

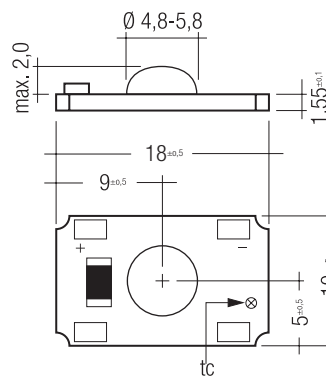
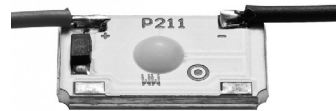
RoHS

TALEXeos P211-3

TALEXeos

Product description

- General lighting
- Design and effect lighting
- Emergency lighting
- Spotlights
- High-flux LED module
- Narrow colour temperature tolerance band
- Compact design
- Excellent thermal management
- Integrated polarity reversal protection
- Optional spot lens accessory TALEX lens O211
- High-power LED in chip-on-board technology (COB)
- Low thermal resistance $R_{th, j-hs} < 10 \text{ K/W}$
- Attached with premounted thermally conductive adhesive tape
- Connection: Cable 200 mm
- Cooling required



Technical data

Beam characteristic	140°
Ambient temperature t_a ®	-25 ... +55 °C
Forward voltage at 700 mA	3.0 – 4.0 V
t_c point	75 °C



Colour temperatures and tolerances, page 4

Ordering data

Colour®	Colour temperature®	Type	Article number
1 light point per module			
Warm white	3,000 K	P211-3 WW	89600667
Neutral white	4,200 K	P211-3 NW	89600666
Daylight white	6,500 K	P211-3 DL	89600684
Gold	2,700 K	P211-3 GOLD	89600940
Cool meat	–	P211-3 CM	89600939
Cool meat	–	P211-3 CM+	89600951

Packaging: 100 pieces/carton

Specific technical data

Type	Typ. luminous flux®		Current DC®		Power®		Colour rendering index CRI®
	at 350 mA	at 700 mA	typ.	max.	at 350 mA	at 700 mA	
1 light point per module							
P211-3 WW	51 lm	73 lm	350 mA	700 mA	1.2 W	2.4 W	> 80
P211-3 NW	59 lm	84 lm	350 mA	700 mA	1.2 W	2.4 W	> 80
P211-3 DL	73 lm	104 lm	350 mA	700 mA	1.2 W	2.4 W	> 80
P211-3 GOLD	54 lm	90 lm	350 mA	700 mA	1.2 W	2.4 W	> 90
P211-3 CM	60 lm	100 lm	350 mA	700 mA	1.2 W	2.4 W	> 80
P211-3 CM+	48 lm	80 lm	350 mA	700 mA	1.2 W	2.4 W	> 70

all values for $t_a = 25 \text{ °C}$, $t_c = 65 \text{ °C}$

® Tolerance range for optical and electrical data: $\pm 15 \%$.

® Exceeding the max. operating current leads to an overload on the TALEXeos module. This may in turn result in a significant reduction in lifetime or even destruction of the TALEXeos module.

® $R_{th, j-hs}$ = Thermal Resistance (Junction – Heat Sink). Exceeding the max. temperature limits leads to a reduced life or the module can be damaged. Measuring of the temperature at the t_c -point in the thermally stable state.

® Colour coordinates and tolerances according to CIE 1964. For details please refer to page 5.

® Colour temperature and CRI according to CIE 1931.

Standards

EN 62031
EN 62471

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 TALEXeos module will be greatly reduced or the TALEXeos module may be destroyed.

Therefore the TALEXeos P211-3 needs to be mounted onto a heat sink. However, it is allowed to operate the TALEXeos P211-3 without heat sink for a short period of time (30 seconds).

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

tc point, ambient temperature ta, temperature and service life

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

For TALEXeos P211-3 a max. tc temperature of 65 °C is recommended 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.

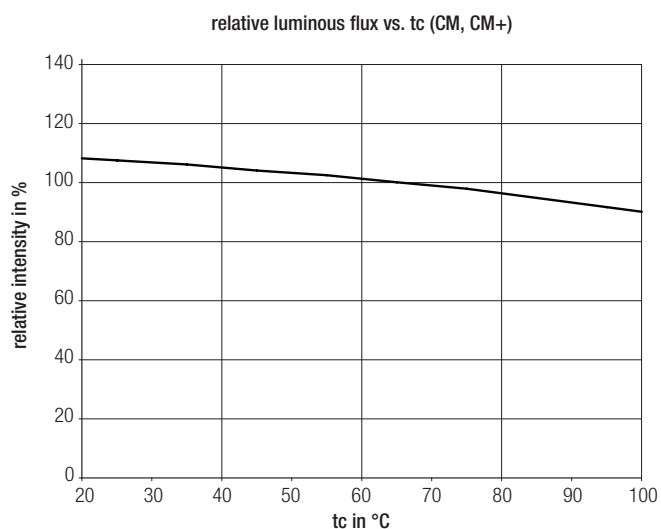
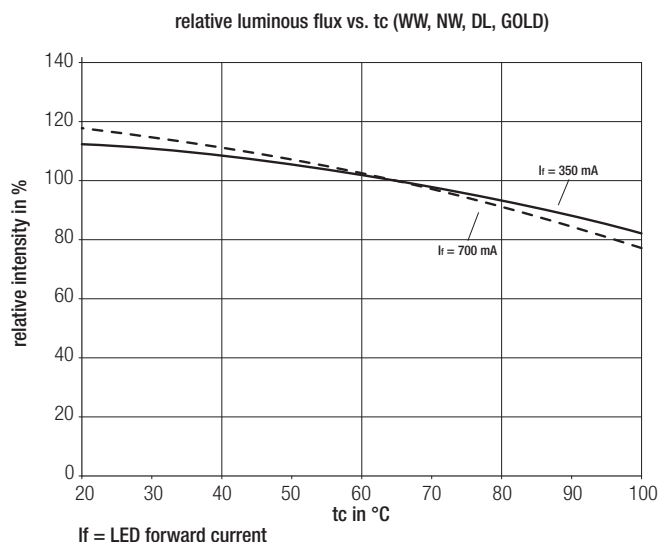
Mounting instruction



TALEXeos modules from Tridonic which have to be installed on a heat sink are equipped as standard with thermally conductive adhesive tape on the back of the pc board.

These TALEX products must be installed with this adhesive tape. To ensure permanent adhesion the fixing/cooling surface must be cleaned before installing the TALEX modules to remove all dirt, dust and grease.

For further information please refer to to the brochure entitled "TALEX installation instructions and guidelines".



Recommended heat sink surface

TALEXeos P211-3, 350 mA			
ta	tc	R _{th, hs-a}	heat sink surface
25 °C	65 °C	30.9 K/W	22 cm ²
35 °C	65 °C	22.4 K/W	30 cm ²
45 °C	65 °C	13.9 K/W	48 cm ²
55 °C	65 °C	5.4 K/W	59 cm ²

TALEXeos P211-3, 700 mA			
ta	tc	R _{th, hs-a}	heat sink surface
25 °C	65 °C	13.5 K/W	50 cm ²
35 °C	65 °C	9.4 K/W	71 cm ²
45 °C	65 °C	5.3 K/W	127 cm ²
55 °C	65 °C	1.2 K/W	154 cm ²

Notes

Above values are guidelines based on natural convection, heat sink material: aluminium ≥ 1 mm thick, R_{th, hs-a} = required thermal resistance of heat sink
The actual required heat sink surface need to be corrected according to the actually measured temperature at Tc.

Thermal behaviour

Storage temperature	-25 – 80 °C
Operating temperature	-25 – 55 °C
tc max. (at typ. current)	75 °C

Electrical supply/choice of converter

TALEXeos modules 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 TALEXeos modules guarantees the necessary protection for safe and reliable operation.

The TALEXeos modules are only for the operation with SELV < 60 V. The operation at converters with output voltage > 60 V is with an additional preparations possible. Further information on request.

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

- Short-circuit protection
- Overload protection



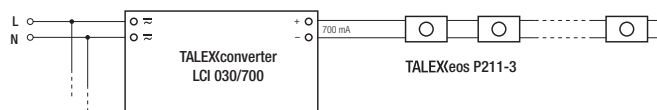
TALEXeos P211-3 must be supplied by a constant current converter. Operation with a constant voltage converter will lead to an irreversible damage of the module. The TALEXeos modules P211-3 are protected against reversed polarity.

Wiring

Cable: AWG24; length 200 mm

Colour	red	black
Function	+	-

Wiring example < 60V



TALEXeos P211-3 must be wired in series connection to the constant current converter TALEXconverter LCAI/LCBI/LCI.

TALEXeos P211-3 can be used with following converter:

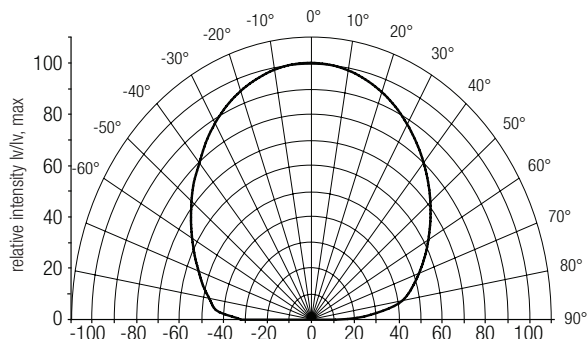
Article number	Type	I _{out}	P _{out}
86458898	TALEXconverter LCBI 015/0350 B020	350 mA	16 VA
86458896	TALEXconverter LCBI 015/0500 B020	500 mA	16 VA
86458897	TALEXconverter LCBI 015/0700 B020	700 mA	16 VA
86458901	TALEXconverter LCI 030/0700 A120	700 mA	32 VA
86458899	TALEXconverter LCAI 015/0350 A020	350 mA	16 VA
86458900	TALEXconverter LCAI 030/0700 A120	700 mA	32 VA

Further converter in the product catalogue or at www.tridonic.com

Optical characteristics TALEXeos P211-3

The optical design of the TALEXeos lens system ensures an optimum of homogeneity for the light distribution.

TALEXeos P211-3 140°: Light distribution I_v/I_{vmax} .



Colour	I_{vmax} . (cd) 700 mA
Warm white (WW)	22,8
Neutral white (NW)	26,1
Daylight white (DL)	32,6
Gold (GOLD)	22
Cool meat (CM)	25
Cool meat (CM+)	19

The evaluation to the eye safety is according to the EN 62471:2008 (Photobiological safety of lamps and lamp systems)

Type	Article number	Colour	Actinic UV	near UV	blue light	retinal thermal	IR radiation, eye
			E_s	E_{UVA}	L_B	L_R	E_{IR}
			200–400 nm	315–400 nm	300–700 nm	380–1,400 nm	780–3,000 nm
P211-3 WW	89600667	Warm white	exempt	exempt	low risk	exempt	exempt
P211-3 NW	89600666	Neutral white	exempt	exempt	low risk	exempt	exempt
P211-3 DL	89600684	Daylight white	exempt	exempt	low risk	exempt	exempt
P211-3 GOLD	89600940	Gold	exempt	exempt	low risk	exempt	exempt
P211-3 CM	89600939	Cool meat	exempt	exempt	low risk	exempt	exempt
P211-3 CM+	89600951	Cool meat +	exempt	exempt	low risk	exempt	exempt

Exempt:

The LED does not pose any photobiological hazard.

Low risk:

The LED does not pose a hazard due to normal behavioral limitations on exposure.

Moderate risk:

The LED does not pose a hazard due to the aversion response to very bright light sources or due to thermal discomfort.

High risk:

The LED may pose a hazard even for momentary or brief exposure.

Coordinates and tolerances according to CIE 1964

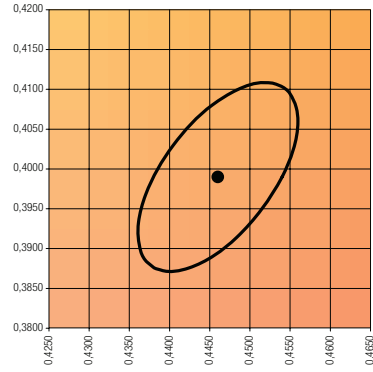
CIE coordinates:

Warm white

	x0	y0
Centre	0.4460	0.3990

MacAdam Ellipse: 5SDCM

Warm white



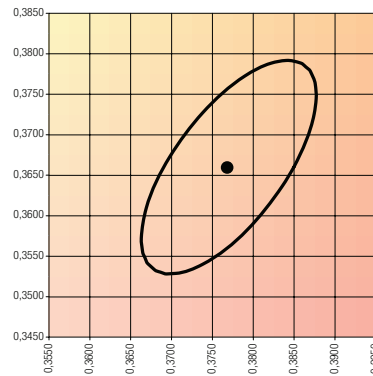
CIE coordinates:

Neutral white

	x0	y0
Centre	0.3770	0.3660

MacAdam Ellipse: 5SDCM

Neutral white



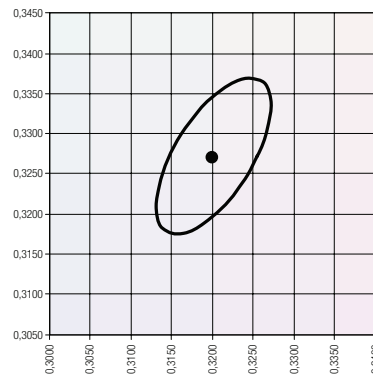
CIE coordinates:

Daylight white

	x0	y0
Centre	0.3200	0.3270

MacAdam Ellipse: 5SDCM

Daylight white



CIE coordinates

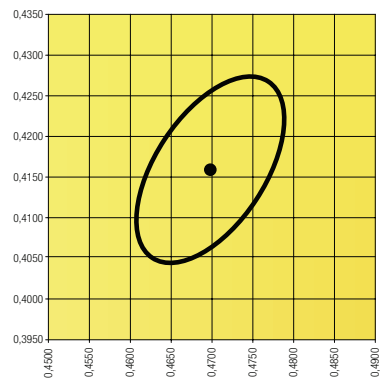
Gold

	x0	y0
Centre	0.4700	0.4160

MacAdam Ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.

Gold



CIE coordinates

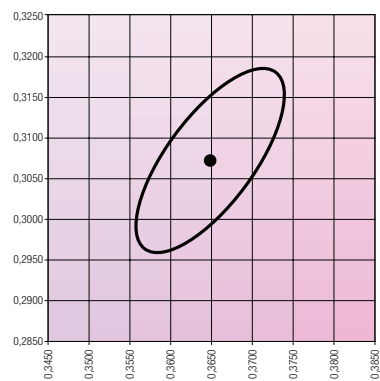
Cool meat

	x0	y0
Centre	0.3630	0.3070

MacAdam Ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.

Cool meat



CIE coordinates

Cool meat +

	x0	y0
Centre	0.3827	0.2960

MacAdam Ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.

Cool meat +

