

ANEXO 23-0951-2-A RALED I 16 LED's RA10 30W

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: 30.67 W

I80 = 51.1 cd per klm. I88 = 0.1 cd per klm.
I90 = 0.9 cd per klm. I80/I88 = 1010.401

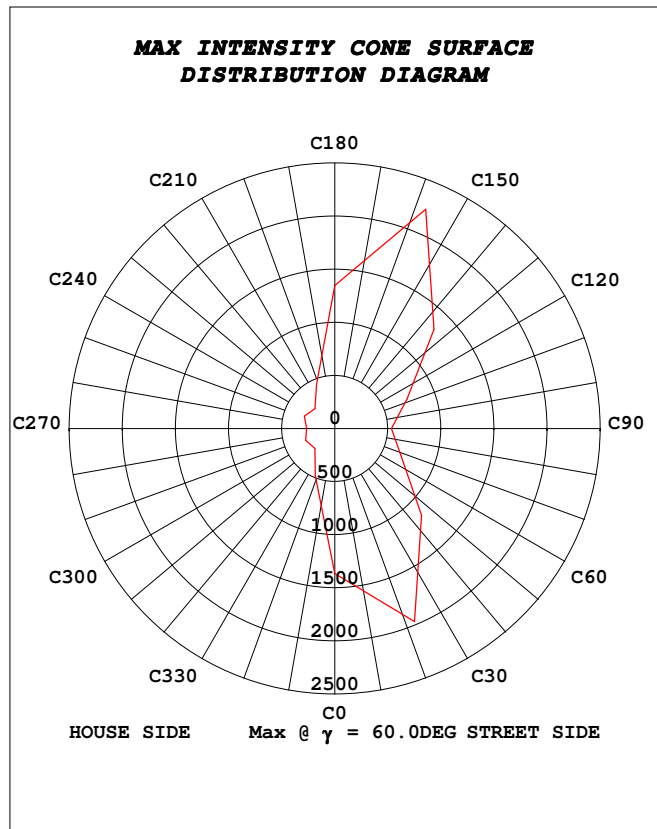
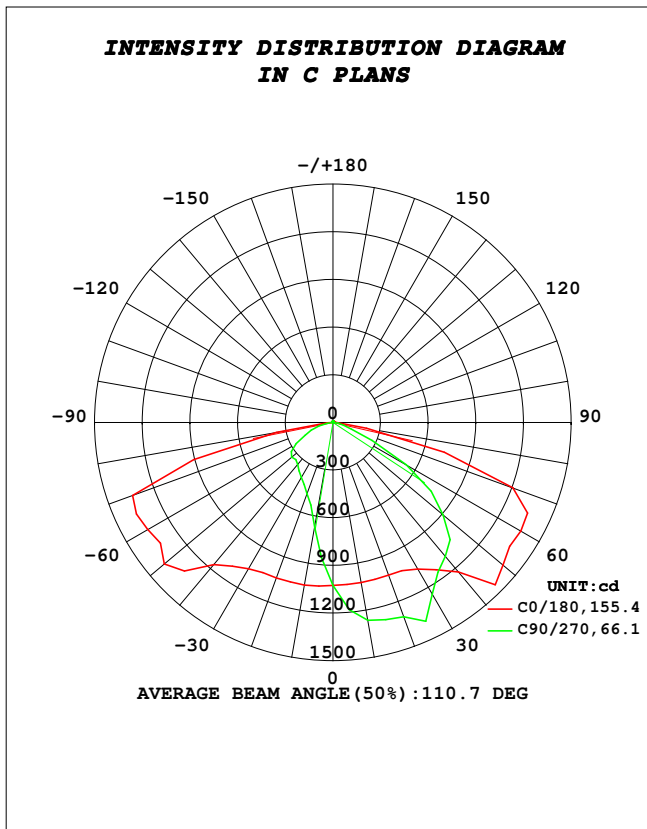
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25±1°CDEG
Operators: Fabian Loaiza
Test Date: 2023-11-06

γ Range: 0 - 180DEG
γ Interval: 5.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity: MAX: 50.2-MIN: 40.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-2-A RALED I 16 LED's 30W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 570mA

STREETLIGHT PHOTOMETRIC TEST REPORT

Test:U:220.19V I:0.1425A P:30.668W PF:0.9773 Freq:60.01Hz Lamp Flux:4211.5x1 lm		
NAME: ANEXO 23-0951-2-A RALED I 16 LED's 30W	TYPE: Alumbrado Publico	WEIGHT: ----
SPEC.: 16 LED's 30W	DIM.: ----	SERIAL No.: 23-0951-2
MFR.: ROY ALPHA	SUR.: ----	Shielding Angle: ----

DATA OF LAMP		PHOTOMETRIC DATA Eff: 137.33 lm/W			
MODEL	2X8 Z15 5050	Imax(cd)	2236	η street_up(%)	0.3
NOMINAL POWER(W)	30	LOR(%)	100.0	η street_down(%)	69.9
RATED VOLTAGE(V)	----	TOTAL FLUX(lm)	4211	η house_up(%)	0.5
NOMINAL FLUX(lm)	4211.5	MAXIMUM @ (C, γ)	158,60.0	η house_down(%)	29.3
LAMPS INSIDE	1	η up(%)	0.8	76 FLASHAREA(m2)	
TEST VOLTAGE(V)	220	η down(%)	99.2	SLI	

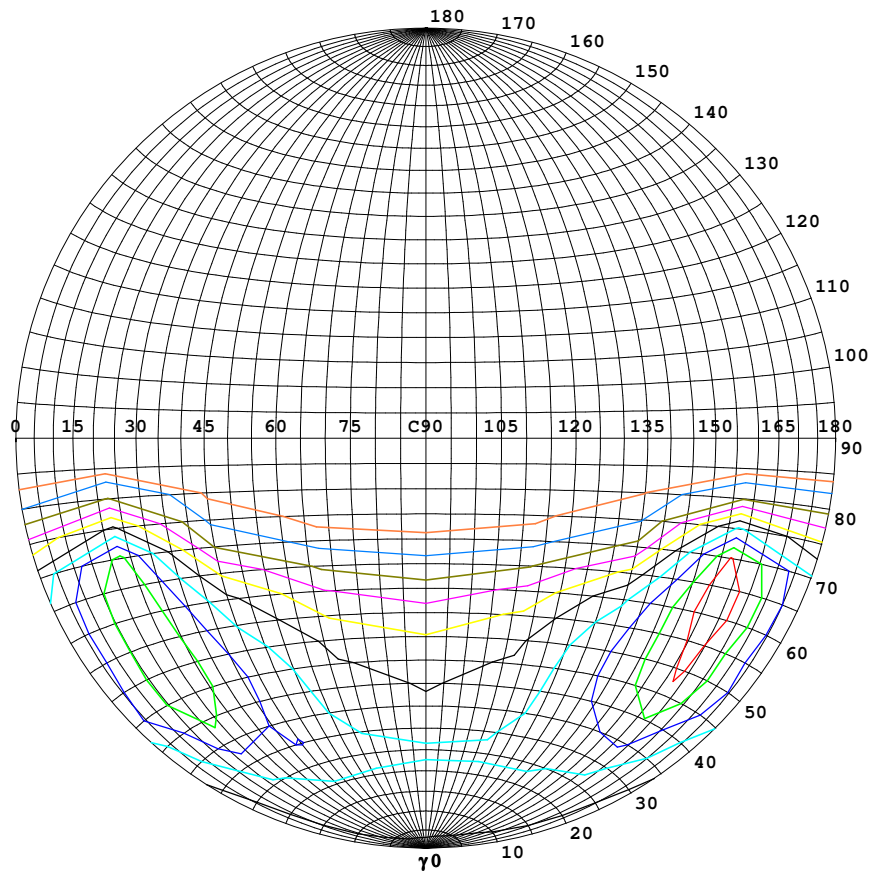


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25±1°C DEG
 Operators: Fabian Loaiza
 Test Date: 2023-11-06

γ Range: 0 - 180DEG
 γ Interval: 5.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
 Humidity: MAX: 50.2-MIN: 40.4%
 Test Distance: 7.080m [K=1.0000]
 Remarks: ANEXO 23-0951-2-A RALED I 16 LED's 30W
 DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
 MODULO LED 2X8 Z15 5050 4K SAMSUNG
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STREETLIGHT ISOCANDELA DIAGRAM

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Classification:

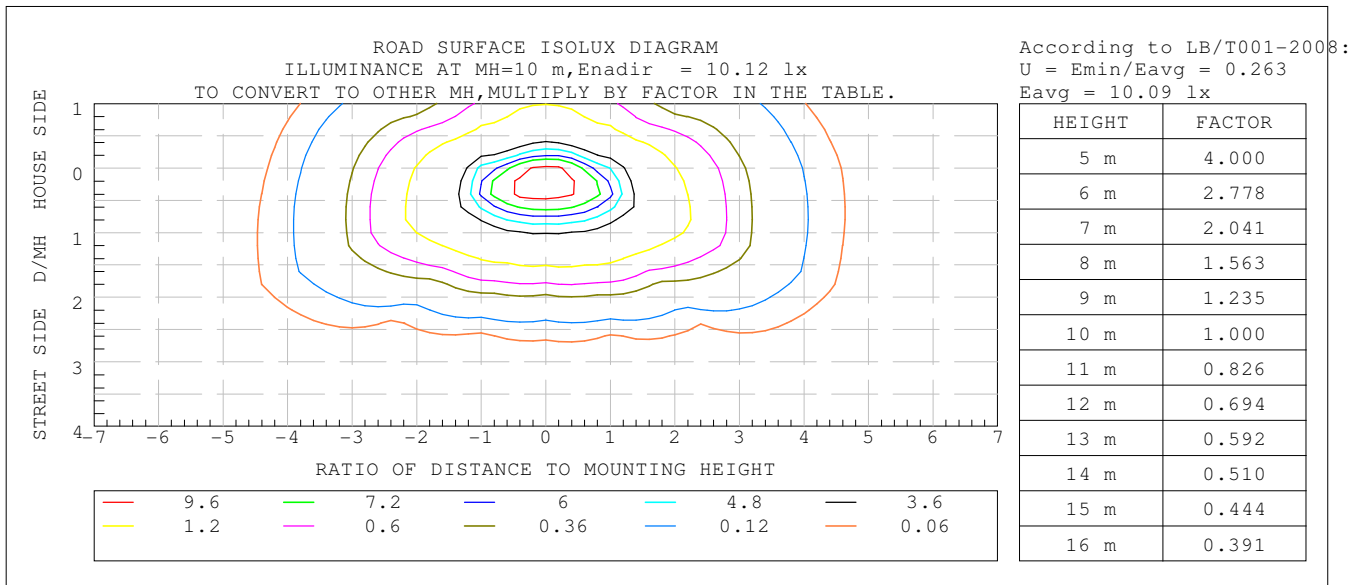
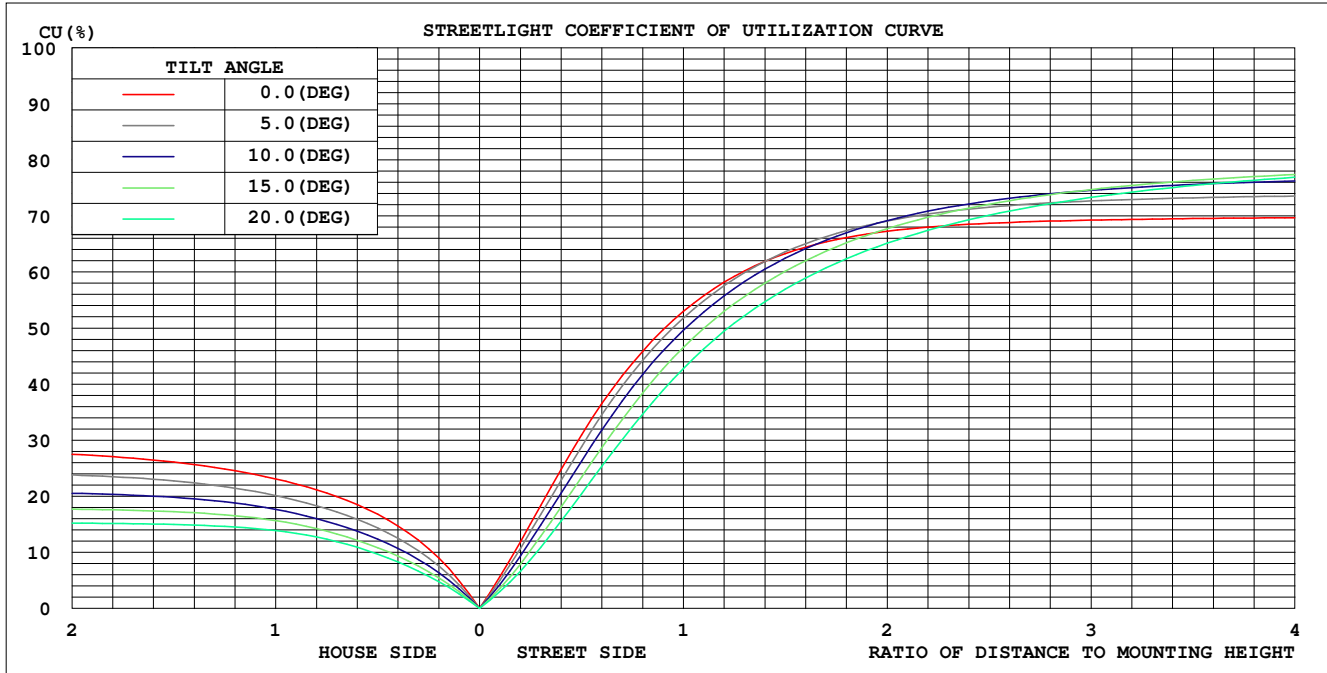
IES:Type II - Short
CIE:Average - Intermediate
IES:Semi cut-off
CIE:Non-cut-off
Max.At80:106.0cd/klm
Max.At90:0.8676cd/klm
Max.80-90:106.0cd/klm
NRB 5101:Semi limited[10.6%]

ISOCANDELA DIAGRAM	
UNIT	cd
I _{max} =100%	2236
90%	2012
80%	1789
70%	1565
60%	1342
50%	1118
40%	894
30%	671
20%	447
10%	224
5%	112

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Test Speed: HIGH
Temperature:25±1°CDEG
Operators:Fabian Loaiza
Test Date:2023-11-06

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γ Interval: 5.0DEG
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Humidity:MAX:50.2-MIN:40.4%
Test Distance:7.080m [K=1.0000]
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Corriente de programacion:570mA

COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM



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ZONAL FLUX DIAGRAM

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MFR.: ROY ALPHA	SUR.:-----	Shielding Angle:-----

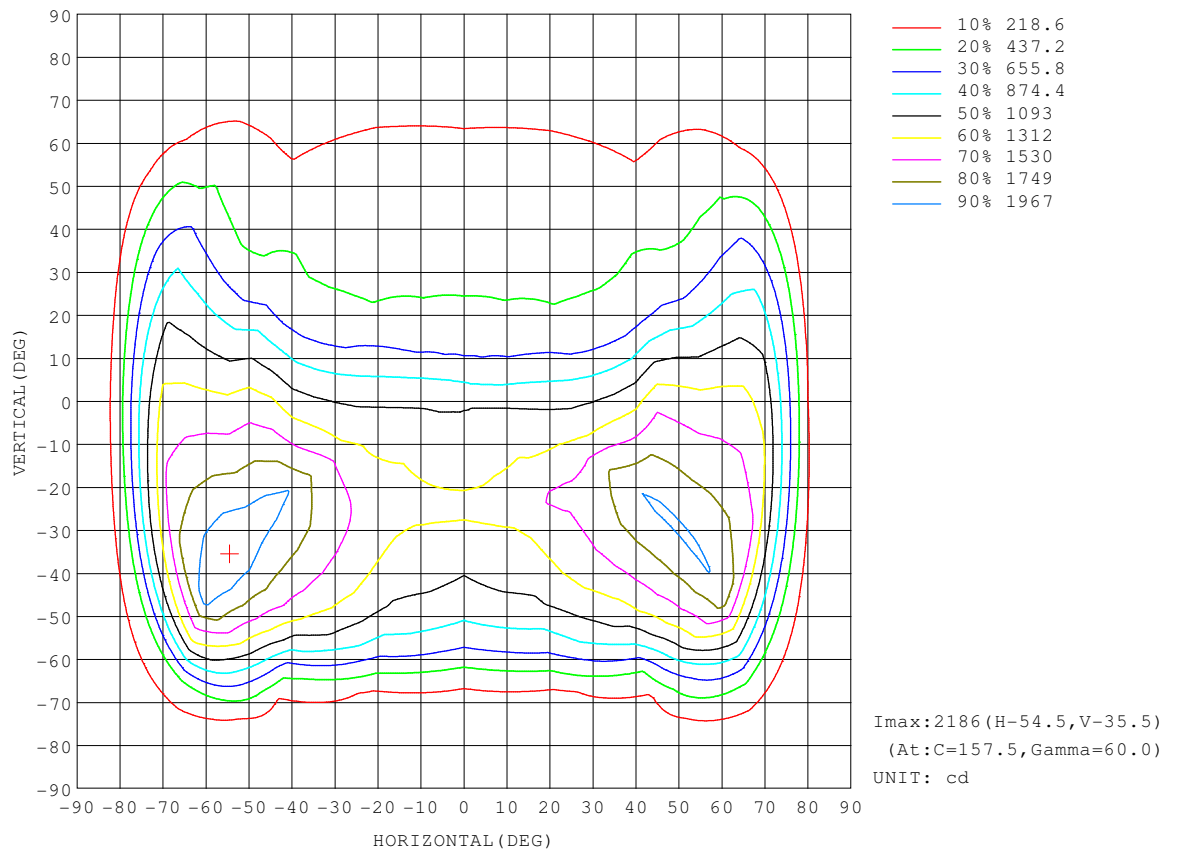
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	1023	1219	1265	1246	1039	788.8	670.8	772.8	0- 10	97.03	97.03	2.3,2.3
20	1023	1310	1302	1332	1041	562.2	478.5	554.4	10- 20	276.0	373.1	8.86,8.86
30	1066	1554	1251	1522	1065	438.0	399.6	446.9	20- 30	443.7	816.8	19.4,19.4
40	1228	1489	1101	1548	1168	364.2	347.4	372.9	30- 40	603.8	1421	33.7,33.7
50	1398	1419	905.4	1549	1385	322.0	340.8	336.0	40- 50	760.6	2181	51.8,51.8
60	1366	1156	534.0	1324	1347	265.6	267.4	268.1	50- 60	825.7	3007	71.4,71.4
70	1205	430.3	125.4	519.6	1343	163.6	145.8	164.8	60- 70	728.2	3735	88.7,88.7
80	215.2	91.66	34.72	110.5	362.1	58.94	39.89	61.64	70- 80	392.5	4128	98,98
90	3.654	0.9211	0.4974	1.090	1.377	0.7446	0.1991	0.9426	80- 90	49.26	4177	99.2,99.2
100	7.087	1.565	1.054	1.533	4.070	2.289	0.7108	2.840	90-100	2.031	4179	99.2,99.2
110	9.952	2.418	1.878	2.368	7.455	5.057	2.254	5.514	100-110	3.991	4183	99.3,99.3
120	10.68	3.267	2.467	2.909	9.438	8.530	4.474	8.192	110-120	5.563	4188	99.5,99.5
130	10.34	3.836	2.804	3.236	9.771	10.15	6.818	9.984	120-130	6.055	4195	99.6,99.6
140	9.275	4.569	3.234	3.769	9.112	9.709	8.545	10.49	130-140	5.590	4200	99.7,99.7
150	8.618	5.575	4.056	4.595	8.278	8.885	9.478	10.31	140-150	4.645	4205	99.8,99.8
160	8.455	6.636	5.568	5.769	8.077	9.529	9.868	9.682	150-160	3.589	4208	99.9,99.9
170	8.665	8.265	7.359	7.065	8.268	9.120	9.431	9.056	160-170	2.323	4211	100,100
180	9.027	9.343	9.045	8.576	8.996	9.312	9.080	8.616	170-180	0.8264	4211	100,100
DEG	LUMINOUS INTENSITY:cd Less than 35% Percent = 14.1 %									UNIT:lm		

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γ Range: 0 - 180DEG
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Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.406.10
Humidity:MAX:50.2-MIN:40.4%
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Corriente de programacion:570mA

ISOCANDELA DIAGRAM

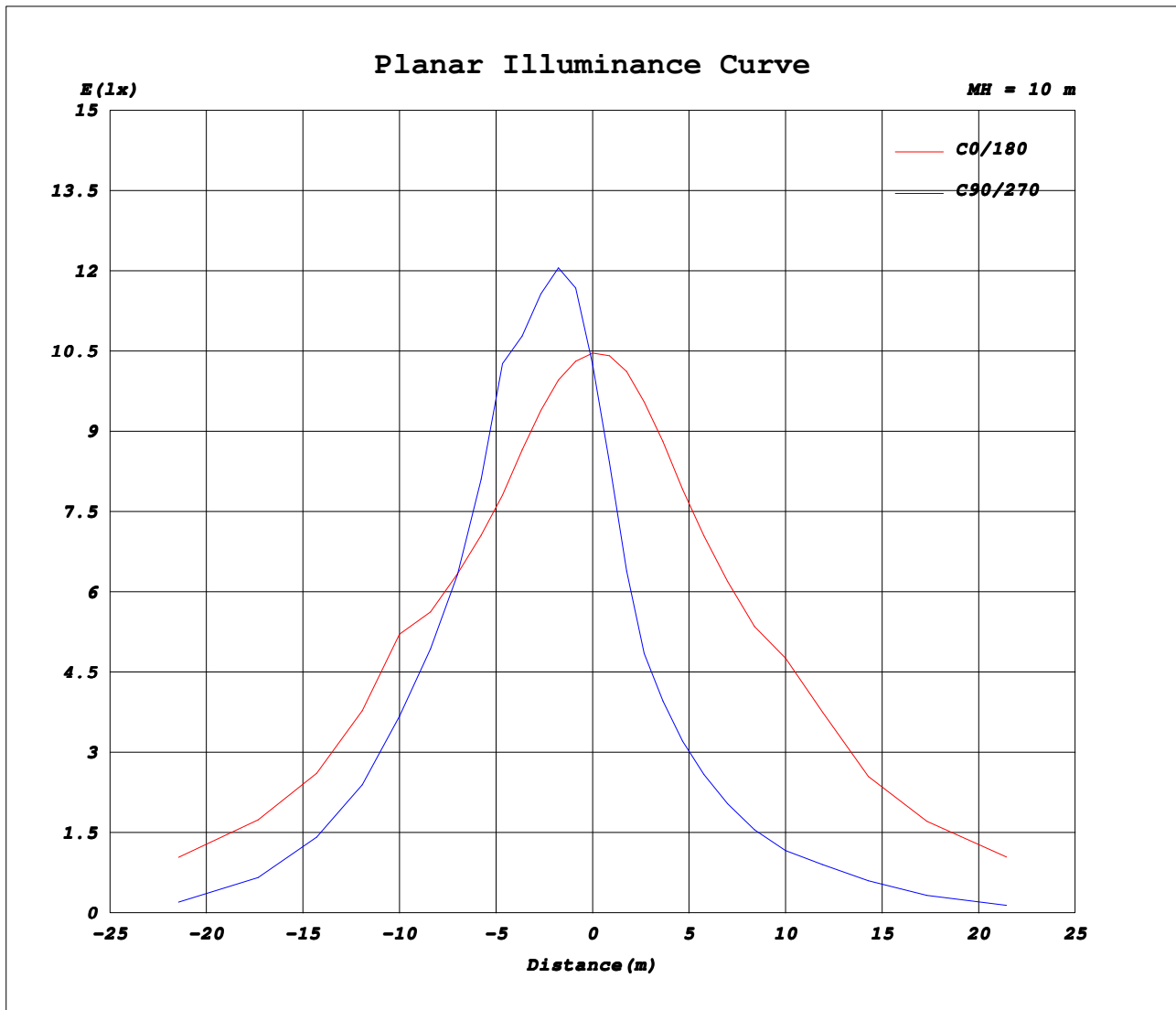
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Planar Illuminance Curve



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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: 0:10:00"
Tiempo de ensayo: 0:10:16"

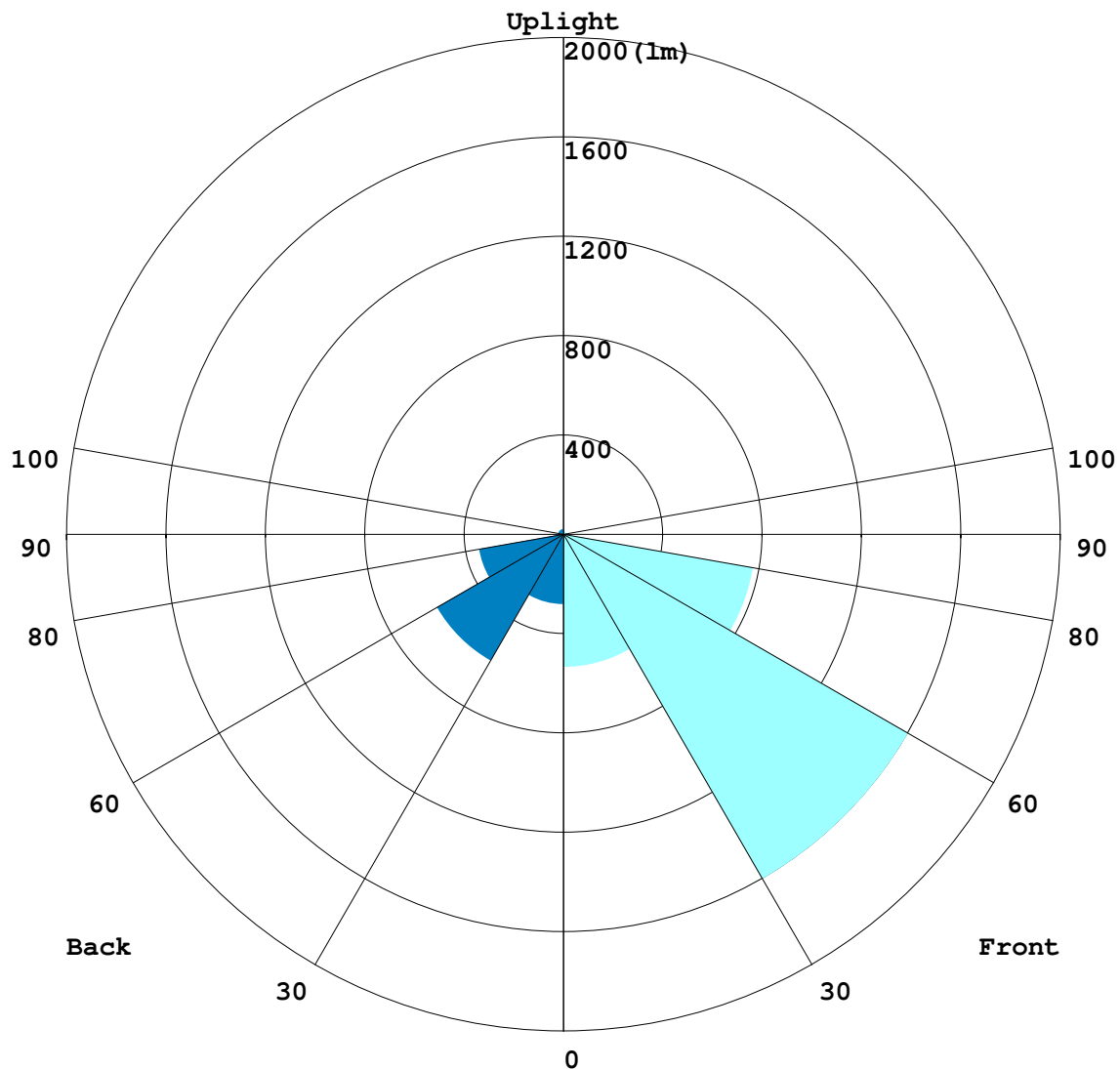
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LCS REPORT

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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)	535.16	12.7
FM - Front-Medium(30-60)	1602.9	38.1
FH - Front-High(60-80)	776.13	18.4
FVH - Front-Very High(80-90)	30.492	0.7
Total Forward Light	2958	70.2

BL - Back-Low(0-30)	281.64	6.7
BM - Back-Medium(30-60)	587.22	13.9
BH - Back-High(60-80)	344.57	8.2
BVH - Back-Very High(80-90)	18.764	0.4
Total Back Light	1253.5	29.8

UL - Uplight-Low(90-100)	2.0307	0.0
UH - Uplight-High(100-180)	32.584	0.8
Total Up Light	34.615	0.8

BUG (Back, Up, Glare) Rating	B1-U2-G1
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	1232.2	21.317	1253.5
Street Side	2944.7	13.297	2958

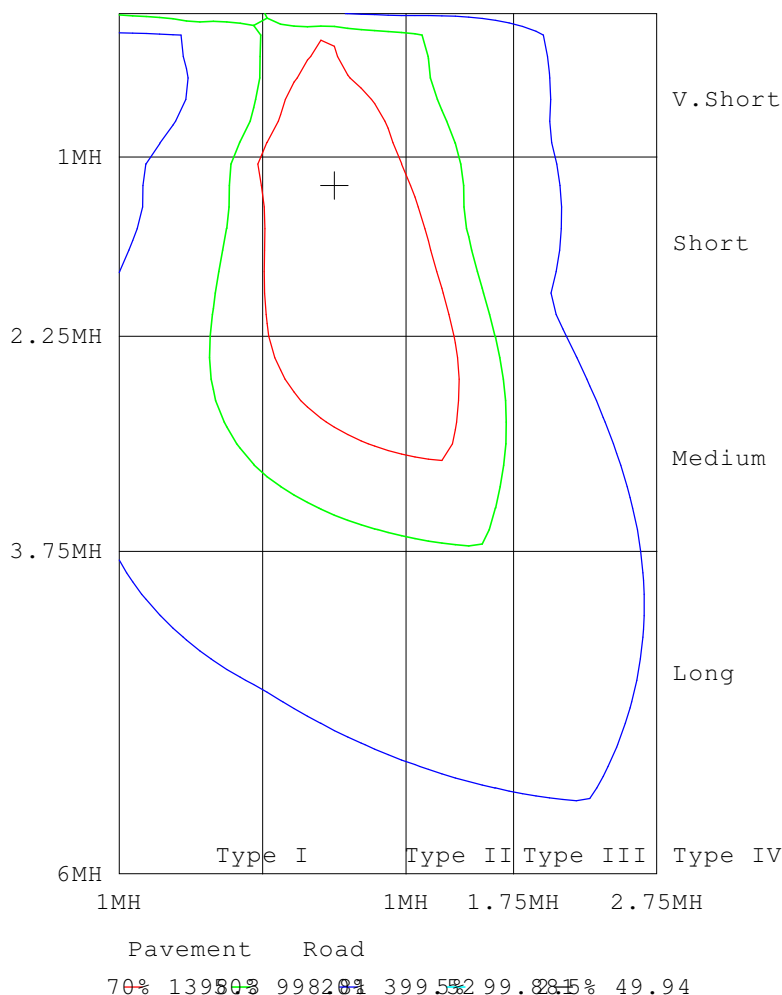
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ROAD ISOCANDELA REPORT

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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	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026			
5	1023	1085	1136	1170	1183	1178	1147	1098	1034	967	911	870	854	865	902	955			
10	1023	1145	1219	1254	1265	1274	1246	1163	1039	909	789	700	671	692	773	891			
15	1022	1189	1263	1286	1286	1301	1297	1219	1039	848	663	566	539	561	651	829			
20	1023	1230	1310	1315	1302	1318	1332	1269	1041	785	562	490	478	493	554	763			
25	1029	1297	1400	1397	1382	1390	1380	1328	1044	715	486	441	433	444	490	692			
30	1066	1430	1554	1333	1251	1344	1522	1434	1065	643	438	404	400	408	447	629			
35	1131	1666	1497	1244	1152	1260	1526	1648	1105	583	397	374	373	381	406	584			
40	1228	1811	1489	1195	1101	1211	1548	1822	1168	537	364	349	347	355	373	553			
45	1446	1929	1481	1130	1043	1157	1562	2018	1322	518	338	325	331	333	347	559			
50	1398	1966	1419	1049	905	1092	1549	2091	1385	559	322	333	341	340	336	577			
55	1359	1967	1313	873	755	943	1481	2137	1326	458	341	335	321	327	349	490			
60	1366	1966	1156	677	534	739	1324	2236	1347	451	266	311	267	297	268	482			
65	1351	1948	854	407	271	443	980	2234	1365	467	211	223	195	216	213	483			
70	1205	1816	430	144	125	160	520	2071	1343	477	164	160	146	153	165	459			
75	726	1141	174	83.5	71.2	90.1	214	1401	907	349	111	107	92.2	103	111	305			
80	215	446	91.7	39.5	34.7	43.6	110	435	362	121	58.9	50.7	39.9	46.9	61.6	98.3			
85	22.6	37.7	17.9	11.6	7.91	13.6	25.0	46.1	36.9	16.2	14.6	12.0	9.97	10.8	11.9	12.4			
90	3.65	1.84	0.92	0.71	0.50	0.80	1.09	1.98	1.38	1.90	0.74	0.30	0.20	0.34	0.94	1.90			
95	5.18	2.44	1.14	0.87	0.75	0.84	1.09	2.30	2.53	3.20	1.21	0.39	0.37	0.56	1.64	3.69			
100	7.09	3.40	1.56	1.22	1.05	1.20	1.53	3.31	4.07	5.11	2.29	0.87	0.71	1.17	2.84	5.82			
105	8.94	4.27	2.00	1.58	1.50	1.55	1.96	4.37	5.79	7.33	3.64	1.66	1.38	2.09	4.19	8.37			
110	9.95	4.86	2.42	1.94	1.88	1.92	2.37	5.07	7.45	9.51	5.06	2.68	2.25	3.22	5.51	10.7			
115	10.5	5.32	2.85	2.31	2.21	2.26	2.68	5.53	8.71	11.0	6.84	3.94	3.28	4.40	6.90	11.5			
120	10.7	5.74	3.27	2.61	2.47	2.45	2.91	5.80	9.44	11.8	8.53	5.30	4.47	5.56	8.19	12.0			
125	10.6	6.12	3.56	2.88	2.65	2.60	3.07	5.89	9.76	12.2	9.60	6.19	5.65	6.67	9.23	12.0			
130	10.3	6.32	3.84	3.12	2.80	2.75	3.24	5.82	9.77	12.1	10.2	6.79	6.82	7.74	9.98	11.6			
135	9.75	6.43	4.16	3.38	2.98	2.89	3.48	5.72	9.55	11.8	10.2	7.56	7.80	8.64	10.4	10.9			
140	9.28	6.64	4.57	3.72	3.23	3.18	3.77	5.72	9.11	11.3	9.71	8.25	8.55	9.26	10.5	10.3			
145	8.85	6.91	5.03	4.16	3.57	3.58	4.14	5.72	8.71	10.5	9.04	8.88	9.10	9.68	10.5	9.77			
150	8.62	7.20	5.58	4.62	4.06	4.08	4.59	5.82	8.28	9.11	8.89	9.84	9.48	9.89	10.3	9.42			
155	8.50	7.59	6.15	5.41	4.80	4.78	5.21	6.24	8.06	8.80	9.06	10.8	9.80	9.93	10.06	9.21			
160	8.45	7.94	6.64	6.24	5.57	5.50	5.77	6.51	8.08	8.88	9.53	10.8	9.87	9.86	9.68	9.02			
165	8.47	8.33	7.49	7.13	6.44	6.27	6.38	6.89	8.12	8.85	9.62	9.90	9.60	9.60	9.33	8.77			
170	8.66	8.57	8.26	8.14	7.36	7.10	7.07	7.35	8.27	8.76	9.12	9.45	9.43	9.38	9.06	8.62			
175	8.93	9.26	9.06	9.19	8.30	8.02	7.84	7.93	8.49	8.70	8.98	9.34	9.28	9.18	8.82	8.55			
180	9.03	9.24	9.34	9.66	9.04	8.84	8.58	8.49	9.00	9.23	9.31	9.65	9.08	8.84	8.62	8.49			

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:50.2-MIN:40.4%

Test Distance:7.080m [K=1.0000]

Remarks: ANEXO 23-0951-2-A RALED I 16 LED's 30W

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

MODULO LED 2X8 Z15 5050 4K SAMSUNG

Corriente de programacion:570mA

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	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026
5.0	1023	1085	1136	1170	1183	1178	1147	1098	1034	967.4
10.0	1023	1145	1219	1254	1265	1274	1246	1163	1039	909.5
15.0	1022	1189	1263	1286	1286	1301	1297	1219	1039	847.7
20.0	1023	1230	1310	1315	1302	1318	1332	1269	1041	785.4
25.0	1029	1297	1400	1397	1382	1390	1380	1328	1044	714.8
30.0	1066	1430	1554	1333	1251	1344	1522	1434	1065	643.3
35.0	1131	1666	1497	1244	1152	1260	1526	1648	1105	583.0
40.0	1228	1811	1489	1195	1101	1211	1548	1822	1168	536.6
45.0	1446	1929	1481	1130	1043	1157	1562	2018	1322	518.5
50.0	1398	1966	1419	1049	905.4	1092	1549	2091	1385	558.7
55.0	1359	1967	1313	873.1	754.9	943.4	1481	2137	1326	458.4
60.0	1366	1966	1156	676.6	534.0	739.3	1324	2236	1347	450.8
65.0	1351	1948	854.5	406.7	271.1	442.6	979.8	2234	1365	467.1
70.0	1205	1816	430.3	144.1	125.4	160.2	519.6	2071	1343	476.8
75.0	725.6	1141	173.7	83.46	71.19	90.09	213.7	1401	907.3	348.6
80.0	215.2	446.2	91.66	39.51	34.72	43.62	110.5	435.5	362.1	120.7
85.0	22.64	37.69	17.93	11.57	7.913	13.61	25.00	46.09	36.92	16.20
90.0	3.654	1.841	0.9211	0.7054	0.4974	0.7975	1.090	1.978	1.377	1.904
95.0	5.181	2.444	1.139	0.8720	0.7472	0.8433	1.089	2.302	2.533	3.203
100.0	7.087	3.404	1.565	1.221	1.054	1.199	1.533	3.307	4.070	5.110
105.0	8.942	4.272	1.999	1.579	1.500	1.552	1.956	4.366	5.790	7.331
110.0	9.952	4.855	2.418	1.938	1.878	1.923	2.368	5.068	7.455	9.513
115.0	10.50	5.319	2.846	2.307	2.208	2.257	2.684	5.525	8.707	10.99
120.0	10.68	5.741	3.267	2.608	2.467	2.447	2.909	5.801	9.438	11.83
125.0	10.64	6.116	3.558	2.878	2.654	2.604	3.071	5.886	9.756	12.15
130.0	10.34	6.319	3.836	3.116	2.804	2.745	3.236	5.816	9.771	12.06
135.0	9.749	6.433	4.162	3.377	2.976	2.894	3.479	5.716	9.548	11.77
140.0	9.275	6.635	4.569	3.723	3.234	3.184	3.769	5.716	9.112	11.34
145.0	8.853	6.914	5.035	4.163	3.572	3.577	4.139	5.720	8.706	10.48
150.0	8.618	7.199	5.575	4.617	4.056	4.081	4.595	5.822	8.278	9.110
155.0	8.497	7.590	6.154	5.414	4.796	4.780	5.209	6.240	8.065	8.796
160.0	8.455	7.942	6.636	6.242	5.568	5.496	5.769	6.509	8.077	8.878
165.0	8.474	8.331	7.486	7.134	6.436	6.270	6.380	6.886	8.116	8.855
170.0	8.665	8.574	8.265	8.137	7.359	7.103	7.065	7.353	8.268	8.761
175.0	8.934	9.257	9.064	9.194	8.300	8.016	7.840	7.926	8.486	8.702
180.0	9.027	9.241	9.343	9.660	9.045	8.838	8.576	8.490	8.996	9.234

G/C	225.0	247.5	270.0	292.5	315.0	337.5
0.0	1026	1026	1026	1026	1026	1026
5.0	911.1	870.4	854.3	864.6	901.5	955.3
10.0	788.8	700.2	670.8	692.2	772.8	891.4
15.0	663.3	565.5	539.3	561.3	651.2	828.5
20.0	562.2	490.5	478.5	492.5	554.4	762.7
25.0	485.9	441.5	432.8	444.1	490.2	692.0
30.0	438.0	403.5	399.6	408.4	446.9	629.5
35.0	396.7	373.9	372.9	380.8	405.7	584.0
40.0	364.2	348.7	347.4	354.8	372.9	553.1
45.0	338.3	324.6	331.0	333.3	347.2	558.6
50.0	322.0	333.4	340.8	339.7	336.0	577.4
55.0	341.1	335.3	321.5	326.9	349.2	490.4
60.0	265.6	311.0	267.4	297.4	268.1	481.7
65.0	211.1	222.9	195.3	215.7	213.4	483.4
70.0	163.6	160.1	145.8	153.5	164.8	458.6
75.0	111.2	106.7	92.16	103.0	111.3	305.3
80.0	58.94	50.70	39.89	46.90	61.64	98.28
85.0	14.60	11.99	9.971	10.76	11.89	12.42
90.0	0.7446	0.2992	0.1991	0.3370	0.9426	1.898
95.0	1.210	0.3909	0.3669	0.5626	1.643	3.691
100.0	2.289	0.8711	0.7108	1.168	2.840	5.816
105.0	3.635	1.662	1.381	2.095	4.192	8.369
110.0	5.057	2.678	2.254	3.217	5.514	10.68
115.0	6.843	3.939	3.283	4.396	6.899	11.55
120.0	8.530	5.304	4.474	5.555	8.192	11.98
125.0	9.600	6.192	5.650	6.665	9.230	11.98
130.0	10.15	6.791	6.818	7.743	9.984	11.56
135.0	10.24	7.564	7.796	8.638	10.43	10.91
140.0	9.709	8.247	8.545	9.261	10.49	10.27
145.0	9.037	8.879	9.098	9.676	10.46	9.770
150.0	8.885	9.841	9.478	9.885	10.31	9.421
155.0	9.062	10.78	9.797	9.934	10.06	9.205
160.0	9.529	10.81	9.868	9.858	9.681	9.023
165.0	9.618	9.897	9.597	9.604	9.326	8.775
170.0	9.120	9.450	9.431	9.382	9.056	8.616

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: 50.2-MIN: 40.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-2-A RALED I 16 LED's 30W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 570mA

Photometric Data Table [cd]

175.0	8.978	9.336	9.283	9.185	8.818	8.547
180.0	9.312	9.649	9.080	8.838	8.616	8.494

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: 50.2-MIN: 40.4%
Test Distance: 7.080m [K=1.0000]
Remarks: ANEXO 23-0951-2-A RALÉD I 16 LED's 30W
DRIVER ADVANCE 55W 0.1.-1.8A 0-10V
MODULO LED 2X8 Z15 5050 4K SAMSUNG
Corriente de programacion: 570mA