

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: P243446

Luminaire Tested: S123RDRP-H775D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243446
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-H775D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

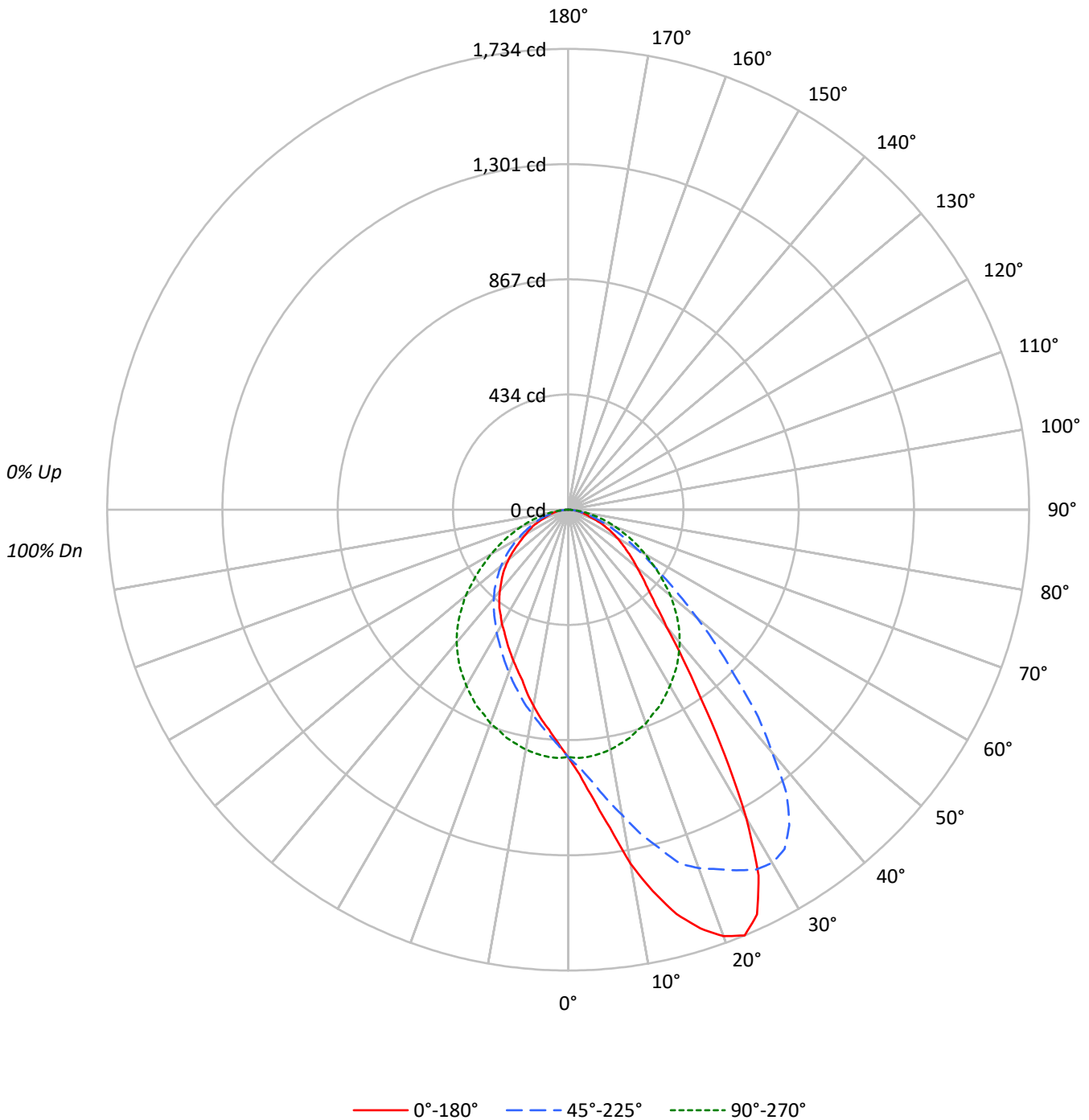
Lumens per Lamp: N/A
Luminaire Lumens: 2425.5 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 23.6
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	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	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74					74			
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64					64			
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56					56			
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49					49			
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44					44			
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32					32			
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	11284	11284	11284	11284	11284
5°	13303	12485	11346	10314	10104
10°	16652	14356	11279	9587	9221
15°	19762	16518	11167	8967	8352
20°	22024	18514	11033	8414	7777
25°	22481	20024	10896	7912	7321
30°	18733	21484	10711	7522	6965
35°	12942	21453	10562	7172	6674
40°	9095	18888	10321	6881	6321
45°	7304	15214	9956	6572	5981
50°	6366	11906	9481	6208	5533
55°	5708	9191	8774	5801	4926
60°	5164	7319	8107	5261	4463
65°	4520	6006	7471	4761	4173
70°	3647	4887	6723	4373	3533
75°	3161	3840	5854	3690	3466
80°	2918	3141	4991	3532	3476
85°	2573	2684	4019	3185	3018

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 19065 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.3	3.8
10°-20°	287.5	11.9
20°-30°	460.6	19.0
30°-40°	500.1	20.6
40°-50°	428.4	17.7
50°-60°	324.8	13.4
60°-70°	207.5	8.6
70°-80°	99.2	4.1
80°-90°	26.0	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°	839.4	34.6
0°-40°	1339.5	55.2
0°-60°	2092.7	86.3
0°-90°	2425.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2425.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	931	931	931	931	931	
5°	1093	1026	932	848	830	112
15°	1575	1316	890	715	666	446
25°	1681	1497	815	592	547	746
35°	875	1450	714	485	451	562
45°	426	888	581	383	349	337
55°	270	435	415	274	233	244
65°	158	209	260	166	146	157
75°	68	82	125	79	74	73
85°	18	19	29	23	22	21
90°	0	0	0	0	0	



TEST NUMBER: P243446

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	997.6	998.8	996.8	996.4	996.0	989.6	987.6	984.3	973.1	970.3	968.3
5°	1093.3	1090.0	1093.7	1086.8	1079.2	1074.8	1067.5	1051.5	1037.4	1026.1	1018.9
7.5°	1206.6	1207.8	1204.2	1197.8	1182.5	1176.1	1156.4	1137.1	1118.6	1095.3	1078.0
10°	1352.9	1343.3	1345.3	1325.2	1309.1	1289.8	1262.9	1231.9	1199.4	1166.4	1141.9
12.5°	1469.5	1476.3	1471.5	1461.8	1430.9	1412.0	1387.5	1342.5	1291.0	1246.8	1209.4
15°	1574.8	1565.5	1566.7	1543.4	1532.2	1514.9	1474.3	1429.7	1396.3	1316.3	1272.1
17.5°	1652.0	1651.1	1649.9	1630.2	1616.6	1580.4	1539.0	1493.2	1451.4	1395.9	1340.5
20°	1707.4	1713.4	1711.8	1695.8	1671.6	1636.7	1611.8	1554.7	1486.0	1435.3	1367.4
22.5°	1733.9	1734.3	1735.2	1727.5	1711.4	1688.9	1653.6	1607.7	1546.6	1463.8	1388.3
25°	1680.9	1682.9	1693.4	1699.8	1704.2	1694.2	1675.7	1634.3	1581.6	1497.2	1418.8
27.5°	1550.7	1557.1	1568.8	1607.3	1623.0	1644.7	1652.4	1635.9	1596.9	1526.5	1437.3
30°	1338.4	1356.5	1367.8	1411.6	1473.1	1531.0	1558.3	1585.2	1581.6	1535.0	1444.6
32.5°	1095.7	1107.3	1139.9	1186.9	1235.5	1320.4	1415.2	1480.3	1516.9	1514.5	1450.6
35°	874.6	891.5	919.2	955.0	1022.1	1110.1	1217.5	1320.0	1411.6	1449.8	1426.9
37.5°	709.8	711.4	737.5	788.2	830.0	907.6	1004.4	1131.0	1251.2	1350.9	1373.0
40°	574.8	586.0	599.7	631.4	680.9	755.2	819.5	944.1	1068.7	1193.7	1283.0
42.5°	489.6	489.6	504.8	524.9	557.9	602.5	679.3	792.2	904.4	1057.9	1158.4
45°	426.1	430.1	436.9	449.8	473.1	507.6	567.1	643.9	758.5	887.5	1038.6
47.5°	380.2	379.8	385.9	393.5	411.6	437.7	472.7	535.0	619.8	758.9	892.3
50°	337.6	339.2	343.7	350.1	362.1	380.6	402.7	449.8	521.3	631.4	771.3
52.5°	304.7	304.3	307.9	311.9	321.1	331.6	351.3	386.3	435.7	523.3	639.5
55°	270.1	271.7	276.1	278.5	286.2	293.0	309.5	329.2	369.0	434.9	540.6
57.5°	240.4	242.4	244.8	247.2	252.4	259.2	272.9	285.0	313.9	361.3	445.7
60°	213.0	212.2	215.0	219.1	221.9	227.9	235.5	248.0	268.1	301.9	363.8
62.5°	185.7	186.1	186.5	188.9	194.1	199.4	206.2	215.4	227.5	252.4	296.2
65°	157.6	158.0	158.8	161.2	166.4	169.6	176.9	184.9	194.5	209.4	240.0
67.5°	132.6	134.2	134.2	136.3	138.3	141.5	146.7	152.7	160.8	171.6	191.3
70°	102.9	102.5	104.5	108.5	110.5	116.2	119.8	123.8	131.0	137.9	154.7
72.5°	82.8	82.8	82.8	84.4	84.8	86.0	88.4	96.9	102.5	109.3	118.6
75°	67.5	67.9	67.9	68.3	68.7	69.9	70.7	73.2	74.8	82.0	87.6
77.5°	53.9	54.3	54.3	54.7	55.1	55.5	57.1	57.1	58.3	59.9	62.3
80°	41.8	41.4	41.4	41.8	41.8	43.0	43.0	43.8	44.2	45.0	46.2
82.5°	29.7	29.3	29.7	29.3	29.7	30.1	30.9	30.5	31.4	32.2	32.6
85°	18.5	18.9	18.9	19.7	19.3	18.9	19.3	19.3	19.3	19.3	20.1
87.5°	8.0	8.8	8.8	8.4	8.8	8.8	8.0	8.8	8.8	8.8	9.2
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°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	967.1	965.4	959.4	953.8	945.4	941.7	936.9	934.9	928.5	919.6	915.6
5°	1012.1	1000.0	988.4	974.3	962.6	949.0	941.3	932.5	918.8	906.4	897.5
7.5°	1059.9	1042.2	1020.5	997.2	976.3	956.6	939.7	925.7	908.0	890.7	877.0
10°	1112.6	1082.4	1047.4	1017.7	987.6	959.0	937.7	916.4	893.5	871.8	855.3
12.5°	1169.2	1126.6	1084.4	1039.8	994.8	961.8	930.1	902.7	877.0	854.1	834.4
15°	1227.9	1169.6	1115.8	1065.5	1002.8	958.6	923.6	889.9	857.7	829.6	810.3
17.5°	1269.7	1203.0	1135.1	1063.9	1010.1	955.4	912.0	869.4	839.6	810.7	784.6
20°	1308.3	1232.7	1151.9	1085.6	1010.5	943.7	896.3	855.3	813.9	783.0	760.9
22.5°	1324.8	1256.4	1174.9	1082.8	1007.6	939.3	878.2	832.0	795.0	761.3	732.3
25°	1328.0	1251.6	1168.0	1079.2	996.8	922.8	860.9	814.7	766.5	731.5	709.0
27.5°	1342.1	1237.6	1155.6	1067.1	983.5	906.4	841.2	789.8	744.8	707.4	678.5
30°	1345.7	1231.5	1129.0	1044.6	958.6	883.1	817.1	765.3	716.2	678.1	651.9
32.5°	1347.3	1223.5	1101.3	1008.9	926.9	855.7	795.4	739.2	692.5	652.3	625.4
35°	1341.7	1212.2	1067.9	968.3	889.5	819.5	763.7	713.8	662.0	624.2	595.7
37.5°	1319.6	1194.5	1049.0	920.8	845.7	779.8	732.3	683.3	635.5	594.5	565.1
40°	1277.7	1168.8	1013.7	881.0	795.8	736.7	692.5	652.3	604.1	564.7	535.8
42.5°	1211.0	1133.9	981.1	836.0	746.4	690.5	653.5	619.0	575.6	538.2	506.4
45°	1112.2	1084.8	937.7	790.2	692.5	639.9	607.7	580.8	541.4	507.2	477.9
47.5°	1005.2	1011.3	893.9	743.6	643.5	593.3	565.1	541.4	511.7	475.1	448.2
50°	881.8	914.8	832.4	696.6	594.5	545.0	517.3	502.8	475.1	444.5	419.2
52.5°	768.9	821.2	770.1	645.1	546.2	497.6	471.9	457.4	438.9	413.6	387.9
55°	651.9	718.3	681.3	589.6	497.2	448.2	426.5	415.2	399.9	380.2	356.9
57.5°	555.1	625.8	602.5	531.4	449.4	405.2	385.9	373.0	363.8	345.7	326.8
60°	460.2	525.7	516.5	464.2	401.9	359.7	344.9	334.4	326.8	313.5	295.0
62.5°	371.4	434.9	440.5	399.5	355.7	317.5	303.9	296.6	290.6	280.1	263.3
65°	294.6	350.5	362.1	330.8	307.1	278.1	264.9	260.5	256.0	244.0	231.1
67.5°	230.7	274.5	289.8	272.1	255.2	238.3	227.9	221.9	218.7	211.4	202.6
70°	176.4	214.2	227.1	219.5	208.2	201.8	193.7	189.7	186.5	177.3	172.4
72.5°	132.2	158.0	174.0	171.6	169.2	164.8	160.0	158.8	153.9	147.9	143.5
75°	96.9	111.7	126.2	131.4	130.6	132.2	127.0	125.0	122.2	117.8	114.1
77.5°	69.5	78.4	88.4	94.9	98.1	98.5	98.5	97.3	95.3	92.0	89.2
80°	48.2	50.2	59.5	65.5	68.7	71.1	71.1	71.5	69.5	68.3	66.3
82.5°	33.4	34.6	36.6	41.4	45.4	48.2	48.6	48.2	47.4	47.0	44.2
85°	20.9	20.5	20.5	21.7	24.9	27.7	28.1	28.9	28.5	28.1	25.3
87.5°	8.8	8.8	9.2	8.8	10.0	10.5	11.3	13.3	12.9	10.9	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9	930.9
2.5°	913.2	908.0	903.1	897.9	891.5	885.5	884.7	883.9	885.9	881.8	880.2
5°	890.7	880.6	873.0	863.4	856.5	847.7	842.9	841.7	841.2	838.8	835.6
7.5°	866.2	855.3	844.5	833.6	822.4	813.1	807.9	805.1	802.7	798.6	795.4
10°	843.3	829.6	817.9	803.1	791.0	778.9	774.1	770.1	767.7	762.1	757.6
12.5°	817.5	800.3	787.4	771.3	760.5	750.0	742.4	734.7	729.1	720.7	717.1
15°	795.0	776.9	755.2	745.6	730.3	714.6	706.2	706.2	694.5	687.7	683.3
17.5°	764.9	749.2	733.9	714.2	692.5	683.3	673.6	665.2	657.2	655.2	647.1
20°	738.4	719.9	704.2	682.9	663.2	652.3	641.1	631.8	625.8	620.2	615.8
22.5°	712.2	693.7	669.6	648.7	635.5	621.0	608.9	600.9	595.7	587.2	583.2
25°	684.9	662.8	641.1	620.6	604.1	591.6	579.2	574.8	565.5	561.1	555.5
27.5°	657.6	631.0	610.5	592.9	574.4	562.3	553.9	545.8	537.8	535.4	532.2
30°	627.0	602.5	582.8	565.5	547.8	537.4	527.3	520.1	513.3	508.0	504.4
32.5°	596.5	576.0	557.1	537.0	520.9	509.7	501.2	494.8	491.6	482.7	479.5
35°	568.3	547.4	527.3	508.4	495.6	484.7	477.1	471.1	464.2	458.6	455.4
37.5°	539.4	520.5	500.0	483.9	469.5	460.6	452.2	444.1	438.9	435.7	431.7
40°	511.3	491.2	475.5	457.8	444.9	434.9	426.1	420.0	413.6	410.8	405.6
42.5°	484.7	465.4	447.4	431.3	419.6	410.0	401.5	394.7	389.5	384.2	381.4
45°	454.2	437.3	420.8	404.7	393.9	383.4	374.2	368.2	360.9	356.5	354.9
47.5°	428.5	410.8	393.1	378.2	367.0	355.7	348.1	340.8	334.8	330.4	328.0
50°	397.9	381.4	367.0	352.1	341.2	329.2	319.9	313.1	306.3	303.1	299.0
52.5°	371.8	355.7	338.0	324.8	312.3	301.9	293.4	287.8	281.8	276.9	274.1
55°	339.2	323.6	309.5	295.4	283.0	274.5	267.7	258.0	252.8	248.0	240.4
57.5°	310.7	295.8	281.0	267.3	255.6	245.6	237.1	230.7	223.9	220.3	215.0
60°	280.6	264.9	251.2	240.8	227.9	217.0	211.4	203.8	198.2	192.5	190.9
62.5°	250.8	236.3	222.7	211.8	200.2	191.7	184.5	180.9	175.2	170.8	169.2
65°	219.9	207.8	194.9	182.9	175.6	166.0	162.0	156.0	152.7	150.7	150.3
67.5°	189.3	178.5	166.8	157.6	150.7	144.3	139.5	137.1	133.8	131.4	129.4
70°	161.6	151.1	141.1	133.4	128.2	123.4	120.2	115.8	112.5	109.3	104.9
72.5°	134.2	125.8	117.4	111.3	106.1	103.3	98.9	92.0	88.8	88.0	87.6
75°	108.9	99.7	93.7	90.4	85.6	78.8	76.0	75.2	74.8	74.0	74.0
77.5°	84.0	78.4	74.4	67.5	65.1	64.7	62.7	62.3	61.5	61.9	61.9
80°	61.1	57.9	53.1	51.0	50.2	50.6	49.8	50.2	49.4	49.8	49.0
82.5°	40.6	37.8	38.6	37.4	37.4	38.2	37.8	36.6	36.6	36.2	36.2
85°	24.1	23.7	24.5	24.5	24.1	22.9	23.7	23.3	22.1	22.5	22.5
87.5°	10.5	10.5	10.5	10.0	10.5	10.0	10.0	10.0	8.8	8.8	8.8
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: P243446

CATALOG NUMBER: S123RDRP-H775D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	930.9	930.9	930.9	930.9
2.5°	881.0	880.2	879.0	877.8
5°	835.6	832.0	831.6	830.4
7.5°	793.0	791.4	788.6	791.8
10°	754.0	755.2	752.4	749.2
12.5°	713.4	711.0	706.6	709.0
15°	677.7	673.6	671.2	665.6
17.5°	640.3	637.1	637.1	633.4
20°	607.7	604.5	605.3	602.9
22.5°	580.4	578.0	574.4	574.8
25°	554.7	551.1	547.0	547.4
27.5°	526.1	522.9	522.1	519.3
30°	500.8	498.0	497.6	497.6
32.5°	476.3	475.1	473.1	471.9
35°	455.0	453.4	450.2	451.0
37.5°	428.5	426.9	426.5	426.1
40°	403.5	402.3	399.1	399.5
42.5°	378.6	376.6	374.6	373.8
45°	351.7	351.3	348.1	348.9
47.5°	326.0	325.2	323.6	321.5
50°	297.4	297.0	295.8	293.4
52.5°	269.7	268.5	266.1	263.7
55°	238.3	234.7	235.1	233.1
57.5°	212.6	211.0	207.8	206.6
60°	187.7	186.1	185.7	184.1
62.5°	166.8	165.2	164.0	164.0
65°	147.9	145.9	145.5	145.5
67.5°	127.0	125.0	124.6	123.8
70°	100.9	100.5	99.7	99.7
72.5°	86.8	86.4	86.8	85.2
75°	74.0	73.6	73.6	74.0
77.5°	61.5	61.5	61.1	61.1
80°	48.6	49.0	48.6	49.8
82.5°	36.6	35.8	36.2	35.4
85°	22.5	22.5	21.7	21.7
87.5°	8.8	8.8	8.8	8.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243446
 CATALOG NUMBER: S123RDRP-H775D935-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	16.81	18.31	17.17	18.62	18.94	19.51	21.01	19.87	21.32	21.64
	3H	17.99	19.34	18.37	19.67	20.03	20.93	22.28	21.31	22.61	22.97
	4H	18.35	19.61	18.75	19.96	20.33	21.44	22.70	21.84	23.04	23.42
	6H	18.62	19.78	19.03	20.15	20.54	21.78	22.94	22.19	23.31	23.70
	8H	18.71	19.82	19.14	20.21	20.61	21.88	22.99	22.31	23.38	23.78
	12H	18.77	19.83	19.20	20.21	20.64	21.94	23.00	22.37	23.38	23.81
4H	2H	17.76	19.02	18.16	19.37	19.75	19.79	21.05	20.19	21.40	21.77
	3H	19.03	20.07	19.44	20.47	20.87	21.50	22.55	21.91	22.95	23.35
	4H	19.43	20.37	19.87	20.79	21.23	22.12	23.06	22.55	23.47	23.91
	6H	19.78	20.59	20.24	21.04	21.50	22.57	23.39	23.03	23.83	24.29
	8H	19.89	20.66	20.36	21.10	21.57	22.71	23.47	23.18	23.92	24.39
	12H	19.98	20.66	20.47	21.14	21.61	22.81	23.49	23.29	23.97	24.44
8H	4H	19.79	20.56	20.26	21.00	21.47	22.18	22.94	22.64	23.38	23.85
	6H	20.21	20.84	20.71	21.33	21.81	22.71	23.33	23.20	23.83	24.30
	8H	20.38	20.94	20.89	21.45	21.94	22.90	23.46	23.41	23.97	24.46
	12H	20.52	21.02	21.03	21.51	22.08	23.05	23.55	23.56	24.04	24.60
12H	4H	19.82	20.50	20.31	20.98	21.45	22.16	22.84	22.65	23.32	23.79
	6H	20.26	20.82	20.77	21.33	21.82	22.70	23.26	23.21	23.77	24.26
	8H	20.47	20.97	20.98	21.46	22.03	22.92	23.42	23.44	23.92	24.48