

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: P243612

Luminaire Tested: S124RDRP-H575D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243612  
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-H575D930-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

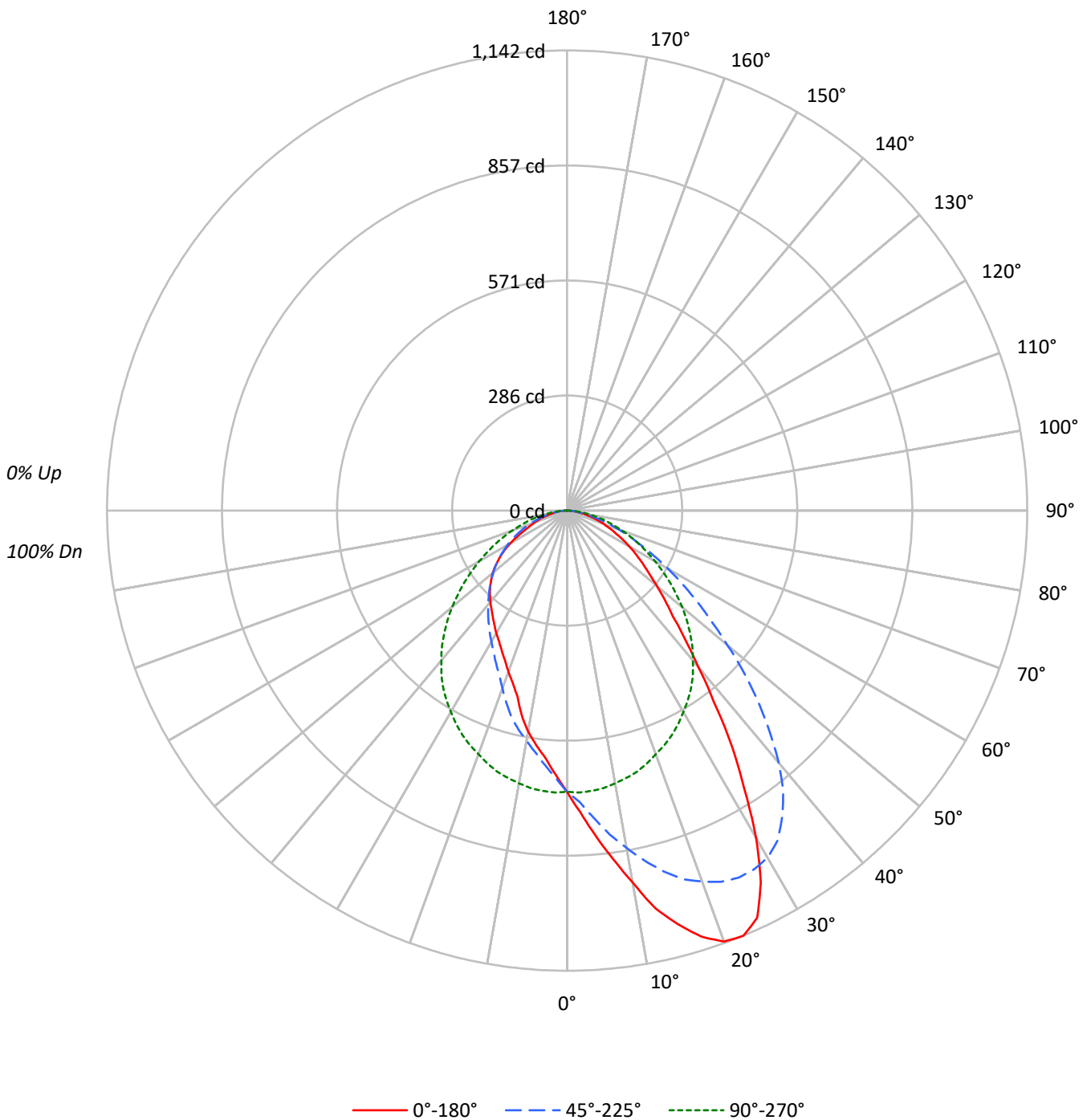
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1801.3 lumens  
Efficiency: N/A  
Efficacy: 104.7 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	0
RCR																					
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102	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°	6204	6204	6204	6204	6204
5°	7227	6836	6230	5655	5500
10°	8463	7676	6204	5232	5028
15°	9779	8533	6172	4889	4391
20°	10767	9267	6085	4440	4026
25°	10940	9860	6029	4097	3763
30°	9630	10210	5922	3855	3610
35°	7726	10095	5822	3683	3492
40°	5878	9483	5636	3536	3437
45°	4666	8425	5428	3413	3395
50°	4006	7183	5159	3304	3337
55°	3538	6098	4827	3188	3175
60°	3170	5156	4478	3044	2908
65°	2789	4242	4139	2835	2446
70°	2487	3496	3758	2599	2204
75°	2167	2744	3417	2287	1961
80°	1838	2099	2933	1935	1807
85°	1611	1713	2519	1887	1826

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 9067 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.7	3.8
10°-20°	205.4	11.4
20°-30°	320.5	17.8
30°-40°	357.4	19.8
40°-50°	321.3	17.8
50°-60°	253.9	14.1
60°-70°	168.6	9.4
70°-80°	84.5	4.7
80°-90°	22.0	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°	593.6	33.0
0°-40°	951.0	52.8
0°-60°	1526.1	84.7
0°-90°	1801.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1801.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	698	698	698	698	698	
5°	810	766	698	634	616	81
15°	1063	927	671	531	477	302
25°	1115	1005	615	418	384	499
35°	712	930	536	339	322	442
45°	371	670	432	272	270	294
55°	228	394	312	206	205	206
65°	133	202	197	135	116	133
75°	63	80	100	67	57	67
85°	16	17	25	18	18	18
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°	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9
2.5°	749.5	746.8	746.6	743.0	742.8	739.2	738.1	735.1	729.2	724.5	724.8
5°	809.9	807.7	807.4	803.9	802.8	798.5	791.7	783.5	774.0	766.1	761.0
7.5°	871.8	875.7	871.6	871.6	863.7	858.5	845.2	838.4	822.1	810.7	798.7
10°	937.6	941.1	939.5	936.3	925.9	915.3	901.5	888.2	868.3	850.4	838.4
12.5°	1011.0	1000.4	1007.2	997.1	988.7	971.9	958.5	931.9	916.1	890.1	866.7
15°	1062.6	1058.6	1058.3	1051.5	1042.2	1023.8	1009.4	981.6	954.7	927.3	900.9
17.5°	1108.8	1109.4	1105.6	1094.7	1082.7	1064.8	1045.2	1020.5	989.8	959.4	928.1
20°	1138.2	1138.5	1135.7	1130.0	1117.0	1100.7	1080.6	1048.2	1013.4	979.7	948.5
22.5°	1142.5	1143.3	1142.5	1139.0	1130.0	1116.7	1098.2	1070.8	1035.7	997.1	959.9
25°	1115.4	1118.1	1118.3	1123.2	1118.6	1113.5	1099.9	1076.8	1044.4	1005.3	964.8
27.5°	1040.9	1048.5	1055.6	1064.3	1072.1	1079.2	1080.3	1068.1	1040.3	1003.9	965.3
30°	938.2	947.1	961.3	970.5	995.0	1010.4	1031.4	1036.0	1022.7	994.7	957.5
32.5°	818.6	828.1	833.5	864.0	899.0	924.3	959.1	979.7	984.9	971.6	941.1
35°	712.0	713.7	717.8	752.3	787.1	825.4	868.6	904.5	928.9	930.3	915.3
37.5°	597.9	599.8	615.8	642.2	672.4	714.5	764.2	815.3	860.2	880.8	876.5
40°	506.6	506.0	523.2	546.0	575.3	619.1	670.5	726.2	774.0	817.2	827.5
42.5°	432.7	434.6	449.2	462.6	490.8	521.5	576.4	634.3	695.7	743.0	774.6
45°	371.2	376.1	386.2	398.7	419.9	448.2	493.0	550.6	613.4	670.2	708.0
47.5°	328.8	330.2	335.4	350.9	365.0	387.8	426.1	475.1	530.8	594.4	644.1
50°	289.7	293.0	294.9	304.1	318.0	339.7	369.3	405.8	460.9	519.4	581.6
52.5°	256.0	257.9	261.4	269.9	280.7	296.0	319.3	351.4	397.3	451.4	510.1
55°	228.3	228.6	232.1	238.1	246.5	258.2	280.5	303.6	344.3	393.5	446.8
57.5°	203.3	201.7	204.9	208.4	216.6	226.7	241.1	264.7	296.5	338.4	386.5
60°	178.3	179.6	179.4	183.4	187.8	197.9	210.1	225.6	251.7	290.0	330.7
62.5°	154.9	154.6	157.4	159.8	162.8	170.9	181.0	193.8	214.2	242.4	281.8
65°	132.6	133.2	135.3	137.2	140.5	145.7	153.3	163.6	179.9	201.7	234.8
67.5°	112.5	114.4	115.5	116.0	119.0	122.8	129.4	137.8	148.9	166.3	194.0
70°	95.7	96.2	96.8	98.7	100.0	102.2	107.1	111.7	121.8	134.5	154.6
72.5°	79.9	79.4	81.0	81.5	82.1	84.2	87.2	89.7	96.2	107.1	119.6
75°	63.1	63.3	63.6	64.4	66.6	66.9	68.2	70.9	75.6	79.9	88.3
77.5°	47.3	48.1	47.8	48.6	49.5	50.3	50.8	53.3	56.5	60.1	64.1
80°	35.9	35.9	35.9	36.4	35.9	37.8	37.8	38.6	39.4	41.0	44.0
82.5°	24.5	25.0	25.3	25.5	25.8	25.8	26.1	26.6	27.7	28.3	29.1
85°	15.8	15.2	15.5	15.5	15.5	15.5	16.0	16.6	16.6	16.8	17.7
87.5°	7.1	7.1	7.1	7.1	6.8	7.1	7.3	7.3	7.6	7.6	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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9
2.5°	723.2	722.4	718.3	713.9	709.9	705.8	704.4	700.4	695.5	691.1	686.2
5°	755.5	749.0	740.0	730.8	721.3	712.6	705.8	698.2	689.5	679.2	671.0
7.5°	788.1	776.2	761.5	747.9	731.6	718.6	705.5	694.6	682.1	667.5	656.3
10°	819.9	800.1	782.2	760.7	740.0	722.1	705.5	687.3	670.7	655.0	639.5
12.5°	845.2	825.4	799.6	773.2	746.6	723.2	700.9	679.4	658.8	639.8	622.6
15°	874.0	845.5	813.7	784.6	748.2	719.4	693.8	670.7	647.1	624.0	605.2
17.5°	895.2	861.5	822.1	788.7	753.6	717.8	687.0	658.0	630.8	606.6	587.3
20°	911.5	871.6	832.2	789.8	747.9	711.2	676.7	643.3	615.8	589.5	569.1
22.5°	918.6	876.5	832.7	786.8	742.2	700.6	664.8	630.2	599.3	572.1	548.4
25°	921.6	875.4	830.0	777.8	732.7	690.3	650.4	614.7	583.0	552.2	528.9
27.5°	919.1	869.7	817.5	768.3	717.2	675.6	633.2	597.1	563.9	534.3	508.2
30°	912.6	856.6	804.7	749.5	700.4	656.6	615.3	577.0	543.5	513.4	487.6
32.5°	895.8	842.0	783.0	729.2	676.2	633.0	595.5	557.7	523.7	492.2	467.2
35°	874.8	822.1	760.4	704.2	651.7	608.0	570.2	536.5	503.1	469.6	444.1
37.5°	848.5	794.9	735.4	674.8	623.4	581.0	546.5	512.6	479.4	448.7	420.2
40°	812.9	764.0	704.2	643.3	591.6	550.9	516.9	485.7	456.3	426.1	395.4
42.5°	768.6	731.3	669.6	609.6	559.0	518.5	488.4	460.4	432.1	401.1	373.4
45°	721.3	689.5	633.5	572.9	524.8	485.4	456.6	431.8	405.2	377.8	348.7
47.5°	668.0	644.4	596.0	535.9	485.4	451.7	425.1	402.5	378.3	353.8	325.6
50°	608.0	593.6	552.2	497.6	449.5	415.3	393.3	373.1	352.5	328.0	303.8
52.5°	547.9	545.2	506.6	458.5	413.1	381.3	359.8	341.3	324.5	301.4	281.0
55°	484.8	493.0	460.9	416.6	376.1	345.4	326.4	311.5	296.8	277.2	257.6
57.5°	428.9	438.1	416.1	375.3	337.5	311.5	295.1	281.6	268.8	250.8	237.8
60°	366.9	383.7	372.1	334.8	301.4	278.0	262.8	251.9	241.3	225.8	214.4
62.5°	318.0	329.7	322.9	295.1	265.5	246.5	232.9	222.9	214.4	202.5	191.3
65°	265.5	280.2	276.7	258.5	232.4	215.0	204.6	196.8	188.1	178.6	169.3
67.5°	218.2	233.5	232.6	220.1	200.8	186.4	176.7	170.9	163.9	154.6	148.9
70°	175.6	189.7	190.2	184.0	170.4	156.8	149.7	144.6	139.1	132.4	128.3
72.5°	136.4	149.2	151.4	148.4	139.7	130.7	124.5	120.9	116.3	110.6	107.1
75°	101.9	111.2	116.3	115.0	111.4	105.4	101.9	99.5	94.8	90.8	87.8
77.5°	72.6	79.9	85.1	87.2	85.6	83.2	79.9	78.0	73.1	71.2	69.6
80°	48.6	55.2	59.8	61.1	62.0	61.4	58.4	57.3	54.9	54.1	52.5
82.5°	29.9	33.4	36.7	40.2	41.9	41.9	40.2	40.5	38.3	37.2	36.7
85°	18.2	19.0	19.6	22.3	24.5	25.3	24.5	24.7	23.9	23.1	22.3
87.5°	8.4	8.4	8.7	9.2	9.8	11.4	12.0	12.8	11.7	11.7	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9	697.9
2.5°	683.2	679.7	677.0	672.6	669.1	663.4	661.5	661.5	662.6	661.2	662.6
5°	665.3	658.8	651.7	645.5	638.7	633.8	628.9	627.8	627.3	624.0	624.3
7.5°	647.4	638.7	629.7	621.5	613.1	605.5	600.3	598.2	596.3	594.1	591.6
10°	628.1	618.0	607.4	598.2	590.0	579.7	574.5	572.9	567.5	566.4	562.6
12.5°	607.7	597.4	586.8	574.8	566.9	556.9	549.3	545.7	540.6	536.8	531.0
15°	591.6	578.6	564.5	552.8	542.5	531.3	521.0	514.2	507.4	496.8	491.6
17.5°	571.8	556.9	544.6	532.1	517.2	500.9	488.6	478.6	471.3	462.6	457.4
20°	550.3	536.5	521.3	503.6	487.8	469.4	458.2	449.8	444.1	438.9	436.2
22.5°	531.3	515.3	494.4	477.5	455.5	440.8	431.8	426.4	421.0	415.5	412.8
25°	510.7	491.9	466.4	445.7	429.1	417.7	409.0	403.9	398.1	394.9	390.8
27.5°	490.3	466.1	440.5	421.8	408.7	395.4	388.1	384.0	379.7	375.0	371.8
30°	465.5	438.1	416.9	399.8	386.7	375.6	370.2	364.2	360.4	357.7	355.7
32.5°	439.7	413.4	394.1	379.4	366.6	358.2	351.4	347.6	344.3	341.3	339.2
35°	415.5	390.0	373.7	359.6	349.0	339.4	334.3	330.7	328.0	325.6	324.5
37.5°	391.6	369.9	352.2	341.1	329.9	322.3	317.4	314.2	312.5	310.1	310.4
40°	368.0	348.4	334.3	321.5	311.2	304.7	300.9	299.5	297.0	296.2	297.0
42.5°	346.8	328.8	315.3	303.3	294.3	288.1	285.1	283.2	282.4	282.1	282.4
45°	326.1	309.3	296.2	286.4	277.2	271.5	269.1	267.7	266.9	268.2	268.5
47.5°	305.5	290.3	278.6	267.2	259.5	255.5	253.0	251.9	252.7	253.3	255.2
50°	285.1	271.0	258.7	248.7	242.7	238.9	238.1	236.2	237.5	238.3	239.7
52.5°	264.4	251.7	240.8	231.3	225.0	222.6	220.7	219.9	221.8	221.8	223.1
55°	243.5	232.4	222.3	213.6	208.7	205.7	204.4	203.3	204.4	204.6	204.4
57.5°	223.9	213.3	202.7	195.4	191.3	188.1	186.7	186.2	185.9	187.0	186.7
60°	203.3	193.2	184.8	177.2	173.1	171.2	168.2	168.8	168.8	168.8	166.1
62.5°	182.6	172.6	165.2	160.1	155.2	151.9	151.4	150.6	148.9	148.7	145.1
65°	161.4	153.8	147.6	142.4	137.5	134.8	134.0	131.5	129.6	126.1	123.7
67.5°	141.9	136.4	129.1	124.7	120.7	117.4	114.4	112.5	108.7	105.2	103.0
70°	122.3	116.6	111.7	107.1	103.0	100.0	96.5	92.9	90.5	88.3	86.7
72.5°	102.7	97.8	93.8	89.4	85.1	82.1	79.4	76.6	75.6	74.5	73.7
75°	84.5	79.9	76.1	72.6	70.1	66.6	65.2	64.1	63.1	61.7	60.1
77.5°	66.9	63.3	60.3	57.3	55.2	53.3	52.2	48.9	46.2	45.7	45.1
80°	49.7	47.0	45.1	42.9	40.5	37.8	37.0	35.9	35.3	35.3	35.6
82.5°	34.8	33.2	31.0	29.1	28.3	27.2	27.2	26.9	26.6	26.9	26.9
85°	21.2	19.0	18.5	18.2	18.5	18.5	18.5	18.5	18.2	18.5	17.9
87.5°	9.2	10.1	10.3	9.5	9.8	9.2	9.5	9.5	9.5	9.8	9.5
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: P243612

CATALOG NUMBER: S124RDRP-H575D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	697.9	697.9	697.9	697.9
2.5°	661.0	661.0	658.2	656.1
5°	623.7	620.2	619.6	616.4
7.5°	588.9	588.4	587.0	587.0
10°	561.2	559.3	557.4	557.1
12.5°	522.1	524.8	521.5	520.7
15°	487.8	485.7	482.9	477.2
17.5°	456.0	452.0	450.9	448.4
20°	431.0	428.0	427.0	425.6
22.5°	407.4	406.8	403.6	402.8
25°	390.0	387.3	385.1	383.7
27.5°	371.0	369.1	368.0	365.8
30°	353.6	353.0	351.7	351.7
32.5°	337.8	336.2	336.2	335.9
35°	323.4	324.0	322.3	321.8
37.5°	309.8	309.0	309.3	308.7
40°	296.5	296.0	296.0	296.2
42.5°	282.9	283.2	283.7	283.7
45°	269.3	269.6	270.1	270.1
47.5°	256.6	256.0	256.6	256.0
50°	240.2	241.9	241.6	241.3
52.5°	223.7	223.1	224.2	223.9
55°	205.7	204.9	206.0	204.9
57.5°	185.6	185.9	185.9	185.3
60°	165.5	164.7	163.6	163.6
62.5°	142.1	139.7	138.1	139.1
65°	119.6	117.7	117.1	116.3
67.5°	101.6	99.5	98.7	98.4
70°	86.2	85.1	84.8	84.8
72.5°	73.1	73.1	72.3	71.7
75°	59.5	58.4	57.1	57.1
77.5°	44.6	44.3	44.0	44.0
80°	34.8	34.8	35.1	35.3
82.5°	26.1	26.4	26.6	26.6
85°	17.7	17.7	17.9	17.9
87.5°	9.5	9.5	9.5	9.2
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243612  
 CATALOG NUMBER: S124RDRP-H575D930-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	15.68	17.22	16.05	17.53	17.84	17.38	18.91	17.74	19.22	19.54
	3H	16.91	18.29	17.29	18.62	18.98	18.86	20.24	19.24	20.57	20.93
	4H	17.35	18.64	17.75	18.99	19.37	19.40	20.69	19.80	21.04	21.42
	6H	17.63	18.82	18.04	19.19	19.58	19.79	20.98	20.20	21.35	21.74
	8H	17.71	18.85	18.14	19.24	19.64	19.91	21.05	20.33	21.44	21.84
	12H	17.77	18.85	18.20	19.24	19.66	19.99	21.07	20.42	21.46	21.89
4H	2H	16.89	18.18	17.29	18.53	18.91	17.91	19.20	18.30	19.55	19.92
	3H	18.16	19.23	18.57	19.63	20.03	19.68	20.75	20.09	21.15	21.55
	4H	18.63	19.60	19.06	20.01	20.45	20.34	21.31	20.77	21.72	22.16
	6H	18.96	19.80	19.42	20.24	20.70	20.84	21.68	21.29	22.12	22.58
	8H	19.06	19.85	19.53	20.29	20.76	20.99	21.78	21.46	22.22	22.69
	12H	19.14	19.84	19.62	20.32	20.79	21.11	21.81	21.59	22.29	22.76
8H	4H	19.04	19.83	19.50	20.27	20.74	20.47	21.25	20.93	21.70	22.16
	6H	19.44	20.09	19.93	20.58	21.06	21.06	21.71	21.56	22.20	22.68
	8H	19.58	20.17	20.10	20.68	21.16	21.28	21.87	21.80	22.38	22.86
	12H	19.71	20.22	20.22	20.71	21.28	21.46	21.98	21.97	22.47	23.04
12H	4H	19.08	19.79	19.57	20.26	20.73	20.46	21.16	20.94	21.64	22.11
	6H	19.49	20.08	20.01	20.59	21.08	21.06	21.64	21.57	22.15	22.64
	8H	19.69	20.20	20.20	20.69	21.26	21.32	21.83	21.83	22.33	22.89