

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: P243253

Luminaire Tested: S122RDRP-H485D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243253
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122RDRP-H485D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

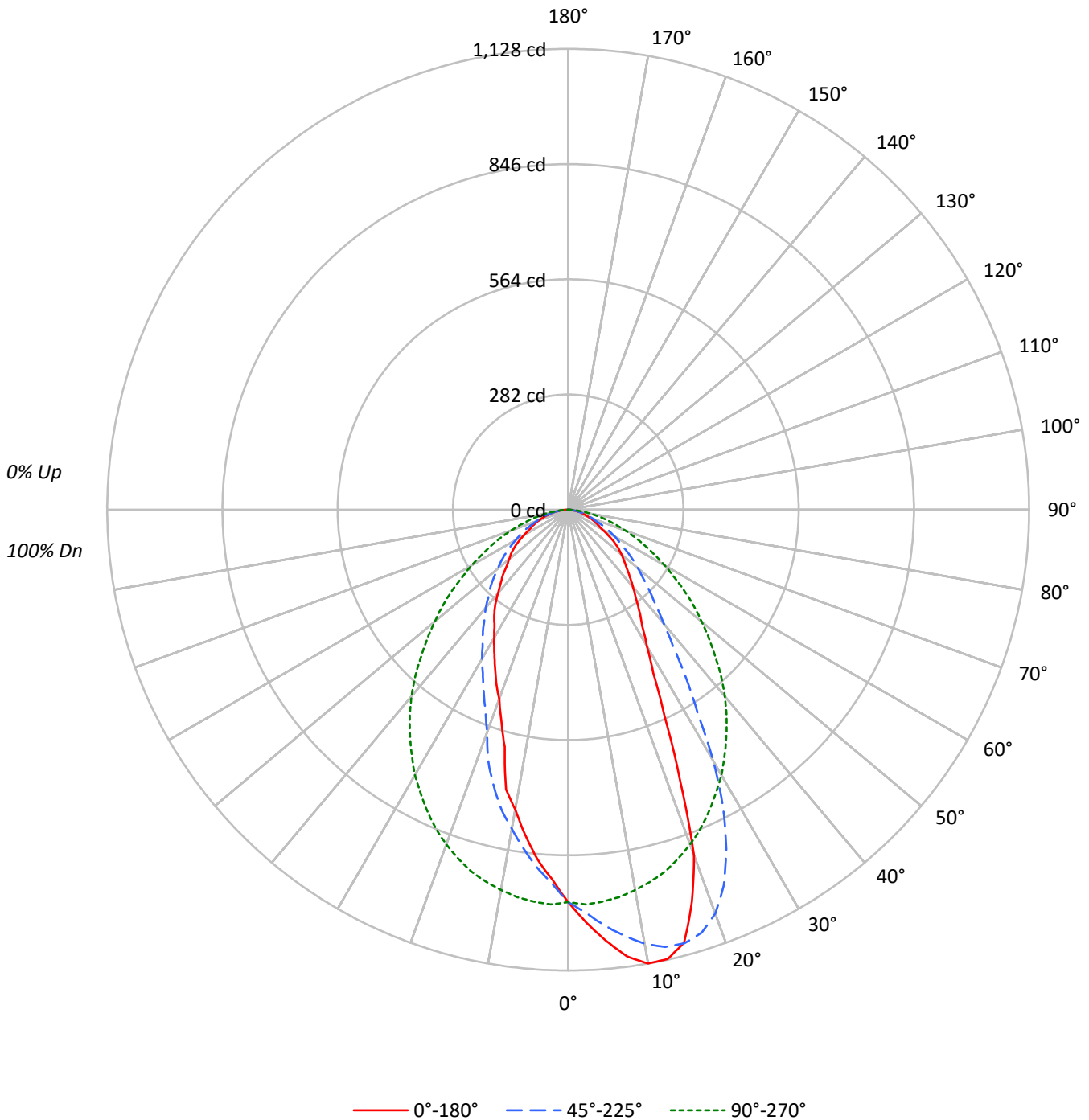
Lumens per Lamp: N/A
Luminaire Lumens: 1618.2 lumens
Efficiency: N/A
Efficacy: 94.1 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

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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	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	86	83	79	84	80	78					76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68					66				
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60					58				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	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					38				
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	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°	18290	18290	18290	18290	18290
5°	20247	19537	18413	16803	16436
10°	21817	20870	18286	15346	14415
15°	21625	21668	18073	13841	11846
20°	18241	21322	17674	11757	9999
25°	11727	19243	17129	10288	8901
30°	8472	15605	16496	9266	7975
35°	7057	11682	15700	8459	7336
40°	6124	9056	14827	7805	6641
45°	5468	7583	13719	7262	6077
50°	5046	6602	12636	6667	5586
55°	4530	5699	11540	6220	5320
60°	3615	5013	10389	5650	4789
65°	3313	4264	9334	5183	4417
70°	3046	3520	8242	4600	4199
75°	2775	3142	7212	4372	3974
80°	2413	2753	6000	3993	3719
85°	1923	2273	4808	3650	3431

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 18164 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.9	5.6
10°-20°	248.7	15.4
20°-30°	313.5	19.4
30°-40°	300.9	18.6
40°-50°	259.2	16.0
50°-60°	198.2	12.2
60°-70°	126.1	7.8
70°-80°	63.9	3.9
80°-90°	16.9	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°	653.1	40.4
0°-40°	954.0	59.0
0°-60°	1411.4	87.2
0°-90°	1618.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1618.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	960	960	960	960	960	
5°	1059	1022	963	879	860	103
15°	1097	1099	916	702	601	297
25°	558	916	815	490	424	267
35°	304	502	675	364	316	191
45°	203	282	509	270	226	158
55°	136	172	348	187	160	120
65°	74	95	207	115	98	73
75°	38	43	98	59	54	40
85°	9	10	22	17	16	10
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°	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2
2.5°	1011.1	1012.3	1013.0	1011.4	1008.0	1008.3	1005.1	999.8	993.2	987.2	990.7
5°	1058.9	1060.4	1060.1	1057.3	1053.8	1050.7	1045.3	1037.8	1029.9	1021.8	1020.2
7.5°	1102.8	1106.3	1105.4	1100.0	1097.5	1093.1	1084.0	1075.5	1063.6	1051.9	1047.2
10°	1128.0	1130.8	1129.2	1128.0	1125.1	1120.7	1112.6	1104.4	1091.2	1079.0	1072.0
12.5°	1126.1	1128.6	1129.9	1131.1	1130.2	1128.6	1125.1	1118.2	1107.6	1096.2	1087.4
15°	1096.6	1092.5	1089.6	1097.5	1100.3	1111.0	1113.5	1114.5	1107.2	1098.8	1096.6
17.5°	1006.7	1008.0	1029.6	1026.2	1030.9	1057.0	1067.3	1081.5	1087.4	1085.6	1089.3
20°	899.9	885.1	895.8	911.5	926.3	964.3	989.4	1011.7	1037.5	1051.9	1065.8
22.5°	713.9	714.2	739.9	765.7	799.0	840.2	878.5	921.2	967.1	995.1	1027.4
25°	558.0	573.1	584.4	595.7	644.1	683.7	747.5	799.3	862.5	915.6	969.9
27.5°	451.2	466.9	468.8	494.2	522.8	554.9	596.7	678.4	743.1	821.0	888.2
30°	385.2	388.4	394.9	401.5	422.6	452.4	497.4	548.6	620.5	709.5	799.6
32.5°	337.4	336.8	343.4	353.8	365.4	385.5	411.0	453.4	518.4	589.1	694.4
35°	303.5	302.6	307.3	311.1	318.0	334.3	357.2	385.2	432.0	502.4	584.1
37.5°	271.5	273.4	276.2	280.3	289.4	299.7	315.1	338.4	375.5	422.0	500.2
40°	246.3	248.5	251.7	254.5	261.4	269.9	280.3	298.8	323.6	364.2	424.2
42.5°	223.7	224.7	227.2	231.3	236.3	243.8	253.9	268.0	288.7	317.0	369.5
45°	203.0	203.0	205.8	209.6	212.7	219.9	227.8	241.3	257.3	281.5	318.9
47.5°	185.4	185.7	187.3	187.9	191.3	197.9	206.4	217.1	230.3	248.8	283.7
50°	170.3	171.6	172.2	173.1	174.4	177.8	183.8	192.0	206.4	222.8	246.0
52.5°	154.6	156.2	157.4	159.3	161.2	161.5	165.9	171.2	181.3	198.3	217.1
55°	136.4	137.6	140.1	141.7	144.2	146.4	149.9	153.6	160.2	171.6	191.0
57.5°	115.6	115.9	118.5	120.0	125.1	130.1	133.2	137.3	142.0	149.9	164.6
60°	94.9	95.8	96.1	97.4	101.8	107.1	113.4	119.7	124.7	131.6	142.0
62.5°	83.6	83.9	84.8	86.1	86.4	88.9	90.8	98.3	107.1	114.1	121.0
65°	73.5	73.8	73.8	74.8	76.0	77.3	78.2	81.1	84.8	94.6	103.1
67.5°	64.1	63.8	64.4	65.4	65.7	66.6	68.2	69.8	72.3	75.1	83.9
70°	54.7	54.7	54.4	55.3	56.2	56.6	57.5	59.1	60.6	63.2	66.0
72.5°	45.2	45.9	45.9	46.5	46.8	48.1	48.7	49.3	51.5	52.8	55.0
75°	37.7	37.4	38.3	38.0	38.6	39.0	39.9	40.8	41.5	42.7	44.6
77.5°	30.2	29.5	30.2	29.8	30.5	31.1	31.1	32.0	32.7	33.9	34.9
80°	22.0	22.0	22.3	22.9	22.9	23.3	23.9	23.6	24.8	25.1	26.1
82.5°	15.1	15.4	15.4	15.7	15.7	15.7	16.3	16.3	16.7	17.3	17.6
85°	8.8	8.5	8.8	8.8	8.8	9.1	9.4	9.1	9.7	10.4	10.4
87.5°	2.5	2.5	2.8	3.1	3.1	3.5	3.5	3.5	3.8	3.8	4.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2
2.5°	990.7	989.1	985.0	981.2	974.3	968.7	966.8	967.1	958.6	949.8	947.3
5°	1018.0	1012.3	1004.2	995.7	985.3	975.0	968.4	963.0	949.8	936.6	929.1
7.5°	1040.6	1031.5	1019.6	1006.1	992.6	977.2	966.5	956.4	938.2	920.3	910.5
10°	1061.4	1048.5	1032.1	1014.5	996.6	976.5	961.1	945.4	922.5	902.4	885.7
12.5°	1081.2	1060.7	1044.1	1018.6	998.8	971.5	950.5	932.2	905.2	880.1	861.5
15°	1083.0	1068.6	1046.3	1019.9	989.7	964.3	937.9	916.5	885.7	857.8	826.0
17.5°	1082.7	1071.4	1048.2	1021.1	985.0	951.7	923.1	895.2	860.0	827.3	800.0
20°	1071.4	1063.6	1043.5	1011.4	975.0	936.6	904.9	871.9	830.7	797.1	767.3
22.5°	1044.7	1046.6	1030.9	1002.3	963.0	920.3	883.5	845.5	803.4	764.8	727.1
25°	999.5	1019.6	1014.9	988.2	946.4	899.6	857.8	815.0	769.8	728.6	693.8
27.5°	943.2	980.9	989.1	968.4	928.5	876.0	828.5	782.0	735.9	691.6	655.7
30°	876.6	932.9	953.6	942.3	905.5	850.5	795.6	750.0	699.4	652.3	614.6
32.5°	792.7	871.6	908.0	911.5	881.3	822.3	761.3	712.3	660.4	615.8	575.3
35°	699.1	795.9	855.2	871.3	849.6	791.2	727.1	675.2	619.9	575.0	534.1
37.5°	604.8	718.6	796.5	827.6	813.1	756.6	688.7	636.3	581.6	535.7	497.4
40°	518.1	626.2	727.4	776.1	771.7	719.2	650.7	596.3	540.7	498.3	456.2
42.5°	440.5	544.8	656.0	721.4	724.9	679.0	608.9	554.2	500.8	458.7	414.7
45°	379.2	471.0	581.3	659.2	674.3	636.6	565.6	509.3	460.6	421.0	377.0
47.5°	330.2	401.5	504.0	595.4	622.1	589.1	521.3	467.8	422.0	388.0	346.6
50°	287.8	354.7	441.8	526.3	565.6	540.7	477.3	426.4	384.9	352.2	315.8
52.5°	250.1	301.9	377.4	458.4	511.2	488.6	434.5	387.7	348.8	318.3	287.8
55°	219.0	262.4	329.0	401.2	449.9	437.4	389.3	347.5	313.3	284.4	259.5
57.5°	186.9	223.4	277.1	341.5	389.3	387.4	347.8	307.6	280.6	253.2	235.3
60°	159.0	188.5	232.2	286.9	334.9	335.3	304.5	272.7	249.5	225.9	208.9
62.5°	134.2	157.7	195.7	239.7	278.1	287.8	264.9	237.2	218.4	200.1	185.7
65°	112.8	130.4	159.0	198.9	229.1	242.2	227.2	207.1	191.3	175.0	162.1
67.5°	93.0	105.9	126.9	158.4	188.5	198.3	192.0	176.6	165.3	151.8	142.0
70°	73.2	84.2	99.0	122.5	147.4	160.9	159.0	148.0	138.6	128.8	119.7
72.5°	58.1	64.4	75.7	92.7	112.5	127.6	128.2	122.5	114.7	106.5	100.5
75°	46.8	49.6	55.0	68.2	83.9	96.5	100.9	98.0	91.7	86.7	82.6
77.5°	36.1	38.6	42.1	48.4	60.6	70.4	75.7	76.0	72.3	67.9	64.7
80°	27.0	28.0	30.5	33.6	39.9	48.4	54.7	54.7	52.5	50.3	48.4
82.5°	18.5	19.5	20.7	22.3	25.5	30.5	36.1	37.1	35.8	35.2	32.7
85°	10.4	11.3	11.9	12.9	14.1	16.7	20.7	22.0	22.3	20.4	19.2
87.5°	4.1	4.1	4.4	4.7	5.0	6.0	7.5	9.4	9.4	8.5	8.2
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2	960.2
2.5°	944.2	939.8	934.1	929.1	922.2	915.3	914.0	916.5	917.1	914.0	914.9
5°	921.9	913.7	906.8	895.5	888.2	878.8	872.5	872.5	872.5	867.8	863.4
7.5°	898.6	887.6	874.4	863.7	849.0	836.7	830.7	827.9	822.3	817.5	812.2
10°	871.6	856.2	839.9	823.2	810.3	793.4	783.3	777.0	767.3	763.2	755.3
12.5°	839.9	824.5	804.7	777.6	773.9	753.1	739.0	727.4	715.4	705.7	702.2
15°	814.4	787.7	761.3	742.1	714.2	701.9	681.2	679.3	669.6	641.0	618.7
17.5°	773.2	749.4	720.1	698.8	676.5	649.1	627.1	605.5	584.7	564.6	564.0
20°	736.8	708.8	681.2	657.9	619.0	580.0	566.5	546.7	534.5	518.4	513.7
22.5°	696.9	667.7	633.1	599.2	553.6	529.1	514.3	498.6	486.4	479.2	471.9
25°	656.7	627.5	581.6	539.8	508.7	489.5	477.0	460.0	451.2	444.9	435.5
27.5°	617.4	580.3	531.9	498.6	473.5	451.8	440.5	426.7	416.9	408.8	402.8
30°	578.4	527.5	486.4	460.6	434.9	421.3	406.6	396.2	389.0	381.4	371.7
32.5°	535.7	482.3	455.6	423.9	408.8	389.3	378.6	367.9	358.5	353.2	349.7
35°	486.1	443.0	419.1	395.9	376.7	363.8	348.8	342.2	337.1	326.8	322.4
37.5°	444.0	412.9	387.7	367.0	349.4	335.6	328.7	317.3	310.1	306.7	301.9
40°	409.1	381.4	359.8	338.7	323.9	313.9	301.6	295.7	286.2	282.8	279.0
42.5°	378.9	353.5	330.9	314.8	301.9	288.1	281.8	271.8	267.7	259.2	256.1
45°	348.4	325.8	306.0	290.3	278.1	269.6	258.3	252.0	244.8	240.4	231.9
47.5°	318.0	297.9	281.5	268.3	257.6	247.3	237.8	232.5	223.4	218.7	214.3
50°	294.4	274.9	259.5	246.3	235.3	225.0	219.0	210.2	202.0	196.7	195.1
52.5°	266.4	249.5	235.3	225.3	214.3	206.7	198.6	188.8	184.7	179.4	178.2
55°	241.6	227.8	215.9	205.2	195.7	187.3	177.8	170.9	167.8	165.3	163.4
57.5°	218.4	205.2	194.2	184.4	176.3	167.5	159.6	155.5	152.7	149.9	148.0
60°	195.4	183.5	173.4	165.3	156.8	148.3	142.6	139.2	137.0	132.9	131.6
62.5°	175.0	164.0	153.6	146.1	138.2	131.6	126.9	122.2	118.8	115.6	109.0
65°	152.7	143.0	135.1	127.6	120.0	115.0	109.7	104.3	99.9	99.9	99.9
67.5°	132.9	124.4	116.3	109.7	103.1	97.1	91.7	91.4	89.9	89.2	88.3
70°	112.8	106.8	99.3	92.1	85.5	82.6	81.7	80.1	78.2	77.9	76.7
72.5°	94.6	87.7	80.7	74.5	73.2	72.0	70.1	68.5	67.2	66.3	65.7
75°	77.3	70.4	64.7	63.2	61.6	59.4	57.8	56.6	55.9	55.9	55.6
77.5°	59.1	55.0	52.5	50.0	48.7	47.4	46.5	45.9	44.9	45.2	44.6
80°	43.4	42.1	39.9	38.3	37.7	36.4	35.8	35.5	34.9	34.9	34.6
82.5°	31.1	28.9	28.0	27.0	26.4	25.8	26.1	25.8	25.5	25.1	25.5
85°	17.9	17.6	17.0	17.0	17.0	16.7	16.7	16.7	16.3	16.0	16.0
87.5°	7.9	8.2	8.2	7.5	8.5	8.5	8.2	8.2	7.9	8.5	7.9
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: P243253

CATALOG NUMBER: S122RDRP-H485D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	960.2	960.2	960.2	960.2
2.5°	910.9	910.5	908.7	905.5
5°	861.5	860.3	857.1	859.6
7.5°	808.7	805.3	802.2	803.7
10°	752.2	750.9	749.1	745.3
12.5°	689.7	694.7	689.4	701.3
15°	597.0	619.3	591.3	600.7
17.5°	550.8	551.1	547.3	542.9
20°	507.4	496.4	500.5	493.3
22.5°	465.6	463.1	461.9	459.4
25°	428.3	423.5	422.0	423.5
27.5°	400.6	398.4	392.4	391.5
30°	366.0	365.1	363.2	362.6
32.5°	344.4	340.3	339.3	335.6
35°	320.2	318.0	316.4	315.5
37.5°	296.0	294.7	291.9	293.5
40°	276.2	269.9	267.4	267.1
42.5°	254.5	251.0	246.0	244.4
45°	229.4	227.8	226.2	225.6
47.5°	207.4	206.4	204.5	203.6
50°	191.7	189.1	188.8	188.5
52.5°	176.6	175.6	174.7	176.0
55°	162.4	161.2	160.2	160.2
57.5°	147.0	144.8	143.0	143.3
60°	129.1	127.9	126.3	125.7
62.5°	108.4	108.4	108.1	108.1
65°	98.7	98.0	97.7	98.0
67.5°	88.0	87.3	86.4	86.7
70°	75.7	75.4	75.7	75.4
72.5°	64.7	64.4	64.7	65.4
75°	54.7	54.4	54.0	54.0
77.5°	44.3	44.0	43.4	44.0
80°	34.6	34.2	33.9	33.9
82.5°	24.5	24.8	24.5	24.5
85°	16.0	16.3	16.0	15.7
87.5°	8.2	8.5	7.9	7.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243253
 CATALOG NUMBER: S122RDRP-H485D830-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	14.94	16.40	15.30	16.71	17.02	21.27	22.73	21.63	23.04	23.35
	3H	16.11	17.42	16.49	17.74	18.11	22.52	23.82	22.90	24.15	24.52
	4H	16.57	17.79	16.97	18.14	18.52	22.95	24.17	23.35	24.52	24.90
	6H	16.90	18.03	17.31	18.39	18.79	23.25	24.37	23.66	24.74	25.13
	8H	17.00	18.07	17.43	18.46	18.86	23.33	24.40	23.76	24.79	25.20
	12H	17.05	18.08	17.48	18.46	18.89	23.38	24.41	23.81	24.79	25.22
4H	2H	15.66	16.88	16.06	17.23	17.61	21.25	22.47	21.65	22.82	23.20
	3H	16.99	18.00	17.40	18.40	18.80	22.64	23.65	23.05	24.05	24.45
	4H	17.54	18.45	17.98	18.87	19.31	23.17	24.07	23.60	24.49	24.93
	6H	17.97	18.76	18.43	19.20	19.67	23.58	24.37	24.04	24.82	25.28
	8H	18.10	18.84	18.57	19.28	19.75	23.71	24.45	24.18	24.90	25.36
	12H	18.19	18.84	18.67	19.32	19.79	23.81	24.46	24.29	24.94	25.42
8H	4H	17.89	18.62	18.35	19.07	19.54	23.16	23.90	23.63	24.35	24.81
	6H	18.41	19.02	18.91	19.51	19.99	23.63	24.23	24.13	24.73	25.21
	8H	18.60	19.14	19.11	19.65	20.14	23.80	24.34	24.32	24.85	25.34
	12H	18.73	19.21	19.24	19.70	20.27	23.94	24.42	24.45	24.91	25.48
12H	4H	17.93	18.59	18.41	19.07	19.54	23.14	23.80	23.63	24.28	24.75
	6H	18.47	19.02	18.99	19.53	20.02	23.61	24.15	24.12	24.66	25.15
	8H	18.71	19.19	19.22	19.68	20.25	23.81	24.29	24.32	24.78	25.35