

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: P242659

Luminaire Tested: S124DRP-S575D940-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242659  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-S575D940-X4F0-XX-UDD-A-W  
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

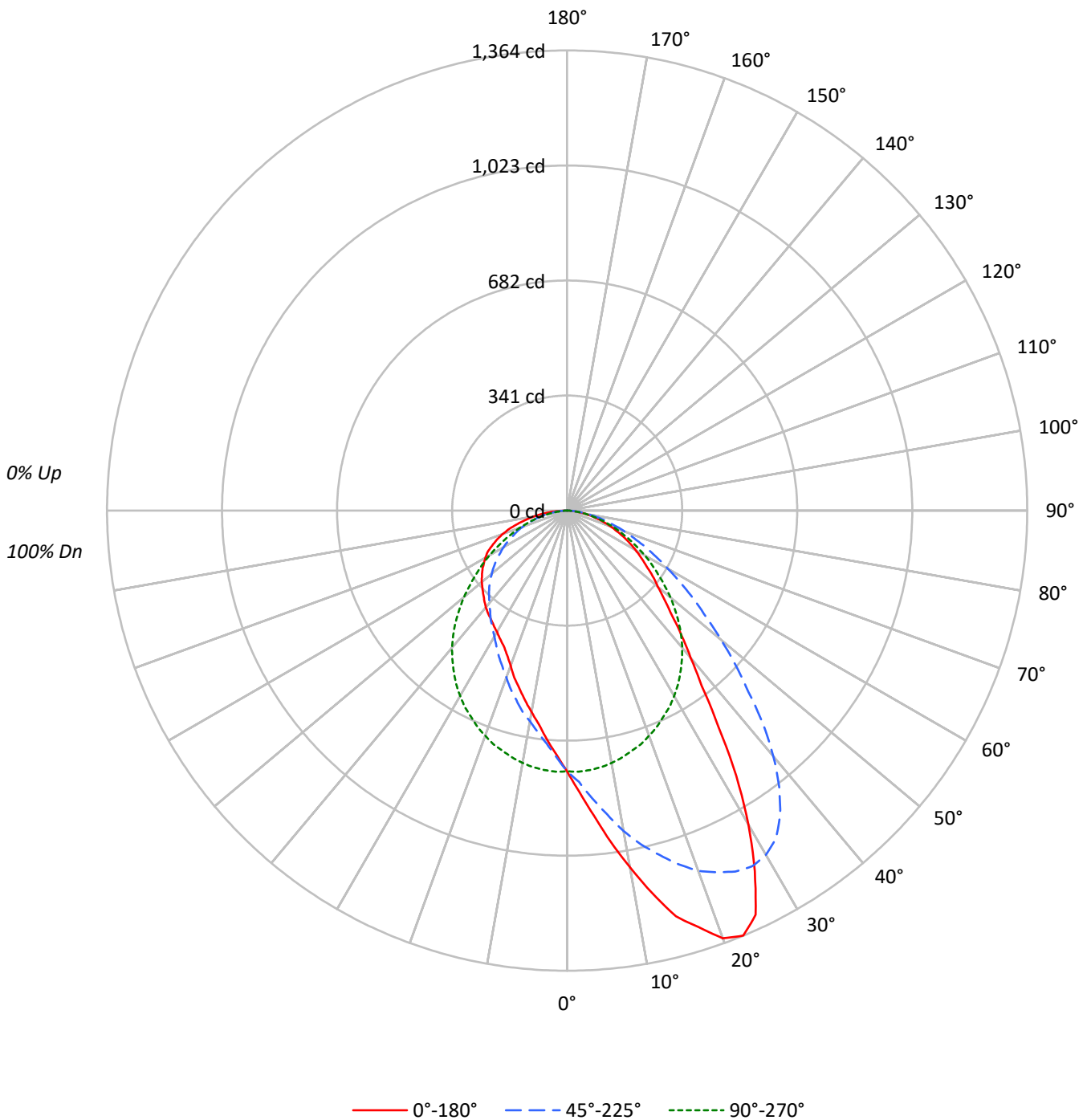
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2132.5 lumens  
Efficiency: N/A  
Efficacy: 113.4 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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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CATALOG NUMBER: S124DRP-S575D940-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot



TEST NUMBER: P242659

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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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62					62			
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46					46			
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

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

	0°	45°	90°	135°	180°
0°	6869	6869	6869	6869	6869
5°	8089	7642	6888	6190	6079
10°	9686	8707	6857	5727	5472
15°	11460	9725	6788	5350	5026
20°	12762	10751	6717	4978	4628
25°	12968	11576	6612	4688	4352
30°	11034	12098	6513	4426	4265
35°	8484	11947	6350	4283	4266
40°	6612	11040	6159	4165	4347
45°	5514	9554	5872	4113	4419
50°	4852	8239	5520	4038	4569
55°	4445	7090	5100	3964	4753
60°	4165	6135	4724	3865	4974
65°	3878	5359	4303	3738	5157
70°	3545	4735	3885	3636	5276
75°	3167	4080	3421	3397	5210
80°	2657	3312	2800	3097	5047
85°	1958	2519	2019	2876	4834

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 55°  
 Vertical Angle: 45°  
 Luminance: 10548 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.2	3.5
10°-20°	232.2	10.9
20°-30°	368.8	17.3
30°-40°	409.8	19.2
40°-50°	372.7	17.5
50°-60°	304.5	14.3
60°-70°	217.4	10.2
70°-80°	119.6	5.6
80°-90°	32.3	1.5
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°	676.2	31.7
0°-40°	1086.0	50.9
0°-60°	1763.2	82.7
0°-90°	2132.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2132.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	773	773	773	773	773	
5°	907	856	772	694	681	92
15°	1245	1057	738	581	546	352
25°	1322	1180	674	478	444	586
35°	782	1101	585	395	393	495
45°	439	760	467	327	352	345
55°	287	458	329	256	307	259
65°	184	255	205	178	245	182
75°	92	119	100	99	152	98
85°	19	25	20	28	47	24
90°	0	0	0	0	0	



TEST NUMBER: P242659

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	834.9	834.6	831.4	830.8	828.5	825.6	825.0	819.9	809.6	804.8	803.5
5°	906.6	913.0	904.7	903.1	902.1	891.6	886.1	879.7	865.0	856.4	849.6
7.5°	990.5	990.8	987.3	983.8	977.7	968.7	956.6	942.5	925.5	908.2	896.1
10°	1073.1	1075.7	1071.5	1070.9	1054.5	1044.3	1023.8	1006.5	986.7	964.6	944.4
12.5°	1160.2	1155.1	1153.5	1136.5	1136.8	1116.0	1091.3	1073.4	1040.1	1013.9	985.4
15°	1245.3	1238.3	1233.8	1214.9	1205.6	1179.7	1154.4	1134.9	1094.9	1056.8	1028.0
17.5°	1294.6	1303.3	1291.8	1284.1	1258.8	1241.8	1216.5	1176.5	1146.7	1099.4	1066.4
20°	1349.1	1349.7	1343.9	1335.9	1317.0	1294.0	1265.8	1221.0	1183.5	1136.5	1086.5
22.5°	1363.8	1363.8	1362.2	1354.8	1341.7	1324.1	1295.6	1260.1	1212.7	1160.5	1110.6
25°	1322.2	1320.9	1323.8	1332.1	1326.7	1320.9	1304.6	1276.7	1234.5	1180.3	1126.6
27.5°	1204.4	1212.7	1230.0	1250.5	1265.2	1278.3	1277.3	1265.5	1235.4	1188.7	1131.4
30°	1075.0	1085.9	1098.1	1118.6	1158.3	1181.0	1206.0	1224.8	1214.3	1178.7	1126.2
32.5°	932.9	933.5	953.1	977.1	1012.6	1061.6	1104.8	1148.0	1166.6	1152.2	1110.6
35°	781.8	786.3	805.8	828.8	873.3	926.8	986.3	1039.5	1083.3	1101.0	1078.5
37.5°	655.0	669.1	683.8	710.1	750.7	799.1	863.1	929.4	993.7	1032.8	1036.9
40°	569.8	577.8	587.8	606.7	640.0	687.3	740.5	819.2	888.7	951.4	971.9
42.5°	502.6	506.5	511.6	528.2	551.6	598.7	646.0	712.9	782.7	860.9	898.6
45°	438.6	443.4	453.6	463.6	482.8	515.4	560.6	617.5	687.7	760.0	823.4
47.5°	390.6	393.8	400.2	411.1	428.3	450.4	488.9	537.2	605.7	675.8	743.7
50°	350.9	353.4	358.2	367.8	380.3	399.5	429.6	474.1	525.0	595.8	662.0
52.5°	319.5	320.1	323.3	329.1	338.4	353.8	377.1	412.0	458.4	519.6	585.5
55°	286.8	288.1	291.3	296.1	304.8	315.0	333.9	361.4	402.7	457.5	514.8
57.5°	260.0	261.2	263.8	265.7	273.4	282.0	297.4	317.3	349.6	398.3	450.4
60°	234.3	233.7	236.9	238.5	243.3	250.3	261.6	280.4	307.7	345.1	392.2
62.5°	209.4	208.4	211.0	213.2	215.5	221.2	229.9	243.6	264.4	297.4	336.5
65°	184.4	183.1	184.7	187.3	189.8	193.0	199.8	212.9	230.5	254.8	285.9
67.5°	158.8	160.4	160.4	162.0	163.6	168.1	172.9	183.1	195.6	215.5	243.0
70°	136.4	136.7	138.0	138.0	138.9	142.8	146.6	152.1	164.2	182.2	203.6
72.5°	114.0	115.6	114.6	115.9	116.5	118.8	121.3	126.5	136.4	148.5	165.8
75°	92.2	93.2	93.2	93.5	94.4	95.4	97.6	101.5	108.8	118.8	131.3
77.5°	71.1	71.1	71.7	73.0	73.0	74.6	76.5	79.4	83.6	90.9	98.9
80°	51.9	52.5	52.2	52.8	52.8	54.1	54.7	58.6	60.2	64.7	70.8
82.5°	34.6	35.2	35.2	36.2	36.8	36.8	37.8	38.7	40.3	44.2	45.8
85°	19.2	19.8	19.2	19.8	20.8	21.1	22.1	22.4	23.7	24.7	26.9
87.5°	7.0	8.0	8.0	8.3	9.0	9.3	9.6	9.3	10.6	10.9	12.2
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°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	803.9	799.4	796.2	793.6	786.6	782.4	779.2	774.7	769.6	764.2	757.4
5°	842.9	832.0	824.0	811.9	800.3	790.7	780.8	771.9	761.0	749.1	740.5
7.5°	882.9	867.9	847.7	832.0	813.1	796.8	782.4	767.4	751.4	736.0	721.6
10°	920.7	899.9	876.9	849.6	824.0	801.3	780.2	759.7	739.8	720.0	703.0
12.5°	961.4	934.2	897.3	864.4	834.9	802.6	776.0	749.8	724.8	703.7	683.2
15°	996.9	959.5	920.1	877.5	839.7	804.2	769.3	737.6	710.7	683.2	664.0
17.5°	1019.3	972.9	930.6	886.1	842.6	798.1	761.9	726.4	693.1	666.2	642.2
20°	1041.4	995.3	939.3	894.8	840.4	794.3	750.7	710.1	674.9	645.7	620.7
22.5°	1060.6	1005.6	949.5	887.4	833.3	783.7	735.0	694.1	657.9	626.8	603.1
25°	1065.1	1004.0	943.1	884.9	823.4	765.4	722.2	674.2	635.8	603.5	577.8
27.5°	1066.7	1002.0	934.5	871.1	807.7	754.9	698.5	656.6	616.9	582.7	558.3
30°	1063.2	995.0	921.0	850.9	787.2	728.6	681.3	634.5	593.9	559.9	534.3
32.5°	1052.0	980.3	903.7	828.5	761.9	704.9	655.6	611.8	572.4	539.1	511.9
35°	1028.3	958.2	877.2	800.0	732.5	674.5	630.4	585.2	545.5	513.8	487.9
37.5°	996.6	931.3	849.0	768.7	703.7	644.8	600.3	558.6	522.8	490.1	463.2
40°	952.4	896.7	814.1	736.3	664.6	609.2	568.2	530.8	495.3	464.8	439.5
42.5°	901.5	854.8	780.2	696.6	628.1	572.4	532.7	500.1	467.1	439.5	414.3
45°	839.1	807.1	735.4	659.2	587.1	534.6	496.5	467.1	438.9	411.4	390.2
47.5°	769.6	751.7	689.3	616.3	547.1	494.6	461.6	433.5	407.9	383.8	365.0
50°	699.5	691.8	639.6	569.8	504.5	455.9	422.6	399.2	378.1	357.6	340.0
52.5°	630.4	632.0	586.2	523.7	464.5	418.1	385.1	363.7	346.1	330.4	315.0
55°	559.6	568.6	531.7	474.8	420.7	378.4	348.6	329.1	316.3	302.5	290.7
57.5°	494.6	509.7	477.6	425.5	379.7	339.3	313.1	298.0	284.0	275.0	265.7
60°	431.2	445.3	421.6	379.4	336.8	303.5	278.8	265.7	253.9	248.1	242.0
62.5°	374.9	387.0	371.0	332.6	297.1	265.4	245.5	233.1	226.0	219.6	216.1
65°	321.7	332.3	317.3	288.8	257.1	231.5	214.5	204.6	196.9	194.3	189.8
67.5°	269.2	278.8	270.8	245.9	219.0	198.8	185.4	174.8	170.3	167.8	164.9
70°	223.5	233.1	224.4	203.3	183.8	167.4	154.9	149.5	144.7	143.7	139.3
72.5°	184.7	190.5	181.8	166.5	150.5	137.3	128.4	122.6	120.7	118.8	116.9
75°	144.4	150.1	144.4	131.6	119.7	110.1	101.8	99.6	96.7	95.7	94.1
77.5°	108.2	113.6	109.2	100.5	91.2	83.2	78.4	75.2	74.9	73.0	73.6
80°	78.1	81.3	77.2	71.7	64.7	59.5	56.3	54.7	52.8	52.2	53.5
82.5°	50.6	51.5	49.9	46.7	41.9	39.1	37.1	35.2	35.2	35.5	35.2
85°	29.1	28.8	28.5	25.3	23.7	21.4	20.2	19.8	19.5	20.2	20.8
87.5°	12.2	12.5	12.2	10.9	9.9	9.0	8.6	8.3	8.6	9.0	9.3
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°	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8	772.8
2.5°	754.2	751.4	747.2	741.4	736.6	731.5	730.2	728.3	732.2	729.0	728.0
5°	733.1	726.4	717.7	707.8	702.1	693.7	692.1	688.9	685.7	685.4	682.2
7.5°	711.0	701.7	690.9	680.6	671.6	662.7	656.9	656.3	651.2	648.6	645.4
10°	689.9	677.7	664.6	655.0	644.1	634.5	627.8	623.9	620.7	617.2	614.0
12.5°	664.9	651.8	641.6	631.0	617.5	610.8	598.7	591.3	591.3	592.3	582.7
15°	646.7	633.9	617.2	602.5	595.5	581.4	575.3	567.6	562.8	558.0	554.2
17.5°	624.3	608.6	595.8	579.1	566.0	555.4	547.1	543.0	535.3	528.2	523.4
20°	603.5	586.5	572.7	554.8	540.1	526.3	519.6	513.2	507.7	502.0	496.5
22.5°	582.3	564.4	546.8	529.5	516.1	501.3	494.9	485.6	480.5	478.0	472.5
25°	559.9	540.7	521.5	504.9	490.8	478.0	469.3	462.6	456.8	454.3	450.8
27.5°	535.6	516.7	498.5	479.2	462.9	453.6	446.6	441.1	437.6	433.8	432.2
30°	512.5	492.7	472.8	455.2	440.5	431.2	424.8	421.3	418.7	417.1	415.5
32.5°	489.2	469.6	448.5	432.8	420.0	412.0	407.5	404.0	403.1	402.7	402.4
35°	463.9	444.0	424.8	410.4	397.9	394.7	390.6	388.6	388.0	390.2	391.2
37.5°	439.5	421.0	403.1	388.6	380.3	375.2	373.6	373.3	375.5	377.4	379.7
40°	416.2	398.3	381.6	369.4	361.8	358.9	358.2	359.8	362.4	364.6	367.2
42.5°	393.4	375.8	361.1	349.9	345.1	342.5	343.2	344.8	348.6	351.5	355.7
45°	369.8	355.0	340.3	331.0	326.5	327.2	327.2	330.1	333.6	337.7	341.9
47.5°	347.7	332.6	320.1	312.1	309.9	308.9	310.5	314.4	319.2	324.0	329.7
50°	325.3	311.2	300.6	293.6	291.0	292.0	294.5	298.0	304.1	310.5	316.6
52.5°	302.5	290.0	280.4	274.0	272.4	274.4	276.9	283.0	288.1	295.2	302.9
55°	278.8	268.0	260.3	255.5	254.8	255.8	258.7	264.8	272.4	281.1	288.1
57.5°	255.5	246.2	238.8	235.3	235.6	236.3	240.7	248.1	255.8	265.1	274.0
60°	231.8	223.5	217.7	215.1	215.5	217.4	223.1	229.9	240.1	249.1	258.7
62.5°	209.4	202.3	196.9	194.6	194.0	198.8	204.2	211.3	221.5	231.8	242.3
65°	185.0	179.3	174.8	173.5	174.5	177.7	184.7	194.0	202.6	213.2	224.1
67.5°	161.3	156.5	153.3	154.0	154.9	159.4	165.5	173.5	183.1	194.0	205.2
70°	138.9	134.5	131.9	132.2	134.1	139.9	145.0	153.0	163.6	174.8	183.8
72.5°	115.9	113.3	111.1	112.7	114.6	118.1	124.9	132.9	141.8	152.1	161.7
75°	92.5	92.5	91.2	92.2	95.1	98.9	103.7	112.0	121.3	129.7	137.3
77.5°	72.7	71.7	72.4	73.3	75.2	80.0	85.5	91.6	98.9	107.6	114.0
80°	52.5	52.8	54.4	56.3	57.0	60.5	66.3	71.7	77.2	84.2	90.3
82.5°	36.2	36.5	37.1	39.7	40.3	44.2	47.4	52.8	57.6	61.8	66.6
85°	21.4	21.4	23.0	24.0	25.6	28.2	30.4	33.6	38.1	41.3	46.1
87.5°	10.2	10.2	11.5	12.2	13.1	14.7	15.4	18.9	20.2	21.8	24.7
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: P242659

CATALOG NUMBER: S124DRP-S575D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	772.8	772.8	772.8	772.8
2.5°	727.4	726.7	724.5	724.2
5°	680.3	678.7	677.7	681.3
7.5°	644.8	643.5	640.6	639.6
10°	610.8	609.5	607.0	606.3
12.5°	578.2	575.3	575.3	576.2
15°	550.0	548.7	545.2	546.2
17.5°	521.2	519.9	515.1	519.9
20°	494.3	491.7	489.5	489.2
22.5°	468.7	466.4	466.8	464.2
25°	448.2	446.0	445.3	443.7
27.5°	431.5	430.3	429.0	429.6
30°	416.5	416.2	415.5	415.5
32.5°	404.0	404.0	404.7	404.7
35°	392.5	393.4	394.1	393.1
37.5°	382.2	382.9	383.8	384.8
40°	370.1	372.3	373.0	374.6
42.5°	358.6	361.1	363.0	363.0
45°	346.7	349.3	351.5	351.5
47.5°	334.5	338.1	340.3	340.6
50°	322.1	326.5	328.8	330.4
52.5°	309.9	314.4	317.6	318.2
55°	295.5	301.9	305.4	306.7
57.5°	282.7	288.4	292.3	293.2
60°	267.3	273.7	278.8	279.8
62.5°	251.6	258.4	262.8	265.7
65°	233.1	239.8	244.3	245.2
67.5°	213.5	220.6	223.5	225.4
70°	192.7	198.2	201.4	203.0
72.5°	169.0	174.8	178.6	178.6
75°	144.7	149.8	151.7	151.7
77.5°	119.4	122.3	124.9	125.5
80°	95.1	96.7	98.6	98.6
82.5°	70.1	71.4	73.3	73.0
85°	45.5	48.3	48.0	47.4
87.5°	25.6	25.9	26.9	27.5
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242659  
 CATALOG NUMBER: S124DRP-S575D940-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	16.66	18.22	17.03	18.54	18.85	17.57	19.14	17.94	19.45	19.76
	3H	18.15	19.55	18.52	19.88	20.24	18.94	20.35	19.32	20.67	21.04
	4H	18.68	20.01	19.08	20.35	20.73	19.41	20.73	19.81	21.08	21.46
	6H	19.04	20.27	19.46	20.63	21.02	19.72	20.94	20.13	21.31	21.70
	8H	19.15	20.31	19.57	20.70	21.10	19.80	20.97	20.23	21.35	21.76
	12H	19.20	20.32	19.63	20.70	21.13	19.84	20.96	20.27	21.34	21.77
4H	2H	17.82	19.14	18.22	19.49	19.87	18.26	19.58	18.66	19.93	20.31
	3H	19.35	20.46	19.76	20.85	21.25	19.97	21.07	20.38	21.47	21.87
	4H	19.94	20.94	20.37	21.35	21.79	20.56	21.55	20.99	21.97	22.40
	6H	20.37	21.23	20.82	21.68	22.13	20.95	21.82	21.41	22.26	22.72
	8H	20.49	21.30	20.95	21.75	22.21	21.06	21.87	21.52	22.31	22.78
	12H	20.57	21.29	21.05	21.77	22.24	21.12	21.85	21.60	22.33	22.80
8H	4H	20.40	21.21	20.86	21.65	22.12	20.87	21.68	21.33	22.12	22.59
	6H	20.90	21.57	21.40	22.06	22.54	21.40	22.07	21.89	22.56	23.04
	8H	21.07	21.68	21.58	22.18	22.67	21.56	22.16	22.07	22.67	23.16
	12H	21.20	21.73	21.70	22.22	22.78	21.67	22.21	22.18	22.70	23.26
12H	4H	20.44	21.17	20.93	21.65	22.12	20.90	21.63	21.38	22.11	22.58
	6H	20.98	21.58	21.49	22.09	22.58	21.45	22.06	21.97	22.57	23.05
	8H	21.20	21.73	21.70	22.22	22.78	21.68	22.21	22.18	22.70	23.26