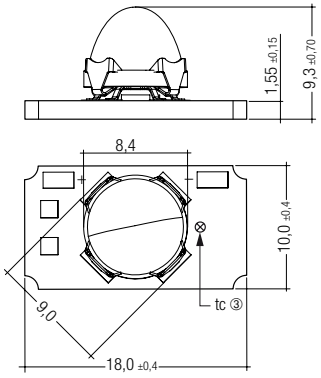
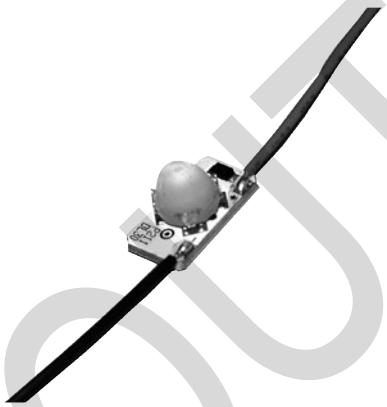
TALEXeos P211-3 30° white
High luminous flux TALEX module – 3rd generation

RoHS





Applications:
- general lighting
- effect and design lighting
- emergency lighting
- spotlights

Highlights:
- high flux TALEX module
- small CCT tolerance band
- compact design
- excellent thermal management ③
- integrated protection against reversed polarity
- 30° lens

Properties:
- high-power LED in COB technology
- colour white: ⑤ ⑥
  warm white (WW): 3,000 K, CRI 80
  neutral white (NW): 4,200 K, CRI 80
- low thermal resistance $R_{th,\ j\text{-}tc} < 10$ K/W ③
- 30° light distribution pattern, uniform illumination ④
- fixing: pre-mounted thermal conductive adhesive tape
- connection method: cable 200 mm
- identification of polarity: + red / – black

Notes:
- cooling required. For details please refer to page 2 ③
- none of the components of the TALEXeos module (substrate, LED, electronic components etc.) may be exposed to tensile or compressive stresses
- for further information on installation please refer to the brochure entitled "TALEX installation instructions"

TALEX

type	article number	colour ⑤	colour temp. K	light points per module	typ. luminous flux lm ①	luminous intensity cd ④	supply current mA ②	typ. power W ①	ta °C ③	max. tc °C ③	packing unit
all data for ta = 25 °C, tc = 45 °C, I = 350 mA											
P211-3 WW 700 mA 30° lens	89600560	warm white	3,000	1	37	74	350	1.2	-25 → +55	75	40
P211-3 NW 700 mA 30° lens	89600561	neutral white	4,200	1	50	100	350	1.2	-25 → +55	75	40
all data for ta = 25 °C, tc = 45 °C, I = 700 mA											
P211-3 WW 700 mA 30° lens	89600560	warm white	3,000	1	62	124	700	2.4	-25 → +55	75	40
P211-3 NW 700 mA 30° lens	89600561	neutral white	4,200	1	79	158	700	2.4	-25 → +55	75	40

① Tolerance range for optical and electrical data: ±15 %

② Exceeding the maximum 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.

③ $R_{th,\ j\text{-}tc}$ = Thermal Resistance (Junction – tc)
If the maximum temperature limits are exceeded, the life of the module will be greatly reduced or the module may be damaged.
The temperature of the TALEXeos module at the tc point in the thermally stable state by means of a temperature sensor or temperature-sensitive sticker (available for example from www.conrad.com, www.rs-components.com) as per EN60598-1.
For the precise position of the tc point see the above diagram. For details please refer to page 2.

④ Typical luminous intensity for 0° central view. For details please refer to page 3.

⑤ Colour coordinates and tolerances according to CIE 1964. For details please refer to page 4.

⑥ Colour temperature and CRI according to CIE 1931

TALEXeos P211-3 30°

Thermal design and heat sink

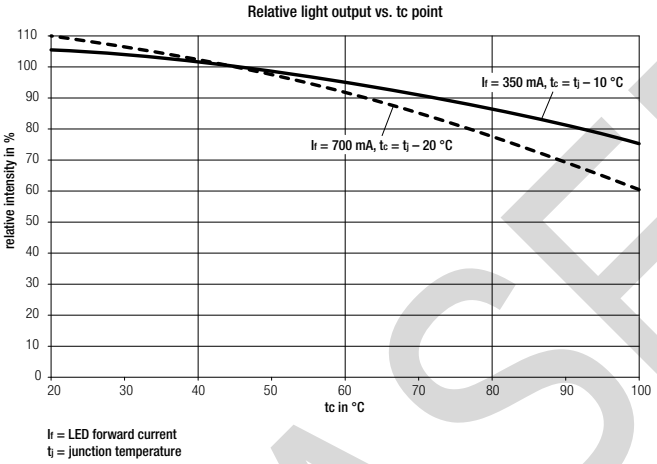
The rated life of TALEX products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the TALEXeos module will be greatly reduced or the TALEXeos module may be destroyed.

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).

TridonicAtco'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 75 °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 TridonicAtco 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".

Recommended heat sink surface per LED

TALEXeos P211-3 30°, 350 mA, 3,8 V, $R_{th,\ tc\text{-}hs}$ = 3 K/W

ta	tc	$R_{th,\ hs\text{-}a}$	heat sink surface
25 °C	75 °C	39.4 K/W	17 cm²
35 °C	75 °C	30.9 K/W	22 cm²
45 °C	75 °C	22.4 K/W	30 cm²
55 °C	75 °C	13.9 K/W	48 cm²

TALEXeos P211-3 30°, 700 mA, 4,0 V, $R_{th,\ tc\text{-}hs}$ = 3 K/W

ta	tc	$R_{th,\ hs\text{-}a}$	heat sink surface
25 °C	75 °C	17.7 K/W	38 cm²
35 °C	75 °C	13.5 K/W	50 cm²
45 °C	75 °C	9.4 K/W	71 cm²
55 °C	75 °C	5.3 K/W	127 cm²

Notes

Values valid for: natural convection, heat sink material: aluminium ≥ 1 mm thick
$R_{th,\ hs\text{-}a}$ = required thermal resistance of heat sink (heat sink – ambient)
$R_{th,\ tc\text{-}hs}$ = thermal resistance (tc – heat sink)

Absolute maximum ratings P211-3 30°

Parameter	Value
storage temperature, t_s	-25 → +80 °C
ambient temperature, t_a ①	-25 → +80 °C
max. reference point temperature, t_c ①	+90 °C
max. junction temperature t_j ①	+145 °C
max. forward current I_f ①	1000 mA
forward voltage U_f (700 mA)	4.0 V

① it is allowed to operate TALEXeos P211-3 30° without heat sink only for a short period of time (30 seconds).

Electrical supply/choice of converter

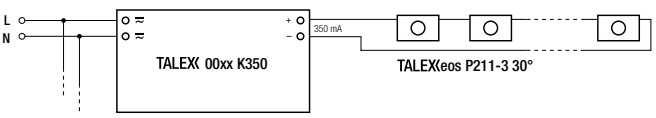
TALEXeos modules from TridonicAtco are not protected against overvoltages, overcurrents, overloads or short-circuit currents. Safe and reliable operation can only be guaranteed in conjunction with a converter which complies with the relevant standards. The use of TALEX converters from TridonicAtco in combination with TALEXeos modules guarantees the necessary protection for safe and reliable operation.

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

- Short-circuit protection
- Overload protection
- Overtemperature 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 example



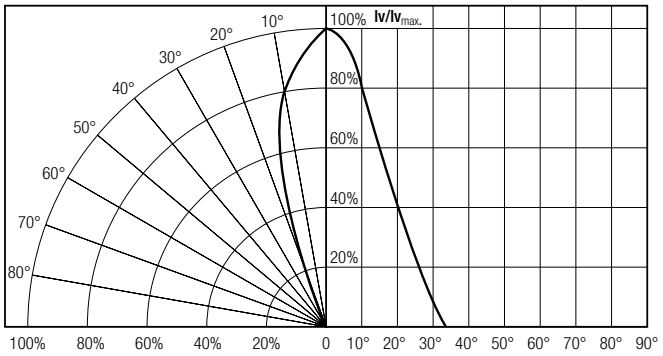
TALEXeos P211-3 30° must be wired in series connection to the constant current converter TALEXconverter 00xx K350/TALEXconverter 00xx K700.

TALEXeos P211-3 30°

Optical characteristics TALEXeos P211-3

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

TALEXeos P211-3 30°: Light distribution Iv/Ivmax.



Colour	Ivmax. (cd) 350 mA	Ivmax. (cd) 700 mA
warm white (WW)	74	124
neutral white (NW)	100	158

TALEXeos P211-3 30°

Coordinates and tolerances according to CIE 1964

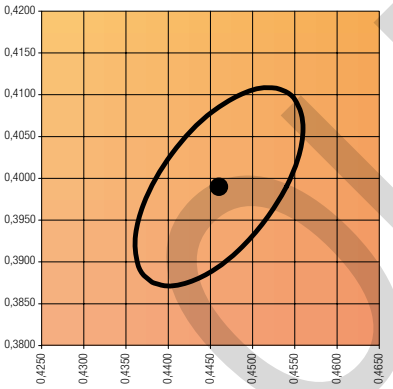
CIE coordinates:

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