

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: P831906

Luminaire Tested: S123RDIP-S1165D1025U840-4F0-1E-UDD-G

Issue Date: 05/03/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P831906  
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-S1165D1025U840-4F0-1E-UDD-G  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC  
UPLIGHT 1025 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: -

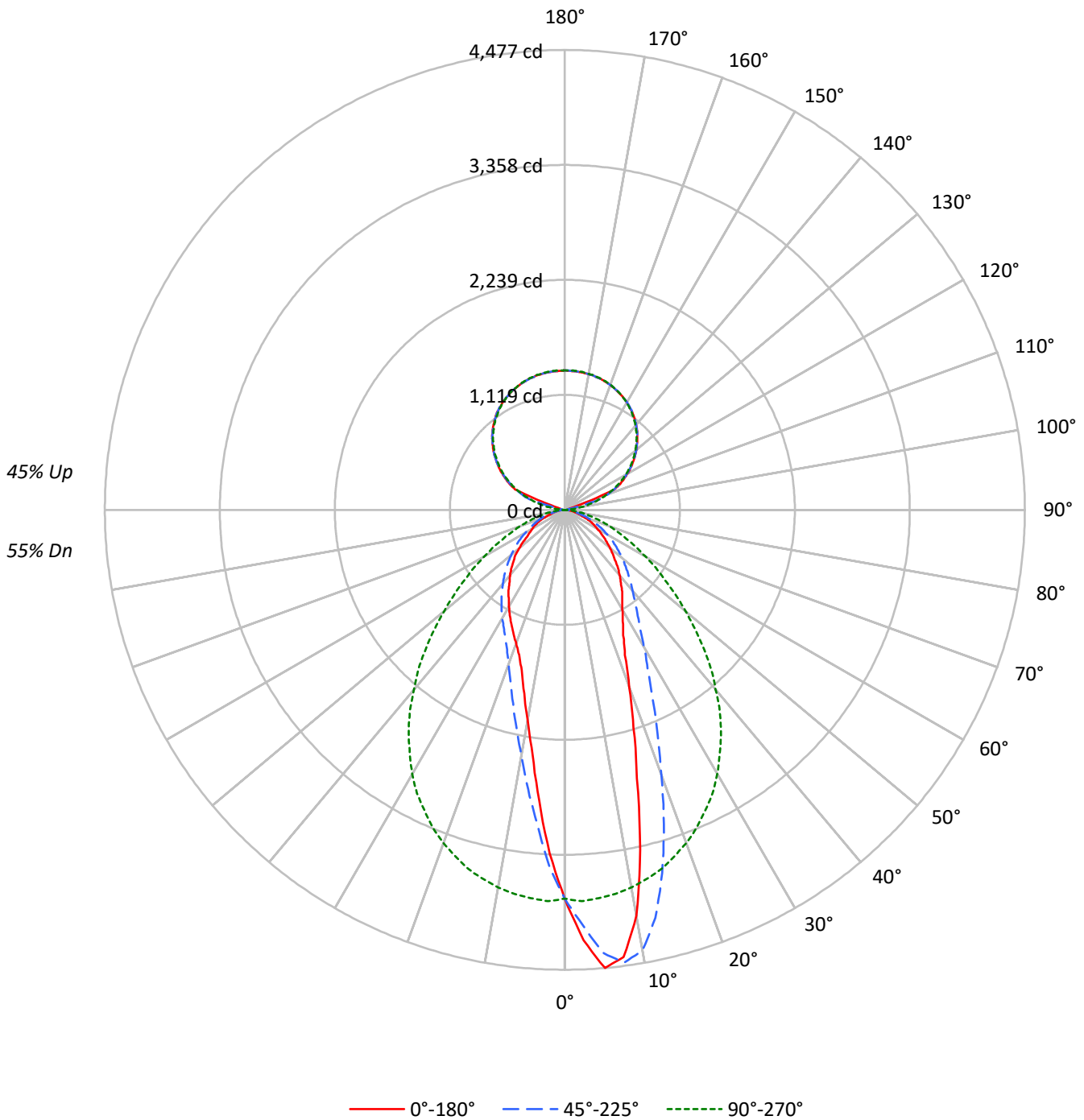
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9156.7 lumens  
Efficiency: N/A  
Efficacy: 134.5 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): 68.1  
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	0	
RCR																						
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55				
1	100	96	92	89	93	89	86	83	77	74	72	65	64	62	55	54	53	48				
2	92	85	79	74	85	79	74	70	68	65	61	59	56	54	49	48	46	42				
3	84	75	68	63	78	70	64	60	61	57	53	53	49	46	45	42	40	36				
4	78	67	60	54	72	63	57	51	55	50	46	48	44	41	41	38	36	32				
5	72	61	53	47	67	57	50	45	50	45	41	43	39	36	37	34	32	29				
6	66	55	47	42	62	52	45	40	46	40	36	40	36	32	34	31	29	26				
7	62	50	43	37	58	47	40	36	42	36	32	37	32	29	32	28	26	24				
8	58	46	39	33	54	43	37	32	38	33	29	34	30	26	29	26	24	22				
9	54	42	35	30	50	40	33	29	36	30	27	31	27	24	28	24	22	20				
10	51	39	32	28	47	37	31	26	33	28	24	29	25	22	26	23	20	18				

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

	0°	45°	90°	135°	180°
0°	40739	40739	40739	40739	40739
5°	48372	46830	40995	33140	30767
10°	43827	47566	40791	26552	22778
15°	30175	40783	40360	21702	18018
20°	20992	31400	39550	18299	15837
25°	15997	23931	38371	16264	14596
30°	13926	19132	36896	15101	13520
35°	12786	16139	34807	14121	12540
40°	11665	14412	32073	13159	11643
45°	10535	13181	29125	12248	10749
50°	9562	12161	25648	11355	9640
55°	8649	11168	22308	10483	8270
60°	7750	10155	19375	9522	7817
65°	7154	9011	16677	8558	7391
70°	5813	7789	14552	7742	6008
75°	5099	6197	12327	6421	5290
80°	4618	5244	10098	5387	5002
85°	4211	4594	7669	4891	4594

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 30731 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	345.0	3.8
10°-20°	798.3	8.7
20°-30°	915.9	10.0
30°-40°	902.8	9.9
40°-50°	796.1	8.7
50°-60°	612.5	6.7
60°-70°	402.7	4.4
70°-80°	195.6	2.1
80°-90°	52.0	0.6
90°-100°	47.8	0.5
100°-110°	231.2	2.5
110°-120°	566.8	6.2
120°-130°	719.6	7.9
130°-140°	768.7	8.4
140°-150°	718.8	7.9
150°-160°	579.8	6.3
160°-170°	374.2	4.1
170°-180°	128.9	1.4
0°-30°	2059.1	22.5
0°-40°	2961.9	32.3
0°-60°	4370.5	47.7
0°-90°	5020.7	54.8
90°-120°	845.9	9.2
90°-150°	3053.1	33.3
90°-180°	4136.0	45.2
0°-180°	9156.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3785	3785	3785	3785	3785	
5°	4477	4334	3794	3067	2848	409
15°	2708	3660	3622	1948	1617	764
25°	1347	2015	3231	1369	1229	636
35°	973	1228	2649	1075	954	607
45°	692	866	1913	805	706	537
55°	461	595	1189	559	441	413
65°	281	354	655	336	290	275
75°	123	149	296	154	127	132
85°	34	37	62	40	37	36
90°	30	24	1	24	30	15
95°	38	31	62	31	38	32
105°	44	221	300	221	44	92
115°	593	579	564	579	593	557
125°	810	806	794	806	810	724
135°	999	999	989	999	999	771
145°	1152	1150	1141	1150	1152	719
155°	1255	1256	1257	1256	1255	579
165°	1322	1322	1326	1322	1322	374
175°	1352	1353	1357	1353	1352	129
180°	1357	1357	1357	1357	1357	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8
2.5°	4194.4	4181.2	4168.0	4164.2	4160.3	4147.9	4135.5	4107.5	4079.6	4050.9	4022.2
5°	4476.8	4478.4	4479.9	4476.1	4472.2	4455.9	4439.6	4405.5	4371.3	4334.1	4296.8
7.5°	4389.9	4414.8	4439.6	4444.3	4448.9	4461.3	4473.7	4466.0	4458.2	4444.3	4430.3
10°	4009.8	4008.2	4006.7	4034.6	4062.5	4145.5	4228.6	4271.2	4313.9	4351.9	4389.9
12.5°	3389.1	3391.4	3393.7	3485.3	3576.8	3655.2	3733.5	3842.2	3950.8	4067.9	4185.1
15°	2707.8	2745.8	2783.9	2865.3	2946.8	3064.7	3182.7	3328.5	3474.4	3659.8	3845.3
17.5°	2223.7	2240.0	2256.3	2334.6	2413.0	2524.7	2636.4	2801.7	2967.0	3205.9	3444.9
20°	1832.6	1847.4	1862.1	1918.8	1975.4	2082.5	2189.5	2347.0	2504.5	2741.2	2977.8
22.5°	1530.0	1558.7	1587.5	1625.5	1663.5	1741.1	1818.7	1979.3	2139.9	2355.6	2571.3
25°	1346.9	1360.1	1373.3	1405.9	1438.5	1513.0	1587.5	1693.8	1800.0	2015.0	2229.9
27.5°	1222.8	1226.7	1230.5	1254.6	1278.7	1326.8	1374.9	1473.4	1571.9	1748.8	1925.7
30°	1120.4	1127.4	1134.3	1153.0	1171.6	1206.5	1241.4	1311.2	1381.1	1539.3	1697.6
32.5°	1041.2	1045.1	1049.0	1064.5	1080.0	1105.6	1131.2	1186.3	1241.4	1362.4	1483.5
35°	973.0	973.7	974.5	986.1	997.8	1022.6	1047.4	1093.2	1139.0	1228.2	1317.4
37.5°	895.4	900.8	906.2	914.8	923.3	945.0	966.7	1004.0	1041.2	1114.9	1188.7
40°	830.2	834.8	839.5	849.6	859.7	876.7	893.8	928.0	962.1	1025.7	1089.3
42.5°	765.0	768.1	771.2	781.3	791.4	812.3	833.3	860.5	887.6	940.4	993.1
45°	692.1	699.8	707.6	718.5	729.3	747.2	765.0	793.0	820.9	865.9	910.9
47.5°	631.6	635.4	639.3	648.6	657.9	679.7	701.4	726.2	751.1	793.0	834.8
50°	571.0	572.6	574.2	582.7	591.2	610.6	630.0	658.7	687.4	726.2	765.0
52.5°	513.6	517.5	521.4	529.9	538.5	551.7	564.8	594.3	623.8	661.8	699.8
55°	460.9	463.2	465.5	471.7	477.9	493.5	509.0	534.6	560.2	595.1	630.0
57.5°	411.2	414.3	417.4	422.1	426.7	440.7	454.7	477.2	499.7	534.6	569.5
60°	360.0	363.9	367.8	373.2	378.6	389.5	400.4	420.5	440.7	471.7	502.8
62.5°	322.8	323.5	324.3	329.0	333.6	341.4	349.1	365.4	381.7	412.8	443.8
65°	280.9	283.2	285.5	287.9	290.2	296.4	302.6	316.6	330.5	353.8	377.1
67.5°	237.4	239.7	242.1	246.0	249.8	255.3	260.7	270.0	279.3	301.0	322.8
70°	184.7	184.7	184.7	190.9	197.1	206.4	215.7	222.7	229.7	247.5	265.4
72.5°	150.5	151.3	152.1	152.8	153.6	159.1	164.5	176.1	187.8	198.6	209.5
75°	122.6	123.4	124.1	124.9	125.7	127.2	128.8	132.7	136.6	149.0	161.4
77.5°	97.8	98.5	99.3	100.1	100.9	102.4	104.0	105.5	107.1	111.7	116.4
80°	74.5	75.3	76.0	76.8	77.6	78.4	79.1	80.7	82.2	84.6	86.9
82.5°	54.3	54.3	54.3	54.3	54.3	55.9	57.4	57.4	57.4	59.0	60.5
85°	34.1	34.1	34.1	34.9	35.7	35.7	35.7	36.5	37.2	37.2	37.2
87.5°	15.5	14.7	14.0	14.7	15.5	15.5	15.5	16.3	17.1	17.1	17.1
90°	30.2	29.8	29.3	28.9	28.4	27.8	26.9	26.0	25.1	24.2	21.3
92.5°	34.3	34.0	33.8	33.6	33.4	32.5	30.9	29.3	27.8	26.2	24.2
95°	38.3	38.3	38.3	38.3	38.3	37.5	36.0	34.4	32.8	31.2	28.8
97.5°	41.3	41.1	40.9	40.7	40.4	39.4	37.6	35.8	34.0	32.3	43.7
100°	42.3	42.1	41.9	41.7	41.4	40.4	38.6	36.8	35.1	33.3	68.2
102.5°	43.3	42.9	42.4	42.0	41.6	45.0	52.4	59.8	67.2	74.6	113.6
105°	44.4	43.9	43.5	43.0	42.6	62.2	101.8	141.5	181.1	220.8	240.9
107.5°	104.8	134.2	163.5	192.9	222.2	254.1	288.6	323.1	357.6	392.1	388.7
110°	277.2	309.2	341.3	373.3	405.3	425.0	432.4	439.8	447.2	454.6	452.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	525.2	525.6	526.1	526.5	527.0	526.2	524.2	522.1	520.1	518.1	515.6
115°	592.7	591.8	590.9	590.0	589.1	587.5	585.3	583.1	580.8	578.6	576.6
117.5°	647.1	646.9	646.7	646.5	646.2	645.2	643.4	641.6	639.9	638.1	636.9
120°	703.6	703.6	703.6	703.6	703.6	702.7	700.9	699.1	697.3	695.5	694.8
122.5°	759.0	758.8	758.6	758.3	758.1	757.5	756.3	755.2	754.1	753.0	752.1
125°	810.4	810.0	809.5	809.1	808.6	808.2	807.7	807.3	806.8	806.4	805.5
127.5°	860.8	861.3	861.7	862.2	862.6	862.5	861.8	861.2	860.5	859.8	858.7
130°	909.2	909.7	910.1	910.6	911.0	910.8	909.9	909.0	908.1	907.2	906.3
132.5°	953.6	954.2	954.9	955.6	956.3	956.1	955.2	954.3	953.5	952.6	951.9
135°	998.9	999.6	1000.3	1000.9	1001.6	1001.6	1000.9	1000.3	999.6	998.9	998.0
137.5°	1042.3	1042.7	1043.2	1043.6	1044.1	1043.7	1042.6	1041.5	1040.4	1039.2	1038.8
140°	1080.6	1081.0	1081.5	1081.9	1082.4	1082.1	1081.2	1080.3	1079.4	1078.6	1077.9
142.5°	1115.8	1116.5	1117.2	1117.9	1118.5	1118.5	1117.9	1117.2	1116.5	1115.8	1115.2
145°	1152.1	1152.1	1152.1	1152.1	1152.1	1151.9	1151.5	1151.0	1150.6	1150.1	1149.7
147.5°	1178.3	1179.5	1180.6	1181.7	1182.8	1183.2	1182.7	1182.3	1181.8	1181.4	1180.9
150°	1208.6	1209.3	1209.9	1210.6	1211.3	1211.4	1210.9	1210.5	1210.0	1209.6	1209.1
152.5°	1232.8	1233.9	1235.0	1236.1	1237.3	1237.4	1236.5	1235.6	1234.7	1233.8	1233.6
155°	1255.0	1256.3	1257.6	1259.0	1260.3	1260.4	1259.3	1258.2	1257.1	1256.0	1255.7
157.5°	1274.1	1275.9	1277.7	1279.5	1281.3	1281.5	1280.2	1278.8	1277.5	1276.1	1276.3
160°	1292.2	1293.8	1295.4	1297.0	1298.5	1298.6	1297.3	1295.9	1294.6	1293.3	1293.5
162.5°	1309.4	1310.7	1312.1	1313.4	1314.8	1314.6	1313.1	1311.5	1309.9	1308.4	1308.6
165°	1322.5	1324.1	1325.6	1327.2	1328.8	1328.6	1326.9	1325.1	1323.3	1321.5	1321.7
167.5°	1332.6	1334.4	1336.2	1337.9	1339.7	1339.7	1337.9	1336.2	1334.4	1332.6	1332.6
170°	1341.6	1343.4	1345.2	1347.0	1348.8	1348.8	1347.0	1345.2	1343.4	1341.6	1341.6
172.5°	1346.7	1348.7	1350.7	1352.7	1354.7	1354.9	1353.1	1351.3	1349.5	1347.7	1347.5
175°	1351.7	1353.5	1355.3	1357.1	1358.9	1359.0	1357.4	1355.9	1354.3	1352.7	1352.5
177.5°	1352.7	1355.0	1357.2	1359.4	1361.7	1361.9	1360.1	1358.3	1356.5	1354.7	1354.5
180°	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8
2.5°	4018.3	4014.4	3977.2	3939.9	3903.5	3867.0	3839.8	3812.7	3766.9	3721.1	3692.4
5°	4267.4	4237.9	4178.9	4119.9	4031.5	3943.0	3868.5	3794.1	3699.4	3604.7	3525.6
7.5°	4406.2	4382.2	4310.8	4239.4	4122.3	4005.1	3888.7	3772.3	3632.7	3493.0	3373.5
10°	4410.1	4430.3	4371.3	4312.4	4180.5	4048.6	3890.3	3732.0	3544.2	3356.5	3202.1
12.5°	4272.0	4358.9	4346.5	4334.1	4199.8	4065.6	3873.2	3680.8	3450.3	3219.9	3026.7
15°	4013.6	4182.0	4231.7	4281.3	4170.4	4059.4	3840.6	3621.8	3351.0	3080.3	2858.3
17.5°	3680.8	3916.7	4047.8	4178.9	4098.2	4017.5	3777.8	3538.0	3233.1	2928.2	2686.9
20°	3286.6	3595.4	3801.0	4006.7	3977.2	3947.7	3700.2	3452.7	3123.7	2794.7	2533.3
22.5°	2897.1	3223.0	3507.0	3791.0	3821.2	3851.5	3601.6	3351.8	2991.8	2631.8	2365.7
25°	2561.2	2892.5	3230.8	3569.1	3637.3	3705.6	3468.2	3230.8	2857.6	2484.4	2219.8
27.5°	2240.7	2555.8	2928.2	3300.6	3424.7	3548.9	3331.6	3114.4	2725.7	2337.0	2073.2
30°	1979.3	2260.9	2641.1	3021.3	3194.3	3367.3	3167.9	2968.5	2582.9	2197.3	1938.9
32.5°	1735.6	1987.8	2369.5	2751.3	2952.2	3153.2	2980.9	2808.7	2437.8	2066.9	1811.7
35°	1543.2	1769.0	2125.1	2481.3	2706.3	2931.3	2790.1	2648.9	2286.5	1924.2	1682.9
37.5°	1378.0	1567.3	1901.7	2236.1	2475.1	2714.0	2596.1	2478.2	2137.6	1796.9	1568.8
40°	1241.4	1393.5	1704.6	2015.7	2250.1	2484.4	2383.5	2282.6	1977.7	1672.8	1459.4
42.5°	1124.3	1255.4	1534.7	1814.0	2028.9	2243.9	2177.1	2110.4	1834.2	1558.0	1360.1
45°	1021.1	1131.2	1377.2	1623.1	1821.0	2018.8	1966.1	1913.3	1675.1	1436.9	1255.4
47.5°	929.5	1024.2	1243.7	1463.3	1641.0	1818.7	1769.8	1720.9	1523.8	1326.8	1161.5
50°	845.7	926.4	1109.5	1292.6	1452.5	1612.3	1571.9	1531.6	1368.7	1205.7	1063.0
52.5°	766.6	833.3	997.8	1162.3	1291.1	1419.9	1388.8	1357.8	1232.1	1106.4	976.8
55°	691.3	752.6	891.5	1030.4	1140.5	1250.7	1219.7	1188.7	1090.9	993.1	879.1
57.5°	623.0	676.6	789.1	901.6	989.2	1076.9	1062.2	1047.4	966.0	884.5	790.6
60°	550.9	599.0	696.0	793.0	863.6	934.2	917.1	900.0	841.8	783.6	702.9
62.5°	486.5	529.2	606.7	684.3	741.7	799.2	786.7	774.3	730.1	685.9	619.2
65°	419.0	460.9	523.7	586.6	631.6	676.6	665.7	654.8	621.5	588.1	534.6
67.5°	357.7	392.6	446.9	501.2	531.5	561.7	555.5	549.3	523.7	498.1	456.2
70°	295.6	325.9	370.9	415.9	436.8	457.8	460.1	462.4	439.1	415.9	384.8
72.5°	233.5	257.6	299.5	341.4	357.7	374.0	373.2	372.4	358.5	344.5	316.6
75°	179.2	197.1	229.7	262.2	276.2	290.2	293.3	296.4	283.2	270.0	254.5
77.5°	128.8	141.2	166.0	190.9	206.4	221.9	223.5	225.0	218.8	212.6	197.8
80°	90.8	94.7	110.2	125.7	142.0	158.3	160.6	162.9	156.7	150.5	141.2
82.5°	62.8	65.2	70.6	76.0	89.2	102.4	105.5	108.6	105.5	102.4	92.3
85°	38.0	38.8	41.1	43.4	49.7	55.9	59.0	62.1	60.5	59.0	53.5
87.5°	17.1	17.1	17.8	18.6	20.2	21.7	25.6	29.5	27.2	24.8	22.5
90°	18.4	15.5	12.5	10.0	7.7	5.5	3.2	1.0	3.2	5.5	7.7
92.5°	22.2	20.2	18.1	17.8	19.2	20.5	21.8	23.2	21.8	20.5	19.2
95°	26.3	23.9	21.4	24.8	33.9	43.1	52.3	61.5	52.3	43.1	33.9
97.5°	55.1	66.5	78.0	86.8	93.1	99.3	105.6	111.9	105.6	99.3	93.1
100°	103.2	138.1	173.0	188.3	183.8	179.3	174.8	170.4	174.8	179.3	183.8
102.5°	152.5	191.5	230.5	248.5	245.6	242.7	239.8	236.9	239.8	242.7	245.6
105°	261.1	281.2	301.4	310.2	307.8	305.3	302.8	300.4	302.8	305.3	307.8
107.5°	385.4	382.0	378.7	376.0	374.0	371.9	369.9	367.9	369.9	371.9	374.0
110°	449.7	447.2	444.7	442.6	440.8	439.0	437.2	435.5	437.2	439.0	440.8





TEST NUMBER: P831906

CATALOG NUMBER: S123RDIP-S1165D1025U840-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	513.2	510.7	508.3	506.2	504.7	503.1	501.5	500.0	501.5	503.1	504.7
115°	574.6	572.5	570.5	568.8	567.5	566.2	564.8	563.5	564.8	566.2	567.5
117.5°	635.8	634.7	633.6	632.2	630.7	629.1	627.5	626.0	627.5	629.1	630.7
120°	694.2	693.5	692.8	691.5	689.5	687.5	685.4	683.4	685.4	687.5	689.5
122.5°	751.2	750.3	749.4	748.2	746.6	745.0	743.5	741.9	743.5	745.0	746.6
125°	804.6	803.7	802.8	801.5	799.7	797.9	796.1	794.3	796.1	797.9	799.7
127.5°	857.6	856.5	855.3	853.9	852.1	850.3	848.5	846.7	848.5	850.3	852.1
130°	905.4	904.5	903.6	902.3	900.5	898.7	896.9	895.1	896.9	898.7	900.5
132.5°	951.2	950.5	949.9	948.6	946.8	945.1	943.3	941.5	943.3	945.1	946.8
135°	997.1	996.2	995.3	994.2	992.9	991.5	990.2	988.8	990.2	991.5	992.9
137.5°	1038.3	1037.9	1037.4	1036.3	1034.5	1032.7	1031.0	1029.2	1031.0	1032.7	1034.5
140°	1077.2	1076.5	1075.9	1074.9	1073.5	1072.2	1070.8	1069.5	1070.8	1072.2	1073.5
142.5°	1114.5	1113.8	1113.2	1112.2	1110.8	1109.5	1108.1	1106.8	1108.1	1109.5	1110.8
145°	1149.2	1148.8	1148.3	1147.3	1145.8	1144.2	1142.6	1141.0	1142.6	1144.2	1145.8
147.5°	1180.5	1180.0	1179.6	1178.8	1177.7	1176.6	1175.4	1174.3	1175.4	1176.6	1177.7
150°	1208.7	1208.2	1207.8	1207.2	1206.6	1205.9	1205.2	1204.6	1205.2	1205.9	1206.6
152.5°	1233.3	1233.1	1232.9	1232.7	1232.4	1232.2	1232.0	1231.8	1232.0	1232.2	1232.4
155°	1255.5	1255.3	1255.1	1255.2	1255.6	1256.1	1256.5	1257.0	1256.5	1256.1	1255.6
157.5°	1276.6	1276.8	1277.0	1277.1	1277.1	1277.1	1277.1	1277.1	1277.1	1277.1	1277.1
160°	1293.7	1293.9	1294.2	1294.4	1294.6	1294.8	1295.0	1295.3	1295.0	1294.8	1294.6
162.5°	1308.8	1309.0	1309.3	1309.7	1310.4	1311.1	1311.7	1312.4	1311.7	1311.1	1310.4
165°	1321.9	1322.2	1322.4	1322.8	1323.5	1324.2	1324.8	1325.5	1324.8	1324.2	1323.5
167.5°	1332.6	1332.6	1332.6	1333.0	1333.9	1334.8	1335.7	1336.6	1335.7	1334.8	1333.9
170°	1341.6	1341.6	1341.6	1342.1	1343.0	1343.9	1344.8	1345.7	1344.8	1343.9	1343.0
172.5°	1347.2	1347.0	1346.8	1347.2	1348.4	1349.5	1350.6	1351.7	1350.6	1349.5	1348.4
175°	1352.3	1352.1	1351.8	1352.3	1353.4	1354.5	1355.6	1356.8	1355.6	1354.5	1353.4
177.5°	1354.3	1354.1	1353.8	1354.3	1355.4	1356.5	1357.7	1358.8	1357.7	1356.5	1355.4
180°	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8



TEST NUMBER: P831906

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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8	3784.8
2.5°	3663.7	3619.5	3575.3	3543.5	3511.6	3472.1	3432.5	3431.0	3429.4	3399.9	3370.4
5°	3446.5	3369.7	3292.8	3217.6	3142.3	3067.1	2991.8	2974.7	2957.7	2932.1	2906.5
7.5°	3254.0	3131.5	3008.9	2912.7	2816.5	2741.2	2665.9	2614.7	2563.5	2523.9	2484.4
10°	3047.7	2895.6	2743.5	2627.1	2510.8	2429.3	2347.8	2288.9	2229.9	2202.0	2174.0
12.5°	2833.5	2668.3	2503.0	2388.9	2274.9	2177.1	2079.4	2025.8	1972.3	1933.5	1894.7
15°	2636.4	2458.8	2281.1	2160.1	2039.0	1947.5	1855.9	1802.4	1748.8	1710.0	1671.2
17.5°	2445.6	2266.4	2087.1	1964.5	1841.9	1758.9	1675.9	1623.9	1571.9	1547.9	1523.8
20°	2271.8	2091.0	1910.2	1794.6	1679.0	1597.5	1516.1	1488.1	1460.2	1437.7	1415.2
22.5°	2099.5	1925.7	1751.9	1641.0	1530.0	1471.1	1412.1	1389.6	1367.1	1350.0	1333.0
25°	1955.2	1782.2	1609.2	1512.2	1415.2	1369.4	1323.7	1308.9	1294.2	1277.1	1260.0
27.5°	1809.4	1644.9	1480.4	1402.8	1325.2	1288.0	1250.7	1232.1	1213.5	1199.5	1185.5
30°	1680.6	1528.5	1376.4	1312.0	1247.6	1215.0	1182.4	1162.3	1142.1	1128.9	1115.7
32.5°	1556.4	1421.4	1286.4	1231.3	1176.2	1144.4	1112.6	1093.2	1073.8	1058.3	1042.8
35°	1441.6	1324.4	1207.3	1156.8	1106.4	1074.6	1042.8	1023.4	1004.0	988.5	973.0
37.5°	1340.7	1234.4	1128.1	1080.8	1033.5	1005.5	977.6	957.4	937.3	921.0	904.7
40°	1246.1	1152.2	1058.3	1012.5	966.7	936.5	906.2	888.4	870.5	855.8	841.1
42.5°	1162.3	1076.1	990.0	945.0	900.0	871.3	842.6	821.7	800.7	792.2	783.6
45°	1073.8	997.8	921.7	878.3	834.8	804.6	774.3	756.5	738.6	730.9	723.1
47.5°	996.2	925.6	855.0	812.3	769.7	742.5	715.4	701.4	687.4	676.6	665.7
50°	920.2	851.9	783.6	742.5	701.4	678.1	654.8	637.8	620.7	612.9	605.2
52.5°	847.3	785.2	723.1	681.2	639.3	616.8	594.3	579.6	564.8	548.5	532.3
55°	765.0	710.7	656.4	619.2	581.9	558.6	535.4	518.3	501.2	484.2	467.1
57.5°	696.7	643.2	589.7	556.3	522.9	500.4	477.9	459.3	440.7	426.7	412.8
60°	622.3	575.7	529.2	496.6	464.0	442.3	420.5	402.7	384.8	377.9	370.9
62.5°	552.4	509.0	465.5	436.8	408.1	387.2	366.2	354.6	342.9	338.3	333.6
65°	481.0	443.8	406.6	380.2	353.8	336.0	318.1	312.7	307.2	303.4	299.5
67.5°	414.3	382.5	350.7	327.4	304.1	291.7	279.3	273.1	266.9	262.2	257.6
70°	353.8	325.9	297.9	277.8	257.6	246.0	234.3	228.9	223.5	214.9	206.4
72.5°	288.6	266.9	245.2	229.7	214.1	204.1	194.0	183.1	172.2	164.5	156.7
75°	239.0	217.2	195.5	180.8	166.0	154.4	142.8	138.9	135.0	132.7	130.3
77.5°	183.1	164.5	145.9	134.2	122.6	117.2	111.7	109.4	107.1	106.3	105.5
80°	131.9	116.4	100.9	94.7	88.5	86.9	85.3	83.8	82.2	81.5	80.7
82.5°	82.2	74.5	66.7	65.2	63.6	62.8	62.1	61.3	60.5	59.7	59.0
85°	48.1	45.0	41.9	41.1	40.3	39.6	38.8	38.8	38.8	38.8	38.8
87.5°	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	19.4	18.6
90°	10.0	12.5	15.5	18.4	21.3	24.2	25.1	26.0	26.9	27.8	28.4
92.5°	17.8	18.1	20.2	22.2	24.2	26.2	27.8	29.3	30.9	32.5	33.4
95°	24.8	21.4	23.9	26.3	28.8	31.2	32.8	34.4	36.0	37.5	38.3
97.5°	86.8	78.0	66.5	55.1	43.7	32.3	34.0	35.8	37.6	39.4	40.4
100°	188.3	173.0	138.1	103.2	68.2	33.3	35.1	36.8	38.6	40.4	41.4
102.5°	248.5	230.5	191.5	152.5	113.6	74.6	67.2	59.8	52.4	45.0	41.6
105°	310.2	301.4	281.2	261.1	240.9	220.8	181.1	141.5	101.8	62.2	42.6
107.5°	376.0	378.7	382.0	385.4	388.7	392.1	357.6	323.1	288.6	254.1	222.2
110°	442.6	444.7	447.2	449.7	452.1	454.6	447.2	439.8	432.4	425.0	405.3



TEST NUMBER: P831906

CATALOG NUMBER: S123RDIP-S1165D1025U840-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	506.2	508.3	510.7	513.2	515.6	518.1	520.1	522.1	524.2	526.2	527.0
115°	568.8	570.5	572.5	574.6	576.6	578.6	580.8	583.1	585.3	587.5	589.1
117.5°	632.2	633.6	634.7	635.8	636.9	638.1	639.9	641.6	643.4	645.2	646.2
120°	691.5	692.8	693.5	694.2	694.8	695.5	697.3	699.1	700.9	702.7	703.6
122.5°	748.2	749.4	750.3	751.2	752.1	753.0	754.1	755.2	756.3	757.5	758.1
125°	801.5	802.8	803.7	804.6	805.5	806.4	806.8	807.3	807.7	808.2	808.6
127.5°	853.9	855.3	856.5	857.6	858.7	859.8	860.5	861.2	861.8	862.5	862.6
130°	902.3	903.6	904.5	905.4	906.3	907.2	908.1	909.0	909.9	910.8	911.0
132.5°	948.6	949.9	950.5	951.2	951.9	952.6	953.5	954.3	955.2	956.1	956.3
135°	994.2	995.3	996.2	997.1	998.0	998.9	999.6	1000.3	1000.9	1001.6	1001.6
137.5°	1036.3	1037.4	1037.9	1038.3	1038.8	1039.2	1040.4	1041.5	1042.6	1043.7	1044.1
140°	1074.9	1075.9	1076.5	1077.2	1077.9	1078.6	1079.4	1080.3	1081.2	1082.1	1082.4
142.5°	1112.2	1113.2	1113.8	1114.5	1115.2	1115.8	1116.5	1117.2	1117.9	1118.5	1118.5
145°	1147.3	1148.3	1148.8	1149.2	1149.7	1150.1	1150.6	1151.0	1151.5	1151.9	1152.1
147.5°	1178.8	1179.6	1180.0	1180.5	1180.9	1181.4	1181.8	1182.3	1182.7	1183.2	1182.8
150°	1207.2	1207.8	1208.2	1208.7	1209.1	1209.6	1210.0	1210.5	1210.9	1211.4	1211.3
152.5°	1232.7	1232.9	1233.1	1233.3	1233.6	1233.8	1234.7	1235.6	1236.5	1237.4	1237.3
155°	1255.2	1255.1	1255.3	1255.5	1255.7	1256.0	1257.1	1258.2	1259.3	1260.4	1260.3
157.5°	1277.1	1277.0	1276.8	1276.6	1276.3	1276.1	1277.5	1278.8	1280.2	1281.5	1281.3
160°	1294.4	1294.2	1293.9	1293.7	1293.5	1293.3	1294.6	1295.9	1297.3	1298.6	1298.5
162.5°	1309.7	1309.3	1309.0	1308.8	1308.6	1308.4	1309.9	1311.5	1313.1	1314.6	1314.8
165°	1322.8	1322.4	1322.2	1321.9	1321.7	1321.5	1323.3	1325.1	1326.9	1328.6	1328.8
167.5°	1333.0	1332.6	1332.6	1332.6	1332.6	1332.6	1334.4	1336.2	1337.9	1339.7	1339.7
170°	1342.1	1341.6	1341.6	1341.6	1341.6	1341.6	1343.4	1345.2	1347.0	1348.8	1348.8
172.5°	1347.2	1346.8	1347.0	1347.2	1347.5	1347.7	1349.5	1351.3	1353.1	1354.9	1354.7
175°	1352.3	1351.8	1352.1	1352.3	1352.5	1352.7	1354.3	1355.9	1357.4	1359.0	1358.9
177.5°	1354.3	1353.8	1354.1	1354.3	1354.5	1354.7	1356.5	1358.3	1360.1	1361.9	1361.7
180°	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8



TEST NUMBER: P831906

CATALOG NUMBER: S123RDIP-S1165D1025U840-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	3784.8	3784.8	3784.8	3784.8
2.5°	3362.7	3354.9	3351.8	3348.7
5°	2882.4	2858.3	2852.9	2847.5
7.5°	2474.3	2464.2	2430.8	2397.5
10°	2143.0	2112.0	2098.0	2084.0
12.5°	1866.0	1837.3	1832.6	1828.0
15°	1651.1	1630.9	1623.9	1616.9
17.5°	1509.9	1495.9	1487.4	1478.8
20°	1405.1	1395.0	1388.8	1382.6
22.5°	1325.2	1317.4	1312.8	1308.1
25°	1248.4	1236.8	1232.9	1229.0
27.5°	1175.5	1165.4	1161.5	1157.6
30°	1107.2	1098.6	1093.2	1087.8
32.5°	1032.7	1022.6	1019.5	1016.4
35°	966.7	960.5	957.4	954.3
37.5°	896.9	889.2	884.5	879.9
40°	837.2	833.3	831.0	828.6
42.5°	776.7	769.7	768.9	768.1
45°	716.1	709.2	707.6	706.1
47.5°	659.5	653.3	652.5	651.7
50°	596.7	588.1	581.9	575.7
52.5°	524.5	516.7	511.3	505.9
55°	458.5	450.0	445.4	440.7
57.5°	408.9	405.0	402.7	400.4
60°	368.5	366.2	364.7	363.1
62.5°	331.3	329.0	329.0	329.0
65°	297.2	294.8	292.5	290.2
67.5°	252.9	248.3	247.5	246.7
70°	199.4	192.4	191.6	190.9
72.5°	156.0	155.2	153.6	152.1
75°	128.8	127.2	127.2	127.2
77.5°	104.0	102.4	102.4	102.4
80°	79.9	79.1	79.9	80.7
82.5°	59.0	59.0	58.2	57.4
85°	38.0	37.2	37.2	37.2
87.5°	18.6	18.6	18.6	18.6
90°	28.9	29.3	29.8	30.2
92.5°	33.6	33.8	34.0	34.3
95°	38.3	38.3	38.3	38.3
97.5°	40.7	40.9	41.1	41.3
100°	41.7	41.9	42.1	42.3
102.5°	42.0	42.4	42.9	43.3
105°	43.0	43.5	43.9	44.4
107.5°	192.9	163.5	134.2	104.8
110°	373.3	341.3	309.2	277.2



TEST NUMBER: P831906

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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	526.5	526.1	525.6	525.2
115°	590.0	590.9	591.8	592.7
117.5°	646.5	646.7	646.9	647.1
120°	703.6	703.6	703.6	703.6
122.5°	758.3	758.6	758.8	759.0
125°	809.1	809.5	810.0	810.4
127.5°	862.2	861.7	861.3	860.8
130°	910.6	910.1	909.7	909.2
132.5°	955.6	954.9	954.2	953.6
135°	1000.9	1000.3	999.6	998.9
137.5°	1043.6	1043.2	1042.7	1042.3
140°	1081.9	1081.5	1081.0	1080.6
142.5°	1117.9	1117.2	1116.5	1115.8
145°	1152.1	1152.1	1152.1	1152.1
147.5°	1181.7	1180.6	1179.5	1178.3
150°	1210.6	1209.9	1209.3	1208.6
152.5°	1236.1	1235.0	1233.9	1232.8
155°	1259.0	1257.6	1256.3	1255.0
157.5°	1279.5	1277.7	1275.9	1274.1
160°	1297.0	1295.4	1293.8	1292.2
162.5°	1313.4	1312.1	1310.7	1309.4
165°	1327.2	1325.6	1324.1	1322.5
167.5°	1337.9	1336.2	1334.4	1332.6
170°	1347.0	1345.2	1343.4	1341.6
172.5°	1352.7	1350.7	1348.7	1346.7
175°	1357.1	1355.3	1353.5	1351.7
177.5°	1359.4	1357.2	1355.0	1352.7
180°	1356.8	1356.8	1356.8	1356.8



TEST NUMBER: P831906

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**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	14.07	14.92	15.00	15.85	17.06	18.73	19.58	19.66	20.52	21.72
	3H	15.29	16.05	16.23	16.99	18.22	20.23	20.99	21.17	21.93	23.16
	4H	15.68	16.39	16.63	17.34	18.58	20.72	21.44	21.68	22.39	23.63
	6H	15.96	16.61	16.92	17.57	18.82	21.04	21.69	22.00	22.65	23.90
	8H	16.04	16.67	17.02	17.64	18.89	21.12	21.74	22.09	22.71	23.96
	12H	16.10	16.69	17.07	17.66	18.93	21.15	21.74	22.12	22.71	23.98
4H	2H	14.79	15.51	15.75	16.46	17.70	18.73	19.44	19.69	20.39	21.63
	3H	16.17	16.76	17.13	17.74	18.99	20.39	20.98	21.36	21.96	23.21
	4H	16.62	17.16	17.60	18.14	19.41	21.00	21.54	21.97	22.51	23.79
	6H	16.99	17.45	17.98	18.45	19.73	21.44	21.90	22.42	22.90	24.17
	8H	17.12	17.55	18.11	18.54	19.83	21.57	22.00	22.56	22.99	24.28
	12H	17.19	17.58	18.20	18.59	19.88	21.63	22.02	22.64	23.03	24.32
8H	4H	16.94	17.37	17.93	18.36	19.65	20.97	21.40	21.96	22.39	23.68
	6H	17.40	17.76	18.41	18.79	20.08	21.46	21.82	22.48	22.85	24.14
	8H	17.59	17.91	18.62	18.93	20.23	21.65	21.96	22.67	22.98	24.29
	12H	17.73	18.01	18.76	19.02	20.38	21.76	22.04	22.79	23.05	24.41
12H	4H	16.95	17.34	17.96	18.35	19.64	20.92	21.31	21.92	22.31	23.61
	6H	17.46	17.77	18.48	18.79	20.10	21.44	21.75	22.46	22.77	24.08
	8H	17.68	17.95	18.70	18.97	20.32	21.63	21.91	22.66	22.92	24.27