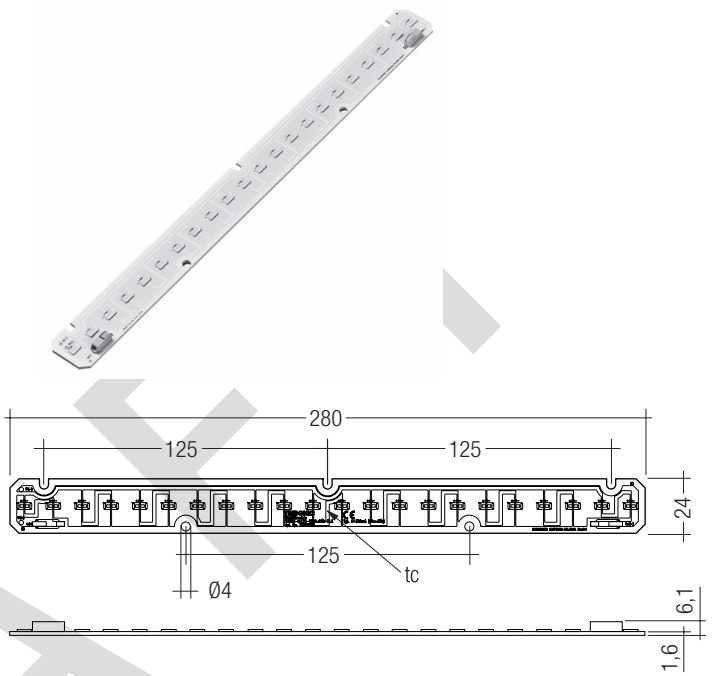
RoHS

TALEX(module STARK LLE24 CLASSIC

TALEX(module STARK LLE

Product description

- Ideal for linear and panel lights
- LED system solution with outstanding system efficiency up to 114 lm/W, consisting of linear LED modules and dimmable converter LCAI 080/0350
- Efficiency of the module up to 124 lm/W
- High colour rendering index CRI > 80
- Small colour tolerance MacAdam 3
- Small luminous flux tolerances
- Colour temperatures 3,000 K, 4,000 K and 5,000 K
- 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
- 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 ta	-30 ... +tbd °C
Typ. tc point	tbd °C
Risk group (EN 62471:2008)	0
Type of protection	IP00

Ordering data

Type	Article number	Colour temperature	Packaging carton	Weight per pcs.
TALEX(module STARK-LLE24-1250-830-CLA	28000094	3,000 K	200 pieces	0.023 kg
TALEX(module STARK-LLE24-1250-840-CLA	28000095	4,000 K	200 pieces	0.023 kg
TALEX(module STARK-LLE24-1250-850-CLA	25000820	5,000 K	200 pieces	0.023 kg

→

Standards, page 3

Colour temperatures and tolerances, page 6

Specific technical data

Type	Photometric code	Typ. luminous flux①	Typ. forward current①②③	Typ. forward voltage	Typ. power consumption①	Efficacy of the module	Efficacy of the system	Colour rendering index CRI
TALEX(module STARK-LLE24 at 300 mA								
TALEX(module STARK-LLE24-1250-830-CLA	830/3x9	1,150 lm	300 mA	33.5 V	10.1 W	~ 117 lm/W	~ 108 lm/W	> 80
TALEX(module STARK-LLE24-1250-840-CLA	840/3x9	1,200 lm	300 mA	33.5 V	10.1 W	~ 122 lm/W	~ 112 lm/W	> 80
TALEX(module STARK-LLE24-1250-850-CLA	850/3x9	1,220 lm	300 mA	33.5 V	10.1 W	~ 124 lm/W	~ 114 lm/W	> 80
TALEX(module STARK-LLE24 at 350 mA								
TALEX(module STARK-LLE24-1250-830-CLA	830/3x9	1,310 lm	350 mA	33.7 V	11.8 W	~ 112 lm/W	~ 103 lm/W	> 80
TALEX(module STARK-LLE24-1250-840-CLA	840/3x9	1,370 lm	350 mA	33.7 V	11.8 W	~ 117 lm/W	~ 108 lm/W	> 80
TALEX(module STARK-LLE24-1250-850-CLA	850/3x9	1,390 lm	350 mA	33.7 V	11.8 W	~ 119 lm/W	~ 109 lm/W	> 80

All values at tc = 65 °C.

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

② Ripple max. 15 % of rated current.

③ Max. permissible surge current: 0.8 A, duration max. 10 µs.

Converter matrix – TALEX(module STARK LLE CLASSIC

	IN-BUILT LCI									
Type	**LCAI 080/0350 I010**		**LCI 080/0350 I010**		**LCAI 070/0300 I010**		**LCI 055/1400 R010**		**LCI 050/1050 R010**	
Ord. No.	**86459392**		**86459366**		**86459201**		**86459217**		**86459216**	
Circuit	series		series		series		parallel		parallel	
Voltage on the module (typ.)	135 V	202 V	135 V	202 V	134 V	201 V	33.7 V	33.7 V	33.7 V	33.7 V
SELV	No		No		No		Yes		Yes	
	assignable converter									
Type	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
STARK LLE24-1250	4	6	4	6	4	6	4	4	3	3

Converter matrix – TALEX(module STARK LLE 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.**	**Min.**	**Max.**
STARK LLE24-1250	3	3	4	4	1	1

Converter matrix – TALEX(module STARK LLE CLASSIC

	IN-BUILT LCI					
Type	**TALEX(control C350 dim**		**TALEX(control C700 dim**		**TALEX(control 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 LLE24-1250	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 / 349

1st digit		2nd + 3rd digit	4th digit	5th digit	6th digit	
Code	CRI	Colour temperature in Kelvin x 100	McAdams initial	McAdams after 25% of the lifetime (max.6000h)	Lumen maintanance 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 TALEX(module STARK LLE will be greatly reduced or the TALEX(module STARK LLE 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 TALEX(module STARK LLE a tc temperature of tbd °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 TALEX(module STARK 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. 2 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

Heat sink values

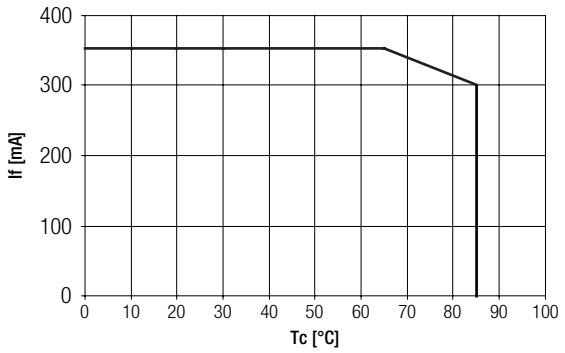
TALEX(module STARK LLE CLASSIC

ta	tc	$R_{th,\ hs\text{-}a}$	Cooling area
25 °C	65 °C	5.00 K/W	133 cm²
35 °C	65 °C	3.70 K/W	180 cm²
45 °C	65 °C	2.50 K/W	267 cm²
55 °C	65 °C	1.25 K/W	533 cm²

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 tc temperature.

Thermal behaviour

storage temperature	-40 ... +85 °C
operating temperature ta	-30 ... +tbd °C
tc max. (at 350 mA)	85 °C
max. humidity	0 ... 80 %



Lifetime (at 300 mA)

tc temperature in °C	luminous flux in %	lifetime in h
65	80	30.000
	70	60.000
	50	100.000

Selection of the control gear

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

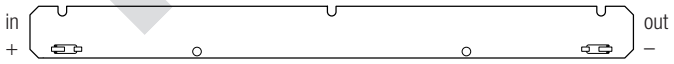
If a converter other than Tridonic TALEXconverter is used, it must provide the following protection:
- Short-circuit protection
- Overload protection
- Overtemperature protection

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

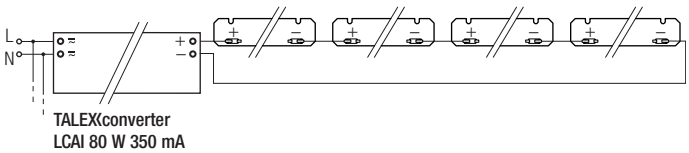
Wrong polarity can damage the TALEXmodule STARK LLE.

If TALEXmodules LLE 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

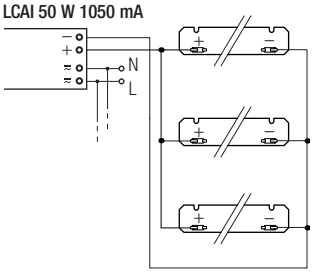


Wiring examples



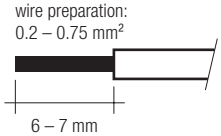
TALEXconverter LCAI 80 W 350 mA

TALEXconverter LCAI 50 W 1050 mA



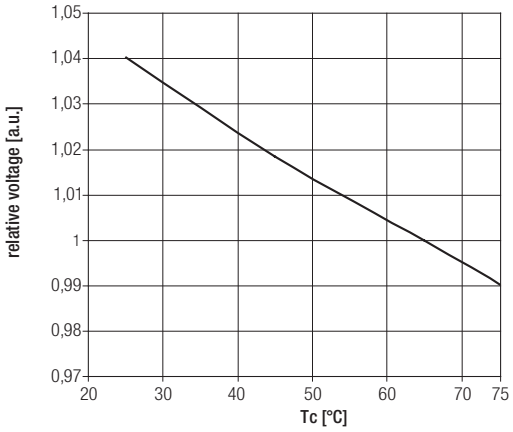
Wiring type and cross section

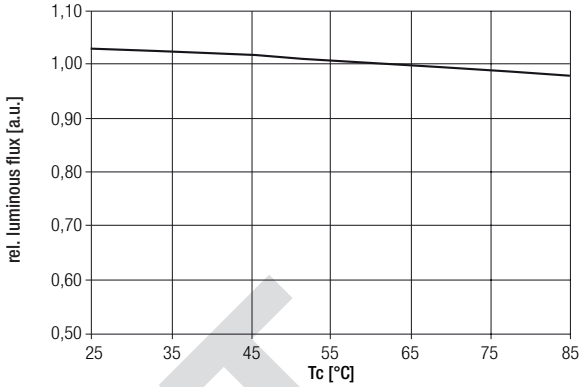
The wiring can be solid cable with a cross section of 0.2 to 0.75 mm². For the push-wire connection you have to strip the insulation (6–7 mm).



Inserting stranded wires / removing wires by lightly pressing on the push button.

Relative forward voltage and relative luminous flux



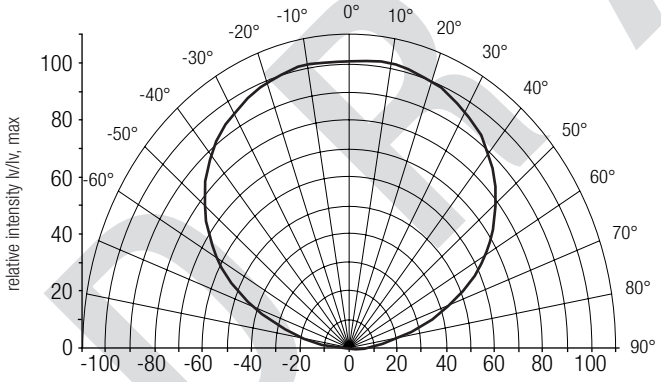


The diagrams are based on statistic values.
The real values can be different.

Optical characteristics TALEX(module STARK LLE

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

Light distribution



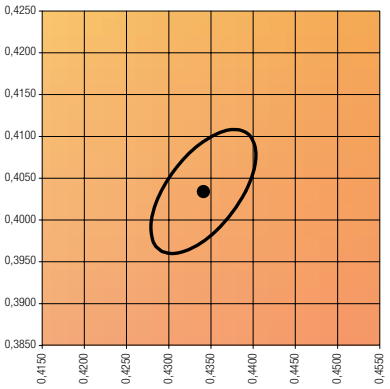
3D-Data, photometric data and Design-in guide available on request or go to www.tridonic.com

Coordinates and tolerances according to CIE 1931

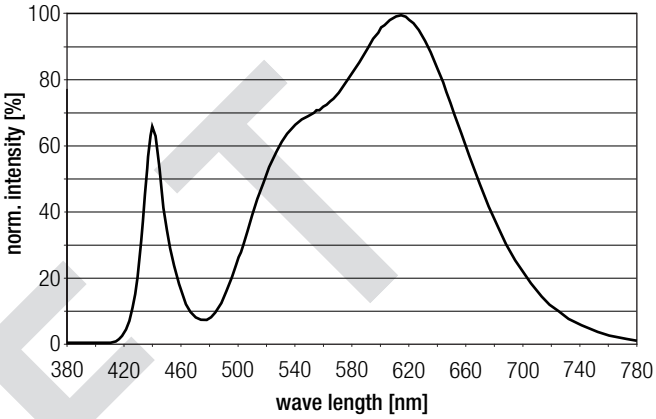
The specified colour coordinates are measured by a current impulse with typical values of module and a duration of 100 ms.
The ambient temperature of the measurement is ta = 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

3,000 K

	x0	y0
Centre	0,4344	0,4032

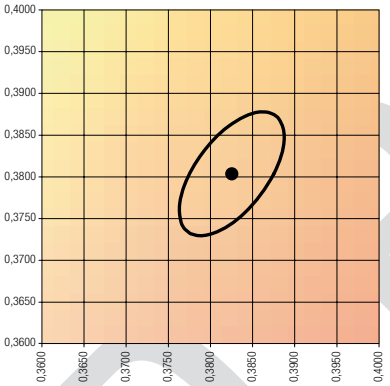


MacAdam Ellipse: 3SDCM

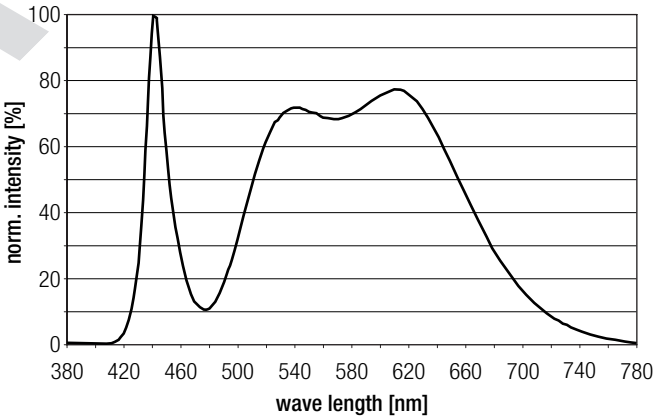


4,000 K

	x0	y0
Mittelpunkt	0,3828	0,3803

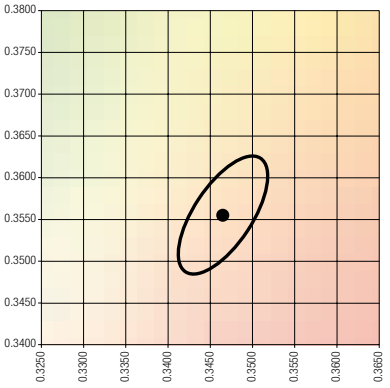


MacAdam Ellipse: 3SDCM



5,000 K

	x0	y0
Mittelpunkt	0,3452	0,3558



MacAdam Ellipse: 3SDCM