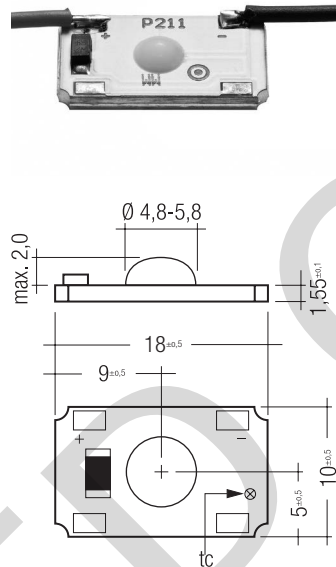


RoHS

## TALEXmodule EOS P211-3 EOS

### 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 TALEXaccessory LENS 0211-2
- High-power LED in chip-on-board technology (COB)
- Low thermal resistance  $R_{th, j-hs} < 10$  K/W
- Attached with premounted thermally conductive adhesive tape
- Connection: Cable 200 mm
- Cooling required



### Technical data

Beam characteristic	140°
Supply voltage at 700 mA	3 – 4 V
Ambient temperature $t_a$ ®	-25 ... +55 °C
tc point	75 °C
Risk group (EN 62471:2008)	0

### Ordering data

Type	Article number	Colour®	Colour temperature®	Packaging carton	Weight per pc.
<b>1 light point per module</b>					
P211-3 WW	89600667	Warm white	3,000 K	100 pc(s).	0.001 kg
P211-3 NW	89600666	Neutral white	4,200 K	100 pc(s).	0.001 kg
P211-3 DL	89600684	Daylight white	6,500 K	100 pc(s).	0.003 kg
P211-3 GOLD	89600940	Gold	2,700 K	100 pc(s).	0.003 kg
P211-3 CM	89600939	Cool meat	–	100 pc(s).	0.003 kg
P211-3 CM+	89600951	Cool meat	–	100 pc(s).	0.003 kg

Standards, page 3

Colour temperatures and tolerances, page 5, 6

### Specific technical data

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

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

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

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

® Colour coordinates and tolerances according to CIE 1964. For details please refer to page 5, 6.

® Colour temperature and CRI according to CIE 1931.

all values for  $t_a = 25$  °C,  $t_c = 65$  °C

LED control gear matrix – TALEX(module EOS P211-3)

IN-BUILT LCI										
Type	0030 K500 one4all	0060 K350 one4all Ip <sup>① ②</sup>	LCI 80 W 350mA one4all Ip <sup>① ②</sup>		LCI 80 W 700mA one4all Ip <sup>① ②</sup>		0018 K350 DALI RGB			
Article number	86458561	86458566	86458997 / 86458846		86459191		86458276			
Assignable LED control gear										
Type	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
TALEX(module EOS P211-3)	6	14	39	42	39	57	20	28	1	4

<sup>①</sup> Not SELV.

<sup>②</sup> Additional insulation required.

LED control gear matrix – TALEX(module EOS P211-3)

REMOTE LCI																		
Type	LCI 15 W 350 mA one4all	LCI 30 W 700 mA one4all	LCI 5 W 350 mA	LCI 15 W 350 mA	LCI 15 W 700 mA	LCI 30 W 700 mA	LCCI 16 W 350 mA	LCCI 16 W 500 mA	LCCI 16 W 700 mA									
Article number	86458899	86458900	24166311	24166312	24166313	24166314	86459210	86459211	86459212									
Assignable LED control gear																		
Type	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
TALEX(module EOS P211-3)	1	11	1	10	3	4	7	10	4	5	7	10	1	12	1	8	1	5

Controls-Matrix – TALEX(module EOS P211-3)

IN-BUILT										REMOTE	
Type	C350-2 12-24 V DC 350 mA 8 VA		C700 12-24 V DC 700 mA 16 VA		C350 dim		C700 dim		C350-2 4-Channel		
Article number	86454974		86458513		86458944		86458945		86458693		
Assignable controls										Assignable controls	
Type	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
TALEX(module EOS P211-3)	1	6	1	6	1	12	1	12	1	48	

x = Special configuration.

## Standards

EN 62031  
EN 62471

## Thermal design and heat sink

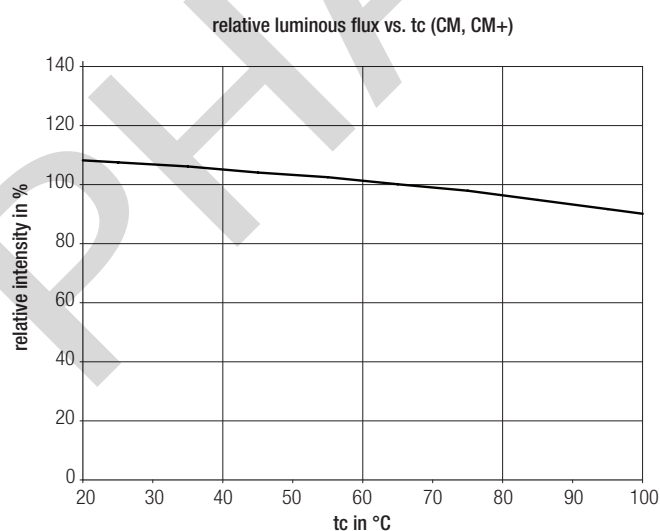
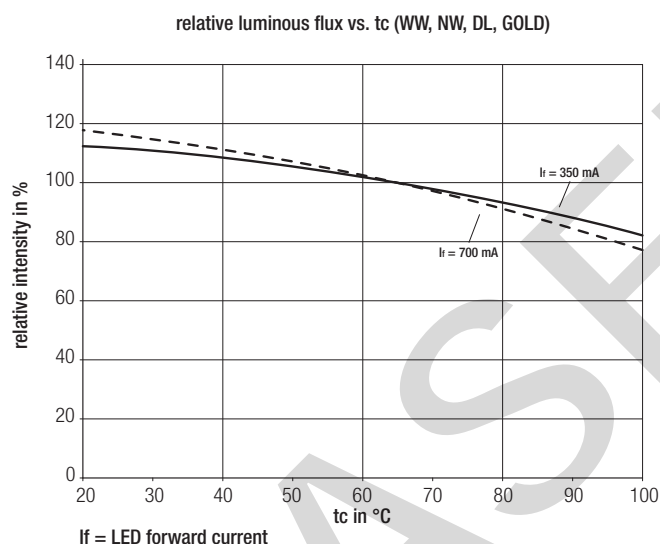
The rated life of TALEX products depends to a large extent on the temperature. If the permissible temperature limits are exceeded, the life of the TALEXmodule EOS will be greatly reduced or the TALEXeos module may be destroyed.

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

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 $t_a$ , temperature and service life

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



For TALEXmodule EOS P211-3 a max.  $t_c$  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  $t_c$  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 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.

## Recommended heat sink surface

### TALEXmodule EOS P211-3, 350 mA

$t_a$	$t_c$	$R_{th, hs-a}$	heat sink surface
25 °C	65 °C	30.9 K/W	22 cm <sup>2</sup>
35 °C	65 °C	22.4 K/W	30 cm <sup>2</sup>
45 °C	65 °C	13.9 K/W	48 cm <sup>2</sup>
55 °C	65 °C	5.4 K/W	59 cm <sup>2</sup>

### TALEXmodule EOS P211-3, 700 mA

$t_a$	$t_c$	$R_{th, hs-a}$	heat sink surface
25 °C	65 °C	13.5 K/W	50 cm <sup>2</sup>
35 °C	65 °C	9.4 K/W	71 cm <sup>2</sup>
45 °C	65 °C	5.3 K/W	127 cm <sup>2</sup>
55 °C	65 °C	1.2 K/W	154 cm <sup>2</sup>

## Notes

Above values are guidelines based on natural convection, heat sink material: aluminium  $\geq 1 \text{ mm}$  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  $t_c$ .

## Thermal behaviour

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

### Electrical supply/choice of LED control gear

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 control gear 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 < 60V. The operation at LED control gears with output voltage > 60V is with an additional preparations possible. Further information on request.

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

- Short-circuit protection
- Overload protection



TALEXmodule EOS P211-3 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. The TALEXmodule EOS P211-3 are protected against reversed polarity.



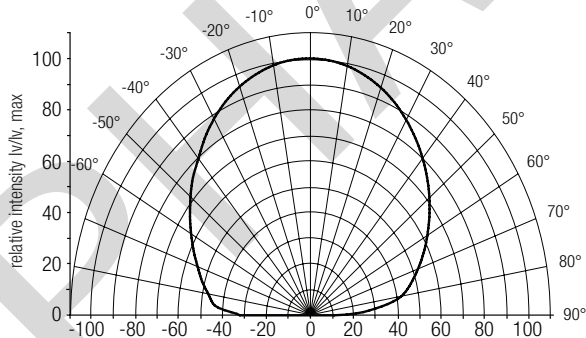
### EOS/ESD safety guidelines

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>

### Optical characteristics TALEXmodule EOS P211-3

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

### Light distribution $I_v/I_{vmax}$ .

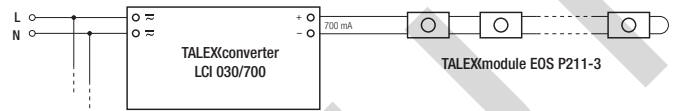


### Wiring

Cable: AWG24; length 200 mm

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

### Wiring example < 60V



TALEXmodule EOS P211-3 must be wired in series connection to the constant current LED control gear TALEXconverter LCAI/LCBI/LCI.

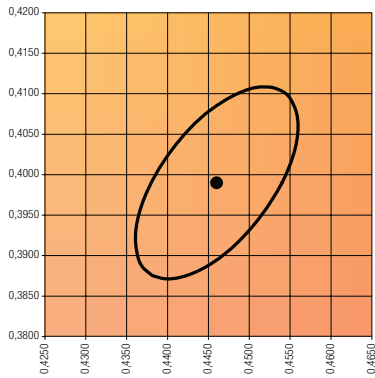
Colour	$I_{vmax}$ (cd) 700 mA
Warm white (WW)	22,8
Neutral white (NW)	26,1
Daylight white (DL)	32,6
Gold (GOLD)	22
Cool meat (CM)	25
Cool meat (CM+)	19

For further information see Design-in Guide, 3D data and photometric data on [www.tridonic.com](http://www.tridonic.com) or on request.

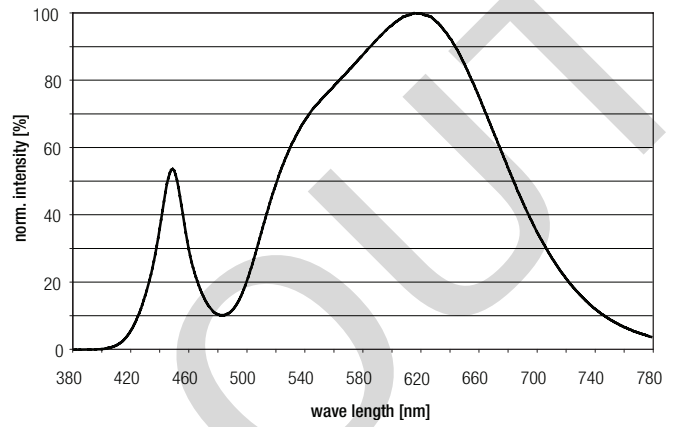
Coordinates and tolerances according to CIE 1964

3,000 K

	x0	y0
Centre	0.4460	0.3990

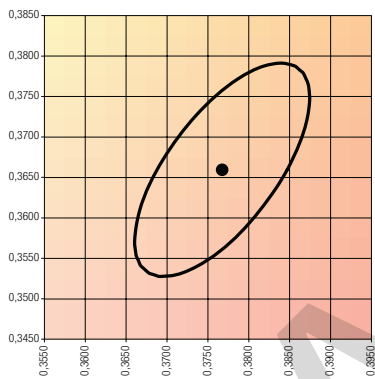


MacAdam ellipse: 5SDCM

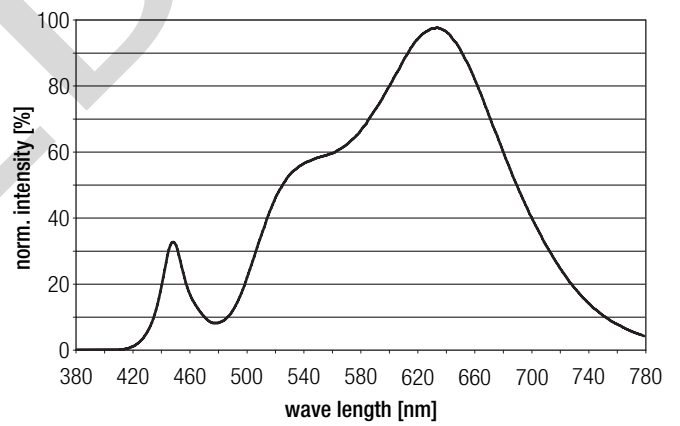


4,200 K

	x0	y0
Centre	0.3770	0.3660

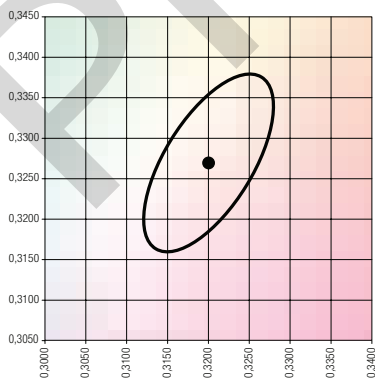


MacAdam ellipse: 5SDCM

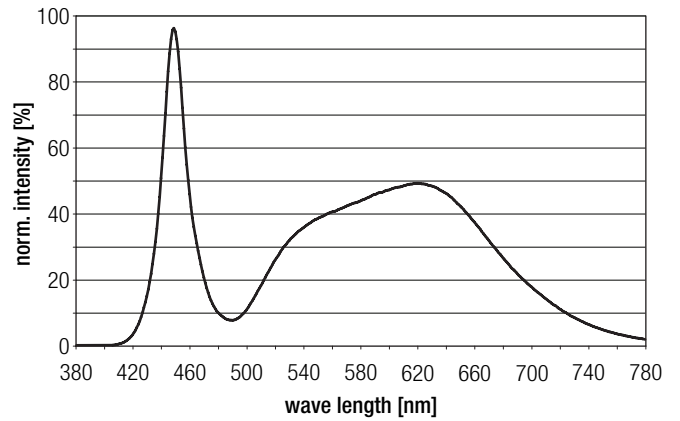


6,500 K

	x0	y0
Centre	0.3200	0.3270

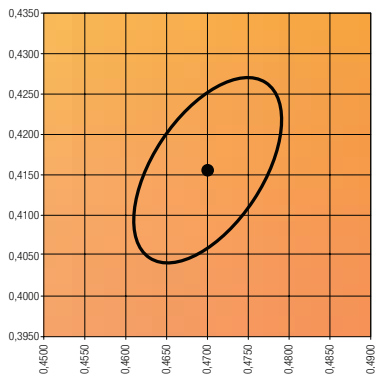


MacAdam ellipse: 5SDCM



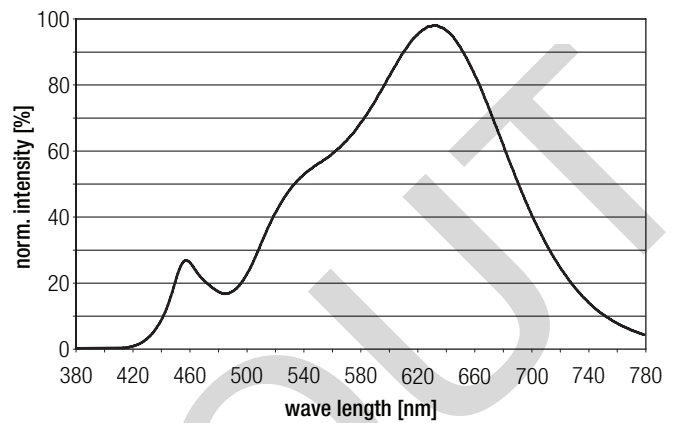
**Gold**

	x0	y0
Centre	0.4700	0.4160



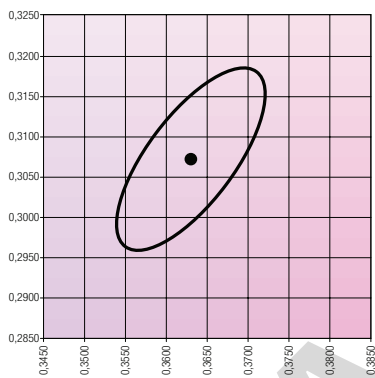
MacAdam ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.



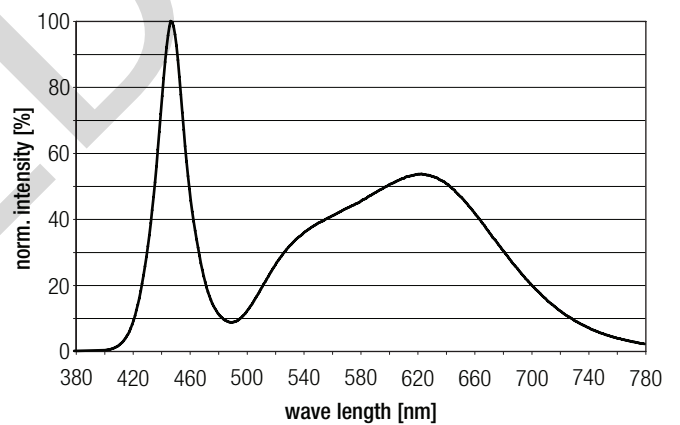
**Cool meat**

	x0	y0
Centre	0.3650	0.3070



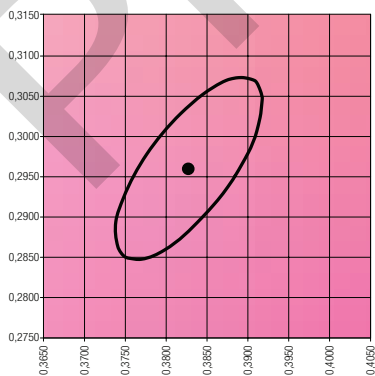
MacAdam ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.



**Cool meat +**

	x0	y0
Centre	0.3827	0.2960



MacAdam ellipse: 5SDCM

Tolerance zone only significant by operating with 700 mA.

