2,700 K            | 275 mA          | C                     | 4 kWh / 1,000 h    |
| LLE 24x140mm 650lm 830 HV ADV6     | 3,000 K            | 275 mA          | C                     | 4 kWh / 1,000 h    |
| LLE 24x140mm 650lm 835 HV ADV6     | 3,500 K            | 275 mA          | B                     | 4 kWh / 1,000 h    |
| LLE 24x140mm 650lm 840 HV ADV6     | 4,000 K            | 275 mA          | B                     | 4 kWh / 1,000 h    |
| LLE 24x140mm 650lm 850 HV ADV6     | 5,000 K            | 275 mA          | B                     | 4 kWh / 1,000 h    |
| LLE 24x140mm 650lm 865 HV ADV6     | 6,500 K            | 275 mA          | B                     | 4 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 827 HV ADV6    | 2,700 K            | 275 mA          | C                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 830 HV ADV6    | 3,000 K            | 275 mA          | C                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 835 HV ADV6    | 3,500 K            | 275 mA          | C                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 840 HV ADV6    | 4,000 K            | 275 mA          | B                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 840 HV ADV6 BT | 4,000 K            | 275 mA          | B                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 850 HV ADV6    | 5,000 K            | 275 mA          | B                     | 7 kWh / 1,000 h    |
| LLE 24x280mm 1250lm 865 HV ADV6    | 6,500 K            | 275 mA          | B                     | 7 kWh / 1,000 h    |
| LLE 24x560mm 2400lm 827 HV ADV6    | 2,700 K            | 275 mA          | C                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 830 HV ADV6    | 3,000 K            | 275 mA          | C                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 835 HV ADV6    | 3,500 K            | 275 mA          | C                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 840 HV ADV6    | 4,000 K            | 275 mA          | B                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 840 HV ADV6 BT | 4,000 K            | 275 mA          | B                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 850 HV ADV6    | 5,000 K            | 275 mA          | B                     | 13 kWh / 1,000 h   |
| LLE 24x560mm 2400lm 865 HV ADV6    | 6,500 K            | 275 mA          | B                     | 13 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 tc point, ambient temperature and lifetime

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

For LLE a tp temperature of 50 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and lifetime.

Compliance with the maximum permissible reference temperature at the 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 ... +80 °C |
|---------------------|----------------|

Operation only in non condensing environment.

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

### 2.3 Heat sink values

#### LLE 24x70mm 325lm ADV6

| ta    | tp    | Forward current | R <sub>th, hs-a</sub> | Cooling area        |
|-------|-------|-----------------|-----------------------|---------------------|
| 25 °C | 50 °C | 275 mA          | 33.97 K/W             | 20 cm <sup>2</sup>  |
| 25 °C | 50 °C | 700 mA          | 8.46 K/W              | 79 cm <sup>2</sup>  |
| 35 °C | 50 °C | 275 mA          | 19.24 K/W             | 35 cm <sup>2</sup>  |
| 35 °C | 50 °C | 700 mA          | 3.93 K/W              | 169 cm <sup>2</sup> |
| 40 °C | 50 °C | 275 mA          | 11.87 K/W             | 56 cm <sup>2</sup>  |
| 40 °C | 50 °C | 700 mA          | 1.67 K/W              | 399 cm <sup>2</sup> |
| 45 °C | 50 °C | 275 mA          | 4.51 K/W              | 148 cm <sup>2</sup> |
| 45 °C | 50 °C | 700 mA          | –                     | –                   |

#### LLE 24x140mm 650lm ADV6

| ta    | tp    | Forward current | R <sub>th, hs-a</sub> | Cooling area        |
|-------|-------|-----------------|-----------------------|---------------------|
| 25 °C | 50 °C | 275 mA          | 16.98 K/W             | 39 cm <sup>2</sup>  |
| 25 °C | 50 °C | 700 mA          | 4.23 K/W              | 158 cm <sup>2</sup> |
| 35 °C | 50 °C | 275 mA          | 9.62 K/W              | 69 cm <sup>2</sup>  |
| 35 °C | 50 °C | 700 mA          | 1.97 K/W              | 339 cm <sup>2</sup> |
| 40 °C | 50 °C | 275 mA          | 5.94 K/W              | 112 cm <sup>2</sup> |
| 40 °C | 50 °C | 700 mA          | 0.84 K/W              | 798 cm <sup>2</sup> |
| 45 °C | 50 °C | 275 mA          | 2.25 K/W              | 296 cm <sup>2</sup> |
| 45 °C | 50 °C | 700 mA          | –                     | –                   |

#### LLE 24x280mm 1250lm ADV6

| ta    | tp    | Forward current | R <sub>th, hs-a</sub> | Cooling area          |
|-------|-------|-----------------|-----------------------|-----------------------|
| 25 °C | 50 °C | 275 mA          | 8.49 K/W              | 79 cm <sup>2</sup>    |
| 25 °C | 50 °C | 700 mA          | 2.12 K/W              | 315 cm <sup>2</sup>   |
| 35 °C | 50 °C | 275 mA          | 4.81 K/W              | 139 cm <sup>2</sup>   |
| 35 °C | 50 °C | 700 mA          | 0.98 K/W              | 678 cm <sup>2</sup>   |
| 40 °C | 50 °C | 275 mA          | 2.97 K/W              | 225 cm <sup>2</sup>   |
| 40 °C | 50 °C | 700 mA          | 0.42 K/W              | 1,596 cm <sup>2</sup> |
| 45 °C | 50 °C | 275 mA          | 1.13 K/W              | 592 cm <sup>2</sup>   |
| 45 °C | 50 °C | 700 mA          | –                     | –                     |

#### LLE 24x560mm 2400lm ADV6

| ta    | tp    | Forward current | R <sub>th, hs-a</sub> | Cooling area          |
|-------|-------|-----------------|-----------------------|-----------------------|
| 25 °C | 50 °C | 275 mA          | 4.25 K/W              | 157 cm <sup>2</sup>   |
| 25 °C | 50 °C | 700 mA          | 1.06 K/W              | 630 cm <sup>2</sup>   |
| 35 °C | 50 °C | 275 mA          | 2.40 K/W              | 277 cm <sup>2</sup>   |
| 35 °C | 50 °C | 700 mA          | 0.49 K/W              | 1,356 cm <sup>2</sup> |
| 40 °C | 50 °C | 275 mA          | 1.48 K/W              | 449 cm <sup>2</sup>   |
| 40 °C | 50 °C | 700 mA          | 0.21 K/W              | 3,192 cm <sup>2</sup> |
| 45 °C | 50 °C | 275 mA          | 0.56 K/W              | 1,183 cm <sup>2</sup> |
| 45 °C | 50 °C | 700 mA          | –                     | –                     |

### Notes

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. Depending on the heat sink a heat conducting paste or heat conducting film might be necessary to keep the specified tp temperature.

For applications with a small distance between LED module and lens, screw mounting is recommended to ensure a reliable thermal connection between LED module and cooling surface.

## 3. Installation / wiring

### 3.1 Electrical supply/choice of LED driver

LLE modules from Tridonic are not protected against overvoltages, overcurrents, overloads or short-circuit currents. Safe and reliable operation can only be guaranteed in conjunction with a LED driver which complies with the relevant standards. The use of LED driver from Tridonic in combination with LLE modules guarantees the necessary protection for safe and reliable operation.

If a LED driver other than Tridonic is used, it must provide the following protection:

- Short-circuit protection
- Overload protection
- Overtemperature protection



LLE modules 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 LLE.

The LLE module is designed for serial wiring.

With parallel wiring tolerance-related differences in output are possible (thermal stress of the module) and can cause differences in brightness.

If a wire breaks or a complete module fails then the current passing through the other module increases. This may reduce its life considerably.

Max. 8 pieces 280 mm modules or 4 pieces 560 mm modules may be connected in parallel.

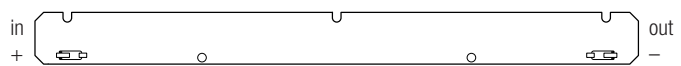
The max. permissible output current of the LED driver for parallel wiring is 1.8 A. For applications with a small distance between LED module and lens, an output current of 1.35 A must not be exceeded.

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

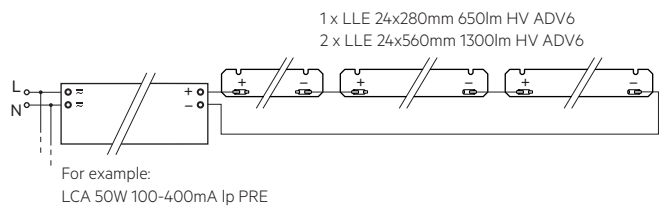
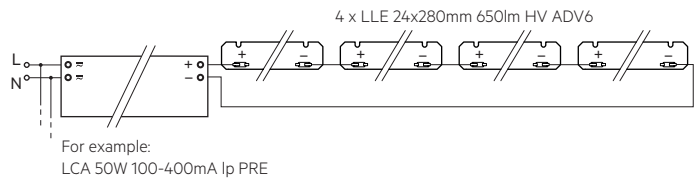


LLE are basic insulated up to 440 V (if mounted with M4 screws with head diameter 7 mm) against ground and can be mounted directly on earthed metal parts of the luminaire. If the max. output voltage of the LED driver (also against earth) is above 440 V, an additional insulation between LED module and heat sink is required (for example by insulated thermal pads) or by a suitable luminaire construction. At voltages > 60 V an additional protection against direct touch (test finger) to the light emitting side of the module has to be guaranteed. This is typically achieved by means of a non removable light distributor over the module.

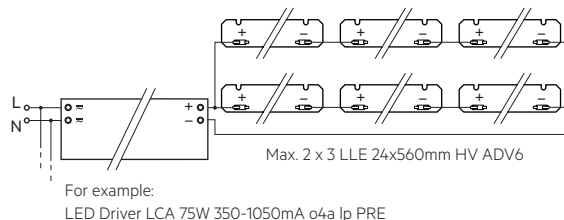
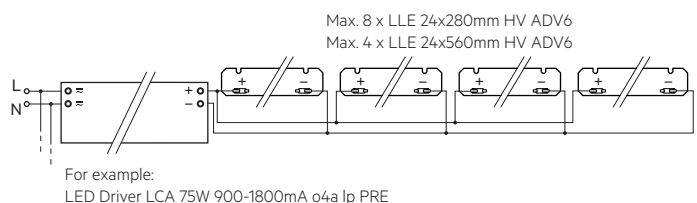
### 3.2 Wiring



#### Wiring examples for serial wiring

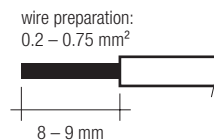


#### Wiring examples for parallel wiring



### 3.3 Wiring type and cross section

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 (8–9 mm).



To remove the wires use a suitable tool (e.g. Microcon release pin) or through twist and pull.

### 3.4 Mounting instruction



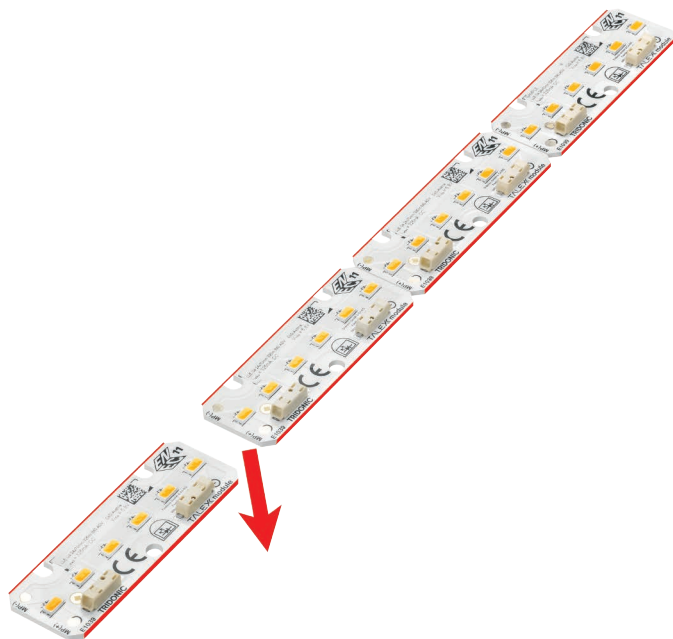
None of the components of the LLE (substrate, LED, electronic components etc.) may be exposed to tensile or compressive stresses.

Max. torque for fixing: 0.5 Nm.

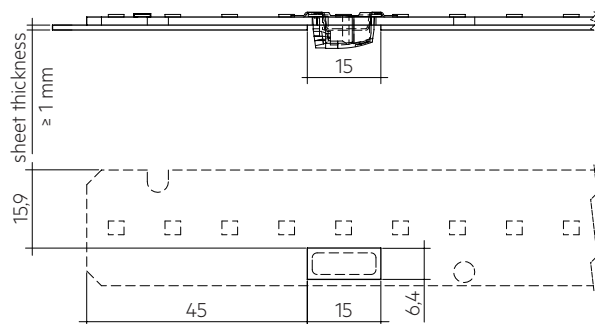
The LED modules are mounted onto a heat sink with min. 3 screws per module or ACL CLIP 4.3mm.

The LLE 24x70mm module is delivered as a board of 280mm (4 pcs.) and must be separated.

Only touch the module at the edge to separate the modules (see marking below).



Cut out on gear tray for backside terminal:



The distance between the terminal and the luminaire sheet must be at least 12 mm.



Chemical substance may harm the LED module. Chemical reactions could lead to colour shift, reduced luminous flux or a total failure of the module caused by corrosion of electrical connections.

Materials which are used in LED applications (e.g. sealings, adhesives) must not produce dissolver gas. They must not be condensation curing based, acetate curing based or contain sulfur, chlorine or phthalate.

Avoid corrosive atmosphere during usage and storage.

### 3.5 EOS/ESD safety guidelines



The device / module contains components that are sensitive to electrostatic discharge and may only be installed in the factory and on site if appropriate EOS/ESD protection measures have been taken. No special measures need be taken for devices/modules with enclosed casings (contact with the pc board not possible), just normal installation practice. Please note the requirements set out in the document EOS / ESD guidelines (Guideline\_EOS\_ESD.pdf) at: <http://www.tridonic.com/esd-protection>

## 4. Lifetime

### 4.1 Lifetime, lumen maintenance and failure rate

The light output of an LED module decreases over the lifetime, this is characterized with the L value.  
L70 means that the LED module will give 70 % of its initial luminous flux.  
This value is always related to the number of operation hours and therefore defines the lifetime of an LED module.

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

The B value defines the amount of modules which are below the specific L value, e.g. L70B10 means 10 % of the LED modules are below 70 % of the initial luminous flux, respectively 90 % will be above 70 % of the initial value.

In addition the percentage of failed modules (fatal failure) is characterized by the C value.

### 4.2 Lumen maintenance for LLE 24mm HV ADV6

| Forward current | tp<br>tempera-<br>ture | L90 / B10 | L90 / B50 | L80 / B10 | L80 / B50 | L70 / B10 | L70 / B50 |
|-----------------|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 100 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    |
|                 | 85 °C                  | >72k h    | >72k h    | >72k h    | >72k h    | >72k h    | >72k h    |
| 275 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                  | 39k h     | 51k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 70 °C                  | 37k h     | 48k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 80 °C                  | 35k h     | 45k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 85 °C                  | 34kh      | 44k h     | 70k h     | >72k h    | >72k h    | >72k h    |
| 700 mA          | 40 °C                  | 48k h     | 62k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 50 °C                  | 45k h     | 59k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 60 °C                  | 42k h     | 55k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 70 °C                  | 40k h     | 52k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 80 °C                  | 37k h     | 49k h     | >72k h    | >72k h    | >72k h    | >72k h    |
|                 | 85 °C                  | 36k h     | 47k 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 a forward current of 195 mA

## 5. Electrical values

### 5.1 Declaration of electrical parameters

$I_{rated}$  ... Nominal operating current the module is designed for.

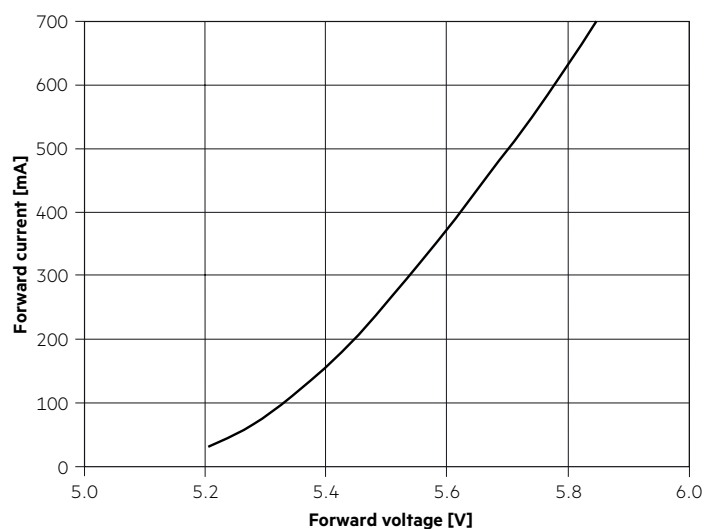
$I_{max}$  ... Max. permissible continuous operating current incl. The tolerances of the LED driver.

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

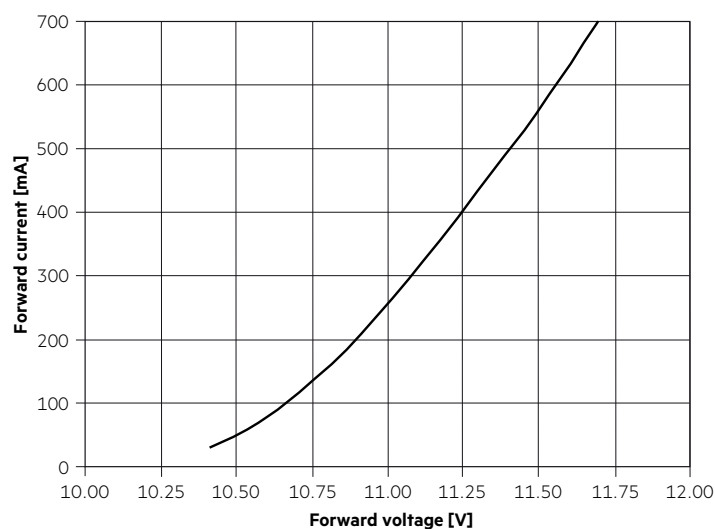
Max. permissible peak current ... The max. output peak current of the LED driver must not exceed this value.

### 5.2 Typ. forward voltage vs. forward current

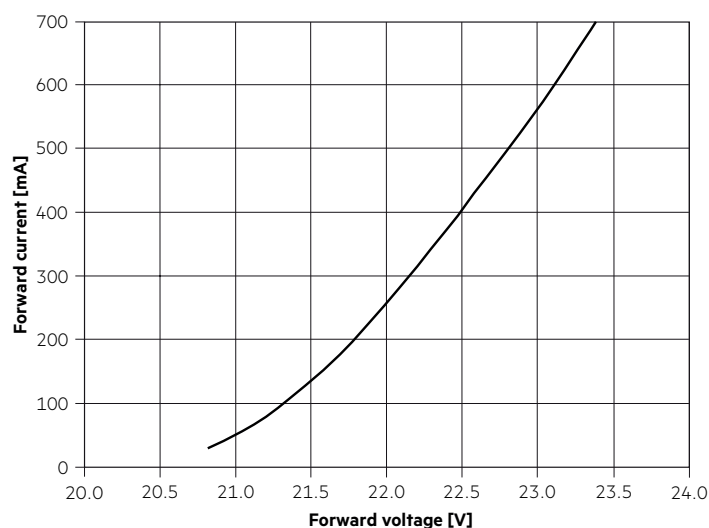
LLE 24x70mm 325lm 8xx HV ADV6



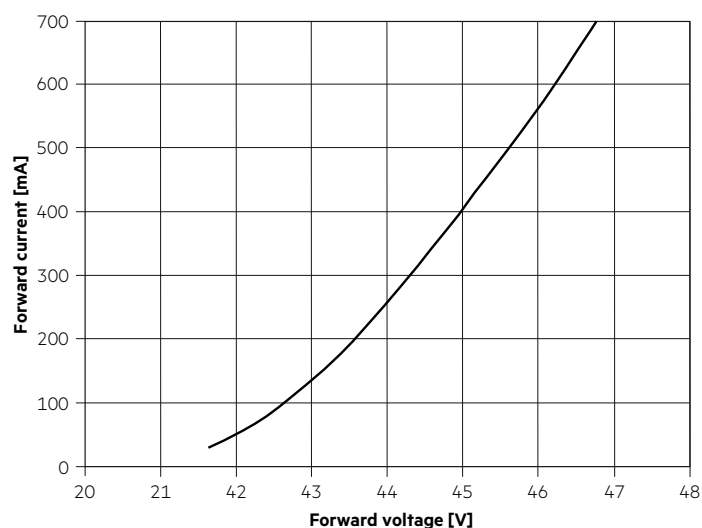
LLE 24x140mm 650lm 8xx HV ADV6



LLE 24x280mm 1250lm 8xx HV ADV6



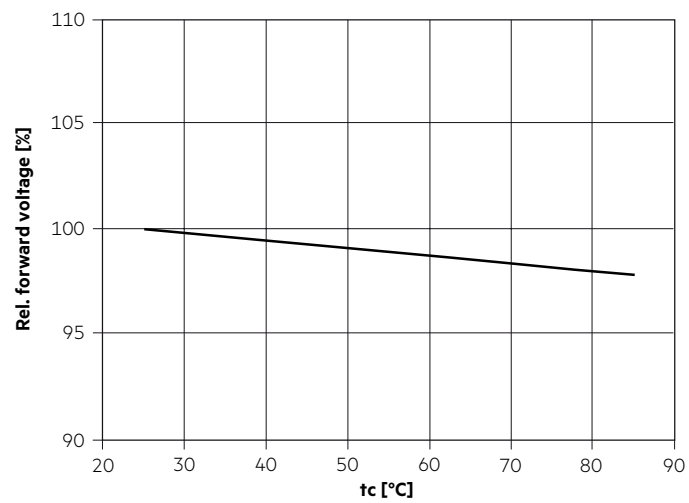
LLE 24x560mm 2400lm 8xx HV ADV6



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



### 5.3 Forward voltage vs. $t_c$ temperature



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

## 6. Photometric characteristics

### 6.1 Coordinates and tolerances according to CIE 1931

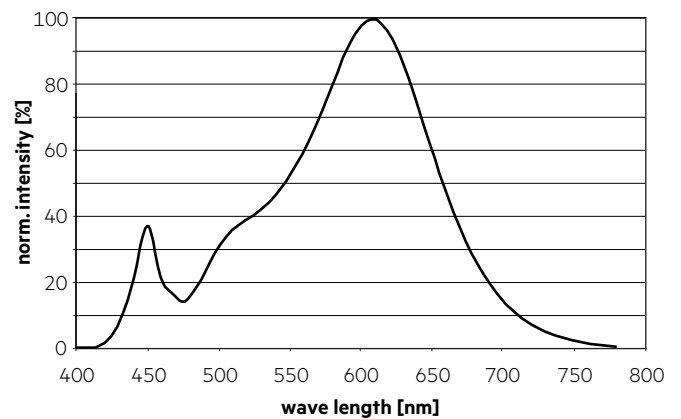
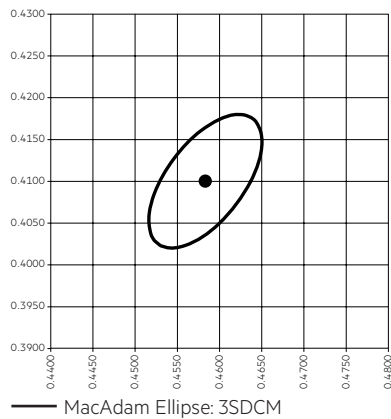
The specified colour coordinates are integral measured by current impulse of 195 mA and a duration of 100 ms.

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

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

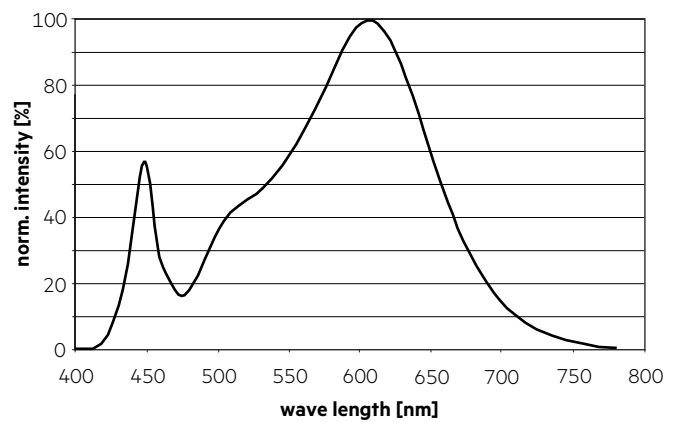
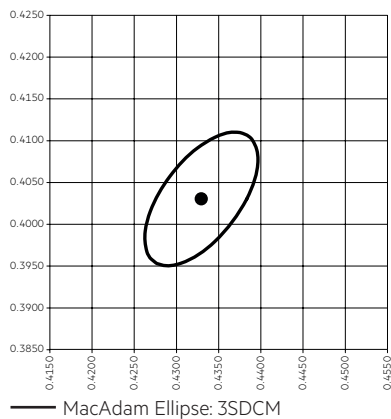
#### 2,700 K

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



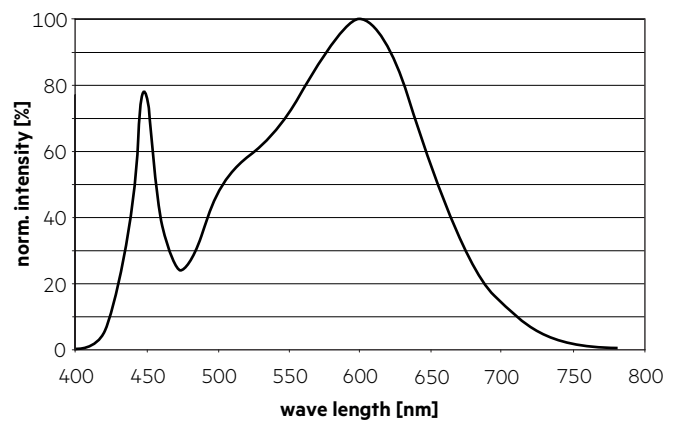
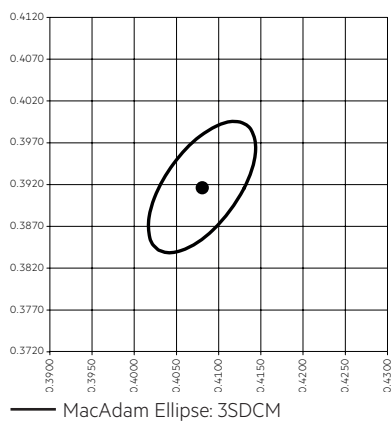
#### 3,000 K

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



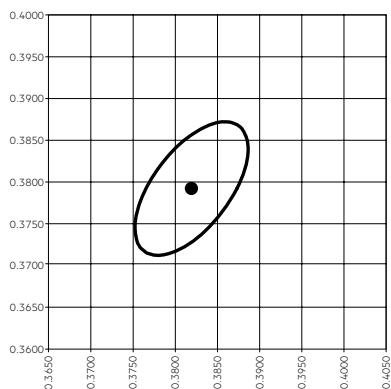
#### 3,500 K

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4073 | 0.3917 |

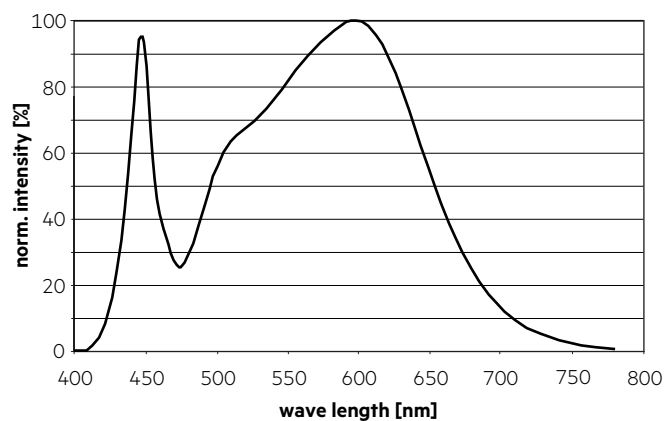


**4,000 K**

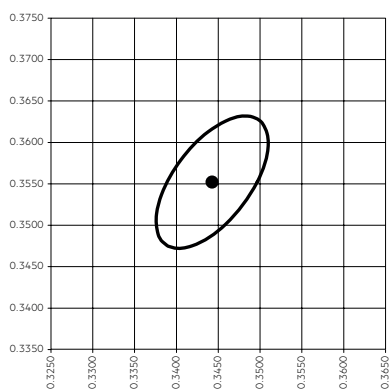
|        | x0     | y0     |
|--------|--------|--------|
| Center | 0.3818 | 0.3797 |



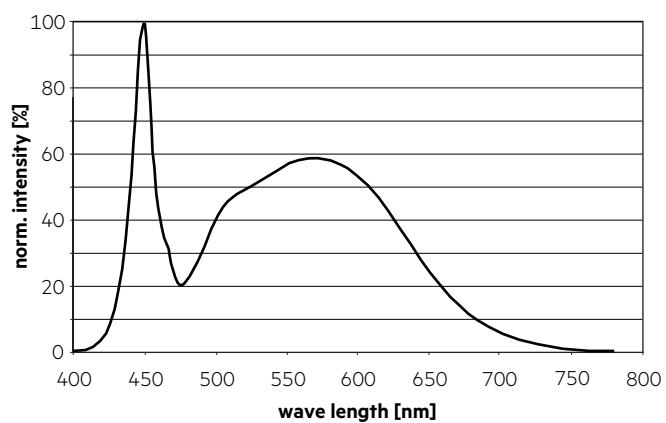
— MacAdam Ellipse: 3SDCM

**5,000 K**

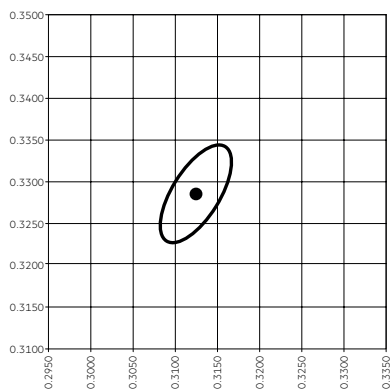
|        | x0     | y0     |
|--------|--------|--------|
| Center | 0.3447 | 0.3553 |



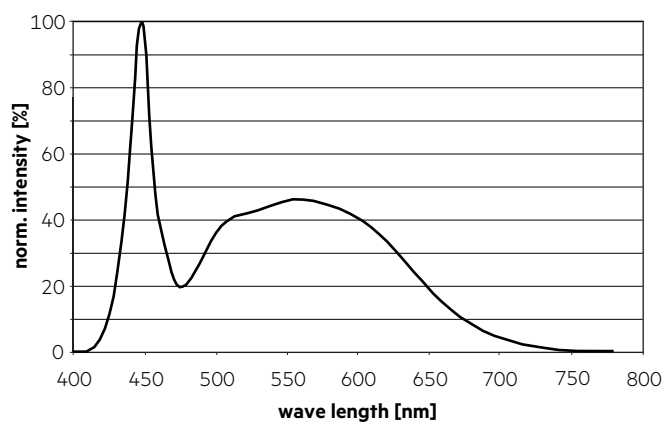
— MacAdam Ellipse: 3SDCM

**6,500 K**

|        | x0     | y0     |
|--------|--------|--------|
| Center | 0.3123 | 0.3282 |

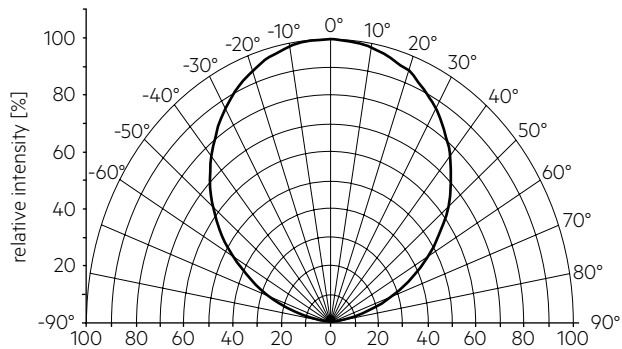


— MacAdam Ellipse: 3SDCM



## 6.2 Light distribution

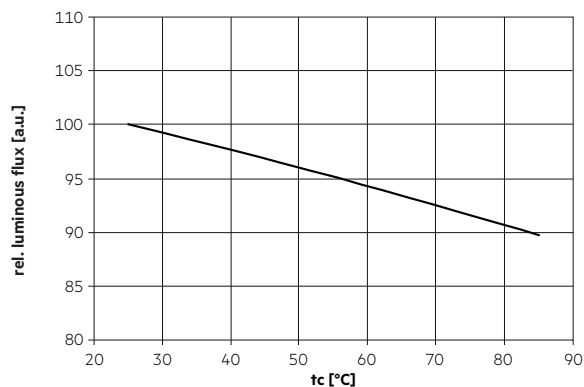
The optical design of the LLE product line ensures optimum homogeneity for the light distribution.



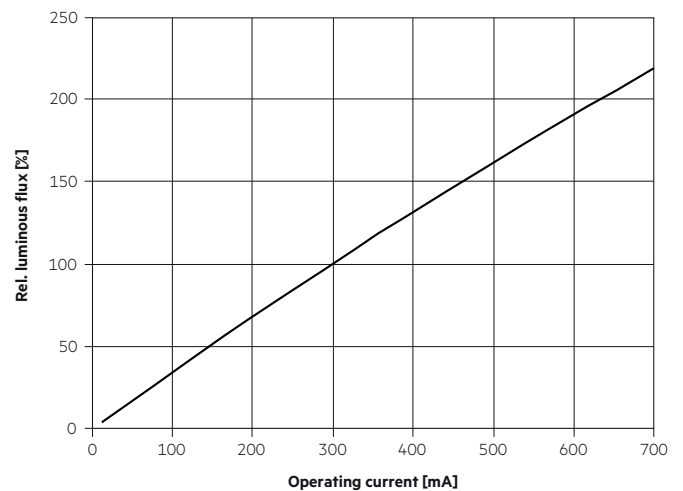
The colour temperature is measured integral over the complete module. The single LED light points can have deviations in the colour coordinates within MacAdam 5.

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. 4 cm) should be used.

## 6.3 Relative luminous flux vs. tc temperature



## 6.4 Relative luminous flux vs. operating current



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

## 7. Miscellaneous

### 7.1 Additional information

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

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/>

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

Lifetime declarations are informative and represent no warranty claim.