

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: P831931

Luminaire Tested: S123RDIP-S1165D1195U835-4F0-1E-UDD-G1

Issue Date: 05/03/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P831931  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2, G3-1807-864-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 05/03/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDIP-S1165D1195U835-4F0-1E-UDD-G1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC  
UPLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: -

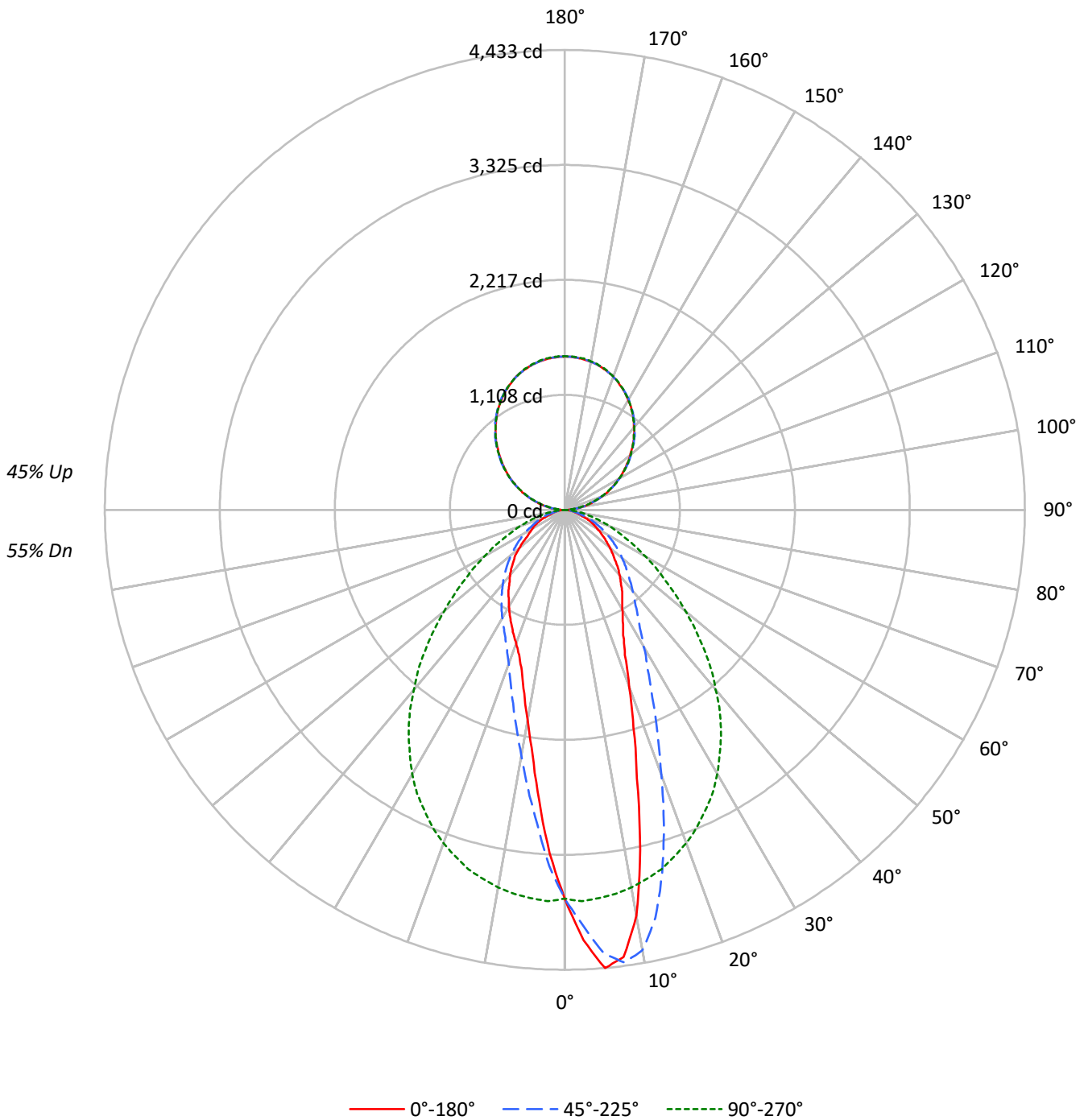
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9070.3 lumens  
Efficiency: N/A  
Efficacy: 123.9 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	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	58	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°	40341	40341	40341	40341	40341
5°	47900	46372	40595	32816	30467
10°	43399	47102	40392	26293	22556
15°	29881	40386	39965	21489	17842
20°	20787	31093	39163	18120	15683
25°	15841	23698	37996	16106	14454
30°	13789	18946	36535	14955	13389
35°	12661	15981	34467	13983	12418
40°	11552	14272	31760	13030	11529
45°	10432	13052	28841	12128	10644
50°	9470	12042	25396	11245	9547
55°	8565	11059	22088	10382	8190
60°	7675	10056	19186	9427	7741
65°	7083	8922	16514	8474	7317
70°	5756	7714	14411	7666	5948
75°	5049	6134	12206	6359	5240
80°	4575	5188	9998	5331	4953
85°	4174	4557	7595	4841	4557

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 30431 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	341.6	3.8
10°-20°	790.5	8.7
20°-30°	906.9	10.0
30°-40°	893.9	9.9
40°-50°	788.3	8.7
50°-60°	606.5	6.7
60°-70°	398.7	4.4
70°-80°	193.6	2.1
80°-90°	52.0	0.6
90°-100°	95.2	1.0
100°-110°	288.2	3.2
110°-120°	490.6	5.4
120°-130°	645.4	7.1
130°-140°	725.5	8.0
140°-150°	713.2	7.9
150°-160°	600.4	6.6
160°-170°	399.7	4.4
170°-180°	140.0	1.5
0°-30°	2039.0	22.5
0°-40°	2933.0	32.3
0°-60°	4327.8	47.7
0°-90°	4972.1	54.8
90°-120°	874.0	9.6
90°-150°	2958.0	32.6
90°-180°	4098.0	45.2
0°-180°	9070.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3748	3748	3748	3748	3748	
5°	4433	4292	3757	3037	2820	405
15°	2681	3624	3586	1928	1601	757
25°	1334	1995	3199	1356	1217	630
35°	964	1216	2623	1064	945	601
45°	685	857	1895	797	699	532
55°	456	589	1177	553	436	409
65°	278	350	648	333	287	273
75°	121	148	294	153	126	131
85°	34	37	62	39	37	36
90°	35	28	1	28	35	19
95°	91	86	69	86	91	91
105°	276	274	261	274	276	293
115°	495	495	494	495	495	490
125°	715	724	723	724	715	639
135°	936	943	938	943	936	720
145°	1138	1143	1138	1143	1138	710
155°	1300	1304	1302	1304	1300	599
165°	1414	1415	1419	1415	1414	399
175°	1470	1471	1476	1471	1470	140
180°	1479	1479	1479	1479	1479	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8
2.5°	4153.4	4140.4	4127.3	4123.5	4119.6	4107.3	4095.1	4067.4	4039.7	4011.3	3982.9
5°	4433.1	4434.6	4436.2	4432.3	4428.5	4412.4	4396.2	4362.4	4328.6	4291.7	4254.9
7.5°	4347.1	4371.6	4396.2	4400.8	4405.4	4417.7	4430.0	4422.3	4414.7	4400.8	4387.0
10°	3970.6	3969.0	3967.5	3995.2	4022.8	4105.0	4187.2	4229.5	4271.8	4309.4	4347.1
12.5°	3355.9	3358.2	3360.6	3451.2	3541.9	3619.5	3697.1	3804.6	3912.2	4028.2	4144.2
15°	2681.4	2719.0	2756.7	2837.3	2918.0	3034.8	3151.6	3296.0	3440.5	3624.1	3807.7
17.5°	2202.0	2218.1	2234.2	2311.8	2389.4	2500.1	2610.7	2774.3	2938.0	3174.6	3411.3
20°	1814.7	1829.3	1843.9	1900.0	1956.1	2062.1	2168.1	2324.1	2480.1	2714.4	2948.7
22.5°	1515.1	1543.5	1571.9	1609.6	1647.2	1724.1	1800.9	1959.9	2119.0	2332.6	2546.2
25°	1333.8	1346.8	1359.9	1392.2	1424.4	1498.2	1571.9	1677.2	1782.5	1995.3	2208.1
27.5°	1210.8	1214.7	1218.5	1242.3	1266.2	1313.8	1361.4	1459.0	1556.6	1731.8	1906.9
30°	1109.4	1116.3	1123.3	1141.7	1160.1	1194.7	1229.3	1298.4	1367.6	1524.3	1681.0
32.5°	1031.1	1034.9	1038.7	1054.1	1069.5	1094.8	1120.2	1174.7	1229.3	1349.1	1469.0
35°	963.5	964.2	965.0	976.5	988.0	1012.6	1037.2	1082.5	1127.9	1216.2	1304.6
37.5°	886.6	892.0	897.4	905.8	914.3	935.8	957.3	994.2	1031.1	1104.1	1177.0
40°	822.1	826.7	831.3	841.3	851.3	868.2	885.1	918.9	952.7	1015.7	1078.7
42.5°	757.5	760.6	763.7	773.7	783.7	804.4	825.2	852.0	878.9	931.2	983.4
45°	685.3	693.0	700.7	711.4	722.2	739.9	757.5	785.2	812.9	857.4	902.0
47.5°	625.4	629.2	633.1	642.3	651.5	673.0	694.5	719.1	743.7	785.2	826.7
50°	565.5	567.0	568.5	577.0	585.4	604.7	623.9	652.3	680.7	719.1	757.5
52.5°	508.6	512.5	516.3	524.8	533.2	546.3	559.3	588.5	617.7	655.4	693.0
55°	456.4	458.7	461.0	467.1	473.3	488.6	504.0	529.4	554.7	589.3	623.9
57.5°	407.2	410.3	413.3	418.0	422.6	436.4	450.2	472.5	494.8	529.4	563.9
60°	356.5	360.3	364.2	369.6	374.9	385.7	396.4	416.4	436.4	467.1	497.9
62.5°	319.6	320.4	321.2	325.8	330.4	338.1	345.7	361.9	378.0	408.7	439.5
65°	278.1	280.4	282.7	285.0	287.3	293.5	299.6	313.5	327.3	350.3	373.4
67.5°	235.1	237.4	239.7	243.6	247.4	252.8	258.1	267.4	276.6	298.1	319.6
70°	182.9	182.9	182.9	189.0	195.1	204.4	213.6	220.5	227.4	245.1	262.8
72.5°	149.1	149.8	150.6	151.4	152.1	157.5	162.9	174.4	185.9	196.7	207.4
75°	121.4	122.2	122.9	123.7	124.5	126.0	127.5	131.4	135.2	147.5	159.8
77.5°	96.8	97.6	98.3	99.1	99.9	101.4	103.0	104.5	106.0	110.6	115.2
80°	73.8	74.5	75.3	76.1	76.8	77.6	78.4	79.9	81.4	83.7	86.0
82.5°	53.8	53.8	53.8	53.8	53.8	55.3	56.9	56.9	56.9	58.4	59.9
85°	33.8	33.8	33.8	34.6	35.3	35.3	35.3	36.1	36.9	36.9	36.9
87.5°	15.4	14.6	13.8	14.6	15.4	15.4	15.4	16.1	16.9	16.9	16.9
90°	34.9	34.3	33.8	33.3	32.8	32.0	31.0	30.0	28.9	27.9	24.5
92.5°	50.0	50.5	51.0	51.5	52.0	51.9	51.1	50.3	49.6	48.8	47.2
95°	90.6	90.6	90.6	90.6	90.6	90.1	89.1	88.0	87.0	86.0	83.9
97.5°	130.1	130.4	130.6	130.9	131.2	130.6	129.4	128.1	126.8	125.5	123.9
100°	176.6	176.1	175.6	175.1	174.5	173.9	173.1	172.3	171.6	170.8	169.5
102.5°	224.2	224.5	224.8	225.0	225.3	225.0	224.2	223.5	222.7	221.9	220.1
105°	276.5	276.0	275.5	275.0	274.5	274.2	274.2	274.2	274.2	274.2	271.9
107.5°	330.0	330.2	330.5	330.7	331.0	330.7	330.0	329.2	328.4	327.7	326.6
110°	384.6	385.1	385.6	386.1	386.6	386.4	385.4	384.3	383.3	382.3	381.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	442.7	442.7	442.7	442.7	442.7	442.0	440.7	439.4	438.2	436.9	436.9
115°	495.0	495.2	495.5	495.7	496.0	496.0	495.7	495.5	495.2	495.0	495.5
117.5°	548.4	549.2	550.0	550.7	551.5	551.9	551.9	551.9	551.9	551.9	552.4
120°	605.3	605.9	606.4	606.9	607.4	607.8	608.1	608.3	608.6	608.8	610.1
122.5°	659.9	660.7	661.5	662.3	663.0	663.8	664.6	665.4	666.1	666.9	667.4
125°	714.6	715.6	716.6	717.7	718.7	719.7	720.8	721.8	722.8	723.9	724.4
127.5°	769.2	770.2	771.2	772.3	773.3	774.6	776.1	777.7	779.2	780.8	781.3
130°	822.6	824.4	826.2	828.0	829.8	831.3	832.3	833.3	834.4	835.4	836.2
132.5°	878.4	879.7	881.0	882.3	883.5	884.8	886.1	887.4	888.7	890.0	890.5
135°	936.5	937.0	937.5	938.0	938.5	939.3	940.3	941.4	942.4	943.4	943.7
137.5°	987.6	988.4	989.1	989.9	990.7	991.7	993.0	994.3	995.6	996.9	996.1
140°	1037.6	1039.4	1041.2	1043.0	1044.8	1045.8	1046.1	1046.3	1046.6	1046.9	1046.6
142.5°	1088.7	1090.0	1091.3	1092.6	1093.8	1094.6	1094.9	1095.1	1095.4	1095.7	1095.1
145°	1137.5	1138.5	1139.5	1140.6	1141.6	1142.3	1142.5	1142.8	1143.0	1143.3	1142.5
147.5°	1181.6	1183.2	1184.7	1186.3	1187.8	1188.6	1188.6	1188.6	1188.6	1188.6	1187.8
150°	1223.5	1225.0	1226.6	1228.1	1229.7	1230.4	1230.4	1230.4	1230.4	1230.4	1229.9
152.5°	1264.1	1265.4	1266.7	1268.0	1269.3	1269.7	1269.2	1268.6	1268.1	1267.6	1267.4
155°	1300.1	1302.0	1303.8	1305.6	1307.4	1307.8	1306.7	1305.7	1304.7	1303.6	1303.4
157.5°	1333.8	1335.4	1336.9	1338.5	1340.0	1340.3	1339.3	1338.2	1337.2	1336.2	1335.9
160°	1366.4	1367.4	1368.4	1369.5	1370.5	1370.4	1369.1	1367.8	1366.5	1365.2	1365.2
162.5°	1390.8	1392.6	1394.4	1396.2	1398.0	1398.3	1397.0	1395.7	1394.4	1393.1	1392.8
165°	1414.0	1415.8	1417.6	1419.4	1421.2	1421.4	1419.8	1418.3	1416.7	1415.2	1415.2
167.5°	1434.9	1436.5	1438.0	1439.6	1441.1	1441.1	1439.6	1438.0	1436.5	1434.9	1434.7
170°	1450.0	1451.8	1453.6	1455.5	1457.3	1457.3	1455.5	1453.6	1451.8	1450.0	1450.0
172.5°	1461.6	1463.5	1465.3	1467.1	1468.9	1469.0	1467.5	1465.9	1464.4	1462.8	1462.8
175°	1469.8	1471.6	1473.4	1475.2	1477.0	1477.1	1475.6	1474.0	1472.5	1470.9	1470.9
177.5°	1474.4	1476.2	1478.0	1479.8	1481.7	1481.8	1480.2	1478.7	1477.1	1475.6	1475.6
180°	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8
2.5°	3979.0	3975.2	3938.3	3901.4	3865.3	3829.2	3802.3	3775.4	3730.1	3684.8	3656.4
5°	4225.7	4196.5	4138.1	4079.7	3992.1	3904.5	3830.8	3757.0	3663.3	3569.5	3491.2
7.5°	4363.2	4339.4	4268.7	4198.0	4082.0	3966.0	3850.7	3735.5	3597.2	3458.9	3340.6
10°	4367.0	4387.0	4328.6	4270.2	4139.6	4009.0	3852.3	3695.5	3509.6	3323.7	3170.8
12.5°	4230.3	4316.3	4304.0	4291.7	4158.8	4025.9	3835.4	3644.8	3416.6	3188.5	2997.1
15°	3974.4	4141.1	4190.3	4239.5	4129.6	4019.8	3803.1	3586.4	3318.3	3050.2	2830.4
17.5°	3644.8	3878.4	4008.2	4138.1	4058.2	3978.3	3740.9	3503.5	3201.5	2899.6	2660.6
20°	3254.5	3560.3	3763.9	3967.5	3938.3	3909.1	3664.0	3418.9	3093.2	2767.4	2508.5
22.5°	2868.8	3191.5	3472.7	3753.9	3783.9	3813.9	3566.5	3319.1	2962.6	2606.1	2342.6
25°	2536.2	2864.2	3199.2	3534.2	3601.8	3669.4	3434.3	3199.2	2829.7	2460.1	2198.1
27.5°	2218.9	2530.8	2899.6	3268.4	3391.3	3514.2	3299.1	3084.0	2699.0	2314.1	2052.9
30°	1959.9	2238.8	2615.3	2991.8	3163.1	3334.4	3137.0	2939.5	2557.7	2175.8	1920.0
32.5°	1718.7	1968.4	2346.4	2724.4	2923.4	3122.4	2951.8	2781.3	2414.0	2046.8	1794.0
35°	1528.2	1751.7	2104.4	2457.0	2679.8	2902.6	2762.8	2623.0	2264.2	1905.4	1666.4
37.5°	1364.5	1552.0	1883.1	2214.2	2450.9	2687.5	2570.7	2454.0	2116.7	1779.4	1553.5
40°	1229.3	1379.9	1688.0	1996.0	2228.1	2460.1	2360.2	2260.3	1958.4	1656.5	1445.2
42.5°	1113.3	1243.1	1519.7	1796.3	2009.1	2221.9	2155.9	2089.8	1816.3	1542.8	1346.8
45°	1011.1	1120.2	1363.7	1607.3	1803.2	1999.1	1946.9	1894.6	1658.8	1422.9	1243.1
47.5°	920.4	1014.2	1231.6	1449.0	1625.0	1800.9	1752.5	1704.1	1508.9	1313.8	1150.1
50°	837.4	917.4	1098.7	1280.0	1438.3	1596.5	1556.6	1516.6	1355.3	1193.9	1052.6
52.5°	759.1	825.2	988.0	1150.9	1278.5	1406.0	1375.3	1344.5	1220.1	1095.6	967.3
55°	684.6	745.3	882.8	1020.3	1129.4	1238.5	1207.8	1177.0	1080.2	983.4	870.5
57.5°	616.9	670.0	781.4	892.8	979.6	1066.4	1051.8	1037.2	956.5	875.9	782.9
60°	545.5	593.1	689.2	785.2	855.1	925.0	908.1	891.2	833.6	776.0	696.1
62.5°	481.7	524.0	600.8	677.6	734.5	791.4	779.1	766.8	723.0	679.2	613.1
65°	414.9	456.4	518.6	580.8	625.4	670.0	659.2	648.4	615.4	582.4	529.4
67.5°	354.2	388.8	442.5	496.3	526.3	556.3	550.1	544.0	518.6	493.3	451.8
70°	292.7	322.7	367.2	411.8	432.6	453.3	455.6	457.9	434.9	411.8	381.1
72.5°	231.3	255.1	296.6	338.1	354.2	370.3	369.6	368.8	355.0	341.1	313.5
75°	177.5	195.1	227.4	259.7	273.5	287.3	290.4	293.5	280.4	267.4	252.0
77.5°	127.5	139.8	164.4	189.0	204.4	219.7	221.3	222.8	216.7	210.5	195.9
80°	89.9	93.7	109.1	124.5	140.6	156.7	159.0	161.3	155.2	149.1	139.8
82.5°	62.2	64.5	69.9	75.3	88.4	101.4	104.5	107.6	104.5	101.4	91.4
85°	37.6	38.4	40.7	43.0	49.2	55.3	58.4	61.5	59.9	58.4	53.0
87.5°	16.9	16.9	17.7	18.4	20.0	21.5	25.4	29.2	26.9	24.6	22.3
90°	21.2	17.8	14.5	11.5	8.9	6.3	3.7	1.2	3.7	6.3	8.9
92.5°	45.7	44.2	42.6	41.1	39.5	38.0	36.4	34.9	36.4	38.0	39.5
95°	81.8	79.8	77.7	75.8	74.0	72.2	70.4	68.6	70.4	72.2	74.0
97.5°	122.4	120.8	119.3	117.9	116.6	115.3	114.0	112.7	114.0	115.3	116.6
100°	168.2	166.9	165.6	164.2	162.7	161.1	159.6	158.0	159.6	161.1	162.7
102.5°	218.3	216.5	214.7	213.4	212.6	211.8	211.1	210.3	211.1	211.8	212.6
105°	269.6	267.2	264.9	263.5	263.0	262.5	261.9	261.4	261.9	262.5	263.0
107.5°	325.6	324.6	323.5	322.9	322.6	322.4	322.1	321.8	322.1	322.4	322.6
110°	381.2	380.7	380.2	379.7	379.2	378.6	378.1	377.6	378.1	378.6	379.2





TEST NUMBER: P831931

CATALOG NUMBER: S123RDIP-S1165D1195U835-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	436.9	436.9	436.9	436.7	436.5	436.2	436.0	435.7	436.0	436.2	436.5
115°	496.0	496.5	497.0	496.9	496.1	495.3	494.6	493.8	494.6	495.3	496.1
117.5°	552.9	553.4	554.0	554.1	553.8	553.6	553.3	553.1	553.3	553.6	553.8
120°	611.4	612.7	614.0	613.9	612.3	610.8	609.2	607.7	609.2	610.8	612.3
122.5°	668.0	668.5	669.0	668.7	667.7	666.7	665.6	664.6	665.6	666.7	667.7
125°	724.9	725.4	725.9	725.8	725.0	724.2	723.5	722.7	723.5	724.2	725.0
127.5°	781.8	782.3	782.8	782.3	780.8	779.2	777.7	776.1	777.7	779.2	780.8
130°	836.9	837.7	838.5	837.8	835.8	833.7	831.6	829.6	831.6	833.7	835.8
132.5°	891.0	891.6	892.1	891.3	889.2	887.2	885.1	883.0	885.1	887.2	889.2
135°	944.0	944.2	944.5	943.8	942.3	940.7	939.2	937.6	939.2	940.7	942.3
137.5°	995.3	994.6	993.8	992.8	991.5	990.2	988.9	987.6	988.9	990.2	991.5
140°	1046.3	1046.1	1045.8	1045.0	1043.8	1042.5	1041.2	1039.9	1041.2	1042.5	1043.8
142.5°	1094.6	1094.1	1093.6	1092.7	1091.4	1090.1	1088.8	1087.5	1088.8	1090.1	1091.4
145°	1141.7	1141.0	1140.2	1139.5	1139.0	1138.5	1138.0	1137.5	1138.0	1138.5	1139.0
147.5°	1187.1	1186.3	1185.5	1184.6	1183.6	1182.5	1181.5	1180.5	1181.5	1182.5	1183.6
150°	1229.4	1228.9	1228.4	1227.9	1227.3	1226.8	1226.3	1225.8	1226.3	1226.8	1227.3
152.5°	1267.1	1266.8	1266.6	1266.1	1265.3	1264.5	1263.7	1263.0	1263.7	1264.5	1265.3
155°	1303.1	1302.9	1302.6	1302.5	1302.5	1302.5	1302.5	1302.5	1302.5	1302.5	1302.5
157.5°	1335.6	1335.4	1335.1	1335.1	1335.4	1335.6	1335.9	1336.2	1335.9	1335.6	1335.4
160°	1365.2	1365.2	1365.2	1365.5	1366.0	1366.5	1367.0	1367.5	1367.0	1366.5	1366.0
162.5°	1392.6	1392.3	1392.1	1392.3	1393.1	1393.9	1394.6	1395.4	1394.6	1393.9	1393.1
165°	1415.2	1415.2	1415.2	1415.6	1416.3	1417.1	1417.9	1418.7	1417.9	1417.1	1416.3
167.5°	1434.4	1434.1	1433.9	1434.3	1435.3	1436.3	1437.4	1438.4	1437.4	1436.3	1435.3
170°	1450.0	1450.0	1450.0	1450.5	1451.6	1452.6	1453.6	1454.7	1453.6	1452.6	1451.6
172.5°	1462.8	1462.8	1462.8	1463.3	1464.4	1465.4	1466.4	1467.5	1466.4	1465.4	1464.4
175°	1470.9	1470.9	1470.9	1471.5	1472.5	1473.5	1474.6	1475.6	1474.6	1473.5	1472.5
177.5°	1475.6	1475.6	1475.6	1476.1	1477.1	1478.2	1479.2	1480.2	1479.2	1478.2	1477.1
180°	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8	3747.8
2.5°	3627.9	3584.1	3540.3	3508.8	3477.3	3438.2	3399.0	3397.4	3395.9	3366.7	3337.5
5°	3412.8	3336.7	3260.7	3186.1	3111.6	3037.1	2962.6	2945.7	2928.8	2903.4	2878.1
7.5°	3222.3	3100.9	2979.5	2884.2	2788.9	2714.4	2639.9	2589.2	2538.5	2499.3	2460.1
10°	3017.9	2867.3	2716.7	2601.5	2486.2	2405.6	2324.9	2266.5	2208.1	2180.4	2152.8
12.5°	2805.8	2642.2	2478.5	2365.6	2252.7	2155.9	2059.1	2006.0	1953.0	1914.6	1876.2
15°	2610.7	2434.7	2258.8	2139.0	2019.1	1928.4	1837.8	1784.8	1731.8	1693.3	1654.9
17.5°	2421.7	2244.2	2066.7	1945.3	1823.9	1741.7	1659.5	1608.1	1556.6	1532.8	1508.9
20°	2249.6	2070.6	1891.6	1777.1	1662.6	1581.9	1501.3	1473.6	1445.9	1423.7	1401.4
22.5°	2079.0	1906.9	1734.8	1625.0	1515.1	1456.7	1398.3	1376.0	1353.7	1336.8	1319.9
25°	1936.1	1764.8	1593.5	1497.4	1401.4	1356.1	1310.7	1296.1	1281.5	1264.6	1247.7
27.5°	1791.7	1628.8	1465.9	1389.1	1312.3	1275.4	1238.5	1220.1	1201.6	1187.8	1174.0
30°	1664.1	1513.6	1363.0	1299.2	1235.4	1203.2	1170.9	1150.9	1130.9	1117.9	1104.8
32.5°	1541.2	1407.5	1273.8	1219.3	1164.7	1133.2	1101.7	1082.5	1063.3	1048.0	1032.6
35°	1427.5	1311.5	1195.5	1145.5	1095.6	1064.1	1032.6	1013.4	994.2	978.8	963.5
37.5°	1327.6	1222.4	1117.1	1070.2	1023.4	995.7	968.1	948.1	928.1	912.0	895.8
40°	1233.9	1140.9	1048.0	1002.6	957.3	927.3	897.4	879.7	862.0	847.4	832.8
42.5°	1150.9	1065.6	980.4	935.8	891.2	862.8	834.4	813.6	792.9	784.4	776.0
45°	1063.3	988.0	912.7	869.7	826.7	796.7	766.8	749.1	731.4	723.7	716.1
47.5°	986.5	916.6	846.7	804.4	762.2	735.3	708.4	694.5	680.7	670.0	659.2
50°	911.2	843.6	776.0	735.3	694.5	671.5	648.4	631.5	614.6	607.0	599.3
52.5°	839.0	777.5	716.1	674.6	633.1	610.8	588.5	573.9	559.3	543.2	527.1
55°	757.5	703.8	650.0	613.1	576.2	553.2	530.1	513.2	496.3	479.4	462.5
57.5°	689.9	636.9	583.9	550.9	517.8	495.6	473.3	454.8	436.4	422.6	408.7
60°	616.2	570.1	524.0	491.7	459.4	437.9	416.4	398.7	381.1	374.2	367.2
62.5°	547.0	504.0	461.0	432.6	404.1	383.4	362.6	351.1	339.6	335.0	330.4
65°	476.3	439.5	402.6	376.5	350.3	332.7	315.0	309.6	304.2	300.4	296.6
67.5°	410.3	378.8	347.3	324.2	301.2	288.9	276.6	270.4	264.3	259.7	255.1
70°	350.3	322.7	295.0	275.1	255.1	243.6	232.0	226.6	221.3	212.8	204.4
72.5°	285.8	264.3	242.8	227.4	212.1	202.1	192.1	181.3	170.6	162.9	155.2
75°	236.6	215.1	193.6	179.0	164.4	152.9	141.4	137.5	133.7	131.4	129.1
77.5°	181.3	162.9	144.4	132.9	121.4	116.0	110.6	108.3	106.0	105.3	104.5
80°	130.6	115.2	99.9	93.7	87.6	86.0	84.5	83.0	81.4	80.7	79.9
82.5°	81.4	73.8	66.1	64.5	63.0	62.2	61.5	60.7	59.9	59.2	58.4
85°	47.6	44.6	41.5	40.7	40.0	39.2	38.4	38.4	38.4	38.4	38.4
87.5°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.2	18.4
90°	11.5	14.5	17.8	21.2	24.5	27.9	28.9	30.0	31.0	32.0	32.8
92.5°	41.1	42.6	44.2	45.7	47.2	48.8	49.6	50.3	51.1	51.9	52.0
95°	75.8	77.7	79.8	81.8	83.9	86.0	87.0	88.0	89.1	90.1	90.6
97.5°	117.9	119.3	120.8	122.4	123.9	125.5	126.8	128.1	129.4	130.6	131.2
100°	164.2	165.6	166.9	168.2	169.5	170.8	171.6	172.3	173.1	173.9	174.5
102.5°	213.4	214.7	216.5	218.3	220.1	221.9	222.7	223.5	224.2	225.0	225.3
105°	263.5	264.9	267.2	269.6	271.9	274.2	274.2	274.2	274.2	274.2	274.5
107.5°	322.9	323.5	324.6	325.6	326.6	327.7	328.4	329.2	330.0	330.7	331.0
110°	379.7	380.2	380.7	381.2	381.7	382.3	383.3	384.3	385.4	386.4	386.6



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CATALOG NUMBER: S123RDIP-S1165D1195U835-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	436.7	436.9	436.9	436.9	436.9	436.9	438.2	439.4	440.7	442.0	442.7
115°	496.9	497.0	496.5	496.0	495.5	495.0	495.2	495.5	495.7	496.0	496.0
117.5°	554.1	554.0	553.4	552.9	552.4	551.9	551.9	551.9	551.9	551.9	551.5
120°	613.9	614.0	612.7	611.4	610.1	608.8	608.6	608.3	608.1	607.8	607.4
122.5°	668.7	669.0	668.5	668.0	667.4	666.9	666.1	665.4	664.6	663.8	663.0
125°	725.8	725.9	725.4	724.9	724.4	723.9	722.8	721.8	720.8	719.7	718.7
127.5°	782.3	782.8	782.3	781.8	781.3	780.8	779.2	777.7	776.1	774.6	773.3
130°	837.8	838.5	837.7	836.9	836.2	835.4	834.4	833.3	832.3	831.3	829.8
132.5°	891.3	892.1	891.6	891.0	890.5	890.0	888.7	887.4	886.1	884.8	883.5
135°	943.8	944.5	944.2	944.0	943.7	943.4	942.4	941.4	940.3	939.3	938.5
137.5°	992.8	993.8	994.6	995.3	996.1	996.9	995.6	994.3	993.0	991.7	990.7
140°	1045.0	1045.8	1046.1	1046.3	1046.6	1046.9	1046.6	1046.3	1046.1	1045.8	1044.8
142.5°	1092.7	1093.6	1094.1	1094.6	1095.1	1095.7	1095.4	1095.1	1094.9	1094.6	1093.8
145°	1139.5	1140.2	1141.0	1141.7	1142.5	1143.3	1143.0	1142.8	1142.5	1142.3	1141.6
147.5°	1184.6	1185.5	1186.3	1187.1	1187.8	1188.6	1188.6	1188.6	1188.6	1188.6	1187.8
150°	1227.9	1228.4	1228.9	1229.4	1229.9	1230.4	1230.4	1230.4	1230.4	1230.4	1229.7
152.5°	1266.1	1266.6	1266.8	1267.1	1267.4	1267.6	1268.1	1268.6	1269.2	1269.7	1269.3
155°	1302.5	1302.6	1302.9	1303.1	1303.4	1303.6	1304.7	1305.7	1306.7	1307.8	1307.4
157.5°	1335.1	1335.1	1335.4	1335.6	1335.9	1336.2	1337.2	1338.2	1339.3	1340.3	1340.0
160°	1365.5	1365.2	1365.2	1365.2	1365.2	1365.2	1366.5	1367.8	1369.1	1370.4	1370.5
162.5°	1392.3	1392.1	1392.3	1392.6	1392.8	1393.1	1394.4	1395.7	1397.0	1398.3	1398.0
165°	1415.6	1415.2	1415.2	1415.2	1415.2	1415.2	1416.7	1418.3	1419.8	1421.4	1421.2
167.5°	1434.3	1433.9	1434.1	1434.4	1434.7	1434.9	1436.5	1438.0	1439.6	1441.1	1441.1
170°	1450.5	1450.0	1450.0	1450.0	1450.0	1450.0	1451.8	1453.6	1455.5	1457.3	1457.3
172.5°	1463.3	1462.8	1462.8	1462.8	1462.8	1462.8	1464.4	1465.9	1467.5	1469.0	1468.9
175°	1471.5	1470.9	1470.9	1470.9	1470.9	1470.9	1472.5	1474.0	1475.6	1477.1	1477.0
177.5°	1476.1	1475.6	1475.6	1475.6	1475.6	1475.6	1477.1	1478.7	1480.2	1481.8	1481.7
180°	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1	1479.1



TEST NUMBER: P831931

CATALOG NUMBER: S123RDIP-S1165D1195U835-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	3747.8	3747.8	3747.8	3747.8
2.5°	3329.8	3322.1	3319.1	3316.0
5°	2854.2	2830.4	2825.0	2819.7
7.5°	2450.1	2440.1	2407.1	2374.1
10°	2122.1	2091.3	2077.5	2063.7
12.5°	1847.8	1819.3	1814.7	1810.1
15°	1634.9	1615.0	1608.1	1601.1
17.5°	1495.1	1481.3	1472.8	1464.4
20°	1391.4	1381.4	1375.3	1369.1
22.5°	1312.3	1304.6	1300.0	1295.4
25°	1236.2	1224.7	1220.8	1217.0
27.5°	1164.0	1154.0	1150.1	1146.3
30°	1096.4	1087.9	1082.5	1077.2
32.5°	1022.6	1012.6	1009.5	1006.5
35°	957.3	951.2	948.1	945.0
37.5°	888.2	880.5	875.9	871.3
40°	829.0	825.2	822.9	820.5
42.5°	769.1	762.2	761.4	760.6
45°	709.1	702.2	700.7	699.2
47.5°	653.1	646.9	646.1	645.4
50°	590.8	582.4	576.2	570.1
52.5°	519.4	511.7	506.3	500.9
55°	454.1	445.6	441.0	436.4
57.5°	404.9	401.1	398.7	396.4
60°	364.9	362.6	361.1	359.6
62.5°	328.1	325.8	325.8	325.8
65°	294.3	292.0	289.6	287.3
67.5°	250.5	245.9	245.1	244.3
70°	197.5	190.5	189.8	189.0
72.5°	154.4	153.7	152.1	150.6
75°	127.5	126.0	126.0	126.0
77.5°	103.0	101.4	101.4	101.4
80°	79.1	78.4	79.1	79.9
82.5°	58.4	58.4	57.6	56.9
85°	37.6	36.9	36.9	36.9
87.5°	18.4	18.4	18.4	18.4
90°	33.3	33.8	34.3	34.9
92.5°	51.5	51.0	50.5	50.0
95°	90.6	90.6	90.6	90.6
97.5°	130.9	130.6	130.4	130.1
100°	175.1	175.6	176.1	176.6
102.5°	225.0	224.8	224.5	224.2
105°	275.0	275.5	276.0	276.5
107.5°	330.7	330.5	330.2	330.0
110°	386.1	385.6	385.1	384.6



TEST NUMBER: P831931

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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	442.7	442.7	442.7	442.7
115°	495.7	495.5	495.2	495.0
117.5°	550.7	550.0	549.2	548.4
120°	606.9	606.4	605.9	605.3
122.5°	662.3	661.5	660.7	659.9
125°	717.7	716.6	715.6	714.6
127.5°	772.3	771.2	770.2	769.2
130°	828.0	826.2	824.4	822.6
132.5°	882.3	881.0	879.7	878.4
135°	938.0	937.5	937.0	936.5
137.5°	989.9	989.1	988.4	987.6
140°	1043.0	1041.2	1039.4	1037.6
142.5°	1092.6	1091.3	1090.0	1088.7
145°	1140.6	1139.5	1138.5	1137.5
147.5°	1186.3	1184.7	1183.2	1181.6
150°	1228.1	1226.6	1225.0	1223.5
152.5°	1268.0	1266.7	1265.4	1264.1
155°	1305.6	1303.8	1302.0	1300.1
157.5°	1338.5	1336.9	1335.4	1333.8
160°	1369.5	1368.4	1367.4	1366.4
162.5°	1396.2	1394.4	1392.6	1390.8
165°	1419.4	1417.6	1415.8	1414.0
167.5°	1439.6	1438.0	1436.5	1434.9
170°	1455.5	1453.6	1451.8	1450.0
172.5°	1467.1	1465.3	1463.5	1461.6
175°	1475.2	1473.4	1471.6	1469.8
177.5°	1479.8	1478.0	1476.2	1474.4
180°	1479.1	1479.1	1479.1	1479.1



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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	14.03	14.88	14.96	15.82	17.02	18.70	19.54	19.62	20.48	21.69
	3H	15.26	16.01	16.19	16.96	18.19	20.20	20.95	21.14	21.90	23.13
	4H	15.64	16.35	16.59	17.30	18.54	20.69	21.40	21.64	22.35	23.59
	6H	15.92	16.58	16.88	17.53	18.78	21.00	21.66	21.97	22.61	23.86
	8H	16.01	16.63	16.98	17.61	18.85	21.08	21.70	22.05	22.68	23.93
	12H	16.06	16.65	17.04	17.62	18.89	21.11	21.71	22.09	22.67	23.94
4H	2H	14.76	15.47	15.72	16.42	17.66	18.69	19.41	19.65	20.36	21.60
	3H	16.13	16.72	17.10	17.70	18.95	20.35	20.95	21.32	21.93	23.18
	4H	16.59	17.13	17.56	18.10	19.38	20.96	21.50	21.94	22.48	23.75
	6H	16.95	17.42	17.94	18.42	19.69	21.40	21.86	22.39	22.86	24.14
	8H	17.08	17.51	18.07	18.50	19.79	21.53	21.96	22.52	22.96	24.24
	12H	17.16	17.55	18.16	18.55	19.85	21.59	21.98	22.60	22.99	24.29
8H	4H	16.90	17.33	17.89	18.32	19.61	20.93	21.36	21.92	22.35	23.64
	6H	17.37	17.72	18.38	18.75	20.04	21.43	21.78	22.44	22.82	24.10
	8H	17.56	17.87	18.58	18.89	20.20	21.61	21.93	22.64	22.95	24.25
	12H	17.70	17.98	18.72	18.99	20.34	21.73	22.01	22.75	23.02	24.37
12H	4H	16.91	17.30	17.92	18.31	19.60	20.88	21.27	21.89	22.28	23.57
	6H	17.42	17.74	18.45	18.76	20.06	21.40	21.72	22.42	22.74	24.04
	8H	17.64	17.92	18.67	18.93	20.28	21.59	21.87	22.62	22.88	24.24