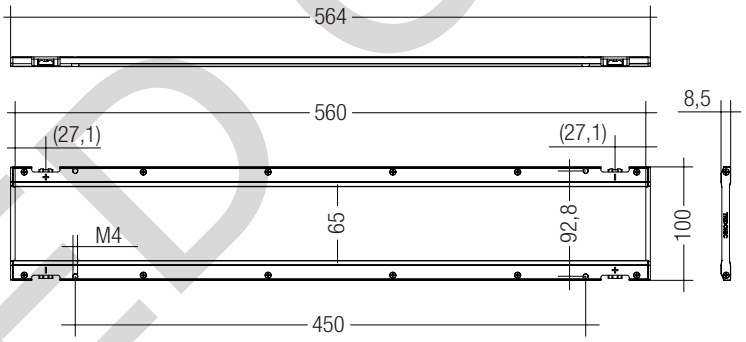
RoHS

TALEXmodule STARK INDI CLASSIC
STARK INDI



Product description
- Ideal for pendant and free-standing luminairs
- Very slim, homogenious illuminated LED module
- Direct/indirect light distribution 80/20 %
- Efficiency of the module up to 94 lm/W
- High colour rendering index CRI > 80
- Small colour tolerance MacAdam 4①
- Colour temperatures 3,000 K and 4,000 K
- Perfectly uniform light, even if several LED modules are used together in a line
- Connectors and preassembled cables for easy wiring
- Simple installation (e.g. screws)
- Long life-time: 50,000 hours
- 5-year system guarantee on the complete product
- Self-cooling (no additional heat sink required)

Technical data

Beam characteristic	150°
Ambient temperature ta	- 20 ... + 35 °C
Typ. tp point	65 °C
Risk group (EN 62471:2008)	0
Type of protection	IP00

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Standards, page 3

Colour temperatures and tolerances, page 6

Ordering data

Type	Article number	Colour temperature	Packaging②	Packaging carton	Weight per pc.
TALEXmodule STARK-INDI-2500-830-CLA	28000088	3,000 K	2 pc(s).	20 pc(s).	0.54 kg
TALEXmodule STARK-INDI-2500-840-CLA	28000089	4,000 K	2 pc(s).	20 pc(s).	0.54 kg

Specific technical data

Type	Photometric code③	Typ. luminous flux at tp = 25 °C④	Typ. luminous flux at tp = 65 °C④	Typ. forward current④ ⑤ ⑥	Min. forward voltage per channel at tp = 65 °C	Max. forward voltage per channel at tp = 25 °C	Typ. power consumption at tp = 65 °C④	Efficacy of the module at tp = 25 °C	Efficacy of the module at tp = 65 °C	Efficacy of the system at tp = 65 °C	Colour rendering index CRI	Energy classification
STARK-INDI-2500-830-CLA	830/3xx	2,550 lm	2,400 lm	350 mA	36.9 V	46 V	28.6 W	86 lm/W	84 lm/W	~76 lm/W	> 80	A
STARK-INDI-2500-840-CLA	840/3xx	2,750 lm	2,500 lm	350 mA	36.9 V	46 V	28.6 W	93 lm/W	87 lm/W	~78 lm/W	> 80	A

① Integrated measurement over the complete module.

② The TALEXmodule STARK INDI is always striped in pairs.

③ X... in preparation.

④ Tolerance range for optical and electrical data: ±10 %.

⑤ Max. permissible repetitive peak current: 750 mA.

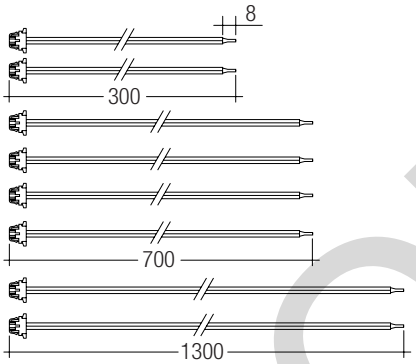
⑥ Max. permissible surge current: 1.5 A, duration max. 10 µs.

ACCES-SORIES

TALEXXaccessory CONNECT INDI cable set parallel

Product description

- Cable set for parallel wiring of two INDI modules in combination with e. g. LCI 4x16 W 200 – 400 mA lp



Ordering data

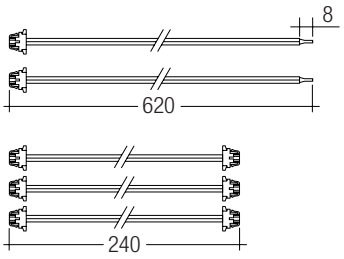
Type	Article number	Packaging bag	Packaging carton	Weight per pc.
CONNECT INDI CABLE SET parallel	28000260	1 pc(s).	240 pc(s).	0.026 kg

ACCES-SORIES

TALEXXaccessories CONNECT INDI cable set series

Product description

- Cable set for serial wiring of two INDI modules in combination with e. g. LCAI 080/0350 I010 one4all



Ordering data

Type	Article number	Packaging bag	Packaging carton	Weight per pc.
CONNECT INDI CABLE SET series	28000261	1 pc(s).	300 pc(s).	0.015 kg

Standards
EN 62031
EN 62471
EN 61547
EN 55015

Photometric code

Key for photometric code, e. g. 830 / 339

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 life-time (max.6000h)	Lumen maintanance after 25% of the life-time (max.6000h)	
					Code	Remaining lumen
7	67 – 76				7	≥ 70 %
8	77 – 86				8	≥ 80 %
9	87 – ≥90				9	≥ 90 %

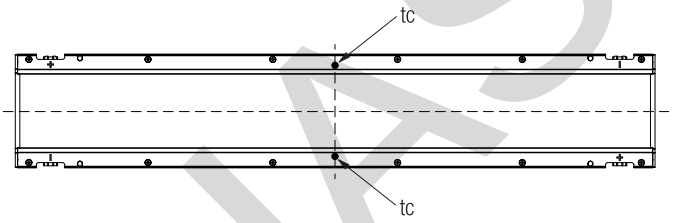
Thermal design and heat sink
The rated life of TALEX products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the TALEXmodule STARK INDI will be greatly reduced or the TALEXmodule STARK INDI may be destroyed.

tp point, ambient temperature and life-time
The temperature at tp reference point is crucial for the light output and life-time of a TALEX product.

For TALEXmodule STARK INDI a tp temperature of 65 °C has to be complied in order to achieve an optimum between 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.

The tc and tp temperature of LED modules from Tridonic are measured at the same reference point.



Mounting instruction

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

Max. torque for fixing: 0.5 Nm.

Chemical substance may harm the LED module. Chemical reactions could lead to colour shift, reduced luminous flux or a total failure of the module caused by corrosion of electrical connections.

Materials which are used in LED applications (e.g. sealings, adhesives) must not produce dissolver gas. They must not be condensation curing based, acetate curing based or contain sulfur, chlorine or phthalate. Avoid corrosive atmosphere during usage and storage.

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/esd-protection

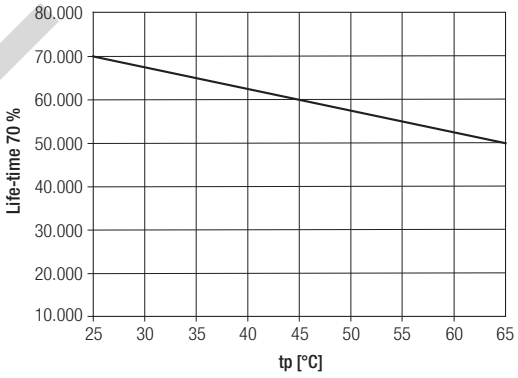
Thermal behaviour

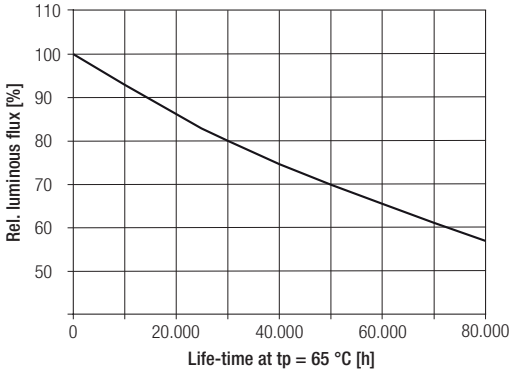
Storage temperature	-40 ... +60 °C
Operating temperature	-20 ... +35 °C
tp (at typ. current)	65 °C
tc max. (at typ. current)	65 °C
Max. humidity*	0 ... 80 %

* not condensating

Life-time

tp temperature in °C	Forward current in mA	Luminous flux in %	Operating time in h
65	350	80	30,000
		70	50,000
		50	80,000





Selection of the LED control gear

TALEXmodule STARK INDI must be operated with SELV LED control gears.
The metal frame of the TALEXmodule STARK INDI must not be earthed.

Electrical supply/choice of LED control gear

TALEXmodule STARK INDI 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 LED control gear which complies with the relevant standards. The use of TALEXconverter from Tridonic in combination with TALEXmodule STARK INDI guarantees the necessary protection for safe and reliable operation.

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

- Short-circuit protection
- Overload protection
- Overtemperature protection

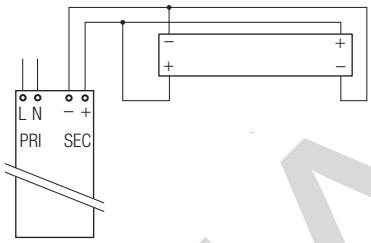
TALEXmodule STARK INDI must be supplied by a constant current LED control gear.
Operation with a constant voltage LED control gear will lead to an irreversible damage of the module.

Wrong polarity can damage the TALEXmodule STARK INDI.

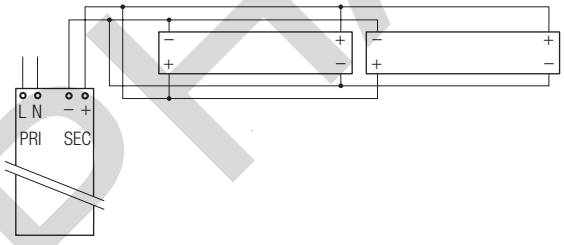
With parallel wiring tolerance-related differences in output are possible (thermal stress of the module) and can cause differences in brightness. If one module fails, the remaining modules may be overloaded.

Wiring

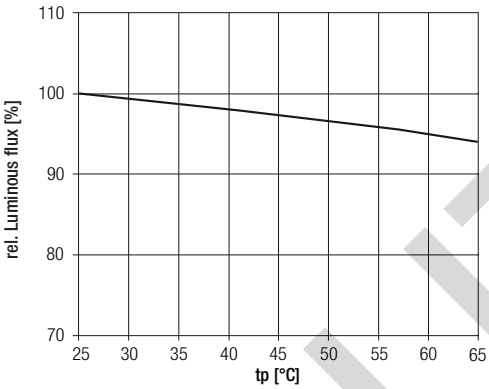
1 STARK INDI module with parallel wiring

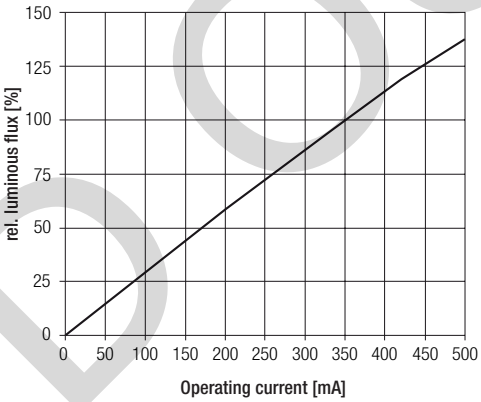


2 STARK INDI modules with parallel wiring

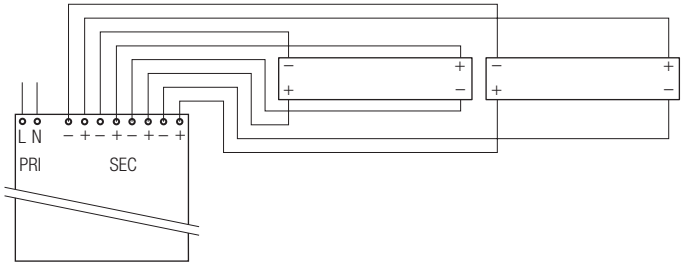


Relative luminous flux

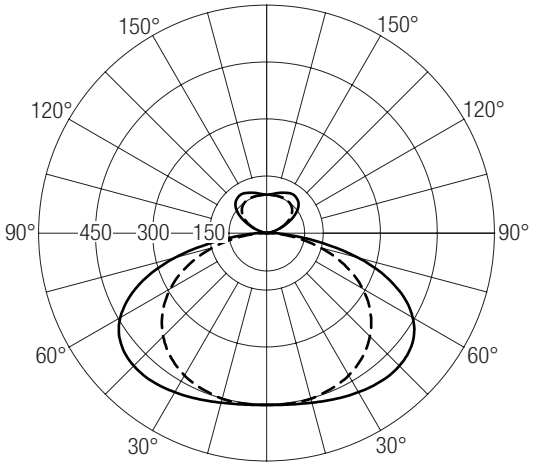




2 STARK INDI modules with 4 channel LED control gear



Light distribution



Despite narrow colour tolerances 4 SDCM slightly noticable colour differences between 2 modules may occour in critical applications.

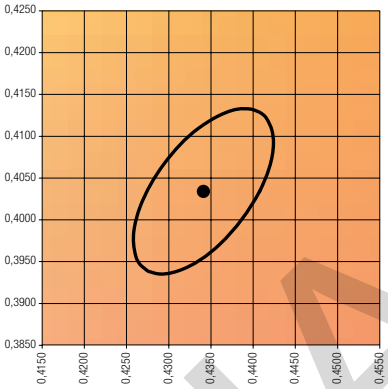
For further information see Design-in Guide, 3D data and photometric data on www.tridonic.com or on request.

Coordinates and tolerances according to CIE 1931

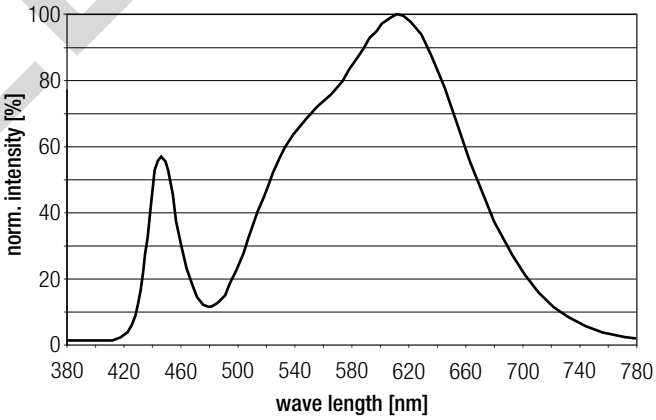
The specified colour coordinates are measured by a current impulse with typical values of module and a duration of 100 ms.
The ambient temperature of the measurement is ta = 25 °C.
The measurement tolerance of the colour coordinates are ± 0.01.

3,000 K

	x0	y0
Centre	0.4344	0.4032

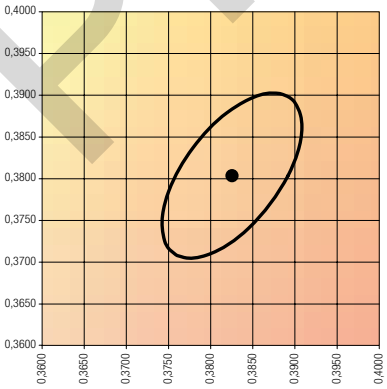


MacAdam Ellipse: 4SDCM



4,000 K

	x0	y0
Centre	0.3828	0.3803



MacAdam Ellipse: 4SDCM