

KHATOD®

Optical Solutions for LED Lighting

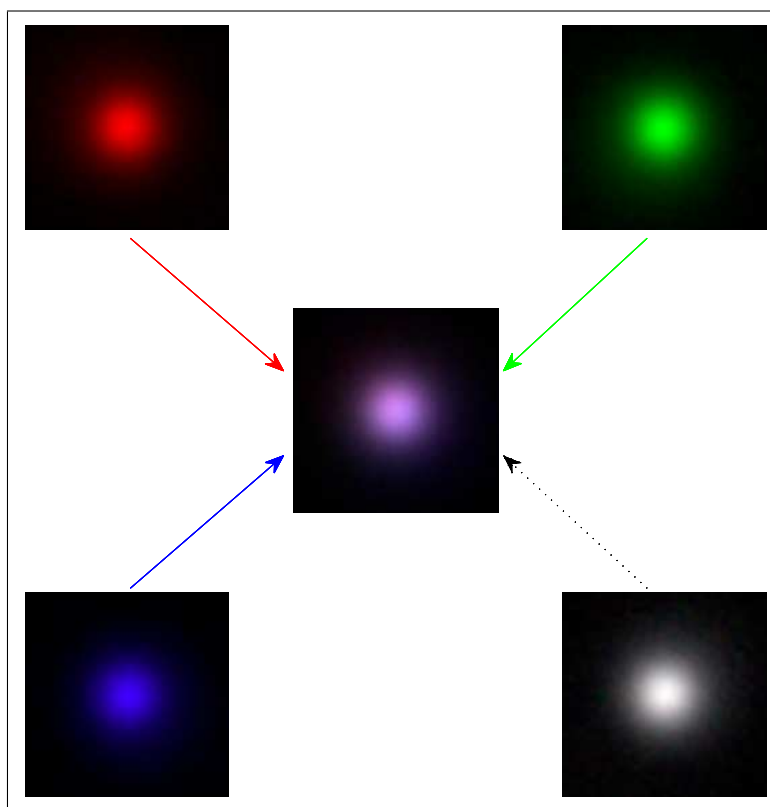
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Test Report

Number: 130000001048

Optics: PL113320

Source: LEDENGIN LZ4-RGBW



Contents

1 Light Source Model	3
2 Measurement Setup	3
3 Results	3
4 Single Color and Color Mix Appearance	4
5 Intensity Plot	5
6 Illuminance Map	6
7 Isolux / Isocandela Plots	7
8 Illuminance Diagram	8
9 Drawing	9
10 Materials	10
11 Use and Maintenance	10
12 Disclaimer	10

1 Light Source Model

Parameter	Symbol	Value	Unit
Lens / Reflector Model	-	PL113320	-
Material (More info on page 10)	-	PMMA	-
Dimensions	-	See page 9	-
Source Model	-	LEDENGIN LZ4-RGBW	-
Number of Sources	N	1	-
Driving Current	I_F	-	mA
Nominal Flux	Φ	520×1	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	-	27-Mar-2013	-

3 Results

Parameter	Symbol	Value	Unit
Total Flux	Φ	520	lm
Max Intensity	I_{max}	2041	cd
Max Illuminance at 5 m	E_{max}	82	lx
C-Viewing Angle at 50% I_{max}	$2\varphi_C$	23	°
γ -Viewing Angle at 50% I_{max}	$2\varphi_\gamma$	23	°
C-Viewing Angle at 10% I_{max}	$2\varphi_{C10\%}$	46	°
γ -Viewing Angle at 10% I_{max}	$2\varphi_{\gamma10\%}$	46	°
General Optical Measurement Tolerance	-	±10%	-

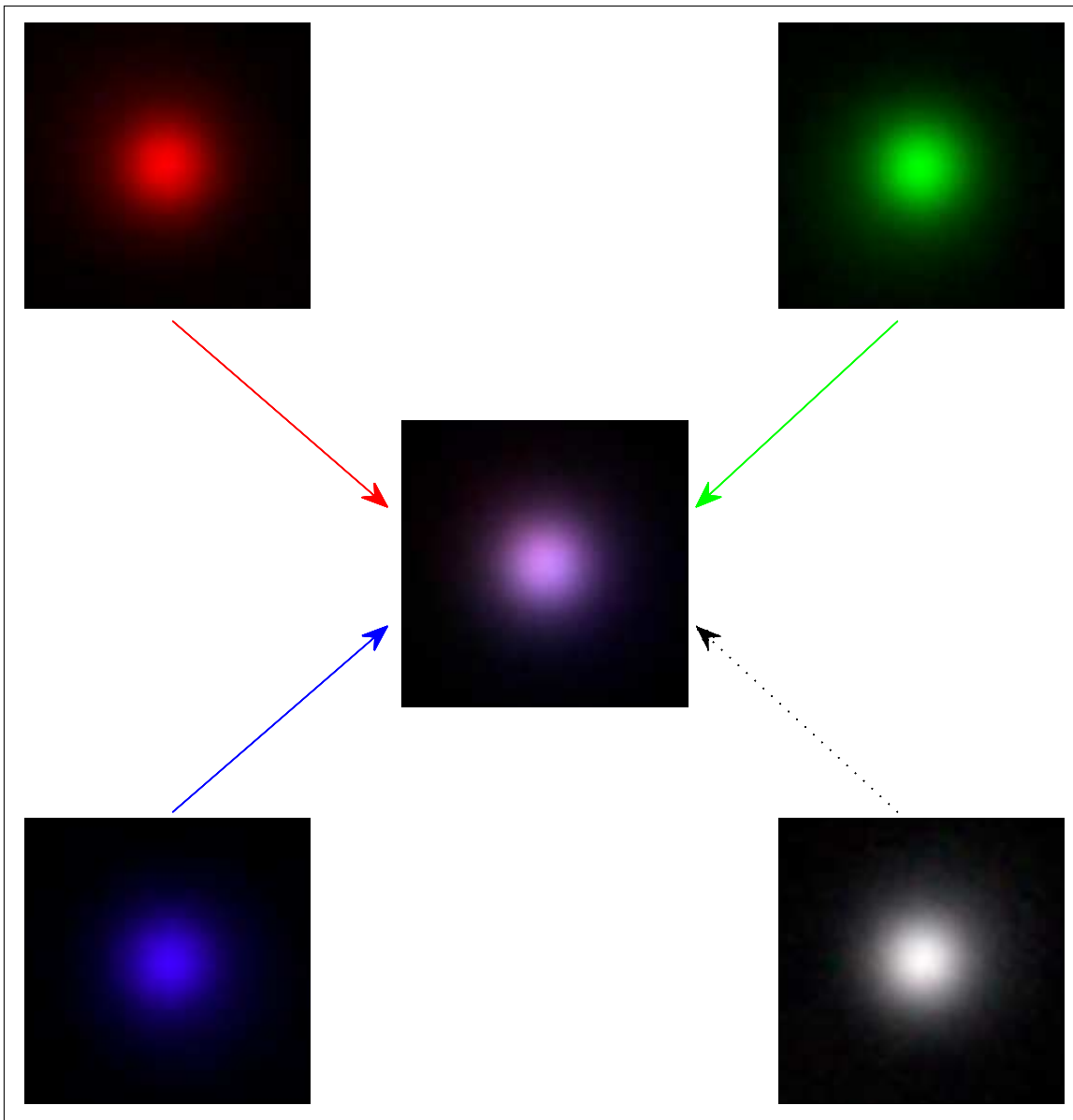
NOTES:

- 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.

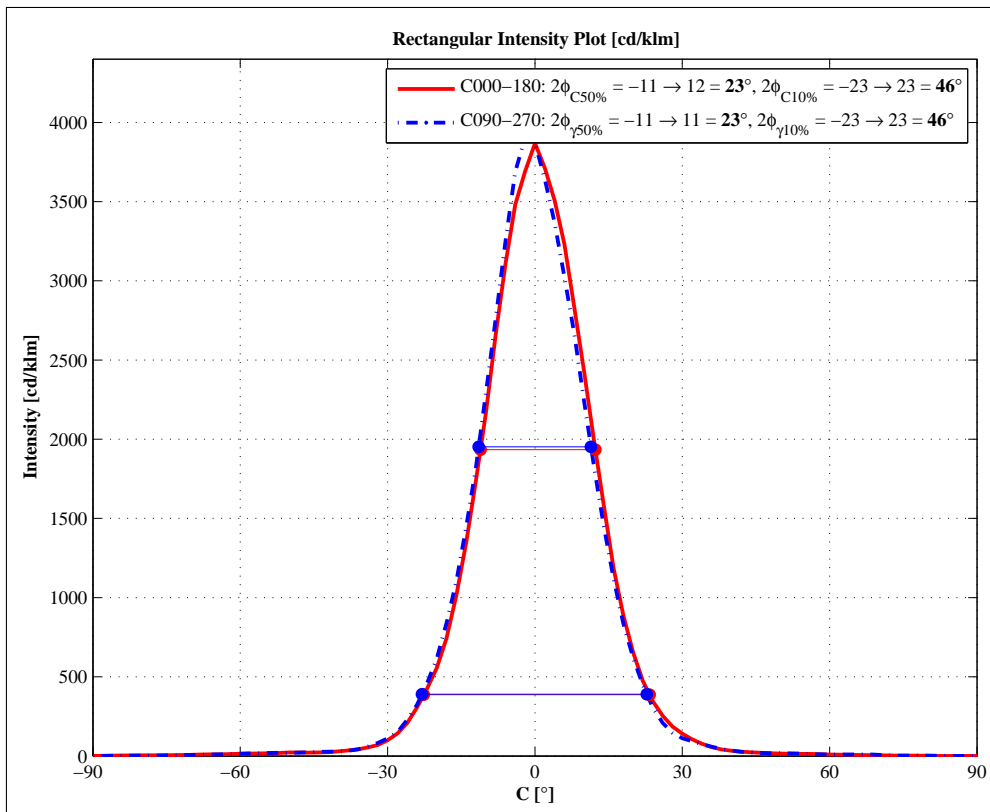
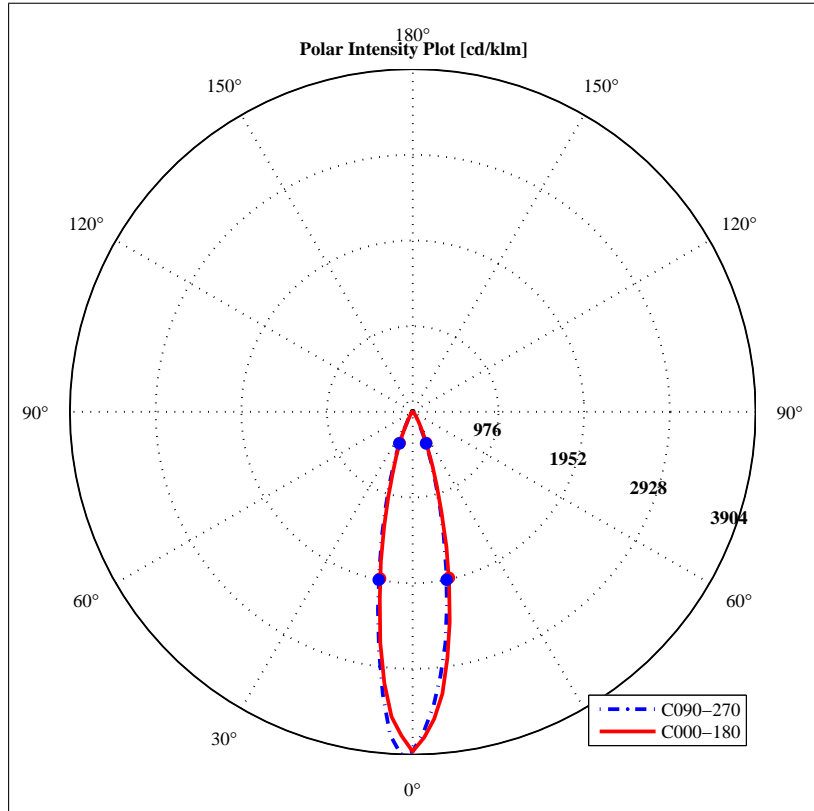
4 Single Color and Color Mix Appearance

The following figure shows the color appearance when all the LED chips are driven with same current, separately and simultaneously.

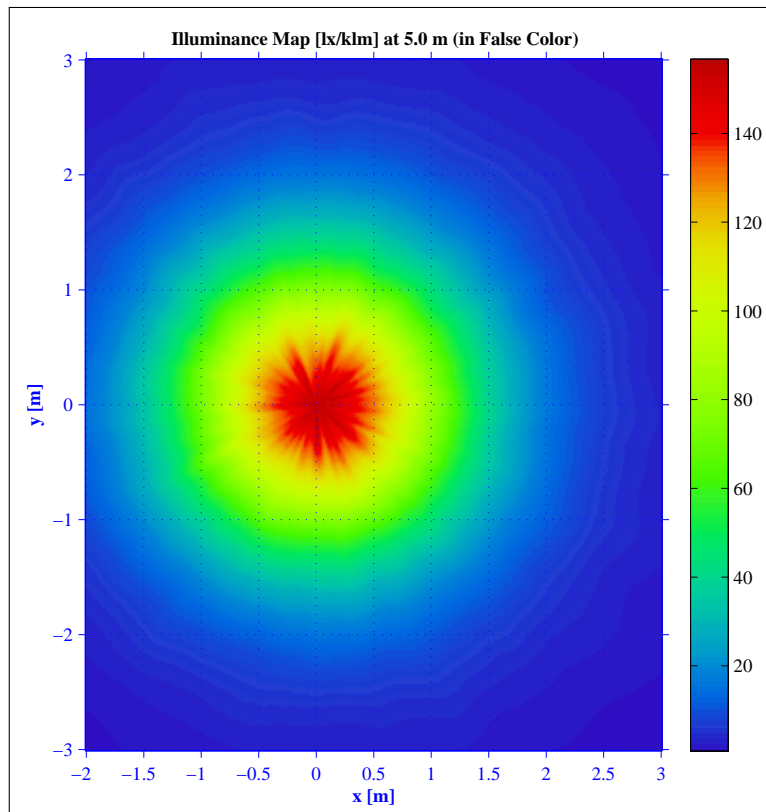
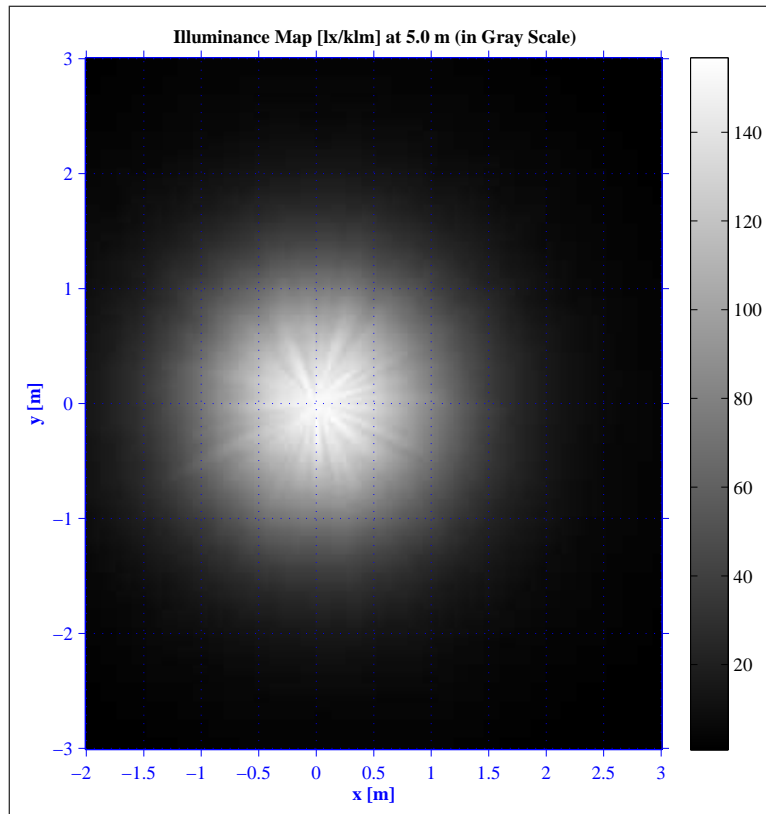
Viewing angles of single color and full color are almost identical, and the relative variation is smaller than those resulting from optical manufacturing and LED's parameters dispersion.



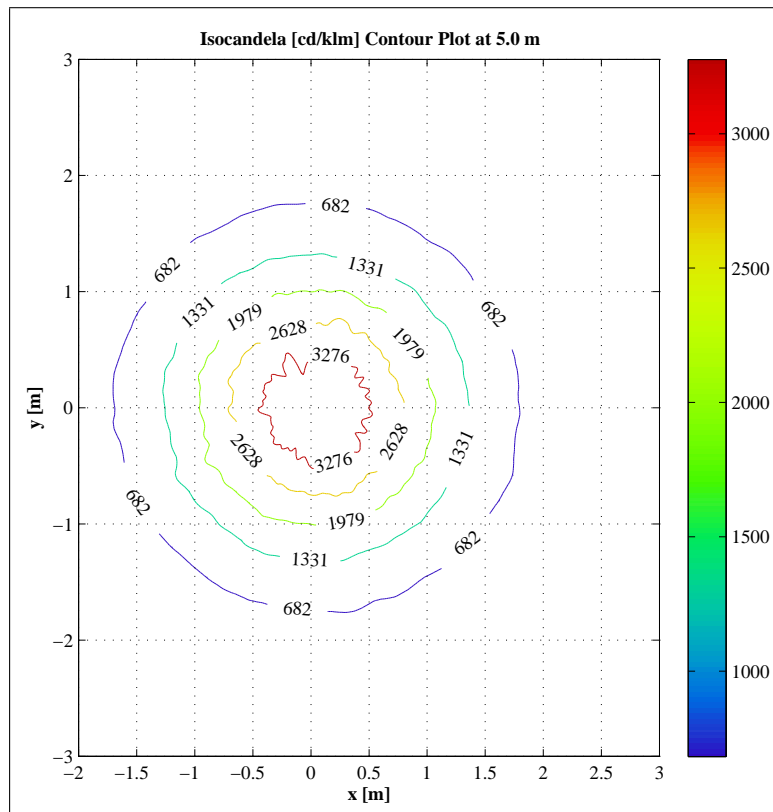
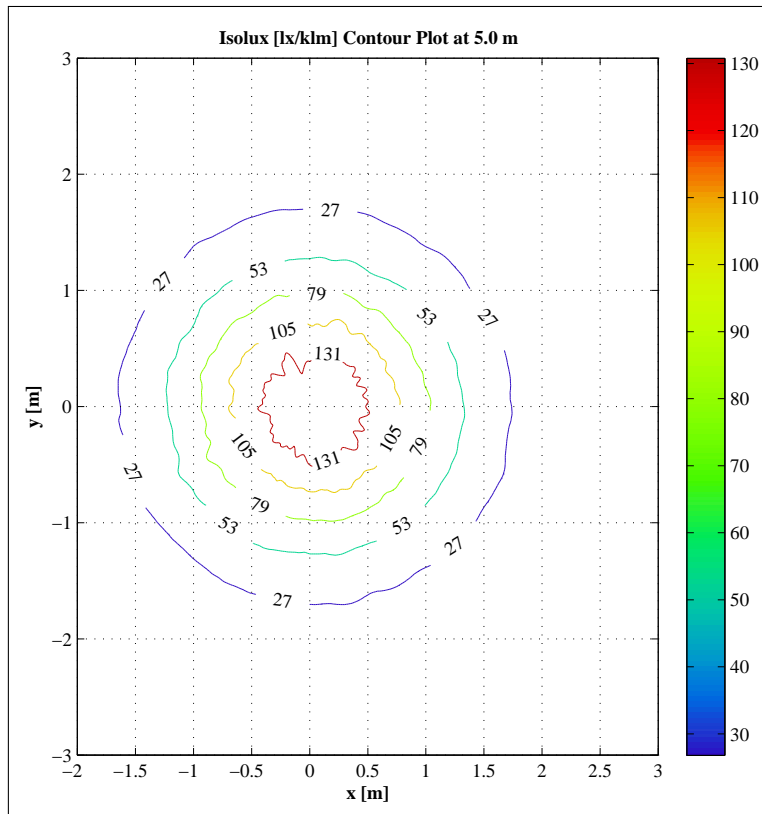
5 Intensity Plot



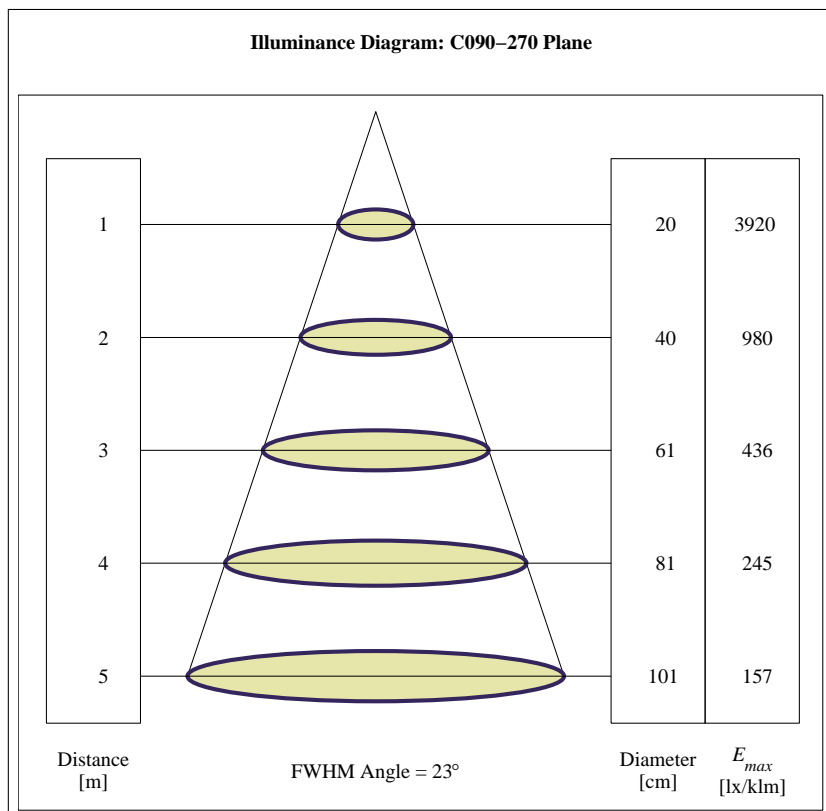
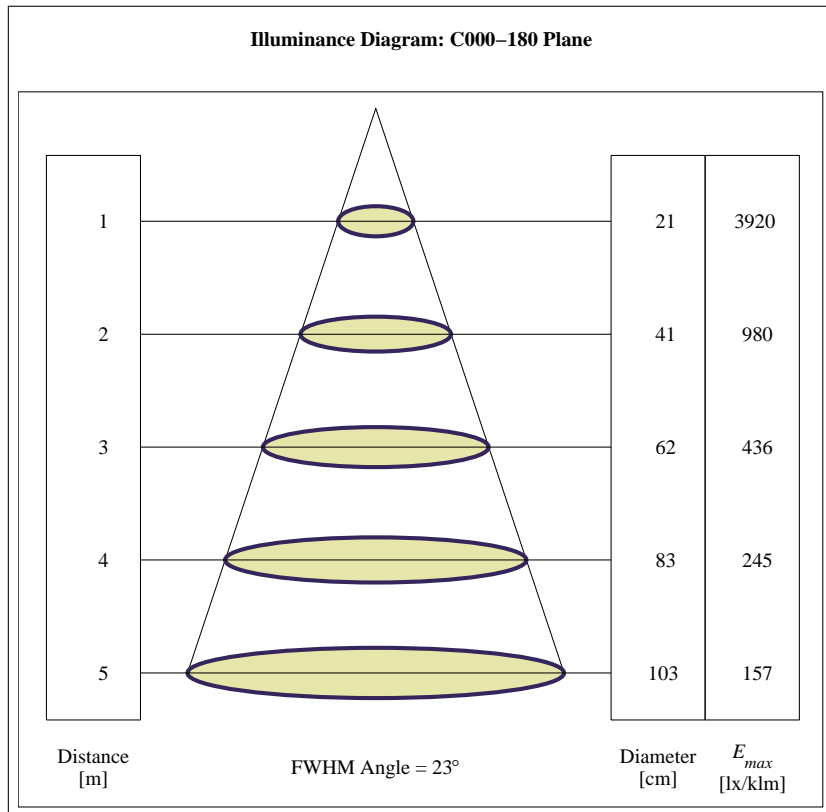
6 Illuminance Map



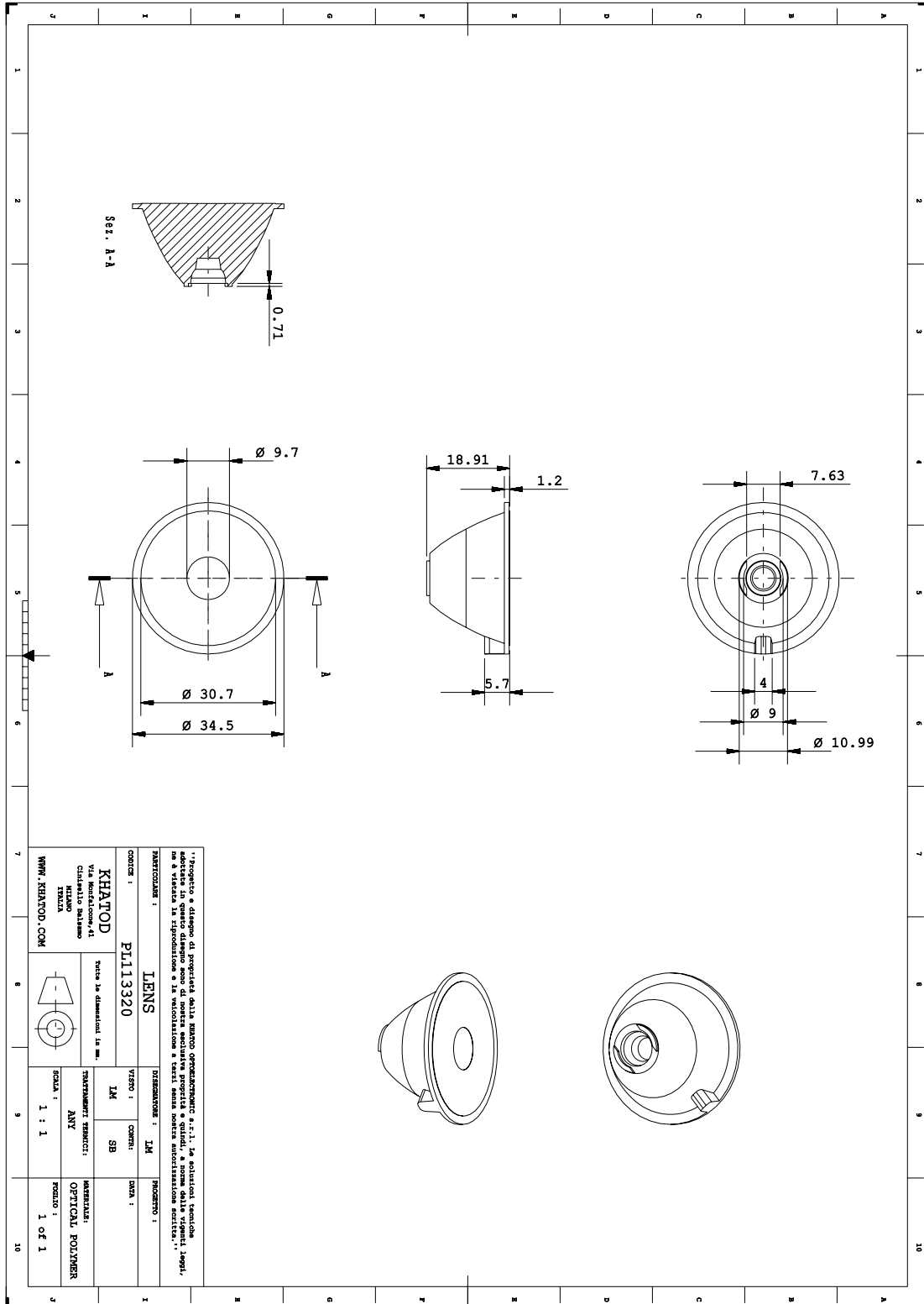
7 Isolux / Isocandela Plots



8 Illuminance Diagram



9 Drawing



10 Materials

Material	T _{op}	T _{stg}
PMMA	-40°...85°C	-40°...85°C
PC	-40°...120°C	-40°...120°C
PC + Aluminum Coating with protective Clear Coat	-40°...120°C	-40°...120°C
APEC + Aluminum Coating with protective Clear Coat	-40°...180°C	-40°...180°C
ABS	-35°...70°C	-35°...70°C

11 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.

12 Disclaimer

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 Results on page 3. 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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