

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P831948

Luminaire Tested: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831948
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2, G3-1807-864-5)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDIP-S1165D1195U940-4F0-1E-UDD-G
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1195 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: -

Summary

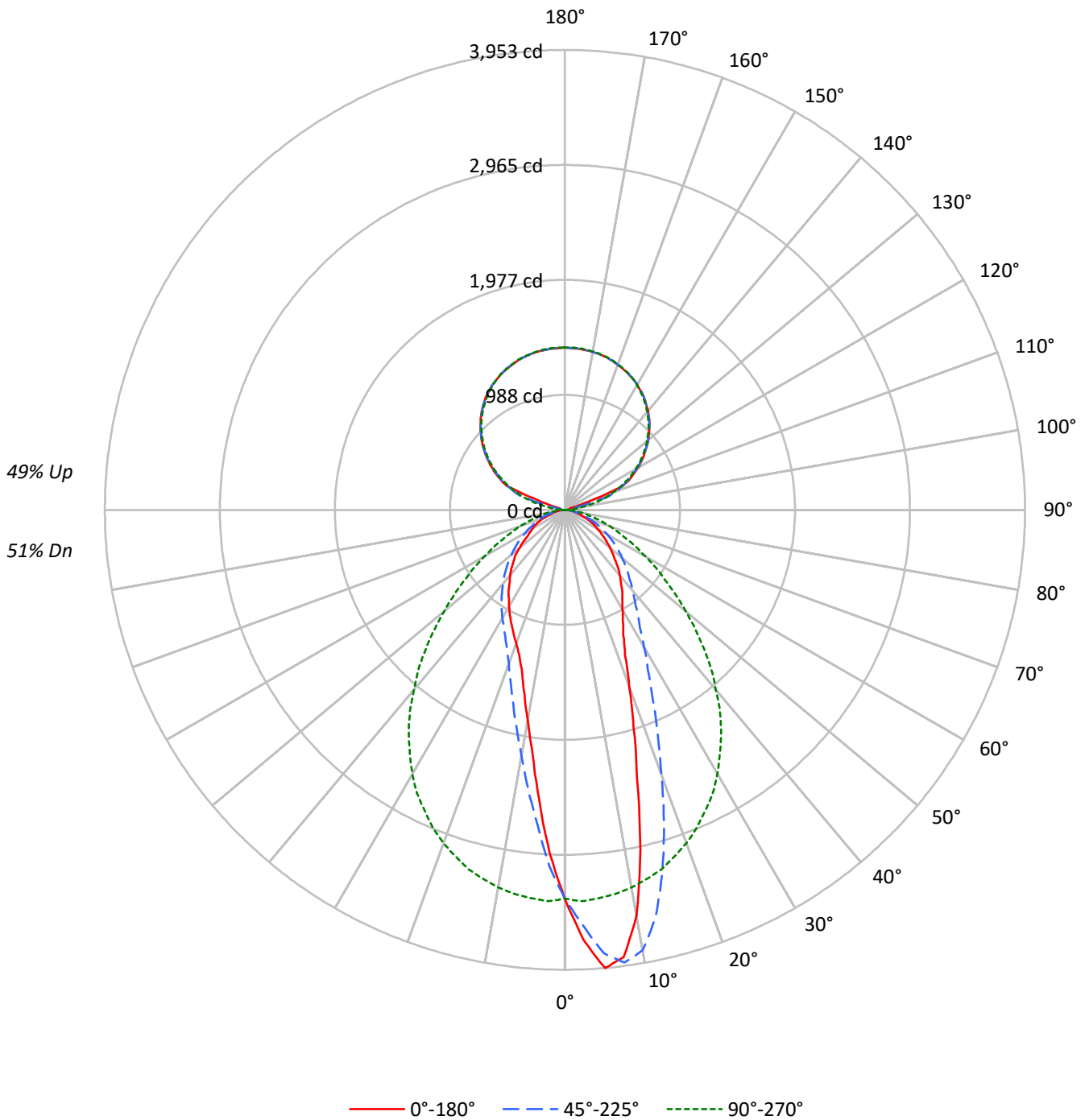
Lumens per Lamp: N/A
Luminaire Lumens: 8684.6 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 73.2
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: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

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	0	
RCR																						
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51				51
1	99	95	91	88	91	88	85	82	75	73	71	63	61	60	52	51	50	45				45
2	91	84	78	73	84	78	73	69	67	63	60	56	54	51	47	45	43	39				39
3	83	74	68	62	77	69	63	59	60	55	51	50	47	45	42	40	38	34				34
4	77	67	59	53	71	62	56	51	54	49	45	46	42	39	38	36	34	30				30
5	71	60	52	47	65	56	49	44	48	43	39	42	38	35	35	32	30	27				27
6	66	54	47	41	61	51	44	39	44	39	35	38	34	31	32	29	27	24				24
7	61	49	42	37	57	46	40	35	40	35	31	35	31	28	30	27	24	22				22
8	57	45	38	33	53	42	36	31	37	32	28	32	28	25	28	25	22	20				20
9	53	42	34	30	49	39	33	28	34	29	26	30	26	23	26	23	21	18				18
10	50	38	31	27	46	36	30	26	32	27	23	28	24	21	24	21	19	17				17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	35972	35972	35972	35972	35972
5°	42712	41351	36199	29262	27167
10°	38699	42001	36018	23446	20113
15°	26644	36012	35638	19163	15911
20°	18536	27726	34922	16158	13985
25°	14125	21131	33882	14361	12889
30°	12296	16894	32579	13335	11938
35°	11289	14251	30734	12469	11073
40°	10301	12726	28322	11619	10281
45°	9302	11639	25718	10816	9490
50°	8443	10739	22647	10027	8512
55°	7638	9862	19697	9257	7302
60°	6844	8966	17108	8407	6902
65°	6316	7957	14727	7554	6525
70°	5133	6877	12850	6836	5303
75°	4500	5469	10884	5669	4675
80°	4079	4630	8920	4754	4420
85°	3717	4063	6768	4310	4063

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 27136 cd/sqm



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	304.6	3.5
10°-20°	704.9	8.1
20°-30°	808.7	9.3
30°-40°	797.1	9.2
40°-50°	703.0	8.1
50°-60°	540.8	6.2
60°-70°	355.6	4.1
70°-80°	172.7	2.0
80°-90°	46.3	0.5
90°-100°	49.2	0.6
100°-110°	237.7	2.7
110°-120°	582.6	6.7
120°-130°	739.6	8.5
130°-140°	790.1	9.1
140°-150°	738.8	8.5
150°-160°	595.9	6.9
160°-170°	384.6	4.4
170°-180°	132.5	1.5
0°-30°	1818.2	20.9
0°-40°	2615.4	30.1
0°-60°	3859.1	44.4
0°-90°	4433.7	51.1
90°-120°	869.4	10.0
90°-150°	3137.9	36.1
90°-180°	4251.0	48.9
0°-180°	8684.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3342	3342	3342	3342	3342	
5°	3953	3827	3350	2708	2514	361
15°	2391	3232	3198	1720	1428	675
25°	1189	1779	2853	1209	1085	562
35°	859	1084	2339	949	843	536
45°	611	765	1690	710	623	474
55°	407	526	1050	493	389	365
65°	248	312	578	297	256	243
75°	108	132	262	136	112	116
85°	30	33	55	35	33	32
90°	31	25	1	25	31	15
95°	39	32	63	32	39	33
105°	46	227	309	227	46	95
115°	609	595	579	595	609	573
125°	833	829	816	829	833	744
135°	1027	1027	1016	1027	1027	792
145°	1184	1182	1173	1182	1184	739
155°	1290	1291	1292	1291	1290	595
165°	1359	1358	1362	1358	1359	384
175°	1389	1390	1394	1390	1389	132
180°	1394	1394	1394	1394	1394	



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9
2.5°	3703.7	3692.0	3680.4	3676.9	3673.5	3662.6	3651.6	3626.9	3602.3	3576.9	3551.6
5°	3953.0	3954.4	3955.8	3952.4	3948.9	3934.5	3920.2	3890.0	3859.9	3827.0	3794.1
7.5°	3876.3	3898.2	3920.2	3924.3	3928.4	3939.3	3950.3	3943.5	3936.6	3924.3	3911.9
10°	3540.6	3539.2	3537.9	3562.5	3587.2	3660.5	3733.8	3771.5	3809.2	3842.7	3876.3
12.5°	2992.5	2994.6	2996.6	3077.5	3158.3	3227.5	3296.7	3392.6	3488.5	3592.0	3695.4
15°	2391.0	2424.6	2458.1	2530.1	2602.0	2706.2	2810.3	2939.1	3067.9	3231.6	3395.4
17.5°	1963.5	1977.9	1992.3	2061.5	2130.7	2229.3	2328.0	2473.9	2619.8	2830.8	3041.9
20°	1618.2	1631.2	1644.2	1694.3	1744.3	1838.8	1933.4	2072.4	2211.5	2420.5	2629.4
22.5°	1351.0	1376.4	1401.7	1435.3	1468.9	1537.4	1605.9	1747.7	1889.5	2080.0	2270.4
25°	1189.3	1201.0	1212.6	1241.4	1270.2	1336.0	1401.7	1495.6	1589.4	1779.2	1969.0
27.5°	1079.7	1083.1	1086.6	1107.8	1129.0	1171.5	1214.0	1301.0	1388.0	1544.2	1700.4
30°	989.3	995.5	1001.6	1018.1	1034.5	1065.3	1096.2	1157.8	1219.5	1359.2	1499.0
32.5°	919.4	922.8	926.3	940.0	953.7	976.3	998.9	1047.5	1096.2	1203.0	1309.9
35°	859.1	859.8	860.5	870.8	881.0	903.0	924.9	965.3	1005.7	1084.5	1163.3
37.5°	790.6	795.4	800.2	807.7	815.3	834.5	853.6	886.5	919.4	984.5	1049.6
40°	733.1	737.2	741.3	750.2	759.1	774.2	789.2	819.4	849.5	905.7	961.9
42.5°	675.5	678.3	681.0	689.9	698.8	717.3	735.8	759.8	783.8	830.3	876.9
45°	611.1	618.0	624.8	634.4	644.0	659.8	675.5	700.2	724.8	764.6	804.3
47.5°	557.7	561.1	564.5	572.7	581.0	600.2	619.3	641.3	663.2	700.2	737.2
50°	504.2	505.6	507.0	514.5	522.0	539.2	556.3	581.7	607.0	641.3	675.5
52.5°	453.5	457.0	460.4	467.9	475.5	487.1	498.8	524.8	550.8	584.4	618.0
55°	407.0	409.0	411.1	416.5	422.0	435.7	449.4	472.0	494.6	525.5	556.3
57.5°	363.1	365.8	368.6	372.7	376.8	389.1	401.5	421.3	441.2	472.0	502.9
60°	317.9	321.3	324.7	329.5	334.3	343.9	353.5	371.3	389.1	416.5	443.9
62.5°	285.0	285.7	286.4	290.5	294.6	301.4	308.3	322.7	337.1	364.5	391.9
65°	248.0	250.1	252.1	254.2	256.2	261.7	267.2	279.5	291.9	312.4	333.0
67.5°	209.6	211.7	213.8	217.2	220.6	225.4	230.2	238.4	246.6	265.8	285.0
70°	163.1	163.1	163.1	168.5	174.0	182.2	190.5	196.6	202.8	218.5	234.3
72.5°	132.9	133.6	134.3	135.0	135.7	140.4	145.2	155.5	165.8	175.4	185.0
75°	108.2	108.9	109.6	110.3	111.0	112.4	113.7	117.2	120.6	131.5	142.5
77.5°	86.3	87.0	87.7	88.4	89.1	90.4	91.8	93.2	94.5	98.7	102.8
80°	65.8	66.5	67.1	67.8	68.5	69.2	69.9	71.3	72.6	74.7	76.7
82.5°	48.0	48.0	48.0	48.0	48.0	49.3	50.7	50.7	50.7	52.1	53.4
85°	30.1	30.1	30.1	30.8	31.5	31.5	31.5	32.2	32.9	32.9	32.9
87.5°	13.7	13.0	12.3	13.0	13.7	13.7	13.7	14.4	15.1	15.1	15.1
90°	31.1	30.6	30.2	29.7	29.2	28.5	27.6	26.7	25.8	24.9	21.9
92.5°	35.2	35.0	34.8	34.5	34.3	33.4	31.8	30.2	28.5	26.9	24.9
95°	39.4	39.4	39.4	39.4	39.4	38.6	37.0	35.3	33.7	32.1	29.6
97.5°	42.5	42.2	42.0	41.8	41.6	40.5	38.7	36.8	35.0	33.2	44.9
100°	43.5	43.3	43.1	42.8	42.6	41.6	39.7	37.9	36.0	34.2	70.1
102.5°	44.5	44.1	43.6	43.2	42.7	46.3	53.9	61.5	69.1	76.7	116.7
105°	45.6	45.1	44.7	44.2	43.7	63.9	104.6	145.4	186.1	226.9	247.6
107.5°	107.7	137.9	168.1	198.2	228.4	261.2	296.6	332.1	367.5	403.0	399.5
110°	284.9	317.8	350.7	383.7	416.6	436.8	444.4	452.0	459.6	467.2	464.7



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	539.8	540.2	540.7	541.1	541.6	540.8	538.7	536.6	534.6	532.5	530.0
115°	609.2	608.2	607.3	606.4	605.5	603.9	601.6	599.3	597.0	594.7	592.6
117.5°	665.1	664.9	664.7	664.4	664.2	663.2	661.3	659.5	657.6	655.8	654.6
120°	723.1	723.1	723.1	723.1	723.1	722.2	720.4	718.5	716.7	714.8	714.1
122.5°	780.1	779.9	779.6	779.4	779.2	778.5	777.3	776.2	775.0	773.9	773.0
125°	832.9	832.5	832.0	831.6	831.1	830.6	830.2	829.7	829.3	828.8	827.9
127.5°	884.7	885.2	885.7	886.1	886.6	886.5	885.8	885.1	884.4	883.7	882.6
130°	934.5	934.9	935.4	935.9	936.3	936.1	935.2	934.2	933.3	932.4	931.5
132.5°	980.1	980.7	981.4	982.1	982.8	982.7	981.8	980.9	979.9	979.0	978.3
135°	1026.7	1027.4	1028.1	1028.7	1029.4	1029.4	1028.7	1028.1	1027.4	1026.7	1025.8
137.5°	1071.2	1071.7	1072.1	1072.6	1073.1	1072.7	1071.6	1070.4	1069.3	1068.1	1067.7
140°	1110.6	1111.1	1111.5	1112.0	1112.4	1112.2	1111.3	1110.4	1109.4	1108.5	1107.8
142.5°	1146.8	1147.5	1148.2	1148.9	1149.6	1149.6	1148.9	1148.2	1147.5	1146.8	1146.2
145°	1184.1	1184.1	1184.1	1184.1	1184.1	1183.9	1183.5	1183.0	1182.5	1182.1	1181.6
147.5°	1211.1	1212.2	1213.4	1214.5	1215.7	1216.0	1215.6	1215.1	1214.7	1214.2	1213.7
150°	1242.2	1242.9	1243.5	1244.2	1244.9	1245.0	1244.6	1244.1	1243.7	1243.2	1242.7
152.5°	1267.0	1268.2	1269.3	1270.5	1271.6	1271.7	1270.8	1269.9	1269.0	1268.1	1267.8
155°	1289.8	1291.2	1292.6	1294.0	1295.3	1295.5	1294.3	1293.2	1292.0	1290.9	1290.6
157.5°	1309.5	1311.3	1313.2	1315.0	1316.9	1317.1	1315.7	1314.3	1313.0	1311.6	1311.8
160°	1328.1	1329.8	1331.4	1333.0	1334.6	1334.7	1333.3	1331.9	1330.6	1329.2	1329.4
162.5°	1345.8	1347.1	1348.5	1349.9	1351.3	1351.2	1349.6	1347.9	1346.3	1344.7	1345.0
165°	1359.2	1360.8	1362.5	1364.1	1365.7	1365.6	1363.7	1361.9	1360.0	1358.2	1358.4
167.5°	1369.6	1371.4	1373.3	1375.1	1377.0	1377.0	1375.1	1373.3	1371.4	1369.6	1369.6
170°	1378.9	1380.8	1382.6	1384.4	1386.3	1386.3	1384.4	1382.6	1380.8	1378.9	1378.9
172.5°	1384.1	1386.2	1388.2	1390.3	1392.4	1392.5	1390.7	1388.8	1387.0	1385.1	1384.9
175°	1389.3	1391.1	1393.0	1394.8	1396.6	1396.8	1395.1	1393.5	1391.9	1390.3	1390.1
177.5°	1390.3	1392.6	1394.9	1397.2	1399.5	1399.7	1397.9	1396.1	1394.2	1392.4	1392.2
180°	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9
2.5°	3548.1	3544.7	3511.8	3479.0	3446.8	3414.6	3390.6	3366.6	3326.2	3285.8	3260.4
5°	3768.1	3742.0	3690.0	3637.9	3559.8	3481.7	3415.9	3350.2	3266.6	3183.0	3113.1
7.5°	3890.7	3869.5	3806.4	3743.4	3640.0	3536.5	3433.7	3331.0	3207.7	3084.3	2978.8
10°	3894.1	3911.9	3859.9	3807.8	3691.3	3574.9	3435.1	3295.3	3129.6	2963.8	2827.4
12.5°	3772.2	3848.9	3837.9	3827.0	3708.5	3589.9	3420.0	3250.1	3046.7	2843.2	2672.6
15°	3544.0	3692.7	3736.6	3780.4	3682.4	3584.5	3391.3	3198.1	2959.0	2719.9	2523.9
17.5°	3250.1	3458.4	3574.2	3690.0	3618.7	3547.5	3335.8	3124.1	2854.8	2585.6	2372.5
20°	2902.1	3174.8	3356.3	3537.9	3511.8	3485.8	3267.3	3048.7	2758.2	2467.7	2236.9
22.5°	2558.2	2845.9	3096.7	3347.4	3374.1	3400.9	3180.2	2959.6	2641.8	2323.9	2088.9
25°	2261.5	2554.1	2852.8	3151.5	3211.8	3272.1	3062.4	2852.8	2523.2	2193.7	1960.1
27.5°	1978.6	2256.7	2585.6	2914.4	3024.0	3133.7	2941.8	2750.0	2406.8	2063.5	1830.6
30°	1747.7	1996.4	2332.1	2667.8	2820.6	2973.3	2797.3	2621.2	2280.7	1940.2	1712.1
32.5°	1532.6	1755.2	2092.3	2429.4	2606.8	2784.3	2632.2	2480.1	2152.6	1825.1	1599.7
35°	1362.7	1562.0	1876.5	2191.0	2389.6	2588.3	2463.6	2338.9	2019.0	1699.1	1486.0
37.5°	1216.7	1383.9	1679.2	1974.5	2185.5	2396.5	2292.4	2188.2	1887.5	1586.7	1385.3
40°	1096.2	1230.4	1505.2	1779.9	1986.8	2193.7	2104.6	2015.6	1746.3	1477.1	1288.7
42.5°	992.7	1108.5	1355.1	1601.8	1791.5	1981.3	1922.4	1863.5	1619.6	1375.7	1201.0
45°	901.6	998.9	1216.1	1433.2	1607.9	1782.6	1736.1	1689.5	1479.1	1268.8	1108.5
47.5°	820.8	904.3	1098.2	1292.1	1449.0	1605.9	1562.7	1519.6	1345.5	1171.5	1025.6
50°	746.8	818.0	979.7	1141.4	1282.5	1423.6	1388.0	1352.4	1208.5	1064.7	938.6
52.5°	676.9	735.8	881.0	1026.3	1140.0	1253.7	1226.3	1198.9	1087.9	977.0	862.5
55°	610.4	664.5	787.2	909.8	1007.1	1104.4	1077.0	1049.6	963.3	876.9	776.2
57.5°	550.1	597.4	696.7	796.1	873.5	950.9	937.9	924.9	853.0	781.0	698.1
60°	486.4	528.9	614.5	700.2	762.5	824.9	809.8	794.7	743.3	692.0	620.7
62.5°	429.6	467.2	535.8	604.3	655.0	705.7	694.7	683.7	644.7	605.6	546.7
65°	370.0	407.0	462.4	517.9	557.7	597.4	587.8	578.2	548.8	519.3	472.0
67.5°	315.8	346.7	394.6	442.6	469.3	496.0	490.5	485.1	462.4	439.8	402.8
70°	261.0	287.7	327.5	367.2	385.7	404.2	406.3	408.3	387.8	367.2	339.8
72.5°	206.2	227.5	264.4	301.4	315.8	330.2	329.5	328.8	316.5	304.2	279.5
75°	158.3	174.0	202.8	231.6	243.9	256.2	259.0	261.7	250.1	238.4	224.7
77.5°	113.7	124.7	146.6	168.5	182.2	195.9	197.3	198.7	193.2	187.7	174.7
80°	80.2	83.6	97.3	111.0	125.4	139.8	141.8	143.9	138.4	132.9	124.7
82.5°	55.5	57.5	62.3	67.1	78.8	90.4	93.2	95.9	93.2	90.4	81.5
85°	33.6	34.3	36.3	38.4	43.8	49.3	52.1	54.8	53.4	52.1	47.3
87.5°	15.1	15.1	15.8	16.4	17.8	19.2	22.6	26.0	24.0	21.9	19.9
90°	18.9	15.9	12.9	10.2	7.9	5.6	3.3	1.0	3.3	5.6	7.9
92.5°	22.8	20.7	18.6	18.3	19.7	21.1	22.4	23.8	22.4	21.1	19.7
95°	27.1	24.5	22.0	25.4	34.9	44.3	53.8	63.2	53.8	44.3	34.9
97.5°	56.6	68.4	80.1	89.2	95.7	102.1	108.5	115.0	108.5	102.1	95.7
100°	106.0	141.9	177.8	193.5	188.9	184.3	179.7	175.1	179.7	184.3	188.9
102.5°	156.8	196.8	236.9	255.4	252.4	249.4	246.5	243.5	246.5	249.4	252.4
105°	268.3	289.0	309.8	318.9	316.3	313.8	311.3	308.7	311.3	313.8	316.3
107.5°	396.1	392.6	389.2	386.4	384.4	382.3	380.2	378.1	380.2	382.3	384.4
110°	462.2	459.6	457.1	454.9	453.1	451.2	449.4	447.6	449.4	451.2	453.1



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	527.4	524.9	522.4	520.3	518.7	517.1	515.5	513.9	515.5	517.1	518.7
115°	590.5	588.4	586.4	584.6	583.3	581.9	580.5	579.1	580.5	581.9	583.3
117.5°	653.5	652.3	651.2	649.8	648.2	646.6	645.0	643.4	645.0	646.6	648.2
120°	713.5	712.8	712.1	710.7	708.6	706.6	704.5	702.4	704.5	706.6	708.6
122.5°	772.0	771.1	770.2	768.9	767.3	765.7	764.1	762.5	764.1	765.7	767.3
125°	827.0	826.0	825.1	823.7	821.9	820.0	818.2	816.4	818.2	820.0	821.9
127.5°	881.4	880.3	879.1	877.6	875.8	873.9	872.1	870.2	872.1	873.9	875.8
130°	930.6	929.6	928.7	927.3	925.5	923.6	921.8	920.0	921.8	923.6	925.5
132.5°	977.6	976.9	976.3	975.0	973.1	971.3	969.5	967.6	969.5	971.3	973.1
135°	1024.8	1023.9	1023.0	1021.8	1020.5	1019.1	1017.7	1016.3	1017.7	1019.1	1020.5
137.5°	1067.2	1066.7	1066.3	1065.1	1063.3	1061.4	1059.6	1057.8	1059.6	1061.4	1063.3
140°	1107.1	1106.4	1105.8	1104.7	1103.3	1102.0	1100.6	1099.2	1100.6	1102.0	1103.3
142.5°	1145.5	1144.8	1144.1	1143.1	1141.7	1140.3	1138.9	1137.5	1138.9	1140.3	1141.7
145°	1181.2	1180.7	1180.2	1179.2	1177.6	1176.0	1174.4	1172.7	1174.4	1176.0	1177.6
147.5°	1213.3	1212.8	1212.3	1211.5	1210.4	1209.2	1208.1	1206.9	1208.1	1209.2	1210.4
150°	1242.3	1241.8	1241.4	1240.8	1240.1	1239.4	1238.7	1238.0	1238.7	1239.4	1240.1
152.5°	1267.6	1267.4	1267.1	1266.9	1266.7	1266.4	1266.2	1266.0	1266.2	1266.4	1266.7
155°	1290.4	1290.2	1289.9	1290.0	1290.5	1291.0	1291.4	1291.9	1291.4	1291.0	1290.5
157.5°	1312.0	1312.3	1312.5	1312.6	1312.6	1312.6	1312.6	1312.6	1312.6	1312.6	1312.6
160°	1329.6	1329.9	1330.1	1330.3	1330.6	1330.8	1331.0	1331.3	1331.0	1330.8	1330.6
162.5°	1345.2	1345.4	1345.6	1346.1	1346.8	1347.5	1348.2	1348.9	1348.2	1347.5	1346.8
165°	1358.7	1358.9	1359.1	1359.6	1360.3	1361.0	1361.6	1362.3	1361.6	1361.0	1360.3
167.5°	1369.6	1369.6	1369.6	1370.0	1371.0	1371.9	1372.8	1373.7	1372.8	1371.9	1371.0
170°	1378.9	1378.9	1378.9	1379.4	1380.3	1381.2	1382.1	1383.1	1382.1	1381.2	1380.3
172.5°	1384.7	1384.4	1384.2	1384.7	1385.8	1387.0	1388.1	1389.3	1388.1	1387.0	1385.8
175°	1389.8	1389.6	1389.4	1389.8	1391.0	1392.2	1393.3	1394.5	1393.3	1392.2	1391.0
177.5°	1391.9	1391.7	1391.5	1391.9	1393.1	1394.2	1395.4	1396.5	1395.4	1394.2	1393.1
180°	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9	3341.9
2.5°	3235.1	3196.0	3157.0	3128.9	3100.8	3065.8	3030.9	3029.5	3028.2	3002.1	2976.1
5°	3043.2	2975.4	2907.6	2841.1	2774.7	2708.2	2641.8	2626.7	2611.6	2589.0	2566.4
7.5°	2873.3	2765.1	2656.8	2571.9	2486.9	2420.5	2354.0	2308.8	2263.6	2228.6	2193.7
10°	2691.1	2556.8	2422.5	2319.8	2217.0	2145.1	2073.1	2021.1	1969.0	1944.3	1919.7
12.5°	2502.0	2356.1	2210.1	2109.4	2008.7	1922.4	1836.1	1788.8	1741.5	1707.3	1673.0
15°	2328.0	2171.1	2014.2	1907.3	1800.5	1719.6	1638.8	1591.5	1544.2	1510.0	1475.7
17.5°	2159.4	2001.2	1842.9	1734.7	1626.4	1553.1	1479.8	1433.9	1388.0	1366.8	1345.5
20°	2006.0	1846.4	1686.7	1584.6	1482.6	1410.6	1338.7	1314.0	1289.4	1269.5	1249.6
22.5°	1853.9	1700.4	1547.0	1449.0	1351.0	1299.0	1246.9	1227.0	1207.2	1192.1	1177.0
25°	1726.5	1573.7	1420.9	1335.3	1249.6	1209.2	1168.8	1155.8	1142.8	1127.7	1112.6
27.5°	1597.7	1452.4	1307.2	1238.7	1170.2	1137.3	1104.4	1087.9	1071.5	1059.2	1046.8
30°	1483.9	1349.7	1215.4	1158.5	1101.6	1072.9	1044.1	1026.3	1008.5	996.8	985.2
32.5°	1374.3	1255.1	1135.9	1087.3	1038.6	1010.5	982.4	965.3	948.2	934.5	920.8
35°	1272.9	1169.5	1066.0	1021.5	977.0	948.9	920.8	903.7	886.5	872.8	859.1
37.5°	1183.9	1090.0	996.1	954.3	912.6	887.9	863.2	845.4	827.6	813.2	798.8
40°	1100.3	1017.4	934.5	894.1	853.6	826.9	800.2	784.4	768.7	755.7	742.7
42.5°	1026.3	950.2	874.2	834.5	794.7	769.4	744.0	725.5	707.0	699.5	692.0
45°	948.2	881.0	813.9	775.5	737.2	710.5	683.7	668.0	652.2	645.4	638.5
47.5°	879.7	817.3	755.0	717.3	679.6	655.6	631.7	619.3	607.0	597.4	587.8
50°	812.5	752.2	692.0	655.6	619.3	598.8	578.2	563.2	548.1	541.2	534.4
52.5°	748.1	693.3	638.5	601.5	564.5	544.7	524.8	511.8	498.8	484.4	470.0
55°	675.5	627.6	579.6	546.7	513.8	493.3	472.7	457.6	442.6	427.5	412.4
57.5°	615.2	568.0	520.7	491.2	461.8	441.9	422.0	405.6	389.1	376.8	364.5
60°	549.5	508.3	467.2	438.5	409.7	390.5	371.3	355.6	339.8	333.6	327.5
62.5°	487.8	449.4	411.1	385.7	360.4	341.9	323.4	313.1	302.8	298.7	294.6
65°	424.8	391.9	359.0	335.7	312.4	296.6	280.9	276.1	271.3	267.9	264.4
67.5°	365.8	337.8	309.7	289.1	268.6	257.6	246.6	241.2	235.7	231.6	227.5
70°	312.4	287.7	263.1	245.3	227.5	217.2	206.9	202.1	197.3	189.8	182.2
72.5°	254.9	235.7	216.5	202.8	189.1	180.2	171.3	161.7	152.1	145.2	138.4
75°	211.0	191.8	172.6	159.6	146.6	136.3	126.1	122.6	119.2	117.2	115.1
77.5°	161.7	145.2	128.8	118.5	108.2	103.5	98.7	96.6	94.5	93.9	93.2
80°	116.5	102.8	89.1	83.6	78.1	76.7	75.4	74.0	72.6	71.9	71.3
82.5°	72.6	65.8	58.9	57.5	56.2	55.5	54.8	54.1	53.4	52.8	52.1
85°	42.5	39.7	37.0	36.3	35.6	34.9	34.3	34.3	34.3	34.3	34.3
87.5°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.1	16.4
90°	10.2	12.9	15.9	18.9	21.9	24.9	25.8	26.7	27.6	28.5	29.2
92.5°	18.3	18.6	20.7	22.8	24.9	26.9	28.5	30.2	31.8	33.4	34.3
95°	25.4	22.0	24.5	27.1	29.6	32.1	33.7	35.3	37.0	38.6	39.4
97.5°	89.2	80.1	68.4	56.6	44.9	33.2	35.0	36.8	38.7	40.5	41.6
100°	193.5	177.8	141.9	106.0	70.1	34.2	36.0	37.9	39.7	41.6	42.6
102.5°	255.4	236.9	196.8	156.8	116.7	76.7	69.1	61.5	53.9	46.3	42.7
105°	318.9	309.8	289.0	268.3	247.6	226.9	186.1	145.4	104.6	63.9	43.7
107.5°	386.4	389.2	392.6	396.1	399.5	403.0	367.5	332.1	296.6	261.2	228.4
110°	454.9	457.1	459.6	462.2	464.7	467.2	459.6	452.0	444.4	436.8	416.6



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	520.3	522.4	524.9	527.4	530.0	532.5	534.6	536.6	538.7	540.8	541.6
115°	584.6	586.4	588.4	590.5	592.6	594.7	597.0	599.3	601.6	603.9	605.5
117.5°	649.8	651.2	652.3	653.5	654.6	655.8	657.6	659.5	661.3	663.2	664.2
120°	710.7	712.1	712.8	713.5	714.1	714.8	716.7	718.5	720.4	722.2	723.1
122.5°	768.9	770.2	771.1	772.0	773.0	773.9	775.0	776.2	777.3	778.5	779.2
125°	823.7	825.1	826.0	827.0	827.9	828.8	829.3	829.7	830.2	830.6	831.1
127.5°	877.6	879.1	880.3	881.4	882.6	883.7	884.4	885.1	885.8	886.5	886.6
130°	927.3	928.7	929.6	930.6	931.5	932.4	933.3	934.2	935.2	936.1	936.3
132.5°	975.0	976.3	976.9	977.6	978.3	979.0	979.9	980.9	981.8	982.7	982.8
135°	1021.8	1023.0	1023.9	1024.8	1025.8	1026.7	1027.4	1028.1	1028.7	1029.4	1029.4
137.5°	1065.1	1066.3	1066.7	1067.2	1067.7	1068.1	1069.3	1070.4	1071.6	1072.7	1073.1
140°	1104.7	1105.8	1106.4	1107.1	1107.8	1108.5	1109.4	1110.4	1111.3	1112.2	1112.4
142.5°	1143.1	1144.1	1144.8	1145.5	1146.2	1146.8	1147.5	1148.2	1148.9	1149.6	1149.6
145°	1179.2	1180.2	1180.7	1181.2	1181.6	1182.1	1182.5	1183.0	1183.5	1183.9	1184.1
147.5°	1211.5	1212.3	1212.8	1213.3	1213.7	1214.2	1214.7	1215.1	1215.6	1216.0	1215.7
150°	1240.8	1241.4	1241.8	1242.3	1242.7	1243.2	1243.7	1244.1	1244.6	1245.0	1244.9
152.5°	1266.9	1267.1	1267.4	1267.6	1267.8	1268.1	1269.0	1269.9	1270.8	1271.7	1271.6
155°	1290.0	1289.9	1290.2	1290.4	1290.6	1290.9	1292.0	1293.2	1294.3	1295.5	1295.3
157.5°	1312.6	1312.5	1312.3	1312.0	1311.8	1311.6	1313.0	1314.3	1315.7	1317.1	1316.9
160°	1330.3	1330.1	1329.9	1329.6	1329.4	1329.2	1330.6	1331.9	1333.3	1334.7	1334.6
162.5°	1346.1	1345.6	1345.4	1345.2	1345.0	1344.7	1346.3	1347.9	1349.6	1351.2	1351.3
165°	1359.6	1359.1	1358.9	1358.7	1358.4	1358.2	1360.0	1361.9	1363.7	1365.6	1365.7
167.5°	1370.0	1369.6	1369.6	1369.6	1369.6	1369.6	1371.4	1373.3	1375.1	1377.0	1377.0
170°	1379.4	1378.9	1378.9	1378.9	1378.9	1378.9	1380.8	1382.6	1384.4	1386.3	1386.3
172.5°	1384.7	1384.2	1384.4	1384.7	1384.9	1385.1	1387.0	1388.8	1390.7	1392.5	1392.4
175°	1389.8	1389.4	1389.6	1389.8	1390.1	1390.3	1391.9	1393.5	1395.1	1396.8	1396.6
177.5°	1391.9	1391.5	1391.7	1391.9	1392.2	1392.4	1394.2	1396.1	1397.9	1399.7	1399.5
180°	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5	1394.5



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3341.9	3341.9	3341.9	3341.9
2.5°	2969.2	2962.4	2959.6	2956.9
5°	2545.2	2523.9	2519.1	2514.3
7.5°	2184.8	2175.9	2146.4	2117.0
10°	1892.3	1864.9	1852.5	1840.2
12.5°	1647.7	1622.3	1618.2	1614.1
15°	1457.9	1440.1	1433.9	1427.8
17.5°	1333.2	1320.9	1313.3	1305.8
20°	1240.7	1231.8	1226.3	1220.9
22.5°	1170.2	1163.3	1159.2	1155.1
25°	1102.3	1092.1	1088.6	1085.2
27.5°	1037.9	1029.0	1025.6	1022.2
30°	977.6	970.1	965.3	960.5
32.5°	911.9	903.0	900.2	897.5
35°	853.6	848.2	845.4	842.7
37.5°	792.0	785.1	781.0	776.9
40°	739.2	735.8	733.7	731.7
42.5°	685.8	679.6	678.9	678.3
45°	632.4	626.2	624.8	623.4
47.5°	582.3	576.9	576.2	575.5
50°	526.8	519.3	513.8	508.3
52.5°	463.1	456.3	451.5	446.7
55°	404.9	397.4	393.2	389.1
57.5°	361.0	357.6	355.6	353.5
60°	325.4	323.4	322.0	320.6
62.5°	292.5	290.5	290.5	290.5
65°	262.4	260.3	258.3	256.2
67.5°	223.3	219.2	218.5	217.9
70°	176.1	169.9	169.2	168.5
72.5°	137.7	137.0	135.7	134.3
75°	113.7	112.4	112.4	112.4
77.5°	91.8	90.4	90.4	90.4
80°	70.6	69.9	70.6	71.3
82.5°	52.1	52.1	51.4	50.7
85°	33.6	32.9	32.9	32.9
87.5°	16.4	16.4	16.4	16.4
90°	29.7	30.2	30.6	31.1
92.5°	34.5	34.8	35.0	35.2
95°	39.4	39.4	39.4	39.4
97.5°	41.8	42.0	42.2	42.5
100°	42.8	43.1	43.3	43.5
102.5°	43.2	43.6	44.1	44.5
105°	44.2	44.7	45.1	45.6
107.5°	198.2	168.1	137.9	107.7
110°	383.7	350.7	317.8	284.9



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	541.1	540.7	540.2	539.8
115°	606.4	607.3	608.2	609.2
117.5°	664.4	664.7	664.9	665.1
120°	723.1	723.1	723.1	723.1
122.5°	779.4	779.6	779.9	780.1
125°	831.6	832.0	832.5	832.9
127.5°	886.1	885.7	885.2	884.7
130°	935.9	935.4	934.9	934.5
132.5°	982.1	981.4	980.7	980.1
135°	1028.7	1028.1	1027.4	1026.7
137.5°	1072.6	1072.1	1071.7	1071.2
140°	1112.0	1111.5	1111.1	1110.6
142.5°	1148.9	1148.2	1147.5	1146.8
145°	1184.1	1184.1	1184.1	1184.1
147.5°	1214.5	1213.4	1212.2	1211.1
150°	1244.2	1243.5	1242.9	1242.2
152.5°	1270.5	1269.3	1268.2	1267.0
155°	1294.0	1292.6	1291.2	1289.8
157.5°	1315.0	1313.2	1311.3	1309.5
160°	1333.0	1331.4	1329.8	1328.1
162.5°	1349.9	1348.5	1347.1	1345.8
165°	1364.1	1362.5	1360.8	1359.2
167.5°	1375.1	1373.3	1371.4	1369.6
170°	1384.4	1382.6	1380.8	1378.9
172.5°	1390.3	1388.2	1386.2	1384.1
175°	1394.8	1393.0	1391.1	1389.3
177.5°	1397.2	1394.9	1392.6	1390.3
180°	1394.5	1394.5	1394.5	1394.5



TEST NUMBER: P831948

CATALOG NUMBER: S123RDIP-S1165D1195U940-4F0-1E-UDD-G

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	13.29	14.11	14.25	15.07	16.33	17.96	18.77	18.92	19.74	21.00
	3H	14.51	15.24	15.48	16.22	17.50	19.45	20.18	20.43	21.16	22.44
	4H	14.89	15.58	15.88	16.56	17.85	19.94	20.63	20.93	21.61	22.90
	6H	15.17	15.81	16.17	16.79	18.10	20.25	20.89	21.25	21.87	23.18
	8H	15.26	15.86	16.26	16.86	18.17	20.33	20.94	21.33	21.94	23.24
	12H	15.31	15.88	16.32	16.88	18.20	20.36	20.94	21.37	21.93	23.26
4H	2H	14.01	14.70	15.00	15.68	16.97	17.95	18.64	18.94	19.62	20.91
	3H	15.38	15.95	16.38	16.96	18.27	19.61	20.18	20.61	21.19	22.49
	4H	15.84	16.36	16.84	17.36	18.69	20.21	20.73	21.22	21.74	23.07
	6H	16.20	16.65	17.22	17.68	19.00	20.65	21.10	21.67	22.12	23.45
	8H	16.33	16.75	17.35	17.76	19.11	20.78	21.20	21.80	22.22	23.56
	12H	16.40	16.78	17.44	17.81	19.16	20.84	21.22	21.88	22.25	23.60
8H	4H	16.15	16.57	17.17	17.59	18.93	20.18	20.60	21.20	21.62	22.96
	6H	16.61	16.96	17.66	18.02	19.36	20.67	21.02	21.72	22.08	23.42
	8H	16.81	17.11	17.86	18.16	19.51	20.86	21.16	21.91	22.21	23.57
	12H	16.94	17.21	18.00	18.25	19.65	20.98	21.24	22.03	22.28	23.68
12H	4H	16.16	16.54	17.20	17.57	18.92	20.13	20.50	21.16	21.54	22.88
	6H	16.67	16.97	17.72	18.02	19.38	20.65	20.95	21.70	22.00	23.36
	8H	16.89	17.16	17.94	18.20	19.60	20.84	21.11	21.89	22.15	23.55