KHATOD®
OPTOELECTRONIC

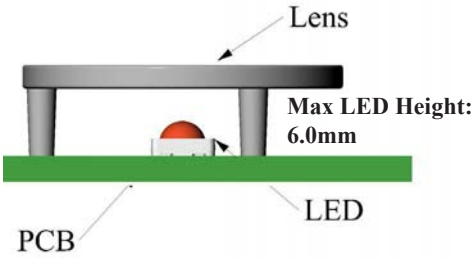
TECHNICAL DEPT.
Lenses Test Report

Via Monfalcone 41
20092 Cinisello Balsamo (Milano) – Italy
Tel. +39 0266013695 – Fax +39 0266013500

CODE NUMBER: 110000000073

SUBJECT: **Secondary Optics for Power LEDs - PL117440**
Lens Coupling - Output Luminous Intensity Measurement

- **Typ. Illuminance@1m ~ 638 lux***
- High lighting efficiency
- Excellent luminous flux
- No vibration problems
- NJC Technology
- Superior optical engineering for a perfect uniform light distribution
- Innovative design
- Easy fixing system to the PCB
- Complying with UL94 Specifications
- UV Protected



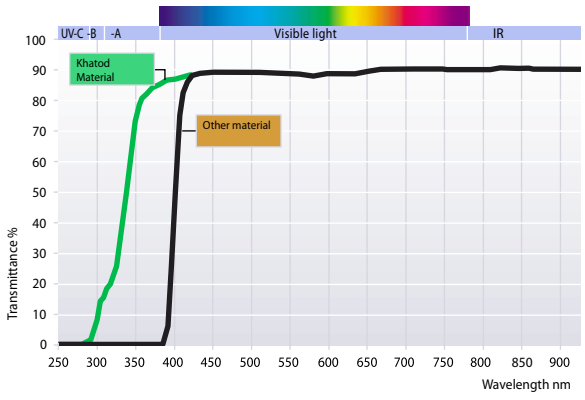
Typical Application are:

- Wall Washing
- Architectural lighting
- Lamps
- Most applications where a compact light source is required
- Any application requiring placement of LEDs in narrow or recessed spaces, as well as in diverse LED configurations

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 a high lighting efficiency.
The product we are proposing, is the result of Khatod's superior engineering. It helps in reducing the costs while meeting the most demanding lighting specifications and applications.

Contents:

Trasmittance Curve vs Wavelength



* Measurement Carried out With LED Driven @ 2000 mA

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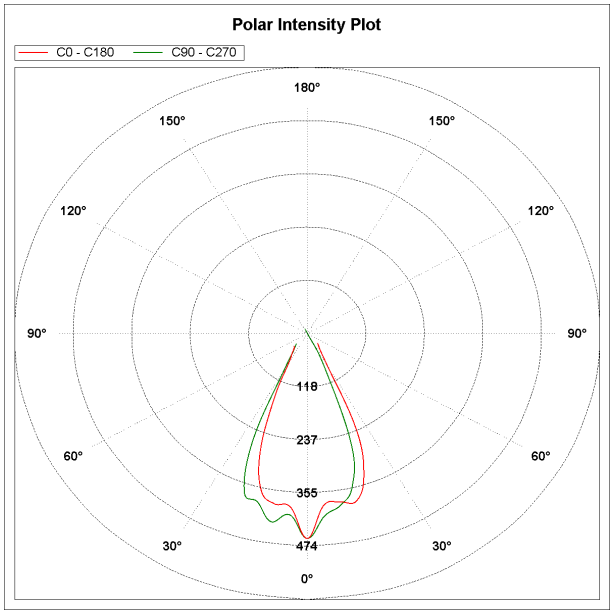
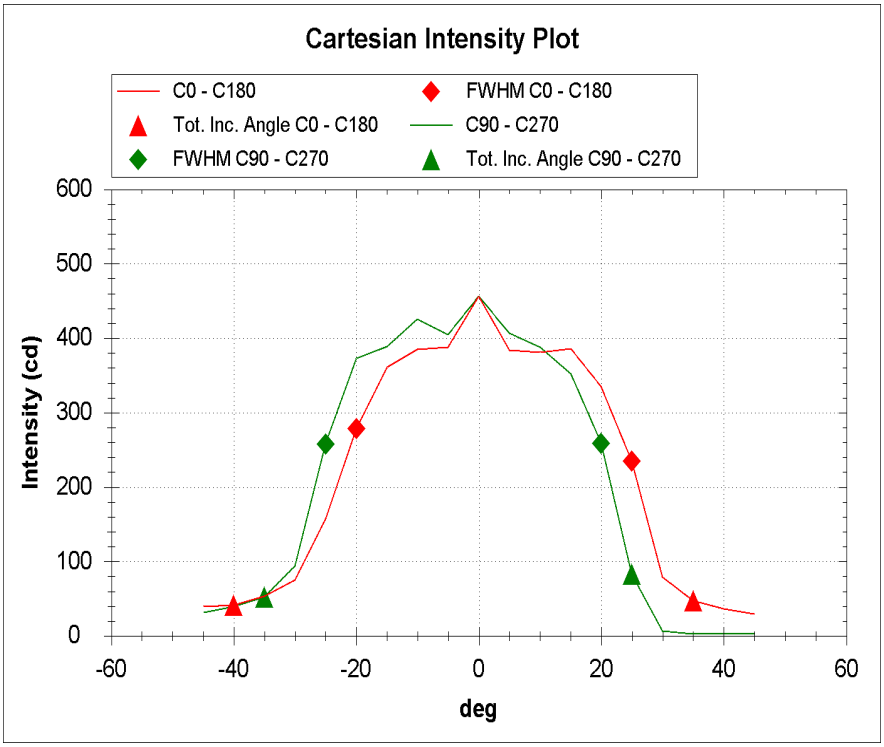
Goniophotometer Type	KLX12M	Operator	SIMONE BASSI
Power Supply Type	ISO TECH ISP3303	Date	15/02/2011
LED Driver Type	////		

Lamp Model	////	Nominal Flux (lm)	500	Angle FWHM C Plane	45
Lens Model	PL117440	Total Flux (lm)	500	Angle FWHM γ Plane	45
LED Model	Generic H. Max 6.0mm	Imax (cd)	456		
N. LED	1	Max Ill.@ Meas. Dist. (lux)	18.2	Total Incl. Angle C Plane	75
Rated Voltage (V)	3.8	Measurement Distance (m)	5	Total Incl. Angle γ Plane	60
LED Drive Current (mA)	1500	Room Temperature (°C)	25		

Notes:

General Optical Measurement Tolerance: +/-10%
Max. LED Height: 6.0mm





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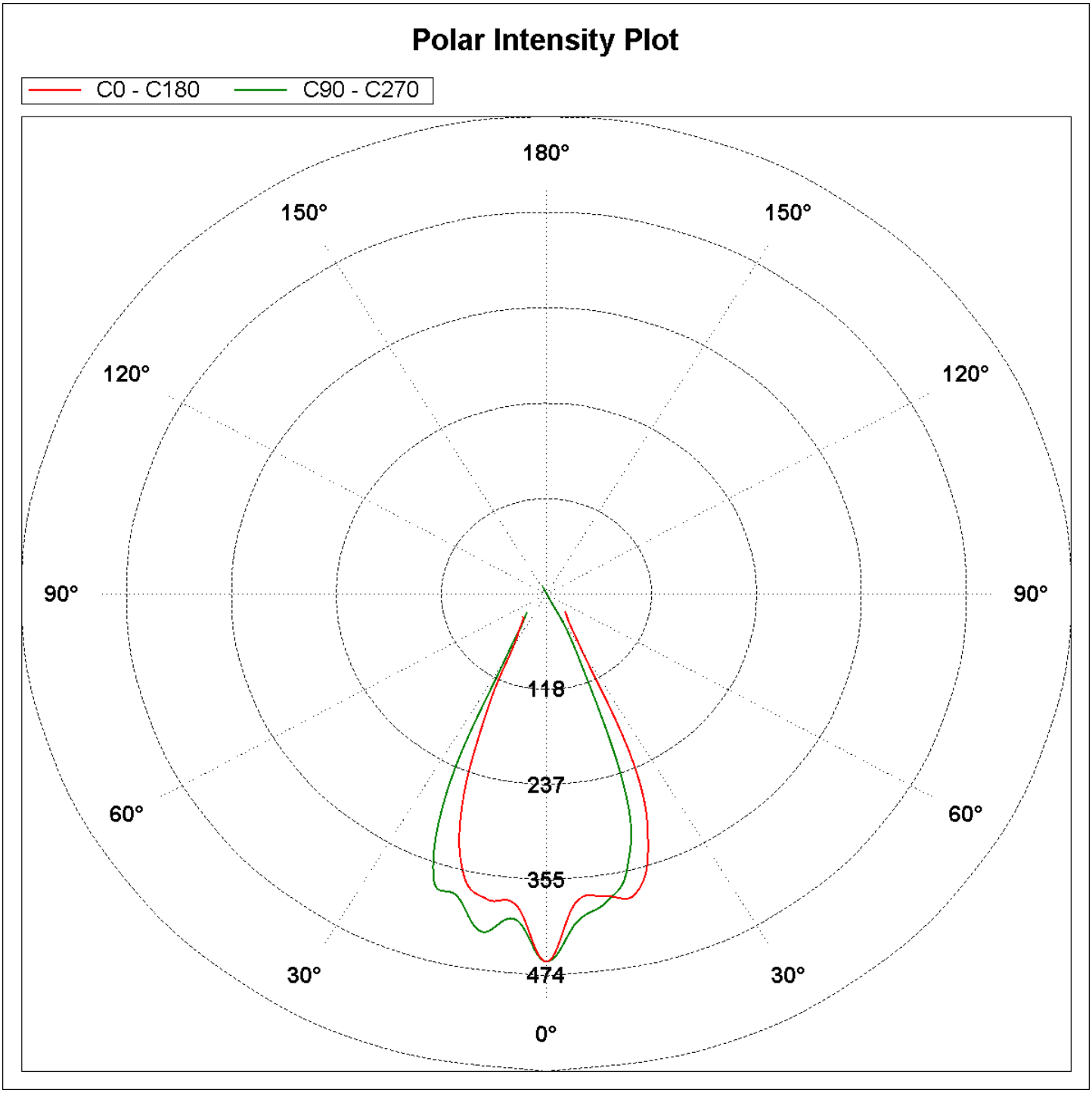

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Figure C0-C180

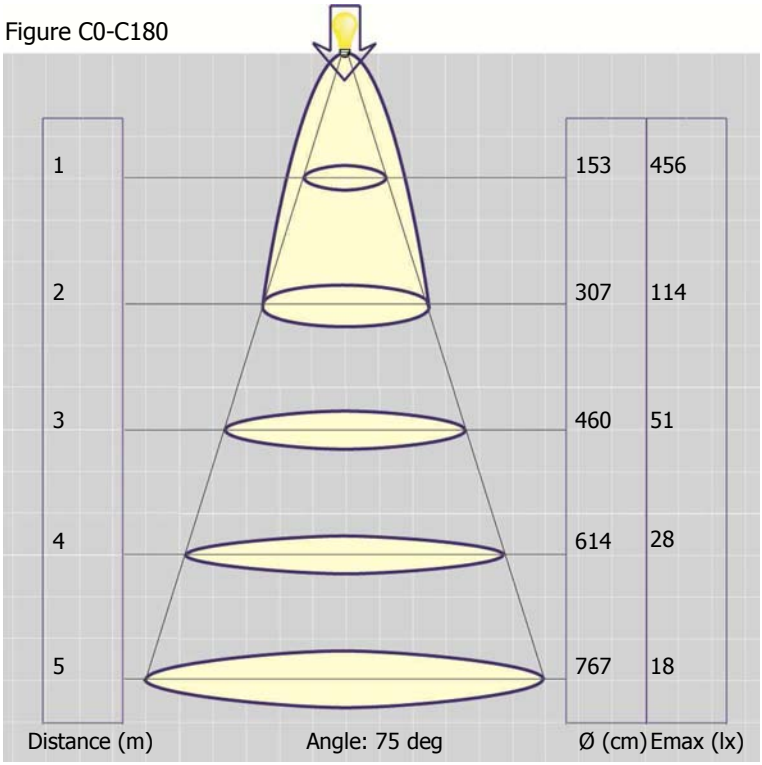
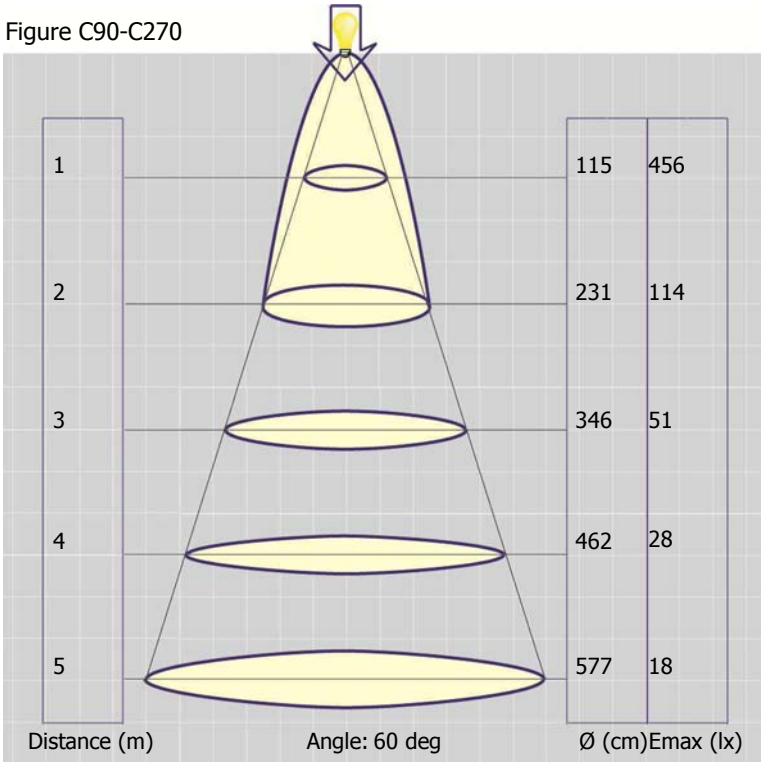
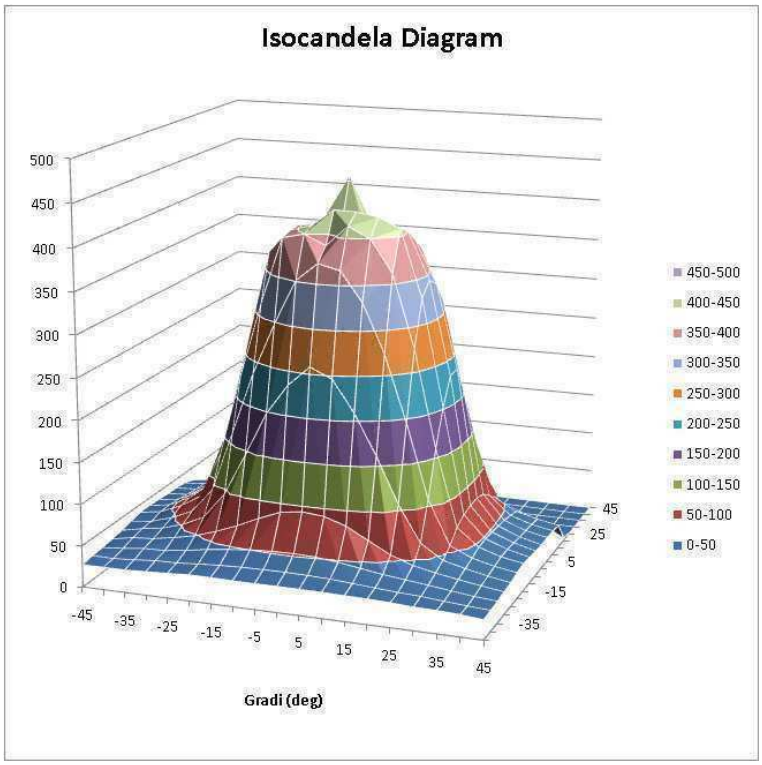
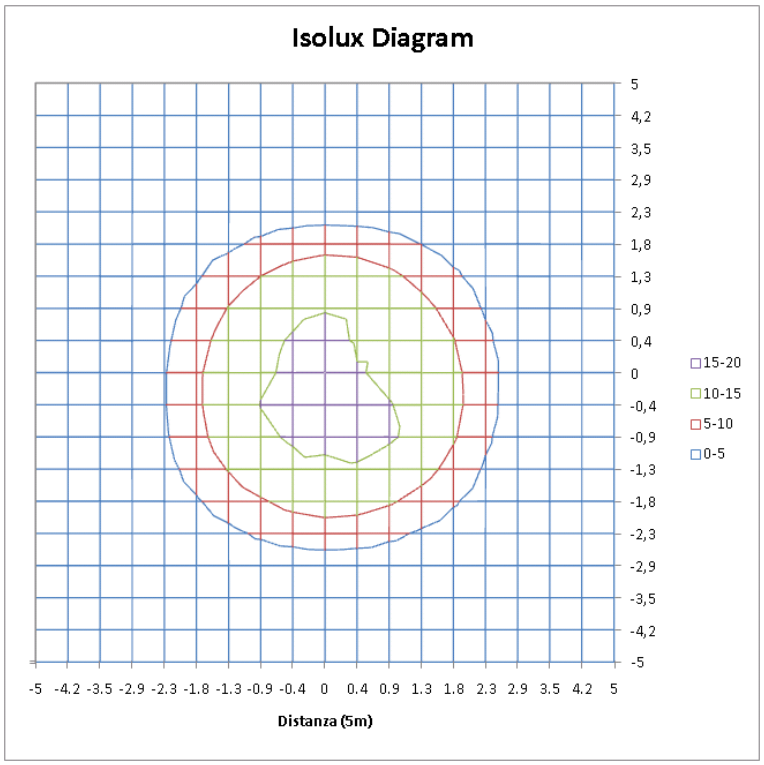


Figure C90-C270







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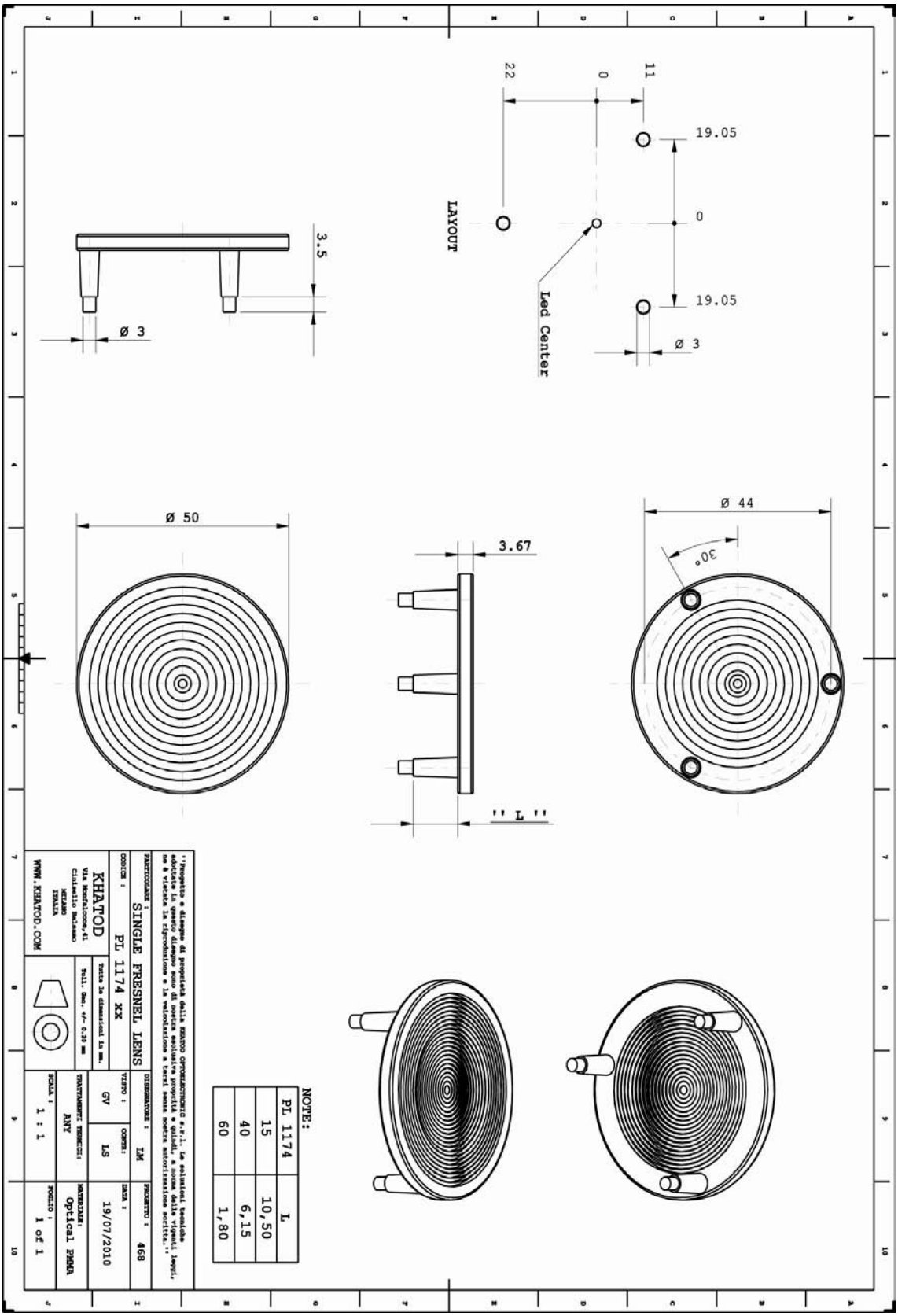

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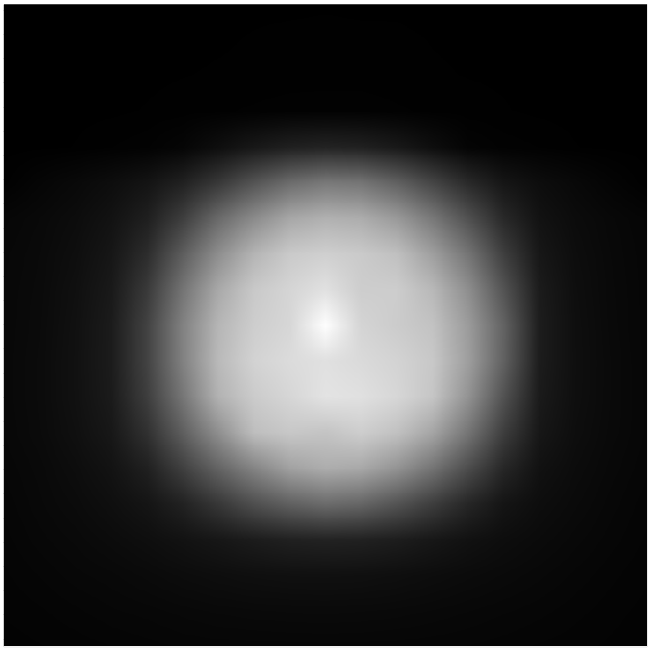
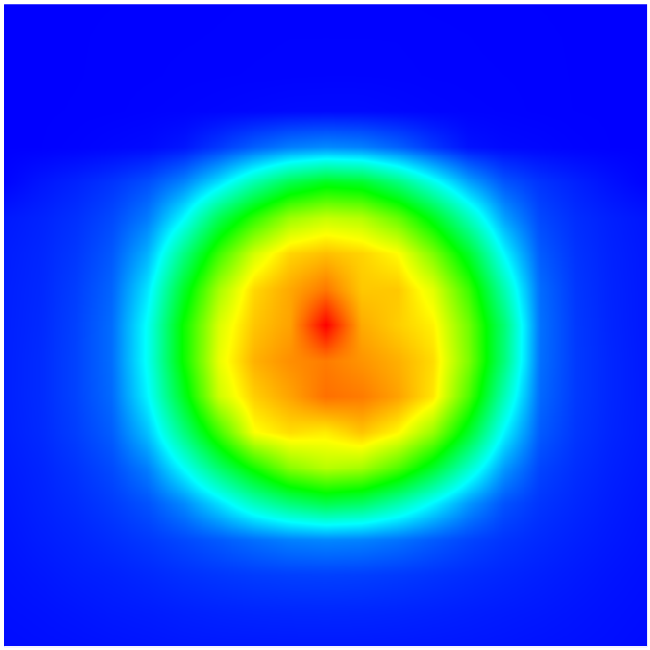
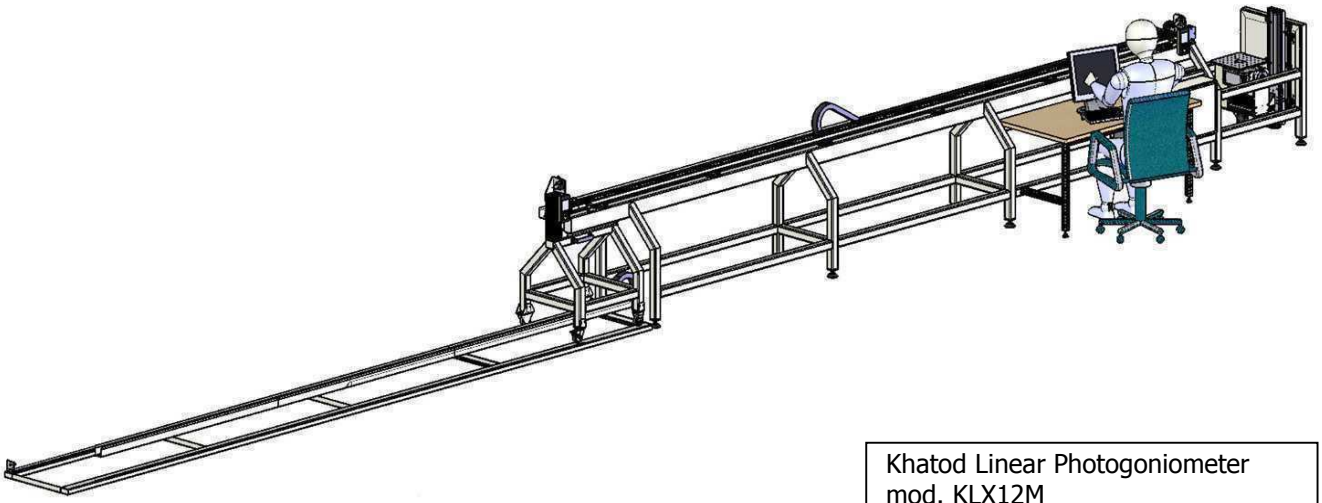
Gray Scale Illuminance @ 5m Distance



False Colours Illuminance @ 5m Distance





Khatod Linear Photogoniometer
mod. KLX12M

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Luminous Distribution Intensity Data

CODE NUMBER: 110000000073

C (deg) / γ (deg)	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°	120°	130°	140°	150°	160°	170°	180°	190°
0°	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456
5°	384	383	384	386	389	392	395	398	402	407	405	403	401	399	397	394	391	389	388	391
10°	381	383	385	384	381	380	380	384	386	388	386	385	384	380	379	383	382	383	385	389
15°	386	378	372	363	363	360	352	353	351	352	345	343	335	337	339	337	345	351	361	368
20°	335	321	307	298	288	281	272	263	261	259	248	242	243	250	254	255	257	265	278	285
25°	235	214	201	195	184	167	143	115	92	83	89.2	106	124	138	147	151	150	150	157	169
30°	78.5	86.2	96.4	94.9	86.7	54.6	29.4	24.8	12.9	6.5	12.5	24.1	30.1	47.3	72.3	75.3	79.2	75.7	74.8	83.6
35°	46.8	47.8	49.7	46.4	29.4	6.64	2.93	3.19	3.07	2.75	2.82	3.15	3.17	7.8	28	46.8	51	52	53.5	57.6
40°	36	36.1	36.7	30.8	4.12	1.8	1.8	2.13	2.52	2.5	2.4	1.97	1.82	1.78	4.12	32.4	39.9	40.6	41	44.9
45°	29.5	30.3	29	10.6	0.98	1.12	1.53	1.87	2.07	2.25	2.05	1.72	1.4	1.07	1.16	12.8	32.9	37.6	38.8	40.4
50°	0	0	0	0.17	0.34	0.79	1.09	0	0	0	0	0	1.09	0.79	0.38	0.34	0	0	0	0
55°	0	0	0	0	0.14	0.38	0	0	0	0	0	0	0	0.48	0.25	0	0	0	0	0
60°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

200°	210°	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°	330°	340°	350°
456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456
395	399	403	405	406	405	405	405	404	404	404	403	400	396	392	387
394	399	400	402	404	410	418	425	424	422	417	412	406	399	394	387
377	382	389	397	399	401	395	388	402	414	413	415	415	407	401	393
298	321	332	343	349	348	360	373	371	367	368	373	376	372	355	345
189	210	225	233	236	240	246	258	257	257	264	272	273	263	248	242
103	115	125	131	130	121	103	93.8	105	127	143	152	152	142	120	91.7
63	63.5	68.4	69.6	61.3	59.8	55.1	52	54.6	59.5	60.3	72	72.4	60	57.9	51
49.1	48.6	49	46.8	45	42.4	39.8	38.8	39.3	40.5	41.3	43.3	43.8	43.3	42.6	39.2
41.8	40.8	40.3	37.6	35.8	34.4	32	31.3	32	33.1	33.9	35.5	36.4	35.8	35.9	32.4
0	35.8	35.7	33.1	30.9	0	0	0	0	0	30.1	30.7	30.9	30.3	0	0
0	0	31.1	29	0	0	0	0	0	0	0	27.7	26.8	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Lens characteristics

Parameter	Symbol	Rating	Unit
Lens Material	PC Optics	--	--
Holder Material	--	--	--
Operating Temperature	Topr	-40 to +120	°C
Storage Temperature	Tstg	-40 to +120	°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