



**TALEXmodule STARK DLE PREMIUM**  
TALEXmodule STARK DLE

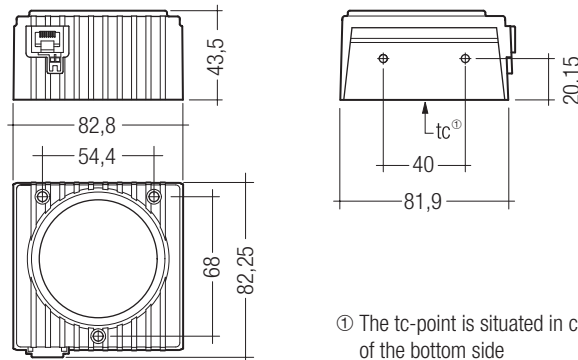
**Product description**

- Tunable white module with adjustable colour temperature along the planck's curve<sup>®</sup>
- High efficiency
- High colour rendering index CRI > 90
- Low tolerances for colour temperature (MacAdams 3)
- Low light current tolerances
- High-power LED module in chip-on-board technology (COB)
- Excellent thermal management<sup>®</sup>
- Downlights



**Technical data**

|                                     |                |
|-------------------------------------|----------------|
| Beam characteristic                 | 80°            |
| Ambient temperature ta <sup>®</sup> | -20 ... +55 °C |
| Typ. tc point                       | 65 °C          |
| Weight                              | 290 g          |
| Risk group <sup>®</sup>             | 0              |



Accessories connection cable, page 2

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**Ordering data**

| Colour temperature <sup>®</sup> | Type               | Article number |
|---------------------------------|--------------------|----------------|
| 2,700 – 6,500 K                 | STARK DLE 1100 PRE | 89601166       |
| 2,700 – 6,500 K                 | STARK DLE 2000 PRE | 89601165       |

Packaging: 10 pieces/carton

**Specific technical data**

| Type               | Typ. luminous flux <sup>®</sup> ④ | Supply voltage DC LMU | Typ. power consumption module incl. LMU <sup>®</sup> | Typ. power consumption system <sup>®</sup> | Efficacy of the module incl. LMU | Efficacy of the system | Colour rendering index CRI, 2,700 – 6,500 K <sup>®</sup> |
|--------------------|-----------------------------------|-----------------------|--|--|----------------------------------|------------------------|--|
| STARK DLE 1100 PRE | 1,100 lm                          | 48 V                  | 15.3 W   | 17.0 W                                     | 72 lm/W                          | 65 lm/W                | > 90   |
| STARK DLE 2000 PRE | 2,000 lm                          | 48 V                  | 27.8 W   | 30.8 W                                     | 72 lm/W                          | 65 lm/W                | > 90   |

④ Tolerance range for optical data: ±15 %.

② Tolerance range for electrical data: ±10 %.

③ If the max. temperature limits are exceeded, the life of the system will be greatly reduced or the system may be damaged. The temperature of the TALEXmodule at the tc-point is to be measured in the thermally stable state with a temperature sensor or a temperature sensitive sticker according to EN 60598-1. For the precise position of the tc point see the above diagram.

④ Colour temperature and CRI according to CIE 1931.

⑤ Tunable white is based on the PI-LED<sup>®</sup> technology. PI-LED<sup>®</sup> is a trademark of Lumitech

⑥ Please refer to EN 62471:2008.

All values at ta = 25 °C, tc = 65 °C, 2,700 K.

**Converter matrix – TALEXmodule STARK DLE PREMIUM**

| REMOTE LCU           |                          |      |
|----------------------|--------------------------|------|
| Type                 | LCAU 2x20W one4all tunew |      |
| Art. no.             | 86459108                 |      |
| Assignable converter |                          |      |
| Type                 | Min.                     | Max. |
| STARK DLE 1100 PRE   | 1                        | 2    |
| STARK DLE 2000 PRE   | 1                        | 1    |

**Product description**

- Connection cable 1 or 2 m for connecting TALEXmodule STARK and TALEXconverter LCAU
- RJ45 unshielded



**Ordering data**

| Weight   | Length | Type             | Article number |
|----------|--------|------------------|----------------|
| 0.030 kg | 1 m    | RJ45/RJ45 U 1.0m | 24166480       |
| 0.060 kg | 2 m    | RJ45/RJ45 U 2.0m | 24166481       |

Packaging: tbd

**Standards**

EN 62031  
EN 62471  
EN 61347-1  
EN 61547  
EN 55015

**Thermal design and heat sink**

The rated life of TALEX products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the TALEXmodule STARK DLE will be greatly reduced or the TALEXmodule STARK DLE may be destroyed.

Therefore the TALEXmodule STARK DLE needs to be mounted onto a heat sink.

Tridonic's excellent thermal design for the TALEXmodule products provides the lowest thermal resistance and therefore allowing new compact designs without sacrificing quality, safety and life time.

**tc point, ambient temperature and lifetime**

The temperature at tc reference point is crucial for the light output and life time of a TALEXmodule.

For TALEXmodule STARK DLE a tc temperature of max. 65 °C has to be complied in order to achieve an optimum between heat sink requirements, light output and life time.

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.

**Mounting instruction**



TALEXengine STARK DLE from Tridonic which needs cooling for correct operation, has to be connected with heat-conducting paste and fixed with M3 screws to the heat sink or fan.

The fixing/cooling surface must be cleaned before installing the TALEXmodule to remove all dirt, dust and grease.

Max. torque for fixing: 0.5 Nm.

For further information please refer to the brochure entitled "Technical Design-In-Guide DLE".

**Temperature monitoring**

There is an integrated thermal management system that automatically reduces luminous flux when the critical temperature is reached. It returns to normal operation by itself.

This protects the TALEXengine STARK DLE and ensures it reaches its full service life.



TALEXengine STARK has to be supplied by TALEXconverter STARK DLE.

Operation with other converters is not allowed.

**Heat sink values**

**TALEXmodule STARKT DLE PREMIUM 1.100 lm**

| ta    | tc    | R <sub>th, hs-a</sub> |
|-------|-------|-----------------------|
| 25 °C | 75 °C | 3.5 K/W               |
| 35 °C | 75 °C | 2.7 K/W               |
| 45 °C | 75 °C | 1.9 K/W               |
| 55 °C | 75 °C | 1.1 K/W               |

**TALEXmodule STARKT DLE PREMIUM 2.000 lm**

| ta    | tc    | R <sub>th, hs-a</sub> |
|-------|-------|-----------------------|
| 25 °C | 75 °C | 2.1 K/W               |
| 35 °C | 75 °C | 1.6 K/W               |
| 45 °C | 75 °C | 1.1 K/W               |
| 55 °C | 75 °C | 0.6 K/W               |

**Notes**

Values valid for: natural convection, heat sink material: aluminium ≥ 1 mm thick, R<sub>th, hs-a</sub> = required thermal resistance of heat sink

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

Additionally the TALEXmodule has to be fixed on the heat sink with M3 screws to optimise the thermal connection.

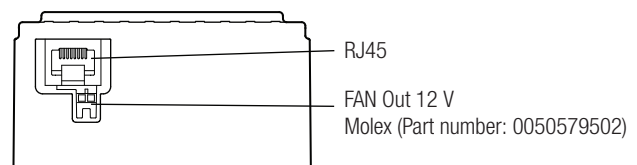
**Thermal behaviour**

|                       |                |
|-----------------------|----------------|
| storage temperature   | -20 ... +65 °C |
| operating temperature | -20 ... +55 °C |
| tc max.               | 65 °C          |
| max. humidity         | 0 ... 80 %     |

**Ambient**

TALEXmodule STARK DLE is designed for inbuilt applications. It has no IP protection.

**Terminal**



**Fan output**

|                |        |
|----------------|--------|
| Output voltage | 12 V   |
| Max. current   | 0.15 A |

**Pin configuration**

**Molex (Part number: 0050579502)**

| PIN | Signal |
|-----|--------|
| 1   | +      |
| 2   | -      |

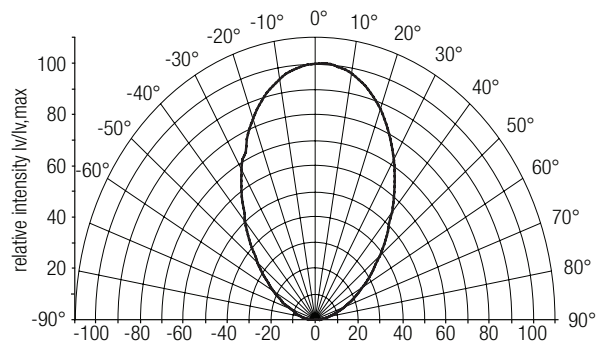
### Lifetime

| tc temperature in °C | luminous flux in % | lifetime in h |
|----------------------|--------------------|---------------|
| 25                   | 80                 | 60,000        |
|                      | 70                 | 81,000        |
|                      | 50                 | 132,000       |
| 45                   | 80                 | 44,000        |
|                      | 70                 | 64,000        |
|                      | 50                 | 110,000       |
| 65                   | 80                 | 32,000        |
|                      | 70                 | 50,000        |
|                      | 50                 | 91,000        |
| 75                   | 80                 | 25,000        |
|                      | 70                 | 41,000        |
|                      | 50                 | 81,000        |

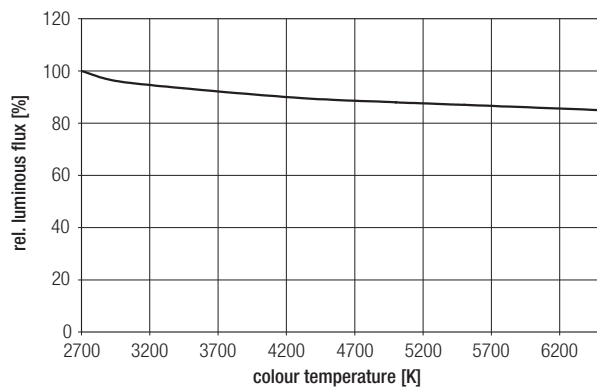
### Optical characteristics TALEXmodule STARK DLE

The optical design of the TALEXmodule STARK DLE product line ensures optimum homogeneity for the light distribution.

### Light distribution



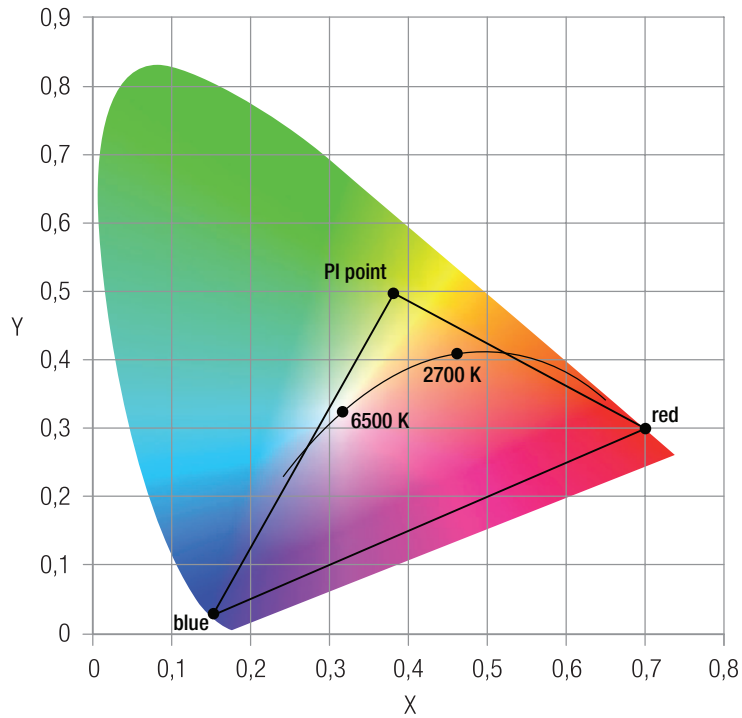
### Relative luminous flux vs. colour temperature



The diagrams are based on statistic values.

Coordinates and tolerances according to CIE 1931

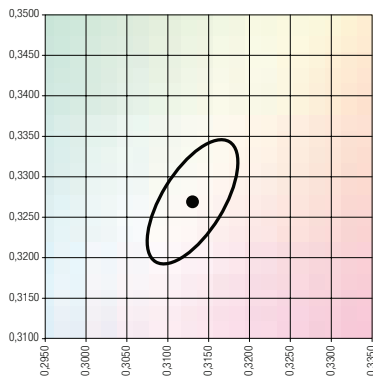
The ambient temperature of the measurement is  $t_a = 25\text{ }^\circ\text{C}$ .  
The measurement tolerance of the colour coordinates are  $\pm 0.01$ .



**6,500 K**

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.3130 | 0.3270 |

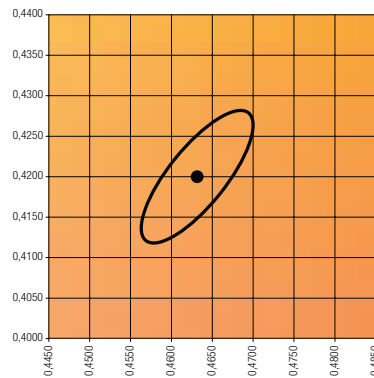
MacAdam ellipse: 3SDCM



**2,700 K**

|        | x0     | y0     |
|--------|--------|--------|
| Centre | 0.4630 | 0.4200 |

MacAdam ellipse: 3SDCM



Colour spectrum at different colour temperatures

