

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: P242403

Luminaire Tested: S122RDRP-S485D840-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242403
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122RDRP-S485D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

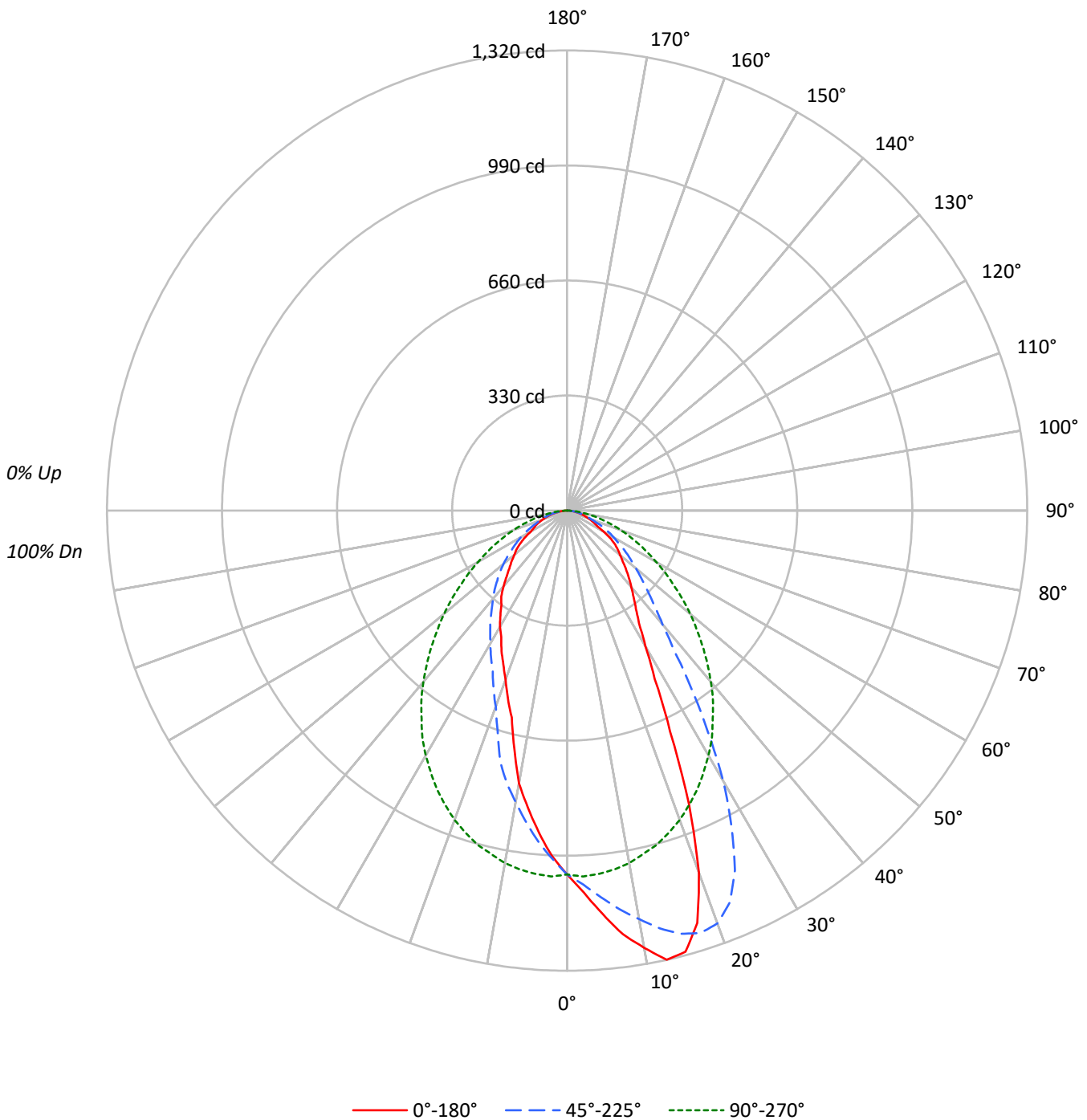
Lumens per Lamp: N/A
Luminaire Lumens: 1803.2 lumens
Efficiency: N/A
Efficacy: 95.9 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78				76	
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68				66	
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60				59	
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54				52	
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49				47	
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44				42	
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40				39	
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37				35	
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	19876	19876	19876	19876	19876
5°	22199	21283	20000	18226	17734
10°	24630	23022	19860	16423	15373
15°	25839	24782	19570	14650	12112
20°	22401	25546	19137	12134	10480
25°	14691	23934	18547	10622	9357
30°	9889	19705	17831	9673	8470
35°	8008	14391	16928	8920	7639
40°	7121	10575	15948	8230	7069
45°	6446	8790	14797	7629	6309
50°	5867	7619	13655	7047	5844
55°	5516	6741	12390	6369	5443
60°	4613	5871	11231	5844	4556
65°	3890	5228	10195	5197	4412
70°	3592	4160	9106	4583	4160
75°	3363	3761	7926	4320	3842
80°	3104	3422	6527	3773	3422
85°	2863	2929	5158	3016	3016

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 70°
 Vertical Angle: 45°
 Luminance: 21555 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.0	5.5
10°-20°	276.3	15.3
20°-30°	355.5	19.7
30°-40°	337.3	18.7
40°-50°	289.0	16.0
50°-60°	220.2	12.2
60°-70°	138.8	7.7
70°-80°	69.3	3.8
80°-90°	17.8	1.0
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°	730.8	40.5
0°-40°	1068.1	59.2
0°-60°	1577.2	87.5
0°-90°	1803.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1803.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1044	1044	1044	1044	1044	
5°	1161	1113	1046	953	928	114
15°	1310	1257	992	743	614	356
25°	699	1139	882	505	445	330
35°	344	619	728	384	328	219
45°	239	326	549	283	234	185
55°	166	203	373	192	164	146
65°	86	116	226	115	98	87
75°	46	51	108	59	52	48
85°	13	13	24	14	14	15
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°	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5
2.5°	1096.4	1097.5	1098.6	1096.1	1096.1	1093.9	1089.2	1085.5	1075.4	1073.9	1073.9
5°	1161.0	1160.2	1161.7	1157.0	1150.4	1149.0	1142.1	1133.0	1123.6	1113.1	1110.9
7.5°	1226.2	1221.9	1220.1	1222.2	1215.3	1205.9	1194.3	1183.4	1167.1	1153.7	1145.4
10°	1273.4	1285.3	1278.1	1265.4	1267.9	1250.9	1241.8	1226.2	1213.2	1190.3	1185.3
12.5°	1319.8	1322.7	1321.6	1315.8	1311.1	1300.6	1287.5	1274.4	1247.6	1227.7	1206.6
15°	1310.3	1317.2	1319.0	1316.9	1318.7	1318.0	1311.4	1300.2	1279.2	1256.7	1237.1
17.5°	1240.7	1248.7	1255.2	1261.0	1270.1	1287.9	1293.3	1295.5	1286.8	1270.8	1254.5
20°	1105.1	1097.1	1130.5	1147.5	1162.1	1198.3	1229.5	1241.5	1260.7	1260.3	1256.7
22.5°	913.0	917.3	948.5	969.5	1018.8	1055.1	1091.7	1145.0	1186.7	1217.5	1236.4
25°	699.0	712.8	744.4	771.9	819.1	886.5	947.8	1018.8	1085.9	1138.8	1189.2
27.5°	543.9	545.7	574.3	602.2	631.2	689.6	771.6	856.8	952.5	1021.4	1108.4
30°	449.6	447.4	457.9	473.5	497.5	540.2	598.2	681.6	777.0	895.9	1001.8
32.5°	382.9	383.6	390.9	401.4	420.2	445.6	480.8	544.6	633.4	749.8	878.5
35°	344.4	344.1	349.9	358.2	366.6	385.1	412.2	447.8	509.8	618.9	745.8
37.5°	312.5	314.4	316.9	322.3	332.5	343.4	360.4	385.4	432.6	500.4	614.2
40°	286.4	287.2	291.1	295.5	300.9	308.9	322.3	341.5	373.8	425.3	503.3
42.5°	262.5	263.2	265.8	269.8	273.7	281.7	292.2	308.2	332.8	370.2	431.1
45°	239.3	239.3	241.8	243.6	248.4	255.6	264.7	278.5	296.6	326.3	369.1
47.5°	216.8	216.8	218.6	221.9	225.2	231.0	240.4	252.0	265.0	289.3	327.4
50°	198.0	198.3	199.4	202.0	203.8	208.8	215.7	225.5	239.3	257.1	287.5
52.5°	182.7	182.4	183.8	184.6	185.6	188.9	193.6	202.0	213.9	228.8	252.7
55°	166.1	164.6	166.8	168.6	169.7	171.1	174.0	179.5	190.0	203.0	221.9
57.5°	146.5	145.8	146.8	148.7	151.9	155.5	157.4	161.0	166.4	176.6	196.5
60°	121.1	121.1	124.4	125.5	129.4	134.5	139.6	142.5	147.9	154.1	167.9
62.5°	98.6	99.0	100.1	101.2	103.0	109.5	117.1	124.4	129.4	135.2	143.2
65°	86.3	87.0	87.0	87.7	89.2	90.6	93.5	98.6	107.7	116.0	122.9
67.5°	75.4	75.4	75.8	76.5	76.9	78.7	79.8	82.3	84.1	93.5	103.0
70°	64.5	65.6	65.3	66.0	66.4	67.1	68.5	69.6	72.9	74.7	79.8
72.5°	54.4	55.1	55.1	55.5	56.6	56.6	57.6	58.7	60.5	62.0	64.2
75°	45.7	45.3	45.7	46.4	46.8	47.1	47.1	48.6	49.7	51.1	52.9
77.5°	37.0	37.3	37.3	37.3	37.3	38.1	38.1	38.8	39.9	40.6	41.7
80°	28.3	28.6	28.3	28.6	29.0	29.4	29.0	29.4	30.5	31.2	31.2
82.5°	20.3	20.3	20.7	20.7	20.7	20.7	21.4	21.4	22.1	21.8	22.1
85°	13.1	12.7	12.7	12.7	13.1	13.4	13.1	13.1	13.4	13.4	13.4
87.5°	5.8	6.2	6.2	6.2	6.2	6.2	6.2	6.5	6.2	6.5	6.2
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°	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5
2.5°	1074.7	1071.8	1069.2	1062.7	1059.4	1052.2	1051.1	1050.7	1041.3	1032.2	1029.7
5°	1105.1	1099.3	1090.6	1080.5	1070.0	1059.1	1051.8	1046.0	1031.5	1017.7	1009.8
7.5°	1135.2	1124.7	1110.9	1093.5	1078.7	1061.3	1049.3	1038.4	1018.5	1000.3	988.4
10°	1169.7	1149.4	1129.4	1103.0	1082.3	1062.0	1043.1	1026.8	1003.6	977.5	959.0
12.5°	1191.1	1168.2	1138.8	1113.1	1084.8	1057.6	1030.8	1008.7	980.4	953.2	930.4
15°	1209.9	1186.0	1152.6	1115.6	1081.2	1047.5	1018.5	992.4	956.8	924.6	897.7
17.5°	1227.3	1194.3	1159.9	1117.1	1079.0	1038.1	1001.4	968.8	930.0	891.9	861.5
20°	1234.9	1202.3	1161.0	1118.2	1071.0	1020.6	980.4	944.1	901.7	859.3	823.0
22.5°	1230.2	1206.6	1159.5	1106.2	1057.6	1004.3	957.6	914.0	865.8	822.3	778.8
25°	1205.6	1196.9	1153.3	1097.5	1042.4	981.1	928.6	882.5	828.8	782.4	736.8
27.5°	1160.2	1172.9	1142.1	1081.6	1022.1	956.1	898.8	847.0	792.2	740.4	694.7
30°	1088.4	1131.6	1120.0	1064.9	996.4	931.8	865.5	810.7	751.3	697.6	652.6
32.5°	990.2	1068.5	1085.5	1041.7	970.2	897.7	827.4	773.0	710.3	653.0	609.5
35°	884.7	991.3	1040.2	1010.9	939.8	863.3	791.5	728.0	665.7	609.8	566.3
37.5°	759.6	901.7	977.1	973.9	906.1	828.1	750.2	687.4	623.3	568.2	522.8
40°	638.5	795.9	902.1	925.7	870.5	784.6	705.6	641.4	579.0	525.4	471.3
42.5°	529.7	686.4	823.0	868.4	827.4	742.2	662.8	595.0	534.8	484.8	429.3
45°	446.0	583.0	727.0	800.2	775.9	696.9	613.1	549.3	492.4	448.5	395.6
47.5°	386.1	485.8	630.5	726.2	723.3	648.3	564.9	503.6	450.0	409.3	364.4
50°	336.5	420.6	538.4	650.8	660.2	599.7	521.4	460.8	411.5	368.4	333.9
52.5°	291.9	357.5	460.5	567.1	598.2	547.8	472.4	417.7	370.2	331.4	303.1
55°	254.2	307.8	388.3	489.1	529.7	492.7	425.3	373.1	334.3	300.9	275.6
57.5°	221.2	263.2	330.3	414.8	460.8	435.8	378.2	335.0	300.6	269.4	249.1
60°	190.4	223.3	278.1	345.9	398.1	381.8	334.3	294.8	266.5	240.4	221.5
62.5°	161.3	188.5	233.5	285.3	332.1	327.8	291.1	259.6	235.7	212.5	197.2
65°	134.5	155.2	191.8	234.9	273.4	276.6	248.7	226.2	204.1	185.3	171.1
67.5°	111.3	125.5	153.0	191.1	220.4	230.6	211.7	193.6	175.5	160.3	147.6
70°	90.3	101.2	120.0	149.4	175.8	186.7	176.9	163.5	148.3	136.3	125.8
72.5°	68.9	79.4	92.1	111.7	133.4	145.4	143.6	134.9	123.3	113.8	104.1
75°	55.1	58.4	67.8	82.3	100.1	110.2	112.8	107.7	97.9	90.3	84.5
77.5°	42.8	45.0	50.0	58.7	71.1	80.1	84.1	83.4	76.1	71.1	65.6
80°	32.6	33.7	35.9	39.2	47.9	56.9	59.5	59.5	54.7	52.9	47.5
82.5°	22.8	23.6	24.7	26.1	29.0	36.6	39.5	40.2	37.7	35.2	31.2
85°	14.1	13.8	14.5	15.6	16.3	18.5	22.8	23.6	22.8	19.9	18.9
87.5°	6.2	6.5	6.5	6.2	6.5	6.9	8.7	10.5	9.1	8.0	7.3
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°	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5	1043.5
2.5°	1025.0	1022.5	1017.7	1010.5	1006.1	998.5	993.5	996.4	997.1	996.4	995.6
5°	1001.1	993.5	982.9	972.8	963.4	953.2	947.4	944.9	939.8	936.9	935.4
7.5°	973.9	962.6	947.8	931.5	916.2	901.7	895.2	890.1	880.7	875.6	870.9
10°	942.7	922.0	907.2	884.0	869.8	849.1	835.0	835.4	821.2	813.3	807.5
12.5°	908.2	885.0	857.9	837.5	816.5	800.9	783.2	774.5	759.2	751.6	733.5
15°	869.5	843.0	816.9	788.6	768.7	742.9	718.3	688.2	663.9	642.8	637.0
17.5°	828.1	795.5	769.7	740.7	709.6	662.8	632.3	613.8	599.3	588.5	579.8
20°	785.3	752.0	724.1	674.0	628.0	598.6	577.6	564.2	548.9	537.0	530.4
22.5°	740.4	705.2	664.6	607.3	574.0	551.8	533.7	517.8	508.7	500.0	494.2
25°	698.3	660.2	597.5	559.1	530.1	505.4	492.4	482.9	472.1	459.4	453.6
27.5°	654.4	593.9	546.4	518.5	488.8	473.2	461.9	446.3	436.5	431.8	425.3
30°	604.0	543.5	508.3	477.1	457.6	439.8	426.0	418.0	408.6	398.8	394.8
32.5°	547.8	502.5	469.2	444.5	424.6	410.1	399.9	385.8	379.6	374.5	365.1
35°	503.3	466.6	435.8	414.8	395.9	383.6	370.9	363.3	351.0	345.9	342.6
37.5°	462.6	430.7	407.5	384.3	369.8	355.3	348.1	335.4	330.7	322.7	316.2
40°	429.3	398.1	376.0	357.9	341.2	331.0	321.2	311.5	303.5	300.2	291.9
42.5°	395.2	371.3	349.2	328.9	319.1	308.2	295.1	288.6	280.3	274.5	270.1
45°	364.4	341.9	323.1	306.7	294.4	283.2	275.2	263.2	258.5	248.0	243.6
47.5°	337.2	315.4	297.3	281.4	269.0	262.5	250.9	240.4	233.9	226.6	220.4
50°	307.8	290.4	273.0	259.2	248.4	237.8	225.9	221.2	209.6	206.3	203.0
52.5°	281.0	264.7	249.1	235.7	224.8	214.6	204.5	198.0	191.1	187.8	185.6
55°	256.3	240.4	225.2	213.2	202.3	191.8	185.3	177.7	174.0	171.5	168.6
57.5°	231.0	216.5	204.5	192.2	181.3	172.6	164.6	160.3	156.6	153.7	149.7
60°	207.0	193.3	182.7	171.5	160.3	153.4	147.6	142.1	137.8	132.7	131.3
62.5°	181.6	170.0	160.6	149.7	140.3	134.2	128.7	123.6	118.2	110.2	108.0
65°	158.8	149.4	139.2	130.2	121.5	115.3	107.3	101.5	99.3	98.6	98.3
67.5°	137.8	128.7	120.0	110.6	102.6	95.7	91.0	90.3	88.8	88.5	87.4
70°	116.7	108.4	99.7	91.0	83.4	82.3	80.9	79.4	77.6	76.9	76.1
72.5°	97.9	89.2	80.5	74.0	71.8	70.3	68.9	67.4	66.4	65.6	65.3
75°	78.0	70.0	64.2	61.6	59.8	58.7	56.6	55.5	54.7	53.7	53.3
77.5°	59.5	54.4	51.5	50.0	47.9	46.8	45.3	44.2	43.1	43.1	42.4
80°	42.8	40.6	38.8	36.6	35.9	34.4	34.1	33.0	33.4	32.3	32.3
82.5°	30.8	27.9	26.5	25.7	25.0	23.9	23.6	23.2	23.2	22.5	22.5
85°	17.0	16.3	15.6	14.9	14.9	13.8	14.1	13.8	13.8	13.1	12.7
87.5°	6.9	6.5	5.8	5.8	5.8	5.4	5.4	5.1	5.1	5.1	4.7
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: P242403

CATALOG NUMBER: S122RDRP-S485D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1043.5	1043.5	1043.5	1043.5
2.5°	991.6	992.4	991.3	992.0
5°	933.6	929.3	928.6	927.5
7.5°	865.1	864.7	862.6	860.0
10°	799.5	797.7	797.3	794.8
12.5°	722.6	708.5	707.0	699.8
15°	628.3	626.2	618.9	614.2
17.5°	575.8	568.5	566.0	564.9
20°	525.4	518.8	517.8	517.0
22.5°	490.6	483.7	480.4	477.9
25°	450.0	447.4	446.0	445.2
27.5°	418.0	411.5	410.8	409.0
30°	391.6	389.8	387.2	385.1
32.5°	360.4	358.9	356.8	356.0
35°	339.0	333.9	331.8	328.5
37.5°	315.4	312.5	308.9	310.4
40°	287.2	285.3	284.6	284.3
42.5°	264.7	258.9	256.7	256.7
45°	241.8	237.1	233.9	234.2
47.5°	217.2	217.5	215.4	216.1
50°	200.5	198.3	196.9	197.2
52.5°	184.6	182.7	181.6	183.5
55°	166.8	164.6	164.2	163.9
57.5°	147.6	146.5	144.7	143.6
60°	126.5	123.6	120.0	119.6
62.5°	107.3	107.3	107.3	107.3
65°	97.5	97.2	97.5	97.9
67.5°	87.4	86.7	85.9	86.3
70°	75.4	75.1	74.7	74.7
72.5°	63.8	63.8	63.5	63.1
75°	52.9	52.2	52.2	52.2
77.5°	42.4	42.1	41.7	41.3
80°	31.9	31.5	31.2	31.2
82.5°	22.5	22.1	22.1	21.8
85°	13.1	13.4	13.1	13.8
87.5°	4.7	4.4	4.7	4.4
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P242403
 CATALOG NUMBER: S122RDRP-S485D840-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	15.92	17.37	16.29	17.69	18.00	21.82	23.27	22.19	23.59	23.90
	3H	17.03	18.33	17.41	18.66	19.02	22.98	24.28	23.36	24.61	24.97
	4H	17.49	18.70	17.89	19.05	19.43	23.37	24.59	23.77	24.94	25.32
	6H	17.85	18.98	18.27	19.34	19.74	23.64	24.76	24.05	25.13	25.52
	8H	17.98	19.04	18.41	19.43	19.84	23.71	24.78	24.14	25.17	25.57
	12H	18.06	19.08	18.49	19.46	19.89	23.75	24.77	24.18	25.15	25.58
4H	2H	16.63	17.85	17.03	18.20	18.58	21.78	23.00	22.19	23.35	23.73
	3H	17.90	18.91	18.31	19.31	19.71	23.08	24.09	23.49	24.49	24.89
	4H	18.45	19.36	18.88	19.77	20.21	23.57	24.48	24.01	24.90	25.34
	6H	18.92	19.71	19.38	20.15	20.61	23.96	24.74	24.42	25.19	25.65
	8H	19.08	19.81	19.55	20.26	20.73	24.07	24.81	24.54	25.25	25.72
	12H	19.20	19.85	19.68	20.33	20.80	24.15	24.80	24.63	25.28	25.75
8H	4H	18.79	19.53	19.26	19.97	20.44	23.56	24.29	24.02	24.74	25.21
	6H	19.36	19.97	19.86	20.46	20.94	23.99	24.59	24.49	25.08	25.56
	8H	19.59	20.13	20.11	20.64	21.13	24.14	24.68	24.65	25.19	25.68
	12H	19.78	20.25	20.29	20.75	21.31	24.26	24.74	24.77	25.23	25.80
12H	4H	18.84	19.49	19.32	19.97	20.44	23.54	24.19	24.02	24.67	25.14
	6H	19.43	19.97	19.94	20.48	20.97	23.96	24.50	24.48	25.01	25.50
	8H	19.71	20.18	20.22	20.68	21.24	24.14	24.62	24.65	25.11	25.68