

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: P242747

Luminaire Tested: S124RDRP-S575D840-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242747
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-S575D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

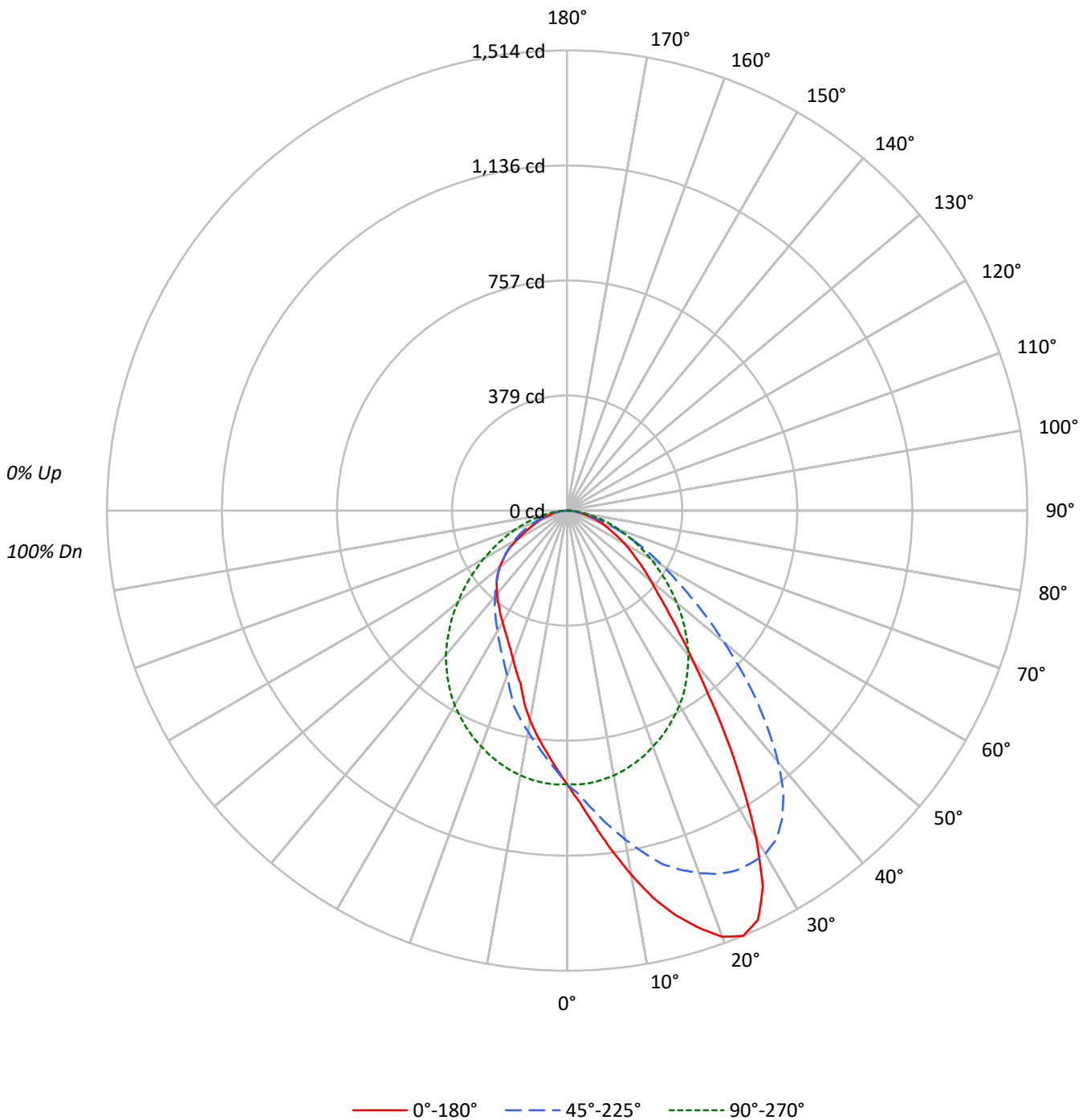
Lumens per Lamp: N/A
Luminaire Lumens: 2274.7 lumens
Efficiency: N/A
Efficacy: 121.0 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (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	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	7999	7999	7999	7999	7999
5°	9278	8832	8023	7260	7091
10°	10976	9915	7988	6673	6329
15°	12678	11071	7914	6166	5439
20°	14116	12003	7813	5453	4918
25°	14572	12830	7713	5025	4566
30°	12756	13382	7591	4707	4354
35°	9930	13388	7413	4470	4226
40°	7446	12524	7207	4278	4156
45°	5879	11052	6877	4116	4121
50°	4963	9300	6498	3976	4001
55°	4327	7708	6080	3826	3788
60°	3893	6452	5646	3609	3351
65°	3433	5376	5178	3363	2882
70°	3090	4296	4694	3033	2602
75°	2590	3338	4159	2665	2215
80°	2191	2524	3542	2206	2078
85°	1846	1999	2774	1958	1846

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 11804 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.1	3.8
10°-20°	263.1	11.6
20°-30°	412.2	18.1
30°-40°	457.7	20.1
40°-50°	405.6	17.8
50°-60°	316.1	13.9
60°-70°	206.8	9.1
70°-80°	101.4	4.5
80°-90°	24.7	1.1
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°	762.4	33.5
0°-40°	1220.1	53.6
0°-60°	1941.8	85.4
0°-90°	2274.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2274.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	900	900	900	900	900	
5°	1040	990	899	814	795	105
15°	1378	1203	860	670	591	392
25°	1486	1308	786	512	466	663
35°	915	1234	683	412	389	573
45°	468	879	547	327	328	369
55°	279	497	392	247	244	254
65°	163	256	246	160	137	164
75°	75	97	121	78	64	83
85°	18	20	27	19	18	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°	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9
2.5°	961.5	964.8	961.5	961.1	957.5	956.4	955.0	950.3	941.6	936.5	937.6
5°	1039.8	1048.9	1043.8	1043.1	1035.1	1027.1	1022.0	1010.4	998.1	989.8	982.9
7.5°	1126.8	1132.3	1128.6	1124.6	1110.9	1106.5	1094.6	1080.8	1060.1	1044.5	1030.4
10°	1216.0	1220.4	1218.9	1209.5	1200.1	1180.8	1170.0	1148.6	1120.7	1098.5	1077.9
12.5°	1303.8	1308.5	1292.9	1295.8	1275.8	1261.7	1242.8	1214.6	1181.2	1151.1	1123.9
15°	1377.7	1371.9	1371.9	1364.7	1344.7	1323.7	1305.9	1277.6	1237.0	1203.0	1167.1
17.5°	1438.6	1441.2	1438.3	1419.8	1405.3	1383.9	1352.0	1319.7	1284.5	1238.9	1203.3
20°	1492.3	1492.3	1489.0	1477.4	1457.1	1433.9	1398.7	1362.8	1315.0	1268.9	1227.6
22.5°	1514.0	1515.5	1511.5	1502.4	1484.7	1462.2	1433.5	1396.9	1347.3	1294.0	1240.3
25°	1485.8	1492.6	1493.4	1490.8	1485.4	1471.6	1445.9	1408.5	1364.3	1308.1	1253.0
27.5°	1394.4	1403.5	1407.1	1415.1	1429.9	1435.4	1432.1	1407.1	1364.3	1308.8	1254.1
30°	1242.8	1250.1	1273.7	1304.5	1328.4	1350.2	1369.0	1374.1	1352.3	1303.8	1245.4
32.5°	1074.6	1085.1	1108.7	1142.4	1186.3	1226.9	1275.1	1300.9	1305.6	1281.3	1228.3
35°	915.1	922.3	944.1	978.9	1026.8	1081.5	1148.6	1200.8	1236.3	1233.8	1200.8
37.5°	762.1	772.2	794.4	823.0	870.1	940.1	1003.6	1073.5	1137.3	1168.5	1151.8
40°	641.7	642.1	663.5	693.2	736.7	795.8	866.5	946.3	1019.5	1079.3	1090.9
42.5°	546.7	546.7	559.1	591.7	620.0	674.7	741.4	820.5	909.3	980.7	1016.2
45°	467.7	471.0	482.6	501.8	526.4	573.6	627.6	701.2	797.3	879.2	930.3
47.5°	405.3	411.1	418.0	435.4	455.7	488.7	534.8	603.7	683.4	774.4	845.1
50°	358.9	359.7	369.1	377.8	394.8	419.8	459.0	514.1	585.9	672.5	753.4
52.5°	319.0	318.7	323.4	335.0	348.1	366.2	395.9	444.9	506.5	581.9	666.0
55°	279.2	281.0	285.3	294.0	304.5	318.3	343.3	381.0	431.1	497.4	573.2
57.5°	248.7	249.8	253.8	257.1	267.2	277.4	297.7	324.9	368.7	424.2	498.5
60°	219.0	219.3	220.4	225.9	233.5	242.9	255.6	277.7	313.2	362.9	418.8
62.5°	190.0	190.7	192.5	196.1	201.6	207.4	220.8	237.5	265.4	306.0	354.9
65°	163.2	163.5	166.1	167.5	172.2	178.0	187.8	199.8	220.1	255.6	293.7
67.5°	140.7	140.7	140.7	142.8	146.5	150.5	157.0	167.1	183.5	206.3	241.8
70°	118.9	118.9	119.6	120.7	122.5	125.8	129.1	136.3	147.6	165.3	191.1
72.5°	98.6	99.0	99.7	99.7	100.4	103.0	105.1	109.1	116.7	129.1	148.6
75°	75.4	76.5	78.3	79.8	81.6	81.2	83.8	86.7	89.2	97.2	109.1
77.5°	59.5	58.7	58.7	60.2	60.5	60.9	62.7	65.3	67.4	71.8	76.1
80°	42.8	42.8	43.9	44.2	43.9	44.2	46.0	47.1	47.9	49.3	53.3
82.5°	29.7	30.5	29.7	30.1	30.5	30.8	32.3	32.3	33.0	33.4	34.4
85°	18.1	18.5	18.9	18.1	18.1	18.1	18.9	19.2	19.9	19.6	20.3
87.5°	8.0	7.6	8.0	8.0	8.3	8.0	8.3	9.1	8.3	8.7	8.7
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°	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9
2.5°	933.9	928.9	926.3	920.5	913.6	910.0	906.8	902.0	895.9	889.3	884.6
5°	974.2	965.5	954.6	941.6	930.0	918.7	908.9	899.1	887.9	876.3	864.7
7.5°	1014.1	998.5	981.8	961.9	942.6	924.9	908.9	893.3	875.6	859.6	844.8
10°	1056.1	1032.9	1007.2	980.0	952.8	929.2	906.0	885.0	861.8	841.1	823.7
12.5°	1090.2	1061.9	1029.7	994.1	960.0	930.3	902.8	873.8	846.6	823.7	799.1
15°	1128.6	1091.3	1049.6	1009.0	966.6	927.8	891.9	860.0	829.9	798.3	776.2
17.5°	1155.1	1112.0	1062.7	1015.5	966.9	922.0	881.4	844.4	809.9	778.4	752.3
20°	1178.3	1129.4	1073.2	1017.7	961.5	912.6	868.0	825.9	790.0	755.2	728.0
22.5°	1191.4	1135.9	1073.2	1014.4	955.7	901.7	851.6	807.4	767.5	732.7	701.9
25°	1192.1	1134.1	1071.4	1004.6	940.8	884.6	833.9	786.4	742.9	708.1	676.2
27.5°	1189.2	1122.1	1059.0	991.2	925.6	865.8	813.2	762.8	719.7	682.7	650.1
30°	1180.5	1107.2	1038.4	967.3	900.6	843.7	787.5	739.6	694.3	655.5	622.5
32.5°	1161.6	1089.1	1013.7	940.5	872.7	813.6	761.0	712.8	668.6	628.7	593.1
35°	1135.5	1061.9	981.4	906.8	840.4	779.5	729.5	683.1	640.6	598.2	561.2
37.5°	1105.4	1028.6	949.2	867.2	801.2	743.2	696.5	651.9	610.5	571.8	530.8
40°	1059.0	990.5	907.8	826.6	758.5	703.0	660.6	621.1	579.4	540.9	500.0
42.5°	1002.8	947.0	863.2	781.7	714.6	661.7	622.9	584.4	547.5	510.5	467.3
45°	939.0	894.8	816.5	738.2	670.4	617.4	581.2	547.1	513.7	478.2	438.0
47.5°	868.0	835.3	767.2	685.2	621.8	573.2	538.4	510.1	480.7	444.9	408.6
50°	793.3	774.1	708.8	635.6	575.7	531.9	496.0	469.9	446.3	412.2	380.7
52.5°	713.5	705.5	653.0	583.7	526.4	483.6	454.3	431.4	407.5	380.7	351.7
55°	632.3	637.7	591.0	530.4	476.0	439.8	411.9	392.3	372.0	348.1	325.2
57.5°	547.8	568.5	533.7	478.9	426.4	392.3	370.9	353.5	336.5	316.1	295.5
60°	473.5	490.2	472.4	425.6	381.0	349.9	330.3	317.6	300.6	282.4	267.6
62.5°	401.0	419.1	410.4	374.9	334.3	308.5	291.9	280.3	268.7	253.4	237.8
65°	342.6	354.2	349.1	323.0	293.7	270.8	254.9	246.2	234.6	223.0	209.2
67.5°	274.1	296.9	293.3	278.8	250.5	232.4	221.2	213.2	202.3	193.6	183.8
70°	215.7	236.4	236.0	224.8	211.0	194.3	187.1	180.6	171.1	162.8	155.2
72.5°	166.8	185.3	188.9	180.9	172.6	161.0	154.1	150.1	141.0	136.0	130.2
75°	123.6	137.4	141.0	141.0	136.7	130.2	124.0	121.1	114.6	109.5	105.9
77.5°	87.0	96.4	101.9	103.0	103.3	100.8	95.0	92.8	87.7	85.9	81.9
80°	57.3	63.1	69.6	71.8	73.6	72.9	70.7	69.2	64.5	62.7	61.3
82.5°	35.2	37.7	42.8	48.2	47.1	49.7	47.9	46.8	43.5	43.1	41.7
85°	20.7	21.0	21.8	25.0	26.8	27.6	27.9	27.2	26.1	26.1	23.6
87.5°	8.7	8.3	9.1	9.1	9.4	10.9	12.0	12.3	11.2	10.2	9.1
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9	899.9
2.5°	879.6	875.9	871.2	865.8	859.3	853.5	850.9	853.1	854.2	851.3	850.9
5°	856.7	847.7	840.4	829.5	820.8	813.6	808.5	806.3	807.0	801.2	799.8
7.5°	831.3	821.6	809.6	797.3	785.7	775.5	770.1	767.5	761.4	758.8	754.8
10°	807.0	792.5	780.9	765.7	751.9	739.3	733.1	728.0	721.8	718.9	712.8
12.5°	782.0	764.6	751.6	735.6	721.5	705.5	699.7	689.2	678.7	671.8	663.5
15°	758.8	738.5	722.9	704.1	687.4	670.0	654.4	637.0	630.5	616.7	608.7
17.5°	731.3	710.2	692.8	668.6	643.5	622.5	605.1	587.0	577.2	567.8	563.8
20°	704.1	685.2	658.4	629.0	600.4	576.5	563.0	552.2	541.3	535.1	530.8
22.5°	678.3	653.0	620.7	588.4	559.8	542.4	531.5	520.3	511.9	506.1	500.0
25°	649.0	617.4	584.4	548.2	528.6	512.3	500.0	490.9	485.5	477.8	474.9
27.5°	620.3	582.3	544.9	520.3	500.0	484.4	473.1	466.6	459.4	454.3	450.3
30°	586.3	547.5	514.8	491.6	471.0	458.6	449.9	442.0	436.5	432.5	429.6
32.5°	552.5	513.7	487.6	462.3	447.0	435.1	425.6	420.2	416.2	410.8	409.3
35°	520.3	485.8	461.9	439.4	422.7	411.9	404.6	398.4	394.8	393.4	392.3
37.5°	488.7	460.1	433.6	415.5	399.9	391.6	382.1	379.2	376.7	373.4	374.9
40°	459.0	432.5	409.7	390.1	378.1	368.7	363.6	360.0	357.8	357.8	357.8
42.5°	433.3	407.5	385.4	368.4	356.4	348.8	343.0	340.1	339.7	339.4	341.5
45°	406.4	382.5	360.0	345.5	335.4	327.4	324.1	321.6	321.6	323.0	323.4
47.5°	379.6	357.1	339.0	322.3	312.9	307.8	304.9	303.5	303.5	305.3	306.7
50°	355.3	333.2	315.4	300.9	292.2	287.5	285.0	284.2	285.0	285.0	287.5
52.5°	328.8	309.6	292.2	280.6	270.5	266.1	265.0	263.9	264.3	265.8	266.5
55°	303.1	285.3	268.7	257.1	249.8	246.9	243.6	244.0	243.3	244.0	244.0
57.5°	277.0	261.4	245.1	235.7	229.5	225.1	221.5	222.6	221.5	221.5	221.2
60°	252.0	234.6	222.2	213.9	206.7	203.0	199.8	200.5	199.4	198.7	197.2
62.5°	224.8	211.0	199.4	191.4	186.0	181.6	178.4	177.3	174.4	171.5	167.9
65°	198.7	186.7	176.2	168.6	163.2	159.9	157.3	155.2	149.7	143.9	141.0
67.5°	172.9	164.2	154.1	147.6	143.2	138.9	134.1	130.2	124.7	121.1	119.3
70°	148.3	139.9	131.6	125.4	120.7	116.7	111.3	108.8	105.1	103.7	101.9
72.5°	124.7	117.1	109.5	104.1	99.0	96.1	92.1	89.6	88.5	88.1	86.3
75°	100.8	94.6	88.8	83.8	79.8	77.6	75.8	74.0	73.2	70.0	68.2
77.5°	77.6	73.2	69.6	65.6	63.1	61.6	57.6	55.1	53.7	51.8	51.5
80°	57.3	54.4	50.8	48.6	44.6	43.1	41.7	41.3	41.0	40.6	40.2
82.5°	39.5	36.6	33.0	31.9	31.5	30.8	30.1	29.7	29.4	29.7	29.7
85°	21.8	20.3	20.3	19.9	19.6	19.2	18.9	18.9	18.5	18.9	18.5
87.5°	9.1	8.7	8.7	8.0	8.3	8.3	8.0	8.0	8.3	7.6	7.6
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: P242747

CATALOG NUMBER: S124RDRP-S575D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	899.9	899.9	899.9	899.9
2.5°	848.7	849.5	846.9	846.2
5°	796.9	796.2	794.4	794.7
7.5°	751.9	749.4	751.2	748.3
10°	711.3	707.3	704.1	701.2
12.5°	655.9	652.6	647.9	649.7
15°	604.0	598.6	589.9	591.0
17.5°	557.6	558.3	553.3	554.7
20°	523.2	520.6	521.0	519.9
22.5°	499.2	496.0	492.7	490.2
25°	471.7	469.5	466.2	465.5
27.5°	447.4	447.0	445.6	443.8
30°	426.7	426.0	425.3	424.2
32.5°	408.2	407.9	407.2	407.5
35°	390.8	390.5	389.7	389.4
37.5°	374.5	375.6	374.9	374.9
40°	357.5	357.8	358.6	358.2
42.5°	343.3	343.3	344.4	343.0
45°	325.9	328.1	327.8	327.8
47.5°	307.4	310.0	310.3	310.3
50°	289.3	288.6	289.7	289.3
52.5°	267.2	267.6	267.2	266.8
55°	244.4	244.7	244.0	244.4
57.5°	220.1	218.6	219.7	219.0
60°	193.6	190.7	190.0	188.5
62.5°	163.9	162.1	159.2	161.0
65°	138.1	136.7	135.6	137.0
67.5°	117.5	116.7	116.7	116.0
70°	101.9	100.8	100.8	100.1
72.5°	85.9	84.8	85.2	84.8
75°	66.0	64.2	64.2	64.5
77.5°	51.5	51.1	51.8	50.8
80°	40.2	39.9	39.5	40.6
82.5°	29.0	29.0	29.0	30.5
85°	18.9	18.1	18.9	18.1
87.5°	8.3	8.0	7.6	8.0
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242747
 CATALOG NUMBER: S124RDRP-S575D840-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	16.33	17.85	16.69	18.16	18.48	18.14	19.67	18.51	19.98	20.29
	3H	17.55	18.92	17.93	19.25	19.61	19.60	20.96	19.98	21.29	21.65
	4H	17.99	19.27	18.39	19.62	19.99	20.11	21.39	20.51	21.74	22.12
	6H	18.26	19.44	18.67	19.81	20.20	20.47	21.65	20.88	22.02	22.41
	8H	18.34	19.46	18.77	19.85	20.26	20.57	21.69	20.99	22.08	22.48
	12H	18.39	19.47	18.82	19.85	20.28	20.63	21.70	21.06	22.09	22.52
4H	2H	17.59	18.87	17.99	19.22	19.59	18.65	19.93	19.05	20.28	20.66
	3H	18.82	19.88	19.23	20.28	20.68	20.39	21.45	20.80	21.85	22.26
	4H	19.29	20.24	19.72	20.66	21.10	21.02	21.98	21.45	22.39	22.83
	6H	19.61	20.44	20.07	20.88	21.34	21.48	22.31	21.93	22.75	23.21
	8H	19.70	20.48	20.17	20.92	21.39	21.61	22.39	22.08	22.83	23.30
	12H	19.77	20.47	20.25	20.94	21.41	21.70	22.40	22.18	22.87	23.34
8H	4H	19.69	20.46	20.15	20.91	21.38	21.13	21.91	21.60	22.35	22.82
	6H	20.07	20.71	20.57	21.21	21.68	21.67	22.31	22.17	22.81	23.28
	8H	20.21	20.78	20.72	21.29	21.78	21.86	22.44	22.38	22.95	23.44
	12H	20.32	20.83	20.83	21.32	21.89	22.01	22.52	22.52	23.01	23.58
12H	4H	19.72	20.42	20.21	20.89	21.37	21.12	21.81	21.60	22.29	22.76
	6H	20.12	20.70	20.64	21.21	21.70	21.66	22.24	22.18	22.75	23.24
	8H	20.30	20.81	20.81	21.30	21.87	21.89	22.40	22.40	22.89	23.46