



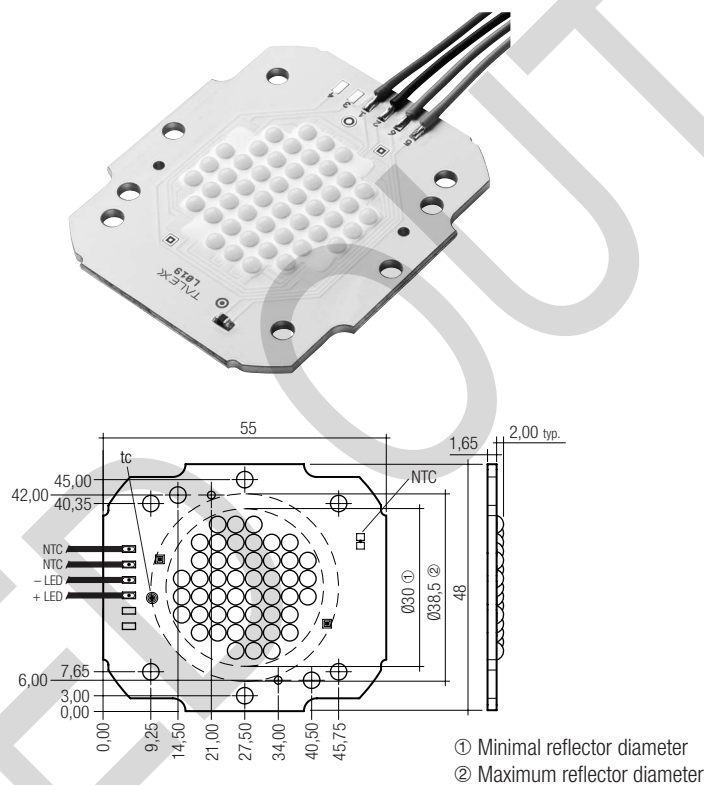
TALEXmodule SPOT P350-3 TALEXmodule SPOT

Product description

- Spotlights
- Downlights
- High-flux LED module
- Narrow colour temperature tolerance band
- Lifetime up to 50,000 hours
- Compact design
- Excellent thermal management^①
- NTC for temperature control
- High-power LED in chip-on-board technology
- Beam characteristic: 140°
- Uniform distribution of light
- Fixing holes for M3 screws
- Connection: Cable 300 mm
- Built-in LED module
- Cooling required

Technical data

Beam characteristic	140°
Ambient temperature t_a	-30 ... +55 °C
Typ. t_c point	65 °C
Weight	0.020 kg
Risk group (EN 62471:2008)	0



Ordering data

Colour temperature	Type	Article number
3,000 K	LED P350-3 3000K 55x48	89601427
3,500 K	LED P350-3 3500K 55x48	89601428
4,000 K	LED P350-3 4000K 55x48	89601429
5,000 K	LED P350-3 5000K 55x48	89601430
2,700 K	LED P350-3 GOLD 55x48	89601597
—	LED P350-3 CM+ 55x48	89601598

Packaging: 20 pieces/packaging, 360 pieces/carton

Specific technical data

Type	Photometric code	Typ. luminous flux at 1,400 mA ^{② ③ ④}	Typ. luminous flux at 1,750 mA ^{② ③ ④}	Typ. forward voltage ^{② ③}	Power consumption module	Typ. efficacy at 1,400 mA	Colour rendering index CRI
LED P350-3 3000K 55x48	830/459	3,600 lm	4,330 lm	38.4 V	53.8 W	67 lm/W	> 80
LED P350-3 3500K 55x48	835/459	3,600 lm	4,330 lm	38.4 V	53.8 W	67 lm/W	> 80
LED P350-3 4000K 55x48	840/459	4,100 lm	4,830 lm	38.4 V	53.8 W	76 lm/W	> 80
LED P350-3 5000K 55x48	750/459	5,300 lm	6,300 lm	38.4 V	53.8 W	99 lm/W	> 70
LED P350-3 GOLD 55x48	—	3,300 lm	3,800 lm	38.4 V	53.8 W	62 lm/W	> 90
LED P350-3 CM+ 55x48	—	3,300 lm	3,800 lm	38.4 V	53.8 W	62 lm/W	—

All values for $t_a = 25$ °C, $t_c = 65$ °C.

^① 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 TALEXmodule SPOT at the t_c point in the thermally stable state by mean of a temperature sensor or temperature-sensitive sticker as per EN 60598-1. For the precise position of the t_c point see the drawing above.

^② At $t_c = 65$ °C.

^③ Tolerance range for optical and electrical data: ± 15 %.

^④ Max. permissible surge current: 3 A, duration max. 10 μ s.

Converter matrix – TALEXmodule SPOT P350-3

REMOTE LCI						IN-BUILT LCI			
Type		LCI 055/1400 T020		LCAI 055/1400 T020		LCI 055/1400 R010		LCAI 055/1400 R010	
Art. No.		86459219		86459248		86459217		86459246	

Assignable converter									
Type		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
LED P350-3 3000K 55x48	89601427	1	1	1	1	1	1	1	1
LED P350-3 3500K 55x48	89601428	1	1	1	1	1	1	1	1
LED P350-3 4000K 55x48	89601429	1	1	1	1	1	1	1	1
LED P350-3 5000K 55x48	89601430	1	1	1	1	1	1	1	1
LED P350-3 GOLD 55x48	89601597	1	1	1	1	1	1	1	1
LED P350-3 CM+ 55x48	89601598	1	1	1	1	1	1	1	1

Wiring

Cable: AWG24; length 300 mm

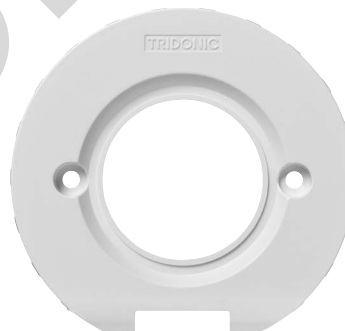
pin	1	2	5	6
function	+	-	NTC	NTC
colour	red	schwarz	grey	grey

ACCES-
SORIES

TALEXXaccessory Cover Spot

Product description

- Housing for LED module
- Diameter: 65 mm



Ordering data

Type	Article number
P 350-3 LED cover white D65 LES 30 mm	88167488

Packaging: 10 pieces/package, 200 pieces/carton

Standards

EN 62031

EN 62471

Photometric code

Key for photometric code, e. g. 830 / 559

1 st digit	2 nd + 3 rd digit	4 th digit	5 th digit	6 th digit
Code	CRI	Colour temperature in Kelvin x 100	McAdams after 25% of the lifetime (max.6000h)	Lumen maintenance after 25% of the lifetime (max.6000h)
7	67 – 76			Code
8	77 – 86			Remaining lumen
9	87 – ≥90			
		McAdams initial		
				7 ≥ 70 %
				8 ≥ 80 %
				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 SPOT will be greatly reduced or the TALEXmodule SPOT may be destroyed.

Therefore the TALEXmodule SPOT P350-3 needs to be mounted onto a heat sink.

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

tc point, ambient temperature and lifetime

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

For TALEXmodule SPOT P350-3 a tc temperature of 65 °C has to be complied 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 SPOT from Tridonic which have to be installed on a heat sink have to be connected with heat-conducting paste or heat conducting adhesive film and fixed with M3 screws with plastic washer.

The fixing/cooling surface must be cleaned before installing the TALEX modules to remove all dirt, dust and grease.

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



EOS/ESD safety guidelines

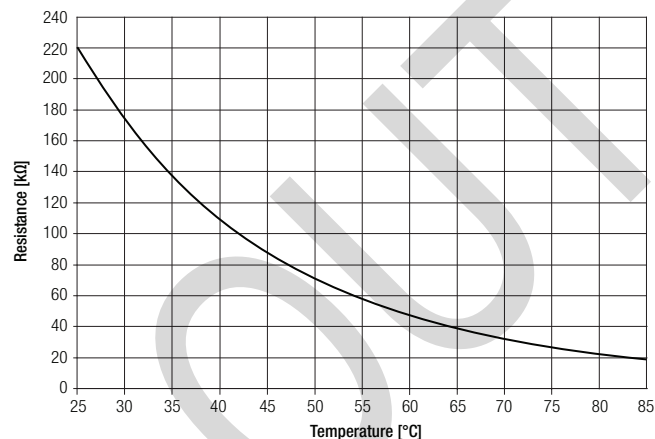
The device / module contains components that are sensitive to electrostatic discharge and may only be installed in the factory and on site if appropriate EOS/ESD protection measures have been taken. No special measures need be taken for devices/modules with enclosed casings (contact with the pc board 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>

Temperature control

An NTC resistor is on the board of the TALEXmodule SPOT P350-3 to control the tc temperature during the operation.

Exact position see drawing on page 1.

The details of the 220 kΩ NTC (order number B57431V2223J062) you can find in the data sheet of the manufacturer AVX (Nr. NB12Q00224).



Typical heat sink surface

TALEXmodule SPOT P350-3, 1,050 mA

ta	tc	Rth, hs-a
25 °C	65 °C	1.34 K/W
30 °C	65 °C	1.15 K/W
40 °C	65 °C	0.77 K/W
50 °C	65 °C	0.4 K/W

TALEXmodule SPOT P350-3, 1,400 mA

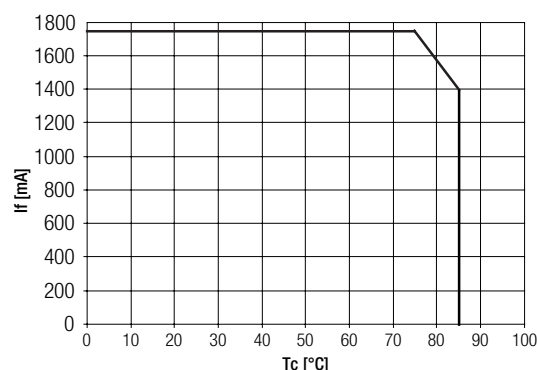
ta	tc	Rth, hs-a
25 °C	65 °C	0.96 K/W
30 °C	65 °C	0.82 K/W
40 °C	65 °C	0.54 K/W
50 °C	65 °C	0.25 K/W

Notes

The actual cooling surface can differ because of the material, the structural shape, outside influences and the installation situation. A thermal connection between TALEXmodule SPOT and heat sink with heat-conducting paste or heat conducting adhesive film is absolutely necessary.

Thermal behaviour

storage temperature	-30 – 85 °C
operating temperature	-30 – 55 °C
tc max. (at typ. current)	85 °C



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 t_a max., e.g. on a plate.

Lifetime

t_c temperature in °C	luminous flux in %	lifetime in h
25	80	60,000
	70	81,000
	50	132,000
45	80	44,000
	70	64,000
	50	110,000
65	80	32,000
	70	50,000
	50	91,000
75	80	25,000
	70	41,000
	50	81,000

Electrical supply/choice of converter

TALEXmodule SPOT 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 TALEXmodule SPOT guarantees the necessary protection for safe and reliable operation.

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

- Short-circuit protection
- Overload protection
- Overtemperature protection

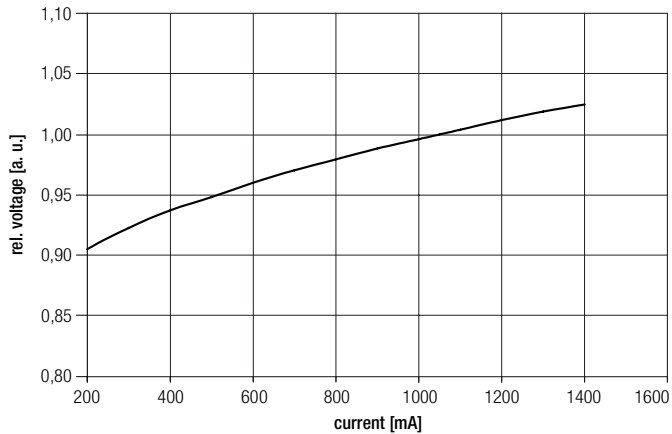


TALEXmodule SPOT P350-3 must be supplied by a constant current converter.

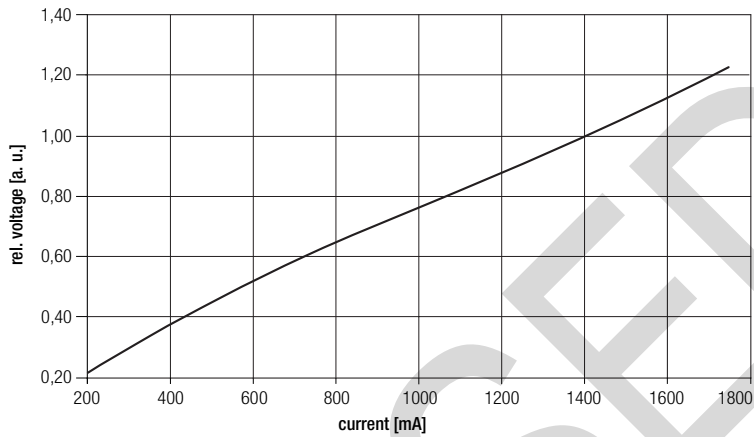
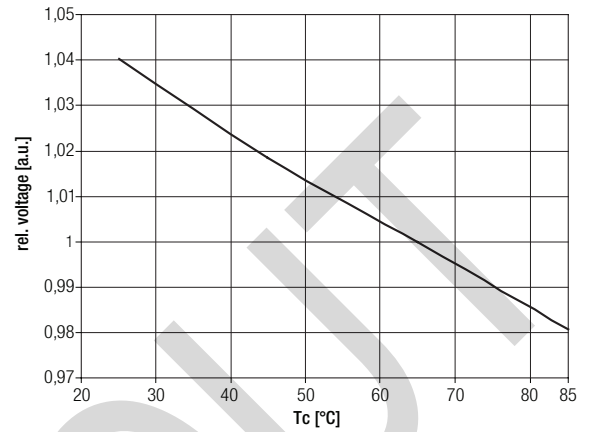
Operation with a constant voltage converter will lead to an irreversible damage of the module.

Wrong polarity can damage the TALEXmodule SPOT P350-3.

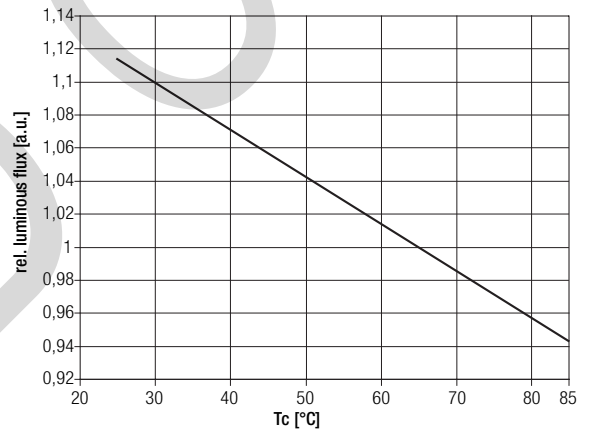
Relative forward voltage and relative luminous flux



— Relative forward voltage at $T_c = 65\text{ °C}$



— Relative forward voltage at $T_c = 65\text{ °C}$

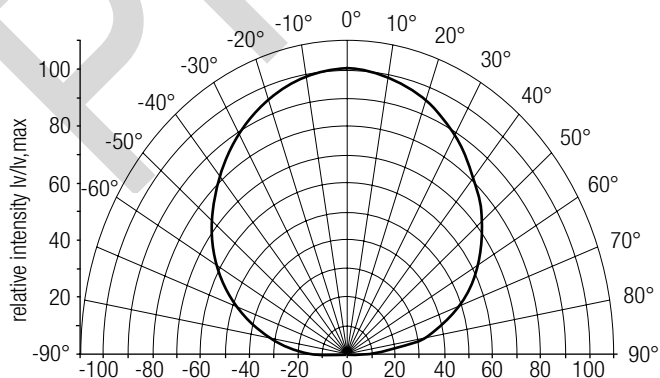


The diagrams based on statistic values.
The real values can be different.

Optical characteristics TALEX(module SPOT P350-3

The optical design of the TALEX(module SPOT product line ensures optimum homogeneity for the light distribution.

TALEX(module SPOT P350-3 140°: Light distribution

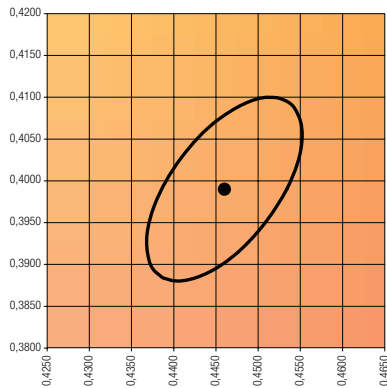


Coordinates and tolerances according to CIE 1964

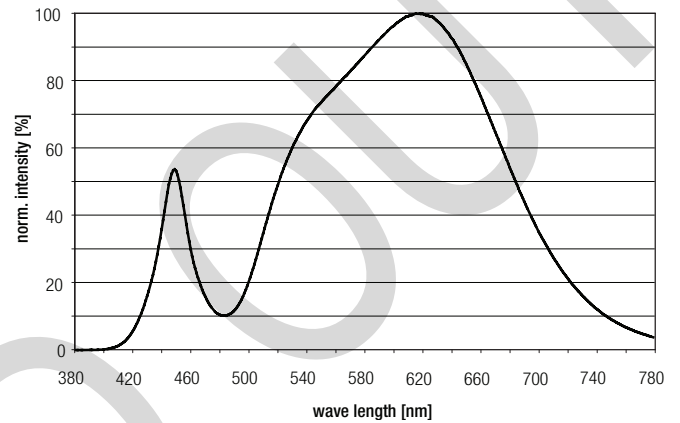
The specified colour coordinates are measured by a current impulse of 1,050 mA and a duration of 100 ms.
The ambient temperature of the measurement is $t_a = 25\text{ °C}$.
The measurement tolerance of the colour coordinates are ± 0.01 .

3,000 K

	x0	y0
Centre	0,4460	0,3990

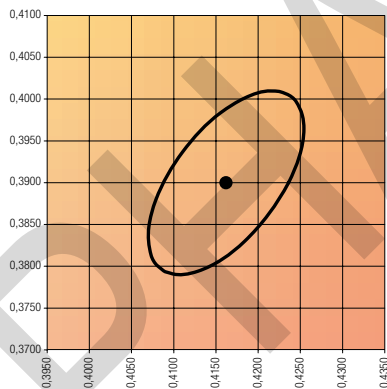


MacAdam ellipse: 4SDCM

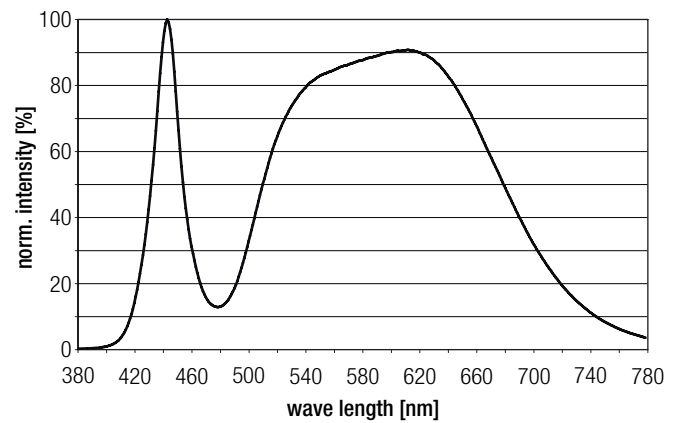


3,500 K

	x0	y0
Centre	0,4160	0,3900

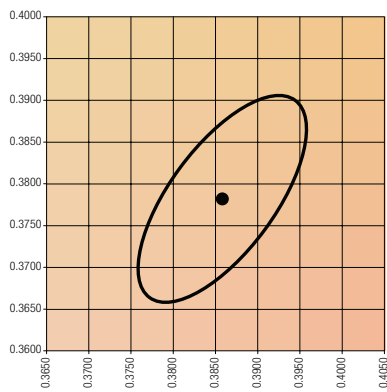


MacAdam ellipse: 4SDCM

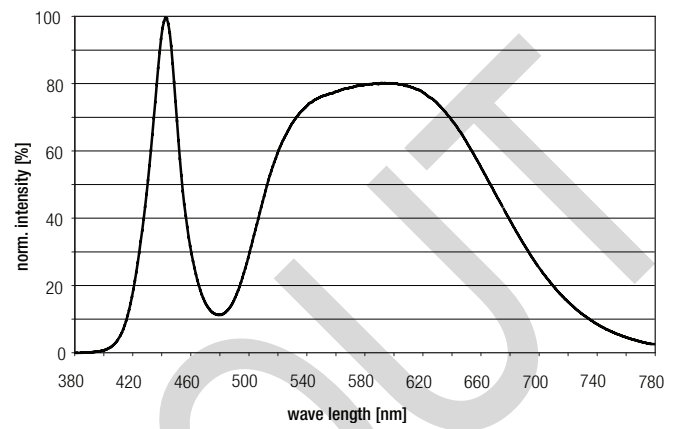


4,000 K

	x0	y0
Centre	0,3860	0,3780

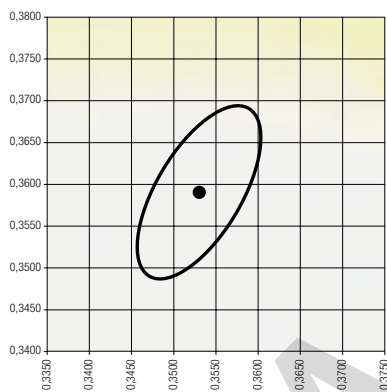


MacAdam ellipse: 4SDCM

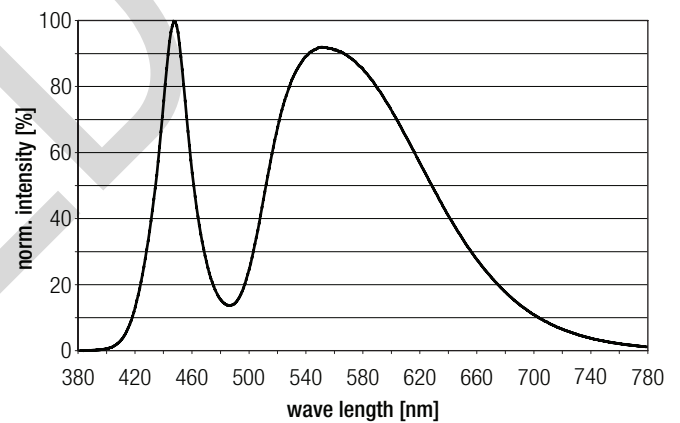


5,000 K

	x0	y0
Centre	0,3530	0,3590

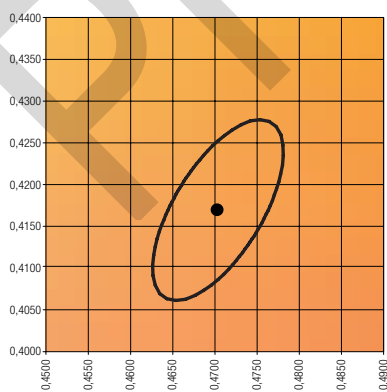


MacAdam ellipse: 4SDCM

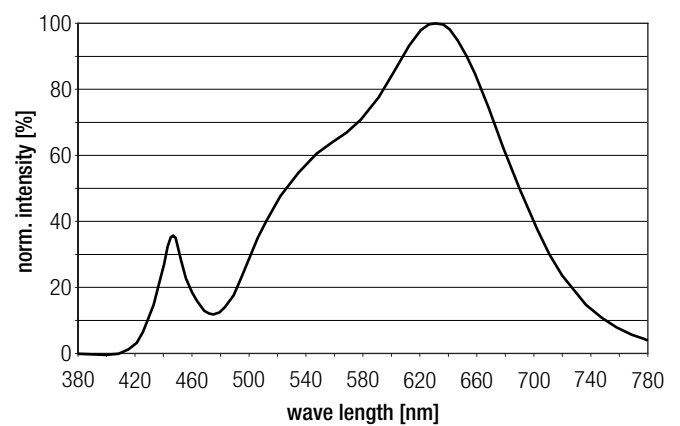


GOLD

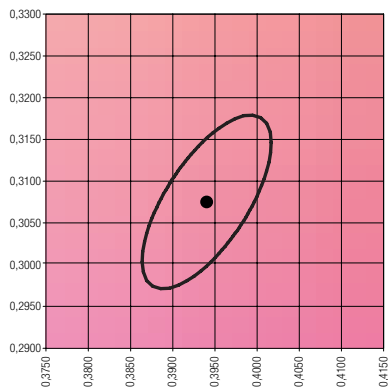
	x0	y0
Centre	0,4700	0,4160



MacAdam ellipse: 4SDCM



CM+		
	x0	y0
Centre	0,3940	0,3070



MacAdam ellipse: 4SDCM

