

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: P831947

Luminaire Tested: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831947
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2, G3-1807-864-17)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: -

Summary

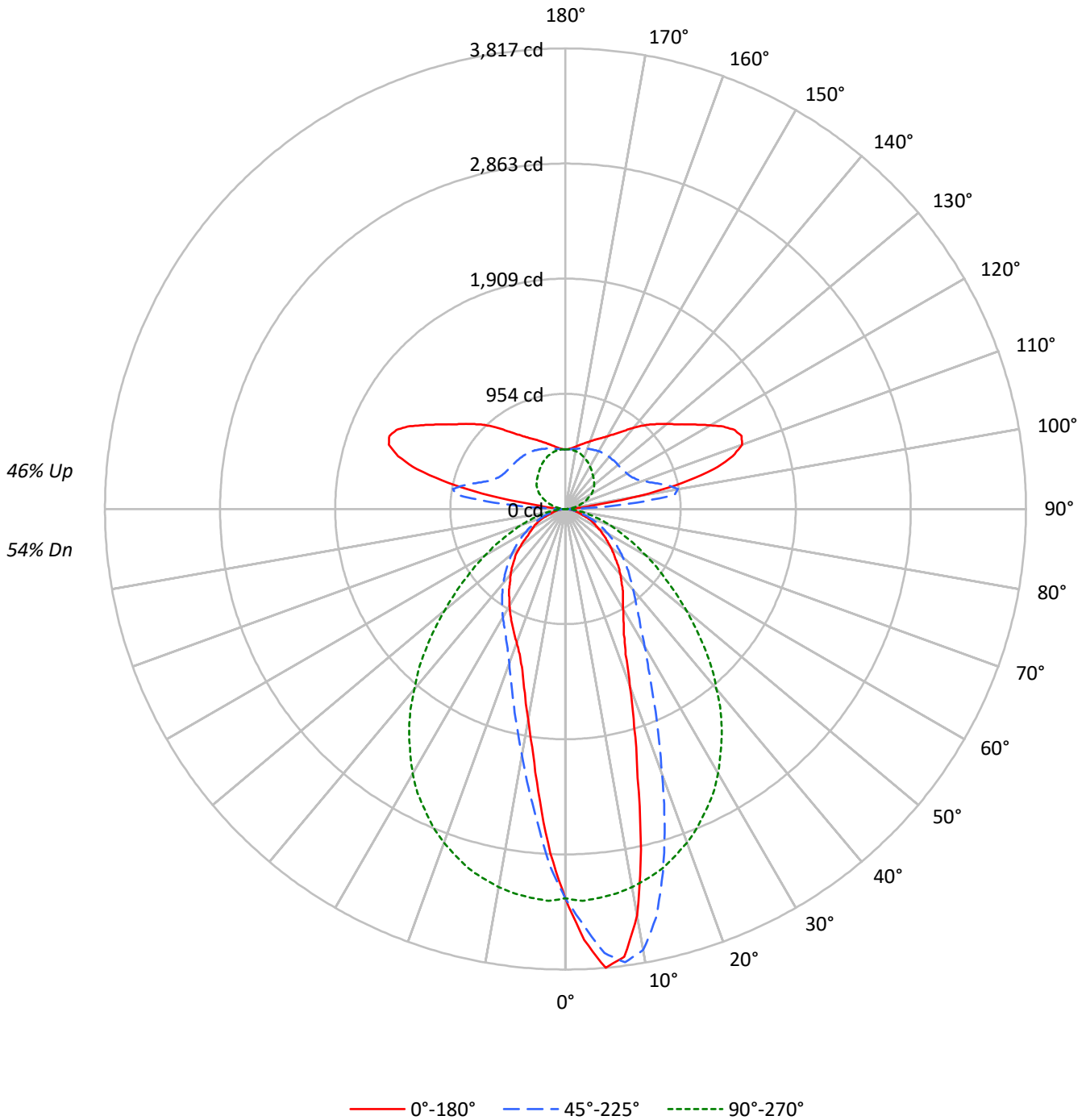
Lumens per Lamp: N/A
Luminaire Lumens: 7998.2 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

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

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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	50	30	10	0				
RCR																															
0	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	54	54	54	47	47	47	41	41	41	36	36	36		
1	99	95	92	89	92	89	86	83	76	74	72	64	63	61	54	53	52	47	47	47	41	41	41	36	36	36	31	31	31		
2	91	84	79	74	84	79	74	69	68	64	61	58	55	53	48	47	45	41	41	41	36	36	36	31	31	31	28	28	28		
3	84	75	68	63	78	70	64	59	61	56	52	52	49	46	44	41	39	36	36	36	31	31	31	28	28	28	25	25	25		
4	77	67	60	54	72	63	56	51	55	50	46	47	43	40	40	37	35	31	31	31	28	28	28	25	25	25	23	23	23		
5	71	60	53	47	66	57	50	45	49	44	40	43	39	36	36	34	31	28	28	28	25	25	25	23	23	23	21	21	21		
6	66	55	47	42	61	51	45	40	45	40	36	39	35	32	34	30	28	25	25	25	23	23	23	21	21	21	19	19	19		
7	62	50	42	37	57	47	40	35	41	36	32	36	32	29	31	28	25	23	23	23	21	21	21	19	19	19	18	18	18		
8	57	46	38	33	53	43	36	32	38	33	29	33	29	26	29	26	23	21	21	21	19	19	19	18	18	18	17	17	17		
9	54	42	35	30	50	40	33	29	35	30	26	31	27	24	27	24	21	19	19	19	18	18	18	17	17	17	16	16	16		
10	50	39	32	27	47	37	30	26	33	28	24	29	25	22	25	22	20	18	18	18	17	17	17	16	16	16	15	15	15		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	34733	34733	34733	34733	34733
5°	41242	39927	34952	28254	26231
10°	37366	40555	34777	22638	19420
15°	25727	34771	34410	18503	15363
20°	17898	26771	33719	15601	13503
25°	13639	20403	32714	13867	12444
30°	11872	16312	31457	12875	11527
35°	10900	13761	29676	12039	10692
40°	9946	12288	27347	11219	9927
45°	8983	11237	24832	10443	9164
50°	8153	10369	21867	9682	8219
55°	7373	9522	19018	8938	7051
60°	6607	8658	16518	8118	6665
65°	6100	7682	14220	7294	6301
70°	4954	6641	12409	6600	5120
75°	4346	5282	10509	5473	4512
80°	3936	4469	8610	4593	4265
85°	3594	3927	6533	4162	3927

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 26201 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	294.1	3.7
10°-20°	680.6	8.5
20°-30°	780.9	9.8
30°-40°	769.7	9.6
40°-50°	678.8	8.5
50°-60°	522.2	6.5
60°-70°	343.3	4.3
70°-80°	166.7	2.1
80°-90°	44.8	0.6
90°-100°	268.2	3.4
100°-110°	785.1	9.8
110°-120°	766.7	9.6
120°-130°	610.6	7.6
130°-140°	481.7	6.0
140°-150°	359.4	4.5
150°-160°	250.6	3.1
160°-170°	147.2	1.8
170°-180°	47.9	0.6
0°-30°	1755.6	21.9
0°-40°	2525.3	31.6
0°-60°	3726.2	46.6
0°-90°	4281.0	53.5
90°-120°	1819.9	22.8
90°-150°	3271.6	40.9
90°-180°	3717.0	46.5
0°-180°	7998.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3227	3227	3227	3227	3227	
5°	3817	3695	3235	2615	2428	349
15°	2309	3120	3088	1660	1379	652
25°	1148	1718	2754	1168	1048	542
35°	830	1047	2258	916	814	517
45°	590	738	1631	686	602	458
55°	393	507	1013	476	376	352
65°	240	302	558	286	247	235
75°	104	127	253	132	108	112
85°	29	32	53	34	32	31
90°	29	25	2	25	29	17
95°	116	593	34	593	116	189
105°	1272	804	116	804	1272	1269
115°	1548	615	205	615	1548	1509
125°	1220	574	285	574	1220	1104
135°	989	566	334	566	989	767
145°	773	559	381	559	773	491
155°	641	541	433	541	641	299
165°	559	518	473	518	559	160
175°	503	497	493	497	503	49
180°	494	494	494	494	494	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8
2.5°	3576.1	3564.9	3553.6	3550.3	3547.0	3536.4	3525.8	3502.0	3478.2	3453.7	3429.3
5°	3816.9	3818.2	3819.5	3816.2	3812.9	3799.0	3785.1	3756.0	3726.9	3695.2	3663.4
7.5°	3742.8	3764.0	3785.1	3789.1	3793.1	3803.7	3814.2	3807.6	3801.0	3789.1	3777.2
10°	3418.7	3417.3	3416.0	3439.8	3463.6	3534.4	3605.2	3641.6	3678.0	3710.4	3742.8
12.5°	2889.5	2891.4	2893.4	2971.5	3049.5	3116.4	3183.2	3275.8	3368.4	3468.3	3568.2
15°	2308.7	2341.1	2373.5	2442.9	2512.4	2613.0	2713.5	2837.9	2962.2	3120.3	3278.4
17.5°	1895.9	1909.8	1923.7	1990.5	2057.3	2152.5	2247.8	2388.7	2529.6	2733.3	2937.1
20°	1562.5	1575.0	1587.6	1635.9	1684.2	1775.5	1866.8	2001.1	2135.3	2337.1	2538.9
22.5°	1304.5	1329.0	1353.4	1385.9	1418.3	1484.4	1550.6	1687.5	1824.4	2008.3	2192.2
25°	1148.4	1159.6	1170.9	1198.6	1226.4	1289.9	1353.4	1444.1	1534.7	1717.9	1901.2
27.5°	1042.5	1045.8	1049.1	1069.7	1090.2	1131.2	1172.2	1256.2	1340.2	1491.0	1641.9
30°	955.2	961.2	967.1	983.0	998.9	1028.6	1058.4	1117.9	1177.5	1312.4	1447.4
32.5°	887.7	891.0	894.4	907.6	920.8	942.6	964.5	1011.4	1058.4	1161.6	1264.8
35°	829.5	830.2	830.9	840.8	850.7	871.9	893.0	932.1	971.1	1047.2	1123.2
37.5°	763.4	768.0	772.6	779.9	787.2	805.7	824.2	856.0	887.7	950.6	1013.4
40°	707.8	711.8	715.8	724.3	732.9	747.5	762.1	791.2	820.3	874.5	928.8
42.5°	652.2	654.9	657.5	666.1	674.7	692.6	710.5	733.6	756.8	801.7	846.7
45°	590.1	596.7	603.3	612.6	621.8	637.0	652.2	676.1	699.9	738.2	776.6
47.5°	538.5	541.8	545.1	553.0	561.0	579.5	598.0	619.2	640.3	676.1	711.8
50°	486.9	488.2	489.5	496.8	504.1	520.6	537.1	561.6	586.1	619.2	652.2
52.5°	437.9	441.2	444.5	451.8	459.1	470.3	481.6	506.7	531.9	564.3	596.7
55°	392.9	394.9	396.9	402.2	407.5	420.7	433.9	455.8	477.6	507.4	537.1
57.5°	350.6	353.2	355.9	359.9	363.8	375.7	387.6	406.8	426.0	455.8	485.5
60°	306.9	310.2	313.6	318.2	322.8	332.1	341.3	358.5	375.7	402.2	428.7
62.5°	275.2	275.8	276.5	280.5	284.4	291.1	297.7	311.6	325.5	351.9	378.4
65°	239.5	241.4	243.4	245.4	247.4	252.7	258.0	269.9	281.8	301.6	321.5
67.5°	202.4	204.4	206.4	209.7	213.0	217.6	222.3	230.2	238.1	256.7	275.2
70°	157.4	157.4	157.4	162.7	168.0	176.0	183.9	189.9	195.8	211.0	226.2
72.5°	128.3	129.0	129.7	130.3	131.0	135.6	140.2	150.2	160.1	169.3	178.6
75°	104.5	105.2	105.8	106.5	107.2	108.5	109.8	113.1	116.4	127.0	137.6
77.5°	83.3	84.0	84.7	85.3	86.0	87.3	88.6	90.0	91.3	95.3	99.2
80°	63.5	64.2	64.8	65.5	66.2	66.8	67.5	68.8	70.1	72.1	74.1
82.5°	46.3	46.3	46.3	46.3	46.3	47.6	49.0	49.0	49.0	50.3	51.6
85°	29.1	29.1	29.1	29.8	30.4	30.4	30.4	31.1	31.8	31.8	31.8
87.5°	13.2	12.6	11.9	12.6	13.2	13.2	13.2	13.9	14.6	14.6	14.6
90°	29.0	30.0	29.0	28.0	29.0	27.0	26.0	25.0	24.0	25.0	22.0
92.5°	53.0	55.0	54.0	58.0	60.0	67.0	77.0	99.0	139.0	186.1	206.1
95°	116.0	120.0	127.0	136.0	155.1	191.1	244.1	360.1	481.2	593.2	528.2
97.5°	238.1	249.1	273.1	311.1	378.1	492.2	624.2	827.3	943.3	912.3	681.2
100°	627.2	626.2	665.2	738.3	839.3	981.3	1098.4	1179.4	1144.4	947.3	640.2
102.5°	993.3	1022.4	1053.4	1107.4	1180.4	1257.4	1313.5	1296.5	1154.4	882.3	580.2
105°	1272.4	1277.4	1309.5	1347.5	1393.5	1419.5	1400.5	1300.5	1091.4	804.3	533.2
107.5°	1454.5	1465.5	1478.5	1496.5	1502.5	1475.5	1397.5	1240.4	1001.3	735.3	499.2
110°	1558.5	1560.5	1562.5	1554.5	1526.5	1456.5	1330.5	1146.4	917.3	678.2	481.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	1579.5	1578.5	1568.5	1539.5	1482.5	1387.5	1242.4	1053.4	844.3	640.2	471.2
115°	1547.5	1542.5	1522.5	1478.5	1403.5	1294.5	1147.4	973.3	788.3	615.2	470.2
117.5°	1477.5	1470.5	1440.5	1391.5	1313.5	1200.4	1065.4	911.3	751.3	598.2	471.2
120°	1385.5	1379.5	1355.5	1299.5	1220.4	1119.4	999.3	864.3	723.3	587.2	475.2
122.5°	1299.5	1291.4	1264.4	1215.4	1147.4	1055.4	946.3	827.3	700.2	580.2	482.2
125°	1220.4	1213.4	1188.4	1144.4	1080.4	1000.3	904.3	795.3	681.2	574.2	489.2
127.5°	1152.4	1146.4	1123.4	1085.4	1027.4	953.3	865.3	766.3	663.2	571.2	497.2
130°	1096.4	1088.4	1067.4	1031.4	978.3	910.3	829.3	739.3	649.2	568.2	505.2
132.5°	1041.4	1036.4	1018.4	982.3	933.3	869.3	795.3	714.2	636.2	567.2	511.2
135°	989.3	982.3	964.3	934.3	885.3	828.3	763.3	692.2	625.2	566.2	517.2
137.5°	934.3	928.3	913.3	882.3	840.3	789.3	731.3	671.2	615.2	564.2	521.2
140°	876.3	877.3	861.3	833.3	795.3	752.3	704.2	653.2	606.2	563.2	525.2
142.5°	822.3	823.3	809.3	785.3	754.3	718.3	678.2	636.2	598.2	561.2	528.2
145°	773.3	771.3	763.3	742.3	717.2	688.2	656.2	623.2	591.2	559.2	529.2
147.5°	731.3	730.3	722.3	707.2	687.2	666.2	639.2	612.2	584.2	556.2	529.2
150°	695.2	695.2	689.2	678.2	663.2	644.2	623.2	600.2	577.2	552.2	529.2
152.5°	665.2	665.2	662.2	652.2	641.2	626.2	608.2	589.2	569.2	547.2	526.2
155°	641.2	640.2	638.2	630.2	621.2	609.2	594.2	578.2	561.2	541.2	524.2
157.5°	618.2	618.2	616.2	610.2	602.2	592.2	580.2	566.2	552.2	536.2	521.2
160°	596.2	597.2	597.2	591.2	584.2	577.2	567.2	556.2	543.2	530.2	519.2
162.5°	576.2	577.2	577.2	572.2	568.2	562.2	553.2	544.2	534.2	524.2	515.2
165°	559.2	559.2	560.2	556.2	552.2	547.2	540.2	534.2	526.2	518.2	511.2
167.5°	542.2	542.2	543.2	540.2	538.2	534.2	530.2	525.2	518.2	512.2	507.2
170°	527.2	527.2	528.2	526.2	525.2	523.2	519.2	516.2	511.2	506.2	503.2
172.5°	513.2	514.2	516.2	514.2	514.2	513.2	510.2	508.2	504.2	501.2	500.2
175°	503.2	504.2	505.2	504.2	504.2	504.2	502.2	501.2	499.2	497.2	497.2
177.5°	496.2	496.2	498.2	497.2	498.2	498.2	497.2	496.2	495.2	494.2	495.2
180°	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8
2.5°	3425.9	3422.6	3390.9	3359.1	3328.0	3296.9	3273.8	3250.6	3211.6	3172.6	3148.1
5°	3638.3	3613.1	3562.9	3512.6	3437.2	3361.8	3298.3	3234.8	3154.1	3073.4	3005.9
7.5°	3756.7	3736.2	3675.3	3614.5	3514.6	3414.7	3315.5	3216.2	3097.2	2978.1	2876.2
10°	3760.0	3777.2	3726.9	3676.7	3564.2	3451.7	3316.8	3181.8	3021.8	2861.7	2730.0
12.5°	3642.3	3716.3	3705.8	3695.2	3580.7	3466.3	3302.2	3138.2	2941.7	2745.3	2580.5
15°	3422.0	3565.5	3607.9	3650.2	3555.6	3461.0	3274.5	3087.9	2857.0	2626.2	2437.0
17.5°	3138.2	3339.3	3451.1	3562.9	3494.1	3425.3	3220.9	3016.5	2756.5	2496.5	2290.8
20°	2802.1	3065.4	3240.7	3416.0	3390.9	3365.7	3154.7	2943.7	2663.2	2382.7	2159.8
22.5°	2470.1	2747.9	2990.0	3232.1	3257.9	3283.7	3070.7	2857.7	2550.8	2243.8	2016.9
25°	2183.6	2466.1	2754.5	3042.9	3101.1	3159.4	2956.9	2754.5	2436.3	2118.1	1892.6
27.5°	1910.4	2179.0	2496.5	2814.0	2919.9	3025.7	2840.5	2655.3	2323.9	1992.5	1767.5
30°	1687.5	1927.6	2251.8	2575.9	2723.4	2870.9	2700.9	2530.9	2202.2	1873.4	1653.1
32.5°	1479.8	1694.8	2020.2	2345.7	2517.0	2688.4	2541.5	2394.7	2078.5	1762.3	1544.6
35°	1315.7	1508.2	1811.9	2115.5	2307.3	2499.2	2378.8	2258.4	1949.5	1640.5	1434.8
37.5°	1174.8	1336.2	1621.4	1906.5	2110.2	2314.0	2213.4	2112.9	1822.5	1532.0	1337.6
40°	1058.4	1188.1	1453.3	1718.6	1918.4	2118.1	2032.1	1946.2	1686.2	1426.2	1244.3
42.5°	958.5	1070.3	1308.5	1546.6	1729.8	1913.1	1856.2	1799.3	1563.8	1328.3	1159.6
45°	870.5	964.5	1174.2	1383.9	1552.6	1721.2	1676.3	1631.3	1428.2	1225.1	1070.3
47.5°	792.5	873.2	1060.4	1247.6	1399.1	1550.6	1508.9	1467.2	1299.2	1131.2	990.3
50°	721.0	789.8	946.0	1102.1	1238.3	1374.6	1340.2	1305.8	1166.9	1028.0	906.3
52.5°	653.6	710.5	850.7	990.9	1100.7	1210.6	1184.1	1157.6	1050.5	943.3	832.8
55°	589.4	641.7	760.1	878.5	972.4	1066.3	1039.9	1013.4	930.1	846.7	749.5
57.5°	531.2	576.8	672.8	768.7	843.4	918.2	905.6	893.0	823.6	754.1	674.1
60°	469.7	510.7	593.4	676.1	736.3	796.5	781.9	767.3	717.7	668.1	599.3
62.5°	414.8	451.1	517.3	583.4	632.4	681.4	670.8	660.2	622.5	584.8	527.9
65°	357.2	392.9	446.5	500.1	538.5	576.8	567.6	558.3	529.9	501.4	455.8
67.5°	305.0	334.7	381.0	427.3	453.1	478.9	473.6	468.3	446.5	424.7	389.0
70°	252.0	277.8	316.2	354.6	372.4	390.3	392.3	394.3	374.4	354.6	328.1
72.5°	199.1	219.6	255.3	291.1	305.0	318.8	318.2	317.5	305.6	293.7	269.9
75°	152.8	168.0	195.8	223.6	235.5	247.4	250.0	252.7	241.4	230.2	217.0
77.5°	109.8	120.4	141.6	162.7	176.0	189.2	190.5	191.8	186.5	181.3	168.7
80°	77.4	80.7	93.9	107.2	121.1	134.9	136.9	138.9	133.6	128.3	120.4
82.5°	53.6	55.6	60.2	64.8	76.1	87.3	90.0	92.6	90.0	87.3	78.7
85°	32.4	33.1	35.1	37.0	42.3	47.6	50.3	52.9	51.6	50.3	45.6
87.5°	14.6	14.6	15.2	15.9	17.2	18.5	21.8	25.1	23.2	21.2	19.2
90°	19.0	16.0	13.0	11.0	9.0	6.0	4.0	2.0	4.0	6.0	9.0
92.5°	154.1	101.0	69.0	51.0	41.0	32.0	22.0	15.0	22.0	32.0	41.0
95°	364.1	215.1	130.0	91.0	65.0	48.0	37.0	34.0	37.0	48.0	65.0
97.5°	405.1	232.1	148.1	105.0	79.0	64.0	55.0	54.0	55.0	64.0	79.0
100°	377.1	229.1	159.1	120.0	96.0	82.0	75.0	74.0	75.0	82.0	96.0
102.5°	353.1	233.1	172.1	137.0	116.0	103.0	97.0	95.0	97.0	103.0	116.0
105°	344.1	241.1	187.1	156.1	137.0	125.0	119.0	116.0	119.0	125.0	137.0
107.5°	342.1	254.1	206.1	177.1	159.1	147.1	141.0	138.0	141.0	147.1	159.1
110°	347.1	271.1	226.1	198.1	181.1	170.1	165.1	162.1	165.1	170.1	181.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	357.1	288.1	247.1	220.1	203.1	192.1	187.1	184.1	187.1	192.1	203.1
115°	368.1	307.1	269.1	242.1	225.1	215.1	209.1	205.1	209.1	215.1	225.1
117.5°	382.1	327.1	289.1	264.1	245.1	236.1	231.1	226.1	231.1	236.1	245.1
120°	398.1	346.1	310.1	285.1	266.1	256.1	251.1	248.1	251.1	256.1	266.1
122.5°	413.1	366.1	331.1	304.1	286.1	275.1	270.1	267.1	270.1	275.1	286.1
125°	429.1	385.1	350.1	323.1	304.1	293.1	287.1	285.1	287.1	293.1	304.1
127.5°	442.2	402.1	368.1	341.1	320.1	309.1	302.1	299.1	302.1	309.1	320.1
130°	455.2	417.1	384.1	357.1	336.1	324.1	315.1	312.1	315.1	324.1	336.1
132.5°	467.2	430.1	398.1	372.1	351.1	336.1	326.1	322.1	326.1	336.1	351.1
135°	477.2	443.2	412.1	385.1	364.1	349.1	338.1	334.1	338.1	349.1	364.1
137.5°	485.2	452.2	422.1	397.1	376.1	360.1	349.1	345.1	349.1	360.1	376.1
140°	491.2	461.2	432.2	407.1	387.1	371.1	361.1	356.1	361.1	371.1	387.1
142.5°	497.2	468.2	440.2	417.1	397.1	383.1	372.1	368.1	372.1	383.1	397.1
145°	501.2	474.2	448.2	425.1	408.1	393.1	384.1	381.1	384.1	393.1	408.1
147.5°	504.2	479.2	455.2	435.2	418.1	405.1	396.1	394.1	396.1	405.1	418.1
150°	505.2	484.2	461.2	443.2	429.1	416.1	408.1	407.1	408.1	416.1	429.1
152.5°	507.2	487.2	468.2	451.2	439.2	428.1	420.1	420.1	420.1	428.1	439.2
155°	507.2	491.2	474.2	460.2	449.2	439.2	433.2	433.2	433.2	439.2	449.2
157.5°	508.2	493.2	479.2	468.2	458.2	449.2	444.2	443.2	444.2	449.2	458.2
160°	508.2	496.2	484.2	474.2	467.2	459.2	455.2	455.2	455.2	459.2	467.2
162.5°	507.2	497.2	487.2	479.2	473.2	467.2	464.2	464.2	464.2	467.2	473.2
165°	505.2	498.2	490.2	483.2	479.2	474.2	472.2	473.2	472.2	474.2	479.2
167.5°	504.2	498.2	492.2	487.2	484.2	480.2	479.2	480.2	479.2	480.2	484.2
170°	501.2	497.2	492.2	490.2	488.2	485.2	484.2	486.2	484.2	485.2	488.2
172.5°	500.2	497.2	493.2	492.2	491.2	489.2	489.2	490.2	489.2	489.2	491.2
175°	498.2	496.2	494.2	493.2	493.2	491.2	492.2	493.2	492.2	491.2	493.2
177.5°	497.2	495.2	494.2	494.2	494.2	493.2	494.2	495.2	494.2	493.2	494.2
180°	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8	3226.8
2.5°	3123.6	3085.9	3048.2	3021.1	2994.0	2960.2	2926.5	2925.2	2923.9	2898.7	2873.6
5°	2938.4	2872.9	2807.4	2743.3	2679.1	2614.9	2550.8	2536.2	2521.7	2499.8	2478.0
7.5°	2774.4	2669.8	2565.3	2483.3	2401.3	2337.1	2272.9	2229.3	2185.6	2151.9	2118.1
10°	2598.4	2468.7	2339.1	2239.9	2140.6	2071.2	2001.7	1951.4	1901.2	1877.4	1853.5
12.5°	2415.8	2274.9	2134.0	2036.8	1939.5	1856.2	1772.8	1727.2	1681.5	1648.5	1615.4
15°	2247.8	2096.3	1944.8	1841.6	1738.4	1660.4	1582.3	1536.7	1491.0	1458.0	1424.9
17.5°	2085.1	1932.3	1779.5	1674.9	1570.4	1499.6	1428.9	1384.5	1340.2	1319.7	1299.2
20°	1936.9	1782.8	1628.6	1530.1	1431.5	1362.0	1292.6	1268.8	1245.0	1225.8	1206.6
22.5°	1790.0	1641.9	1493.7	1399.1	1304.5	1254.2	1203.9	1184.8	1165.6	1151.0	1136.5
25°	1667.0	1519.5	1372.0	1289.3	1206.6	1167.6	1128.5	1116.0	1103.4	1088.8	1074.3
27.5°	1542.6	1402.4	1262.2	1196.0	1129.9	1098.1	1066.3	1050.5	1034.6	1022.7	1010.8
30°	1432.8	1303.2	1173.5	1118.6	1063.7	1035.9	1008.1	990.9	973.7	962.5	951.2
32.5°	1327.0	1211.9	1096.8	1049.8	1002.8	975.7	948.6	932.1	915.5	902.3	889.1
35°	1229.1	1129.2	1029.3	986.3	943.3	916.2	889.1	872.5	856.0	842.8	829.5
37.5°	1143.1	1052.5	961.8	921.5	881.1	857.3	833.5	816.3	799.1	785.2	771.3
40°	1062.4	982.3	902.3	863.3	824.2	798.4	772.6	757.4	742.2	729.6	717.1
42.5°	990.9	917.5	844.1	805.7	767.3	742.9	718.4	700.5	682.7	675.4	668.1
45°	915.5	850.7	785.9	748.8	711.8	686.0	660.2	645.0	629.8	623.1	616.5
47.5°	849.4	789.2	729.0	692.6	656.2	633.1	609.9	598.0	586.1	576.8	567.6
50°	784.5	726.3	668.1	633.1	598.0	578.2	558.3	543.8	529.2	522.6	516.0
52.5°	722.4	669.4	616.5	580.8	545.1	525.9	506.7	494.1	481.6	467.7	453.8
55°	652.2	605.9	559.6	527.9	496.1	476.3	456.4	441.9	427.3	412.8	398.2
57.5°	594.0	548.4	502.7	474.3	445.9	426.7	407.5	391.6	375.7	363.8	351.9
60°	530.5	490.8	451.1	423.4	395.6	377.1	358.5	343.3	328.1	322.2	316.2
62.5°	471.0	433.9	396.9	372.4	348.0	330.1	312.2	302.3	292.4	288.4	284.4
65°	410.1	378.4	346.6	324.1	301.6	286.4	271.2	266.6	262.0	258.6	255.3
67.5°	353.2	326.1	299.0	279.2	259.3	248.7	238.1	232.9	227.6	223.6	219.6
70°	301.6	277.8	254.0	236.8	219.6	209.7	199.8	195.1	190.5	183.2	176.0
72.5°	246.1	227.6	209.0	195.8	182.6	174.0	165.4	156.1	146.9	140.2	133.6
75°	203.7	185.2	166.7	154.1	141.6	131.6	121.7	118.4	115.1	113.1	111.1
77.5°	156.1	140.2	124.4	114.4	104.5	99.9	95.3	93.3	91.3	90.6	90.0
80°	112.5	99.2	86.0	80.7	75.4	74.1	72.8	71.4	70.1	69.5	68.8
82.5°	70.1	63.5	56.9	55.6	54.2	53.6	52.9	52.3	51.6	50.9	50.3
85°	41.0	38.4	35.7	35.1	34.4	33.7	33.1	33.1	33.1	33.1	33.1
87.5°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	16.5	15.9
90°	11.0	13.0	16.0	19.0	22.0	25.0	24.0	25.0	26.0	27.0	29.0
92.5°	51.0	69.0	101.0	154.1	206.1	186.1	139.0	99.0	77.0	67.0	60.0
95°	91.0	130.0	215.1	364.1	528.2	593.2	481.2	360.1	244.1	191.1	155.1
97.5°	105.0	148.1	232.1	405.1	681.2	912.3	943.3	827.3	624.2	492.2	378.1
100°	120.0	159.1	229.1	377.1	640.2	947.3	1144.4	1179.4	1098.4	981.3	839.3
102.5°	137.0	172.1	233.1	353.1	580.2	882.3	1154.4	1296.5	1313.5	1257.4	1180.4
105°	156.1	187.1	241.1	344.1	533.2	804.3	1091.4	1300.5	1400.5	1419.5	1393.5
107.5°	177.1	206.1	254.1	342.1	499.2	735.3	1001.3	1240.4	1397.5	1475.5	1502.5
110°	198.1	226.1	271.1	347.1	481.2	678.2	917.3	1146.4	1330.5	1456.5	1526.5



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CATALOG NUMBER: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	220.1	247.1	288.1	357.1	471.2	640.2	844.3	1053.4	1242.4	1387.5	1482.5
115°	242.1	269.1	307.1	368.1	470.2	615.2	788.3	973.3	1147.4	1294.5	1403.5
117.5°	264.1	289.1	327.1	382.1	471.2	598.2	751.3	911.3	1065.4	1200.4	1313.5
120°	285.1	310.1	346.1	398.1	475.2	587.2	723.3	864.3	999.3	1119.4	1220.4
122.5°	304.1	331.1	366.1	413.1	482.2	580.2	700.2	827.3	946.3	1055.4	1147.4
125°	323.1	350.1	385.1	429.1	489.2	574.2	681.2	795.3	904.3	1000.3	1080.4
127.5°	341.1	368.1	402.1	442.2	497.2	571.2	663.2	766.3	865.3	953.3	1027.4
130°	357.1	384.1	417.1	455.2	505.2	568.2	649.2	739.3	829.3	910.3	978.3
132.5°	372.1	398.1	430.1	467.2	511.2	567.2	636.2	714.2	795.3	869.3	933.3
135°	385.1	412.1	443.2	477.2	517.2	566.2	625.2	692.2	763.3	828.3	885.3
137.5°	397.1	422.1	452.2	485.2	521.2	564.2	615.2	671.2	731.3	789.3	840.3
140°	407.1	432.2	461.2	491.2	525.2	563.2	606.2	653.2	704.2	752.3	795.3
142.5°	417.1	440.2	468.2	497.2	528.2	561.2	598.2	636.2	678.2	718.3	754.3
145°	425.1	448.2	474.2	501.2	529.2	559.2	591.2	623.2	656.2	688.2	717.2
147.5°	435.2	455.2	479.2	504.2	529.2	556.2	584.2	612.2	639.2	666.2	687.2
150°	443.2	461.2	484.2	505.2	529.2	552.2	577.2	600.2	623.2	644.2	663.2
152.5°	451.2	468.2	487.2	507.2	526.2	547.2	569.2	589.2	608.2	626.2	641.2
155°	460.2	474.2	491.2	507.2	524.2	541.2	561.2	578.2	594.2	609.2	621.2
157.5°	468.2	479.2	493.2	508.2	521.2	536.2	552.2	566.2	580.2	592.2	602.2
160°	474.2	484.2	496.2	508.2	519.2	530.2	543.2	556.2	567.2	577.2	584.2
162.5°	479.2	487.2	497.2	507.2	515.2	524.2	534.2	544.2	553.2	562.2	568.2
165°	483.2	490.2	498.2	505.2	511.2	518.2	526.2	534.2	540.2	547.2	552.2
167.5°	487.2	492.2	498.2	504.2	507.2	512.2	518.2	525.2	530.2	534.2	538.2
170°	490.2	492.2	497.2	501.2	503.2	506.2	511.2	516.2	519.2	523.2	525.2
172.5°	492.2	493.2	497.2	500.2	500.2	501.2	504.2	508.2	510.2	513.2	514.2
175°	493.2	494.2	496.2	498.2	497.2	497.2	499.2	501.2	502.2	504.2	504.2
177.5°	494.2	494.2	495.2	497.2	495.2	494.2	495.2	496.2	497.2	498.2	498.2
180°	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2



TEST NUMBER: P831947

CATALOG NUMBER: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3226.8	3226.8	3226.8	3226.8
2.5°	2867.0	2860.4	2857.7	2855.1
5°	2457.5	2437.0	2432.4	2427.7
7.5°	2109.5	2100.9	2072.5	2044.1
10°	1827.1	1800.6	1788.7	1776.8
12.5°	1590.9	1566.4	1562.5	1558.5
15°	1407.7	1390.5	1384.5	1378.6
17.5°	1287.3	1275.4	1268.1	1260.8
20°	1198.0	1189.4	1184.1	1178.8
22.5°	1129.9	1123.2	1119.3	1115.3
25°	1064.4	1054.4	1051.1	1047.8
27.5°	1002.2	993.6	990.3	987.0
30°	944.0	936.7	932.1	927.4
32.5°	880.5	871.9	869.2	866.6
35°	824.2	818.9	816.3	813.7
37.5°	764.7	758.1	754.1	750.1
40°	713.8	710.5	708.5	706.5
42.5°	662.2	656.2	655.6	654.9
45°	610.6	604.6	603.3	602.0
47.5°	562.3	557.0	556.3	555.7
50°	508.7	501.4	496.1	490.8
52.5°	447.2	440.6	435.9	431.3
55°	391.0	383.7	379.7	375.7
57.5°	348.6	345.3	343.3	341.3
60°	314.2	312.2	310.9	309.6
62.5°	282.5	280.5	280.5	280.5
65°	253.4	251.4	249.4	247.4
67.5°	215.7	211.7	211.0	210.4
70°	170.0	164.1	163.4	162.7
72.5°	133.0	132.3	131.0	129.7
75°	109.8	108.5	108.5	108.5
77.5°	88.6	87.3	87.3	87.3
80°	68.1	67.5	68.1	68.8
82.5°	50.3	50.3	49.6	49.0
85°	32.4	31.8	31.8	31.8
87.5°	15.9	15.9	15.9	15.9
90°	28.0	29.0	30.0	29.0
92.5°	58.0	54.0	55.0	53.0
95°	136.0	127.0	120.0	116.0
97.5°	311.1	273.1	249.1	238.1
100°	738.3	665.2	626.2	627.2
102.5°	1107.4	1053.4	1022.4	993.3
105°	1347.5	1309.5	1277.4	1272.4
107.5°	1496.5	1478.5	1465.5	1454.5
110°	1554.5	1562.5	1560.5	1558.5



TEST NUMBER: P831947

CATALOG NUMBER: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	1539.5	1568.5	1578.5	1579.5
115°	1478.5	1522.5	1542.5	1547.5
117.5°	1391.5	1440.5	1470.5	1477.5
120°	1299.5	1355.5	1379.5	1385.5
122.5°	1215.4	1264.4	1291.4	1299.5
125°	1144.4	1188.4	1213.4	1220.4
127.5°	1085.4	1123.4	1146.4	1152.4
130°	1031.4	1067.4	1088.4	1096.4
132.5°	982.3	1018.4	1036.4	1041.4
135°	934.3	964.3	982.3	989.3
137.5°	882.3	913.3	928.3	934.3
140°	833.3	861.3	877.3	876.3
142.5°	785.3	809.3	823.3	822.3
145°	742.3	763.3	771.3	773.3
147.5°	707.2	722.3	730.3	731.3
150°	678.2	689.2	695.2	695.2
152.5°	652.2	662.2	665.2	665.2
155°	630.2	638.2	640.2	641.2
157.5°	610.2	616.2	618.2	618.2
160°	591.2	597.2	597.2	596.2
162.5°	572.2	577.2	577.2	576.2
165°	556.2	560.2	559.2	559.2
167.5°	540.2	543.2	542.2	542.2
170°	526.2	528.2	527.2	527.2
172.5°	514.2	516.2	514.2	513.2
175°	504.2	505.2	504.2	503.2
177.5°	497.2	498.2	496.2	496.2
180°	494.2	494.2	494.2	494.2



TEST NUMBER: P831947

CATALOG NUMBER: S123RDIP-S1165D1195U935-4F0-1E-UDD-G4

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	13.40	14.23	14.34	15.18	16.40	18.06	18.90	19.00	19.84	21.07
	3H	14.62	15.36	15.57	16.32	17.57	19.56	20.31	20.51	21.26	22.51
	4H	15.00	15.71	15.97	16.67	17.92	20.05	20.76	21.02	21.72	22.97
	6H	15.28	15.93	16.26	16.90	18.17	20.36	21.01	21.34	21.98	23.25
	8H	15.37	15.99	16.35	16.97	18.24	20.44	21.06	21.42	22.04	23.31
	12H	15.42	16.01	16.41	16.98	18.27	20.47	21.06	21.46	22.04	23.33
4H	2H	14.12	14.83	15.09	15.79	17.04	18.06	18.76	19.03	19.72	20.98
	3H	15.49	16.08	16.47	17.07	18.34	19.72	20.30	20.69	21.29	22.56
	4H	15.95	16.48	16.93	17.46	18.76	20.32	20.86	21.31	21.84	23.14
	6H	16.31	16.77	17.31	17.78	19.07	20.76	21.22	21.76	22.23	23.52
	8H	16.44	16.87	17.44	17.87	19.18	20.89	21.32	21.89	22.32	23.63
	12H	16.52	16.90	17.53	17.92	19.23	20.95	21.34	21.97	22.36	23.67
8H	4H	16.26	16.69	17.26	17.69	19.00	20.29	20.72	21.29	21.72	23.03
	6H	16.72	17.08	17.75	18.12	19.43	20.79	21.14	21.81	22.18	23.49
	8H	16.92	17.23	17.95	18.26	19.58	20.97	21.28	22.01	22.31	23.64
	12H	17.06	17.33	18.09	18.35	19.72	21.09	21.36	22.12	22.38	23.75
12H	4H	16.27	16.66	17.29	17.67	18.99	20.24	20.63	21.26	21.64	22.95
	6H	16.78	17.09	17.82	18.12	19.45	20.76	21.07	21.79	22.10	23.43
	8H	17.00	17.27	18.04	18.30	19.67	20.95	21.23	21.99	22.25	23.62