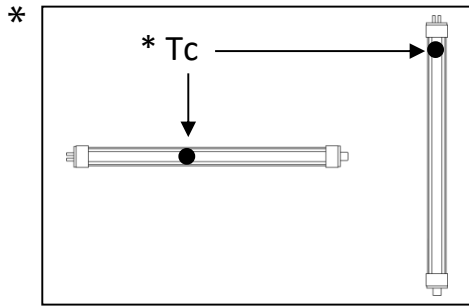
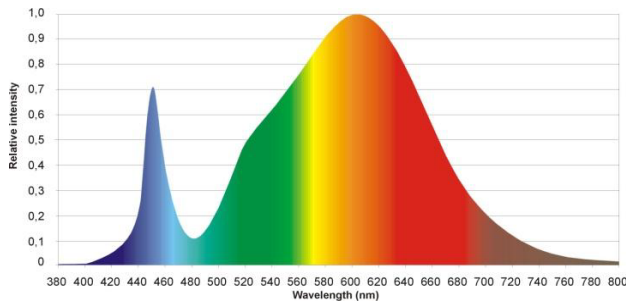


**Aura UltiLED Long Life**

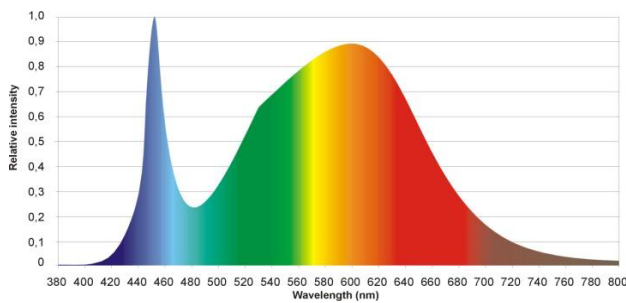
|  |  |  |  |      |           |                |      |           |                |      |  |
|--|--|--|--|------|-----------|----------------|------|-----------|----------------|------|--|
| Nominal wattage (W)  |  | <b>8</b>   |  |      | <b>17</b> |                |      | <b>23</b> |                |      |  |
| Nominal length (mm)  |  | 549  |  |      | 1149      |                |      | 1449      |                |      |  |
| Diameter (mm)  |  | 16   |  |      | 16        |                |      | 16        |                |      |  |
| Weight (g)   |  | 120  |  |      | 250       |                |      | 315       |                |      |  |
| Colour Rendering Index CRI   |  | ≥80  |  |      | ≥80       |                |      | ≥80       |                |      |  |
| SDCM   |  | 3  |  |      | 3         |                |      | 3         |                |      |  |
| Light Colour   |  |  | 830  | 840  |           | 830            | 840  |           | 830            | 840  |  |
| Correlated Colour Temperature CCT                                    |  |  | 3000   | 4000 |           | 3000           | 4000 |           | 3000           | 4000 |  |
| Nominal and rated flux <sup>1)</sup> @ 25 °C (lm) (+/- 8% tolerance) |  |  | 1040   | 1100 |           | 2080           | 2220 |           | 2800           | 3000 |  |
| Lamp efficacy <sup>1)</sup> @ 25 °C (lm/W)                           |  |  | 130  | 138  |           | 122            | 131  |           | 122            | 130  |  |
| Energy Class   |  |  | E  | E    |           | E              | E    |           | E              | E    |  |
| kW/1000 hrs  |  |  | 8,8  | 8,8  |           | 18,7           | 18,7 |           | 25,3           | 25,3 |  |
| Electrical Data  | Rated Wattage (W)  |  | <b>8</b>                                     |      |           | <b>17</b>      |      |           | <b>23</b>      |      |  |
|  | Power Factor (Pf)  |  | >0,9 (in combination with approved driver)   |      |           |                |      |           |                |      |  |
|  | Input  | Operating Voltage (V)  | 24 (23,2-26,4)                               |      |           | 24 (23,2-26,4) |      |           | 33 (31,9-36,3) |      |  |
|  |  | Operating Current (mA)   | 350 (500 max)                                |      |           | 700 (1050 max) |      |           | 700 (1050 max) |      |  |
|  | Output   |  |  |      |           |                |      |           |                |      |  |
|  |  |  |  |      |           |                |      |           |                |      |  |
|  |  |  |  |      |           |                |      |           |                |      |  |
| LMF & LSF  | Nominal lifetime   |  | 58 000                                       |      |           |                |      |           |                |      |  |
|  | Rated lifetime   |  | 58 000                                       |      |           |                |      |           |                |      |  |
|  | LLMF - Lamp Lumen Maintenance Factor end of nominal life |  | 80%  |      |           |                |      |           |                |      |  |
|  | LSF - Lamp Survival Factor end of nominal life           |  | 90%  |      |           |                |      |           |                |      |  |
|  | Installation environment                                 |  | Indoor and outdoor                           |      |           |                |      |           |                |      |  |
|  | Ingress Protection                                       |  | IP65   |      |           |                |      |           |                |      |  |
|  | Warm-up time to 60% light output                         |  | Instant full light                           |      |           |                |      |           |                |      |  |
|  | Starting time  |  | 0,5 seconds (max) will depend on driver used |      |           |                |      |           |                |      |  |
|  | Max Tc *   |  | +75 °C                                       |      |           |                |      |           |                |      |  |
|  | Ambient temperature (Ta)                                 |  | -30 °C - +50 °C                              |      |           |                |      |           |                |      |  |
|  | Nominal beam angle                                       |  | 120°   |      |           |                |      |           |                |      |  |
|  | Rated beam angle   |  | 120°   |      |           |                |      |           |                |      |  |
|  | Suitable for accent lighting                             |  | No   |      |           |                |      |           |                |      |  |
|  | Switching cycles   |  | 1 500 000 (min)                              |      |           |                |      |           |                |      |  |
|  | Dimmable   |  | Yes (depends on driver used)                 |      |           |                |      |           |                |      |  |
| Cap  |  | G5   |  |      |           |                |      |           |                |      |  |
| Tube and cap material  |  | Glass and PC, FEP foil   |  |      |           |                |      |           |                |      |  |
| Mercury Content  |  | 0  |  |      |           |                |      |           |                |      |  |
| Notice   |  | When replacing fluorescent lighting, light distribution and overall energy efficiency will be determined by the design of the installation |  |      |           |                |      |           |                |      |  |



**Spectral distribution 3000K**

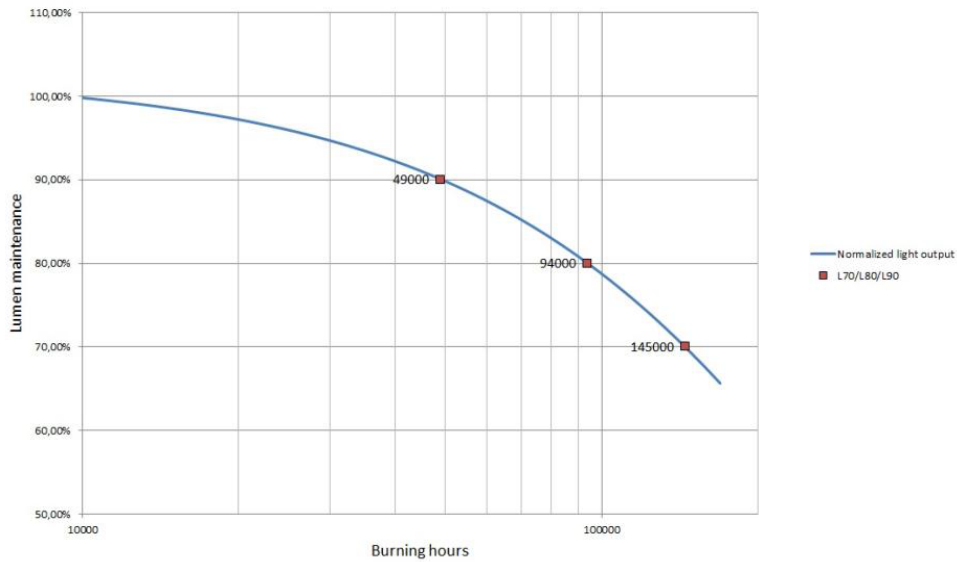


**Spectral distribution 4000K**



| Calculated LED Lifetime h (TM-21) | L70     | L80    | L90    |
|-----------------------------------|---------|--------|--------|
|                                   | 145 000 | 94 000 | 49 000 |

**Lumen maintenance - UltiLED Long Life, Ta=25°C**



**Installation guide – UltiLED**

This guide explains the steps necessary to install UltiLED inside a luminaire and ensure optimal performance. The guide is only for reference and is intended for qualified electricians or lighting technicians.

**Installation 6 steps:**

1) Make sure that the right type of driver is within the luminaire. (A SELV driver is recommended. Should a non-SELV driver be used that still meets the requirements of the tube, power to the luminaire should be disconnected prior to installing or changing the UltiLED tube if the UoutMax (no load voltage) is equal to or greater than 400V.)

- a) 8W tube needs 350mA and 24VDC
- b) 17W tube needs 700mA and 24VDC
- c) 23W tube needs 700mA and 33VDC

2) Unpack the UltiLED tube.

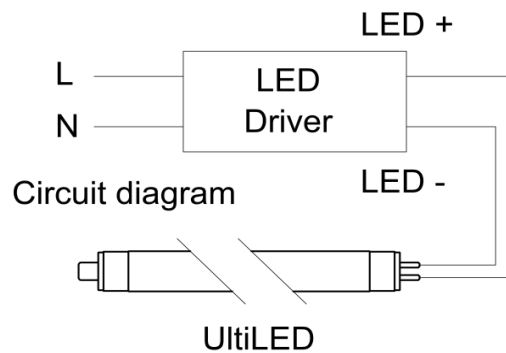
- a) Carefully examine the product
- b) Do not use the product if it's damaged

3) Make sure that the active side (metal pin side) is connected to the active side within the luminaire.

See picture below.

- a) The UltiLED tube is bipolar so the LED+ and LED- side doesn't matter.

UltiLED is not a retrofit LED lamp for T8 or T5 replacement application. An external LED driver complying for European safety & performance norms should be used. All light fitting manufacturers should conform to the international standards IEC 60598-luminaires



4) Make sure that the UltiLED is turned into the luminaire so that the light output is directed the desired way.

5) Reconnect power to the luminaire and turn it on.

**Additional information**

- because of external power supply, tubes can only be used in therefore suitable luminaires.
- installation instructions and warnings are provided with the products
- to avoid dangerous situation for end user, the tube is double/re-inforced insulated from live parts.
- LED tube is recommended to be used with certified SELV LED driver

**Limitation of use**

Due to dimension of the and cap, the LED tubes can only be used with lampholders which are provided with rotor in the middle.