

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242295

Luminaire Tested: S122DRP-S485D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242295
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S485D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

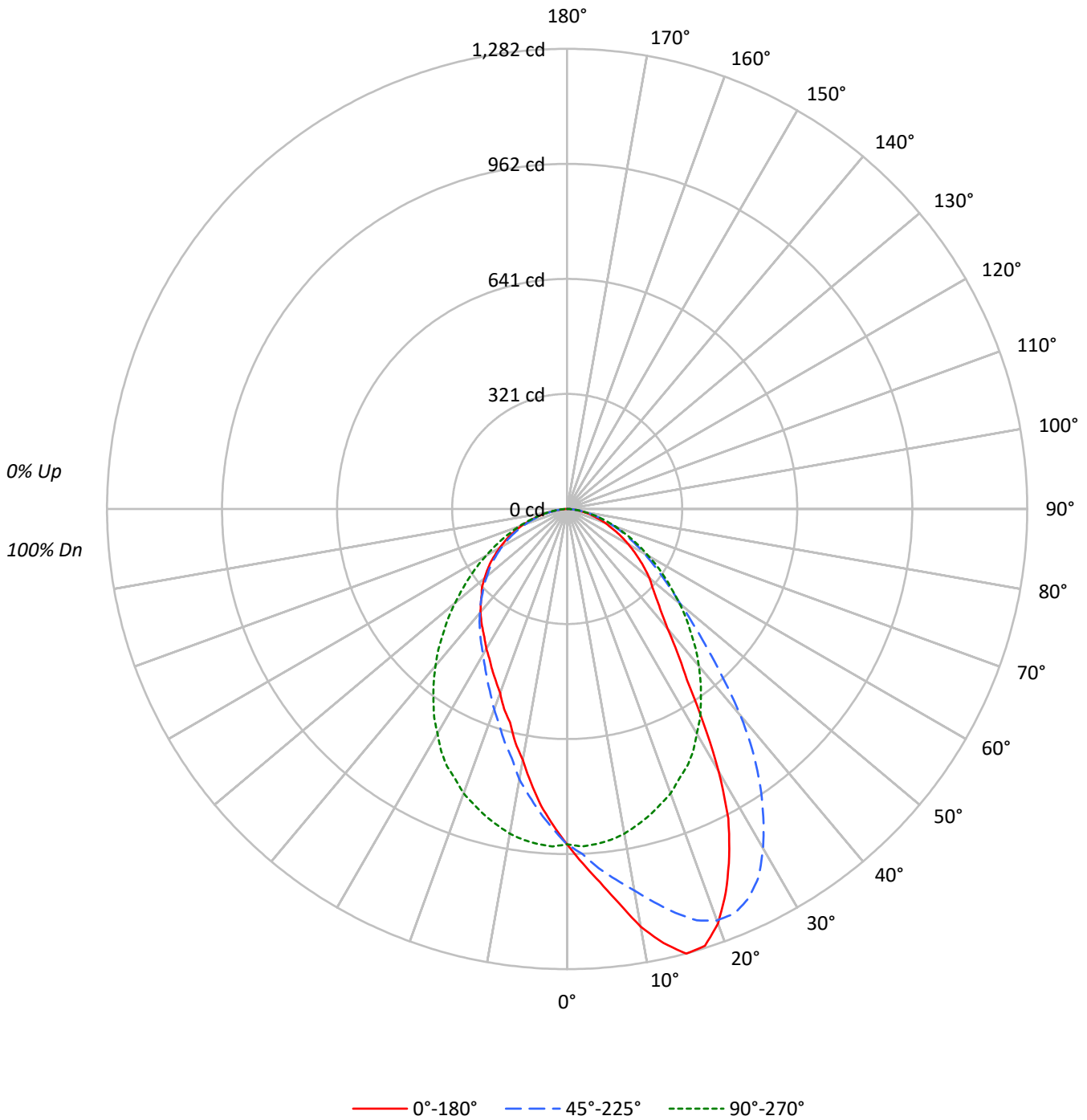
Lumens per Lamp: N/A
Luminaire Lumens: 2061.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58					55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45					43				
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37					35				
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34					32				
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31					29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	17796	17796	17796	17796	17796
5°	19950	19203	17912	16272	15872
10°	22862	20875	17765	14798	13736
15°	25290	22975	17438	13261	12135
20°	24906	24732	17090	12038	11063
25°	22456	25145	16624	11055	10384
30°	18559	24016	15882	10289	9886
35°	13526	21790	15103	9817	9534
40°	10804	18686	14185	9409	9339
45°	9439	14942	13124	8994	9073
50°	8875	12194	12096	8650	8896
55°	8179	10600	11052	8335	8657
60°	7497	9436	9943	7962	8290
65°	6828	8527	8951	7477	7928
70°	6198	7619	7981	6900	7396
75°	5498	6741	6896	6182	6550
80°	4728	5715	5715	5079	5276
85°	4240	4633	4240	3540	3147

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 22894 cd/sqm



TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.0	4.3
10°-20°	259.0	12.6
20°-30°	375.9	18.2
30°-40°	396.3	19.2
40°-50°	350.6	17.0
50°-60°	279.9	13.6
60°-70°	190.1	9.2
70°-80°	97.3	4.7
80°-90°	23.0	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	723.9	35.1
0°-40°	1120.1	54.3
0°-60°	1750.6	84.9
0°-90°	2061.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2061.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	934	934	934	934	934	
5°	1043	1004	937	851	830	104
15°	1282	1165	884	672	615	355
25°	1068	1196	791	526	494	485
35°	582	937	650	422	410	377
45°	350	555	487	334	337	275
55°	246	319	333	251	261	221
65°	152	189	199	166	176	150
75°	75	92	94	84	89	80
85°	19	21	19	16	14	22
90°	0	0	0	0	0	



TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	988.1	988.5	989.2	983.4	982.7	982.7	977.7	973.4	968.4	961.5	962.3
5°	1043.4	1047.4	1048.8	1044.5	1038.0	1037.3	1031.2	1021.1	1011.8	1004.3	998.9
7.5°	1107.3	1108.8	1105.9	1100.9	1096.5	1088.3	1078.2	1068.5	1054.2	1041.3	1031.9
10°	1182.0	1184.2	1178.1	1169.8	1163.0	1152.9	1136.4	1119.5	1099.1	1079.3	1063.5
12.5°	1238.7	1244.8	1236.6	1237.3	1224.4	1209.7	1189.2	1182.7	1151.8	1122.4	1105.2
15°	1282.5	1282.2	1282.9	1276.1	1267.5	1265.3	1244.5	1221.9	1181.3	1165.1	1137.1
17.5°	1276.1	1281.1	1284.0	1281.8	1280.4	1277.2	1268.2	1251.3	1229.0	1201.8	1168.4
20°	1228.7	1235.9	1236.9	1245.2	1249.9	1256.0	1258.5	1254.5	1242.0	1220.1	1192.1
22.5°	1155.4	1156.2	1160.1	1174.1	1185.6	1203.2	1212.5	1230.1	1227.2	1219.3	1197.1
25°	1068.5	1065.0	1077.5	1084.0	1107.3	1131.7	1149.3	1168.7	1186.0	1196.4	1189.5
27.5°	972.3	964.8	983.8	1000.7	1017.2	1040.9	1067.5	1099.1	1123.1	1155.8	1163.7
30°	843.8	847.0	865.0	883.3	912.0	949.3	980.2	1015.8	1054.2	1091.9	1118.1
32.5°	705.2	719.9	729.6	760.1	784.5	827.3	876.1	922.8	973.0	1017.2	1061.4
35°	581.7	596.0	611.8	632.3	667.8	709.1	753.3	813.3	878.6	937.1	985.2
37.5°	503.4	500.9	510.6	525.7	556.2	591.7	644.1	705.2	783.5	848.4	913.1
40°	434.5	433.0	439.5	453.1	475.0	499.4	544.0	596.0	667.5	751.5	832.3
42.5°	387.1	388.5	391.4	400.0	413.3	432.3	462.8	505.2	569.1	647.0	735.3
45°	350.4	352.9	356.9	361.6	370.2	386.7	405.4	437.0	488.7	554.7	640.2
47.5°	321.7	322.4	326.7	331.0	336.1	346.1	362.6	382.8	422.2	478.6	555.1
50°	299.5	296.9	299.8	303.0	308.4	314.9	324.9	343.6	368.0	411.5	472.9
52.5°	272.2	272.9	275.4	276.1	280.8	287.2	296.2	307.7	329.3	360.8	408.6
55°	246.3	248.1	249.5	251.7	256.0	260.7	267.9	276.5	293.7	319.2	356.5
57.5°	221.9	222.6	223.7	228.4	230.9	235.2	242.4	250.3	261.7	281.5	310.9
60°	196.8	196.8	199.6	201.4	205.0	209.3	214.7	222.3	232.3	247.7	270.4
62.5°	173.8	173.4	174.1	177.4	179.9	183.8	189.2	195.3	204.7	217.9	235.5
65°	151.5	150.8	153.0	153.7	156.5	160.5	164.8	171.6	179.2	189.2	205.7
67.5°	129.3	130.3	131.8	133.2	134.6	139.3	142.2	147.2	153.7	162.3	173.8
70°	111.3	111.3	111.3	112.4	114.5	116.7	119.6	123.5	129.6	136.8	146.9
72.5°	91.2	92.6	94.1	93.0	95.9	96.9	100.5	102.3	108.1	112.0	120.6
75°	74.7	74.7	74.7	76.5	77.6	78.6	80.8	82.9	85.8	91.6	96.2
77.5°	58.9	58.5	58.9	59.2	60.7	62.1	62.8	64.6	67.5	70.4	74.7
80°	43.1	43.8	44.2	44.9	44.9	45.6	46.0	48.5	50.3	52.1	54.6
82.5°	30.9	30.9	30.9	30.9	31.2	31.6	32.7	33.0	33.4	34.8	36.6
85°	19.4	19.0	19.0	19.7	19.4	19.4	20.1	20.8	20.8	21.2	22.3
87.5°	9.3	9.3	9.7	9.3	9.3	9.7	9.7	9.3	9.7	10.1	10.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	964.8	961.9	960.1	953.6	947.9	942.2	940.4	941.1	933.2	925.6	922.4
5°	996.0	988.8	982.0	972.3	960.8	948.3	941.8	936.8	924.2	910.6	902.7
7.5°	1024.4	1015.0	1002.8	985.6	969.8	951.1	939.6	929.9	912.4	894.0	882.9
10°	1049.9	1035.9	1019.0	996.7	976.3	952.2	935.3	918.5	896.9	873.9	859.6
12.5°	1071.8	1051.7	1035.2	1005.0	979.9	948.3	927.4	901.9	879.0	850.6	836.6
15°	1109.1	1074.3	1042.7	1010.4	980.6	938.6	916.3	884.3	854.5	820.8	804.6
17.5°	1136.8	1099.1	1050.2	1011.1	978.1	933.2	901.2	863.2	829.4	792.1	770.5
20°	1159.7	1114.9	1061.4	1012.5	970.9	917.7	882.2	843.1	801.8	758.3	734.6
22.5°	1173.4	1125.6	1072.9	1007.1	956.5	905.2	858.1	814.3	772.3	724.6	699.4
25°	1174.1	1131.0	1075.0	1004.6	945.0	886.5	832.6	791.0	740.4	696.6	660.3
27.5°	1162.3	1128.1	1073.9	999.6	931.7	864.6	806.1	760.5	707.0	659.6	623.3
30°	1136.0	1118.1	1065.7	991.0	915.2	841.6	775.6	722.1	668.9	620.8	583.5
32.5°	1095.5	1095.1	1050.6	978.8	897.6	812.5	743.6	689.4	629.1	582.0	546.8
35°	1039.8	1057.1	1028.0	959.4	874.7	785.2	711.3	649.5	588.5	543.2	509.9
37.5°	969.1	1008.9	997.5	933.5	845.2	756.2	675.7	611.1	552.6	505.9	473.2
40°	895.5	950.1	958.0	903.0	813.6	721.3	634.8	570.5	513.8	472.2	439.1
42.5°	816.5	882.6	907.7	866.4	779.1	684.7	598.2	531.0	475.0	434.8	406.4
45°	726.4	810.7	849.9	824.7	740.0	643.8	554.7	487.2	436.2	398.2	375.6
47.5°	644.9	736.4	786.3	774.5	698.0	602.5	514.5	448.8	398.2	367.3	346.1
50°	557.3	652.0	715.6	718.5	652.0	557.6	469.3	408.2	362.6	334.3	317.8
52.5°	481.1	570.5	641.3	659.6	600.7	510.9	428.7	368.0	329.3	303.8	289.4
55°	416.9	493.3	570.2	598.2	549.7	463.5	386.3	332.8	295.1	277.2	264.3
57.5°	355.8	423.0	495.9	525.3	494.4	418.7	344.0	296.9	265.0	248.8	238.8
60°	309.5	359.8	423.0	459.9	434.1	368.4	305.2	261.0	235.9	221.9	212.6
62.5°	266.4	309.5	360.5	393.5	382.4	321.4	266.4	228.7	207.9	195.0	188.9
65°	226.9	262.1	303.4	334.6	325.3	278.3	231.9	198.6	181.3	170.9	165.5
67.5°	193.2	220.1	249.5	278.3	270.4	235.5	196.4	169.5	156.2	146.9	143.6
70°	161.6	181.0	206.5	228.4	222.3	195.0	165.5	143.3	132.1	124.6	121.4
72.5°	131.4	146.5	164.4	181.3	177.7	156.2	132.8	117.4	109.5	102.7	100.2
75°	103.8	116.0	127.8	139.7	138.6	121.0	106.6	93.7	86.9	81.5	80.4
77.5°	81.1	88.7	97.3	104.8	103.0	91.6	79.7	71.8	66.4	62.8	62.5
80°	58.5	62.5	68.2	73.2	70.7	66.4	57.4	52.1	48.5	44.9	43.4
82.5°	38.4	42.4	45.2	47.4	45.6	41.7	37.0	33.8	32.0	29.8	29.4
85°	22.3	24.4	25.9	26.6	25.9	23.3	20.8	19.4	17.6	16.5	16.2
87.5°	10.8	10.8	10.8	11.5	10.4	10.4	9.0	7.9	7.5	7.2	6.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	918.8	916.7	909.1	905.2	898.7	892.6	888.7	890.5	891.9	891.2	890.1
5°	895.5	888.7	878.2	869.3	862.8	851.0	845.9	843.4	841.3	838.7	836.2
7.5°	869.6	859.9	845.2	833.7	822.2	807.2	799.6	795.3	790.6	785.2	780.2
10°	841.6	826.5	810.7	792.8	778.4	765.1	753.3	745.4	738.2	731.4	726.4
12.5°	812.2	794.2	773.8	747.5	731.4	710.9	711.6	696.2	684.0	680.4	674.3
15°	780.6	756.2	731.4	702.3	689.7	672.5	661.7	651.0	641.3	634.4	632.7
17.5°	746.1	713.4	689.4	667.8	647.4	629.8	620.4	611.8	603.6	593.5	593.2
20°	705.5	678.3	651.3	633.0	611.8	593.9	581.7	573.0	566.2	560.8	556.2
22.5°	667.1	636.6	612.5	592.1	571.3	557.6	548.6	540.4	535.0	528.9	524.6
25°	625.5	602.1	575.2	552.6	535.3	526.0	518.1	510.9	507.3	503.4	498.4
27.5°	589.9	564.1	537.5	519.9	504.1	495.9	489.7	484.4	481.1	478.6	475.4
30°	551.9	525.7	505.9	488.7	476.1	467.8	464.3	461.4	457.4	456.0	454.6
32.5°	515.2	492.3	476.1	461.7	449.9	445.2	442.0	439.5	436.6	435.2	431.9
35°	481.1	461.4	444.9	436.6	426.9	422.2	419.7	416.1	413.3	411.8	411.5
37.5°	448.5	430.5	419.4	408.2	403.6	401.1	397.5	395.0	393.9	393.5	393.2
40°	416.9	402.9	393.2	384.5	382.8	378.4	375.6	373.4	373.4	373.8	373.4
42.5°	388.1	375.9	367.7	360.5	358.3	356.2	353.3	353.7	354.4	355.8	354.4
45°	359.1	350.1	344.0	340.4	336.4	333.9	333.6	334.6	335.0	335.4	336.4
47.5°	331.8	326.0	320.3	316.0	314.2	313.8	313.1	314.9	316.7	317.0	318.8
50°	308.1	301.2	296.6	294.1	292.6	291.9	292.6	294.8	296.2	298.0	299.1
52.5°	281.5	277.2	274.3	272.5	272.2	272.9	272.9	275.4	277.9	278.3	278.6
55°	257.4	253.9	253.1	249.9	251.3	251.0	252.8	254.2	256.4	258.5	258.9
57.5°	233.0	229.8	227.6	228.0	228.4	229.8	231.2	233.7	236.3	238.8	238.8
60°	208.6	207.2	206.1	206.1	206.8	209.0	210.8	213.3	214.7	216.2	217.2
62.5°	186.3	184.9	183.8	184.6	186.7	187.8	189.9	191.0	192.5	193.9	194.2
65°	162.7	161.9	163.0	163.7	164.1	165.9	168.4	169.5	170.9	171.6	174.1
67.5°	141.1	141.1	140.7	141.8	144.0	144.3	146.9	149.7	149.7	151.2	153.0
70°	119.2	119.9	120.6	121.4	123.2	123.9	125.7	126.7	128.2	129.3	130.3
72.5°	99.1	99.1	99.8	99.5	100.9	102.7	104.1	105.2	106.6	108.1	109.2
75°	79.4	79.4	80.1	80.4	82.2	84.0	83.7	84.4	85.8	87.2	88.0
77.5°	61.4	60.7	61.4	61.8	62.5	63.9	64.3	65.3	67.1	66.8	67.5
80°	44.2	43.1	44.2	44.5	44.5	46.3	46.3	47.0	48.1	47.0	48.1
82.5°	28.4	28.0	28.7	28.7	29.4	29.1	29.8	29.8	30.9	30.5	30.9
85°	15.8	15.4	15.8	15.4	15.8	16.2	16.2	15.8	15.8	16.5	15.4
87.5°	6.1	5.7	5.4	5.4	5.0	4.7	4.3	4.3	4.3	3.6	3.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242295

CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	934.3	934.3	934.3	934.3
2.5°	886.5	885.8	885.8	882.6
5°	831.2	830.1	828.3	830.1
7.5°	778.8	774.1	773.4	769.8
10°	720.3	717.4	717.0	710.2
12.5°	675.7	667.8	669.6	666.4
15°	623.0	623.0	621.5	615.4
17.5°	585.3	584.9	581.7	583.8
20°	552.2	550.1	545.8	545.8
22.5°	521.0	521.3	516.7	518.5
25°	498.0	495.1	493.0	494.1
27.5°	474.3	473.2	472.9	469.6
30°	454.2	450.6	451.3	449.5
32.5°	431.2	430.5	429.4	428.0
35°	410.8	411.1	409.3	410.0
37.5°	392.4	393.9	392.8	392.8
40°	374.5	374.5	374.5	375.6
42.5°	357.3	356.5	355.8	355.5
45°	337.2	338.2	338.6	336.8
47.5°	319.6	319.9	319.6	321.7
50°	300.9	300.2	300.9	300.2
52.5°	281.1	281.5	280.8	280.8
55°	260.3	261.0	260.7	260.7
57.5°	239.1	239.5	240.2	238.4
60°	216.9	218.7	218.3	217.6
62.5°	196.4	196.8	196.8	196.8
65°	175.2	175.9	174.9	175.9
67.5°	152.2	152.6	153.3	153.7
70°	131.1	130.7	131.8	132.8
72.5°	108.8	109.9	109.2	109.9
75°	87.2	88.3	88.0	89.0
77.5°	66.8	67.1	67.1	67.5
80°	48.1	47.4	46.7	48.1
82.5°	29.8	30.5	29.8	29.4
85°	15.4	15.1	14.4	14.4
87.5°	3.6	3.2	3.2	2.9
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P242295
 CATALOG NUMBER: S122DRP-S485D835-X4F0-XX-UDD-A-W

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference 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	18.30	19.82	18.66	20.13	20.44	21.55	23.07	21.92	23.38	23.70
	3H	19.71	21.07	20.08	21.39	21.76	22.56	23.92	22.94	24.25	24.61
	4H	20.21	21.49	20.61	21.84	22.21	22.88	24.16	23.28	24.51	24.88
	6H	20.56	21.74	20.98	22.11	22.50	23.08	24.25	23.49	24.62	25.01
	8H	20.68	21.80	21.10	22.19	22.59	23.12	24.24	23.55	24.63	25.03
	12H	20.75	21.82	21.18	22.20	22.63	23.14	24.21	23.57	24.59	25.02
4H	2H	19.16	20.43	19.56	20.78	21.16	21.76	23.04	22.16	23.39	23.77
	3H	20.71	21.77	21.12	22.17	22.57	23.10	24.16	23.51	24.56	24.96
	4H	21.30	22.26	21.74	22.67	23.11	23.61	24.56	24.04	24.98	25.42
	6H	21.75	22.58	22.21	23.02	23.48	23.94	24.77	24.40	25.22	25.68
	8H	21.89	22.67	22.35	23.11	23.58	24.02	24.79	24.48	25.24	25.71
	12H	21.99	22.69	22.48	23.16	23.64	24.06	24.75	24.54	25.23	25.70
8H	4H	21.74	22.51	22.20	22.96	23.42	23.74	24.51	24.20	24.96	25.42
	6H	22.27	22.91	22.77	23.40	23.88	24.18	24.82	24.67	25.31	25.78
	8H	22.46	23.04	22.98	23.55	24.04	24.31	24.88	24.82	25.39	25.88
	12H	22.62	23.13	23.13	23.62	24.19	24.40	24.91	24.91	25.40	25.96
12H	4H	21.79	22.49	22.28	22.96	23.44	23.73	24.42	24.21	24.90	25.37
	6H	22.35	22.92	22.86	23.43	23.92	24.18	24.75	24.69	25.26	25.75
	8H	22.59	23.10	23.10	23.59	24.15	24.35	24.86	24.86	25.35	25.92