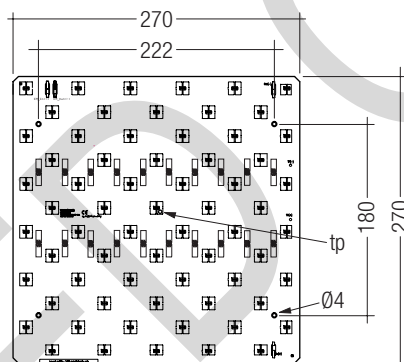




TALEXmodule STARK QLE CLASSIC EM TALEXmodule STARK QLE

Product description

- Ideal for linear and panel lights
- Combined LED module for general and emergency lighting
- Integrated separate emergency LEDs controlled by EM powerLED (2 or 4 W version)
- Efficiency of the module up to 106 lm/W
- Separate wired emergency LEDs
- High colour rendering index CRI > 80
- Small colour tolerance MacAdam 4[®]
- Small luminous flux tolerances
- Colour temperatures 3,000 and 4,000 K
- Perfectly uniform light, even if several LED modules are used together in a line
- Self-cooling (no additional heat sink required)
- Push terminals for quick and simple wiring of LED module to LED module
- Simple installation (e.g. screws)
- Long lifetime: 50,000 hours
- 5-year system guarantee on the complete product



Technical data

Beam characteristic	120°
Ambient temperature t_a	-30 ... +55 °C
Typ. t_p point	65 °C
Risk group (EN 62471:2008)	0
Type of protection	IP00

Ordering data

Type	Article number	Colour temperature	Packaging, carton	Weight per pcs.
STARK-QLE-1250-830-CLA-EM	25000817	3,000 K	40 pieces	0.135 kg
STARK-QLE-1250-840-CLA-EM	25000819	4,000 K	40 pieces	0.135 kg



Standards, page 3

For colour temperatures and tolerances, page 6

Specific technical data

Type	Photometric code	Typ. luminous flux ^①	Typ. forward current ^{② ③}	Typ. forward voltage	Typ. power consumption ^①	Luminous efficacy module	Luminous efficacy system	Colour rendering index CRI
Mains mode								
STARK QLE-1250-830-CLA EM	830/4x9	1,190 lm	350 mA	33.7 V	11.8 W	> 101 lm/W	~ 93 lm/W	> 80
STARK QLE-1250-840-CLA EM	840/4x9	1,250 lm	350 mA	33.7 V	11.8 W	> 106 lm/W	~ 98 lm/W	> 80
Emergency mode – 350 mA (EM powerLED 2 W)								
STARK QLE-1250-830-CLA EM	830/4x9	230 lm	350 mA	6.2 V	—	—	—	—
STARK QLE-1250-840-CLA EM	840/4x9	245 lm	350 mA	6.2 V	—	—	—	—
Emergency mode – 700 mA (EM powerLED 4 W)								
STARK QLE-1250-830-CLA EM	830/4x9	430 lm	700 mA	6.2 V	—	—	—	—
STARK QLE-1250-840-CLA EM	840/4x9	455 lm	700 mA	6.2 V	—	—	—	—

All values at $t_c = 65$ °C.

^① Tolerance range for optical and electrical data: ± 10 %.

^② Ripple max. 15 % of rated current.

^③ Max. permissible surge current: 1.5 A, duration max. 10 μ s.

^④ Integrated measurement over the complete module.

Converter matrix – TALEXmodule STARK QLE CLASSIC

IN-BUILT LCI																
Type	LCAI 080/0350 I010		LCI 080/0350 I010		LCI 050/1050 R010		LCI 055/1400 R010									
Ord. No.	86459392		86459366		86459216		86459217									
Circuit	series		series		parallel		parallel									
Voltage on the module (typ.)	135 V	202 V	135 V	202 V	33.7 V	33.7 V	33.7 V	33.7 V								
SELV	No		No		Yes		Yes									
assignable converter																
Type	Min.		Max.		Min.		Max.		Min.		Max.					
STARK QLE-1250	4		6		4		6		3		3		4		4	

Converter matrix – TALEXmodule STARK QLE CLASSIC

REMOTE LCI						
Type	LCI 050/1050 T020		LCI 055/1400 T020		LCCI 016/0350 Q010	
Ord. No.	86459218		86459219		86459213	
Circuit	parallel		parallel		—	
Voltage on the module (typ.)	33.7 V	33.7 V	33.7 V	33.7 V	33.7 V	33.7 V
SELV	Yes		Yes		Yes	

assignable converter								
Type	Min.		Max.		Min.		Max.	
STARK QLE-1250	3	3	4	4	1	1		

Converter matrix – TALEXmodule STARK QLE CLASSIC

IN-BUILT LCI						
Type	TALEXcontrol C350 dim		TALEXcontrol C700 dim		TALEXcontrol C350-2 4 Kanal	
Ord. No.	86458944		86458945		86458693	
Circuit	—		parallel		—	
Voltage on the module (typ.)	33.7 V	33.7 V	33.7 V	33.7 V	33.7 V	33.7 V
SELV	Yes		Yes		Yes	
assignable converter						
Type	Min.	Max.	Min.	Max.	Min.	Max.
STARK QLE-1250	1	1	2	2	1	4

Standards

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

Photometric code

Key for photometric code, e. g. 830 / 449

1 st digit	2 nd + 3 rd digit	4 th digit	5 th digit	6 th digit
Code	CRI			Lumen maintenance after 25% of the lifetime (max.6000h)
	Colour temperature in Kelvin x 100	McAdams initial	McAdams after 25% of the lifetime (max.6000h)	Code Remaining lumen
7	67 – 76			7 ≥ 70 %
8	77 – 86			8 ≥ 80 %
9	87 – ≥90			9 ≥ 90 %

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 QLE will be greatly reduced or the TALEXmodule STARK QLE may be destroyed.

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 TALEXmodule STARK QLE 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



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

Max. torque for fixing: 0.5 Nm.

The LED modules are mounted with 4 screws per module. In order not to damage the modules only rounded head screws and an additional plastic flat washer should be used.

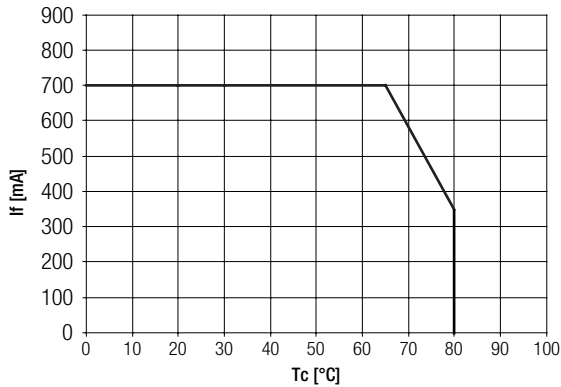


EOS/ESD safety guidelines

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/com/en/technical-docs.asp>

Thermal behaviour

storage temperature	-40 ... +85 °C
operating temperature t_a	-30 ... +55 °C
t_c max. (at typ. current)	80 °C
max. humidity	0 ... 80 %



Lifetime

t_c temperature in °C	luminous flux in %	lifetime in h
65	80	30.000
	70	50.000
	50	90.000

Selection of the control gear

TALEXmodule STARK QLE can be operated either from 350mA SELV converters or from 350 mA converters with LV output voltage.

For a maximised system efficacy LED controlgear with LV output (e.g. LCAI 080/0350) are recommended.

These LED controlgear are designed for an efficiency > 90 % where LED control gear with SELV outputvoltage (e.g. LCI 050) can be delivered with an efficiency > 83 %.



TALEXmodule STARK QLE are basic isolated against ground and can be mounted directly on earthed metal parts of the luminaire also when used in conjunction with the converter LCAI 080/0350. In this case the light emitting side of the module has to be protected against direct touch (test finger). This is typically achieved by means of a non removable light distributor over the module.

Electrical supply/choice of converter

TALEXmodule STARK QLE 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 TALEXmodule STARK QLE guarantees the necessary protection for safe and reliable operation.

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

- Short-circuit protection
- Overload protection
- Overtemperature protection



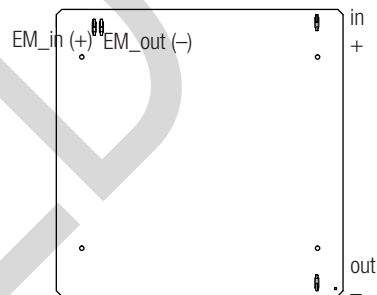
TALEXmodule STARK QLE must be supplied by a constant current converter.

Operation with a constant voltage converter will lead to an irreversible damage of the module.

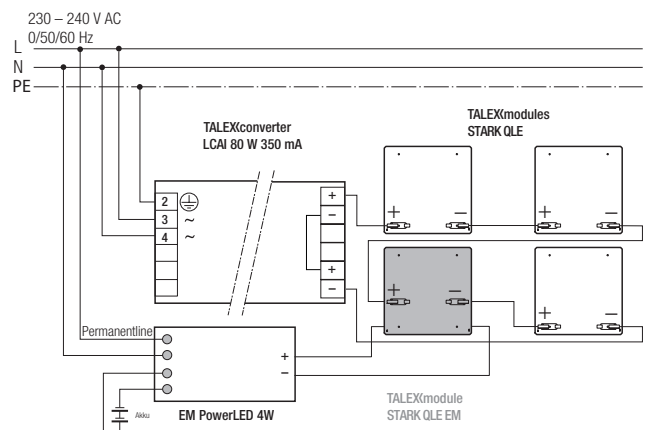
Wrong polarity can damage the TALEXmodule STARK QLE.

If TALEXmodules QLE are wired in parallel and a wire breaks or a complete module fails then the current passing through the other module increases. This may reduce its life considerably. In addition there can be slight differences in light output caused by tolerances.

Wiring



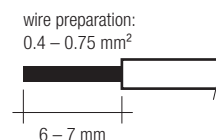
Wiring examples



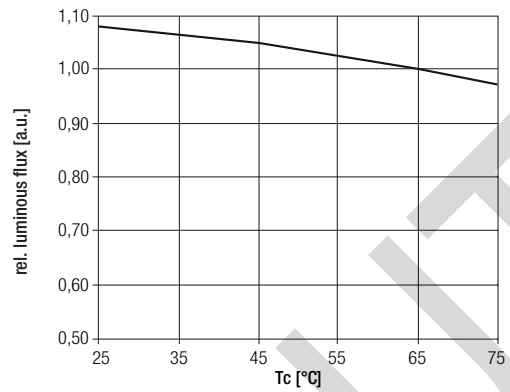
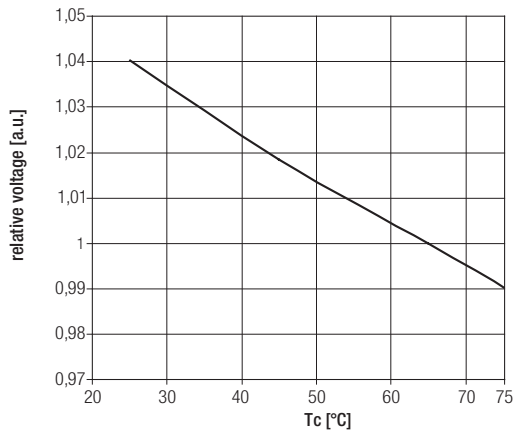
Wiring type and cross section

The wiring can be solid cable with a cross section of 0.4 to 0.75 mm². For the push-wire connection you have to strip the insulation (6–7 mm).

Loosen wire through twisting and pulling.



Relative forward voltage and relative luminous flux

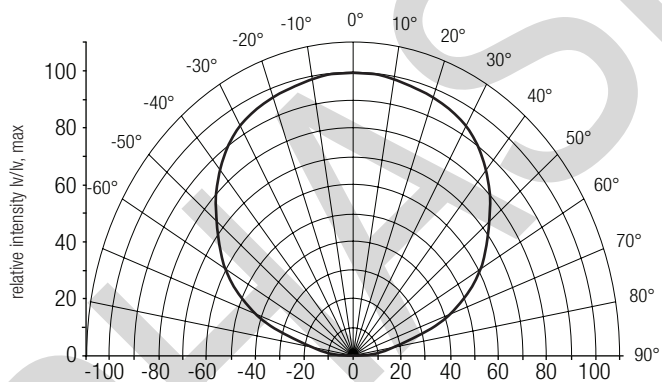


The diagrams based on statistic values.
The real values can be different.

Optical characteristics TALEX(module STARK QLE

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

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 7. To ensure an ideal mixture of colours and a homogenous light distribution a suitable optic (e. g. PMMA diffuser) and a sufficient spacing between module and optic (typ. 6 cm) should be used.

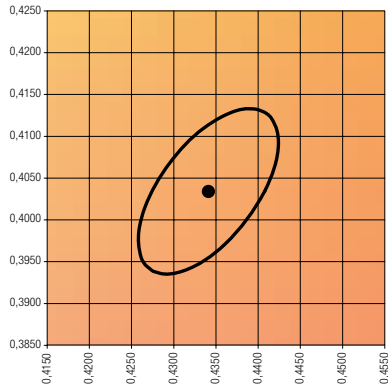
3D-Data, photometric data and Design-in guide available on request or go to www.tridonic.com

Coordinates and tolerances according to CIE 1931

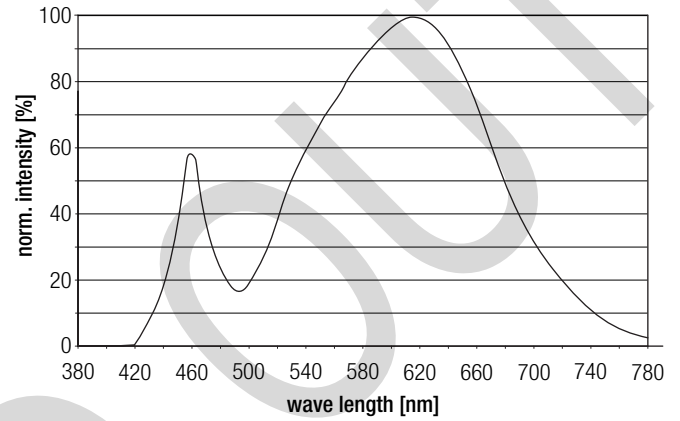
The specified colour coordinates are measured by a current impulse with typical values of module and a duration of 100 ms.
The ambient temperature of the measurement is $t_a = 25\text{ °C}$.
The measurement tolerance of the colour coordinates are ± 0.01 .

3,000 K

	x0	y0
Centre	0,4344	0,4032

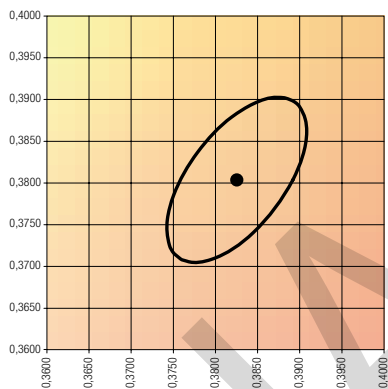


— MacAdam Ellipse: 4SDCM



4,000 K

	x0	y0
Mittelpunkt	0,3828	0,3803



— MacAdam Ellipse: 4SDCM

