

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: P243155

Luminaire Tested: S122DRP-H485D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243155
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-H485D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

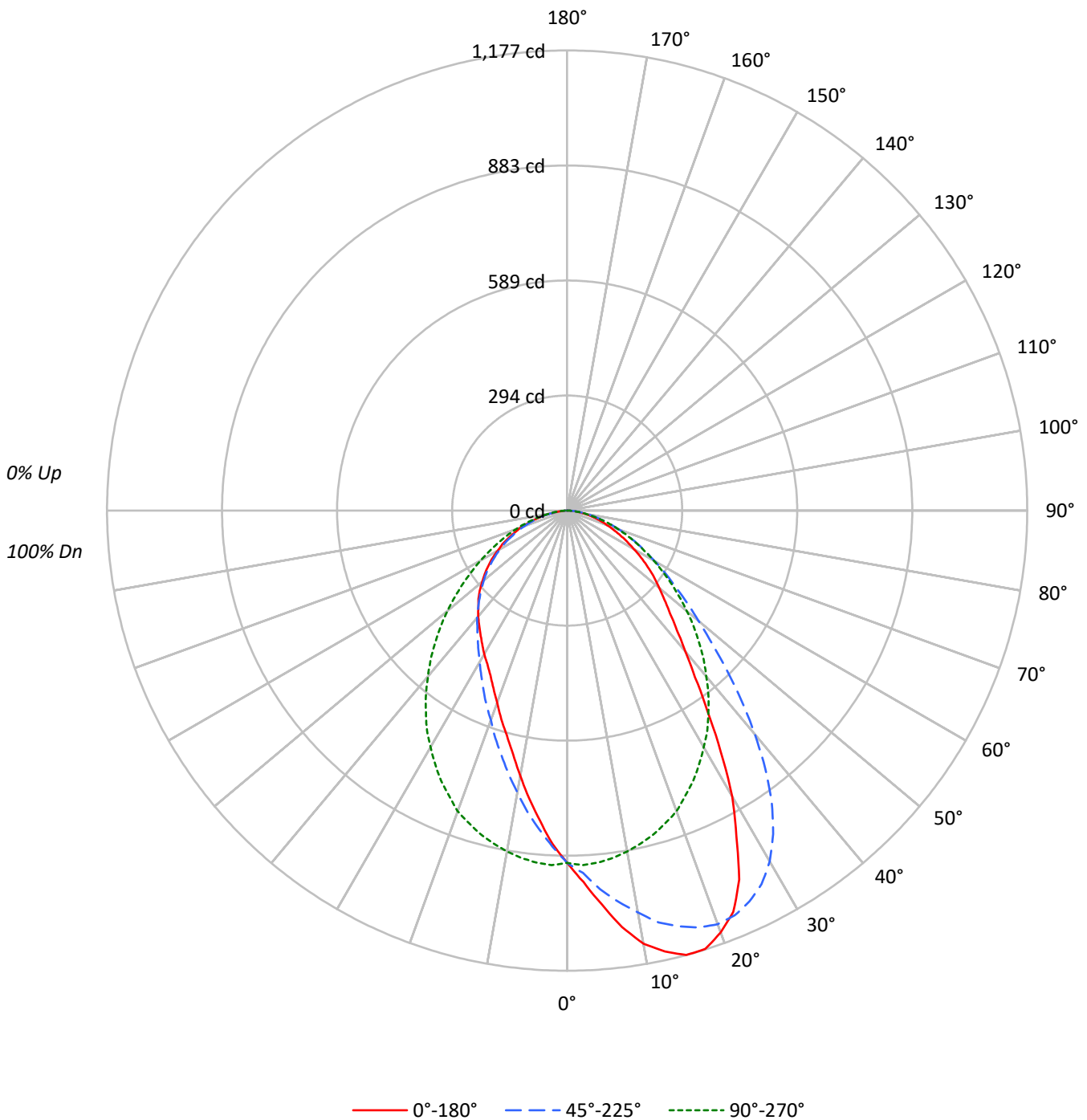
Lumens per Lamp: N/A
Luminaire Lumens: 1998.9 lumens
Efficiency: N/A
Efficacy: 116.2 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 17.2
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

TEST NUMBER: P243155

CATALOG NUMBER: S122DRP-H485D835-X4F0-XX-UDD-A-W

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	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																												
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86																												
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74																												
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63																												
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55																												
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49																												
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43																												
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39																												
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35																												
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32																												
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	17158	17158	17158	17158	17158
5°	19327	18589	17281	15650	15222
10°	21755	20189	17127	14166	13322
15°	23206	21701	16896	12786	11741
20°	23274	22820	16591	11562	10595
25°	21889	23186	16038	10649	9767
30°	18581	22791	15370	9825	9328
35°	14528	21225	14652	9280	8978
40°	11672	18559	13770	8904	8805
45°	10040	15554	12860	8531	8639
50°	9109	12970	11835	8250	8398
55°	8392	11148	10783	7927	8169
60°	7543	9829	9714	7558	7798
65°	6792	8789	8730	7076	7423
70°	6054	7797	7763	6483	6945
75°	5446	6793	6675	5740	6086
80°	4750	5627	5375	4684	4750
85°	4087	4655	3999	3125	2623

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 21510 cd/sqm



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CATALOG NUMBER: S122DRP-H485D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.8	4.3
10°-20°	246.7	12.3
20°-30°	358.7	17.9
30°-40°	384.8	19.3
40°-50°	344.9	17.3
50°-60°	274.9	13.8
60°-70°	186.0	9.3
70°-80°	94.8	4.7
80°-90°	22.2	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°	691.2	34.6
0°-40°	1076.0	53.8
0°-60°	1695.8	84.8
0°-90°	1998.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1998.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	901	901	901	901	901	
5°	1011	972	904	818	796	100
15°	1177	1100	857	648	595	330
25°	1042	1103	763	507	465	469
35°	625	913	630	399	386	396
45°	373	577	477	317	321	292
55°	253	336	325	239	246	226
65°	151	195	194	157	165	150
75°	74	92	91	78	83	79
85°	19	21	18	14	12	22
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°	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8
2.5°	950.8	953.8	951.1	950.1	948.1	947.5	942.1	937.8	935.1	927.8	928.5
5°	1010.8	1017.5	1013.8	1013.5	1006.2	1001.5	996.8	990.2	980.2	972.2	965.8
7.5°	1074.2	1070.8	1069.8	1066.2	1060.8	1054.2	1043.8	1034.2	1021.5	1009.8	1001.2
10°	1124.8	1123.8	1125.5	1116.2	1112.8	1102.5	1093.5	1078.5	1062.2	1043.8	1032.5
12.5°	1154.8	1157.8	1160.2	1156.5	1148.5	1145.5	1130.5	1109.5	1103.8	1078.8	1065.2
15°	1176.8	1178.2	1178.5	1174.5	1170.5	1162.8	1153.8	1140.5	1122.2	1100.5	1090.2
17.5°	1175.5	1175.2	1177.2	1174.8	1172.5	1170.2	1163.2	1152.8	1138.5	1118.2	1100.8
20°	1148.2	1154.2	1158.8	1159.8	1159.5	1160.8	1157.5	1150.8	1140.5	1125.8	1106.2
22.5°	1110.8	1108.5	1118.5	1117.8	1122.2	1132.2	1136.5	1133.8	1129.8	1120.5	1104.8
25°	1041.5	1043.8	1050.8	1058.2	1075.2	1081.2	1094.2	1104.2	1105.5	1103.2	1093.5
27.5°	937.5	954.1	957.8	967.5	991.2	1010.8	1037.2	1052.8	1075.2	1077.2	1072.8
30°	844.8	844.1	849.8	867.1	888.8	918.5	952.5	992.8	1018.5	1036.2	1042.5
32.5°	730.8	733.4	748.1	769.5	791.5	821.1	860.5	909.8	944.1	980.8	1001.5
35°	624.8	633.1	647.1	661.8	685.8	726.4	770.1	811.1	863.8	912.8	946.1
37.5°	537.4	548.8	559.4	573.4	596.8	628.1	667.4	721.8	774.1	833.1	882.1
40°	469.4	473.7	481.1	494.7	510.4	541.8	581.4	622.1	678.8	746.4	810.8
42.5°	416.1	415.1	423.1	431.7	446.1	469.4	504.1	544.8	601.1	661.1	726.1
45°	372.7	373.1	376.4	385.4	396.7	410.1	436.7	475.1	517.7	577.4	646.4
47.5°	337.4	338.4	343.4	349.7	356.4	368.7	386.4	411.4	451.4	501.4	566.1
50°	307.4	309.0	312.4	317.0	322.1	330.7	344.1	363.7	395.4	437.7	496.4
52.5°	280.7	281.4	282.4	286.7	290.7	298.7	308.7	324.1	349.1	384.4	430.1
55°	252.7	252.0	254.4	258.0	261.7	267.4	277.7	290.0	307.7	335.7	373.4
57.5°	224.0	225.0	226.7	228.7	235.4	241.4	249.0	260.4	274.4	296.4	327.7
60°	198.0	198.0	200.0	202.7	207.0	211.0	218.4	228.7	241.0	258.0	284.4
62.5°	172.7	174.0	176.0	177.4	181.4	186.4	192.0	200.0	211.4	225.0	244.7
65°	150.7	150.0	152.0	154.7	157.7	161.0	167.4	174.0	182.7	195.0	211.4
67.5°	128.0	130.0	130.7	132.0	134.4	138.7	141.7	148.7	155.7	166.7	180.4
70°	108.7	110.0	111.0	112.7	114.7	116.7	119.7	125.4	132.4	140.0	149.7
72.5°	91.3	92.3	91.3	93.0	94.0	96.0	100.0	102.7	108.0	114.7	123.4
75°	74.0	74.7	74.3	76.0	76.3	78.3	80.3	82.7	88.7	92.3	98.3
77.5°	58.0	58.7	59.0	59.7	60.3	61.3	62.3	64.7	68.0	71.3	76.0
80°	43.3	43.3	44.3	44.7	45.0	45.7	47.3	48.0	50.3	51.3	55.0
82.5°	30.0	30.3	30.7	30.7	31.0	31.7	32.0	33.3	34.0	35.7	37.3
85°	18.7	19.0	19.0	19.0	20.0	19.7	19.7	20.3	21.3	21.3	22.0
87.5°	9.3	9.7	9.7	9.7	10.0	10.0	10.0	10.0	10.0	10.7	10.3
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: P243155

CATALOG NUMBER: S122DRP-H485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8
2.5°	928.1	927.8	926.5	920.5	915.8	909.8	908.8	907.8	899.5	890.5	887.8
5°	960.8	954.8	946.5	936.5	926.5	915.5	909.1	903.8	891.1	877.1	869.1
7.5°	992.8	981.2	968.2	952.5	935.8	918.1	906.8	896.1	878.8	860.5	849.5
10°	1020.2	1004.5	986.5	965.8	942.8	918.8	902.1	885.5	863.5	841.1	826.5
12.5°	1042.8	1022.8	999.2	971.2	950.1	917.1	893.8	871.8	847.5	818.5	802.5
15°	1060.2	1040.5	1008.5	980.2	952.5	908.5	880.1	856.8	824.1	795.8	770.5
17.5°	1081.2	1053.2	1021.5	980.8	950.1	899.8	867.8	837.5	802.1	768.8	740.8
20°	1090.5	1061.2	1027.2	981.8	942.8	890.5	847.8	818.5	775.8	737.4	705.8
22.5°	1091.8	1063.8	1026.8	978.8	930.1	876.8	827.8	789.5	746.8	706.1	670.4
25°	1086.2	1059.5	1021.2	973.5	916.1	862.1	807.5	763.1	713.8	671.8	635.4
27.5°	1070.8	1049.2	1012.8	961.8	901.8	839.5	779.8	731.4	682.8	635.1	600.4
30°	1046.2	1031.8	1000.5	946.5	883.5	814.8	755.1	698.8	646.1	601.4	564.1
32.5°	1014.5	1007.5	981.5	928.1	864.8	787.8	725.4	667.4	610.1	567.8	529.4
35°	974.2	977.8	955.8	907.5	841.1	760.5	690.8	630.1	574.1	529.1	493.7
37.5°	921.8	939.8	925.8	880.5	810.8	732.8	654.4	593.4	534.7	491.4	460.4
40°	863.1	894.8	888.1	850.1	778.1	700.4	619.4	553.8	496.4	455.4	425.7
42.5°	794.1	840.1	847.5	813.1	745.8	660.1	580.1	516.7	461.4	421.1	392.7
45°	716.8	773.8	798.5	771.5	708.1	621.1	539.8	477.4	422.7	388.4	364.7
47.5°	639.1	707.8	741.1	728.1	664.1	579.4	499.7	438.7	387.1	357.1	334.7
50°	562.4	636.1	684.8	676.1	620.8	539.8	459.4	399.4	352.1	324.4	305.4
52.5°	495.1	564.8	617.8	622.1	572.4	494.4	416.7	361.1	320.7	295.7	279.7
55°	428.7	493.4	551.4	562.1	521.7	446.7	377.4	324.7	288.0	267.4	254.4
57.5°	369.4	428.1	485.7	504.4	471.7	404.1	335.1	288.7	257.0	241.0	229.7
60°	319.0	372.1	421.7	440.7	418.4	356.7	296.4	255.0	228.7	214.4	205.4
62.5°	275.0	316.0	360.1	381.1	366.1	312.4	259.7	223.0	201.7	189.4	182.4
65°	235.4	267.0	301.7	326.1	309.4	269.4	225.4	193.7	175.7	164.4	159.4
67.5°	198.7	225.0	252.7	272.0	263.7	227.4	190.4	165.7	150.7	142.0	137.4
70°	165.4	185.0	207.4	222.4	216.4	188.4	159.0	139.4	126.7	120.7	116.7
72.5°	135.7	148.4	165.4	177.7	171.4	151.7	130.7	115.0	105.7	98.7	95.7
75°	107.7	118.7	130.7	139.0	134.0	119.4	102.7	90.7	84.3	80.0	78.0
77.5°	81.7	90.3	98.7	102.7	100.3	89.7	78.3	69.0	63.7	61.0	58.7
80°	58.7	63.7	69.3	73.0	71.7	64.3	56.3	49.0	46.7	43.3	42.7
82.5°	39.3	43.3	44.7	46.3	45.3	42.0	36.3	32.0	30.0	28.3	28.0
85°	23.3	24.3	26.0	26.0	25.0	22.7	19.7	18.3	16.3	16.0	15.0
87.5°	10.3	10.3	10.3	10.3	10.3	9.7	8.3	7.7	7.0	6.7	6.3
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°	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8	900.8
2.5°	885.5	882.1	877.5	872.1	867.5	860.1	857.8	857.8	859.5	857.5	855.8
5°	862.5	855.8	849.1	838.8	830.1	818.5	815.1	811.8	811.5	808.1	803.8
7.5°	837.8	827.8	814.1	799.5	790.1	777.5	770.5	768.5	762.1	756.1	749.1
10°	809.1	793.8	777.5	763.5	748.8	732.4	724.1	718.4	712.1	704.8	699.8
12.5°	774.5	757.1	742.1	725.8	713.4	690.4	687.8	680.4	667.8	656.8	652.8
15°	753.1	722.8	705.8	690.8	672.1	648.4	639.8	631.8	619.8	612.8	607.1
17.5°	715.4	688.1	666.8	646.8	628.8	610.4	597.4	590.8	581.1	575.1	569.4
20°	681.1	651.4	629.1	605.8	587.1	570.4	559.4	551.1	546.1	540.1	534.4
22.5°	646.4	615.4	594.1	570.4	548.4	538.4	525.4	518.4	511.7	507.1	501.1
25°	606.1	581.4	554.8	536.4	517.1	506.7	494.4	487.7	482.4	477.1	474.1
27.5°	570.1	545.1	520.4	502.1	485.7	475.7	468.1	461.7	455.1	451.1	448.7
30°	532.7	509.7	488.1	470.4	457.7	446.7	442.1	436.1	431.1	429.4	425.7
32.5°	499.4	473.7	456.4	440.4	429.7	422.1	418.7	412.4	411.4	409.7	407.7
35°	466.1	444.1	427.4	413.7	404.7	399.1	394.7	393.1	391.4	389.7	388.1
37.5°	433.1	415.7	400.1	389.1	381.7	377.4	376.4	373.1	372.7	370.4	370.4
40°	403.4	385.7	374.7	366.1	360.1	358.1	355.4	354.7	353.7	353.1	354.4
42.5°	373.7	361.7	352.4	343.4	338.7	337.1	336.4	335.4	334.7	336.7	337.4
45°	346.1	335.7	327.7	321.4	318.7	316.7	316.7	317.7	317.4	318.4	318.4
47.5°	320.4	311.0	304.4	302.0	298.7	298.0	298.4	298.0	299.7	301.0	302.4
50°	296.0	287.7	282.4	280.0	279.4	278.4	279.7	280.4	281.4	282.7	283.4
52.5°	269.0	265.0	261.7	259.4	259.0	259.4	259.0	261.4	262.4	264.4	264.0
55°	246.0	243.0	240.7	238.0	237.7	238.7	239.4	241.4	242.7	244.4	244.0
57.5°	224.4	222.0	219.4	218.7	218.4	218.7	221.7	221.4	223.4	224.7	225.4
60°	200.7	199.0	196.7	196.7	197.7	198.4	199.4	201.0	203.0	202.7	205.0
62.5°	179.0	177.0	176.4	177.4	177.0	178.7	179.7	179.7	182.4	183.4	184.0
65°	157.4	156.7	155.7	155.7	156.7	157.0	158.7	159.7	160.7	162.7	164.4
67.5°	137.0	135.4	135.4	134.7	136.0	137.0	138.0	139.4	140.0	142.4	143.4
70°	115.7	115.0	114.7	115.4	115.4	116.4	118.0	119.7	121.0	121.4	123.4
72.5°	95.0	95.0	95.0	96.0	96.7	97.7	98.0	99.3	101.3	101.7	102.7
75°	76.3	76.7	76.3	76.7	77.0	78.0	78.7	80.0	81.3	81.7	82.3
77.5°	59.0	58.3	57.7	58.7	59.3	61.3	61.0	61.7	63.0	62.3	63.0
80°	41.3	42.3	41.0	43.0	43.0	42.7	43.3	44.3	44.0	44.7	44.0
82.5°	28.0	27.0	27.0	28.0	28.3	27.3	28.0	28.3	28.7	28.0	27.7
85°	15.3	15.0	15.7	14.7	15.0	14.3	14.3	13.7	14.3	13.7	13.0
87.5°	5.7	5.3	5.7	4.7	4.3	4.0	3.7	3.7	3.0	3.0	3.0
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: P243155

CATALOG NUMBER: S122DRP-H485D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	900.8	900.8	900.8	900.8
2.5°	858.1	854.5	852.8	854.1
5°	799.1	800.1	794.1	796.1
7.5°	748.1	743.8	745.1	742.8
10°	694.1	691.8	688.1	688.8
12.5°	657.8	642.1	641.1	638.1
15°	606.8	598.1	596.1	595.4
17.5°	566.1	558.8	561.4	559.4
20°	529.4	529.7	525.4	522.7
22.5°	497.1	496.4	494.7	492.1
25°	469.7	469.7	465.7	464.7
27.5°	444.7	445.4	442.1	442.1
30°	426.1	423.7	423.4	424.1
32.5°	407.4	404.7	405.1	404.7
35°	387.4	388.1	387.1	386.1
37.5°	370.4	370.4	370.4	369.4
40°	353.7	354.4	353.4	354.1
42.5°	337.1	337.4	337.4	336.1
45°	320.4	320.0	319.4	320.7
47.5°	303.0	303.0	302.7	303.4
50°	284.0	284.7	283.7	283.4
52.5°	264.7	265.0	264.7	265.4
55°	245.0	245.0	245.4	246.0
57.5°	224.7	227.0	225.4	226.7
60°	204.7	205.0	205.4	204.7
62.5°	185.7	185.4	185.7	186.7
65°	165.0	165.7	165.4	164.7
67.5°	144.7	144.0	145.0	144.0
70°	123.0	124.4	123.4	124.7
72.5°	103.3	103.0	103.7	102.0
75°	82.7	82.7	83.0	82.7
77.5°	63.3	62.7	62.3	61.3
80°	43.7	43.7	42.3	43.3
82.5°	26.7	27.0	27.3	25.3
85°	12.7	12.7	12.3	12.0
87.5°	2.7	2.7	3.0	3.3
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243155

CATALOG NUMBER: S122DRP-H485D835-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	18.52	20.05	18.89	20.36	20.68	21.36	22.88	21.73	23.20	23.51
	3H	19.88	21.24	20.25	21.57	21.93	22.38	23.75	22.76	24.08	24.44
	4H	20.36	21.64	20.76	21.99	22.37	22.71	23.99	23.11	24.34	24.72
	6H	20.71	21.90	21.12	22.26	22.65	22.90	24.09	23.32	24.45	24.85
	8H	20.82	21.94	21.24	22.33	22.74	22.95	24.07	23.37	24.46	24.86
	12H	20.89	21.97	21.32	22.35	22.78	22.96	24.04	23.39	24.42	24.85
4H	2H	19.41	20.69	19.81	21.04	21.41	21.60	22.88	22.00	23.23	23.61
	3H	20.90	21.97	21.31	22.37	22.77	22.97	24.04	23.38	24.44	24.84
	4H	21.47	22.43	21.90	22.84	23.28	23.49	24.45	23.92	24.86	25.30
	6H	21.91	22.74	22.36	23.18	23.64	23.82	24.65	24.28	25.09	25.55
	8H	22.04	22.82	22.51	23.26	23.73	23.89	24.67	24.36	25.12	25.58
	12H	22.14	22.84	22.62	23.31	23.79	23.93	24.63	24.41	25.11	25.58
8H	4H	21.91	22.69	22.37	23.13	23.60	23.62	24.40	24.09	24.85	25.31
	6H	22.43	23.07	22.93	23.56	24.04	24.07	24.71	24.56	25.20	25.68
	8H	22.62	23.19	23.13	23.70	24.19	24.20	24.78	24.71	25.29	25.77
	12H	22.77	23.28	23.28	23.77	24.34	24.29	24.80	24.80	25.29	25.85
12H	4H	21.96	22.66	22.45	23.14	23.61	23.62	24.31	24.10	24.79	25.26
	6H	22.51	23.08	23.02	23.59	24.08	24.07	24.64	24.58	25.15	25.64
	8H	22.74	23.25	23.25	23.75	24.31	24.25	24.76	24.76	25.25	25.81