

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: P243617

Luminaire Tested: S124RDRP-H575D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243617  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124RDRP-H575D935-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

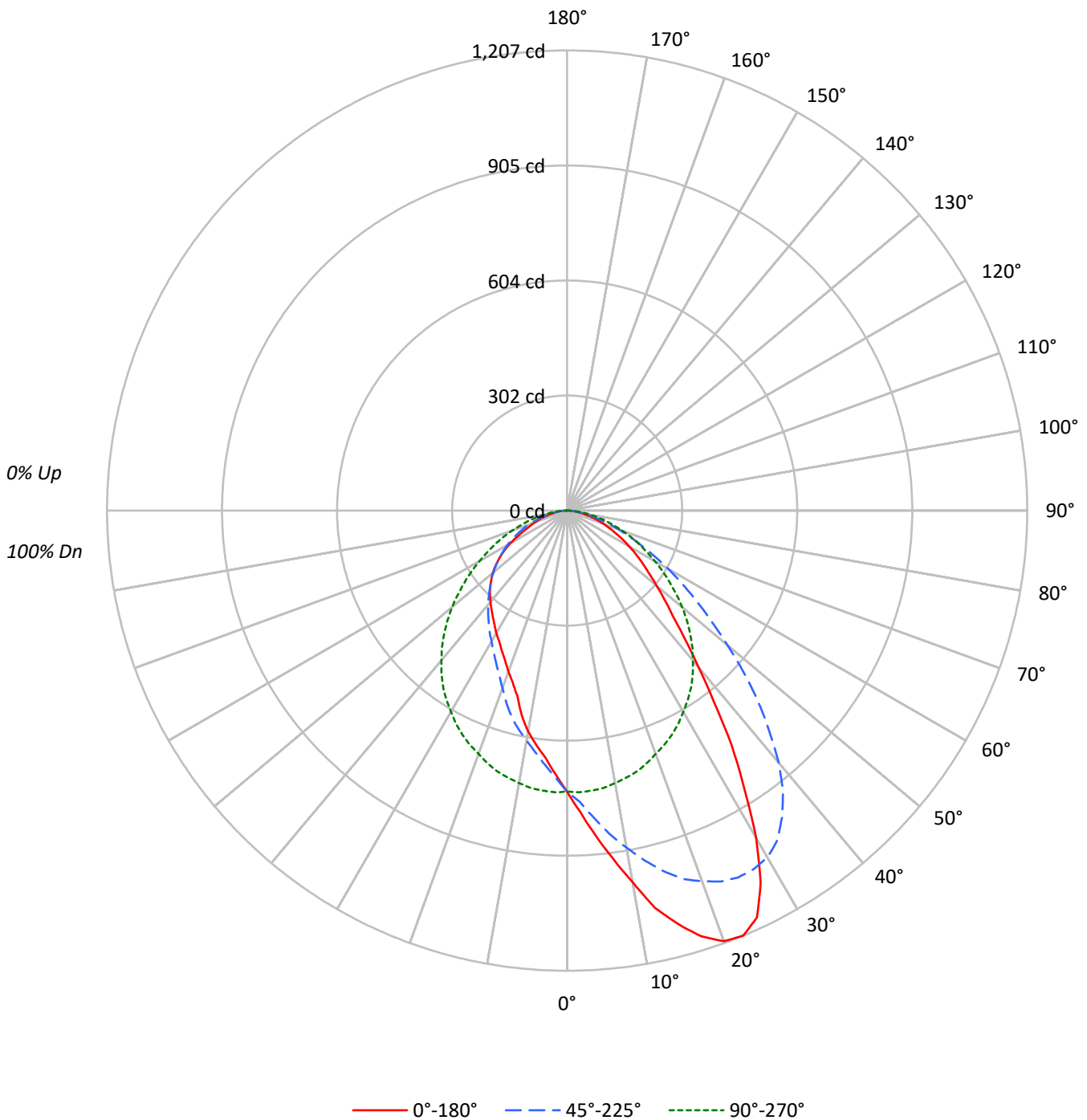
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1902.2 lumens  
Efficiency: N/A  
Efficacy: 110.6 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' 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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88				86	
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75				73	
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65				63	
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57				55	
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50				48	
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44				42	
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40				38	
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36				34	
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32				31	
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30				28	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	6551	6551	6551	6551	6551
5°	7632	7219	6579	5972	5808
10°	8938	8105	6551	5526	5311
15°	10327	9012	6518	5164	4638
20°	11370	9788	6426	4689	4252
25°	11553	10412	6367	4326	3975
30°	10169	10781	6254	4071	3812
35°	8160	10660	6148	3890	3687
40°	6208	10014	5952	3733	3630
45°	4929	8898	5734	3604	3586
50°	4230	7585	5450	3489	3525
55°	3736	6441	5097	3368	3354
60°	3348	5444	4731	3214	3072
65°	2947	4480	4371	2995	2583
70°	2625	3693	3969	2744	2326
75°	2287	2899	3606	2414	2071
80°	1940	2216	3102	2042	1909
85°	1693	1815	2662	1989	1928

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 9575 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.5	3.8
10°-20°	216.9	11.4
20°-30°	338.5	17.8
30°-40°	377.4	19.8
40°-50°	339.3	17.8
50°-60°	268.1	14.1
60°-70°	178.0	9.4
70°-80°	89.3	4.7
80°-90°	23.2	1.2
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°	626.9	33.0
0°-40°	1004.3	52.8
0°-60°	1611.6	84.7
0°-90°	1902.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1902.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	737	737	737	737	737	
5°	855	809	737	669	651	86
15°	1122	979	708	561	504	319
25°	1178	1062	649	441	405	527
35°	752	982	567	358	340	467
45°	392	708	456	287	285	311
55°	241	416	329	217	216	217
65°	140	213	208	142	123	140
75°	67	84	105	70	60	71
85°	17	18	26	20	19	19
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°	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0
2.5°	791.6	788.7	788.4	784.7	784.4	780.7	779.5	776.4	770.0	765.2	765.4
5°	855.3	853.0	852.7	849.0	847.8	843.2	836.0	827.4	817.4	809.1	803.6
7.5°	920.7	924.7	920.4	920.4	912.1	906.7	892.6	885.4	868.2	856.1	843.5
10°	990.2	993.9	992.2	988.7	977.8	966.6	952.0	937.9	917.0	898.0	885.4
12.5°	1067.7	1056.5	1063.6	1053.0	1044.1	1026.3	1012.3	984.1	967.5	939.9	915.3
15°	1122.2	1117.9	1117.6	1110.4	1100.7	1081.2	1065.9	1036.7	1008.3	979.3	951.4
17.5°	1171.0	1171.6	1167.5	1156.1	1143.4	1124.5	1103.8	1077.7	1045.3	1013.1	980.1
20°	1202.0	1202.3	1199.4	1193.4	1179.6	1162.4	1141.1	1107.0	1070.2	1034.7	1001.7
22.5°	1206.6	1207.4	1206.6	1202.8	1193.4	1179.3	1159.8	1130.8	1093.8	1053.0	1013.7
25°	1177.9	1180.7	1181.0	1186.2	1181.3	1175.9	1161.5	1137.1	1103.0	1061.6	1018.9
27.5°	1099.2	1107.3	1114.7	1123.9	1132.2	1139.7	1140.8	1127.9	1098.7	1060.2	1019.4
30°	990.7	1000.2	1015.1	1024.9	1050.7	1067.1	1089.2	1094.1	1080.0	1050.4	1011.1
32.5°	864.5	874.5	880.2	912.4	949.4	976.1	1012.8	1034.7	1040.1	1026.0	993.9
35°	752.0	753.7	758.0	794.4	831.2	871.6	917.3	955.2	981.0	982.4	966.6
37.5°	631.4	633.4	650.4	678.2	710.1	754.5	807.1	861.0	908.4	930.2	925.6
40°	535.0	534.4	552.5	576.6	607.6	653.8	708.0	766.9	817.4	863.0	873.9
42.5°	456.9	458.9	474.4	488.5	518.3	550.8	608.7	669.9	734.7	784.7	818.0
45°	392.1	397.2	407.8	421.0	443.4	473.3	520.6	581.5	647.8	707.8	747.7
47.5°	347.3	348.7	354.2	370.5	385.4	409.6	450.0	501.7	560.5	627.7	680.2
50°	305.9	309.4	311.4	321.2	335.8	358.8	390.0	428.5	486.8	548.5	614.2
52.5°	270.4	272.4	276.1	285.0	296.5	312.5	337.2	371.1	419.6	476.7	538.7
55°	241.1	241.4	245.1	251.4	260.3	272.7	296.2	320.6	363.6	415.6	471.8
57.5°	214.7	213.0	216.4	220.1	228.7	239.4	254.6	279.5	313.1	357.3	408.1
60°	188.3	189.7	189.4	193.7	198.3	208.9	221.9	238.2	265.8	306.2	349.3
62.5°	163.6	163.3	166.2	168.8	171.9	180.5	191.1	204.6	226.2	256.0	297.6
65°	140.1	140.6	142.9	144.9	148.4	153.8	161.9	172.8	190.0	213.0	248.0
67.5°	118.8	120.8	122.0	122.6	125.7	129.7	136.6	145.5	157.3	175.6	204.9
70°	101.0	101.6	102.2	104.2	105.6	107.9	113.1	118.0	128.6	142.1	163.3
72.5°	84.4	83.8	85.5	86.1	86.7	89.0	92.1	94.7	101.6	113.1	126.3
75°	66.6	66.9	67.2	68.0	70.3	70.6	72.0	74.9	79.8	84.4	93.3
77.5°	49.9	50.8	50.5	51.4	52.2	53.1	53.7	56.3	59.7	63.4	67.7
80°	37.9	37.9	37.9	38.5	37.9	39.9	39.9	40.8	41.6	43.3	46.5
82.5°	25.8	26.4	26.7	27.0	27.3	27.3	27.6	28.1	29.3	29.8	30.7
85°	16.6	16.1	16.4	16.4	16.4	16.4	16.9	17.5	17.5	17.8	18.7
87.5°	7.5	7.5	7.5	7.5	7.2	7.5	7.7	7.7	8.0	8.0	8.6
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°	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0
2.5°	763.7	762.9	758.6	754.0	749.7	745.4	743.9	739.6	734.4	729.9	724.7
5°	797.9	791.0	781.5	771.8	761.7	752.5	745.4	737.3	728.1	717.2	708.6
7.5°	832.3	819.7	804.2	789.8	772.6	758.8	745.1	733.6	720.4	704.9	693.1
10°	865.9	844.9	826.0	803.3	781.5	762.6	745.1	725.8	708.3	691.7	675.3
12.5°	892.6	871.6	844.4	816.5	788.4	763.7	740.2	717.5	695.7	675.6	657.5
15°	923.0	892.9	859.3	828.6	790.1	759.7	732.7	708.3	683.4	659.0	639.2
17.5°	945.4	909.8	868.2	832.9	795.9	758.0	725.6	694.8	666.1	640.6	620.2
20°	962.6	920.4	878.8	834.0	789.8	751.1	714.6	679.3	650.4	622.5	601.0
22.5°	970.1	925.6	879.4	830.9	783.8	739.9	702.0	665.6	632.8	604.1	579.2
25°	973.2	924.4	876.5	821.4	773.8	729.0	686.8	649.2	615.6	583.2	558.5
27.5°	970.7	918.4	863.3	811.4	757.4	713.5	668.7	630.6	595.5	564.3	536.7
30°	963.8	904.6	849.8	791.6	739.6	693.4	649.8	609.3	574.0	542.2	514.9
32.5°	946.0	889.1	826.9	770.0	714.1	668.4	628.8	588.9	553.1	519.8	493.4
35°	923.9	868.2	803.0	743.6	688.2	642.0	602.1	566.6	531.2	495.9	469.0
37.5°	896.0	839.5	776.6	712.6	658.4	613.6	577.2	541.3	506.3	473.8	443.7
40°	858.4	806.8	743.6	679.3	624.8	581.8	545.9	512.9	481.9	450.0	417.6
42.5°	811.7	772.3	707.2	643.8	590.4	547.6	515.8	486.2	456.3	423.6	394.3
45°	761.7	728.1	669.0	605.0	554.2	512.6	482.2	456.1	427.9	398.9	368.2
47.5°	705.5	680.5	629.4	566.0	512.6	477.0	448.9	425.1	399.5	373.7	343.8
50°	642.0	626.8	583.2	525.5	474.7	438.5	415.3	394.1	372.2	346.4	320.9
52.5°	578.6	575.7	535.0	484.2	436.2	402.7	380.0	360.5	342.7	318.3	296.8
55°	512.0	520.6	486.8	440.0	397.2	364.8	344.7	328.9	313.4	292.7	272.1
57.5°	452.9	462.7	439.4	396.4	356.5	328.9	311.7	297.3	283.8	264.9	251.1
60°	387.5	405.3	392.9	353.6	318.3	293.6	277.5	266.1	254.9	238.5	226.4
62.5°	335.8	348.1	341.0	311.7	280.4	260.3	246.0	235.3	226.4	213.8	202.1
65°	280.4	295.9	292.2	272.9	245.4	227.0	216.1	207.8	198.6	188.6	178.8
67.5°	230.5	246.5	245.7	232.5	212.1	196.9	186.6	180.5	173.1	163.3	157.3
70°	185.4	200.3	200.9	194.3	180.0	165.6	158.1	152.7	146.9	139.8	135.5
72.5°	144.1	157.6	159.9	156.7	147.5	138.0	131.4	127.7	122.8	116.8	113.1
75°	107.6	117.4	122.8	121.4	117.7	111.4	107.6	105.0	100.2	95.9	92.7
77.5°	76.6	84.4	89.8	92.1	90.4	87.8	84.4	82.4	77.2	75.2	73.5
80°	51.4	58.3	63.1	64.6	65.4	64.9	61.7	60.6	58.0	57.1	55.4
82.5°	31.6	35.3	38.7	42.5	44.2	44.2	42.5	42.8	40.5	39.3	38.7
85°	19.2	20.1	20.7	23.5	25.8	26.7	25.8	26.1	25.3	24.4	23.5
87.5°	8.9	8.9	9.2	9.8	10.3	12.1	12.6	13.5	12.3	12.3	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



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0	737.0
2.5°	721.5	717.8	714.9	710.3	706.6	700.6	698.6	698.6	699.7	698.3	699.7
5°	702.6	695.7	688.2	681.6	674.5	669.3	664.1	663.0	662.4	659.0	659.3
7.5°	683.6	674.5	665.0	656.4	647.5	639.4	634.0	631.7	629.7	627.4	624.8
10°	663.3	652.7	641.5	631.7	623.1	612.2	606.7	605.0	599.3	598.1	594.1
12.5°	641.7	630.8	619.6	607.0	598.7	588.1	580.0	576.3	570.9	566.8	560.8
15°	624.8	611.0	596.1	583.8	572.9	561.1	550.2	543.0	535.8	524.6	519.2
17.5°	603.9	588.1	575.2	562.0	546.2	529.0	516.0	505.4	497.7	488.5	483.0
20°	581.2	566.6	550.5	531.8	515.2	495.7	483.9	475.0	469.0	463.5	460.6
22.5°	561.1	544.2	522.1	504.3	481.0	465.5	456.1	450.3	444.6	438.8	436.0
25°	539.3	519.5	492.5	470.7	453.2	441.1	431.9	426.5	420.5	417.0	412.7
27.5°	517.8	492.2	465.2	445.4	431.7	417.6	409.8	405.5	400.9	396.1	392.6
30°	491.6	462.7	440.3	422.2	408.4	396.6	390.9	384.6	380.6	377.7	375.7
32.5°	464.4	436.5	416.2	400.7	387.2	378.3	371.1	367.1	363.6	360.5	358.2
35°	438.8	411.9	394.6	379.7	368.5	358.5	353.0	349.3	346.4	343.8	342.7
37.5°	413.6	390.6	372.0	360.2	348.4	340.4	335.2	331.8	330.1	327.5	327.8
40°	388.6	367.9	353.0	339.5	328.6	321.7	317.7	316.3	313.7	312.8	313.7
42.5°	366.2	347.3	332.9	320.3	310.8	304.2	301.1	299.1	298.2	297.9	298.2
45°	344.4	326.6	312.8	302.5	292.7	286.7	284.1	282.7	281.8	283.3	283.6
47.5°	322.6	306.5	294.2	282.1	274.1	269.8	267.2	266.1	266.9	267.5	269.5
50°	301.1	286.1	273.2	262.6	256.3	252.3	251.4	249.4	250.8	251.7	253.1
52.5°	279.3	265.8	254.3	244.2	237.6	235.1	233.0	232.2	234.2	234.2	235.6
55°	257.2	245.4	234.8	225.6	220.4	217.3	215.8	214.7	215.8	216.1	215.8
57.5°	236.5	225.3	214.1	206.4	202.1	198.6	197.2	196.6	196.3	197.5	197.2
60°	214.7	204.1	195.2	187.1	182.8	180.8	177.7	178.2	178.2	178.2	175.4
62.5°	192.9	182.2	174.5	169.0	163.9	160.4	159.9	159.0	157.3	157.0	153.3
65°	170.5	162.4	155.8	150.4	145.2	142.4	141.5	138.9	136.9	133.2	130.6
67.5°	149.8	144.1	136.3	131.7	127.4	124.0	120.8	118.8	114.8	111.1	108.8
70°	129.2	123.1	118.0	113.1	108.8	105.6	101.9	98.2	95.6	93.3	91.6
72.5°	108.5	103.3	99.0	94.4	89.8	86.7	83.8	80.9	79.8	78.6	77.8
75°	89.3	84.4	80.4	76.6	74.0	70.3	68.9	67.7	66.6	65.2	63.4
77.5°	70.6	66.9	63.7	60.6	58.3	56.3	55.1	51.7	48.8	48.2	47.6
80°	52.5	49.7	47.6	45.3	42.8	39.9	39.0	37.9	37.3	37.3	37.6
82.5°	36.7	35.0	32.7	30.7	29.8	28.7	28.7	28.4	28.1	28.4	28.4
85°	22.4	20.1	19.5	19.2	19.5	19.5	19.5	19.5	19.2	19.5	18.9
87.5°	9.8	10.6	10.9	10.0	10.3	9.8	10.0	10.0	10.0	10.3	10.0
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: P243617

CATALOG NUMBER: S124RDRP-H575D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	737.0	737.0	737.0	737.0
2.5°	698.0	698.0	695.1	692.8
5°	658.7	654.9	654.4	650.9
7.5°	621.9	621.4	619.9	619.9
10°	592.7	590.7	588.6	588.4
12.5°	551.3	554.2	550.8	549.9
15°	515.2	512.9	510.0	504.0
17.5°	481.6	477.3	476.1	473.6
20°	455.2	452.0	450.9	449.5
22.5°	430.2	429.6	426.2	425.3
25°	411.9	409.0	406.7	405.3
27.5°	391.8	389.8	388.6	386.3
30°	373.4	372.8	371.4	371.4
32.5°	356.7	355.0	355.0	354.7
35°	341.5	342.1	340.4	339.8
37.5°	327.2	326.3	326.6	326.0
40°	313.1	312.5	312.5	312.8
42.5°	298.8	299.1	299.6	299.6
45°	284.4	284.7	285.3	285.3
47.5°	270.9	270.4	270.9	270.4
50°	253.7	255.4	255.1	254.9
52.5°	236.2	235.6	236.8	236.5
55°	217.3	216.4	217.6	216.4
57.5°	196.0	196.3	196.3	195.7
60°	174.8	173.9	172.8	172.8
62.5°	150.1	147.5	145.8	146.9
65°	126.3	124.3	123.7	122.8
67.5°	107.3	105.0	104.2	103.9
70°	91.0	89.8	89.5	89.5
72.5°	77.2	77.2	76.3	75.8
75°	62.9	61.7	60.3	60.3
77.5°	47.1	46.8	46.5	46.5
80°	36.7	36.7	37.0	37.3
82.5°	27.6	27.8	28.1	28.1
85°	18.7	18.7	18.9	18.9
87.5°	10.0	10.0	10.0	9.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243617  
 CATALOG NUMBER: S124RDRP-H575D935-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	15.87	17.40	16.24	17.72	18.03	17.57	19.10	17.93	19.42	19.73
	3H	17.10	18.48	17.48	18.81	19.17	19.05	20.43	19.43	20.76	21.12
	4H	17.54	18.83	17.94	19.18	19.56	19.59	20.88	19.99	21.23	21.61
	6H	17.82	19.01	18.23	19.38	19.77	19.98	21.17	20.39	21.54	21.93
	8H	17.90	19.04	18.33	19.43	19.83	20.10	21.24	20.52	21.63	22.03
	12H	17.95	19.04	18.38	19.43	19.85	20.18	21.26	20.61	21.65	22.08
4H	2H	17.08	18.37	17.48	18.72	19.10	18.10	19.39	18.50	19.74	20.11
	3H	18.35	19.42	18.76	19.82	20.22	19.87	20.94	20.28	21.34	21.75
	4H	18.82	19.78	19.25	20.20	20.64	20.53	21.50	20.96	21.91	22.35
	6H	19.15	19.99	19.61	20.43	20.89	21.03	21.87	21.48	22.31	22.77
	8H	19.25	20.04	19.72	20.48	20.95	21.18	21.97	21.65	22.41	22.88
	12H	19.33	20.03	19.81	20.51	20.98	21.30	22.00	21.78	22.48	22.95
8H	4H	19.23	20.02	19.69	20.46	20.93	20.66	21.44	21.12	21.89	22.35
	6H	19.63	20.28	20.12	20.77	21.25	21.25	21.90	21.75	22.39	22.87
	8H	19.77	20.36	20.29	20.87	21.35	21.47	22.06	21.99	22.57	23.05
	12H	19.90	20.41	20.41	20.90	21.47	21.65	22.17	22.16	22.66	23.22
12H	4H	19.27	19.98	19.76	20.45	20.92	20.65	21.35	21.13	21.83	22.30
	6H	19.68	20.27	20.20	20.78	21.26	21.25	21.83	21.76	22.34	22.83
	8H	19.88	20.39	20.39	20.88	21.45	21.51	22.02	22.02	22.52	23.08