

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: P242290

Luminaire Tested: S122DRP-S485D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242290
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-S485D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

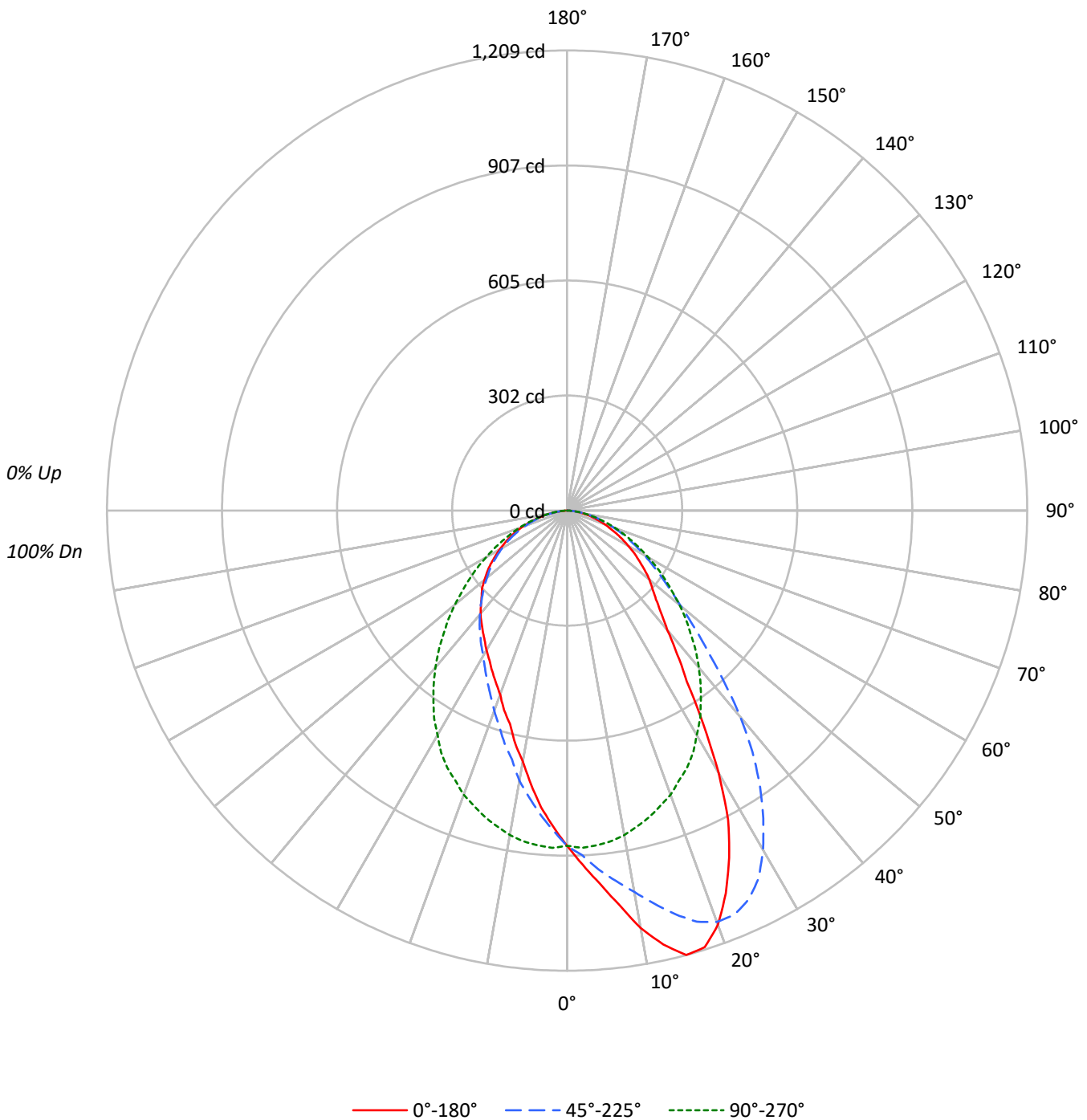
Lumens per Lamp: N/A
Luminaire Lumens: 1942.6 lumens
Efficiency: N/A
Efficacy: 103.3 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): 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

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Luminous Intensity Polar Plot



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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°	16773	16773	16773	16773	16773
5°	18805	18099	16881	15337	14960
10°	21548	19676	16744	13949	12947
15°	23837	21656	16436	12500	11439
20°	23475	23311	16107	11347	10427
25°	21166	23699	15668	10420	9788
30°	17492	22634	14969	9700	9319
35°	12747	20539	14235	9255	8987
40°	10182	17612	13372	8869	8802
45°	8897	14086	12370	8477	8550
50°	8362	11492	11403	8152	8383
55°	7711	9992	10418	7857	8159
60°	7067	8895	9371	7505	7813
65°	6436	8036	8433	7049	7473
70°	5842	7179	7518	6505	6973
75°	5181	6351	6498	5829	6175
80°	4453	5386	5386	4794	4969
85°	3999	4371	3999	3322	2950

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 21577 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.9	4.3
10°-20°	244.1	12.6
20°-30°	354.3	18.2
30°-40°	373.5	19.2
40°-50°	330.5	17.0
50°-60°	263.8	13.6
60°-70°	179.2	9.2
70°-80°	91.7	4.7
80°-90°	21.7	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°	682.3	35.1
0°-40°	1055.8	54.3
0°-60°	1650.0	84.9
0°-90°	1942.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1942.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	881	881	881	881	881	
5°	984	947	883	802	782	98
15°	1209	1098	834	634	580	335
25°	1007	1128	746	496	466	457
35°	548	883	612	398	386	355
45°	330	523	459	315	317	259
55°	232	301	314	237	246	208
65°	143	178	187	156	166	142
75°	70	86	88	79	84	75
85°	18	20	18	15	14	21
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	931.3	931.7	932.4	926.9	926.3	926.3	921.5	917.5	912.7	906.3	907.0
5°	983.5	987.2	988.5	984.5	978.4	977.7	972.0	962.5	953.7	946.6	941.5
7.5°	1043.7	1045.1	1042.3	1037.6	1033.5	1025.8	1016.3	1007.1	993.6	981.4	972.6
10°	1114.1	1116.1	1110.4	1102.6	1096.2	1086.7	1071.1	1055.2	1035.9	1017.3	1002.4
12.5°	1167.6	1173.3	1165.5	1166.2	1154.0	1140.1	1120.9	1114.8	1085.7	1057.9	1041.7
15°	1208.8	1208.5	1209.2	1202.8	1194.6	1192.6	1173.0	1151.7	1113.4	1098.2	1071.8
17.5°	1202.8	1207.5	1210.2	1208.2	1206.8	1203.8	1195.3	1179.4	1158.4	1132.7	1101.2
20°	1158.1	1164.9	1165.9	1173.7	1178.1	1183.8	1186.2	1182.5	1170.6	1150.0	1123.6
22.5°	1089.0	1089.7	1093.4	1106.6	1117.5	1134.1	1142.9	1159.4	1156.7	1149.3	1128.3
25°	1007.1	1003.8	1015.6	1021.7	1043.7	1066.7	1083.3	1101.6	1117.8	1127.6	1121.2
27.5°	916.4	909.3	927.3	943.2	958.8	981.1	1006.1	1035.9	1058.6	1089.4	1096.8
30°	795.3	798.3	815.3	832.5	859.6	894.8	923.9	957.4	993.6	1029.1	1053.8
32.5°	664.7	678.5	687.7	716.4	739.5	779.7	825.8	869.7	917.1	958.8	1000.4
35°	548.2	561.8	576.7	596.0	629.5	668.4	710.0	766.5	828.1	883.3	928.6
37.5°	474.5	472.1	481.2	495.5	524.2	557.7	607.1	664.7	738.4	799.7	860.6
40°	409.5	408.1	414.2	427.1	447.7	470.7	512.7	561.8	629.1	708.3	784.5
42.5°	364.8	366.2	368.9	377.0	389.5	407.5	436.2	476.2	536.4	609.8	693.1
45°	330.3	332.7	336.4	340.8	348.9	364.5	382.1	411.9	460.6	522.9	603.4
47.5°	303.2	303.9	308.0	312.0	316.8	326.2	341.8	360.8	398.0	451.1	523.2
50°	282.2	279.9	282.6	285.6	290.7	296.8	306.3	323.9	346.9	387.8	445.7
52.5°	256.5	257.2	259.6	260.2	264.6	270.7	279.2	290.0	310.3	340.1	385.1
55°	232.2	233.9	235.2	237.2	241.3	245.7	252.5	260.6	276.8	300.9	336.1
57.5°	209.1	209.8	210.8	215.2	217.6	221.7	228.4	235.9	246.7	265.3	293.1
60°	185.5	185.5	188.2	189.9	193.2	197.3	202.4	209.5	219.0	233.5	254.8
62.5°	163.8	163.5	164.1	167.2	169.5	173.3	178.3	184.1	192.9	205.4	222.0
65°	142.8	142.1	144.2	144.8	147.6	151.3	155.3	161.8	168.9	178.3	193.9
67.5°	121.8	122.8	124.2	125.6	126.9	131.3	134.0	138.8	144.8	153.0	163.8
70°	104.9	104.9	104.9	105.9	108.0	110.0	112.7	116.4	122.2	128.9	138.4
72.5°	86.0	87.3	88.7	87.7	90.4	91.4	94.8	96.5	101.9	105.6	113.7
75°	70.4	70.4	70.4	72.1	73.1	74.1	76.1	78.2	80.9	86.3	90.7
77.5°	55.5	55.2	55.5	55.8	57.2	58.5	59.2	60.9	63.6	66.3	70.4
80°	40.6	41.3	41.6	42.3	42.3	43.0	43.3	45.7	47.4	49.1	51.4
82.5°	29.1	29.1	29.1	29.1	29.4	29.8	30.8	31.1	31.5	32.8	34.5
85°	18.3	17.9	17.9	18.6	18.3	18.3	19.0	19.6	19.6	20.0	21.0
87.5°	8.8	8.8	9.1	8.8	8.8	9.1	9.1	8.8	9.1	9.5	9.8
90°	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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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	909.3	906.6	904.9	898.9	893.4	888.0	886.3	887.0	879.6	872.5	869.4
5°	938.8	932.0	925.6	916.4	905.6	893.8	887.7	882.9	871.1	858.2	850.8
7.5°	965.5	956.7	945.2	929.0	914.1	896.5	885.7	876.5	859.9	842.7	832.2
10°	989.5	976.4	960.4	939.5	920.2	897.5	881.6	865.7	845.4	823.7	810.2
12.5°	1010.2	991.2	975.7	947.2	923.6	893.8	874.1	850.1	828.5	801.7	788.5
15°	1045.4	1012.6	982.8	952.3	924.2	884.6	863.7	833.5	805.4	773.6	758.4
17.5°	1071.4	1035.9	989.9	953.0	921.9	879.6	849.4	813.6	781.8	746.6	726.3
20°	1093.1	1050.8	1000.4	954.4	915.1	865.0	831.5	794.6	755.7	714.7	692.4
22.5°	1106.0	1061.0	1011.2	949.3	901.6	853.2	808.8	767.5	727.9	682.9	659.2
25°	1106.6	1066.0	1013.2	946.9	890.7	835.6	784.8	745.5	697.8	656.5	622.4
27.5°	1095.5	1063.3	1012.2	942.2	878.2	814.9	759.8	716.8	666.4	621.7	587.5
30°	1070.8	1053.8	1004.4	934.0	862.6	793.3	731.0	680.6	630.5	585.1	549.9
32.5°	1032.5	1032.2	990.2	922.5	846.1	765.9	700.9	649.8	592.9	548.6	515.4
35°	980.1	996.3	968.9	904.3	824.4	740.1	670.4	612.2	554.7	512.0	480.6
37.5°	913.4	951.0	940.1	879.9	796.6	712.7	636.9	576.0	520.8	476.8	446.0
40°	844.0	895.5	902.9	851.1	766.9	679.9	598.3	537.8	484.3	445.0	413.9
42.5°	769.6	831.8	855.5	816.6	734.4	645.4	563.8	500.5	447.7	409.8	383.1
45°	684.6	764.2	801.0	777.4	697.5	606.8	522.9	459.2	411.2	375.3	354.0
47.5°	607.8	694.1	741.1	730.0	657.9	567.9	485.0	423.0	375.3	346.2	326.2
50°	525.2	614.6	674.5	677.2	614.6	525.6	442.3	384.8	341.8	315.1	299.5
52.5°	453.5	537.8	604.4	621.7	566.2	481.6	404.1	346.9	310.3	286.3	272.8
55°	392.9	465.0	537.4	563.8	518.1	436.9	364.1	313.7	278.2	261.3	249.1
57.5°	335.4	398.7	467.4	495.1	466.0	394.6	324.2	279.9	249.8	234.5	225.1
60°	291.7	339.1	398.7	433.5	409.2	347.2	287.7	246.0	222.3	209.1	200.3
62.5°	251.1	291.7	339.8	370.9	360.4	302.9	251.1	215.6	195.9	183.8	178.0
65°	213.9	247.0	286.0	315.4	306.6	262.3	218.6	187.1	170.9	161.1	156.0
67.5°	182.1	207.5	235.2	262.3	254.8	222.0	185.1	159.7	147.2	138.4	135.4
70°	152.3	170.6	194.6	215.2	209.5	183.8	156.0	135.0	124.5	117.4	114.4
72.5°	123.9	138.1	155.0	170.9	167.5	147.2	125.2	110.7	103.2	96.8	94.4
75°	97.8	109.3	120.5	131.6	130.6	114.0	100.5	88.3	81.9	76.8	75.8
77.5°	76.5	83.6	91.7	98.8	97.1	86.3	75.1	67.7	62.6	59.2	58.9
80°	55.2	58.9	64.3	69.0	66.7	62.6	54.1	49.1	45.7	42.3	40.9
82.5°	36.2	39.9	42.6	44.7	43.0	39.3	34.9	31.8	30.1	28.1	27.8
85°	21.0	23.0	24.4	25.0	24.4	22.0	19.6	18.3	16.6	15.6	15.2
87.5°	10.2	10.2	10.2	10.8	9.8	9.8	8.5	7.4	7.1	6.8	6.1
90°	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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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6	880.6
2.5°	866.0	864.0	856.9	853.2	847.1	841.3	837.6	839.3	840.6	840.0	839.0
5°	844.0	837.6	827.8	819.3	813.2	802.1	797.3	795.0	792.9	790.6	788.2
7.5°	819.7	810.5	796.6	785.8	775.0	760.8	753.7	749.6	745.2	740.1	735.4
10°	793.3	779.0	764.2	747.2	733.7	721.2	710.0	702.6	695.8	689.4	684.6
12.5°	765.5	748.6	729.3	704.6	689.4	670.1	670.8	656.2	644.7	641.3	635.6
15°	735.7	712.7	689.4	662.0	650.1	633.9	623.7	613.6	604.4	598.0	596.3
17.5°	703.2	672.4	649.8	629.5	610.2	593.6	584.8	576.7	568.9	559.4	559.1
20°	665.0	639.3	613.9	596.6	576.7	559.8	548.2	540.1	533.7	528.6	524.2
22.5°	628.8	600.0	577.3	558.1	538.4	525.6	517.1	509.3	504.3	498.5	494.4
25°	589.5	567.5	542.2	520.8	504.6	495.8	488.3	481.6	478.2	474.5	469.7
27.5°	556.0	531.7	506.6	490.0	475.1	467.4	461.6	456.5	453.5	451.1	448.1
30°	520.2	495.5	476.8	460.6	448.7	441.0	437.6	434.9	431.2	429.8	428.4
32.5°	485.6	464.0	448.7	435.2	424.0	419.6	416.6	414.2	411.5	410.2	407.1
35°	453.5	434.9	419.3	411.5	402.4	398.0	395.6	392.2	389.5	388.2	387.8
37.5°	422.7	405.8	395.3	384.8	380.4	378.0	374.6	372.3	371.3	370.9	370.6
40°	392.9	379.7	370.6	362.5	360.8	356.7	354.0	352.0	352.0	352.3	352.0
42.5°	365.8	354.3	346.5	339.8	337.7	335.7	333.0	333.3	334.0	335.4	334.0
45°	338.4	330.0	324.2	320.8	317.1	314.7	314.4	315.4	315.7	316.1	317.1
47.5°	312.7	307.3	301.9	297.8	296.1	295.8	295.1	296.8	298.5	298.8	300.5
50°	290.4	283.9	279.5	277.2	275.8	275.1	275.8	277.8	279.2	280.9	281.9
52.5°	265.3	261.3	258.6	256.9	256.5	257.2	257.2	259.6	261.9	262.3	262.6
55°	242.6	239.3	238.6	235.5	236.9	236.6	238.2	239.6	241.6	243.7	244.0
57.5°	219.6	216.6	214.6	214.9	215.2	216.6	217.9	220.3	222.7	225.1	225.1
60°	196.6	195.3	194.3	194.3	194.9	197.0	198.7	201.0	202.4	203.7	204.7
62.5°	175.6	174.3	173.3	173.9	176.0	177.0	179.0	180.0	181.4	182.7	183.1
65°	153.3	152.6	153.6	154.3	154.7	156.4	158.7	159.7	161.1	161.8	164.1
67.5°	133.0	133.0	132.7	133.7	135.7	136.0	138.4	141.1	141.1	142.5	144.2
70°	112.4	113.0	113.7	114.4	116.1	116.8	118.4	119.5	120.8	121.8	122.8
72.5°	93.4	93.4	94.1	93.7	95.1	96.8	98.1	99.2	100.5	101.9	102.9
75°	74.8	74.8	75.5	75.8	77.5	79.2	78.9	79.5	80.9	82.2	82.9
77.5°	57.9	57.2	57.9	58.2	58.9	60.2	60.6	61.6	63.3	62.9	63.6
80°	41.6	40.6	41.6	42.0	42.0	43.7	43.7	44.3	45.3	44.3	45.3
82.5°	26.7	26.4	27.1	27.1	27.8	27.4	28.1	28.1	29.1	28.8	29.1
85°	14.9	14.6	14.9	14.6	14.9	15.2	15.2	14.9	14.9	15.6	14.6
87.5°	5.8	5.4	5.1	5.1	4.7	4.4	4.1	4.1	4.1	3.4	3.4
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: P242290

CATALOG NUMBER: S122DRP-S485D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	880.6	880.6	880.6	880.6
2.5°	835.6	834.9	834.9	831.8
5°	783.4	782.4	780.7	782.4
7.5°	734.0	729.6	729.0	725.6
10°	678.9	676.2	675.8	669.4
12.5°	636.9	629.5	631.2	628.1
15°	587.2	587.2	585.8	580.1
17.5°	551.6	551.3	548.2	550.3
20°	520.5	518.5	514.4	514.4
22.5°	491.1	491.4	487.0	488.7
25°	469.4	466.7	464.7	465.7
27.5°	447.1	446.0	445.7	442.7
30°	428.1	424.7	425.4	423.7
32.5°	406.4	405.8	404.8	403.4
35°	387.2	387.5	385.8	386.5
37.5°	369.9	371.3	370.2	370.2
40°	353.0	353.0	353.0	354.0
42.5°	336.7	336.1	335.4	335.0
45°	317.8	318.8	319.1	317.4
47.5°	301.2	301.5	301.2	303.2
50°	283.6	282.9	283.6	282.9
52.5°	265.0	265.3	264.6	264.6
55°	245.4	246.0	245.7	245.7
57.5°	225.4	225.7	226.4	224.7
60°	204.4	206.1	205.8	205.1
62.5°	185.1	185.5	185.5	185.5
65°	165.2	165.8	164.8	165.8
67.5°	143.5	143.8	144.5	144.8
70°	123.5	123.2	124.2	125.2
72.5°	102.5	103.6	102.9	103.6
75°	82.2	83.3	82.9	83.9
77.5°	62.9	63.3	63.3	63.6
80°	45.3	44.7	44.0	45.3
82.5°	28.1	28.8	28.1	27.8
85°	14.6	14.2	13.5	13.5
87.5°	3.4	3.0	3.0	2.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242290
 CATALOG NUMBER: S122DRP-S485D830-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	18.09	19.61	18.46	19.92	20.24	21.35	22.86	21.71	23.18	23.49
	3H	19.50	20.86	19.88	21.19	21.55	22.36	23.72	22.73	24.04	24.41
	4H	20.00	21.28	20.40	21.63	22.01	22.67	23.95	23.07	24.30	24.68
	6H	20.36	21.54	20.77	21.90	22.30	22.87	24.05	23.28	24.42	24.81
	8H	20.47	21.59	20.90	21.98	22.38	22.91	24.04	23.34	24.43	24.83
	12H	20.54	21.62	20.97	22.00	22.43	22.93	24.01	23.36	24.39	24.82
4H	2H	18.95	20.23	19.35	20.58	20.96	21.56	22.83	21.96	23.18	23.56
	3H	20.51	21.57	20.92	21.97	22.37	22.90	23.96	23.31	24.36	24.76
	4H	21.10	22.05	21.53	22.47	22.91	23.40	24.36	23.84	24.77	25.21
	6H	21.55	22.37	22.00	22.82	23.28	23.74	24.57	24.20	25.01	25.47
	8H	21.68	22.46	22.15	22.90	23.37	23.81	24.59	24.28	25.03	25.50
	12H	21.79	22.48	22.27	22.96	23.43	23.85	24.55	24.34	25.02	25.50
8H	4H	21.53	22.31	22.00	22.75	23.22	23.53	24.31	23.99	24.75	25.22
	6H	22.06	22.70	22.56	23.20	23.67	23.97	24.61	24.47	25.10	25.58
	8H	22.26	22.83	22.77	23.34	23.83	24.10	24.68	24.62	25.19	25.68
	12H	22.42	22.92	22.93	23.42	23.98	24.19	24.70	24.70	25.19	25.76
12H	4H	21.59	22.28	22.07	22.76	23.23	23.53	24.22	24.01	24.70	25.17
	6H	22.14	22.72	22.66	23.23	23.71	23.97	24.55	24.48	25.06	25.54
	8H	22.39	22.89	22.90	23.38	23.95	24.15	24.66	24.66	25.15	25.71