

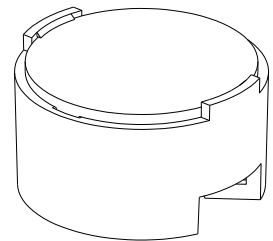
Via Monfalcone 41
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CODE NUMBER: 110000000006

**SUBJECT: Secondary Optics for Power LEDs - KEPL115440
Lens Coupling - Output Luminous Intensity Measurement**



- **Typ. Illuminance@1m ~ 441 lux**
- High lighting efficiency
- Excellent luminous flux
- No vibration problems
- Free testing
- 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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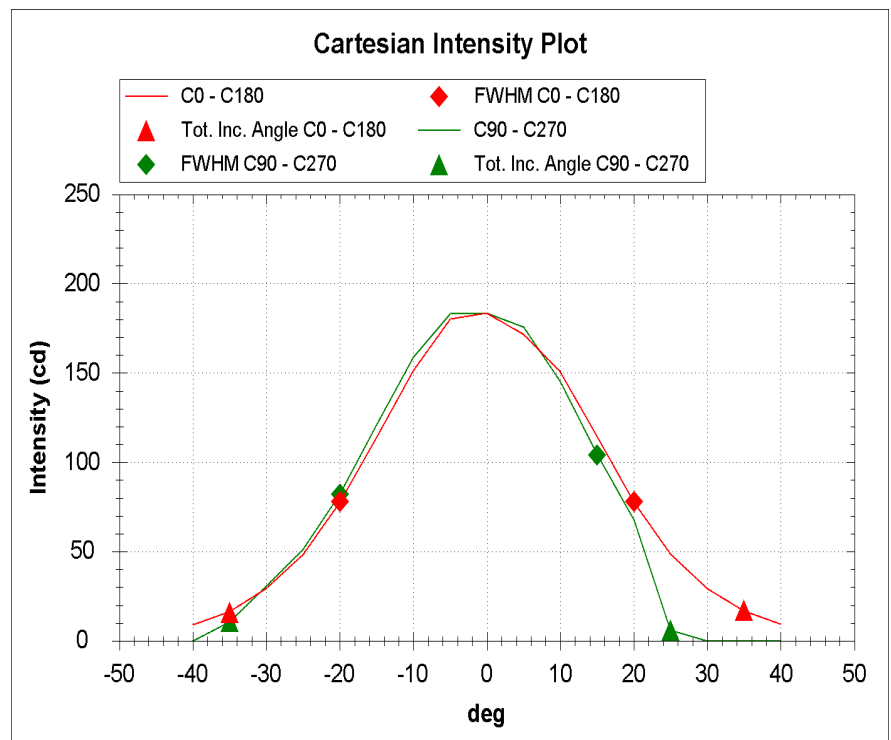
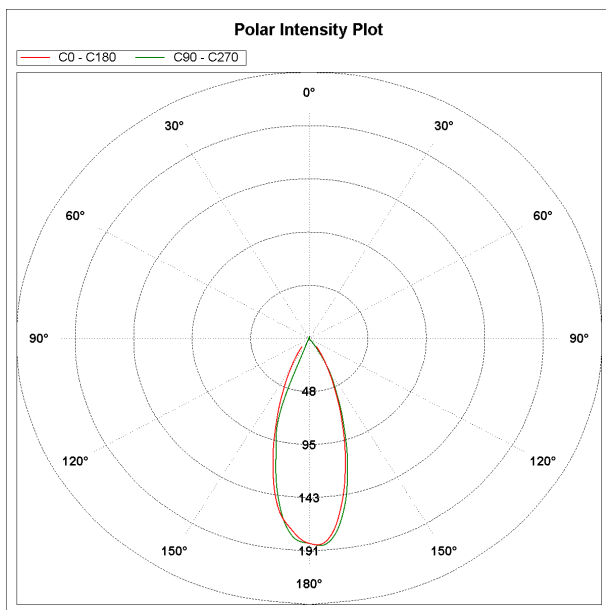
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CODE NUMBER: 11000000006

Goniophotometer Type	KLX12M	Operator	SIMONE BASSI
Power Supply Type	ISO TECH ISP3303	Date	03/02/2011
LED Driver Type	////		

Lamp Model	////	Nominal Flux (lm)	130	Angle FWHM C Plane	40
Lens Model	KEPL115440	Total Flux (lm)	130	Angle FWHM γ Plane	35
LED Model	REBEL ES	Imax (cd)	184		
N. LED	1	Max Ill. @ Meas. Dist. (lux)	7.3	Total Incl. Angle C Plane	70
Rated Voltage (V)	2.9	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

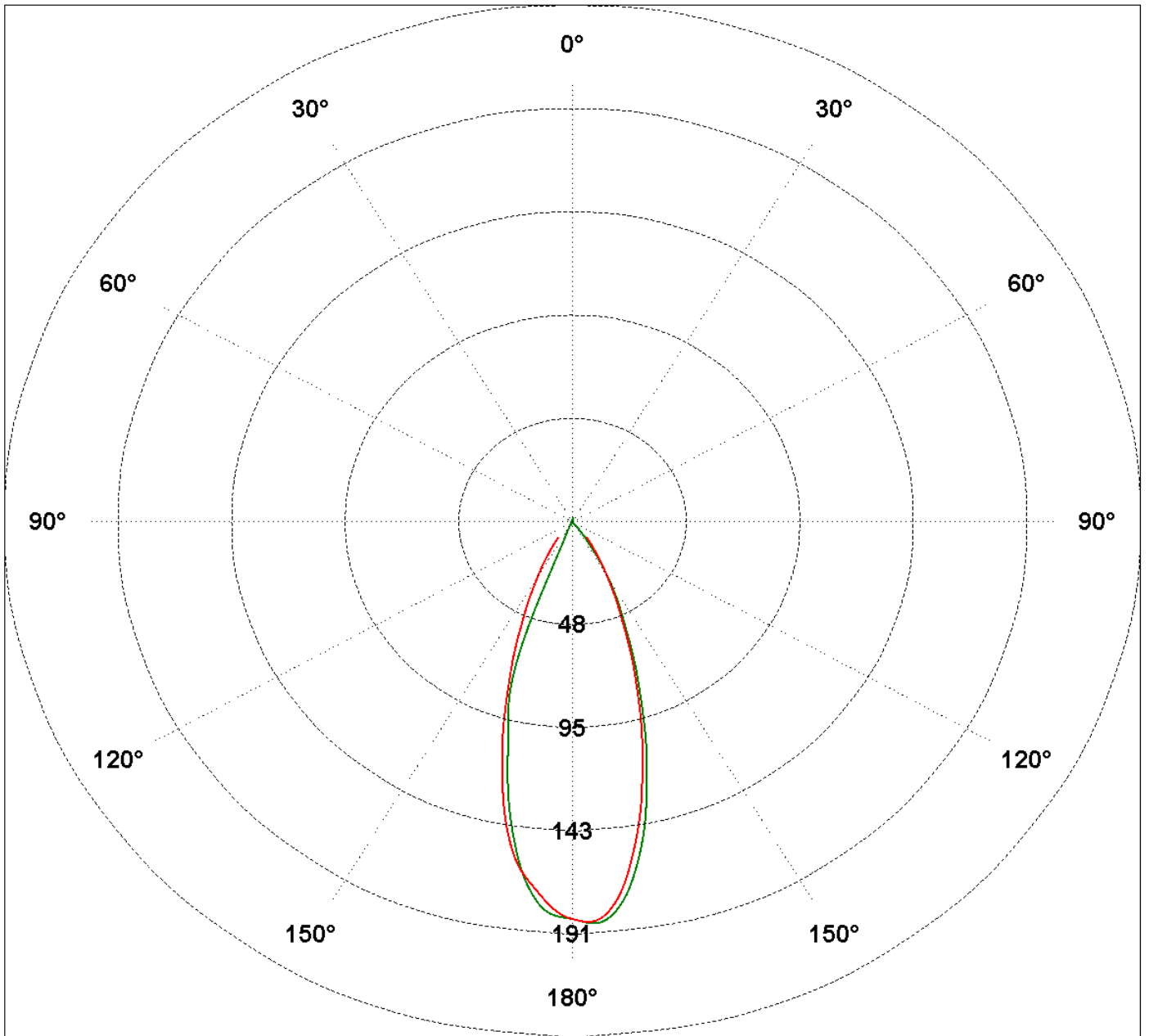


Figure C0-C180

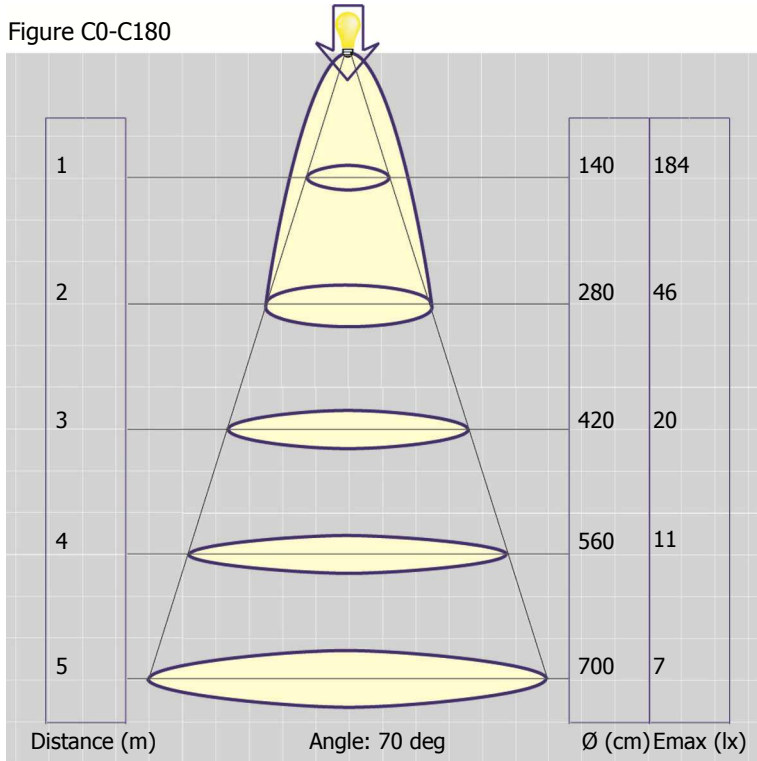
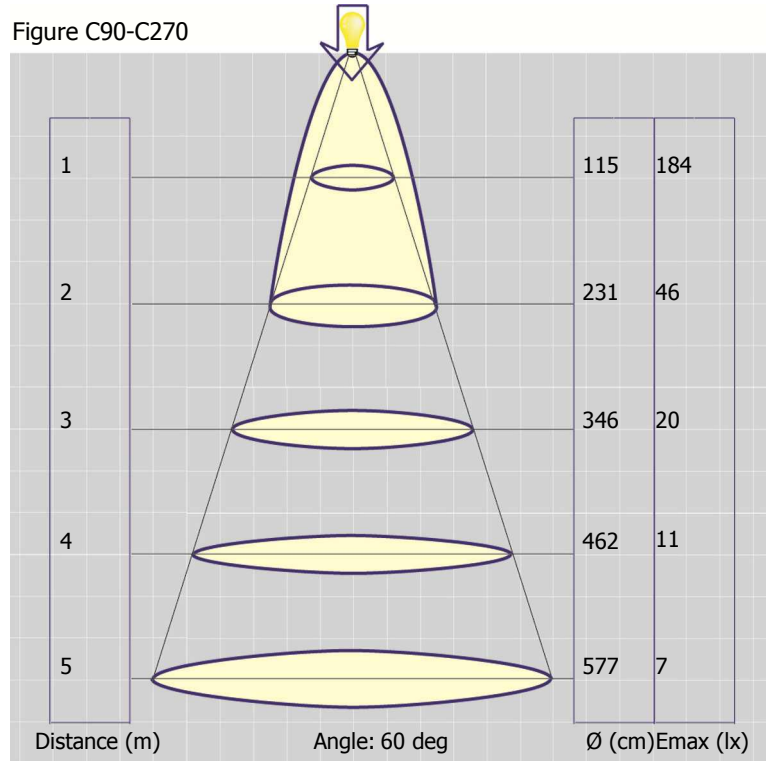
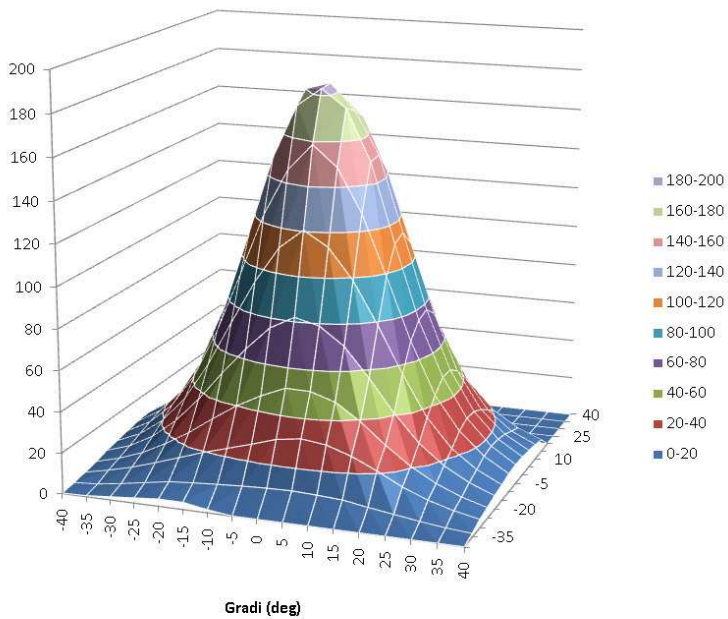


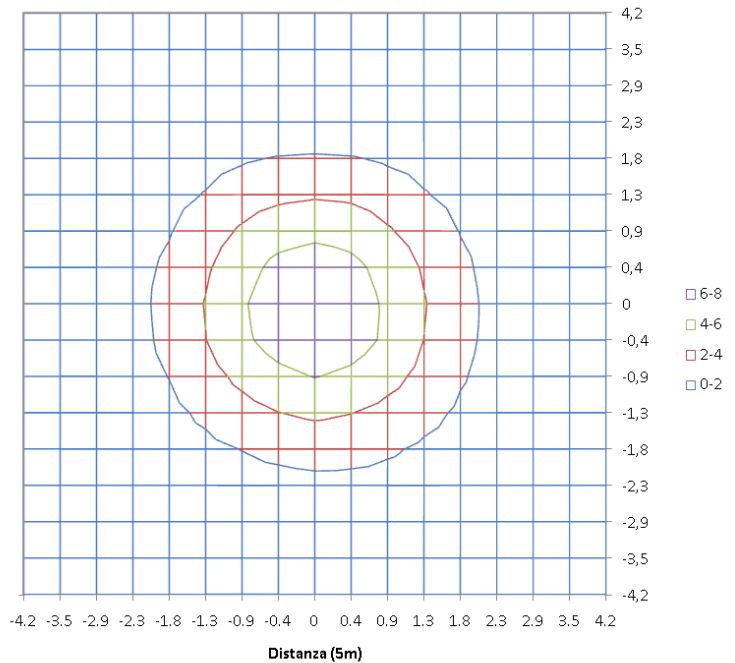
Figure C90-C270

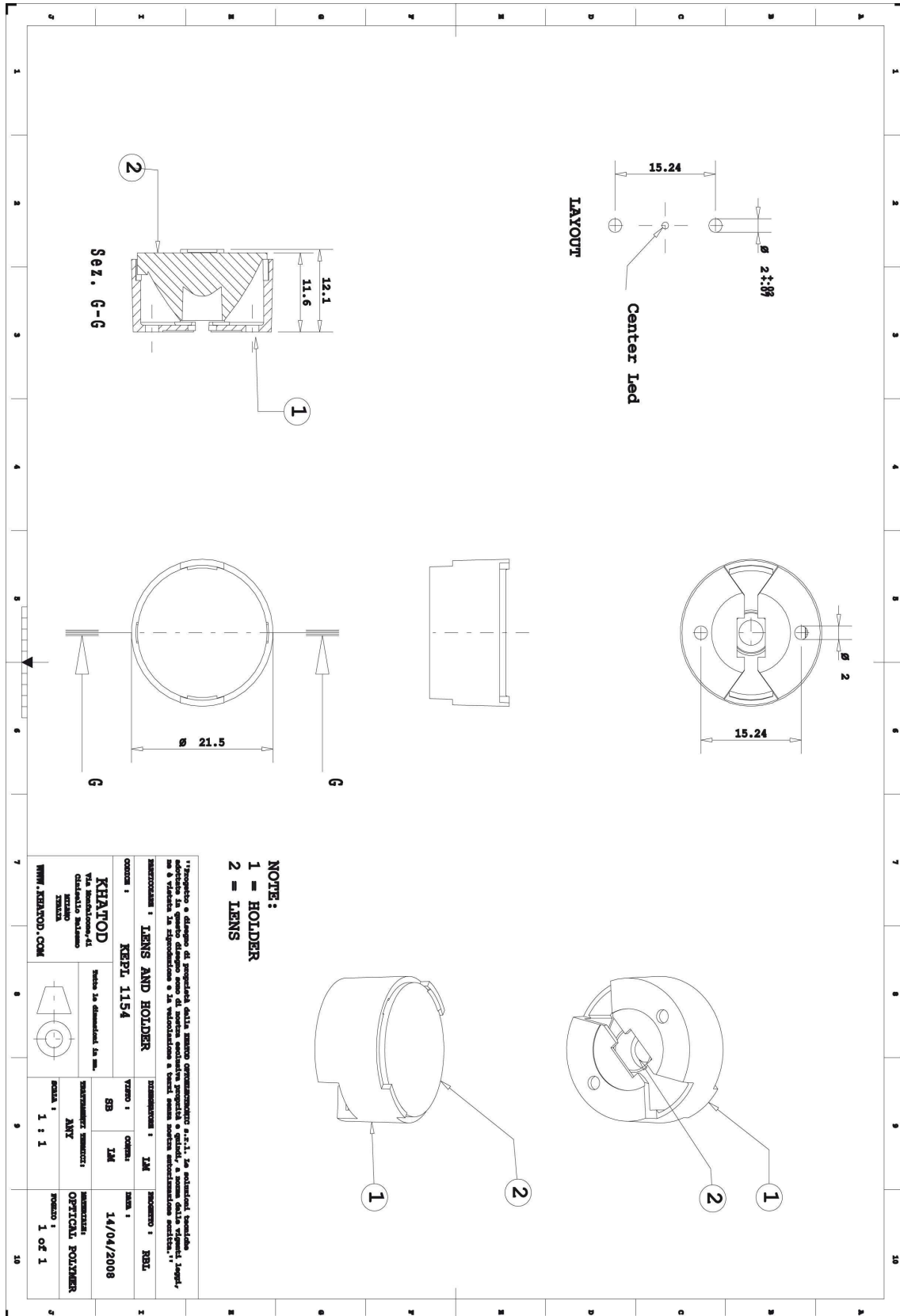


Isocandela Diagram

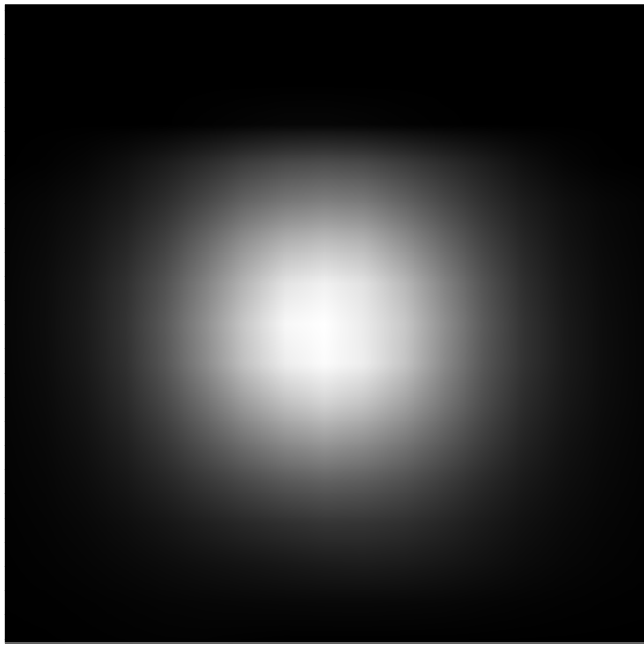


Isolux Diagram

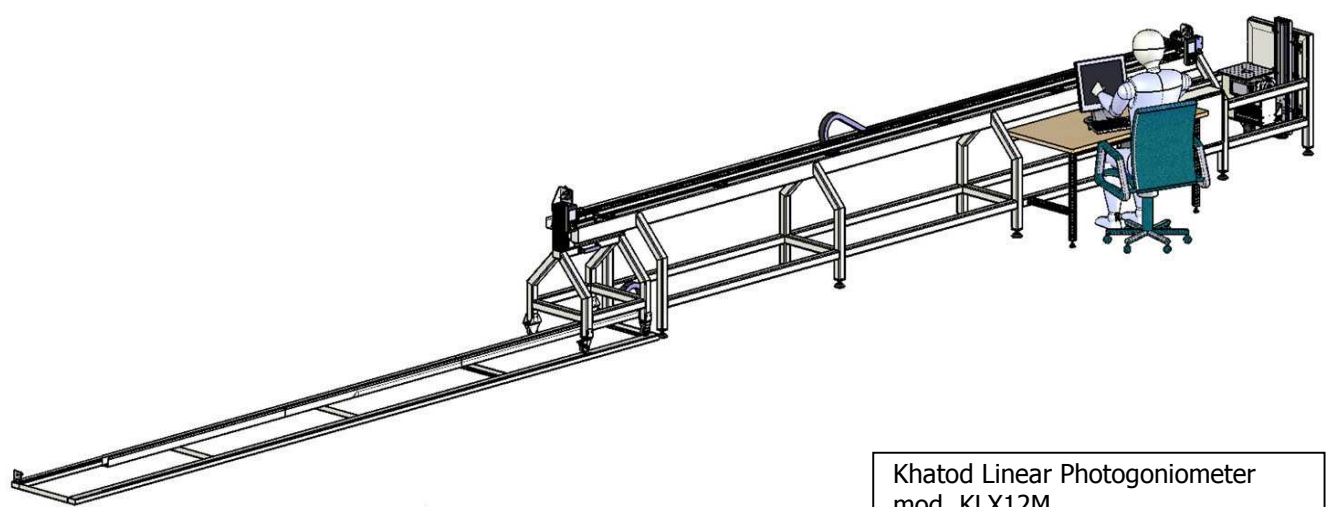
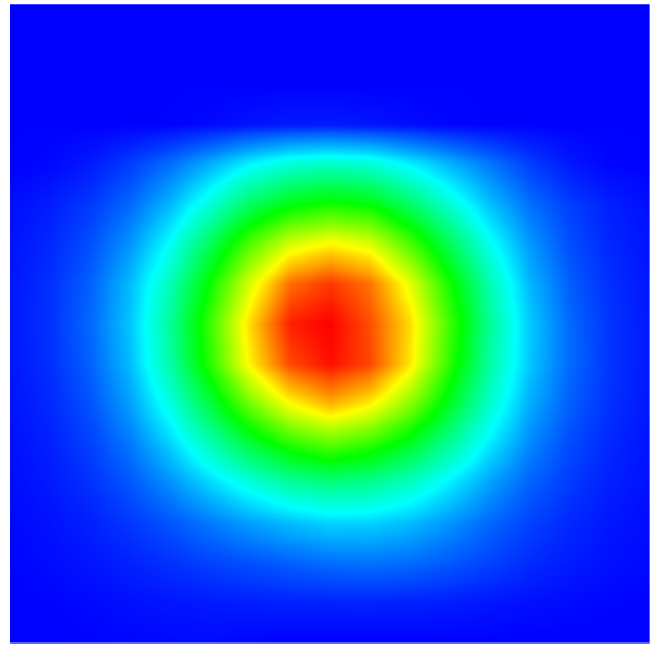




Gray Scale Illuminance @ 5m Distance



False Colours Illuminance @ 5m Distance



Khatod Linear Photogoniometer
mod. KLX12M

Luminous Distribution Intensity Data

CODE NUMBER: 11000000006

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°	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
5°	171	171	170	170	170	171	172	173	174	176	174	173	173	173	173	174	176	178	180	179
10°	151	148	147	148	145	145	146	144	144	145	143	144	145	144	145	146	146	148	151	151
15°	114	112	112	109	109	108	107	107	104	105	103	105	106	109	109	109	110	110	114	114
20°	77.5	76.1	75.6	75	73.2	71.7	70.6	69.2	67.9	67.8	67.6	69.1	71.7	71.7	72.7	74.3	74.3	75.2	77.5	78.1
25°	48.8	47.4	47.3	46.8	45.5	43.7	33.2	19.7	9.49	6	10.5	20.9	33.7	42.5	43.7	45.2	46.9	48.3	48.3	48.7
30°	29.3	28	27.9	27.5	24.7	13.1	0.8	0.96	0.43	0	0.54	1.5	1.81	12.6	23.4	25.6	27.8	28.8	29	29
35°	16.8	15.9	15.8	12.5	6.95	0	0	0	0	0	0	0	0	0.08	6.88	12.1	15.6	16.4	16.5	16.3
40°	9.25	8.87	8.78	1.93	0	0	0	0	0	0	0	0	0	0	0	3.13	8.32	8.84	9	8.91
45°	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	0	0.28	0	0	0	0
50°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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°
184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
178	178	178	178	179	180	182	183	182	180	179	177	176	174	173	172
152	155	153	152	154	153	155	159	156	155	156	154	155	157	153	151
117	116	116	116	115	117	117	121	119	119	119	120	120	119	118	115
79.2	79.8	79.8	80	80.1	79.5	79.9	82	82.1	83.6	85.6	85.6	85.5	84.8	81.2	78.3
49.8	50.4	51	51.3	50.5	49.6	49.2	51.3	53.2	55.8	56.8	56.7	56.5	55	52.8	50.8
29.5	29.7	30.9	30.7	29.7	28.9	28.1	30.3	33.7	36.3	36.7	35.7	34.7	33.6	32.8	31.4
16.6	16.9	18	18	16.9	14.4	11.8	10.8	13.1	18.1	22.8	22.3	21.2	19.9	19.5	18.3
9.12	9.45	10	10.3	8.31	5.86	1.72	0	1.31	4.8	8.7	13	12.6	12	11.1	10.2
0	5.1	5.53	4.64	3.77	0	0	0	0	0	1.42	5.3	7.39	6.85	0	0
0	0	2.42	1.73	0	0	0	0	0	0	0	1.23	3.67	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	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	PC	--	--
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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