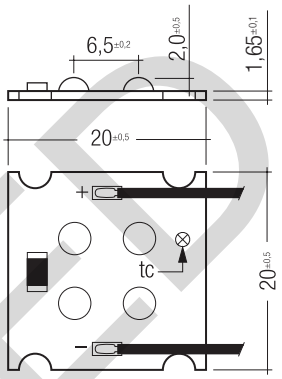
EAC RoHS

TALEXmodule EOS P214-4

TALEXmodule EOS

Product description

- General lighting
- Design and effect lighting
- Spotlights
- High-flux LED module
- Narrow colour temperature tolerance band
- Compact design
- Excellent thermal management
- Integrated polarity reversal protection
- Optional spot lens accessory TALEXaccessories LENS O214
- High-power LED module in chip-on-board technology (COB)
- Low thermal resistance $R_{th, j\text{-}hs} < 2.5$ K/W
- Attached with premounted thermally conductive adhesive tape
- Connection: Cable 200 mm
- Cooling required



Technical data

Beam characteristic	140°
Ambient temperature range	-25 ... +55 °C
tp rated	65 °C
tc	75 °C
Max. DC forward current	700 mA
Max. permissible LF current ripple	1,000 mA
Max. permissible peak current	1,250 mA / max. 10 ms
ESD classification	severity level 4
Risk group (EN 62471:2008)	0
Type of protection	IP00

Ordering data

Type	Article number	Colour	Colour temperature	Packaging carton	Weight per pc.
P214-4 WW	89601373	Warm white	3,000 K	25 pc(s).	0.008 kg
P214-4 NW	89601372	Neutral white	4,200 K	25 pc(s).	0.004 kg
P214-4 DL	89601371	Daylight white	6,500 K	25 pc(s).	0.005 kg

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Standards, page 3

Colour temperatures and tolerances, page 5

Specific technical data

Type	Typ. luminous flux at 350 mA①	Typ. luminous flux at 700 mA①	Typ. Current①②③	Max. Current①②③	Typ. forward voltage at 350 mA①	Typ. forward voltage at 700 mA①	Power at 350 mA①	Power at 700 mA①	Colour rendering index CRI	Typ. efficacy at 350 mA	Typ. efficacy at 700 mA
P214-4 WW	310 lm	515 lm	350 mA	700 mA	13.6 V	14.0 V	4.8 W	9.8 W	> 80	65 lm/W	53 lm/W
P214-4 NW	340 lm	525 lm	350 mA	700 mA	13.6 V	14.0 V	4.8 W	9.8 W	> 80	71 lm/W	54 lm/W
P214-4 DL	410 lm	620 lm	350 mA	700 mA	13.6 V	14.0 V	4.8 W	9.8 W	> 70	85 lm/W	63 lm/W

All values for ta = 25 °C and tp = 65 °C.

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

② $R_{th, j\text{-}hs}$ = 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 tc-point in the thermally stable state.

③ Exceeding the max. operating current leads to an overload on the TALEXmodule EOS. This may in turn result in a significant reduction in life-time or even destruction of the TALEXmodule EOS.

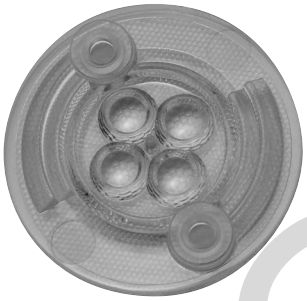
RoHS

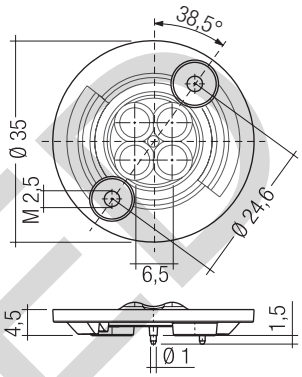
ACCES-SORIES

TALEXlens 0214

Product description

- 60° lens for TALEXmodule EOS P214
- For general, design and effect lighting
- As a spotlight
- LV halogen replacement
- Simple installation
- Beam characteristic: 60°
- Attached with 2 x M2.5 screws
- Material: PC





Ordering data

Type	Article number	Colour	Dimensions ØxH	Packaging carton	Weight per pc.
0214 lens 60°	**24139082**	Transparent	35 x 7.3 mm	10 pc(s).	0.005 kg

Standards
EN 62031
EN 62471

Energy classification

Type	Forward current	Energy classification
P214-4 WW	350 mA	A
	700 mA	A
P214-4 NW	350 mA	A+
	700 mA	A
P214-4 DL	350 mA	A+
	700 mA	A

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 EOS will be greatly reduced or the TALEXmodule EOS may be destroyed.

Therefore the TALEXmodule EOS P214-4 needs to be mounted onto a heat sink.

Tridonic's excellent thermal design for the TALEXmodule EOS 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 life-time

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

For TALEXmodule EOS P214-4 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

TALEXmodule EOS 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".

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

Recommended heat sink surface

TALEXmodule EOS P214-4, 350 mA

ta	tc	$R_{th,\ hs\text{-}a}$
25 °C	65 °C	7.7 K/W
35 °C	65 °C	5.6 K/W
45 °C	65 °C	3.5 K/W
55 °C	65 °C	1.4 K/W

TALEXmodule EOS P214-4, 700 mA

ta	tc	$R_{th,\ hs\text{-}a}$
25 °C	65 °C	3.4 K/W
35 °C	65 °C	2.3 K/W
45 °C	65 °C	1.3 K/W
55 °C	65 °C	0.2 K/W

Notes
$R_{th,\ hs\text{-}a}$ = required thermal resistance of heat sink
The actual required heat sink surface need to be corrected according to the actually measured temperature at tc.

Matrix temperature

f(soldering time) for the modules

Temperature	Max. time without heat sink	Max. time with optimized heat sink
330 °C	15 s	–
340 °C	12 s	–
350 °C	10 s	–
360 °C	5 s	15 s
370 °C	3 s	12 s
380 °C	2 s	10 s
390 °C	1 s	5 s

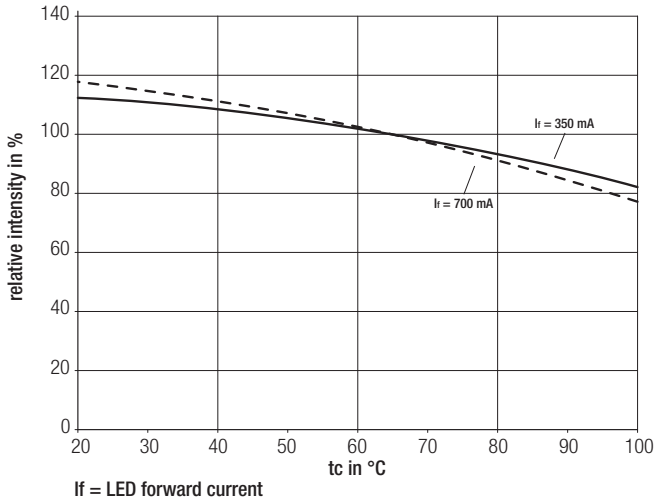
The values apply for soldering without heat sink. To reduce the duration of soldering it is recommended to pre-heat the module at ta max., e.g. on a plate.

Storage and humidity

storage temperature	-25 ... +80 °C

Operation only in non condensing environment.
Humidity during processing of the module should be between 30 to 70 %.

relative luminous flux vs. tc point



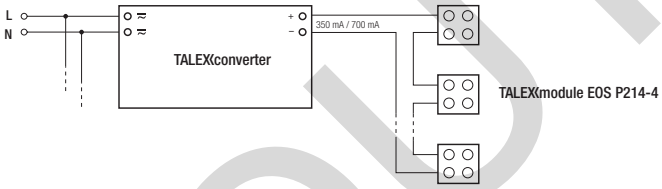
If = LED forward current

Wiring

Cable: AWG24; length 200 mm

Colour	red (white-red)	black (white-black)
Function	+	–

Wiring example < 60 V



Electrical supply/choice of LED Driver

TALEXmodule EOS 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 Driver which complies with the relevant standards. The use of TALEXconverter from Tridonic in combination with TALEXmodule EOS guarantees the necessary protection for safe and reliable operation.
The TALEXmodule EOS are only for the operation with SELV < 60 V.
The operation at LED Drivers with outputvoltage > 60 V is with an additional preparations possible. Further information on request.

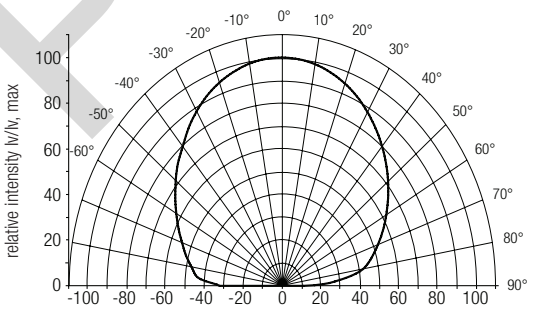
If a LED Driver other than Tridonic TALEXconverter is used, it must provide the following protection:
- Short-circuit protection
- Overload protection

TALEXmodule EOS P214-4 must be supplied by a constant current LED Driver.
Operation with a constant voltage LED Driver will lead to an irreversible damage of the module. The TALEXmodule EOS P214-4 are protected against reversed polarity.

Optical characteristics TALEXmodule EOS P214-4

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

Light distribution Iv/Iv$_{max.}$



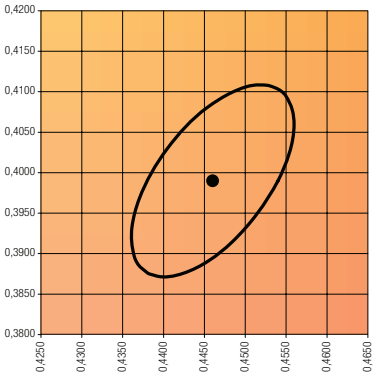
Colour	Iv$_{max.}$ 350 mA	Iv$_{max.}$ 700 mA
Warm white (WW)	55.6 cd	91.2 cd
Neutral white (NW)	64.0 cd	104.4 cd
Daylight white (DL)	79.2 cd	130.4 cd

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 1964

3,000 K

	x0	y0
Centre	0.4460	0.3990



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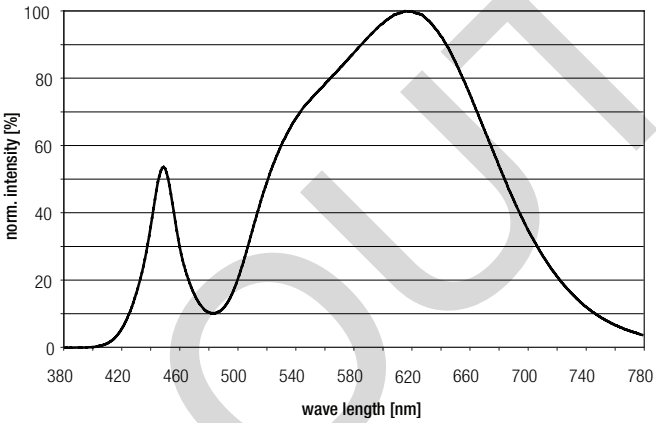
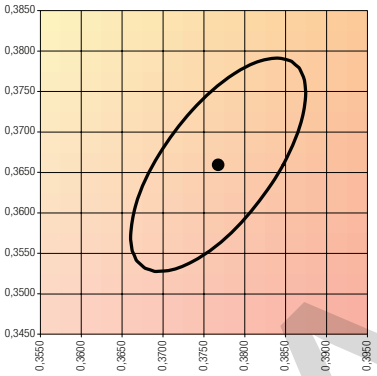


4,200 K

	x0	y0
Centre	0.3770	0.3660



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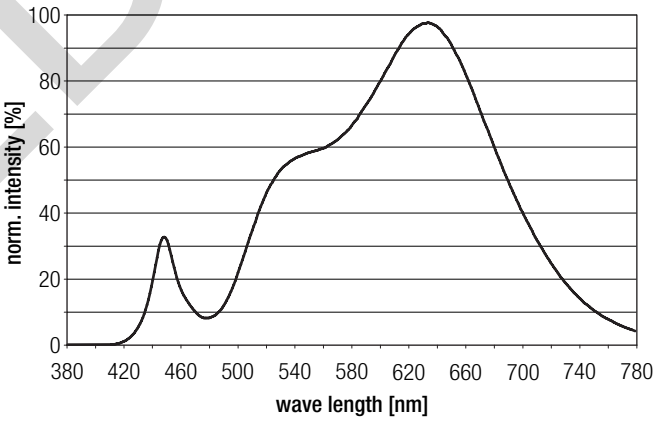
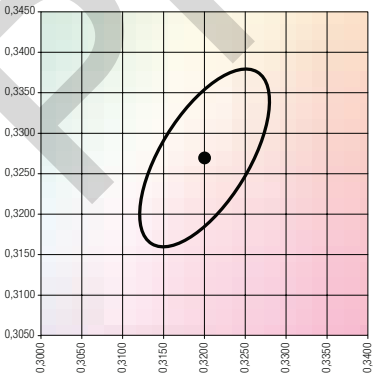


6,500 K

	x0	y0
Centre	0.3200	0.3270



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