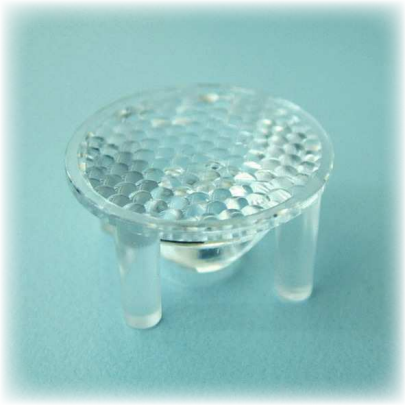
KHATOD®
OPTOELECTRONIC

TECHNICAL DEPT.
Lenses Test Report

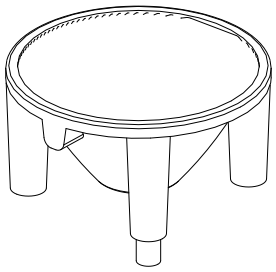
Via Monfalcone 41
20092 Cinisello Balsamo (Milano) – Italy
Tel. +39 0266013695 – Fax +39 0266013500

CODE NUMBER: 110000000161

SUBJECT: **Secondary Optics for Power LEDs - PL114540**
Lens Coupling - Output Luminous Intensity Measurement



- **Typ. Illuminance@1m ~ 1686 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



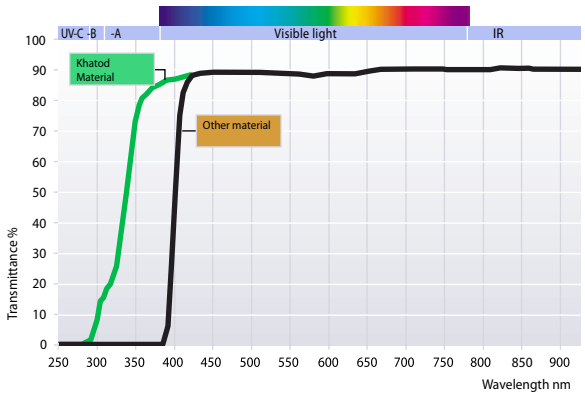
Typical Application are:

- 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 @ 3000 mA

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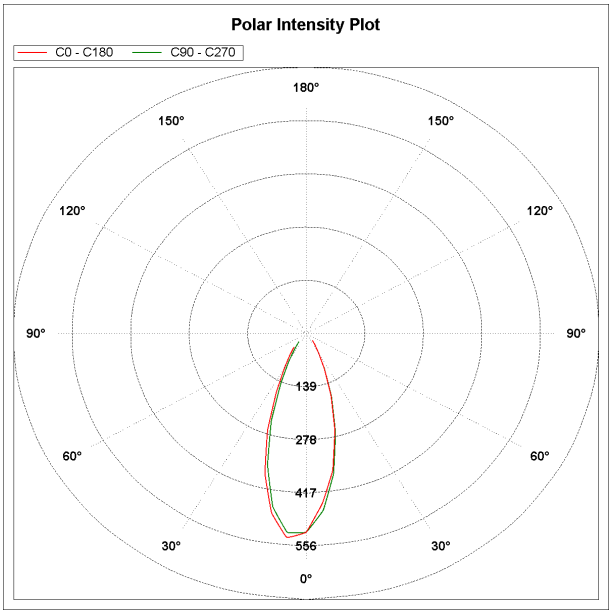
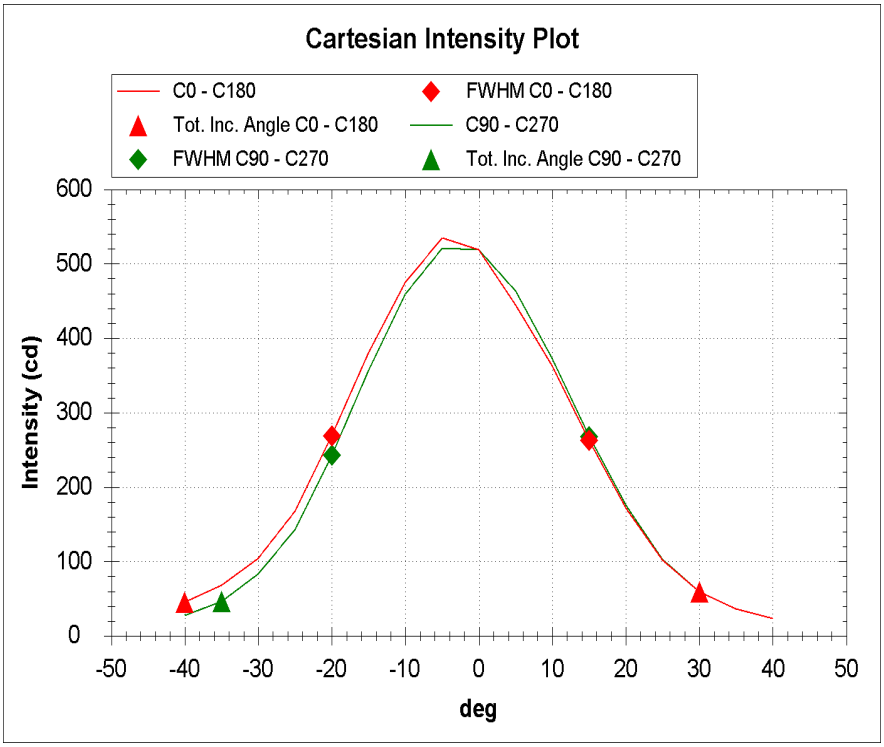
Goniophotometer Type	KLX12M	Operator	SIMONE BASSI
Power Supply Type	ISO TECH ISP3303	Date	25/03/2011
LED Driver Type	////		

Lamp Model	////	Nominal Flux (lm)	280	Angle FWHM C Plane	35
Lens Model	PL114540	Total Flux (lm)	280	Angle FWHM γ Plane	35
LED Model	CREE XM-L	Imax (cd)	535		
N. LED	1	Max Ill.@ Meas. Dist. (lux)	21	Total Incl. Angle C Plane	70
Rated Voltage (V)	2.9	Measurement Distance (m)	5	Total Incl. Angle γ Plane	65
LED Drive Current (mA)	700	Room Temperature (°C)	25		

Notes:

General Optical Measurement Tolerance: +/-10%





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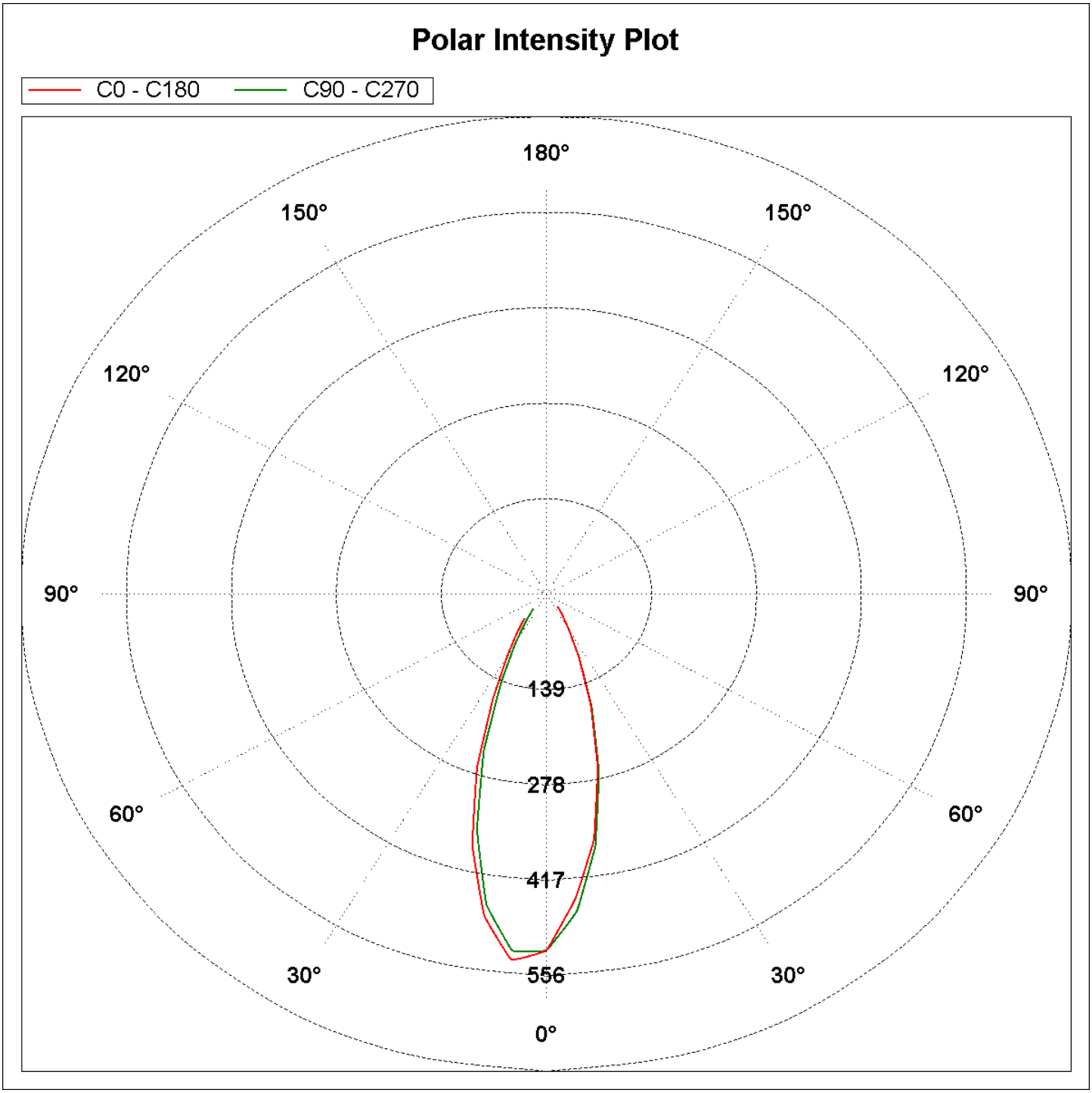

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Figure C0-C180

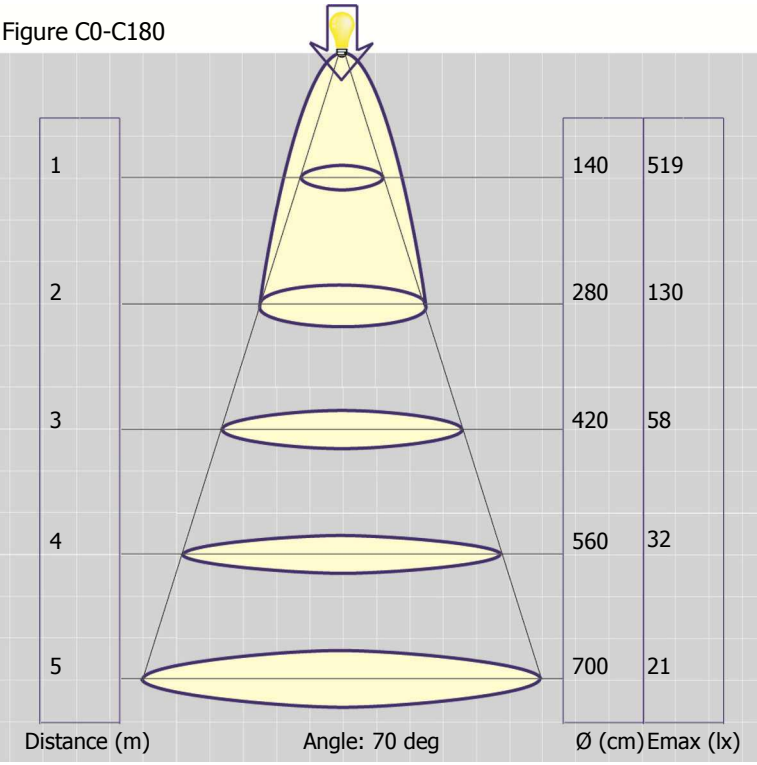
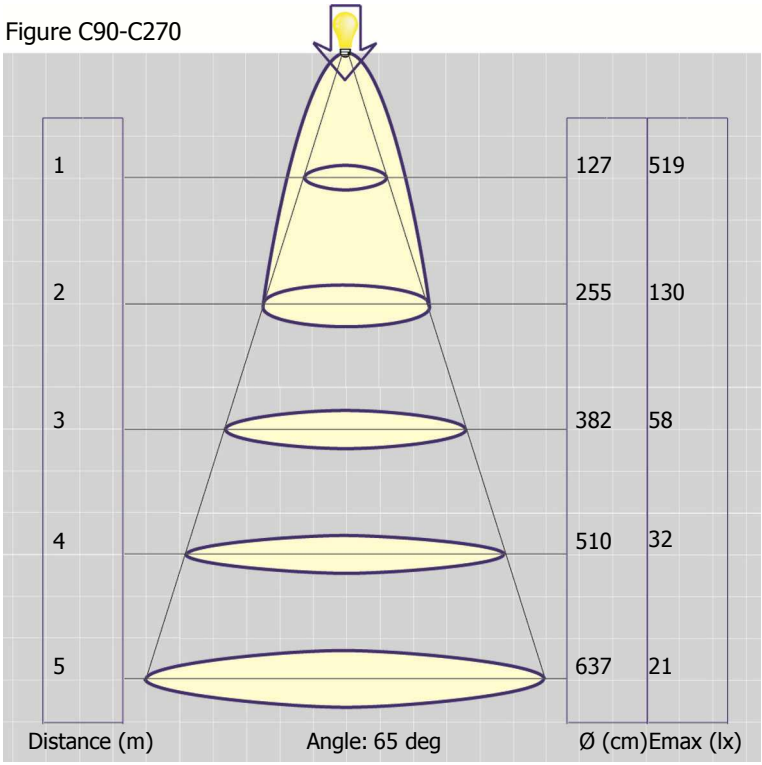
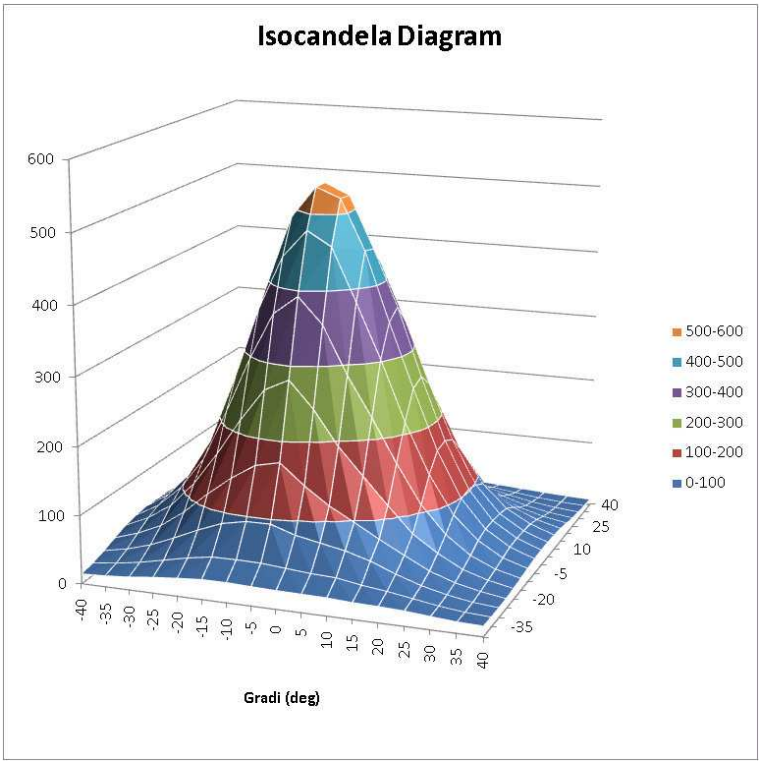
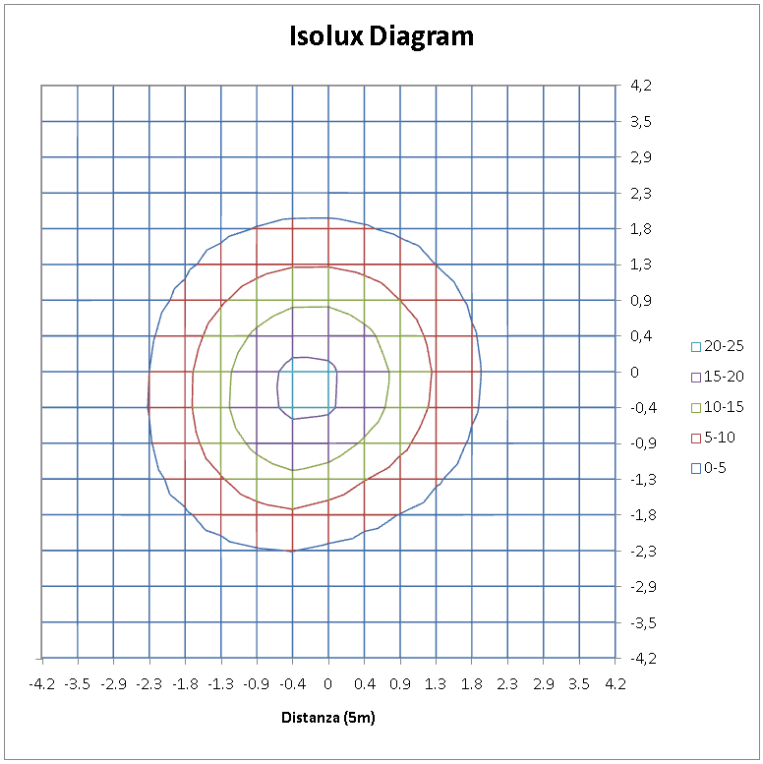


Figure C90-C270







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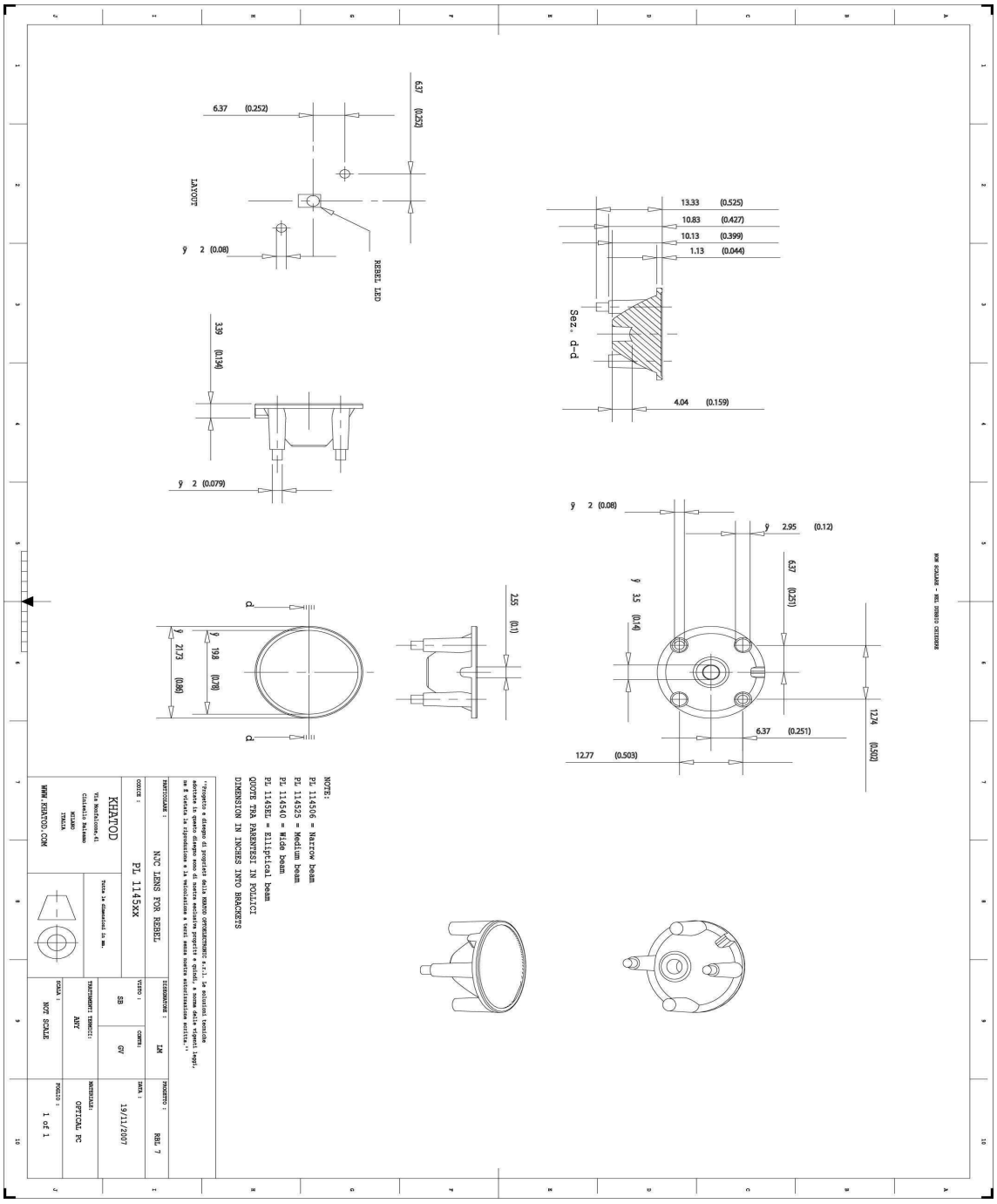

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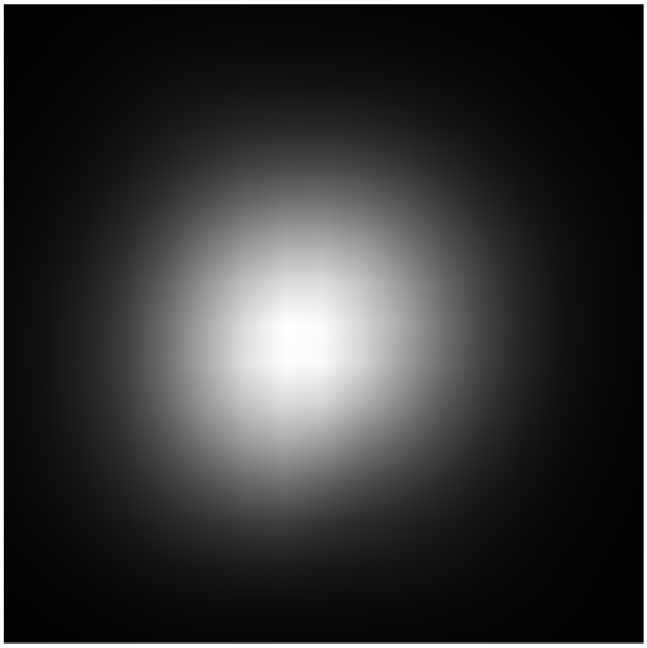
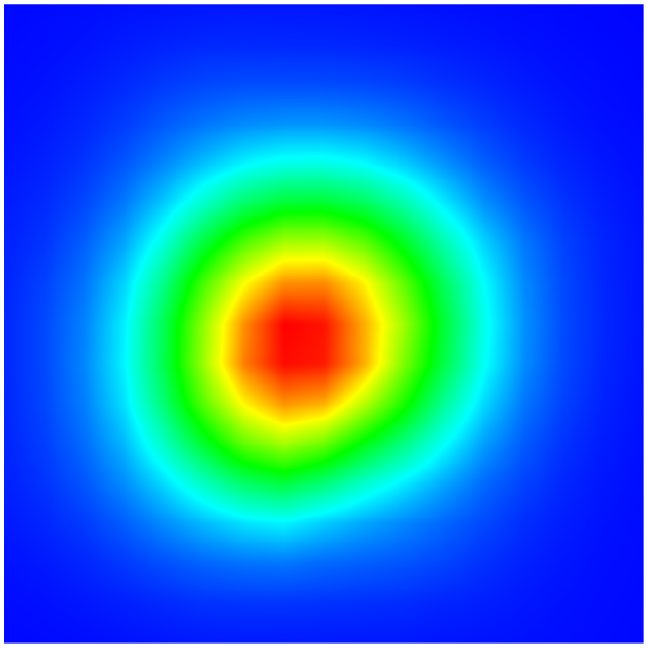
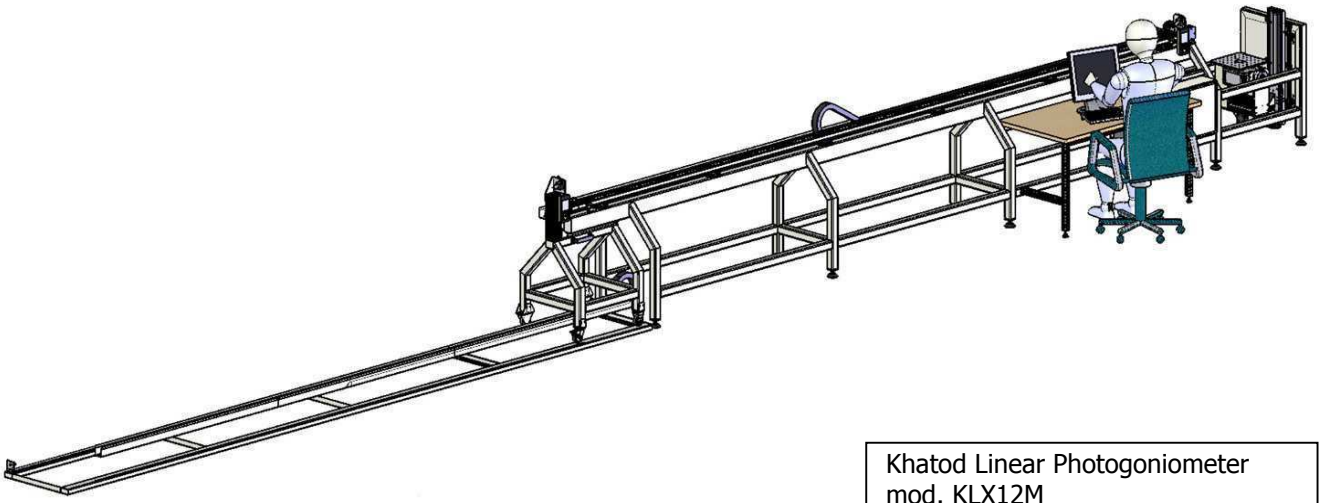
Gray Scale Illuminance @ 5m Distance



False Colours Illuminance @ 5m Distance





Khatod Linear Photogoniometer
mod. KLX12M

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Luminous Distribution Intensity Data

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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°	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519
5°	444	440	437	437	438	440	444	449	455	463	465	468	473	480	489	499	510	522	535	534
10°	363	355	352	354	351	352	357	358	363	373	376	385	400	406	416	431	443	457	475	482
15°	263	257	259	255	256	257	257	261	261	268	274	288	297	313	325	336	353	363	379	389
20°	171	170	172	173	170	170	172	170	171	175	181	192	206	213	225	235	244	254	269	280
25°	102	103	108	106	102	103	103	103	102	103	109	121	130	136	141	147	152	159	168	180
30°	58.8	61.2	65.8	62.8	60.7	61	60.2	62	59.9	59.3	64.8	76.1	83.8	87.3	86.9	87.3	93.1	98	104	114
35°	36.5	37.8	40.1	37.9	37	37.8	37.1	37.1	35.7	36.3	40	48.7	55.3	57.3	55.1	54	58	62.6	67.8	72.9
40°	23	23.8	25.5	23.7	22.8	23.8	23.6	23	22.4	23.5	26.2	32	36.7	38	35.6	35	38.8	41.9	44.8	47.6
45°	0	0	0	15.9	15.3	15.7	15.8	0	0	0	0	0	24.8	25.9	24.5	25	0	0	0	0
50°	0	0	0	0	11.1	11.3	0	0	0	0	0	0	0	18.7	18	0	0	0	0	0
55°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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°
519	519	519	519	519	519	519	519	519	519	519	519	519	519	519	519
534	533	531	530	528	526	523	521	508	496	484	474	464	456	450	446
491	502	496	493	494	480	468	459	434	414	400	388	380	375	364	360
407	411	420	420	412	408	379	356	324	302	292	286	280	272	271	263
296	314	319	320	319	301	277	243	214	199	194	189	183	182	178	174
196	209	217	218	212	198	177	143	127	122	119	115	111	110	108	105
126	132	140	140	131	119	101	82.5	79	78.4	73.7	70.1	66.6	64.1	64.3	61.5
80.4	84.1	88	86.5	77.4	67.1	54.3	46.5	46.5	50.1	49.8	45.2	41.3	37.8	37.7	36.8
53.1	56.4	54.4	51.9	45.6	39	31.1	27	28.3	30.8	32.6	29.9	26.1	24.1	23.2	22.7
0	38.1	35	31.3	27.7	0	0	0	0	0	23.8	21.9	18.5	16.4	0	0
0	0	23.6	20.3	0	0	0	0	0	0	0	17.9	15.1	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