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MODEL NO: PL1172 series

SUBJECT: **LED 1-3-5W – Lens Coupling - Output Luminous Intensity Measurement**

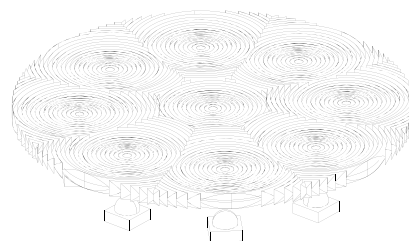


PL1172 Series FLUX-LENS - Fresnel System

- High efficiency
- Autofocus Lens
- For AR111 systems

Typical applications are

- Architectural lighting
- Lamps
- Street lights



DESCRIPTION:

Verification of Luminous Intensity with coupling conditions between Khatod Fresnel lenses and 1W White Lambertian LEDs.

REPORT:

From 1 m $\pm$ 0,02 distance, we have measured Luminous Intensity emitted by LED.
Such measurements have been repeated with the same test conditions but coupling LEDs to the lens Khatod cod. PL1172

MEASURED DATA:

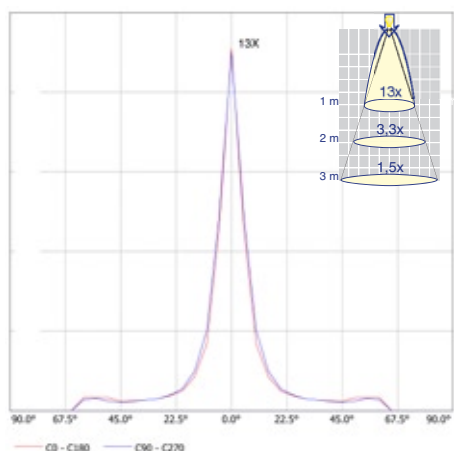
Column 1 shows p/n of the Lenses, column 2 shows Luminous Intensity detected measuring LEDs without lens, column 3 shows Luminous Intensity detected on LEDs coupled with lens, column 4 shows the difference (X*) between col. 2 and col. 3

Lens Type	LED Lux from 1 Mt (ftc From 1 Mt)	LED + lens Lux from 1Mt (ftc From 1 Mt)	X*
PL1172 (10°)	198 (18,27 ftc)	2491 (229,90 ftc)	13
PL1172 (30°)	198 (18,27 ftc)	1162 (107,24 ftc)	6
PL1172 (60°)	198 (18,27 ftc)	586 (54,08 ftc)	3

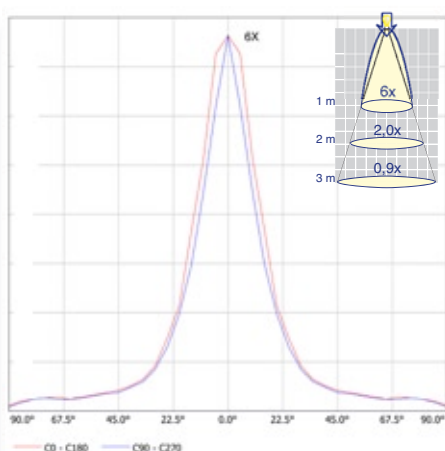
Test carried out after 5 min. of operation of the LED to 350 mA ~ , local power source **GOSSEN KONSTANTER** mod 3226-K118
Measurements carried out with Luxometer mod LUX-1337 of **ISO-TEC** and **MINOLTA** mod LS – 150

* X is the value of the measurement of the LED brightness at 1 meter distance, without optic devices applied to the LED.

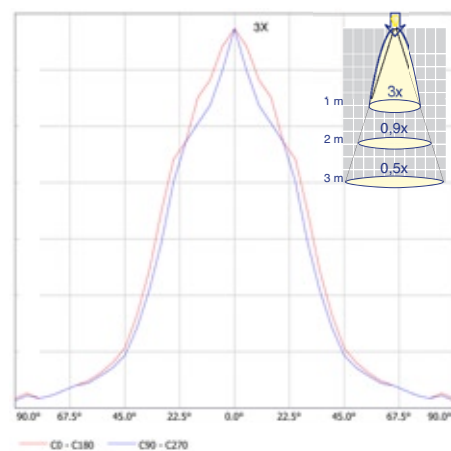
White LED Illuminance Chart



PL1172 - 10°



PL1172 - 30°



PL1172 - 60°

* X is the value of the measurement of the LED brightness at 1 meter distance, without optic devices applied to the LED.

Test conditions:

Test current: 350 mA / LED

Room Luminous Intensity : 0 Lumen

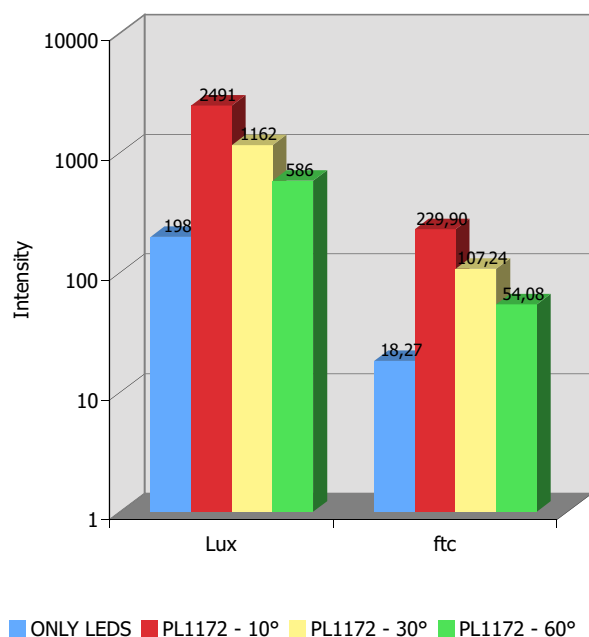
Room Temperature: 23° C

LED temperature after 10 min. : ~ 42 °C

The diagram demonstrates the performance of Khatod lenses

PL1172 Fresnel Fluxlens : Operation

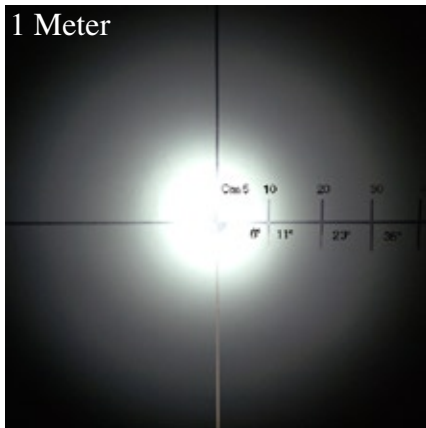
Intensity to 1 Meter



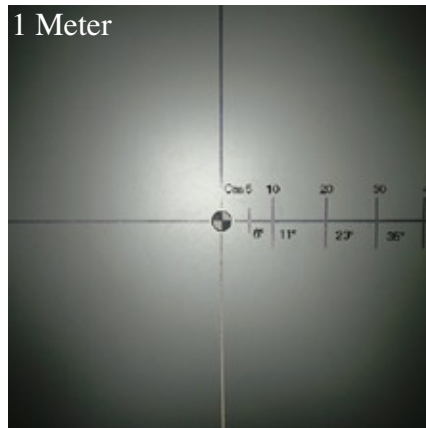
Photo

Fresnel Technology allows a perfect and uniform light flux avoiding to see the LED light spots separately. The final result is the perception of a unique light source even if it is produced by 9 LEDs. Another great benefit of Fluxlens is that it allows to obtain a wide range of different focus. On page 3 of the present Test Report you can find the focus we recommend in order to achieve light beams of 10°, 30° and 60°. Fluxlens is an autofocus lens which allows to perform a great variety of focus beams, from 8-10° to 60-80°, by increasing or decreasing the focus height.

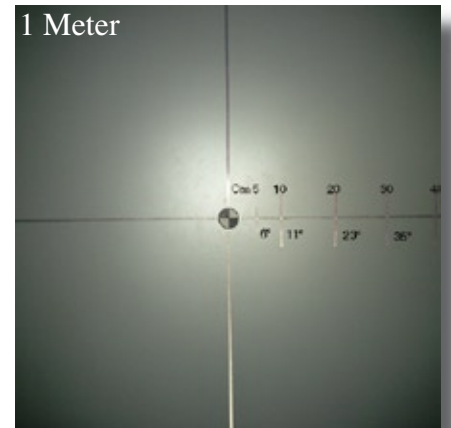
Photos:



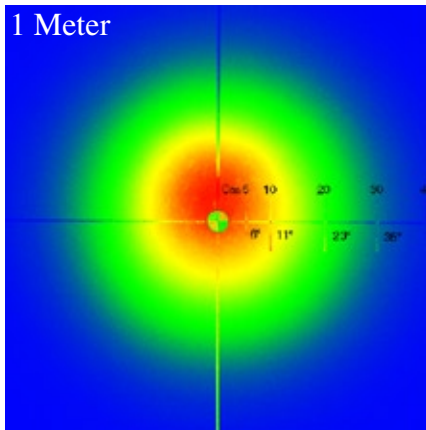
PL117206 (10°)



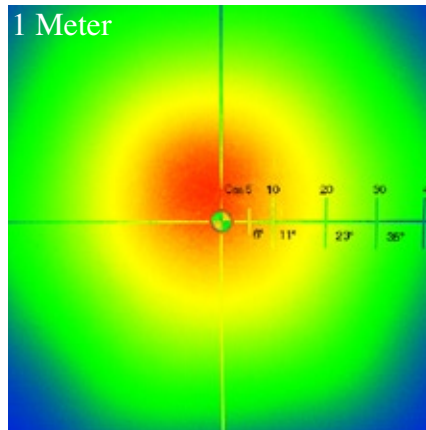
PL117225 (25°)



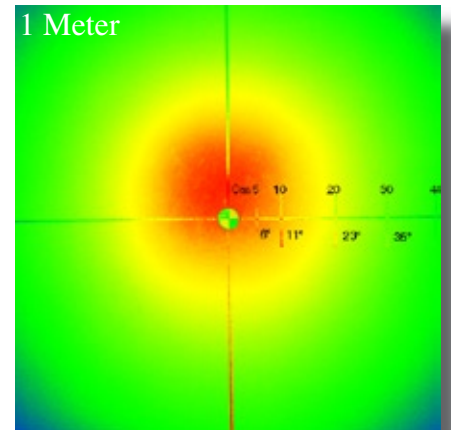
PL1172 - 60°



PL1172 - 10°
Spectro Metric Analysis



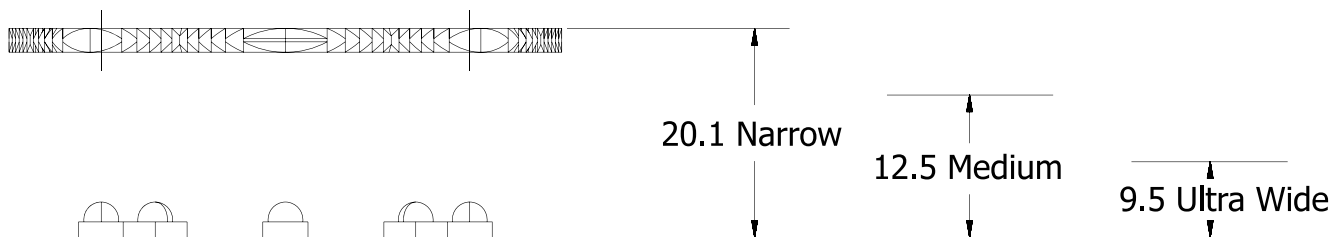
PL1172 - 30°
Spectro Metric Analysis



PL1172 - 60°
Spectro Metric Analysis

Measurements carried out with Luxometer mod LUX-1337. Room Luminous Intensity: 0 Lumen. Camera mod. Fujifilm S7000

Recommended Focus



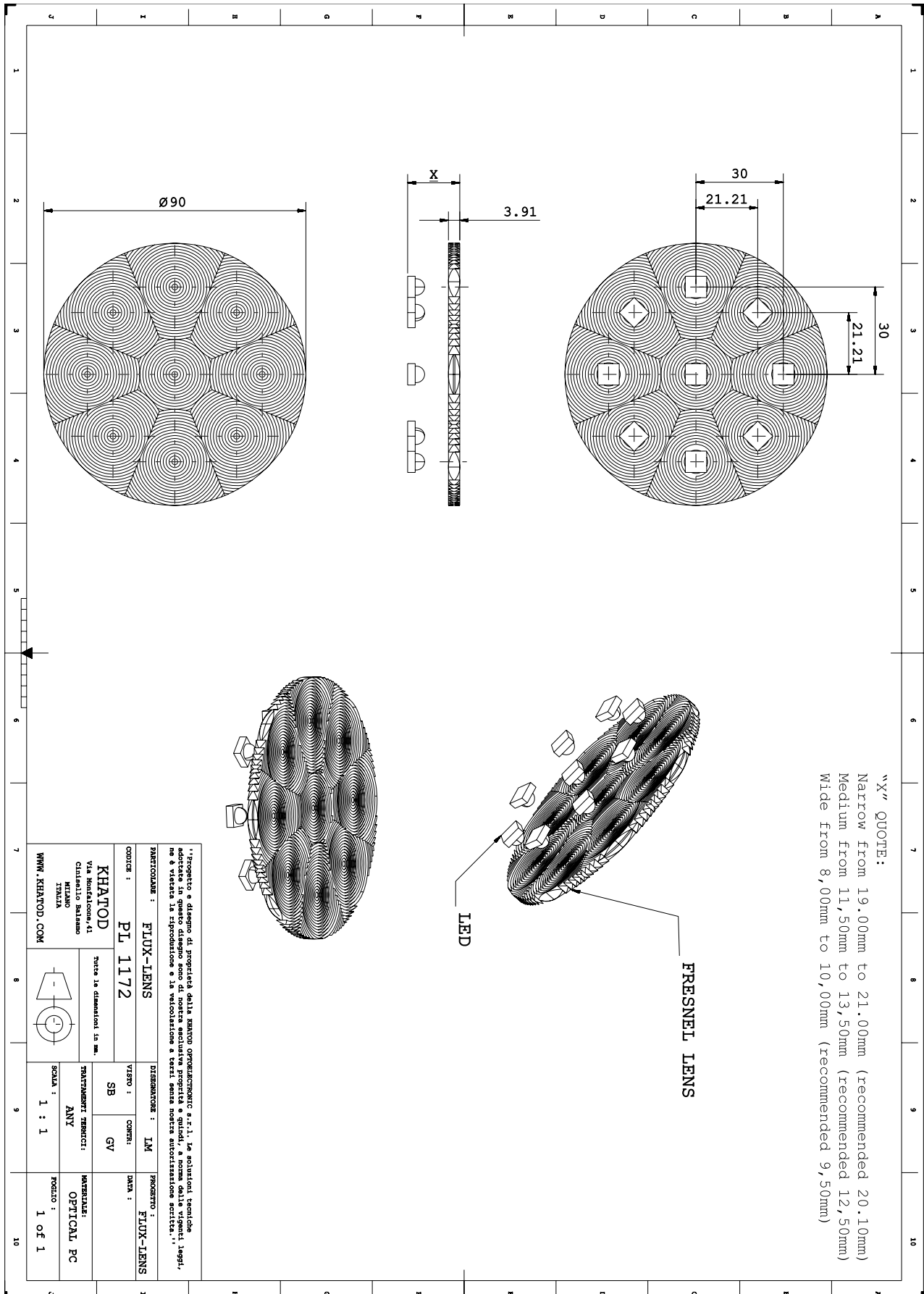
"X" Quote:

Narrow: from 19,00mm to 21,00mm (recommended 20,10mm)

Medium: from 11,50mm to 13,50mm (recommended 12,50mm)

Wide: from 8,00mm to 12,00mm (recommended 9,50 for ultra wide)

Drawing.



Lens characteristics

Parameter	Symbol	Rating	Unit
Lens Material	PC	--	--
Holder Material	--	--	--
Operating Temperature	Topr	-40 to +120	°C
Storage Temperature	Tstg	-40 to +120	°C
Average transmittance in visible spectrum (400 – 700nm) >90% as measured using 3mm thick Optical Grade PC			

LED characteristics

X Value is valid for any 1-3-5W lambertian LED.

Notes:

Please note that flow lines and weld lines on the external surfaces of the lenses are acceptable if the optical performance of the lens is within the specification described in the section "OPTICAL CHARACTERISTICS"

- Should you require further information, please contact Khatod for advice.
- All lens testing must be subject to identical conditions as Khatod test condition.
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KHATOD LENS Use And Maintenance

- DO NOT HANDLE OR INSTALL LENSES WITHOUT WEARING GLOVES, SKIN OILS MAY DAMAGE LENS OR LIGHT TRANSMISSION
- CLEAN LENSES WITH MILD SOAP AND WATER AND A SOFT CLOTH
- DO NOT USE ANY COMMERCIAL CLEANING SOLVENTS ON LENSES

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