

# Laboratory Service Photogoniometer



Test report carried out in Dark Room



The test report supplied by Luz Negra and carried out by the Photogoniometer will offer us a lot of detailed information regarding luminous aspects of the lighting system or led product, highlighting the following:

- Lumens.
- Lighting efficiency.
- ISOLUX diagram.
- Luminance distribution diagram.
- Diagram indicating flow in zones.
- Luminance curves.
- UGR table.
- Isocandela diagram.
- Lighting cone lux.
- Illuminance curves.
- Distribution data.
- Plugins EULUMDAT (.LDT).
- Plugins IESNA (.ies).
- Plugins Cibse (.cib).
- Plugins CIE (.cie).
- Others .....

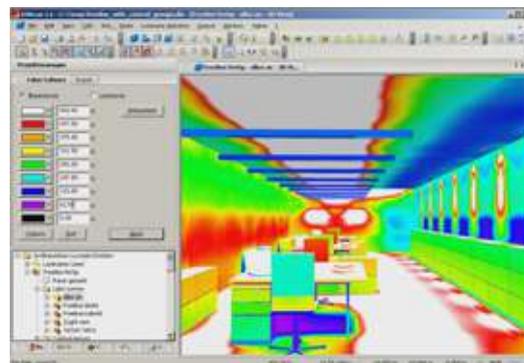
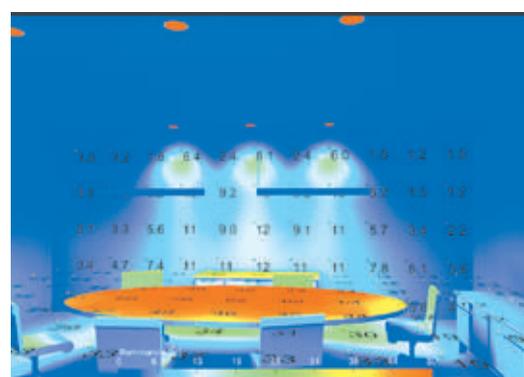


Image taken from DIALux



From all the options, the most requested is PLUGINS in “ies” or “LDT” format for use in professional luminance calculation programmes y rendering 3D like **DIALux** and **RELUX**.

With the plugins supplied, we can, in these programmes calculate the luminance curve which the product offers us and therefore check that the lighting system complies with the needs of the project in question.

Both **DIALux** and **RELUX**, in their normal versions, are free programmes and apart from letting us check whether the luminosity and its distribution are correct, according to the client’s needs, they permit us to design and calculate a room or area, quickly and easily and to add people and objects (such as tables, beds, chairs, etc) and hence achieving a much more realistic 3D image.



Image taken from DIALux

Cost and precision are directly related in the metering carried out by the photogoniometer. Fast metering can be carried out in just 30 minutes, normal metering requires 3-4 hours and metering with maximum precision can take up to 6-8 hours.

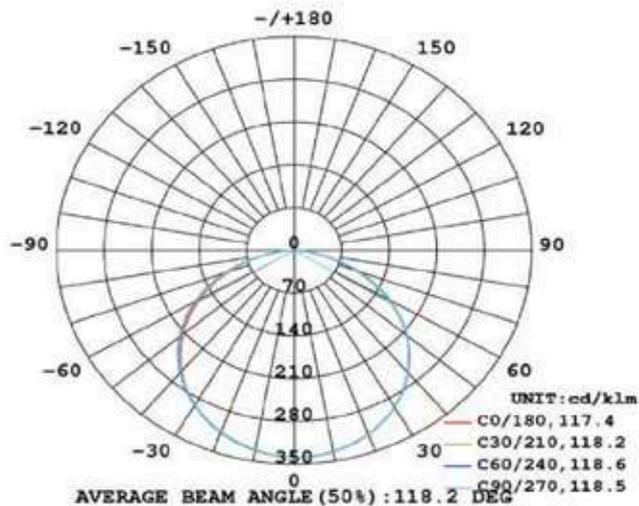
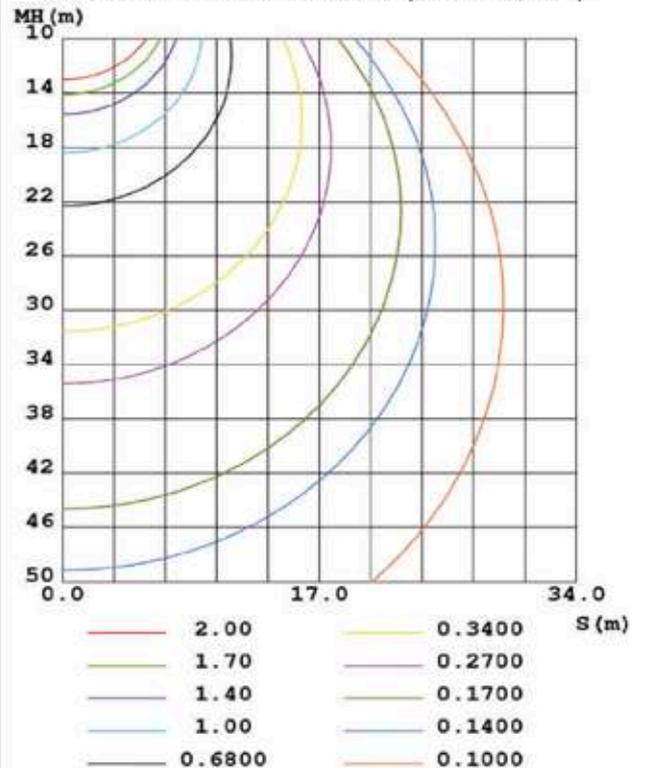
Check with our technical department for prices and discounts.

(For our regular clients and for made-to-measure projects we offer free metering or with considerable discount).

**LUMINAIRE PHOTOMETRIC TEST REPORT**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	560173	Imax (cd/klm)	338.6	S/MH (C0/180)	1.29
NOMINAL POWER (W)	17.17	LOR (%)	102.6	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	25.308	TOTAL FLUX (lm/klm)	1025.9	$\eta$ UP, DN (C0-180)	0.1, 51.3
NOMINAL FLUX (lm)	2475	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.1, 51.1
LAMPS INSIDE	1	$\eta$ up (%)	0.2	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	220.0	$\eta$ down (%)	102.4	CIBSE SHR MAX	1.50

**LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**

**C0 PLANE ISOLUX DIAGRAM (UNIT: lx/klm)**


**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
**Test Speed: MEDIUM**  
**Temperature: 25.3DEG**  
**Operators: Sergio Carneros**  
**Test Date: 02 May 2017**

**$\gamma$  Range: 0 - 110DEG**  
 **$\gamma$  Interval: 0.5DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity: 65.0%**  
**Test Distance: 8.200m [K=1.0000]**  
**Remarks:**

**ZONAL FLUX DIAGRAM**
**ZONAL FLUX DIAGRAM:**

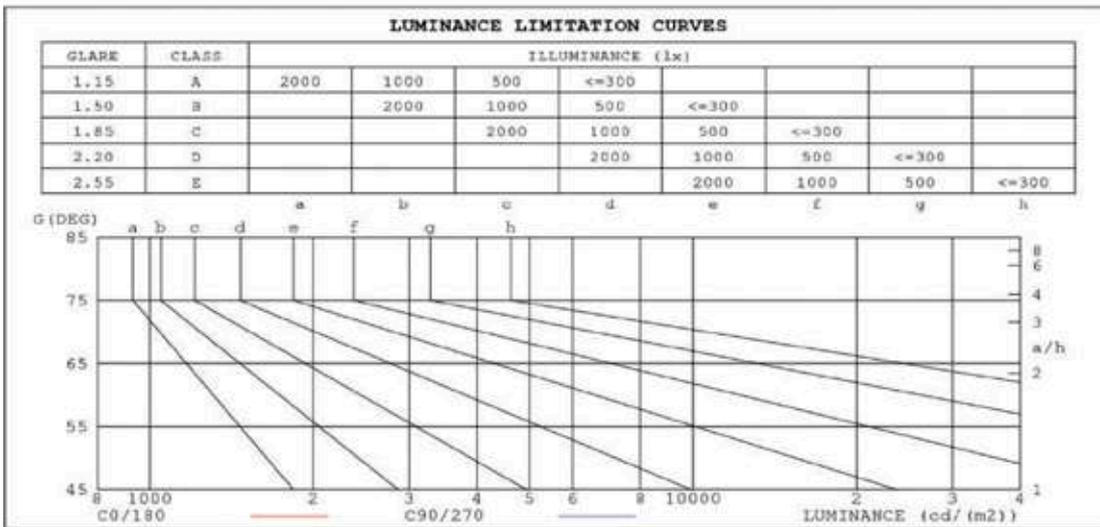
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	334.1	334.9	334.8	334.2	332.3	331.6	331.4	332.3	0- 10	32.05	32.05	3.12, 3.2
20	320.0	320.6	320.5	320.4	316.9	316.5	315.8	316.6	10- 20	92.37	124.4	12.1, 12.4
30	296.0	296.0	296.0	296.6	292.2	292.5	291.6	291.6	20- 30	141.8	266.2	25.9, 26.6
40	261.8	261.4	261.6	262.9	258.0	260.1	259.2	257.2	30- 40	174.2	440.4	42.9, 44
50	217.3	216.9	217.2	219.5	214.6	218.8	218.0	213.6	40- 50	185.1	625.5	61, 62.5
60	160.8	162.9	163.6	166.8	162.5	167.4	166.3	160.4	50- 60	171.2	796.7	77.7, 79.7
70	98.66	100.9	102.3	106.2	103.0	107.1	105.5	98.64	60- 70	132.7	929.4	90.6, 92.9
80	37.61	37.48	38.83	43.46	41.34	44.12	42.65	38.81	70- 80	74.98	1004	97.9, 100
90	1.693	1.903	0.7814	2.807	2.355	2.873	1.014	1.651	80- 90	19.13	1024	99.8, 102
100	1.004	1.094	0.9235	0.9990	1.172	1.020	0.8838	0.9243	90-100	1.214	1025	99.9, 102
110	1.257	1.304	1.329	1.274	1.235	1.265	1.295	1.281	100-110	1.189	1026	100, 103
120	0	0	0	0	0	0	0	0	110-120	0.6332	1026	100, 103
130	0	0	0	0	0	0	0	0	120-130	0	1026	100, 103
140	0	0	0	0	0	0	0	0	130-140	0	1026	100, 103
150	0	0	0	0	0	0	0	0	140-150	0	1026	100, 103
160	0	0	0	0	0	0	0	0	150-160	0	1026	100, 103
170	0	0	0	0	0	0	0	0	160-170	0	1026	100, 103
180	0	0	0	0	0	0	0	0	170-180	0	1026	100, 103
DEG	LUMINOUS INTENSITY:cd/klm									UNIT:lm/klm		

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**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity:65.0%**  
**Test Distance:8.200m [K=1.0000]**  
**Remarks:**

**LUMINANCE LIMITATION CURVES**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232



LUMINANCE cd/ (m2)		
G (DEG)	C0/180	C90/270
85	202	204
80	268	278
75	315	336
70	357	371
65	383	393
60	398	406
55	411	414
50	418	419
45	422	422

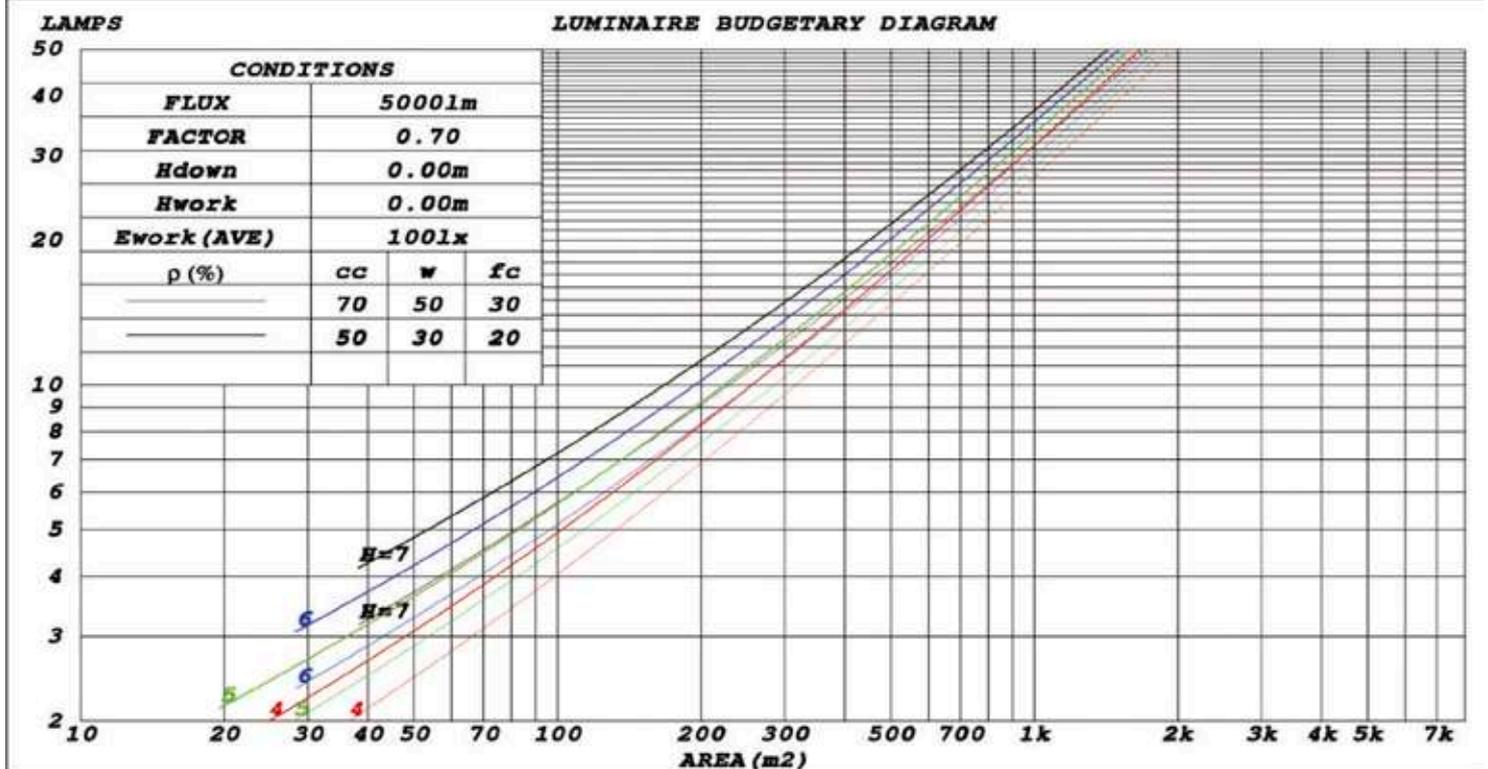
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**Test Distance: 8.200m [K=1.0000]**  
**Remarks:**

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc																
RCR	RCR: Room Cavity Ratio						Coefficients of Utilization (CU)									
0.0	1.22	1.22	1.22	1.19	1.19	1.19	1.14	1.14	1.14	1.09	1.09	1.09	1.04	1.04	1.04	1.02
1.0	1.06	1.02	.98	1.04	.00	.96	.00	.96	.93	.95	.93	.90	.92	.89	.87	.85
2.0	.92	.85	.79	.90	.84	.78	.87	.81	.76	.83	.79	.74	.80	.76	.73	.71
3.0	.81	.72	.65	.79	.71	.65	.76	.69	.64	.73	.67	.62	.70	.66	.61	.59
4.0	.71	.62	.55	.70	.61	.55	.67	.60	.54	.65	.58	.53	.63	.57	.52	.50
5.0	.64	.54	.47	.62	.54	.47	.60	.52	.46	.58	.51	.46	.56	.50	.45	.43
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.40	.52	.45	.40	.51	.45	.40	.38
7.0	.52	.43	.36	.51	.42	.36	.49	.41	.36	.48	.41	.35	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.44	.37	.32	.42	.36	.31	.29
9.0	.43	.35	.29	.43	.34	.29	.41	.34	.29	.40	.33	.28	.39	.33	.28	.26
10.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



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γ Range: 0 - 110DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity: 65.0%  
 Test Distance: 8.200m [K=1.0000]  
 Remarks:

**WEC AND CCEC**

NAME: Tira rigida	TYPE:led	WEIGHT:15
SPEC.:435	DIM.: 560x20x6mm	SERIAL No.:3234
MFR.: Luz Negra	SUR.:22	Shielding Angle:232

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
<b>RCR</b>	<b>RCR:Room Cavity Ratio</b>						<b>Wall Exitance Coefficients (WEC)</b>									
0.0																
1.0	.322	.183	.058	.315	.180	.057	.301	.173	.055	.288	.166	.053	.277	.160	.052	
2.0	.303	.166	.051	.297	.164	.050	.285	.158	.049	.274	.153	.048	.263	.149	.047	
3.0	.281	.149	.045	.275	.147	.044	.264	.143	.044	.254	.139	.043	.245	.136	.042	
4.0	.259	.135	.040	.254	.133	.039	.244	.130	.039	.235	.126	.038	.227	.123	.038	
5.0	.239	.122	.035	.235	.120	.035	.226	.118	.035	.218	.115	.034	.211	.113	.034	
6.0	.222	.111	.032	.218	.110	.032	.210	.108	.031	.203	.105	.031	.196	.103	.031	
7.0	.206	.102	.029	.203	.101	.029	.196	.099	.029	.189	.097	.028	.183	.095	.028	
8.0	.192	.094	.026	.189	.093	.026	.183	.091	.026	.177	.090	.026	.172	.088	.026	
9.0	.180	.087	.024	.177	.086	.024	.172	.085	.024	.167	.084	.024	.162	.082	.024	
10.0	.169	.081	.023	.167	.081	.022	.162	.079	.022	.157	.078	.022	.153	.077	.022	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
<b>RCR</b>	<b>RCR:Room Cavity Ratio</b>						<b>Ceiling Cavity Exitance Coefficients (CCEC)</b>									
0.0	.197	.197	.197	.169	.169	.169	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.187	.162	.139	.160	.139	.120	.110	.096	.083	.063	.055	.048	.020	.018	.016	
2.0	.179	.137	.102	.153	.118	.088	.105	.082	.061	.061	.048	.036	.019	.015	.012	
3.0	.171	.119	.078	.147	.103	.067	.101	.071	.047	.058	.042	.028	.019	.014	.009	
4.0	.164	.106	.061	.140	.091	.053	.097	.064	.037	.056	.037	.022	.018	.012	.007	
5.0	.156	.095	.050	.134	.082	.043	.092	.057	.031	.053	.034	.018	.017	.011	.006	
6.0	.149	.086	.042	.128	.075	.036	.088	.052	.026	.051	.031	.015	.017	.010	.005	
7.0	.142	.079	.036	.122	.069	.031	.084	.048	.022	.049	.028	.013	.016	.009	.004	
8.0	.135	.073	.031	.116	.064	.027	.080	.045	.019	.047	.026	.011	.015	.009	.004	
9.0	.129	.068	.028	.111	.059	.024	.077	.042	.017	.045	.025	.010	.014	.008	.003	
10.0	.123	.064	.025	.106	.056	.022	.073	.039	.015	.043	.023	.009	.014	.008	.003	

**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
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**Operators:Sergio Carneros**  
**Test Date:02 May 2017**

**$\gamma$  Range: 0 - 110DEG**  
 **$\gamma$  Interval: 0.5DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity:65.0%**  
**Test Distance:8.200m [K=1.0000]**  
**Remarks:**

UGR(Unified Glare Rating) Table

NAME: Tira rigida		TYPE:led					WEIGHT:15				
SPEC.:435		DIM.: 560x20x6mm					SERIAL No.:3234				
MFR.: Luz Negra		SUR.:22					Shielding Angle:232				
ceiling/cavity		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
x = 2H	y = 2H	6.7	8.2	6.9	8.4	8.6	6.7	8.3	7.0	8.5	8.7
	3H	8.2	9.6	8.5	9.8	10.1	8.3	9.7	8.6	10.0	10.2
	4H	8.7	10.1	9.0	10.3	10.6	8.9	10.2	9.2	10.5	10.7
	6H	9.1	10.3	9.4	10.6	10.9	9.2	10.5	9.6	10.8	11.1
	8H	9.2	10.4	9.5	10.7	11.0	9.3	10.6	9.7	10.8	11.1
	12H	9.2	10.4	9.6	10.7	11.0	9.4	10.6	9.7	10.9	11.2
4H	2H	7.3	8.6	7.6	8.9	9.2	7.4	8.7	7.7	9.0	9.2
	3H	9.0	10.1	9.3	10.4	10.8	9.1	10.3	9.4	10.6	10.9
	4H	9.6	10.7	10.0	11.0	11.4	9.7	10.8	10.1	11.2	11.5
	6H	10.1	11.0	10.5	11.4	11.8	10.2	11.2	10.6	11.5	11.9
	8H	10.2	11.1	10.6	11.5	11.9	10.4	11.2	10.8	11.6	12.0
	12H	10.3	11.1	10.7	11.5	11.9	10.4	11.2	10.9	11.6	12.0
8H	4H	9.9	10.8	10.3	11.1	11.5	10.0	10.9	10.4	11.2	11.6
	6H	10.4	11.2	10.9	11.6	12.0	10.6	11.3	11.0	11.7	12.1
	8H	10.7	11.3	11.1	11.7	12.2	10.8	11.4	11.2	11.9	12.3
	12H	10.8	11.4	11.3	11.8	12.3	10.9	11.5	11.4	11.9	12.4
12H	4H	9.9	10.7	10.3	11.1	11.5	10.0	10.8	10.4	11.2	11.6
	6H	10.5	11.1	11.0	11.6	12.0	10.6	11.3	11.1	11.7	12.1
	8H	10.7	11.3	11.2	11.7	12.2	10.8	11.4	11.3	11.8	12.3
Variations with the observer position at spacings:											
S = 1.0H		+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 2475 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 3.1)

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 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity:65.0%  
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 Remarks:

**UTILIZATION FACTORS TABLE**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
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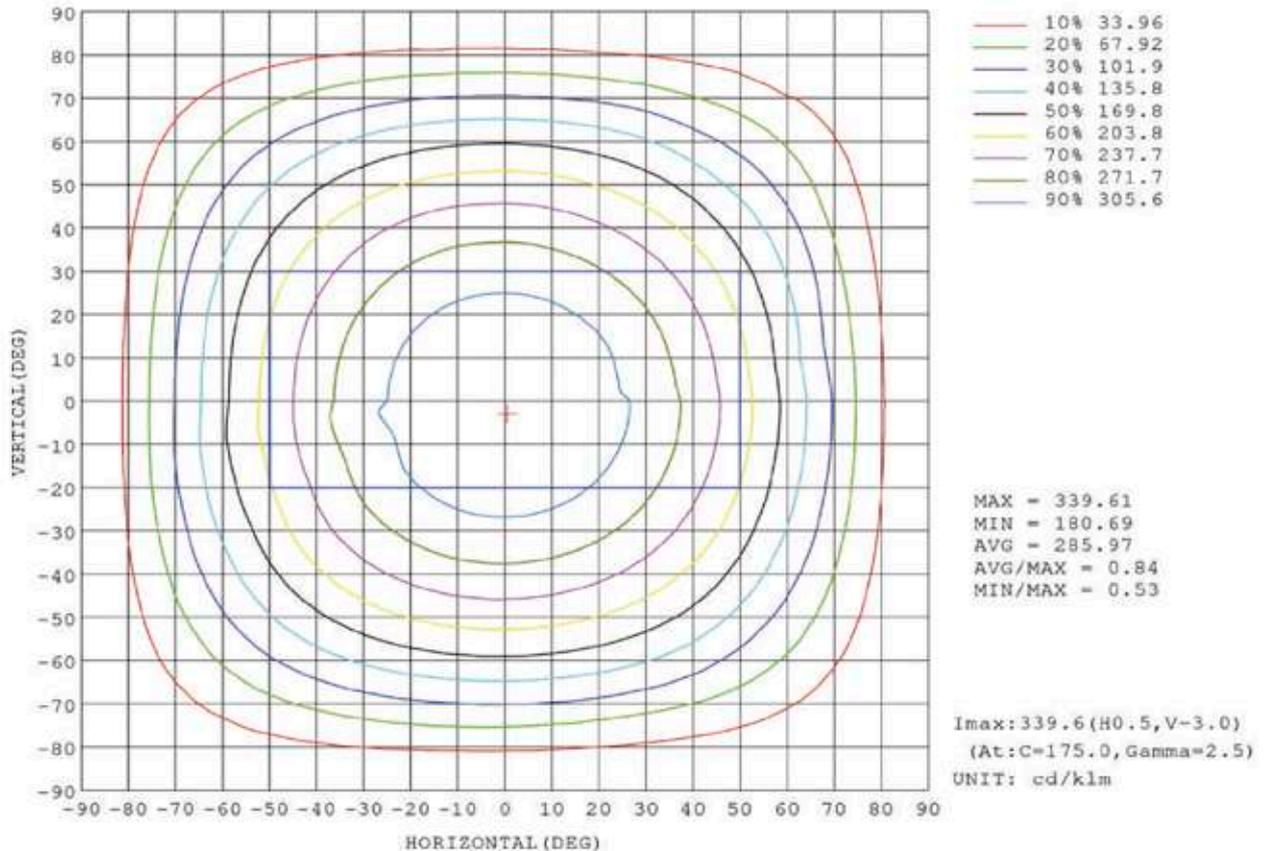
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	58	46	39	57	46	39	56	45	38	32
0.80	68	56	48	67	56	48	65	55	48	41
1.00	77	65	58	76	65	57	73	66	57	49
1.25	84	73	66	83	73	66	80	71	65	57
1.50	90	79	72	88	78	71	85	76	70	62
2.00	97	88	81	95	87	80	91	84	79	71
2.50	101	93	86	99	91	86	95	89	84	75
3.00	104	97	91	102	96	90	98	93	88	79
4.00	109	103	98	106	101	96	102	97	94	84
5.00	111	106	102	109	104	100	104	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

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**ISOCANDELA DIAGRAM**

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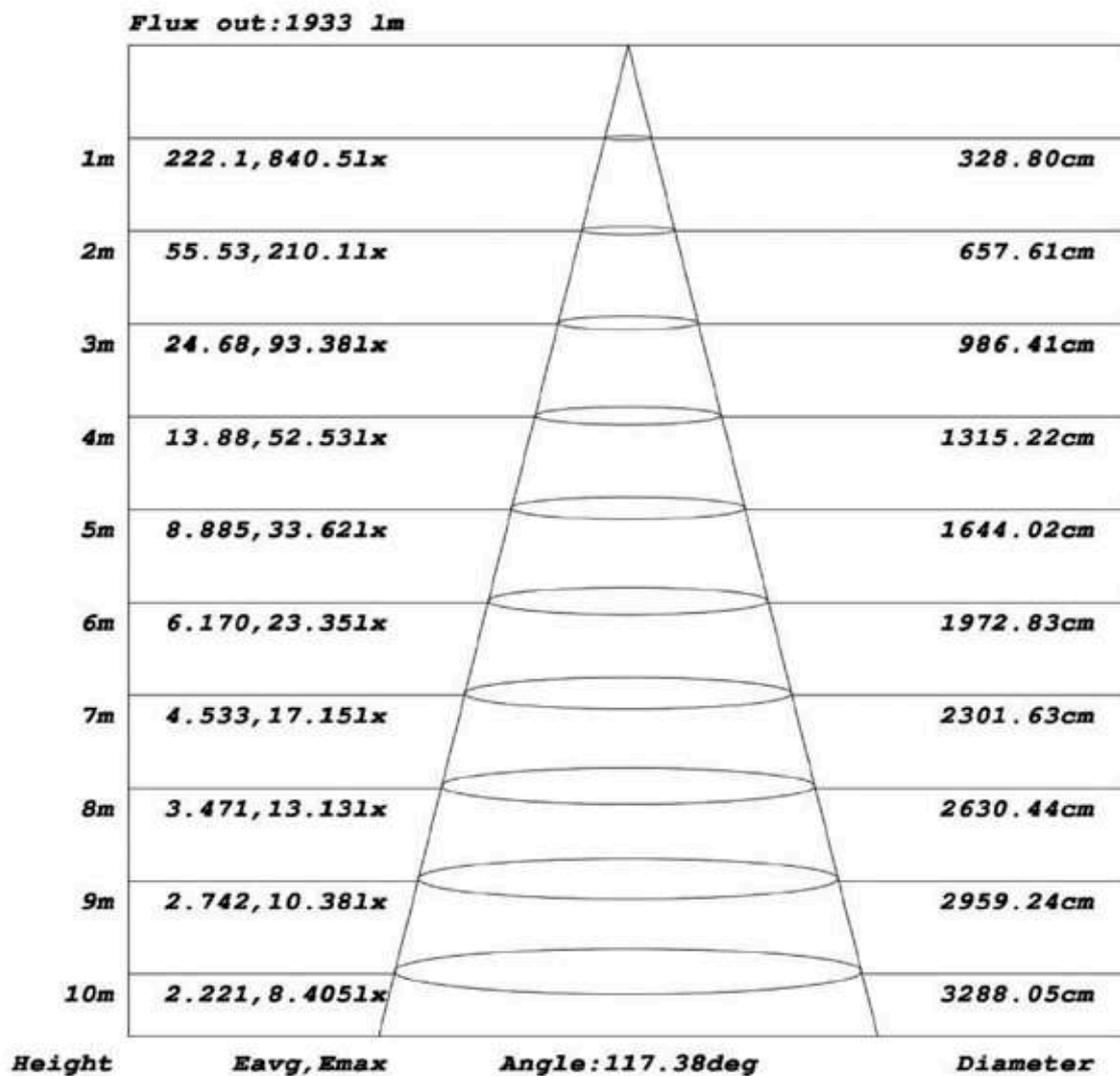


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**AAI Figure**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
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MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232



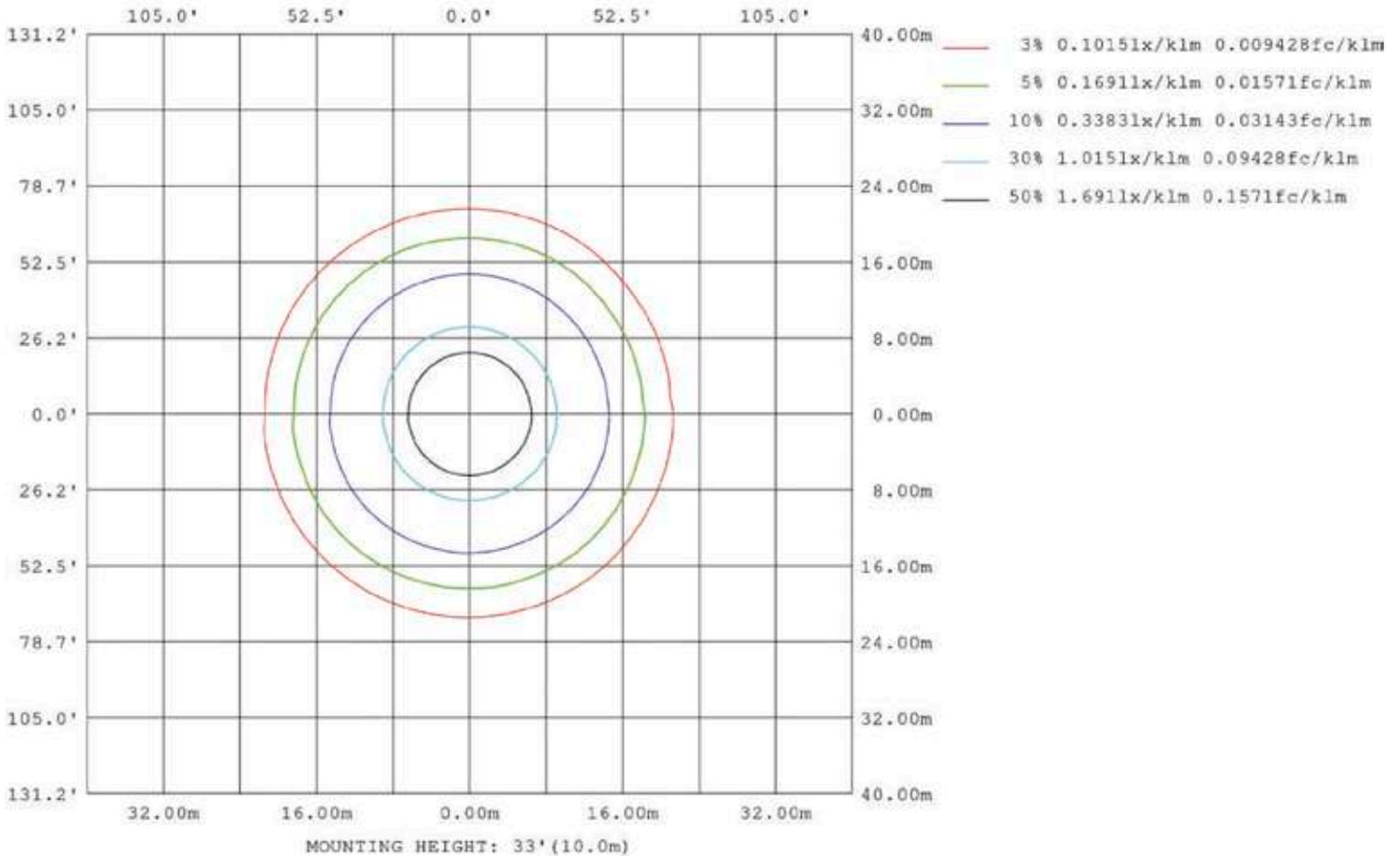
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3DEG  
 Operators: Sergio Carneros  
 Test Date: 02 May 2017

γ Range: 0 - 110DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity: 65.0%  
 Test Distance: 8.200m [K=1.0000]  
 Remarks:

**ISOLUX DIAGRAM**

NAME: Tira rigida	TYPE: led	WEIGHT:15
SPEC.:435	DIM.: 560x20x6mm	SERIAL No.:3234
MFR.: Luz Negra	SUR.:22	Shielding Angle:232



**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
**Test Speed: MEDIUM**  
**Temperature:25.3DEG**  
**Operators:Sergio Carneros**  
**Test Date:02 May 2017**

**γ Range: 0 - 110DEG**  
**γ Interval: 0.5DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity:65.0%**  
**Test Distance:8.200m [K=1.0000]**  
**Remarks:**

**LED Avg.L Report**

NAME: Tira rigida	TYPE:led	WEIGHT:15
SPEC.:435	DIM.: 560x20x6mm	SERIAL No.:3234
MFR.: Luz Negra	SUR.:22	Shielding Angle:232

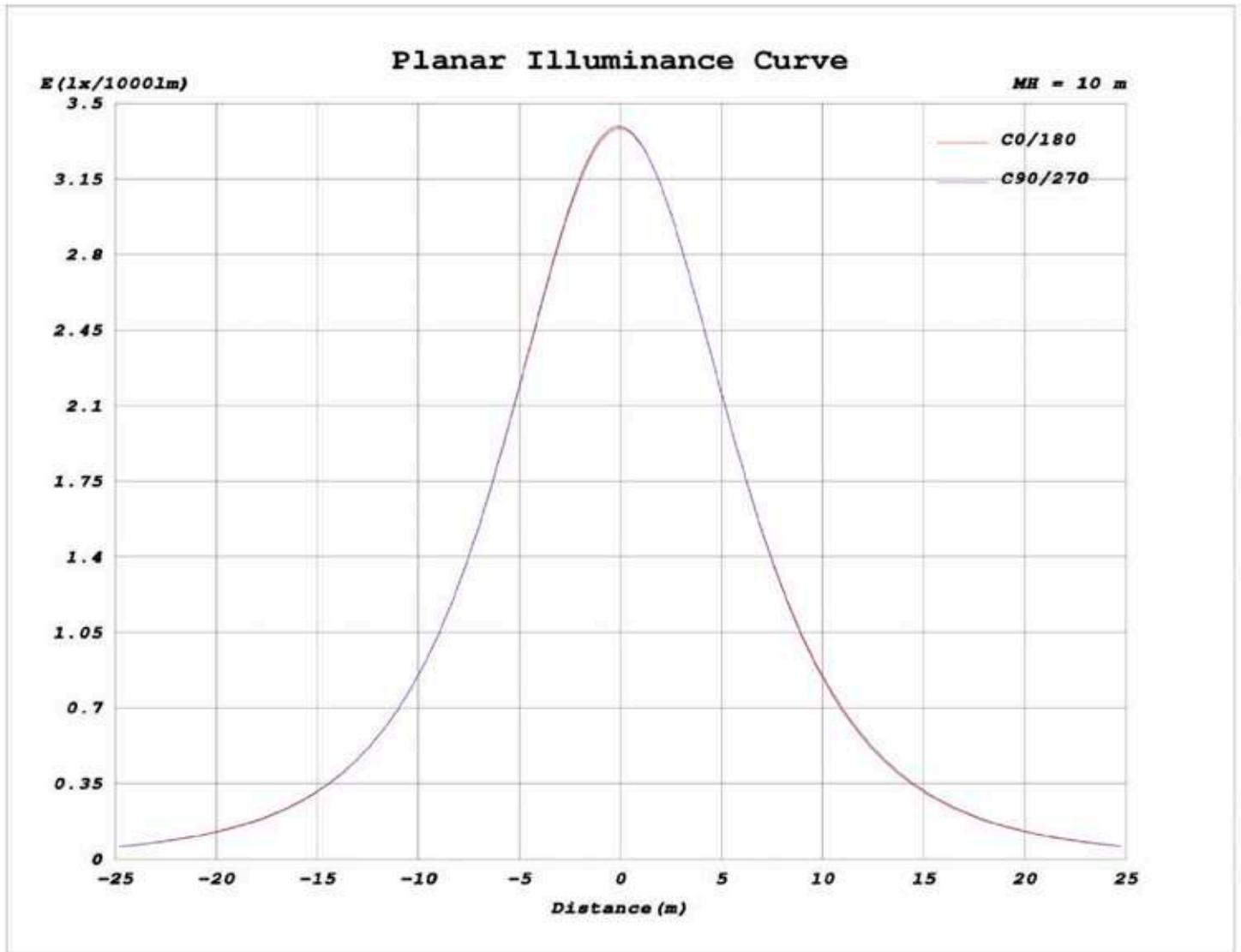
AvgL	cd/m2
L_0~180 (65) av	387
L_0~180 (75) av	329
L_0~180 (85) av	215
L_90~270 (65) av	396
L_90~270 (75) av	343
L_90~270 (85) av	220
L_45 (65) av	394
L_45 (75) av	339
L_45 (85) av	229

Standard: GB/T 29293-2012

**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
**Test Speed: MEDIUM**  
**Temperature:25.3DEG**  
**Operators:Sergio Carneros**  
**Test Date:02 May 2017**

**γ Range: 0 - 110DEG**  
**γ Interval: 0.5DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity:65.0%**  
**Test Distance:8.200m [K=1.0000]**  
**Remarks:**

**Planar Illuminance Curve**



**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
**Test Speed: MEDIUM**  
**Temperature: 25.3DEG**  
**Operators: Sergio Carneros**  
**Test Date: 02 May 2017**

**γ Range: 0 - 110DEG**  
**γ Interval: 0.5DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity: 65.0%**  
**Test Distance: 8.200m [K=1.0000]**  
**Remarks:**

**LUMINOUS DISTRIBUTION INTENSITY DATA**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

Table--1

UNIT: cd/klm

C (DEG) Y (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
5	337	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
10	334	334	334	335	335	335	335	335	335	335	335	335	335	335	335	335	335	335	335
15	328	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329
20	320	320	320	321	320	321	320	321	320	321	320	321	320	321	320	321	320	320	320
25	309	310	309	310	310	310	310	310	309	310	309	309	309	310	309	310	309	310	309
30	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296
35	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	279	280	280
40	262	262	262	262	262	262	261	262	261	261	261	261	261	261	261	261	261	262	262
45	241	241	241	241	241	241	240	241	240	240	240	240	240	240	240	240	240	241	241
50	217	218	217	217	217	217	217	217	217	217	217	217	216	217	217	217	217	217	217
55	191	191	190	191	190	191	191	191	191	191	191	191	191	191	191	191	191	192	192
60	161	161	160	161	160	161	161	162	162	163	163	163	163	163	163	163	163	164	164
65	131	131	130	131	130	130	130	131	131	133	133	133	133	133	133	133	133	134	134
70	98.7	99.3	98.7	98.8	97.8	98.2	97.7	99.0	99.4	101	101	101	101	101	101	102	102	103	102
75	65.9	66.2	65.8	66.3	66.4	67.1	66.7	67.0	66.7	66.7	65.9	66.1	65.8	66.2	66.4	68.0	67.6	69.4	70.0
80	37.6	37.8	37.3	37.6	37.1	37.7	37.4	38.0	37.5	37.5	36.9	36.8	36.6	37.1	37.1	37.8	38.4	38.9	38.8
85	14.2	14.4	14.1	14.3	14.0	14.3	14.1	14.4	14.0	14.2	14.0	14.4	14.2	14.4	13.8	14.1	13.4	14.1	14.3
90	1.69	1.78	1.74	1.83	1.80	1.88	1.85	1.91	1.86	1.90	1.84	1.88	1.83	1.86	1.76	1.78	1.45	1.00	0.78
95	0.85	0.86	0.87	0.87	0.88	0.89	0.91	0.92	0.92	0.93	0.93	0.93	0.94	0.93	0.93	0.92	0.85	0.73	0.74
100	1.00	1.01	1.03	1.03	1.04	1.05	1.04	1.02	1.03	1.09	1.13	1.12	1.13	1.11	1.04	0.94	0.93	0.92	0.92
105	1.11	1.10	1.10	1.10	1.10	1.09	1.10	1.10	1.11	1.11	1.13	1.15	1.16	1.13	1.12	1.12	1.12	1.12	1.12
110	1.26	1.26	1.26	1.27	1.28	1.28	1.29	1.29	1.30	1.30	1.31	1.31	1.32	1.32	1.32	1.32	1.32	1.33	1.33
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3DEG  
 Operators: Sergio Carneros  
 Test Date: 02 May 2017

Y Range: 0 - 110DEG  
 Y Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity: 65.0%  
 Test Distance: 8.200m [K=1.0000]  
 Remarks:

**LUMINOUS DISTRIBUTION INTENSITY DATA**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

Table--2

UNIT: cd/klm

C (DEG) γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
5	338	338	338	338	338	338	338	338	338	337	337	337	337	337	337	338	338	337	336
10	335	335	335	335	335	335	335	334	334	334	334	334	333	333	334	334	336	332	332
15	329	329	329	329	329	329	329	329	329	328	328	328	327	327	328	329	330	326	326
20	321	321	321	321	321	321	321	320	320	320	320	319	319	318	319	321	322	317	317
25	310	310	310	310	310	310	310	310	310	309	309	308	308	307	308	310	312	306	305
30	297	296	297	296	297	297	297	297	297	296	296	295	295	294	295	297	298	292	292
35	281	280	281	281	281	281	281	281	281	281	280	280	279	278	279	281	281	276	276
40	262	262	263	262	263	263	263	263	263	262	262	262	261	260	261	261	261	258	258
45	241	241	242	242	242	242	243	242	242	242	242	241	241	240	240	240	239	238	237
50	218	218	218	218	219	219	220	219	220	219	219	219	218	217	217	216	216	215	215
55	192	192	193	193	194	194	194	194	194	194	194	194	194	192	192	192	194	190	190
60	165	164	165	165	166	166	167	166	167	166	167	166	167	166	167	167	168	163	163
65	135	134	135	135	136	136	137	137	137	137	137	137	138	137	139	138	138	134	134
70	103	103	104	104	105	105	106	105	106	106	107	106	107	107	107	107	107	103	104
75	71.1	71.0	71.9	71.9	72.8	72.7	73.6	73.4	74.2	74.1	74.7	74.5	75.1	74.7	75.2	74.5	74.6	71.6	72.2
80	39.5	39.5	40.4	41.1	42.0	42.0	42.7	42.7	43.5	43.4	44.0	43.7	44.2	43.6	44.0	43.4	42.8	41.3	41.8
85	14.8	14.8	15.6	15.7	16.3	16.6	17.5	17.6	18.3	18.2	18.6	18.1	18.3	17.7	18.0	17.1	17.5	16.1	16.3
90	1.12	1.59	2.00	2.03	2.18	2.21	2.42	2.53	2.81	2.85	2.99	2.87	2.90	2.71	2.67	2.45	2.65	2.36	2.36
95	0.73	0.81	0.91	0.95	0.95	0.94	0.91	0.91	0.94	1.01	1.11	1.14	1.16	1.12	1.10	1.21	1.46	1.24	1.24
100	0.92	0.92	0.91	0.98	1.02	1.02	1.01	1.01	1.00	0.99	1.02	1.05	1.07	1.12	1.18	1.31	1.35	1.17	1.17
105	1.12	1.12	1.11	1.10	1.10	1.14	1.16	1.13	1.10	1.10	1.09	1.11	1.14	1.17	1.21	1.22	1.25	1.08	1.08
110	1.33	1.32	1.31	1.30	1.30	1.29	1.29	1.28	1.27	1.27	1.26	1.28	1.30	1.34	1.34	1.35	1.40	1.24	1.24
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3DEG  
 Operators: Sergio Carneros  
 Test Date: 02 May 2017

γ Range: 0 - 110DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity: 65.0%  
 Test Distance: 8.200m [K=1.0000]  
 Remarks:

**LUMINOUS DISTRIBUTION INTENSITY DATA**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

Table--3

UNIT: cd/klm

C (DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338
5	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336
10	332	332	332	332	332	332	332	332	332	331	331	331	331	331	331	331	331	331	332
15	326	325	325	325	325	325	325	325	325	325	325	325	325	325	324	324	325	325	325
20	317	317	317	317	317	317	317	316	316	316	316	316	316	316	316	316	316	316	316
25	306	306	306	306	306	306	306	306	306	305	305	305	305	305	305	305	305	305	305
30	292	292	292	292	292	292	293	293	293	292	293	292	292	292	292	291	292	292	292
35	276	276	277	277	277	277	277	278	277	278	277	278	277	276	276	276	276	276	276
40	258	258	259	259	260	260	260	260	261	260	261	261	261	260	259	259	259	259	259
45	238	238	239	239	240	240	240	241	241	241	241	241	241	241	240	240	240	240	239
50	216	216	217	217	218	218	219	219	219	219	220	219	220	219	218	218	218	218	218
55	191	191	193	193	194	194	194	194	195	195	195	195	195	194	194	193	194	193	193
60	164	165	166	166	167	167	168	167	168	168	168	167	168	167	167	166	166	166	166
65	135	136	137	137	138	138	138	138	139	138	139	138	138	137	137	137	137	136	137
70	105	105	106	106	107	107	108	107	108	107	107	107	107	106	106	105	106	105	105
75	73.4	73.7	74.7	74.8	75.4	75.2	75.5	75.1	75.4	75.0	75.2	74.7	74.8	74.1	74.0	73.3	73.4	72.9	72.9
80	42.8	43.1	43.8	43.8	44.4	44.1	44.5	44.1	44.4	44.0	44.3	43.8	43.9	41.8	43.3	42.6	42.7	42.1	42.3
85	17.1	17.3	17.9	17.9	18.3	18.3	18.5	18.4	18.6	18.3	18.4	18.0	18.0	17.5	17.4	16.7	16.6	15.9	16.3
90	2.56	2.68	2.90	2.88	2.98	3.04	2.99	2.87	2.91	2.78	2.80	2.65	2.65	2.46	2.23	1.43	1.01	1.10	1.60
95	1.27	1.33	1.38	1.35	1.30	1.25	1.21	1.17	1.12	1.07	1.01	0.96	0.85	0.72	0.70	0.70	0.70	0.72	0.73
100	1.17	1.20	1.30	1.28	1.23	1.18	1.12	1.02	0.93	0.89	0.88	0.88	0.88	0.90	0.88	0.89	0.88	0.89	0.90
105	1.07	1.07	1.06	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.08	1.08	1.09	1.08	1.09	1.09	1.09
110	1.24	1.24	1.24	1.25	1.26	1.26	1.27	1.27	1.27	1.27	1.28	1.28	1.29	1.28	1.28	1.29	1.30	1.30	1.30
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3DEG  
 Operators: Sergio Carneros  
 Test Date: 02 May 2017

γ Range: 0 - 110DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400  
 Humidity: 65.0%  
 Test Distance: 8.200m [K=1.0000]  
 Remarks:

**LUMINOUS DISTRIBUTION INTENSITY DATA**

NAME: Tira rigida	TYPE: led	WEIGHT: 15
SPEC.: 435	DIM.: 560x20x6mm	SERIAL No.: 3234
MFR.: Luz Negra	SUR.: 22	Shielding Angle: 232

Table--4

UNIT: cd/klm

C (DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	338	338	338	338	338	338	338	338	338	338	338	338	338	338	338				
5	336	336	336	336	336	336	337	337	337	337	337	337	337	337	337				
10	332	332	332	332	332	332	332	333	333	333	333	333	333	333	331				
15	325	325	325	325	325	326	326	326	326	327	327	327	327	326	325				
20	316	316	316	316	316	317	317	317	317	318	318	318	318	318	316				
25	305	305	305	305	305	305	305	306	306	307	307	307	307	307	305				
30	291	291	291	292	292	292	292	292	292	293	294	294	294	293	292				
35	276	276	276	276	276	276	276	276	276	277	278	278	278	278	277				
40	258	258	258	258	257	258	257	258	258	259	259	260	260	260	260				
45	239	238	238	238	237	237	237	237	237	238	239	240	240	240	239				
50	217	216	215	215	214	214	214	214	213	215	215	216	216	217	215				
55	192	192	191	191	190	189	188	188	187	188	188	189	189	189	188				
60	165	165	164	164	163	162	160	160	158	159	159	160	159	159	157				
65	136	136	135	135	134	132	130	129	128	130	130	130	129	129	125				
70	103	105	104	104	102	100	98.6	98.8	98.2	98.4	97.8	98.3	97.7	90.5	94.3				
75	71.5	71.4	70.8	70.8	69.5	68.9	67.9	68.3	67.7	67.7	67.1	66.7	65.4	66.5	64.9				
80	40.9	40.3	40.1	40.4	39.5	39.4	38.8	39.1	37.3	35.2	36.4	36.3	36.5	35.9	36.1				
85	15.8	15.6	15.2	15.5	15.1	14.0	13.6	14.1	13.8	13.4	12.8	12.9	13.1	13.3	12.9				
90	1.71	1.79	1.76	1.77	1.69	1.70	1.65	1.70	1.59	1.60	1.52	1.53	1.47	1.44	1.39				
95	0.73	0.73	0.73	0.72	0.72	0.71	0.72	0.73	0.74	0.73	0.73	0.73	0.73	0.74	0.76				
100	0.91	0.91	0.91	0.90	0.90	0.90	0.92	0.92	0.93	0.93	0.93	0.91	0.92	0.91	0.92				
105	1.09	1.09	1.10	1.09	1.09	1.09	1.09	1.10	1.11	1.11	1.12	1.11	1.11	1.10	1.11				
110	1.30	1.29	1.29	1.29	1.29	1.28	1.28	1.28	1.28	1.29	1.30	1.31	1.31	1.31	1.31				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

**C Range: 0 - 360DEG**  
**C Interval: 5.0DEG**  
**Test Speed: MEDIUM**  
**Temperature: 25.3DEG**  
**Operators: Sergio Carneros**  
**Test Date: 02 May 2017**

**γ Range: 0 - 110DEG**  
**γ Interval: 0.5DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.400**  
**Humidity: 65.0%**  
**Test Distance: 8.200m [K=1.0000]**  
**Remarks:**