KHATOD®
Optical Solutions for LED Lighting

TECHNICAL DEPT.
Lenses Test Report

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CODE NUMBER: 120000000264

SUBJECT: **KEPL140060 Lens Coupling - Output Luminous Intensity Measurement**

- High lighting efficiency
- Excellent luminous flux
- Superior optical engineering for a perfect uniform light distribution
- Easy fixing system to the PCB
- No vibration problems
- Complying with UL94 Specifications
- UV protected

Typical Applications:

Khatod Optics are suitable for any application in Wide Area Lighting, Indoor and Outoor:

- Wall Washing
- Architectural lighting
- Lamps
- Bike Lights
- Most applications where a compact light source is required
- Any applications in narrow or recessed spaces

Khatod Optics are a basic element to make your optical design real.
The right optical solution is fundamental for type and number of LEDs used in your design.
Advanced research, scientific rigour, great attention to the continuous evolution in LED Technology, have led Khatod to develop optical solutions performing an excellent homogeneous luminous flux, and high lighting efficiency.
Khatod delivers the widest range of Single, Triple, Quad and Multiple Lenses, compliant with MR16, MR11, AR111 Standards, for the major LEDs manufacturers
They are available in a variety of beam angles: Narrow, Medium, Wide, Super-Wide, Elliptical and special Blade-Shaped Beam.
Khatod Lenses meet the most demanding lighting specifications and applications, while delivering real cost-effective and competitive products.

Contents

1 Light Source Model

Parameter	Symbol	Value	Unit
Lens / Reflector Model	-	KEPL140060	-
Material (More info on page 9)	-	PC, PMMA	-
Dimensions	-	See page 8	-
Source Model	-	NICHIA NVSW119A	-
Number of Sources	N	3	-
Power Supply Type	-	ISO TECH ISP3303	-
Driver Type	-	-	-
Driving Voltage	V_F	-	V
Driving Current	I_F	350	mA
Nominal Flux	Φ	140×3	lm

2 Measurement Setup

Parameter	Symbol	Value	Unit
Operator	-	Simone Bassi	-
Goniophotometer Type	-	KLX12M	-
Measurement Distance	z	5	m
Room Temperature	T	25	°C
Date	-	28-Mar-2012	-

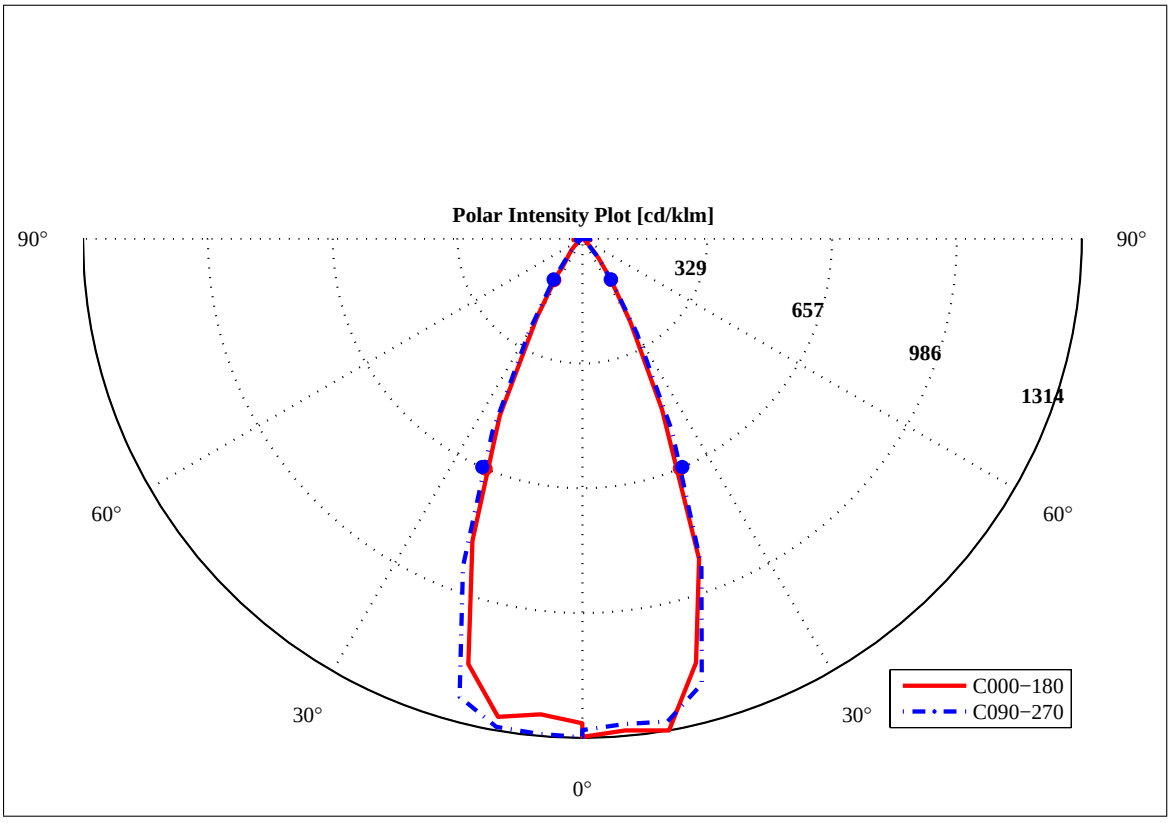
3 Results

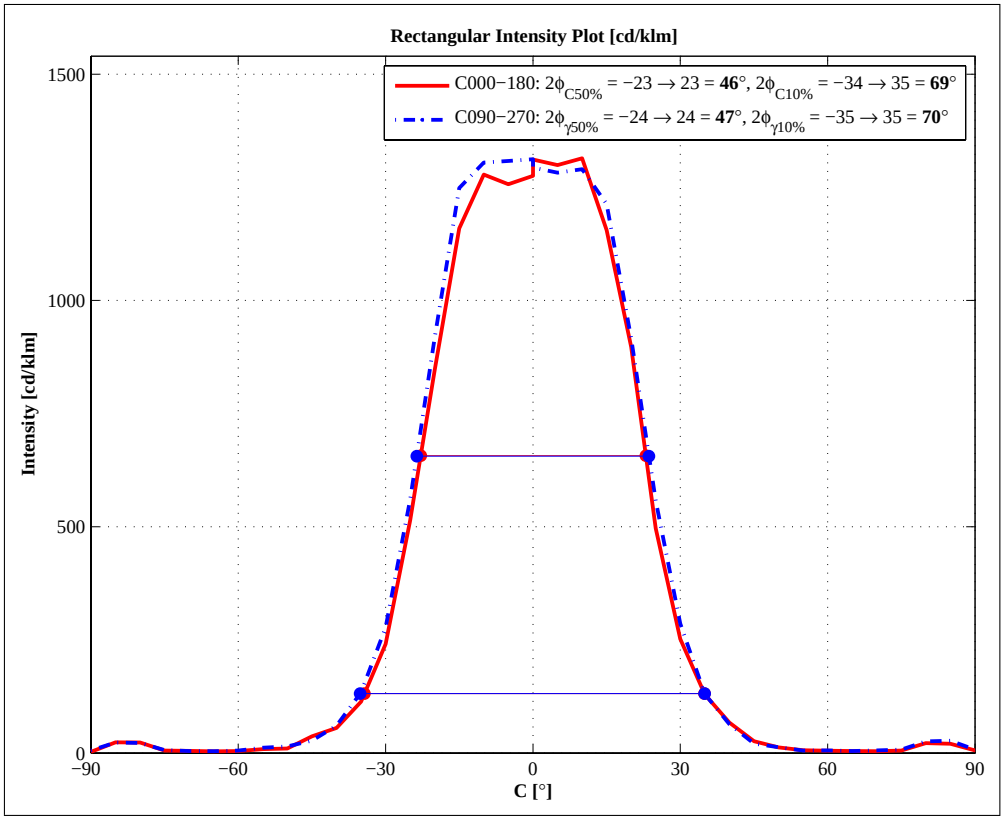
Parameter	Symbol	Value	Unit
Total Flux	Φ	420	lm
Max Intensity	I_{max}	552	cd
Max Illuminance at 5 m	E_{max}	22	lx
C-Viewing Angle at 50%I_{max}	$2\varphi_C$	46	°
γ-Viewing Angle at 50%I_{max}	$2\varphi_\gamma$	47	°
C-Viewing Angle at 10%I_{max}	$2\varphi_{C10\%}$	69	°
γ-Viewing Angle at 10%I_{max}	$2\varphi_{\gamma 10\%}$	70	°
General Optical Measurement Tolerance	-	±10%	-

NOTES:

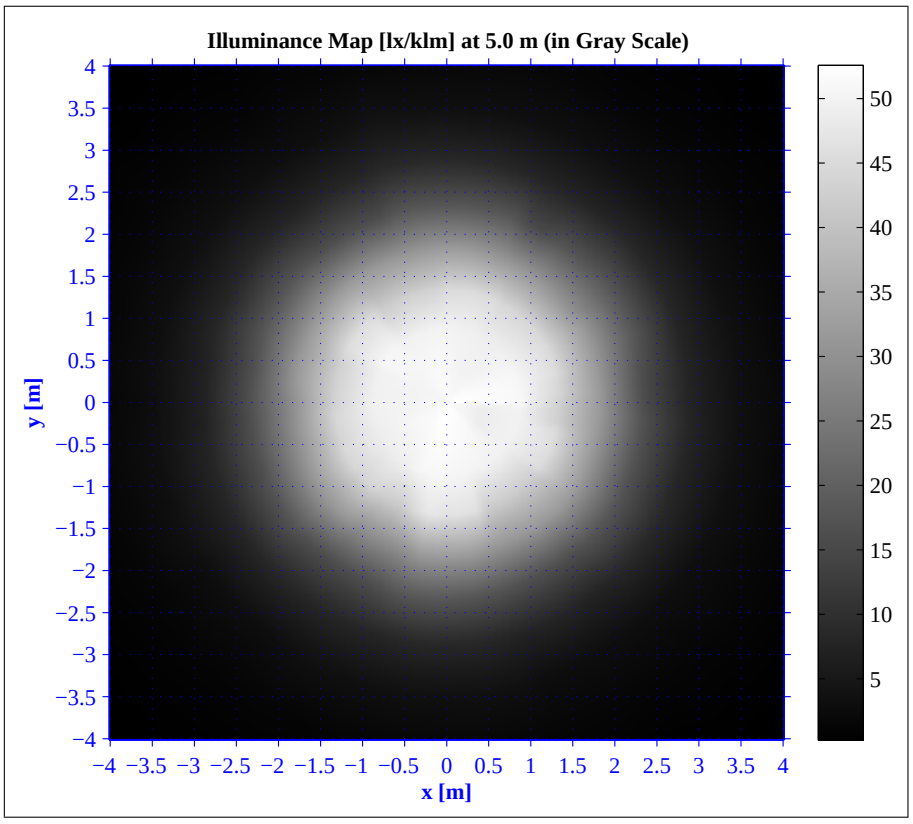
- Intensity (I) and illuminance (E) data are normalized by 1000 lm
- The optical values shown are the result of optical simulations carried out with ASAP and ZEMAX software systems. The optical simulations are carried out on the basis of the typical values provided in the LED manufacturers' official datasheets. The photometric analysis has been carried out on physical samples. On request, by supplying your PCB, we can provide the measurement photometric file.

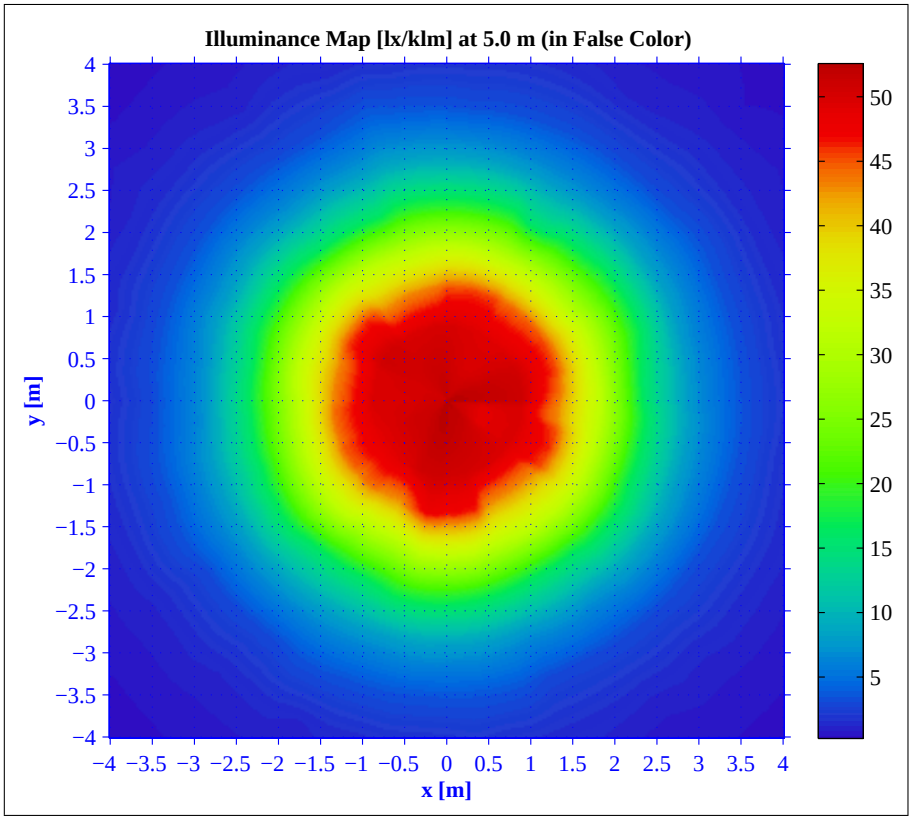
4 Intensity Plot



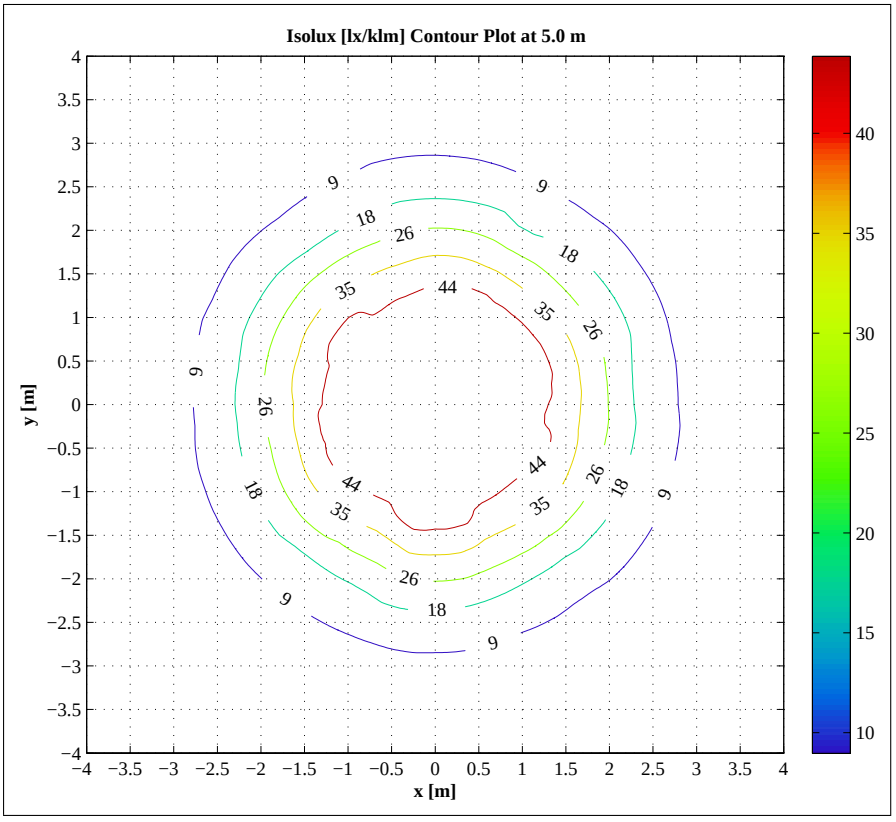


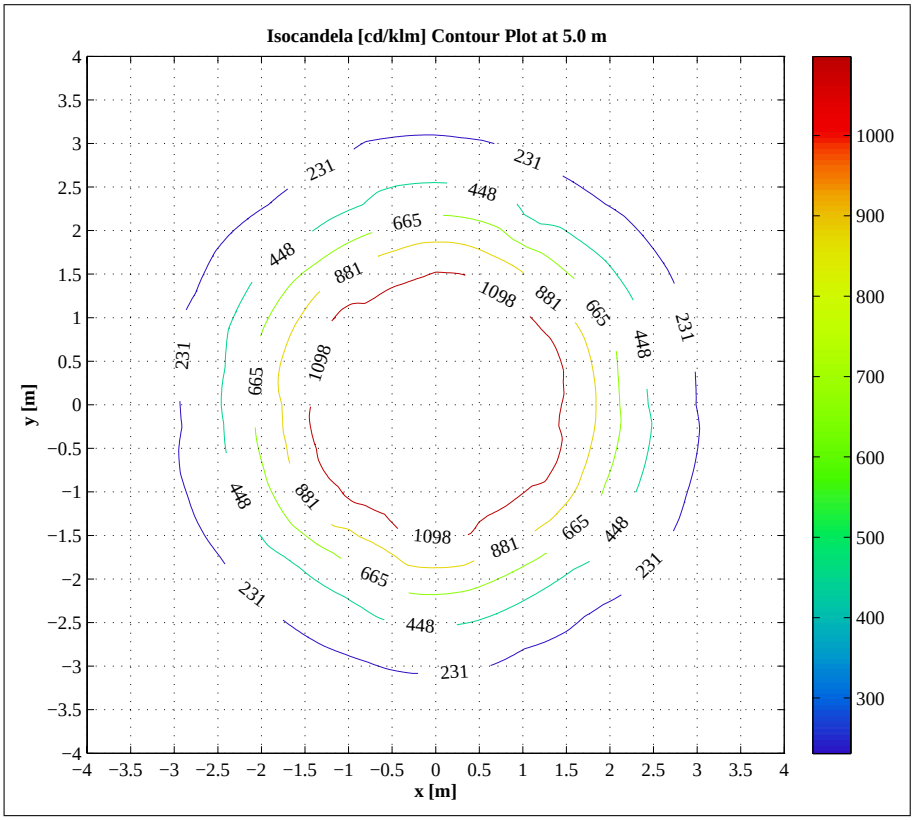
5 Illuminance Map



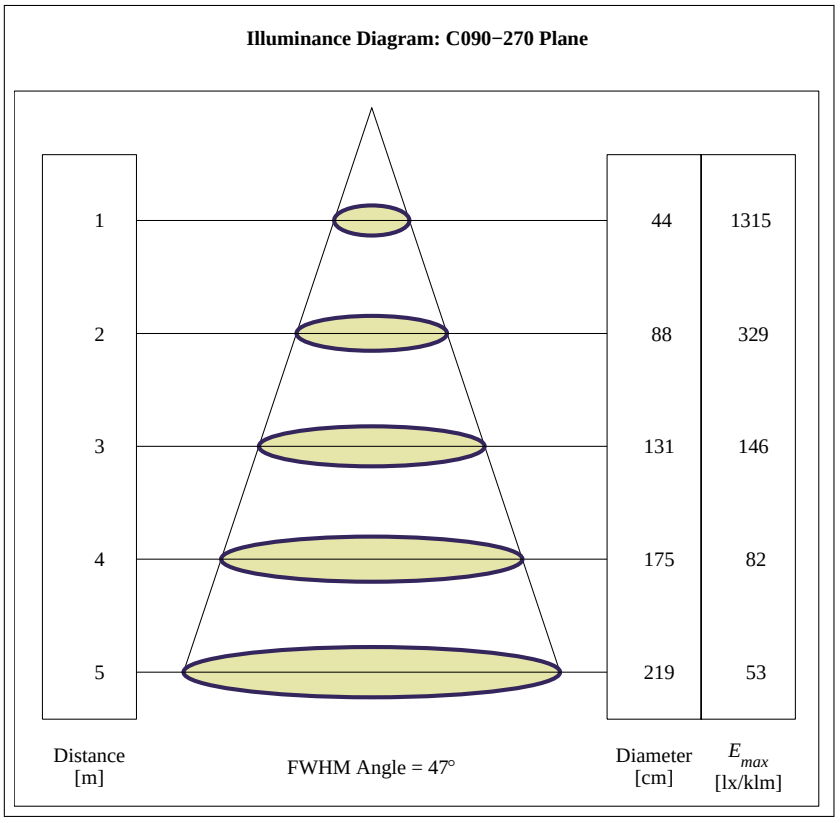


6 Isolux / Isocandela Plots

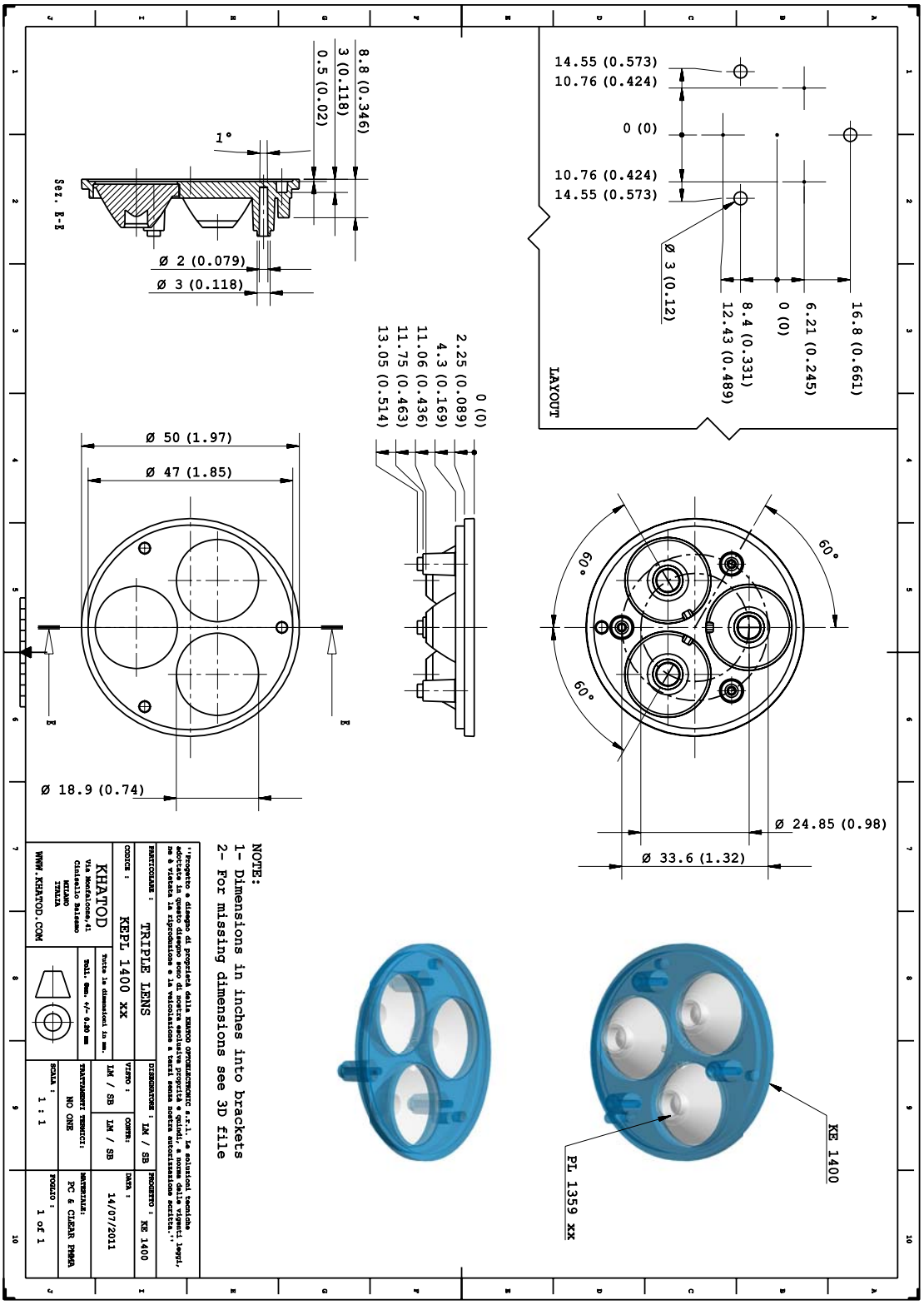




7 Illuminance Diagram



8 Drawing


14.55 (0.573)
10.76 (0.424)
0 (0)
10.76 (0.424)
14.55 (0.573)
Ø 3 (0.12)
16.8 (0.661)
6.21 (0.245)
0 (0)
8.4 (0.331)
12.43 (0.489)
LAYOUT
8.8 (0.346)
3 (0.118)
0.5 (0.02)
1°
Sez. F-F
Ø 2 (0.079)
Ø 3 (0.118)
0 (0)
2.25 (0.089)
4.3 (0.169)
11.06 (0.436)
11.75 (0.463)
13.05 (0.514)
Ø 50 (1.97)
Ø 47 (1.85)
Ø 18.9 (0.74)
60°
60°
60°
Ø 24.85 (0.98)
Ø 33.6 (1.32)
NOTE:
1- Dimensions in inches into brackets
2- For missing dimensions see 3D file
KE 1400
PL 1359 XX
KHATOD
Via Monfalcone,41
Cinisello Balsamo
MILANO
ITALIA
WWW.KHATOD.COM
PARTICOLARE : TRIPLE LENS
CODICE : KEPL 1400 XX
Tutte le dimensioni in mm.
Tol. Gen. +/- 0.20 mm
DISEGNATORE : LM / SB
VISTO : LM / SB
CONTR: LM / SB
PROGETTO : KE 1400
DATA : 14/07/2011
TRATTAMENTI TERMICI: NO ONE
MATERIALE: PC & CLEAR PMMA
SCALA : 1 : 1
FOGLIO : 1 of 1

9 Use and Maintenance

Lens characteristics

Parameter	Symbol	Rating	Unit
Lens Material	PMMA Optics	--	--
Holder Material	PC	--	--
Operating Temperature	Topr	-30 to +85	°C
Storage Temperature	Tstg	-30 to +85	°C

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.
– Published by Khatod optoelectronic srl - All the data contained in this document are the proprety of Khatod optoelectronic srl and may change without notice.

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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