

ANEXO 23-0951-5-A RALED I 16 LED's RA10 55W

DRIVER ADVANCE XITANIUM 55W 0.1-1.8A 0-10V Dimming
MODULO LED 2X8 Z15 5050 4K SAMSUNG
SURGE PROTECTIVE DEVICE SPD-10KP320
LENTE: RA10 (4UND)



Light Output Ratio: 100.0%
Luminaire Power: 55.03 W

I80 = 49.7 cd per klm. I88 = 1.8 cd per klm.
I90 = 2.6 cd per klm. I80/I88 = 28.313

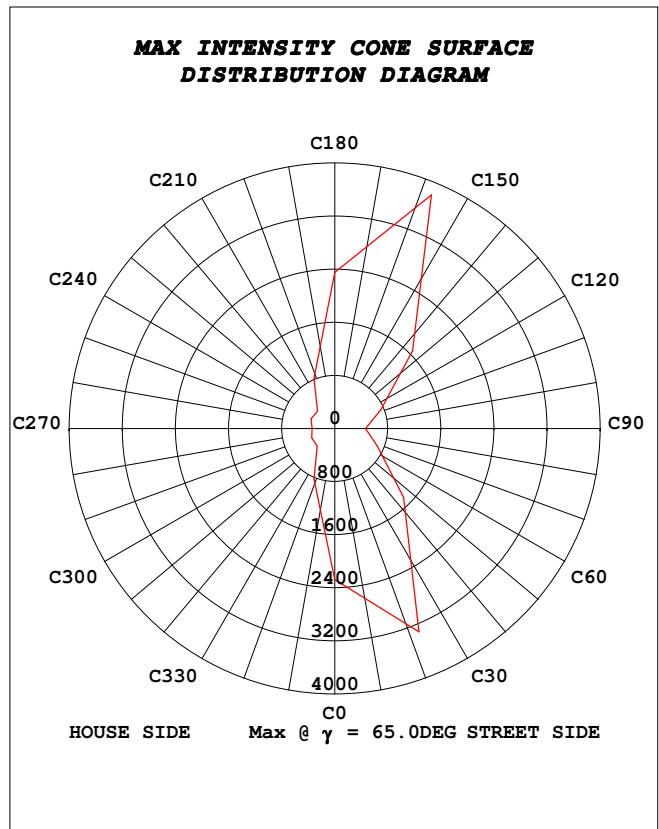
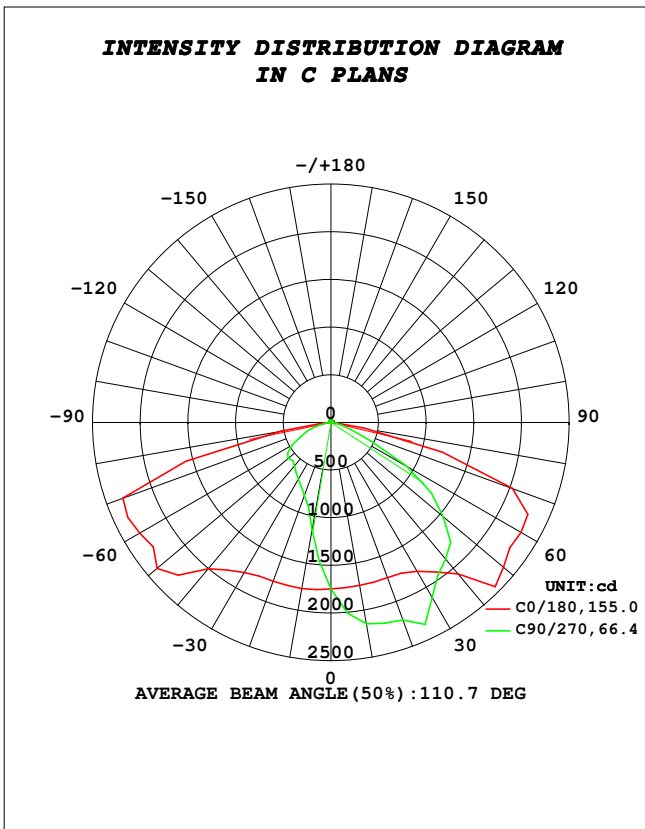
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25±1°CDEG
Operators: Fabian Loaiza
Test Date: 2023-11-06

γ Range: 0 - 180DEG
γ Interval: 5.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity: MAX: 51.1-MIN: 42.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-5-A RALED I 16 LED's 55W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 1030mA

STREETLIGHT PHOTOMETRIC TEST REPORT

Test:U:220.17V I:0.2522A P:55.029W PF:0.9911 Freq:60.01Hz Lamp Flux:7282.06x1 lm		
NAME: ANEXO 23-0951-5-A RALED I 16 LED's 55W	TYPE:Alumbrado Publico	WEIGHT:----
SPEC.:16 LED's 55W	DIM.: ----	SERIAL No.:23-0951-5
MFR.: ROY ALPHA	SUR.:-----	Shielding Angle:-----

DATA OF LAMP		PHOTOMETRIC DATA Eff: 132.33 lm/W			
MODEL	2X8 Z15 5050	Imax(cd)	3808	η street_up(%)	0.9
NOMINAL POWER(W)	55	LOR(%)	100.0	η street_down(%)	68.8
RATED VOLTAGE(V)	----	TOTAL FLUX(lm)	7282	η house_up(%)	1.1
NOMINAL FLUX(lm)	7282.06	MAXIMUM @ (C, γ)	158,65.0	η house_down(%)	29.2
LAMPS INSIDE	1	η up(%)	2.0	76 FLASHAREA(m2)	
TEST VOLTAGE(V)	220	η down(%)	98.0	SLI	

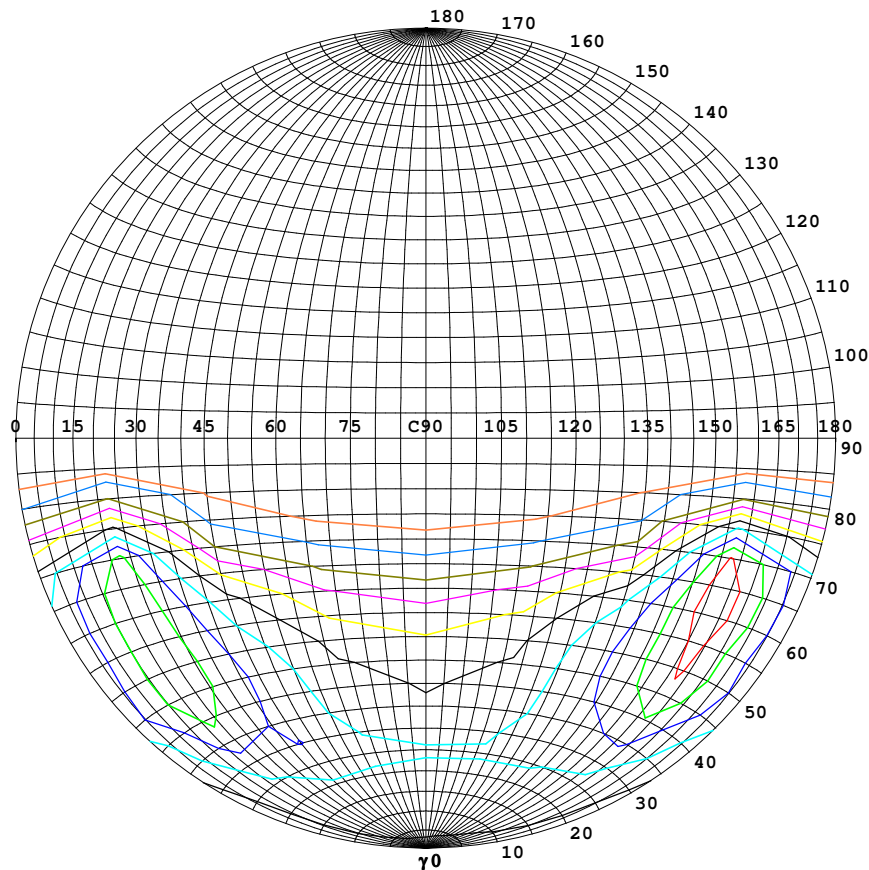


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Humidity: MAX: 51.1-MIN: 42.4%
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STREETLIGHT ISOCANDELA DIAGRAM

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Classification:

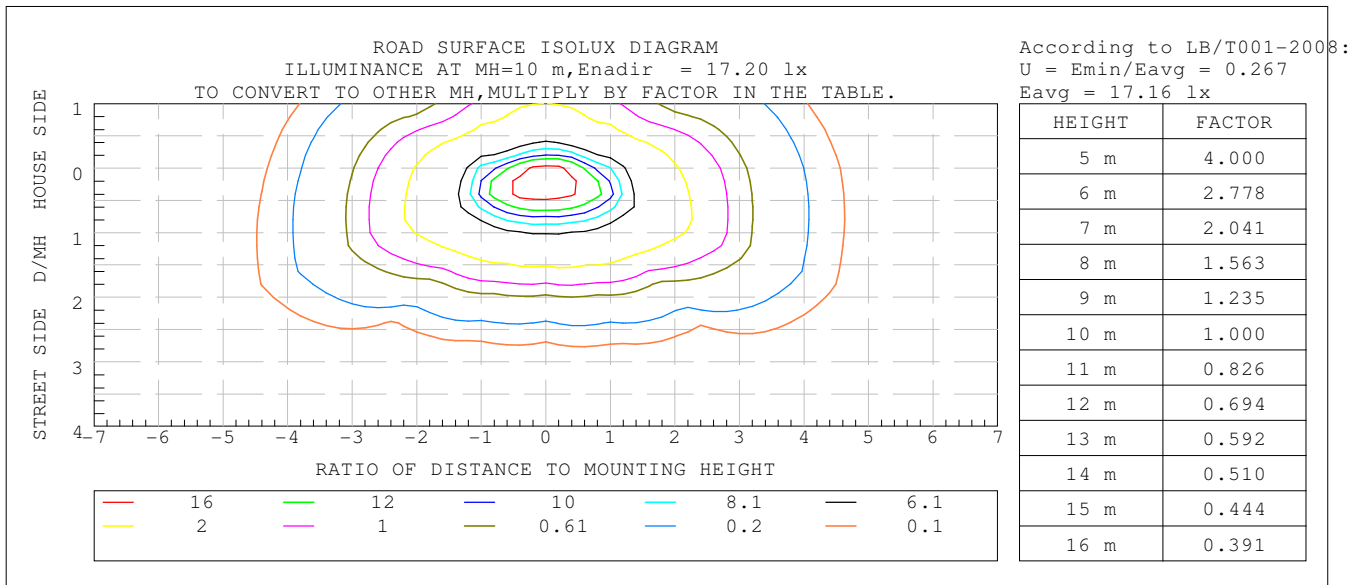
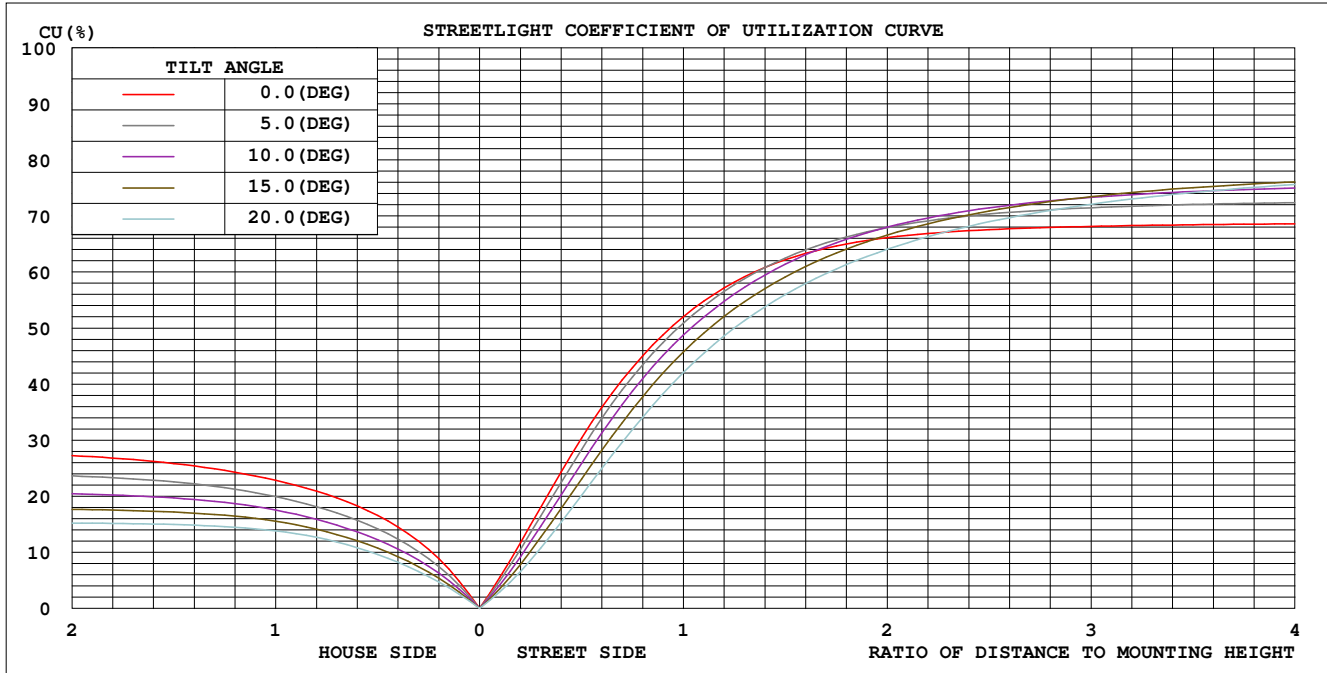
IES:Type II - Short
CIE:Average - Intermediate
IES:Semi cut-off
CIE:Non-cut-off
Max.At80:103.0cd/klm
Max.At90:2.599cd/klm
Max.80-90:103.0cd/klm
NRB 5101:Semi limited[10.3%]

ISOCANDELA DIAGRAM	
UNIT	cd
Imax=100%	3808
90%	3427
80%	3046
70%	2666
60%	2285
50%	1904
40%	1523
30%	1142
20%	762
10%	381
5%	190

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Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity:MAX:51.1-MIN:42.4%
Test Distance:7.080m [K=1.0000]
Remarks: ANEXO 23-0951-5-A RALED I 16 LED's 55W
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COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM



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ZONAL FLUX DIAGRAM

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SPEC.:16 LED's 55W	DIM.: ----	SERIAL No.:23-0951-5
MFR.: ROY ALPHA	SUR.:-----	Shielding Angle:-----

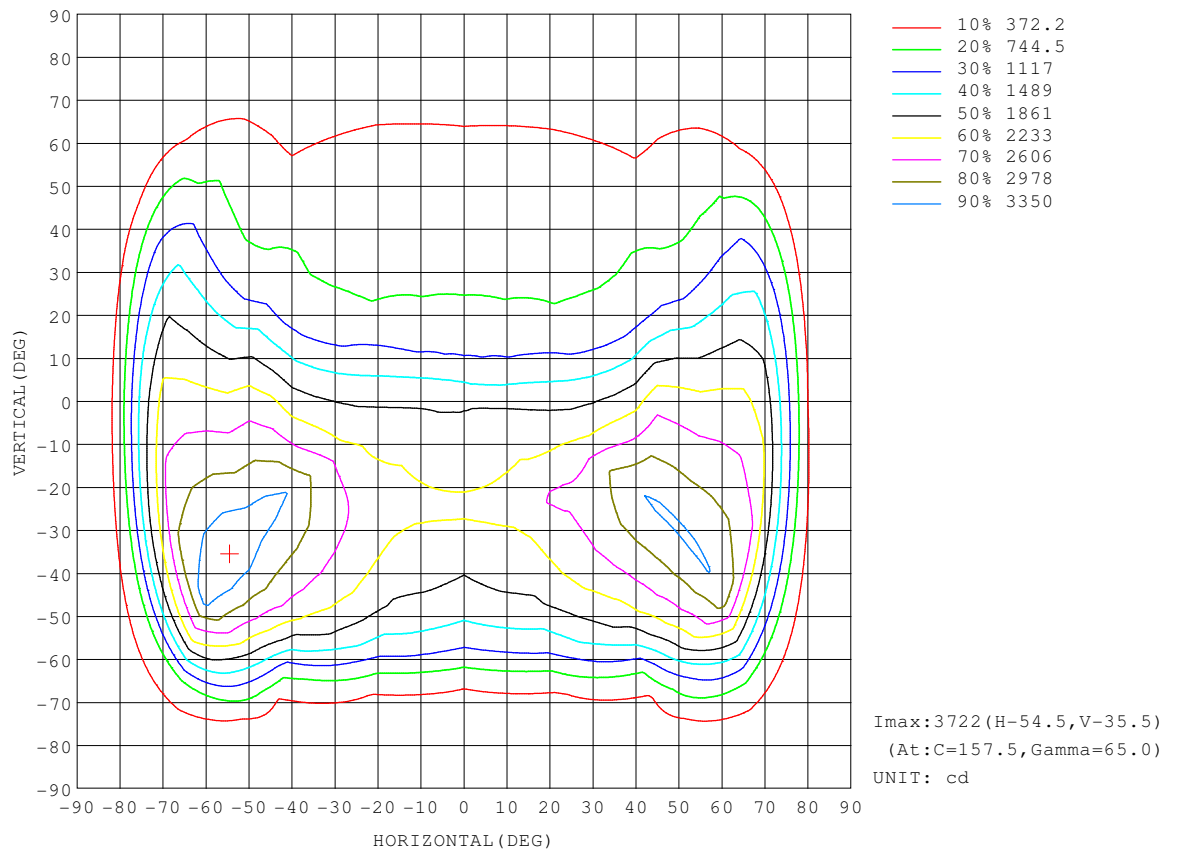
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	1738	2067	2146	2117	1769	1347	1144	1315	0- 10	165.0	165.0	2.27,2.27
20	1734	2221	2207	2259	1775	962.3	816.2	944.2	10- 20	469.2	634.2	8.71,8.71
30	1805	2641	2122	2579	1818	750.8	684.6	763.6	20- 30	754.1	1388	19.1,19.1
40	2075	2538	1872	2620	2002	626.7	596.9	640.7	30- 40	1027	2416	33.2,33.2
50	2361	2421	1541	2625	2381	556.5	587.0	579.8	40- 50	1295	3711	51,51
60	2303	1980	911.5	2247	2319	461.2	465.4	465.0	50- 60	1408	5119	70.3,70.3
70	2026	750.8	221.5	872.5	2322	292.6	262.0	292.2	60- 70	1249	6368	87.5,87.5
80	361.8	169.6	70.34	198.1	532.0	113.4	80.80	117.4	70- 80	676.9	7045	96.7,96.7
90	18.93	14.26	13.75	14.95	15.09	14.01	13.24	14.71	80- 90	93.55	7139	98,98
100	25.07	15.69	14.86	15.84	20.04	16.71	14.11	18.10	90-100	17.65	7156	98.3,98.3
110	30.51	17.94	16.54	17.64	25.99	21.87	16.85	22.95	100-110	20.88	7177	98.6,98.6
120	33.39	19.63	17.47	19.09	29.33	27.90	20.84	27.68	110-120	23.08	7200	98.9,98.9
130	31.66	19.85	17.95	19.37	30.16	30.74	24.92	30.85	120-130	22.66	7223	99.2,99.2
140	28.98	20.67	18.50	19.65	29.44	30.05	28.01	31.92	130-140	20.00	7243	99.5,99.5
150	27.56	22.04	19.84	20.87	28.85	28.88	29.84	31.71	140-150	16.36	7259	99.7,99.7
160	27.10	24.37	22.34	22.74	27.69	30.10	30.42	30.47	150-160	12.32	7272	99.9,99.9
170	27.72	26.99	25.44	25.07	27.48	28.80	29.43	29.00	160-170	7.718	7279	100,100
180	28.72	28.94	28.46	27.87	28.72	28.92	28.50	27.90	170-180	2.665	7282	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 14.4 %									UNIT:lm		

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 γ Interval: 5.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity:MAX:51.1-MIN:42.4%
Test Distance:7.080m [K=1.0000]
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Corriente de programacion:1030mA

ISOCANDELA DIAGRAM

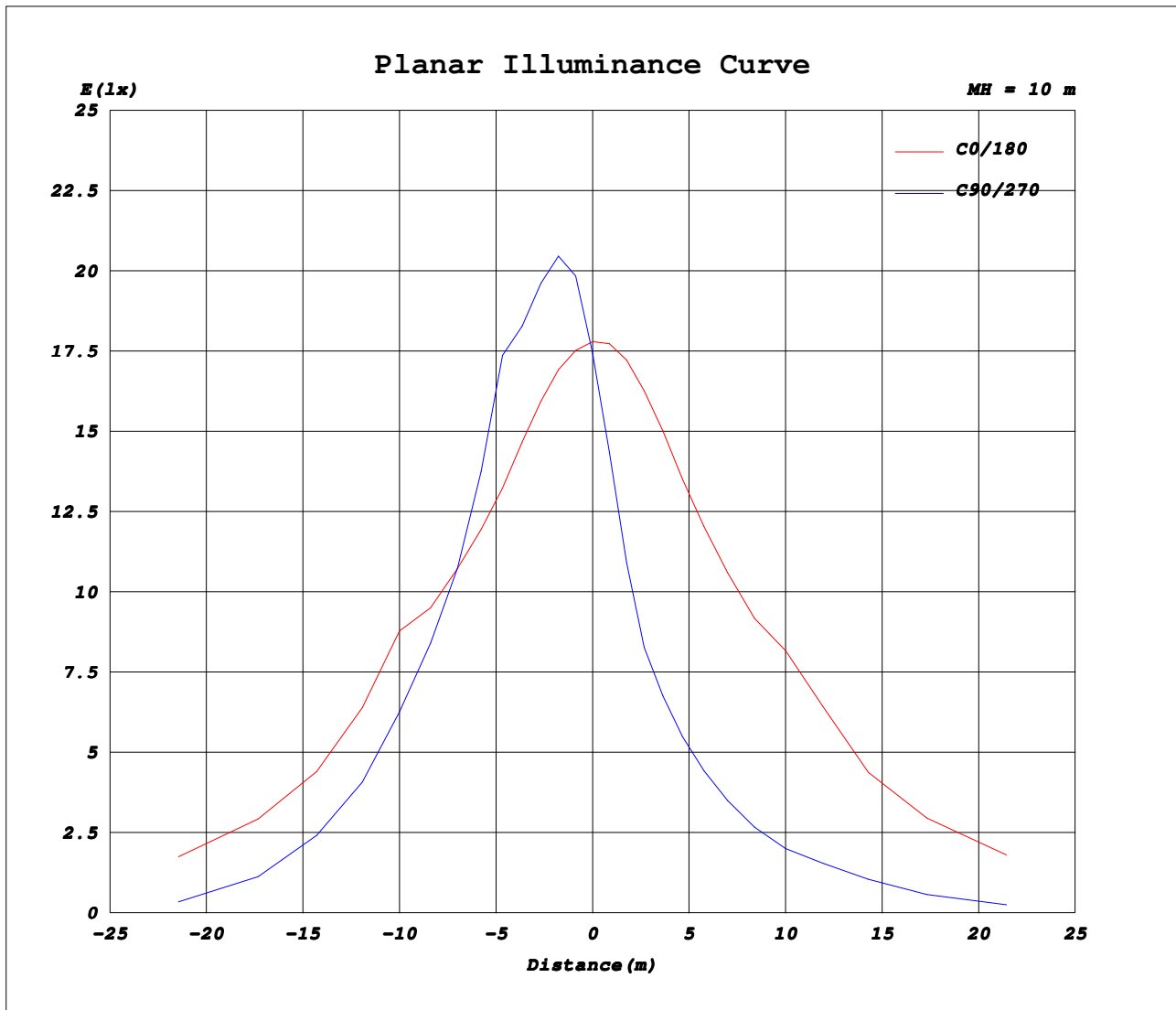
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Planar Illuminance Curve



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DRIVER ADVANCE XITANIUM 55W 0.1-1.8A 0-10V Dimming
MODULO LED 2X8 Z15 5050 4K SAMSUNG
SURGE PROTECTIVE DEVICE SPD-10KP320
LENTE: RA10 (4UND)

Test Distance: 7.080 metres
Test Temperature: 25±1°C degrees Celsius

Significance: ENSAYO FOTOMETRICO A LUMINARIAS
ROY ALPHA S.A
CALLE 15 No 32-598
Acopi Yumbo

Special Notes: EQUIPOS UTILIZADOS
Fotogoniómetro EQEN-023
Fuente de tensión INCO-011
Luxómetro INME-039
Flexómetro INME-050
Controlador de temperatura INME-046
Analizador de potencia INME-013
Datalogger INME-062-3
El presente reporte de pruebas no se debe reproducir en forma parcial,
sin la aprobación del Laboratorio de ensayos de Roy Alpha.

Realizó/revisó Realizó
Fabian Loaiza.

Revisó
Luis Asprilla.

Testing Procedure: Las pruebas fueron realizadas de acuerdo con la norma LM 79 de 2019.
Tiempo de estabilización: 0:22':20"
Tiempo de ensayo: 0:10':12"

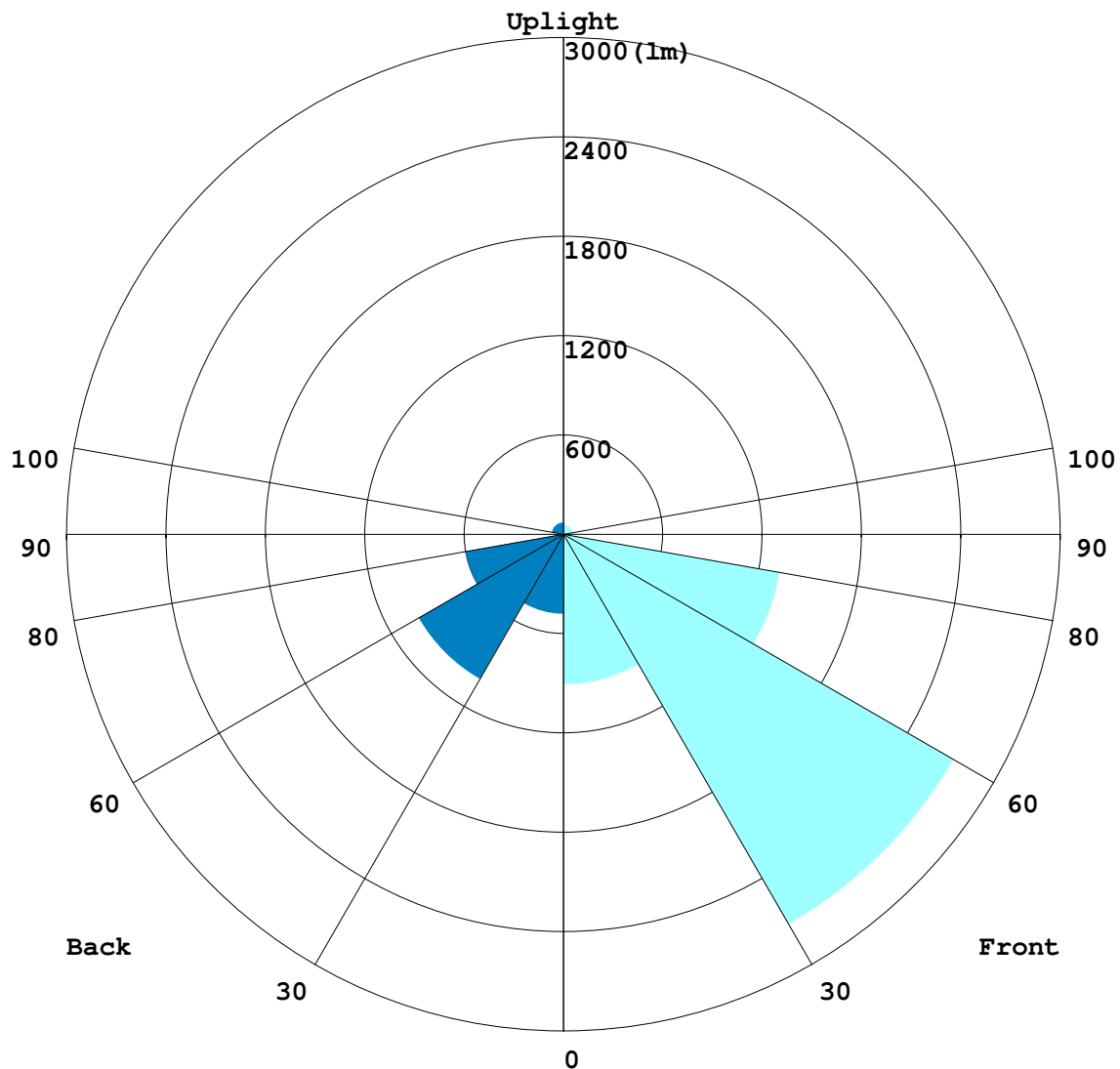
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LCS REPORT

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LUMINAIRE CLASSIFICATION SYSTEM(LCS) GRAPH



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BUG REPORT

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IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	907.68	12.5
FM - Front-Medium(30-60)	2721.2	37.4
FH - Front-High(60-80)	1326.6	18.2
FVH - Front-Very High(80-90)	57.47	0.8
Total Forward Light	5077.6	69.7

BL - Back-Low(0-30)	480.64	6.6
BM - Back-Medium(30-60)	1009.8	13.9
BH - Back-High(60-80)	599.3	8.2
BVH - Back-Very High(80-90)	36.084	0.5
Total Back Light	2204.5	30.3

UL - Uplight-Low(90-100)	17.654	0.2
UH - Uplight-High(100-180)	125.67	1.7
Total Up Light	143.32	2.0

BUG (Back, Up, Glare) Rating	B2-U3-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	2125.8	78.714	2204.5
Street Side	5013	64.606	5077.6

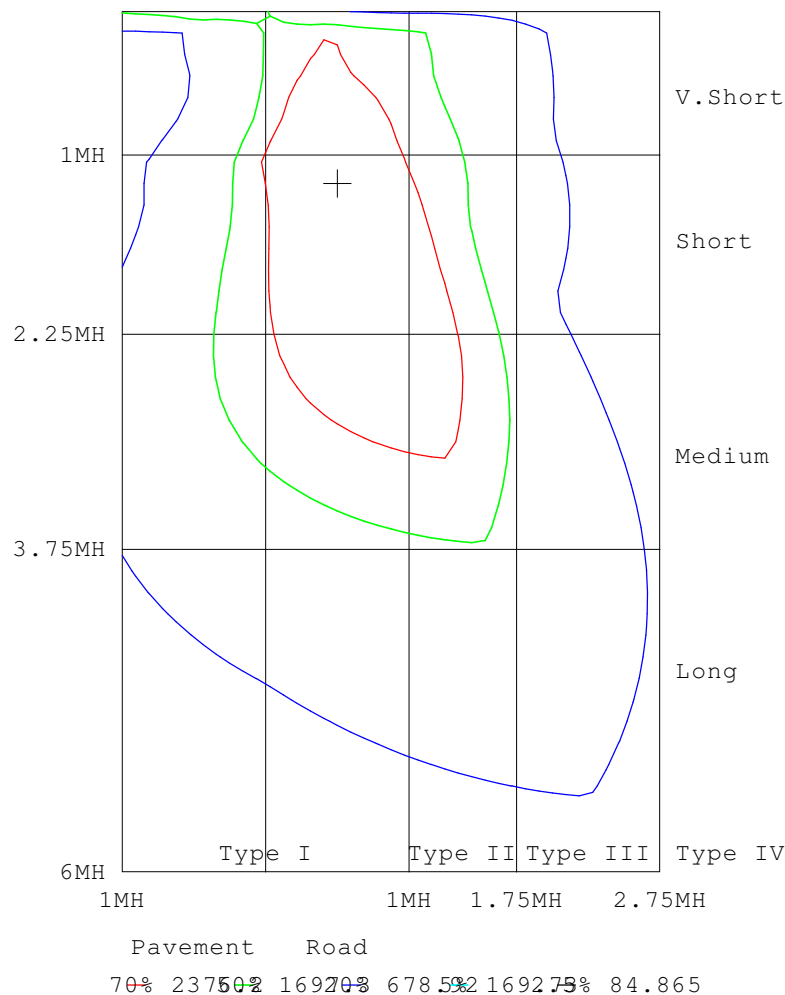
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ROAD ISOCANDELA REPORT

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ROAD SURFACE ISOCANDELA DIAGRAM



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LUMINOUS DISTRIBUTION INTENSITY DATA

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Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745			
5	1738	1843	1929	1987	2010	2003	1949	1868	1759	1648	1551	1482	1455	1471	1533	1624			
10	1738	1944	2067	2128	2146	2163	2117	1978	1769	1551	1347	1194	1144	1178	1315	1515			
15	1734	2016	2141	2182	2180	2208	2202	2074	1771	1449	1134	966	920	957	1108	1408			
20	1734	2085	2221	2229	2207	2234	2259	2156	1775	1347	962	837	816	840	944	1296			
25	1744	2200	2373	2364	2337	2350	2340	2259	1780	1228	832	755	740	759	837	1177			
30	1805	2423	2641	2263	2122	2278	2579	2436	1818	1108	751	691	685	700	764	1069			
35	1914	2820	2550	2114	1956	2135	2585	2799	1892	1008	680	641	640	653	695	992			
40	2075	3078	2538	2034	1872	2050	2620	3095	2002	928	627	599	597	610	641	940			
45	2438	3278	2527	1926	1775	1960	2642	3421	2268	898	584	558	569	574	598	950			
50	2361	3339	2421	1786	1541	1854	2625	3550	2381	967	557	574	587	587	580	985			
55	2292	3341	2243	1488	1285	1601	2511	3624	2277	800	587	582	557	565	603	836			
60	2303	3344	1980	1155	911	1256	2247	3805	2319	789	461	542	465	516	465	822			
65	2280	3315	1470	696	465	755	1657	3808	2352	822	373	391	346	377	375	824			
70	2026	3094	751	315	222	351	873	3535	2322	842	293	285	262	272	292	784			
75	1215	1932	308	152	132	163	368	2373	1575	623	203	197	169	188	201	524			
80	362	750	170	78.4	70.3	85.4	198	743	532	180	113	105	80.8	92.0	117	145			
85	48.5	72.8	42.4	31.8	25.7	35.6	54.1	88.9	74.0	40.5	38.3	33.4	29.9	31.3	33.0	34.0			
90	18.9	15.9	14.3	14.1	13.8	14.5	14.9	16.5	15.1	16.0	14.0	13.4	13.2	13.7	14.7	16.5			
95	21.6	17.0	14.8	14.4	14.3	14.6	15.0	17.1	17.2	18.4	14.7	13.5	13.5	14.0	15.9	19.8			
100	25.1	18.8	15.7	15.2	14.9	15.2	15.8	18.9	20.0	22.1	16.7	14.4	14.1	15.1	18.1	23.9			
105	28.4	20.5	16.6	16.0	15.7	16.0	16.7	20.8	23.1	26.2	19.2	15.8	15.3	16.7	20.6	28.4			
110	30.5	21.8	17.9	17.1	16.5	16.7	17.6	22.2	26.0	30.0	21.9	17.6	16.9	18.7	23.0	32.3			
115	32.1	23.4	19.3	18.0	17.2	17.5	18.5	23.3	28.1	32.5	25.0	19.8	18.7	20.8	25.4	33.7			
120	33.4	24.7	19.6	18.2	17.5	18.0	19.1	24.1	29.3	33.9	27.9	22.2	20.8	22.9	27.7	34.5			
125	33.3	24.5	19.6	18.4	17.7	18.3	19.5	24.3	30.0	34.6	29.8	23.9	22.9	24.8	29.5	34.5			
130	31.7	24.3	19.8	18.6	17.9	18.3	19.4	23.9	30.2	34.6	30.7	24.9	24.9	26.7	30.8	33.8			
135	30.1	24.2	20.2	18.8	18.1	18.3	19.4	23.4	30.0	34.2	31.0	26.2	26.6	28.3	31.7	32.7			
140	29.0	24.3	20.7	19.2	18.5	18.6	19.6	23.1	29.4	33.6	30.1	27.4	28.0	29.5	31.9	31.7			
145	28.1	24.6	21.3	19.8	19.1	19.1	20.2	23.0	28.8	32.0	28.9	28.6	29.1	30.3	31.9	31.0			
150	27.6	25.0	22.0	20.8	19.8	19.9	20.9	23.1	28.9	29.9	28.9	30.3	29.8	30.8	31.7	30.4			
155	27.2	25.6	23.1	22.0	21.0	21.0	21.8	23.4	28.0	29.4	29.1	31.9	30.4	30.9	31.2	30.0			
160	27.1	26.2	24.4	23.4	22.3	22.2	22.7	23.9	27.7	29.2	30.1	31.9	30.4	30.6	30.5	29.5			
165	27.3	26.7	25.6	24.9	23.8	23.6	23.8	24.7	27.5	28.8	29.9	30.2	29.8	30.0	29.7	28.9			
170	27.7	27.6	27.0	26.7	25.4	25.1	25.1	25.6	27.5	28.4	28.8	29.4	29.4	29.5	29.0	28.4			
175	28.2	28.7	28.4	28.5	27.1	26.7	26.5	26.7	27.7	28.1	28.4	29.0	29.0	28.9	28.5	28.1			
180	28.7	28.8	28.9	29.5	28.5	28.2	27.9	27.8	28.7	28.8	28.9	29.5	28.5	28.2	27.9	27.8			

C Range: 0 - 360DEG

C Interval: 22.5DEG

Test Speed: HIGH

Temperature:25±1°CDEG

Operators:Fabian Loaiza

Test Date:2023-11-06

γ Range: 0 - 180DEG

γ Interval: 5.0DEG

Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10

Humidity:MAX:51.1-MIN:42.4%

Test Distance:7.080m [K=1.0000]

Remarks: ANEXO 23-0951-5-A RALED I 16 LED's 55W

DRIVER ADVANCE 55W 0.1.-1.8A 0-10V

MODULO LED 2X8 Z15 5050 4K SAMSUNG

Corriente de programacion:1030mA

Photometric Data Table [cd]

G/C	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	202.5
0.0	1745	1745	1745	1745	1745	1745	1745	1745	1745	1745
5.0	1738	1843	1929	1987	2010	2003	1949	1868	1759	1648
10.0	1738	1944	2067	2128	2146	2163	2117	1978	1769	1551
15.0	1734	2016	2141	2182	2180	2208	2202	2074	1771	1449
20.0	1734	2085	2221	2229	2207	2234	2259	2156	1775	1347
25.0	1744	2200	2373	2364	2337	2350	2340	2259	1780	1228
30.0	1805	2423	2641	2263	2122	2278	2579	2436	1818	1108
35.0	1914	2820	2550	2114	1956	2135	2585	2799	1892	1008
40.0	2075	3078	2538	2034	1872	2050	2620	3095	2002	928.3
45.0	2438	3278	2527	1926	1775	1960	2642	3421	2268	898.1
50.0	2361	3339	2421	1786	1541	1854	2625	3550	2381	966.9
55.0	2292	3341	2243	1488	1285	1601	2511	3624	2277	799.8
60.0	2303	3344	1980	1155	911.5	1256	2247	3805	2319	789.0
65.0	2280	3315	1470	695.6	465.2	755.2	1657	3808	2352	821.9
70.0	2026	3094	750.8	315.1	221.5	351.1	872.5	3535	2322	842.0
75.0	1215	1932	307.5	151.9	132.0	162.6	368.4	2373	1575	623.4
80.0	361.8	749.9	169.6	78.37	70.34	85.37	198.1	743.1	532.0	179.9
85.0	48.45	72.76	42.36	31.85	25.72	35.57	54.11	88.93	73.96	40.47
90.0	18.93	15.87	14.26	14.11	13.75	14.48	14.95	16.52	15.09	16.01
95.0	21.59	17.00	14.81	14.45	14.27	14.58	14.98	17.08	17.17	18.42
100.0	25.07	18.79	15.69	15.20	14.86	15.24	15.84	18.91	20.04	22.13
105.0	28.39	20.46	16.65	16.03	15.70	15.96	16.71	20.80	23.12	26.18
110.0	30.51	21.79	17.94	17.12	16.54	16.74	17.64	22.21	25.99	30.01
115.0	32.06	23.45	19.33	18.04	17.20	17.46	18.45	23.33	28.08	32.52
120.0	33.39	24.75	19.63	18.19	17.47	17.98	19.09	24.09	29.33	33.93
125.0	33.30	24.52	19.63	18.36	17.73	18.33	19.46	24.25	30.00	34.58
130.0	31.66	24.34	19.85	18.59	17.95	18.29	19.37	23.93	30.16	34.55
135.0	30.08	24.22	20.16	18.77	18.15	18.29	19.42	23.40	29.97	34.18
140.0	28.98	24.35	20.67	19.24	18.50	18.56	19.65	23.15	29.44	33.58
145.0	28.10	24.65	21.34	19.80	19.08	19.13	20.16	22.96	28.77	31.98
150.0	27.56	25.03	22.04	20.77	19.84	19.94	20.87	23.09	28.85	29.91
155.0	27.16	25.57	23.10	22.03	20.99	21.01	21.76	23.40	28.02	29.40
160.0	27.10	26.20	24.37	23.40	22.34	22.25	22.74	23.94	27.69	29.25
165.0	27.29	26.72	25.62	24.94	23.83	23.63	23.83	24.66	27.47	28.82
170.0	27.72	27.64	26.99	26.68	25.44	25.10	25.07	25.61	27.48	28.40
175.0	28.25	28.74	28.42	28.55	27.12	26.71	26.50	26.71	27.68	28.10
180.0	28.72	28.84	28.94	29.47	28.46	28.21	27.87	27.81	28.72	28.83

G/C	225.0	247.5	270.0	292.5	315.0	337.5
0.0	1745	1745	1745	1745	1745	1745
5.0	1551	1482	1455	1471	1533	1624
10.0	1347	1194	1144	1178	1315	1515
15.0	1134	966.2	920.3	957.3	1108	1408
20.0	962.3	837.4	816.2	840.5	944.2	1296
25.0	831.7	755.2	739.8	759.3	836.8	1177
30.0	750.8	691.3	684.6	699.6	763.6	1069
35.0	680.5	641.3	639.8	653.4	695.0	991.5
40.0	626.7	599.1	596.9	610.1	640.7	940.1
45.0	583.5	558.3	569.4	574.4	598.3	950.3
50.0	556.5	574.2	587.0	587.5	579.8	984.6
55.0	586.7	581.8	556.8	565.3	603.5	836.1
60.0	461.2	542.1	465.4	516.3	465.0	821.7
65.0	372.6	390.9	346.1	377.2	375.0	824.2
70.0	292.6	284.9	262.0	271.7	292.2	784.4
75.0	202.6	197.4	169.5	187.5	200.5	524.2
80.0	113.4	104.5	80.80	91.97	117.4	145.3
85.0	38.26	33.41	29.88	31.29	33.00	34.02
90.0	14.01	13.39	13.24	13.67	14.71	16.52
95.0	14.67	13.52	13.51	14.04	15.93	19.84
100.0	16.71	14.36	14.11	15.10	18.10	23.91
105.0	19.24	15.78	15.25	16.72	20.55	28.41
110.0	21.87	17.63	16.85	18.71	22.95	32.29
115.0	25.00	19.83	18.73	20.82	25.45	33.74
120.0	27.90	22.22	20.84	22.87	27.68	34.46
125.0	29.78	23.89	22.93	24.83	29.51	34.48
130.0	30.74	24.93	24.92	26.72	30.85	33.80
135.0	30.98	26.24	26.64	28.31	31.67	32.73
140.0	30.05	27.44	28.01	29.49	31.92	31.72
145.0	28.91	28.62	29.08	30.30	31.92	30.99
150.0	28.88	30.28	29.84	30.78	31.71	30.42
155.0	29.12	31.86	30.38	30.88	31.23	29.96
160.0	30.10	31.93	30.42	30.58	30.47	29.49
165.0	29.95	30.24	29.84	30.01	29.66	28.87
170.0	28.80	29.39	29.43	29.46	29.00	28.39

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25±1°CDEG
Operators: Fabian Loaiza
Test Date: 2023-11-06

γ Range: 0 - 180DEG
γ Interval: 5.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity: MAX: 51.1-MIN: 42.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-5-A RALED I 16 LED's 55W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 1030mA

Photometric Data Table [cd]

175.0	28.41	29.04	29.02	28.95	28.46	28.07
180.0	28.92	29.46	28.50	28.20	27.90	27.80

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25±1°CDEG
Operators: Fabian Loaiza
Test Date: 2023-11-06

γ Range: 0 - 180DEG
γ Interval: 5.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity: MAX: 51.1-MIN: 42.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-5-A RALÉD I 16 LED's 55W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 1030mA