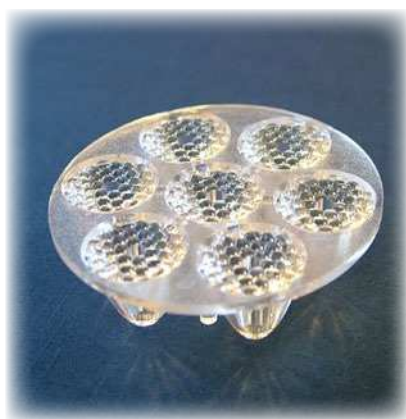


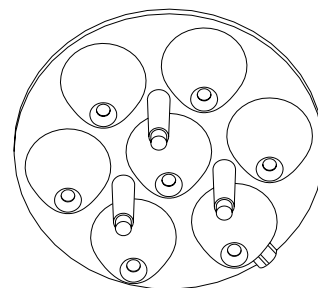
Via Monfalcone 41
20092 Cinisello Balsamo (Milano) – Italy
Tel. +39 0266013695 – Fax +39 0266013500

CODE NUMBER: 110000000040

SUBJECT: Secondary Optics for Power LEDs - PL121140
Lens Coupling - Output Luminous Intensity Measurement



- **Typ. Illuminance@1m ~ 2484 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



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.

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General Notes	- Annex B

Via Monfalcone 41
200092 Cinisello Balsamo (Milano) - Italy
Tel. 0266013695 - Fax. +39 0266013500

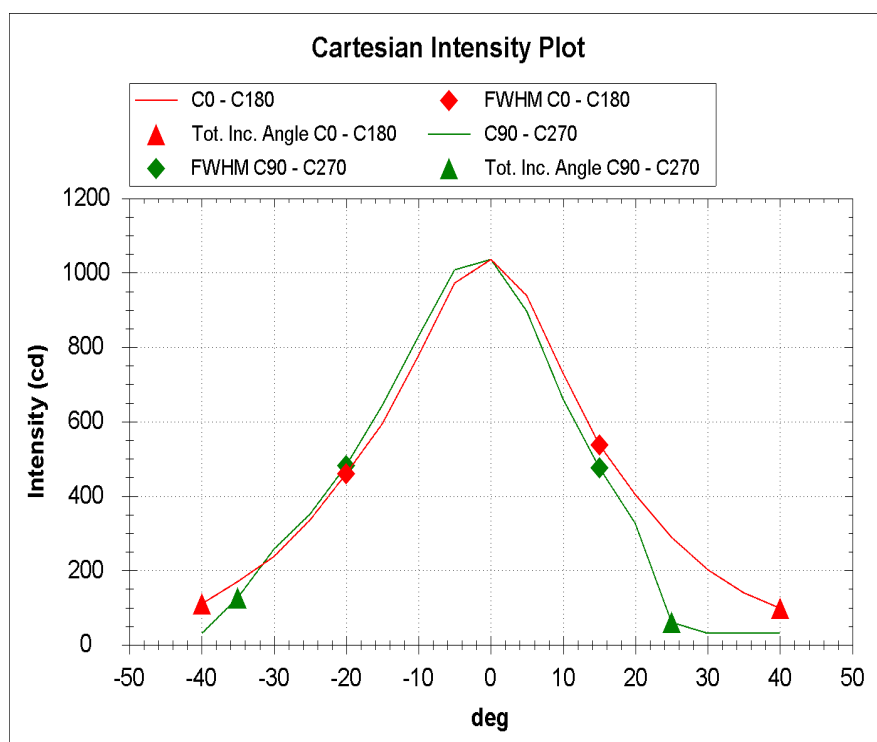
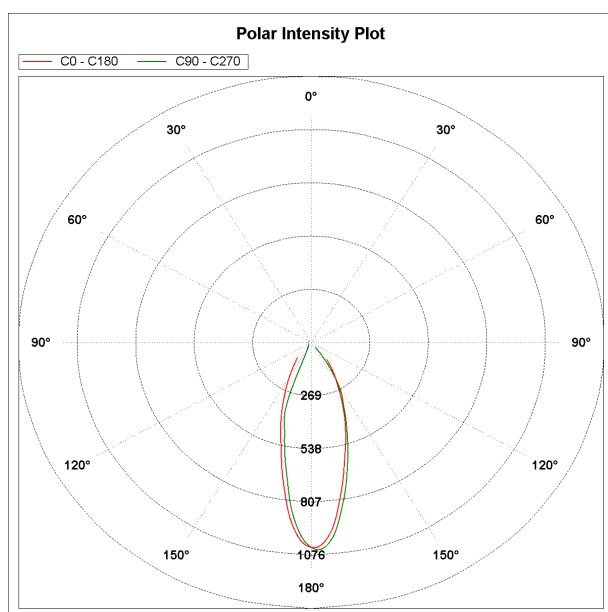
CODE NUMBER: 110000000040

Goniophotometer Type	KLX12M	Operator	SIMONE BASSI
Power Supply Type	ISO TECH ISP3303	Date	07/02/2011
LED Driver Type	////		

Lamp Model	////	Nominal Flux (lm)	130	Angle FWHM C Plane	35
Lens Model	PL121140	Total Flux (lm)	910	Angle FWHM γ Plane	35
LED Model	REBEL ES	Imax (cd)	1035		
N. LED	7	Max Ill. @ Meas. Dist. (lux)	41	Total Incl. Angle C Plane	80
Rated Voltage (V)	20.4	Measurement Distance (m)	5	Total Incl. Angle γ Plane	60
LED Drive Current (mA)	350	Room Temperature (°C)	25		

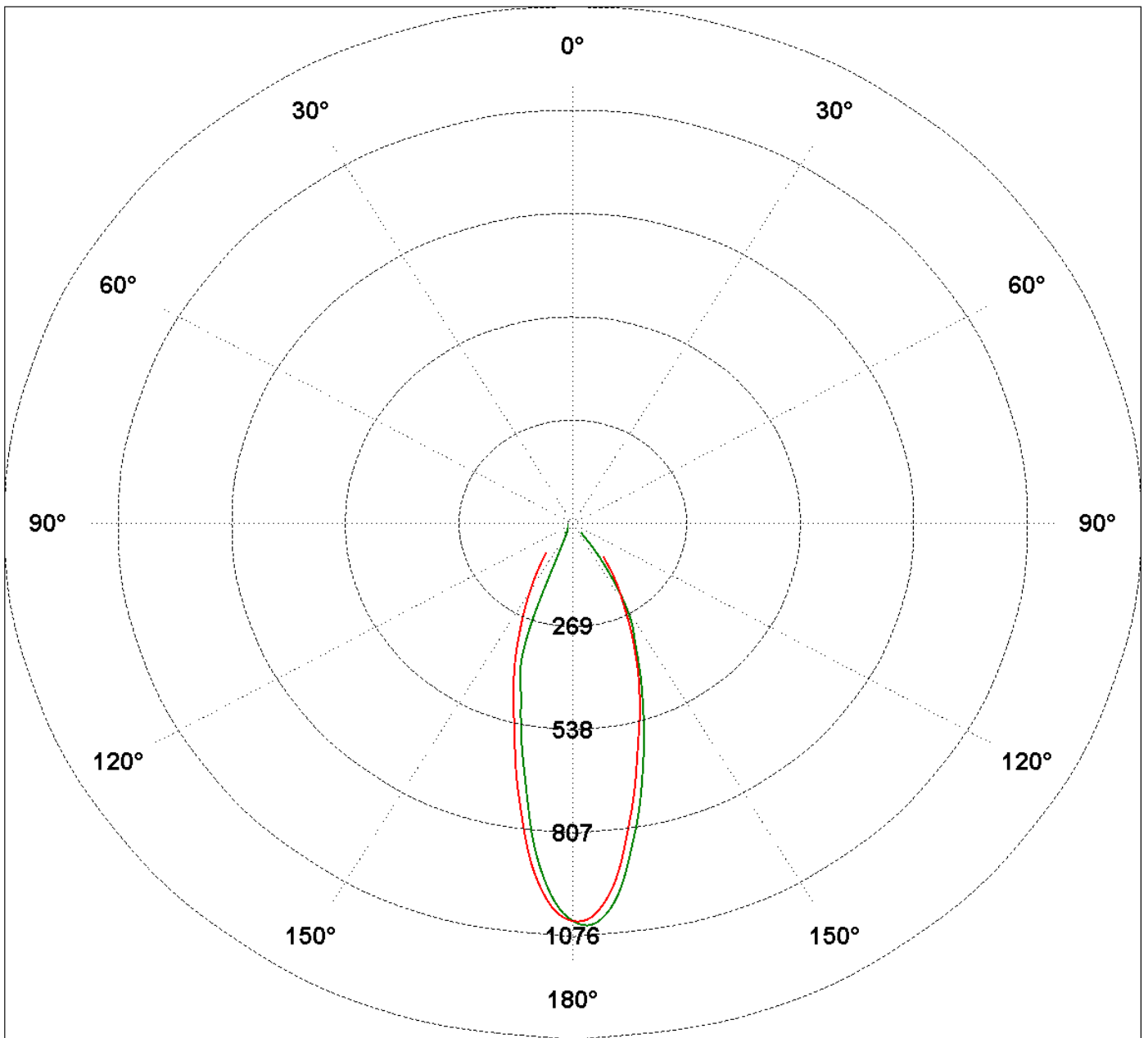
Notes:

General Optical Measurement Tolerance: +/-10%



Polar Intensity Plot

— C0 - C180 — C90 - C270



CODE NUMBER: 110000000040

Figure C0-C180

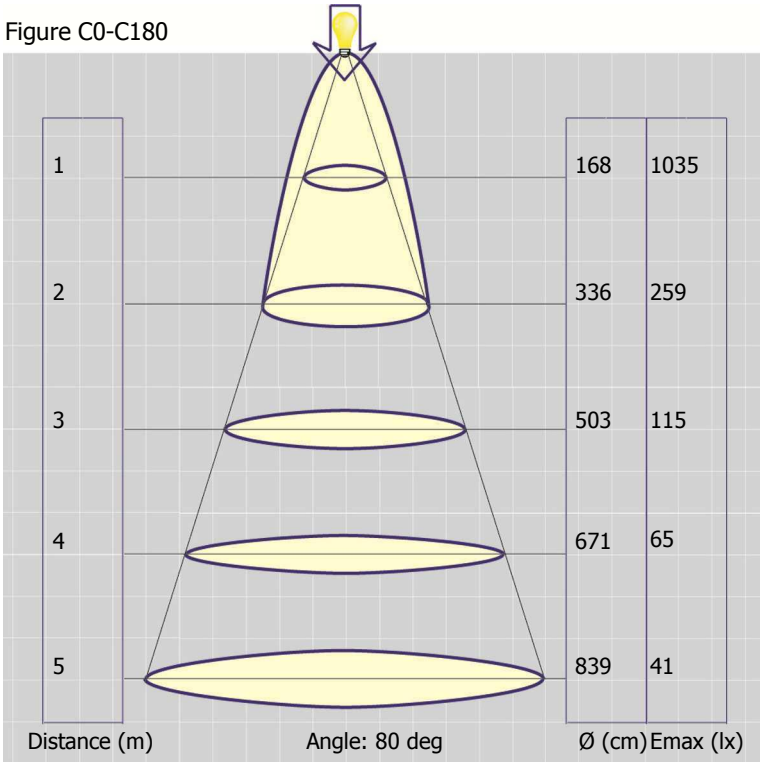
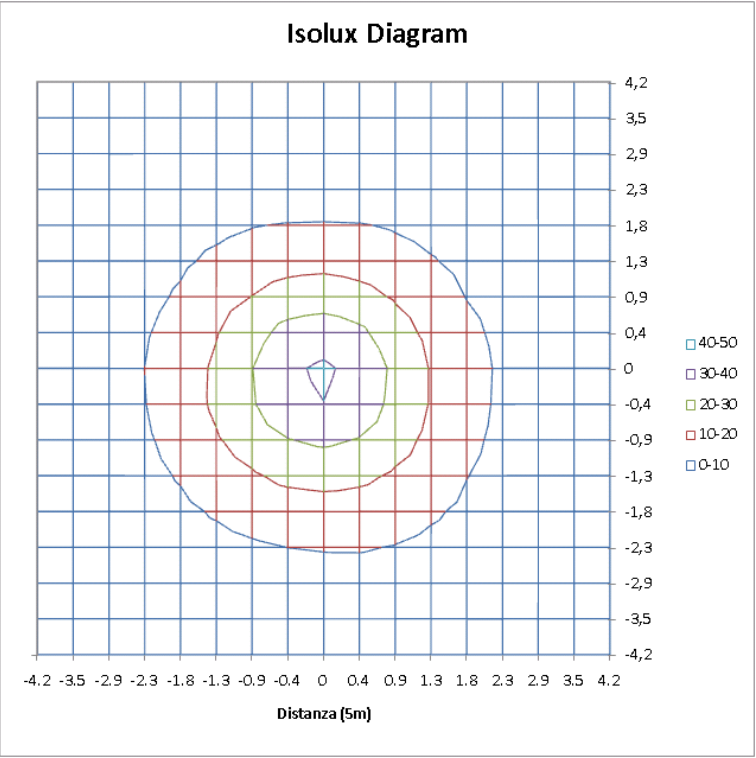
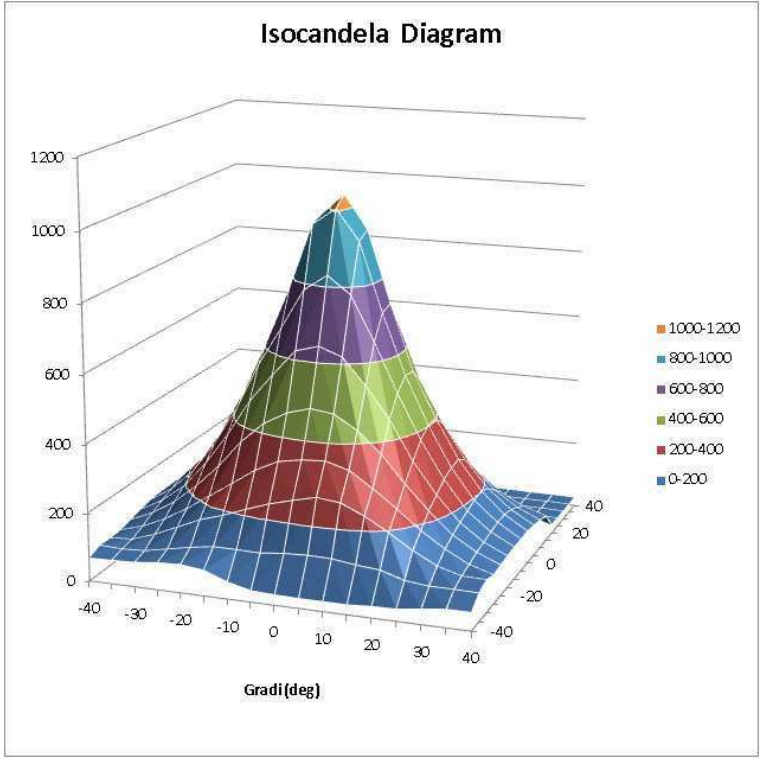
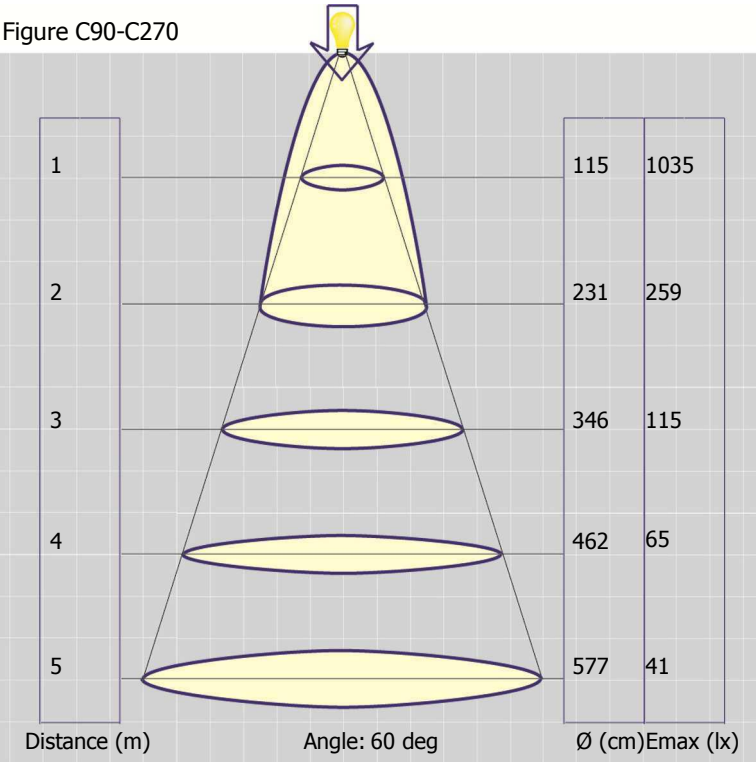
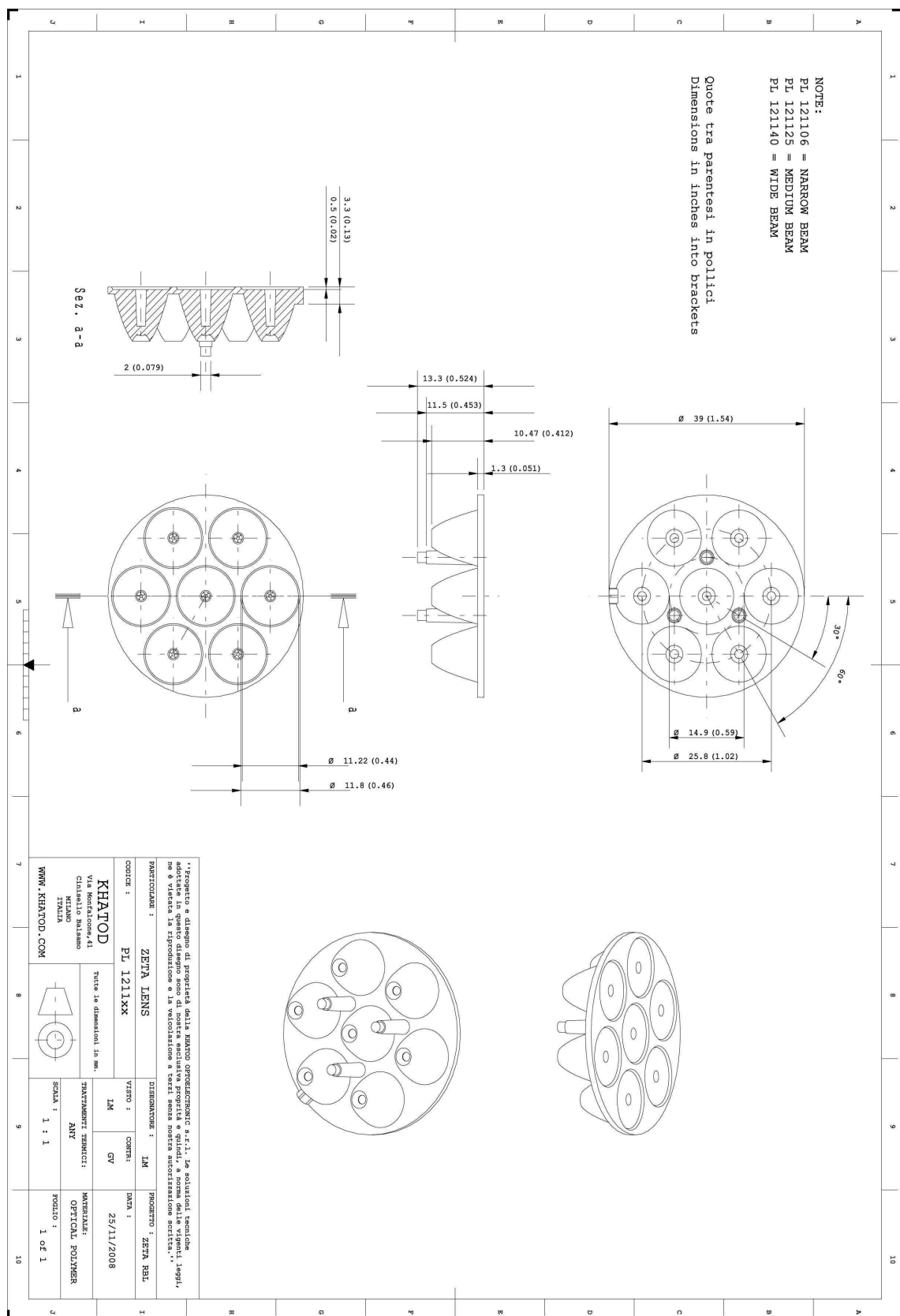


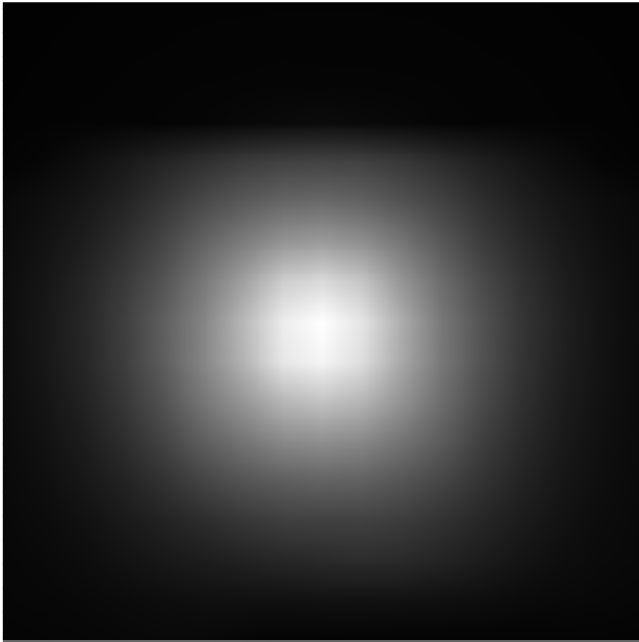
Figure C90-C270



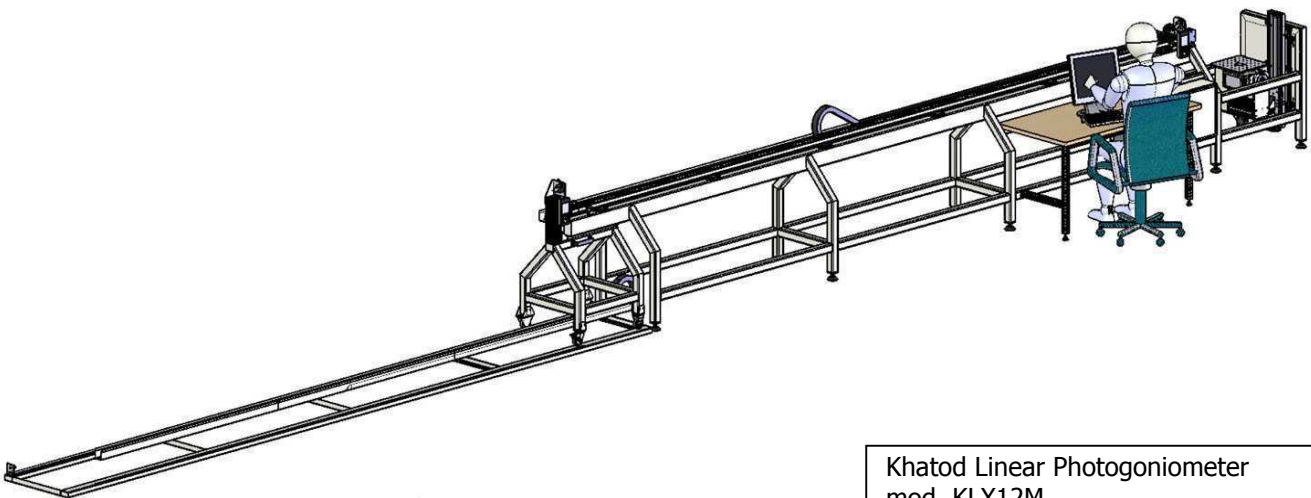
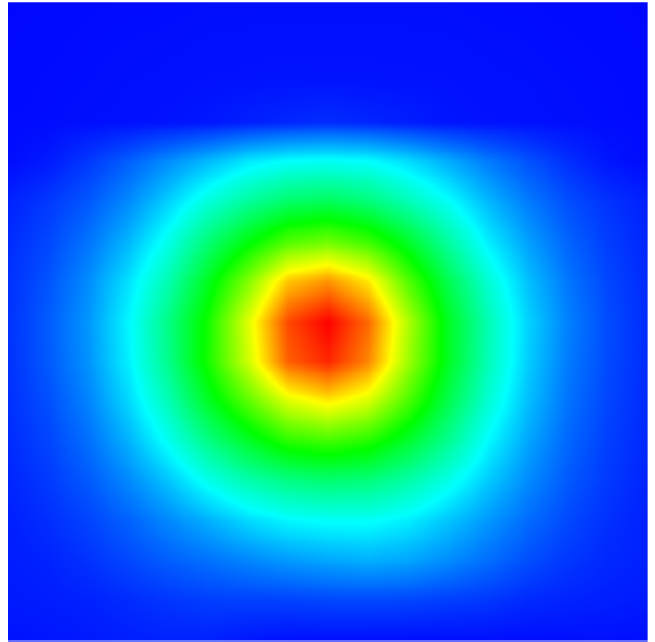


CODE NUMBER: 110000000040

Gray Scale Illuminance @ 5m Distance



False Colours Illuminance @ 5m Distance



Khatod Linear Photogoniometer
mod. KLX12M

Luminous Distribution Intensity Data

CODE NUMBER: 110000000040

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°	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035
5°	939	920	903	891	882	876	875	878	886	897	892	891	893	899	908	921	935	953	972	971
10°	731	705	691	687	678	671	669	654	651	660	659	671	695	703	716	733	738	754	780	782
15°	537	521	515	503	496	487	477	474	468	476	477	493	502	517	534	551	569	577	596	610
20°	405	388	374	362	356	346	340	335	330	327	333	346	364	379	399	410	420	435	461	467
25°	290	278	265	254	246	237	185	119	72.6	60	74	125	198	260	278	289	303	323	338	342
30°	203	194	184	174	160	92.9	30	33.6	31.9	30	33.3	34.7	32.4	104	183	196	211	229	237	241
35°	140	134	127	107	71.6	28.5	29.3	30	30	30	30.1	30	29.3	29	81.6	123	146	158	170	170
40°	97.5	94.5	90.9	47.9	27	28.3	28.5	30	30	30	30	30	28.5	28.3	28.1	57.4	102	111	111	116
45°	0	0	0	28.3	27	27.3	28.5	0	0	0	0	0	28.5	28.4	27	31.6	0	0	0	0
50°	0	0	0	0	26	27	0	0	0	0	0	0	0	27.9	27	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°
1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035
971	973	976	980	986	992	1000	1008	993	979	967	956	948	942	938	937
796	820	819	823	831	820	820	831	818	814	817	799	784	772	747	733
635	636	640	639	642	651	641	644	638	645	634	626	613	590	574	549
477	489	495	493	490	484	478	482	484	489	491	484	468	449	427	412
348	353	359	362	358	353	351	353	365	373	373	366	346	326	309	295
245	249	252	252	247	246	247	257	280	290	281	271	255	233	216	203
170	172	177	179	175	156	131	126	144	179	210	200	185	164	151	143
121	123	125	129	114	93.2	49.1	30	40.6	73.1	119	141	135	122	110	101
0	91.9	91.6	88.5	85.5	0	0	0	0	0	47.8	89.7	102	92.8	0	0
0	0	82.1	74.3	0	0	0	0	0	0	0	59.8	90.7	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
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

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 property 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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