

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: P243597

Luminaire Tested: S124RDRP-H575D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243597  
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-H575D830-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

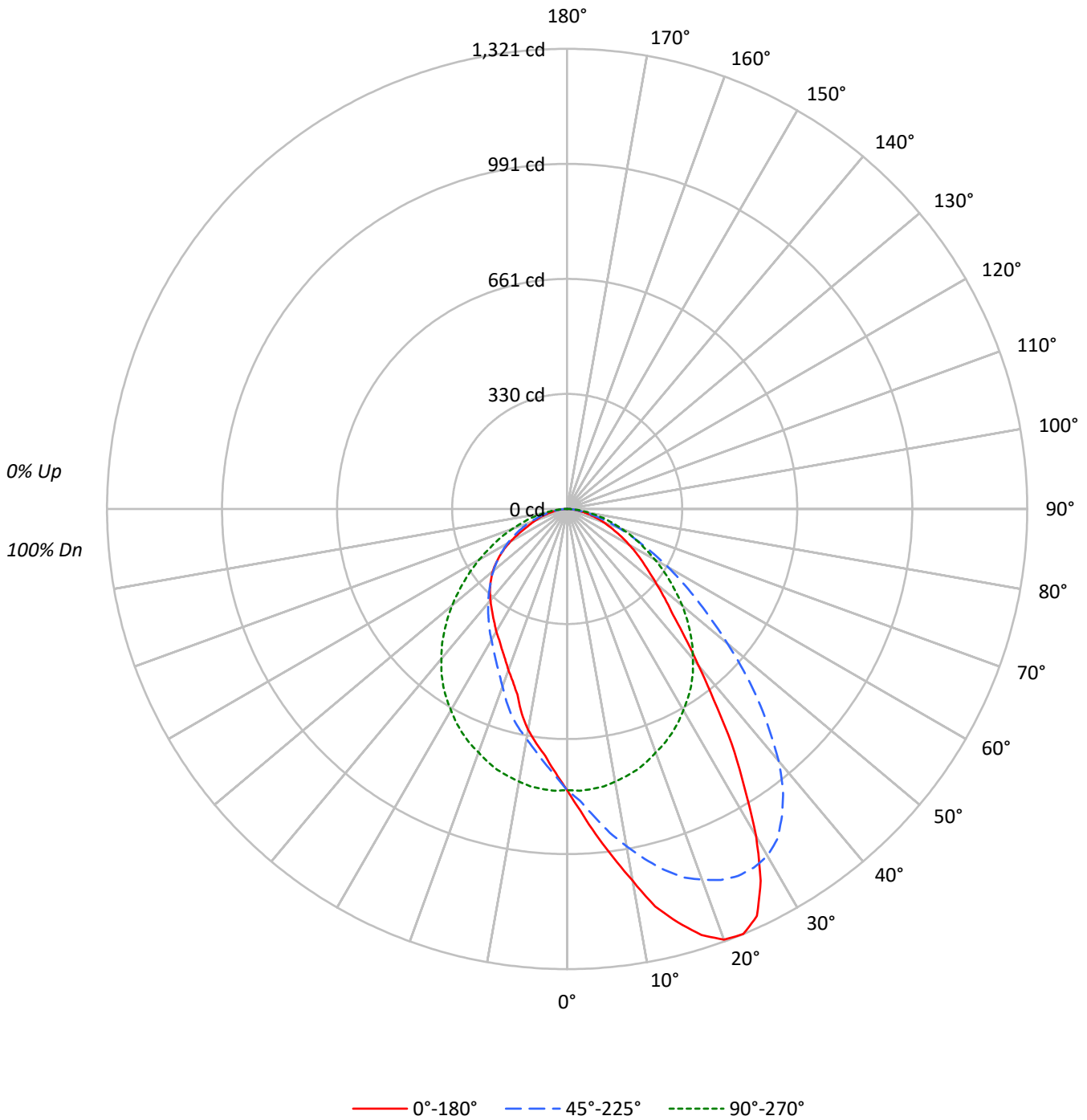
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2082.4 lumens  
Efficiency: N/A  
Efficacy: 121.1 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

TEST NUMBER: P243597

CATALOG NUMBER: S124RDRP-H575D830-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot



TEST NUMBER: P243597

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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	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°	7172	7172	7172	7172	7172
5°	8354	7903	7202	6538	6358
10°	9783	8873	7172	6049	5814
15°	11305	9865	7136	5652	5077
20°	12447	10714	7035	5133	4654
25°	12646	11399	6970	4736	4351
30°	11132	11803	6846	4457	4173
35°	8933	11671	6730	4258	4037
40°	6795	10963	6515	4087	3974
45°	5395	9740	6275	3946	3926
50°	4631	8303	5966	3819	3858
55°	4090	7050	5581	3685	3671
60°	3664	5959	5179	3518	3362
65°	3224	4903	4785	3277	2829
70°	2874	4041	4343	3004	2547
75°	2504	3173	3950	2644	2267
80°	2124	2426	3394	2237	2089
85°	1856	1989	2917	2183	2111

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 10483 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.3	3.8
10°-20°	237.4	11.4
20°-30°	370.5	17.8
30°-40°	413.2	19.8
40°-50°	371.4	17.8
50°-60°	293.5	14.1
60°-70°	194.9	9.4
70°-80°	97.7	4.7
80°-90°	25.5	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°	686.2	33.0
0°-40°	1099.4	52.8
0°-60°	1764.3	84.7
0°-90°	2082.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2082.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	807	807	807	807	807	
5°	936	886	807	733	713	94
15°	1228	1072	775	614	552	349
25°	1289	1162	711	483	444	577
35°	823	1076	620	392	372	511
45°	429	775	499	314	312	340
55°	264	455	360	238	237	238
65°	153	233	228	156	134	153
75°	73	92	115	77	66	78
85°	18	20	29	21	21	21
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	866.5	863.4	863.1	859.0	858.7	854.6	853.3	849.9	843.0	837.6	837.9
5°	936.3	933.8	933.5	929.4	928.1	923.1	915.2	905.8	894.8	885.7	879.7
7.5°	1007.9	1012.3	1007.6	1007.6	998.5	992.5	977.1	969.3	950.4	937.2	923.4
10°	1083.9	1088.0	1086.1	1082.4	1070.4	1058.2	1042.2	1026.8	1003.8	983.1	969.3
12.5°	1168.8	1156.5	1164.4	1152.8	1143.0	1123.5	1108.1	1077.3	1059.1	1029.0	1001.9
15°	1228.5	1223.8	1223.4	1215.6	1204.9	1183.5	1166.9	1134.8	1103.7	1072.0	1041.5
17.5°	1281.9	1282.5	1278.1	1265.5	1251.7	1231.0	1208.4	1179.8	1144.3	1109.1	1073.0
20°	1315.8	1316.1	1313.0	1306.4	1291.3	1272.5	1249.2	1211.8	1171.6	1132.6	1096.5
22.5°	1320.8	1321.8	1320.8	1316.8	1306.4	1291.0	1269.6	1237.9	1197.4	1152.8	1109.7
25°	1289.4	1292.6	1292.9	1298.5	1293.2	1287.2	1271.5	1244.8	1207.4	1162.2	1115.4
27.5°	1203.3	1212.1	1220.3	1230.4	1239.5	1247.6	1248.9	1234.8	1202.7	1160.6	1116.0
30°	1084.6	1094.9	1111.3	1122.0	1150.2	1168.1	1192.3	1197.7	1182.3	1149.9	1106.9
32.5°	946.3	957.3	963.6	998.8	1039.3	1068.6	1108.8	1132.6	1138.6	1123.2	1088.0
35°	823.2	825.1	829.8	869.7	909.9	954.2	1004.1	1045.6	1073.9	1075.5	1058.2
37.5°	691.2	693.4	711.9	742.4	777.3	826.0	883.5	942.6	994.4	1018.3	1013.3
40°	585.6	585.0	604.8	631.2	665.1	715.7	775.1	839.5	894.8	944.8	956.7
42.5°	500.2	502.4	519.4	534.7	567.4	602.9	666.4	733.3	804.3	859.0	895.4
45°	429.2	434.8	446.5	460.9	485.4	518.1	569.9	636.5	709.1	774.8	818.5
47.5°	380.2	381.7	387.7	405.6	422.0	448.3	492.6	549.2	613.6	687.1	744.6
50°	334.9	338.7	340.9	351.6	367.6	392.7	427.0	469.1	532.9	600.4	672.4
52.5°	296.0	298.2	302.2	312.0	324.6	342.2	369.2	406.2	459.3	521.9	589.7
55°	263.9	264.2	268.3	275.2	285.0	298.5	324.2	350.9	398.1	454.9	516.5
57.5°	235.0	233.1	236.9	241.0	250.4	262.0	278.7	306.0	342.8	391.2	446.8
60°	206.1	207.7	207.4	212.1	217.1	228.7	242.9	260.8	290.9	335.2	382.4
62.5°	179.1	178.8	181.9	184.7	188.2	197.6	209.2	224.0	247.6	280.3	325.8
65°	153.3	154.0	156.5	158.7	162.4	168.4	177.2	189.1	208.0	233.1	271.5
67.5°	130.1	132.3	133.5	134.2	137.6	142.0	149.6	159.3	172.2	192.3	224.3
70°	110.6	111.2	111.9	114.1	115.6	118.1	123.8	129.1	140.8	155.5	178.8
72.5°	92.4	91.7	93.6	94.3	94.9	97.4	100.9	103.7	111.2	123.8	138.2
75°	72.9	73.2	73.5	74.5	77.0	77.3	78.9	82.0	87.3	92.4	102.1
77.5°	54.7	55.6	55.3	56.2	57.2	58.1	58.8	61.6	65.4	69.4	74.1
80°	41.5	41.5	41.5	42.1	41.5	43.7	43.7	44.6	45.6	47.4	50.9
82.5°	28.3	28.9	29.2	29.5	29.8	29.8	30.2	30.8	32.0	32.7	33.6
85°	18.2	17.6	17.9	17.9	17.9	17.9	18.5	19.2	19.2	19.5	20.4
87.5°	8.2	8.2	8.2	8.2	7.9	8.2	8.5	8.5	8.8	8.8	9.4
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	836.1	835.1	830.4	825.4	820.7	815.9	814.4	809.7	804.0	799.0	793.3
5°	873.4	865.9	855.5	844.9	833.9	823.8	815.9	807.1	797.1	785.2	775.7
7.5°	911.1	897.3	880.4	864.6	845.8	830.7	815.6	803.1	788.6	771.6	758.8
10°	947.9	925.0	904.2	879.4	855.5	834.8	815.6	794.6	775.4	757.2	739.3
12.5°	977.1	954.2	924.3	893.9	863.1	836.1	810.3	785.5	761.6	739.6	719.8
15°	1010.4	977.4	940.7	907.1	865.0	831.7	802.1	775.4	748.1	721.4	699.7
17.5°	1034.9	996.0	950.4	911.8	871.2	829.8	794.3	760.6	729.2	701.3	679.0
20°	1053.8	1007.6	962.0	913.0	864.6	822.2	782.3	743.7	711.9	681.5	657.9
22.5°	1062.0	1013.3	962.7	909.6	858.0	810.0	768.5	728.6	692.8	661.4	634.0
25°	1065.4	1012.0	959.5	899.2	847.0	798.0	751.9	710.7	673.9	638.4	611.4
27.5°	1062.6	1005.4	945.1	888.2	829.1	781.1	732.1	690.3	651.9	617.7	587.5
30°	1055.0	990.3	930.3	866.5	809.7	759.1	711.3	667.0	628.4	593.5	563.7
32.5°	1035.6	973.4	905.2	843.0	781.7	731.7	688.4	644.7	605.4	569.0	540.1
35°	1011.4	950.4	879.1	814.1	753.4	702.8	659.2	620.2	581.6	542.9	513.4
37.5°	980.9	919.0	850.2	780.1	720.7	671.7	631.8	592.6	554.2	518.7	485.7
40°	939.7	883.2	814.1	743.7	684.0	636.9	597.6	561.5	527.5	492.6	457.1
42.5°	888.5	845.5	774.2	704.7	646.3	599.5	564.6	532.2	499.6	463.7	431.7
45°	833.9	797.1	732.4	662.3	606.7	561.1	527.8	499.2	468.5	436.7	403.1
47.5°	772.3	744.9	689.0	619.6	561.1	522.2	491.4	465.3	437.3	409.1	376.4
50°	702.8	686.2	638.4	575.3	519.7	480.1	454.6	431.4	407.5	379.2	351.3
52.5°	633.4	630.3	585.6	530.0	477.6	440.8	416.0	394.6	375.1	348.4	324.9
55°	560.5	569.9	532.9	481.6	434.8	399.3	377.3	360.1	343.1	320.5	297.8
57.5°	495.8	506.5	481.0	433.9	390.2	360.1	341.2	325.5	310.7	290.0	274.9
60°	424.2	443.6	430.1	387.1	348.4	321.4	303.8	291.3	279.0	261.1	247.9
62.5°	367.6	381.1	373.3	341.2	307.0	285.0	269.3	257.6	247.9	234.1	221.2
65°	307.0	323.9	319.8	298.8	268.6	248.5	236.6	227.5	217.4	206.4	195.7
67.5°	252.3	269.9	268.9	254.5	232.2	215.5	204.2	197.6	189.5	178.8	172.2
70°	203.0	219.3	219.9	212.7	197.0	181.3	173.1	167.1	160.9	153.0	148.3
72.5°	157.7	172.5	175.0	171.5	161.5	151.1	143.9	139.8	134.5	127.9	123.8
75°	117.8	128.5	134.5	132.9	128.8	121.9	117.8	115.0	109.7	104.9	101.5
77.5°	83.9	92.4	98.3	100.9	99.0	96.1	92.4	90.2	84.5	82.3	80.4
80°	56.2	63.8	69.1	70.7	71.6	71.0	67.6	66.3	63.5	62.5	60.6
82.5°	34.6	38.6	42.4	46.5	48.4	48.4	46.5	46.8	44.3	43.0	42.4
85°	21.1	22.0	22.6	25.8	28.3	29.2	28.3	28.6	27.6	26.7	25.8
87.5°	9.7	9.7	10.1	10.7	11.3	13.2	13.8	14.8	13.5	13.5	11.3
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°	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8	806.8
2.5°	789.9	785.8	782.6	777.6	773.5	766.9	764.7	764.7	766.0	764.4	766.0
5°	769.1	761.6	753.4	746.2	738.3	732.7	727.0	725.8	725.1	721.4	721.7
7.5°	748.4	738.3	728.0	718.5	708.8	700.0	694.0	691.5	689.3	686.8	684.0
10°	726.1	714.5	702.2	691.5	682.1	670.2	664.2	662.3	656.0	654.8	650.4
12.5°	702.5	690.6	678.3	664.5	655.4	643.8	635.0	630.9	624.9	620.5	613.9
15°	684.0	668.9	652.6	639.1	627.1	614.2	602.3	594.4	586.6	574.3	568.4
17.5°	661.1	643.8	629.6	615.2	597.9	579.0	564.9	553.3	544.8	534.7	528.8
20°	636.2	620.2	602.6	582.2	564.0	542.6	529.7	520.0	513.4	507.4	504.3
22.5°	614.2	595.7	571.5	552.0	526.6	509.6	499.2	493.0	486.7	480.4	477.3
25°	590.4	568.7	539.1	515.3	496.1	482.9	472.9	466.9	460.3	456.5	451.8
27.5°	566.8	538.8	509.3	487.6	472.5	457.1	448.7	443.9	438.9	433.6	429.8
30°	538.2	506.5	482.0	462.2	447.1	434.2	427.9	421.0	416.6	413.5	411.3
32.5°	508.4	477.9	455.6	438.6	423.8	414.1	406.2	401.8	398.1	394.6	392.1
35°	480.4	450.9	432.0	415.7	403.4	392.4	386.5	382.4	379.2	376.4	375.1
37.5°	452.7	427.6	407.2	394.3	381.4	372.6	367.0	363.2	361.3	358.5	358.8
40°	425.4	402.8	386.5	371.7	359.7	352.2	347.8	346.2	343.4	342.5	343.4
42.5°	400.9	380.2	364.5	350.6	340.3	333.0	329.6	327.4	326.4	326.1	326.4
45°	377.0	357.5	342.5	331.2	320.5	313.9	311.0	309.5	308.5	310.1	310.4
47.5°	353.1	335.6	322.0	308.8	300.0	295.3	292.5	291.3	292.2	292.8	295.0
50°	329.6	313.2	299.1	287.5	280.6	276.2	275.2	273.0	274.6	275.5	277.1
52.5°	305.7	290.9	278.4	267.4	260.1	257.3	255.1	254.2	256.4	256.4	257.9
55°	281.5	268.6	257.0	247.0	241.3	237.8	236.3	235.0	236.3	236.6	236.3
57.5°	258.9	246.6	234.4	225.9	221.2	217.4	215.8	215.2	214.9	216.2	215.8
60°	235.0	223.4	213.6	204.9	200.1	197.9	194.5	195.1	195.1	195.1	192.0
62.5°	211.1	199.5	191.0	185.1	179.4	175.6	175.0	174.1	172.2	171.9	167.8
65°	186.6	177.8	170.6	164.6	159.0	155.8	154.9	152.1	149.9	145.8	143.0
67.5°	164.0	157.7	149.2	144.2	139.5	135.7	132.3	130.1	125.7	121.6	119.1
70°	141.4	134.8	129.1	123.8	119.1	115.6	111.5	107.5	104.6	102.1	100.2
72.5°	118.8	113.1	108.4	103.4	98.3	94.9	91.7	88.6	87.3	86.1	85.1
75°	97.7	92.4	88.0	83.9	81.1	77.0	75.4	74.1	72.9	71.3	69.4
77.5°	77.3	73.2	69.7	66.3	63.8	61.6	60.3	56.6	53.4	52.8	52.2
80°	57.5	54.4	52.2	49.6	46.8	43.7	42.7	41.5	40.8	40.8	41.2
82.5°	40.2	38.3	35.8	33.6	32.7	31.4	31.4	31.1	30.8	31.1	31.1
85°	24.5	22.0	21.4	21.1	21.4	21.4	21.4	21.4	21.1	21.4	20.7
87.5°	10.7	11.6	11.9	11.0	11.3	10.7	11.0	11.0	11.0	11.3	11.0
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: P243597

CATALOG NUMBER: S124RDRP-H575D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	806.8	806.8	806.8	806.8
2.5°	764.1	764.1	761.0	758.4
5°	721.1	717.0	716.3	712.6
7.5°	680.8	680.2	678.6	678.6
10°	648.8	646.6	644.4	644.1
12.5°	603.6	606.7	602.9	602.0
15°	564.0	561.5	558.3	551.7
17.5°	527.2	522.5	521.2	518.4
20°	498.3	494.8	493.6	492.0
22.5°	471.0	470.3	466.6	465.6
25°	450.9	447.7	445.2	443.6
27.5°	428.9	426.7	425.4	422.9
30°	408.8	408.1	406.6	406.6
32.5°	390.5	388.7	388.7	388.3
35°	373.9	374.5	372.6	372.0
37.5°	358.2	357.2	357.5	356.9
40°	342.8	342.2	342.2	342.5
42.5°	327.1	327.4	328.0	328.0
45°	311.4	311.7	312.3	312.3
47.5°	296.6	296.0	296.6	296.0
50°	277.7	279.6	279.3	279.0
52.5°	258.6	257.9	259.2	258.9
55°	237.8	236.9	238.2	236.9
57.5°	214.6	214.9	214.9	214.3
60°	191.3	190.4	189.1	189.1
62.5°	164.3	161.5	159.6	160.9
65°	138.2	136.0	135.4	134.5
67.5°	117.5	115.0	114.1	113.7
70°	99.6	98.3	98.0	98.0
72.5°	84.5	84.5	83.6	82.9
75°	68.8	67.6	66.0	66.0
77.5°	51.5	51.2	50.9	50.9
80°	40.2	40.2	40.5	40.8
82.5°	30.2	30.5	30.8	30.8
85°	20.4	20.4	20.7	20.7
87.5°	11.0	11.0	11.0	10.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243597  
 CATALOG NUMBER: S124RDRP-H575D830-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	16.19	17.72	16.55	18.03	18.35	17.88	19.42	18.25	19.73	20.04
	3H	17.42	18.80	17.80	19.12	19.49	19.36	20.74	19.74	21.07	21.43
	4H	17.85	19.14	18.25	19.49	19.87	19.91	21.20	20.30	21.55	21.92
	6H	18.13	19.32	18.54	19.69	20.08	20.29	21.49	20.71	21.85	22.25
	8H	18.21	19.35	18.64	19.74	20.14	20.41	21.55	20.84	21.94	22.34
	12H	18.27	19.36	18.70	19.74	20.17	20.49	21.58	20.92	21.96	22.39
4H	2H	17.39	18.69	17.79	19.03	19.41	18.41	19.70	18.81	20.05	20.43
	3H	18.66	19.74	19.07	20.14	20.54	20.19	21.26	20.60	21.66	22.06
	4H	19.13	20.10	19.57	20.51	20.95	20.84	21.81	21.28	22.22	22.66
	6H	19.47	20.31	19.92	20.75	21.21	21.34	22.18	21.80	22.62	23.08
	8H	19.57	20.35	20.03	20.80	21.27	21.50	22.28	21.96	22.73	23.19
	12H	19.64	20.35	20.13	20.82	21.29	21.61	22.31	22.09	22.79	23.26
8H	4H	19.54	20.33	20.01	20.77	21.24	20.97	21.76	21.43	22.20	22.67
	6H	19.94	20.59	20.44	21.08	21.56	21.57	22.22	22.07	22.71	23.19
	8H	20.09	20.67	20.60	21.18	21.67	21.79	22.37	22.30	22.88	23.37
	12H	20.21	20.72	20.72	21.22	21.78	21.97	22.48	22.48	22.97	23.54
12H	4H	19.59	20.29	20.07	20.77	21.24	20.96	21.66	21.44	22.14	22.61
	6H	20.00	20.58	20.51	21.09	21.58	21.56	22.15	22.08	22.66	23.14
	8H	20.19	20.71	20.70	21.20	21.76	21.82	22.34	22.33	22.83	23.39