

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: P831951

Luminaire Tested: S123RDIP-S1165D1195U950-4F0-1E-UDD-G

Issue Date: 05/03/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P831951  
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-S1165D1195U950-4F0-1E-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: -

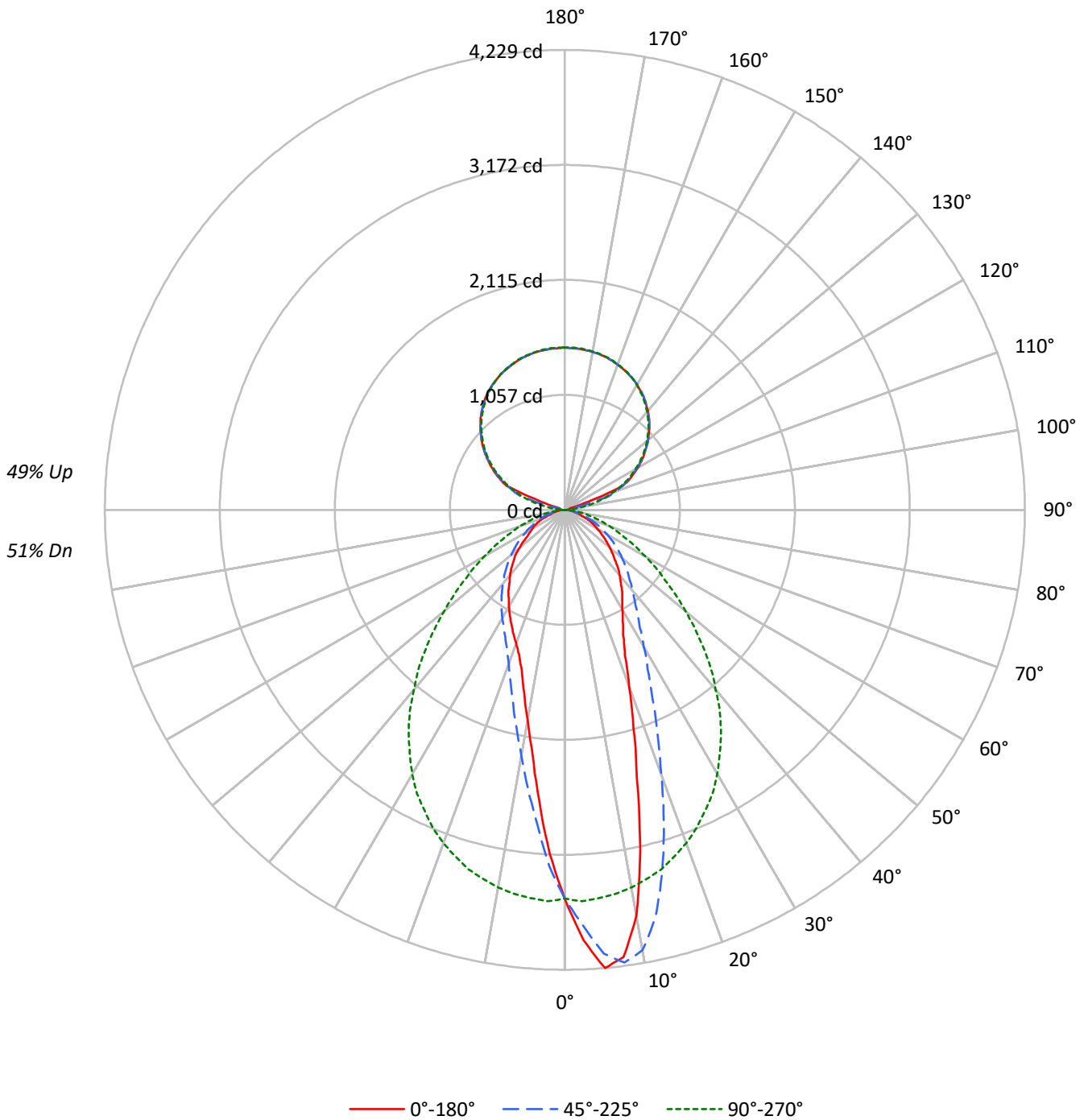
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9291.3 lumens  
Efficiency: N/A  
Efficacy: 126.9 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	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°	38485	38485	38485	38485	38485
5°	45697	44239	38727	31306	29066
10°	41402	44935	38534	25083	21518
15°	28505	38528	38128	20501	17022
20°	19832	29662	37362	17287	14961
25°	15112	22607	36248	15365	13789
30°	13155	18074	34855	14266	12772
35°	12077	15247	32881	13340	11846
40°	11020	13616	30300	12431	10999
45°	9952	12452	27515	11571	10153
50°	9034	11489	24229	10727	9108
55°	8171	10550	21073	9903	7812
60°	7322	9593	18303	8994	7384
65°	6757	8512	15755	8084	6981
70°	5489	7358	13747	7311	5674
75°	4816	5852	11645	6068	4999
80°	4364	4953	9540	5089	4723
85°	3989	4347	7237	4619	4347

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 29032 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	325.9	3.5
10°-20°	754.1	8.1
20°-30°	865.2	9.3
30°-40°	852.8	9.2
40°-50°	752.1	8.1
50°-60°	578.6	6.2
60°-70°	380.4	4.1
70°-80°	184.7	2.0
80°-90°	49.6	0.5
90°-100°	52.6	0.6
100°-110°	254.3	2.7
110°-120°	623.3	6.7
120°-130°	791.2	8.5
130°-140°	845.3	9.1
140°-150°	790.4	8.5
150°-160°	637.6	6.9
160°-170°	411.4	4.4
170°-180°	141.8	1.5
0°-30°	1945.2	20.9
0°-40°	2798.0	30.1
0°-60°	4128.7	44.4
0°-90°	4743.4	51.1
90°-120°	930.1	10.0
90°-150°	3357.1	36.1
90°-180°	4548.0	48.9
0°-180°	9291.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3575	3575	3575	3575	3575	
5°	4229	4094	3584	2897	2690	386
15°	2558	3457	3422	1840	1528	722
25°	1272	1904	3052	1294	1161	601
35°	919	1160	2502	1015	902	573
45°	654	818	1808	760	667	508
55°	435	562	1123	528	416	391
65°	265	334	619	317	274	260
75°	116	141	280	146	120	125
85°	32	35	59	37	35	34
90°	33	27	1	27	33	16
95°	42	34	68	34	42	35
105°	49	243	330	243	49	102
115°	652	636	620	636	652	613
125°	891	887	873	887	891	796
135°	1098	1098	1087	1098	1098	847
145°	1267	1265	1255	1265	1267	791
155°	1380	1381	1382	1381	1380	637
165°	1454	1453	1458	1453	1454	411
175°	1486	1487	1492	1487	1486	141
180°	1492	1492	1492	1492	1492	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4
2.5°	3962.4	3949.9	3937.5	3933.8	3930.1	3918.4	3906.7	3880.3	3853.9	3826.8	3799.7
5°	4229.2	4230.6	4232.1	4228.4	4224.8	4209.4	4194.0	4161.7	4129.5	4094.3	4059.1
7.5°	4147.1	4170.5	4194.0	4198.4	4202.8	4214.5	4226.2	4218.9	4211.6	4198.4	4185.2
10°	3787.9	3786.5	3785.0	3811.4	3837.8	3916.2	3994.6	4034.9	4075.3	4111.2	4147.1
12.5°	3201.6	3203.8	3206.0	3292.5	3378.9	3453.0	3527.0	3629.6	3732.2	3842.9	3953.6
15°	2558.0	2593.9	2629.9	2706.8	2783.8	2895.2	3006.6	3144.4	3282.2	3457.4	3632.6
17.5°	2100.7	2116.1	2131.4	2205.5	2279.5	2385.1	2490.6	2646.7	2802.8	3028.6	3254.3
20°	1731.3	1745.2	1759.1	1812.6	1866.1	1967.3	2068.4	2217.2	2366.0	2589.5	2813.1
22.5°	1445.4	1472.5	1499.6	1535.6	1571.5	1644.8	1718.1	1869.8	2021.5	2225.3	2429.0
25°	1272.4	1284.9	1297.3	1328.1	1358.9	1429.3	1499.6	1600.1	1700.5	1903.5	2106.5
27.5°	1155.1	1158.8	1162.5	1185.2	1207.9	1253.4	1298.8	1391.9	1485.0	1652.1	1819.2
30°	1058.4	1065.0	1071.6	1089.2	1106.8	1139.8	1172.7	1238.7	1304.7	1454.2	1603.7
32.5°	983.6	987.3	991.0	1005.6	1020.3	1044.5	1068.7	1120.7	1172.7	1287.1	1401.4
35°	919.1	919.9	920.6	931.6	942.6	966.0	989.5	1032.7	1076.0	1160.3	1244.6
37.5°	845.8	851.0	856.1	864.2	872.2	892.7	913.3	948.5	983.6	1053.3	1122.9
40°	784.3	788.7	793.1	802.6	812.1	828.2	844.4	876.6	908.9	969.0	1029.1
42.5°	722.7	725.6	728.6	738.1	747.6	767.4	787.2	812.9	838.5	888.3	938.2
45°	653.8	661.1	668.5	678.7	689.0	705.8	722.7	749.1	775.5	818.0	860.5
47.5°	596.6	600.3	604.0	612.8	621.6	642.1	662.6	686.1	709.5	749.1	788.7
50°	539.5	540.9	542.4	550.5	558.5	576.8	595.2	622.3	649.4	686.1	722.7
52.5°	485.2	488.9	492.5	500.6	508.7	521.1	533.6	561.4	589.3	625.2	661.1
55°	435.4	437.6	439.8	445.6	451.5	466.2	480.8	505.0	529.2	562.2	595.2
57.5°	388.5	391.4	394.3	398.7	403.1	416.3	429.5	450.8	472.0	505.0	538.0
60°	340.1	343.8	347.4	352.6	357.7	367.9	378.2	397.3	416.3	445.6	475.0
62.5°	304.9	305.6	306.4	310.8	315.2	322.5	329.8	345.2	360.6	389.9	419.3
65°	265.3	267.5	269.7	271.9	274.1	280.0	285.9	299.0	312.2	334.2	356.2
67.5°	224.3	226.5	228.7	232.3	236.0	241.1	246.3	255.1	263.9	284.4	304.9
70°	174.4	174.4	174.4	180.3	186.2	195.0	203.8	210.4	217.0	233.8	250.7
72.5°	142.2	142.9	143.7	144.4	145.1	150.3	155.4	166.4	177.4	187.6	197.9
75°	115.8	116.5	117.3	118.0	118.7	120.2	121.7	125.3	129.0	140.7	152.5
77.5°	92.4	93.1	93.8	94.6	95.3	96.8	98.2	99.7	101.1	105.5	109.9
80°	70.4	71.1	71.8	72.6	73.3	74.0	74.8	76.2	77.7	79.9	82.1
82.5°	51.3	51.3	51.3	51.3	51.3	52.8	54.2	54.2	54.2	55.7	57.2
85°	32.3	32.3	32.3	33.0	33.7	33.7	33.7	34.4	35.2	35.2	35.2
87.5°	14.7	13.9	13.2	13.9	14.7	14.7	14.7	15.4	16.1	16.1	16.1
90°	33.3	32.8	32.3	31.8	31.3	30.5	29.6	28.6	27.6	26.6	23.4
92.5°	37.7	37.4	37.2	36.9	36.7	35.7	34.0	32.3	30.5	28.8	26.6
95°	42.1	42.1	42.1	42.1	42.1	41.3	39.5	37.8	36.1	34.4	31.7
97.5°	45.4	45.2	45.0	44.7	44.5	43.3	41.4	39.4	37.4	35.5	48.0
100°	46.6	46.3	46.1	45.8	45.6	44.5	42.5	40.5	38.5	36.6	75.0
102.5°	47.7	47.2	46.7	46.2	45.7	49.5	57.6	65.8	73.9	82.0	124.9
105°	48.8	48.3	47.8	47.3	46.8	68.3	111.9	155.5	199.1	242.7	264.9
107.5°	115.3	147.5	179.8	212.1	244.3	279.4	317.4	355.3	393.2	431.2	427.5
110°	304.8	340.0	375.2	410.5	445.7	467.4	475.5	483.6	491.7	499.9	497.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	577.5	578.0	578.4	578.9	579.4	578.6	576.4	574.1	571.9	569.7	567.0
115°	651.7	650.7	649.7	648.8	647.8	646.1	643.6	641.1	638.7	636.2	634.0
117.5°	711.6	711.3	711.1	710.8	710.6	709.5	707.5	705.5	703.6	701.6	700.4
120°	773.6	773.6	773.6	773.6	773.6	772.7	770.7	768.7	766.7	764.8	764.0
122.5°	834.6	834.4	834.1	833.9	833.6	832.9	831.6	830.4	829.2	827.9	827.0
125°	891.1	890.6	890.1	889.6	889.2	888.7	888.2	887.7	887.2	886.7	885.7
127.5°	946.5	947.0	947.5	948.0	948.5	948.4	947.7	946.9	946.2	945.4	944.2
130°	999.7	1000.2	1000.7	1001.2	1001.7	1001.5	1000.5	999.5	998.5	997.5	996.5
132.5°	1048.5	1049.3	1050.0	1050.7	1051.5	1051.3	1050.4	1049.4	1048.4	1047.4	1046.7
135°	1098.4	1099.1	1099.9	1100.6	1101.3	1101.3	1100.6	1099.9	1099.1	1098.4	1097.4
137.5°	1146.1	1146.5	1147.0	1147.5	1148.0	1147.7	1146.4	1145.2	1144.0	1142.7	1142.2
140°	1188.2	1188.7	1189.2	1189.6	1190.1	1189.9	1188.9	1187.9	1186.9	1186.0	1185.2
142.5°	1227.0	1227.7	1228.4	1229.2	1229.9	1229.9	1229.2	1228.4	1227.7	1227.0	1226.2
145°	1266.9	1266.9	1266.9	1266.9	1266.9	1266.6	1266.1	1265.6	1265.1	1264.6	1264.2
147.5°	1295.7	1296.9	1298.1	1299.4	1300.6	1301.0	1300.5	1300.0	1299.5	1299.0	1298.5
150°	1328.9	1329.7	1330.4	1331.1	1331.9	1332.0	1331.5	1331.0	1330.5	1330.0	1329.5
152.5°	1355.5	1356.8	1358.0	1359.2	1360.5	1360.6	1359.6	1358.6	1357.6	1356.6	1356.4
155°	1379.9	1381.4	1382.9	1384.3	1385.8	1386.0	1384.7	1383.5	1382.3	1381.0	1380.8
157.5°	1401.0	1402.9	1404.9	1406.9	1408.9	1409.1	1407.6	1406.1	1404.7	1403.2	1403.4
160°	1420.9	1422.7	1424.4	1426.1	1427.8	1427.9	1426.5	1425.0	1423.5	1422.0	1422.3
162.5°	1439.8	1441.2	1442.7	1444.2	1445.7	1445.6	1443.8	1442.1	1440.4	1438.7	1438.9
165°	1454.2	1455.9	1457.6	1459.3	1461.1	1461.0	1459.0	1457.0	1455.0	1453.1	1453.3
167.5°	1465.3	1467.2	1469.2	1471.2	1473.1	1473.1	1471.2	1469.2	1467.2	1465.3	1465.3
170°	1475.2	1477.2	1479.2	1481.1	1483.1	1483.1	1481.1	1479.2	1477.2	1475.2	1475.2
172.5°	1480.8	1483.0	1485.2	1487.4	1489.6	1489.8	1487.8	1485.8	1483.9	1481.9	1481.6
175°	1486.3	1488.3	1490.3	1492.2	1494.2	1494.3	1492.6	1490.9	1489.2	1487.4	1487.2
177.5°	1487.4	1489.9	1492.4	1494.8	1497.3	1497.5	1495.6	1493.6	1491.6	1489.6	1489.4
180°	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4
2.5°	3796.0	3792.3	3757.2	3722.0	3687.5	3653.1	3627.4	3601.8	3558.5	3515.3	3488.2
5°	4031.3	4003.4	3947.7	3892.0	3808.5	3724.9	3654.5	3584.2	3494.8	3405.3	3330.6
7.5°	4162.5	4139.8	4072.3	4004.9	3894.2	3783.5	3673.6	3563.7	3431.7	3299.8	3186.9
10°	4166.1	4185.2	4129.5	4073.8	3949.2	3824.6	3675.1	3525.5	3348.2	3170.8	3024.9
12.5°	4035.7	4117.8	4106.0	4094.3	3967.5	3840.7	3658.9	3477.2	3259.5	3041.8	2859.3
15°	3791.6	3950.7	3997.6	4044.5	3939.7	3834.8	3628.2	3421.5	3165.7	2909.9	2700.2
17.5°	3477.2	3700.0	3823.9	3947.7	3871.5	3795.3	3568.8	3342.3	3054.2	2766.2	2538.2
20°	3104.8	3396.5	3590.8	3785.0	3757.2	3729.3	3495.5	3261.7	2950.9	2640.1	2393.1
22.5°	2736.9	3044.7	3313.0	3581.2	3609.8	3638.4	3402.4	3166.4	2826.3	2486.2	2234.8
25°	2419.5	2732.5	3052.0	3371.6	3436.1	3500.6	3276.3	3052.0	2699.5	2346.9	2097.0
27.5°	2116.8	2414.4	2766.2	3118.0	3235.3	3352.6	3147.3	2942.1	2574.9	2207.7	1958.5
30°	1869.8	2135.8	2495.0	2854.1	3017.6	3181.0	2992.7	2804.3	2440.0	2075.7	1831.7
32.5°	1639.6	1877.8	2238.5	2599.1	2788.9	2978.8	2816.0	2653.3	2303.0	1952.6	1711.5
35°	1457.9	1671.1	2007.6	2344.0	2556.6	2769.1	2635.7	2502.3	2160.0	1817.7	1589.8
37.5°	1301.7	1480.6	1796.5	2112.4	2338.1	2563.9	2452.5	2341.1	2019.3	1697.5	1482.0
40°	1172.7	1316.4	1610.3	1904.2	2125.6	2346.9	2251.7	2156.4	1868.3	1580.3	1378.7
42.5°	1062.1	1185.9	1449.8	1713.7	1916.7	2119.7	2056.7	1993.7	1732.7	1471.8	1284.9
45°	964.6	1068.7	1301.0	1533.4	1720.3	1907.2	1857.3	1807.5	1582.5	1357.4	1185.9
47.5°	878.1	967.5	1174.9	1382.4	1550.2	1718.1	1671.9	1625.7	1439.5	1253.4	1097.2
50°	798.9	875.2	1048.1	1221.1	1372.1	1523.1	1485.0	1446.9	1292.9	1139.0	1004.2
52.5°	724.2	787.2	942.6	1098.0	1219.6	1341.3	1312.0	1282.7	1163.9	1045.2	922.8
55°	653.1	711.0	842.2	973.4	1077.5	1181.5	1152.2	1122.9	1030.5	938.2	830.4
57.5°	588.6	639.1	745.4	851.7	934.5	1017.3	1003.4	989.5	912.5	835.6	746.9
60°	520.4	565.8	657.5	749.1	815.8	882.5	866.4	850.2	795.3	740.3	664.1
62.5°	459.6	499.9	573.2	646.5	700.7	754.9	743.2	731.5	689.7	647.9	584.9
65°	395.8	435.4	494.7	554.1	596.6	639.1	628.9	618.6	587.1	555.6	505.0
67.5°	337.9	370.9	422.2	473.5	502.1	530.7	524.8	518.9	494.7	470.6	431.0
70°	279.3	307.8	350.4	392.9	412.7	432.4	434.6	436.8	414.9	392.9	363.5
72.5°	220.6	243.3	282.9	322.5	337.9	353.3	352.6	351.8	338.6	325.4	299.0
75°	169.3	186.2	217.0	247.7	260.9	274.1	277.1	280.0	267.5	255.1	240.4
77.5°	121.7	133.4	156.9	180.3	195.0	209.6	211.1	212.6	206.7	200.8	186.9
80°	85.8	89.4	104.1	118.7	134.1	149.5	151.7	153.9	148.1	142.2	133.4
82.5°	59.4	61.6	66.7	71.8	84.3	96.8	99.7	102.6	99.7	96.8	87.2
85°	35.9	36.6	38.8	41.0	46.9	52.8	55.7	58.6	57.2	55.7	50.6
87.5°	16.1	16.1	16.9	17.6	19.1	20.5	24.2	27.9	25.7	23.5	21.3
90°	20.2	17.0	13.8	11.0	8.5	6.0	3.6	1.1	3.6	6.0	8.5
92.5°	24.4	22.2	20.0	19.6	21.1	22.5	24.0	25.5	24.0	22.5	21.1
95°	28.9	26.2	23.5	27.2	37.3	47.4	57.5	67.6	57.5	47.4	37.3
97.5°	60.6	73.2	85.7	95.4	102.3	109.2	116.1	123.0	116.1	109.2	102.3
100°	113.4	151.8	190.3	207.0	202.1	197.2	192.2	187.3	192.2	197.2	202.1
102.5°	167.7	210.6	253.4	273.3	270.1	266.9	263.7	260.5	263.7	266.9	270.1
105°	287.1	309.2	331.4	341.1	338.4	335.7	333.0	330.3	333.0	335.7	338.4
107.5°	423.8	420.1	416.4	413.4	411.2	409.0	406.8	404.6	406.8	409.0	411.2
110°	494.5	491.7	489.0	486.7	484.7	482.8	480.8	478.8	480.8	482.8	484.7





TEST NUMBER: P831951

CATALOG NUMBER: S123RDIP-S1165D1195U950-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	564.3	561.6	558.9	556.6	554.9	553.2	551.5	549.7	551.5	553.2	554.9
115°	631.8	629.6	627.3	625.5	624.0	622.5	621.1	619.6	621.1	622.5	624.0
117.5°	699.1	697.9	696.7	695.2	693.5	691.7	690.0	688.3	690.0	691.7	693.5
120°	763.3	762.6	761.8	760.3	758.1	755.9	753.7	751.5	753.7	755.9	758.1
122.5°	826.0	825.0	824.0	822.7	820.9	819.2	817.5	815.8	817.5	819.2	820.9
125°	884.7	883.7	882.8	881.3	879.3	877.3	875.4	873.4	875.4	877.3	879.3
127.5°	943.0	941.7	940.5	938.9	936.9	935.0	933.0	931.0	933.0	935.0	936.9
130°	995.6	994.6	993.6	992.1	990.1	988.2	986.2	984.2	986.2	988.2	990.1
132.5°	1045.9	1045.2	1044.5	1043.1	1041.1	1039.2	1037.2	1035.2	1037.2	1039.2	1041.1
135°	1096.4	1095.4	1094.5	1093.2	1091.7	1090.3	1088.8	1087.3	1088.8	1090.3	1091.7
137.5°	1141.7	1141.2	1140.8	1139.5	1137.6	1135.6	1133.6	1131.6	1133.6	1135.6	1137.6
140°	1184.5	1183.7	1183.0	1181.9	1180.4	1178.9	1177.5	1176.0	1177.5	1178.9	1180.4
142.5°	1225.5	1224.7	1224.0	1222.9	1221.4	1219.9	1218.5	1217.0	1218.5	1219.9	1221.4
145°	1263.7	1263.2	1262.7	1261.6	1259.8	1258.1	1256.4	1254.7	1256.4	1258.1	1259.8
147.5°	1298.0	1297.5	1297.0	1296.2	1294.9	1293.7	1292.5	1291.2	1292.5	1293.7	1294.9
150°	1329.1	1328.6	1328.1	1327.5	1326.7	1326.0	1325.2	1324.5	1325.2	1326.0	1326.7
152.5°	1356.1	1355.9	1355.7	1355.4	1355.2	1354.9	1354.7	1354.4	1354.7	1354.9	1355.2
155°	1380.5	1380.3	1380.0	1380.2	1380.7	1381.1	1381.6	1382.1	1381.6	1381.1	1380.7
157.5°	1403.7	1403.9	1404.2	1404.3	1404.3	1404.3	1404.3	1404.3	1404.3	1404.3	1404.3
160°	1422.5	1422.8	1423.0	1423.3	1423.5	1423.8	1424.0	1424.3	1424.0	1423.8	1423.5
162.5°	1439.2	1439.4	1439.6	1440.1	1440.9	1441.6	1442.4	1443.1	1442.4	1441.6	1440.9
165°	1453.6	1453.8	1454.1	1454.5	1455.3	1456.0	1456.8	1457.5	1456.8	1456.0	1455.3
167.5°	1465.3	1465.3	1465.3	1465.8	1466.7	1467.7	1468.7	1469.7	1468.7	1467.7	1466.7
170°	1475.2	1475.2	1475.2	1475.7	1476.7	1477.7	1478.7	1479.7	1478.7	1477.7	1476.7
172.5°	1481.4	1481.1	1480.9	1481.4	1482.6	1483.9	1485.1	1486.3	1485.1	1483.9	1482.6
175°	1486.9	1486.7	1486.4	1486.9	1488.2	1489.4	1490.6	1491.9	1490.6	1489.4	1488.2
177.5°	1489.2	1488.9	1488.7	1489.2	1490.4	1491.6	1492.8	1494.1	1492.8	1491.6	1490.4
180°	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4	3575.4
2.5°	3461.0	3419.3	3377.5	3347.4	3317.4	3280.0	3242.6	3241.2	3239.7	3211.8	3184.0
5°	3255.8	3183.2	3110.7	3039.6	2968.5	2897.4	2826.3	2810.2	2794.0	2769.9	2745.7
7.5°	3074.0	2958.2	2842.4	2751.5	2660.6	2589.5	2518.5	2470.1	2421.7	2384.3	2346.9
10°	2879.1	2735.4	2591.7	2481.8	2371.9	2294.9	2217.9	2162.2	2106.5	2080.1	2053.8
12.5°	2676.8	2520.7	2364.5	2256.8	2149.0	2056.7	1964.3	1913.8	1863.2	1826.5	1789.9
15°	2490.6	2322.8	2154.9	2040.6	1926.2	1839.7	1753.2	1702.7	1652.1	1615.4	1578.8
17.5°	2310.3	2141.0	1971.7	1855.9	1740.0	1661.6	1583.2	1534.1	1485.0	1462.3	1439.5
20°	2146.1	1975.3	1804.5	1695.3	1586.1	1509.2	1432.2	1405.8	1379.4	1358.2	1336.9
22.5°	1983.4	1819.2	1655.0	1550.2	1445.4	1389.7	1334.0	1312.7	1291.5	1275.4	1259.2
25°	1847.1	1683.6	1520.2	1428.5	1336.9	1293.7	1250.4	1236.5	1222.6	1206.5	1190.3
27.5°	1709.3	1553.9	1398.5	1325.2	1251.9	1216.7	1181.5	1163.9	1146.3	1133.2	1120.0
30°	1587.6	1443.9	1300.3	1239.4	1178.6	1147.8	1117.0	1098.0	1078.9	1066.5	1054.0
32.5°	1470.3	1342.8	1215.2	1163.2	1111.2	1081.1	1051.1	1032.7	1014.4	999.8	985.1
35°	1361.8	1251.2	1140.5	1092.8	1045.2	1015.2	985.1	966.8	948.5	933.8	919.1
37.5°	1266.6	1166.1	1065.7	1021.0	976.3	949.9	923.5	904.5	885.4	870.0	854.6
40°	1177.1	1088.4	999.8	956.5	913.3	884.7	856.1	839.2	822.4	808.5	794.5
42.5°	1098.0	1016.6	935.3	892.7	850.2	823.1	796.0	776.2	756.4	748.4	740.3
45°	1014.4	942.6	870.8	829.7	788.7	760.1	731.5	714.6	697.8	690.4	683.1
47.5°	941.1	874.4	807.7	767.4	727.1	701.4	675.8	662.6	649.4	639.1	628.9
50°	869.3	804.8	740.3	701.4	662.6	640.6	618.6	602.5	586.4	579.0	571.7
52.5°	800.4	741.8	683.1	643.5	604.0	582.7	561.4	547.5	533.6	518.2	502.8
55°	722.7	671.4	620.1	584.9	549.7	527.7	505.7	489.6	473.5	457.4	441.2
57.5°	658.2	607.6	557.0	525.5	494.0	472.8	451.5	433.9	416.3	403.1	389.9
60°	587.8	543.9	499.9	469.1	438.3	417.8	397.3	380.4	363.5	357.0	350.4
62.5°	521.9	480.8	439.8	412.7	385.5	365.7	346.0	335.0	324.0	319.6	315.2
65°	454.4	419.3	384.1	359.2	334.2	317.4	300.5	295.4	290.3	286.6	282.9
67.5°	391.4	361.3	331.3	309.3	287.3	275.6	263.9	258.0	252.1	247.7	243.3
70°	334.2	307.8	281.5	262.4	243.3	232.3	221.4	216.2	211.1	203.0	195.0
72.5°	272.7	252.1	231.6	217.0	202.3	192.8	183.2	173.0	162.7	155.4	148.1
75°	225.8	205.2	184.7	170.8	156.9	145.9	134.9	131.2	127.5	125.3	123.1
77.5°	173.0	155.4	137.8	126.8	115.8	110.7	105.5	103.3	101.1	100.4	99.7
80°	124.6	109.9	95.3	89.4	83.6	82.1	80.6	79.2	77.7	77.0	76.2
82.5°	77.7	70.4	63.0	61.6	60.1	59.4	58.6	57.9	57.2	56.4	55.7
85°	45.4	42.5	39.6	38.8	38.1	37.4	36.6	36.6	36.6	36.6	36.6
87.5°	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	18.3	17.6
90°	11.0	13.8	17.0	20.2	23.4	26.6	27.6	28.6	29.6	30.5	31.3
92.5°	19.6	20.0	22.2	24.4	26.6	28.8	30.5	32.3	34.0	35.7	36.7
95°	27.2	23.5	26.2	28.9	31.7	34.4	36.1	37.8	39.5	41.3	42.1
97.5°	95.4	85.7	73.2	60.6	48.0	35.5	37.4	39.4	41.4	43.3	44.5
100°	207.0	190.3	151.8	113.4	75.0	36.6	38.5	40.5	42.5	44.5	45.6
102.5°	273.3	253.4	210.6	167.7	124.9	82.0	73.9	65.8	57.6	49.5	45.7
105°	341.1	331.4	309.2	287.1	264.9	242.7	199.1	155.5	111.9	68.3	46.8
107.5°	413.4	416.4	420.1	423.8	427.5	431.2	393.2	355.3	317.4	279.4	244.3
110°	486.7	489.0	491.7	494.5	497.2	499.9	491.7	483.6	475.5	467.4	445.7



TEST NUMBER: P831951

CATALOG NUMBER: S123RDIP-S1165D1195U950-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	556.6	558.9	561.6	564.3	567.0	569.7	571.9	574.1	576.4	578.6	579.4
115°	625.5	627.3	629.6	631.8	634.0	636.2	638.7	641.1	643.6	646.1	647.8
117.5°	695.2	696.7	697.9	699.1	700.4	701.6	703.6	705.5	707.5	709.5	710.6
120°	760.3	761.8	762.6	763.3	764.0	764.8	766.7	768.7	770.7	772.7	773.6
122.5°	822.7	824.0	825.0	826.0	827.0	827.9	829.2	830.4	831.6	832.9	833.6
125°	881.3	882.8	883.7	884.7	885.7	886.7	887.2	887.7	888.2	888.7	889.2
127.5°	938.9	940.5	941.7	943.0	944.2	945.4	946.2	946.9	947.7	948.4	948.5
130°	992.1	993.6	994.6	995.6	996.5	997.5	998.5	999.5	1000.5	1001.5	1001.7
132.5°	1043.1	1044.5	1045.2	1045.9	1046.7	1047.4	1048.4	1049.4	1050.4	1051.3	1051.5
135°	1093.2	1094.5	1095.4	1096.4	1097.4	1098.4	1099.1	1099.9	1100.6	1101.3	1101.3
137.5°	1139.5	1140.8	1141.2	1141.7	1142.2	1142.7	1144.0	1145.2	1146.4	1147.7	1148.0
140°	1181.9	1183.0	1183.7	1184.5	1185.2	1186.0	1186.9	1187.9	1188.9	1189.9	1190.1
142.5°	1222.9	1224.0	1224.7	1225.5	1226.2	1227.0	1227.7	1228.4	1229.2	1229.9	1229.9
145°	1261.6	1262.7	1263.2	1263.7	1264.2	1264.6	1265.1	1265.6	1266.1	1266.6	1266.9
147.5°	1296.2	1297.0	1297.5	1298.0	1298.5	1299.0	1299.5	1300.0	1300.5	1301.0	1300.6
150°	1327.5	1328.1	1328.6	1329.1	1329.5	1330.0	1330.5	1331.0	1331.5	1332.0	1331.9
152.5°	1355.4	1355.7	1355.9	1356.1	1356.4	1356.6	1357.6	1358.6	1359.6	1360.6	1360.5
155°	1380.2	1380.0	1380.3	1380.5	1380.8	1381.0	1382.3	1383.5	1384.7	1386.0	1385.8
157.5°	1404.3	1404.2	1403.9	1403.7	1403.4	1403.2	1404.7	1406.1	1407.6	1409.1	1408.9
160°	1423.3	1423.0	1422.8	1422.5	1422.3	1422.0	1423.5	1425.0	1426.5	1427.9	1427.8
162.5°	1440.1	1439.6	1439.4	1439.2	1438.9	1438.7	1440.4	1442.1	1443.8	1445.6	1445.7
165°	1454.5	1454.1	1453.8	1453.6	1453.3	1453.1	1455.0	1457.0	1459.0	1461.0	1461.1
167.5°	1465.8	1465.3	1465.3	1465.3	1465.3	1465.3	1467.2	1469.2	1471.2	1473.1	1473.1
170°	1475.7	1475.2	1475.2	1475.2	1475.2	1475.2	1477.2	1479.2	1481.1	1483.1	1483.1
172.5°	1481.4	1480.9	1481.1	1481.4	1481.6	1481.9	1483.9	1485.8	1487.8	1489.8	1489.6
175°	1486.9	1486.4	1486.7	1486.9	1487.2	1487.4	1489.2	1490.9	1492.6	1494.3	1494.2
177.5°	1489.2	1488.7	1488.9	1489.2	1489.4	1489.6	1491.6	1493.6	1495.6	1497.5	1497.3
180°	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9	1491.9



TEST NUMBER: P831951

CATALOG NUMBER: S123RDIP-S1165D1195U950-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	3575.4	3575.4	3575.4	3575.4
2.5°	3176.7	3169.3	3166.4	3163.5
5°	2722.9	2700.2	2695.1	2690.0
7.5°	2337.4	2327.9	2296.4	2264.8
10°	2024.4	1995.1	1981.9	1968.7
12.5°	1762.8	1735.7	1731.3	1726.9
15°	1559.7	1540.7	1534.1	1527.5
17.5°	1426.3	1413.1	1405.1	1397.0
20°	1327.4	1317.9	1312.0	1306.1
22.5°	1251.9	1244.6	1240.2	1235.8
25°	1179.3	1168.3	1164.7	1161.0
27.5°	1110.4	1100.9	1097.2	1093.6
30°	1045.9	1037.9	1032.7	1027.6
32.5°	975.6	966.0	963.1	960.2
35°	913.3	907.4	904.5	901.5
37.5°	847.3	840.0	835.6	831.2
40°	790.9	787.2	785.0	782.8
42.5°	733.7	727.1	726.4	725.6
45°	676.5	669.9	668.5	667.0
47.5°	623.0	617.2	616.4	615.7
50°	563.6	555.6	549.7	543.9
52.5°	495.5	488.2	483.0	477.9
55°	433.2	425.1	420.7	416.3
57.5°	386.3	382.6	380.4	378.2
60°	348.2	346.0	344.5	343.0
62.5°	313.0	310.8	310.8	310.8
65°	280.7	278.5	276.3	274.1
67.5°	238.9	234.5	233.8	233.1
70°	188.4	181.8	181.0	180.3
72.5°	147.3	146.6	145.1	143.7
75°	121.7	120.2	120.2	120.2
77.5°	98.2	96.8	96.8	96.8
80°	75.5	74.8	75.5	76.2
82.5°	55.7	55.7	55.0	54.2
85°	35.9	35.2	35.2	35.2
87.5°	17.6	17.6	17.6	17.6
90°	31.8	32.3	32.8	33.3
92.5°	36.9	37.2	37.4	37.7
95°	42.1	42.1	42.1	42.1
97.5°	44.7	45.0	45.2	45.4
100°	45.8	46.1	46.3	46.6
102.5°	46.2	46.7	47.2	47.7
105°	47.3	47.8	48.3	48.8
107.5°	212.1	179.8	147.5	115.3
110°	410.5	375.2	340.0	304.8



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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	578.9	578.4	578.0	577.5
115°	648.8	649.7	650.7	651.7
117.5°	710.8	711.1	711.3	711.6
120°	773.6	773.6	773.6	773.6
122.5°	833.9	834.1	834.4	834.6
125°	889.6	890.1	890.6	891.1
127.5°	948.0	947.5	947.0	946.5
130°	1001.2	1000.7	1000.2	999.7
132.5°	1050.7	1050.0	1049.3	1048.5
135°	1100.6	1099.9	1099.1	1098.4
137.5°	1147.5	1147.0	1146.5	1146.1
140°	1189.6	1189.2	1188.7	1188.2
142.5°	1229.2	1228.4	1227.7	1227.0
145°	1266.9	1266.9	1266.9	1266.9
147.5°	1299.4	1298.1	1296.9	1295.7
150°	1331.1	1330.4	1329.7	1328.9
152.5°	1359.2	1358.0	1356.8	1355.5
155°	1384.3	1382.9	1381.4	1379.9
157.5°	1406.9	1404.9	1402.9	1401.0
160°	1426.1	1424.4	1422.7	1420.9
162.5°	1444.2	1442.7	1441.2	1439.8
165°	1459.3	1457.6	1455.9	1454.2
167.5°	1471.2	1469.2	1467.2	1465.3
170°	1481.1	1479.2	1477.2	1475.2
172.5°	1487.4	1485.2	1483.0	1480.8
175°	1492.2	1490.3	1488.3	1486.3
177.5°	1494.8	1492.4	1489.9	1487.4
180°	1491.9	1491.9	1491.9	1491.9



TEST NUMBER: P831951

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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	13.53	14.34	14.49	15.31	16.57	18.19	19.01	19.15	19.97	21.23
	3H	14.75	15.48	15.72	16.45	17.74	19.69	20.42	20.66	21.39	22.68
	4H	15.13	15.82	16.11	16.80	18.09	20.18	20.87	21.16	21.85	23.14
	6H	15.41	16.04	16.40	17.03	18.33	20.49	21.12	21.48	22.11	23.41
	8H	15.50	16.10	16.50	17.10	18.40	20.57	21.17	21.57	22.17	23.47
	12H	15.55	16.12	16.55	17.11	18.44	20.60	21.17	21.60	22.17	23.49
4H	2H	14.25	14.94	15.24	15.92	17.21	18.18	18.87	19.18	19.85	21.15
	3H	15.62	16.19	16.61	17.20	18.50	19.84	20.41	20.84	21.42	22.73
	4H	16.07	16.59	17.08	17.60	18.92	20.45	20.97	21.45	21.97	23.30
	6H	16.44	16.89	17.46	17.91	19.24	20.88	21.33	21.90	22.36	23.69
	8H	16.56	16.98	17.58	18.00	19.34	21.01	21.43	22.03	22.45	23.79
	12H	16.64	17.02	17.68	18.05	19.40	21.08	21.45	22.11	22.49	23.83
8H	4H	16.38	16.80	17.40	17.82	19.16	20.41	20.83	21.43	21.85	23.19
	6H	16.85	17.19	17.89	18.25	19.59	20.91	21.25	21.95	22.31	23.65
	8H	17.04	17.34	18.09	18.39	19.75	21.10	21.40	22.15	22.44	23.80
	12H	17.18	17.45	18.23	18.49	19.89	21.21	21.48	22.26	22.52	23.92
12H	4H	16.39	16.77	17.43	17.81	19.15	20.36	20.74	21.40	21.77	23.12
	6H	16.91	17.21	17.96	18.26	19.61	20.88	21.19	21.93	22.23	23.59
	8H	17.12	17.39	18.18	18.43	19.83	21.08	21.34	22.13	22.38	23.78