TALEX(module STARK DLE SELECT

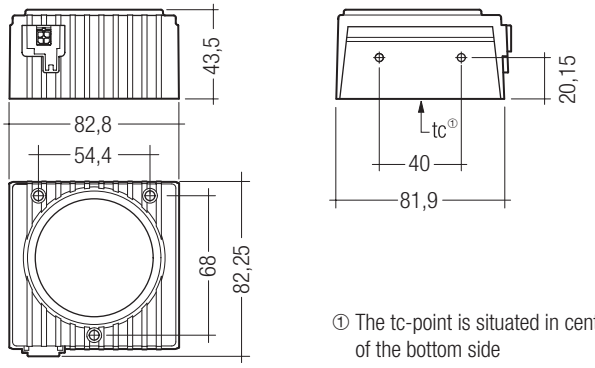
TALEX(module STARK DLE

Product description

- Downlights
- High-flux LED module
- Low tolerances for colour temperatures (MacAdams 3)
- Compact design
- Excellent thermal management①
- NTC for temperature control
- High-power LED module in chip-on-board technololgy (COB)
- Uniform distribution of light
- Fixing holes for M4 screws

Technical data

Beam characteristic	80°
Ambient temperature ta	-20 ... +55 °C
Typ. tc point	65 °C
Weight	260 g
Risk group⑦	0



① The tc-point is situated in centre of the bottom side

Accessories connection cable, page 2

Standards, page 3

Colour temperatures and tolerances, page 6

Ordering data

Colour temperature	Type	Article number
3.000 K	**STARK DLE 1100 930 SEL**	**89601296**
3.000 K	**STARK DLE 2000 930 SEL**	**89601291**
3.000 K	**STARK DLE 3000 930 SEL**	**89601167**
4.000 K	**STARK DLE 1100 940 SEL**	**89601297**
4.000 K	**STARK DLE 2000 940 SEL**	**89601292**
4.000 K	**STARK DLE 3000 940 SEL**	**89601168**

Packaging: 10 pieces/carton

Specific technical data

Type	Typ, luminous flux②	Typ, forward current③④⑤	Typ, forward voltage⑥	Power consumption module	Power consumption system	Efficacy of the module	Efficacy of the system	Colour rendering index CRI
STARK DLE 1100 930 SEL	1,100 lm	1,050 mA	14.1 V	14.8 W	16.7 W	74 lm/W	66 lm/W	90
STARK DLE 2000 930 SEL	2,000 lm	1,050 mA	26.1 V	27.4 W	31.0 W	73 lm/W	65 lm/W	90
STARK DLE 3000 930 SEL	3,000 lm	1,400 mA	29.4 V	41.2 W	46.5 W	73 lm/W	65 lm/W	90
STARK DLE 1100 940 SEL	1,100 lm	1,050 mA	14.1 V	14.8 W	16.7 W	74 lm/W	66 lm/W	90
STARK DLE 2000 940 SEL	2,000 lm	1,050 mA	26.1 V	27.4 W	31.0 W	73 lm/W	65 lm/W	90
STARK DLE 3000 940 SEL	3,000 lm	1,400 mA	29.4 V	41.2 W	46.5 W	73 lm/W	65 lm/W	90

① 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 TALEX(module at the tc-point is to be measured in the thermally stable state with a temperature sensor or or temperature-sensitive sticker as per EN 60598-1, For the precise position of the tc point see the drawing above,

② Tolerance range for optical data: ±10 %,

③ Exceeding the max, operating current leads to an overload on the TALEX(module, This may in turn result in a significant reduction in lifetime or even destruction of the TALEX(module,

④ Max, permissible surge current: 3 A, duration max, 10 µs,

⑤ Tolerance range current: ±5 %,

⑥ Tolerance range voltage: ±10 %,

⑦ Please refer to EN 62471:2008.

All values at ta = 25 °C, tc = 65 °C.

Converter matrix – TALEXXmodule STARK DLE SELECT

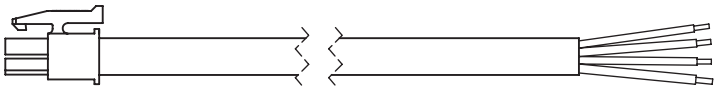
		REMOTE LCI							
	Type	LCI 050/1050 N020		LCAI 050/1050		LCI 055/1400 T020		LCAI 055/1400 T020	
	Art. no.	24166468		24166469		86459219		86459248	
		Assignable converter							
Typ		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
STARK DLE 1100 930 SEL	89601296	1	1	1	1	–	–	–	–
STARK DLE 2000 930 SEL	89601291	1	1	1	1	–	–	–	–
STARK DLE 3000 930 SEL	89601167	–	–	–	–	1	1	1	1
STARK DLE 1100 940 SEL	89601297	1	1	1	1	–	–	–	–
STARK DLE 2000 940 SEL	89601292	1	1	1	1	–	–	–	–
STARK DLE 3000 940 SEL	89601168	–	–	–	–	1	1	1	1

ACCES-SORIES

TALEXXaccessories CONNECT 4PIN PLUG / 4PIN CRIMP

Product description

- Open wire ends for flexible use of the module
- 4-pin plug to 4 open wires
- Halogen free



Ordering data

Length	Type	Article number
1 m	Connection cable 1.0m	24176077
2 m	Connection cable 2.0m	24176078

Packaging: 10 pieces/carton

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 TALEX(module STARK DLE will be greatly reduced or the TALEX(module STARK DLE may be destroyed.

Therefore the TALEX(module STARK DLE needs to be mounted onto a heat sink.

Tridonic's excellent thermal design for the TALEX(module STARK DLE 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 TALEX(product.

For TALEX(module STARK DLE a tc temperature of 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

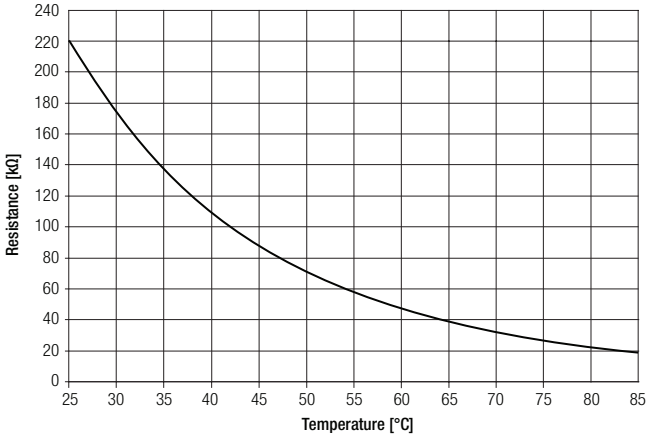
TALEX(module STARK DLE from Tridonic which have to be installed on a heat sink have to be connected with heat-conducting paste or heat conducting adhesive film and fixed with M4 screws.

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

Max. torque for fixing: 0.5 Nm.

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

Temperature control
An NTC resistor is on the board of the TALEX(module STARK DLE to control the tc temperature during the operation.
The details of the 220 kΩ NTC (order number B57431V2223J062) you can find in the data sheet of the manufacturer AVX (Nr. NB12QØØ224).



Heat sink values

TALEX(module STARK DLE SELECT 1,100 lm

ta	tc	$R_{th, hs-a}$
25 °C	65 °C	2.7 K/W
35 °C	65 °C	1.9 K/W
45 °C	65 °C	1.1 K/W

TALEX(module STARK DLE SELECT 2,000 lm

ta	tc	$R_{th, hs-a}$
25 °C	65 °C	1.6 K/W
35 °C	65 °C	1.1 K/W
45 °C	65 °C	0.6 K/W

TALEX(module STARK DLE SELECT 3,000 lm

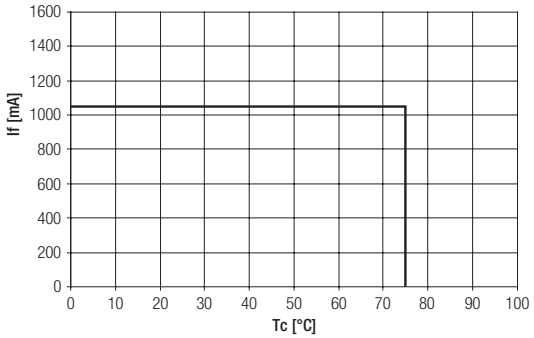
ta	tc	$R_{th, hs-a}$
25 °C	65 °C	0.8 K/W
35 °C	65 °C	0.5 K/W
45 °C	65 °C	0.1 K/W

Notes
Values valid for: natural convection, heat sink material: aluminium ≥ 1 mm thick,
$R_{th, hs-a}$ = required thermal resistance of heat sink

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. A thermal connection between TALEX(module STARK DLE and heat sink with heat-conducting paste or heat conducting adhesive film is absolutely necessary.
Additionally the TALEX(module STARK DLE has to be fixed on the heat sink with M4 screws to optimise the thermal connection.

Thermal behaviour

storage temperature	-20 ... +80 °C
operating temperature	-20 ... +55 °C
tc max. (at typ. current)	75 °C
max. humidity	0 ... 80 %



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

Electrical supply/choice of converter

TALEX(module STARK DLE 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 converter which complies with the relevant standards. The use of TALEX(converters from Tridonic in combination with TALEX(module STARK DLE guarantees the necessary protection for safe and reliable operation.

If a converter other than Tridonic TALEX(converter is used, it must provide the following protection:

- Short-circuit protection
- Overload protection
- Overtemperature protection

TALEX(module STARK DLE must be supplied by a constant current converter.
Operation with a constant voltage converter will lead to an irreversible damage of the module.

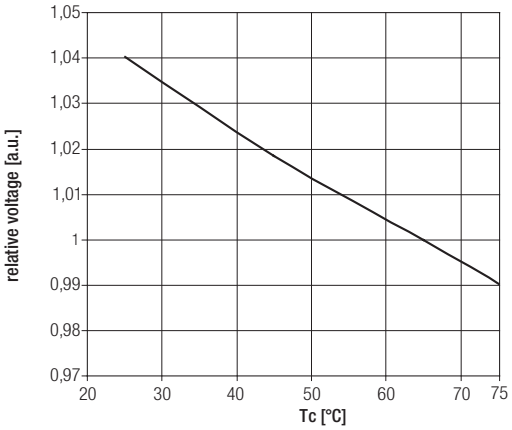
Wrong polarity can damage the TALEX(module STARK DLE.

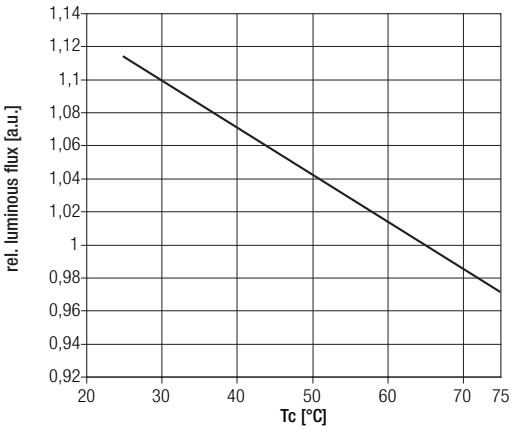
Wiring

Cable: see page 2 (Accessories)

colour	red	black	grey	grey
function	+ LED	- LED	NTC	NTC

Relative forward voltage and relative luminous flux



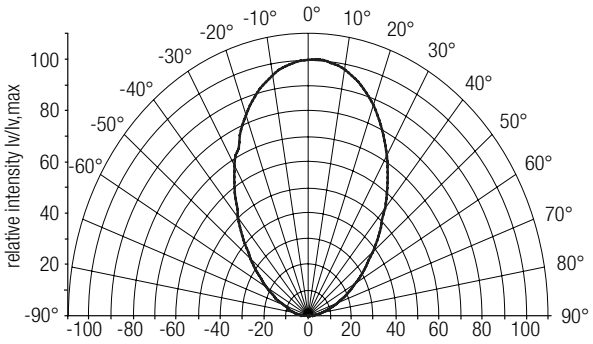


The diagrams based on statistic values.
The real values can be different.

Optical characteristics TALEX(module STARK DLE

The optical design of the TALEX(module STARK DLE product line ensures optimum homogenity for the light distribution.

TALEX(module STARK DLE SELECT 80°: Light distribution

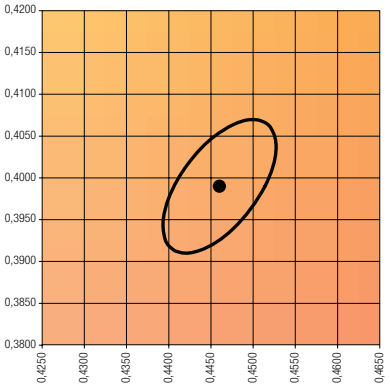


Coordinates and tolerances according to CIE 1964

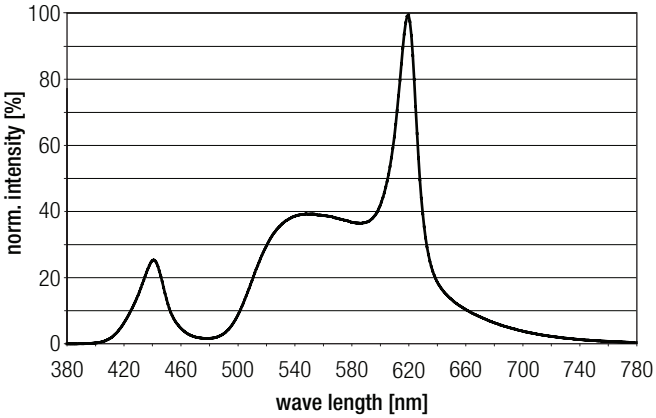
The specified colour coordinates are measured by a current impulse of with typical values of module and a duration of 100 ms.
The ambient temperature of the measurement is ta = 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

3,000 K

	x0	y0
Centre	0,4460	0,3990

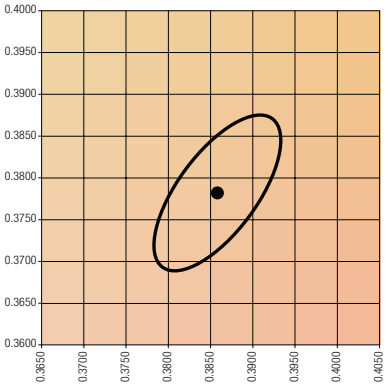


MacAdam ellipse: 3SDCM



4,000 K

	x0	y0
Centre	0,3860	0,3780



MacAdam ellipse: 3SDCM