

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: P831930

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

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831930
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-S1165D1195U835-4F0-1E-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

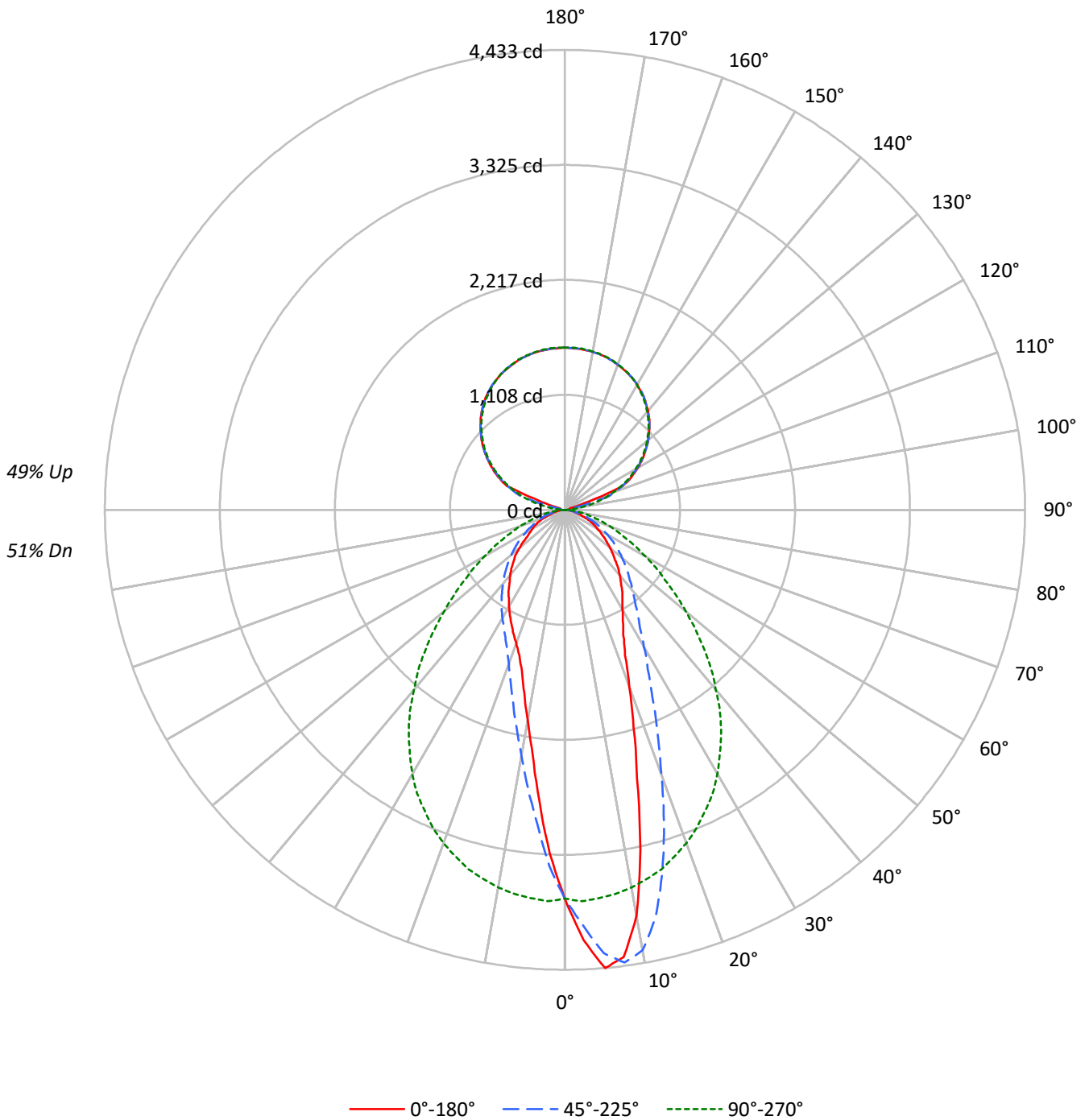
Lumens per Lamp: N/A
Luminaire Lumens: 9739.3 lumens
Efficiency: N/A
Efficacy: 133.0 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

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

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	3.5
10°-20°	790.5	8.1
20°-30°	906.9	9.3
30°-40°	893.9	9.2
40°-50°	788.3	8.1
50°-60°	606.5	6.2
60°-70°	398.7	4.1
70°-80°	193.6	2.0
80°-90°	51.9	0.5
90°-100°	55.1	0.6
100°-110°	266.5	2.7
110°-120°	653.3	6.7
120°-130°	829.4	8.5
130°-140°	886.0	9.1
140°-150°	828.5	8.5
150°-160°	668.3	6.9
160°-170°	431.3	4.4
170°-180°	148.6	1.5
0°-30°	2039.0	20.9
0°-40°	2933.0	30.1
0°-60°	4327.8	44.4
0°-90°	4972.1	51.1
90°-120°	975.0	10.0
90°-150°	3518.9	36.1
90°-180°	4767.0	48.9
0°-180°	9739.3	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	17
95°	44	36	71	36	44	37
105°	51	254	346	254	51	107
115°	683	667	650	667	683	643
125°	934	929	916	929	934	835
135°	1151	1151	1140	1151	1151	888
145°	1328	1326	1315	1326	1328	829
155°	1446	1448	1449	1448	1446	667
165°	1524	1523	1528	1523	1524	431
175°	1558	1559	1564	1559	1558	148
180°	1564	1564	1564	1564	1564	



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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	29.9	28.9	27.9	24.5
92.5°	39.5	39.2	39.0	38.7	38.5	37.4	35.6	33.8	32.0	30.2	27.9
95°	44.1	44.1	44.1	44.1	44.1	43.2	41.4	39.6	37.8	36.0	33.2
97.5°	47.6	47.4	47.1	46.9	46.6	45.4	43.4	41.3	39.2	37.2	50.3
100°	48.8	48.5	48.3	48.0	47.8	46.6	44.5	42.5	40.4	38.3	78.6
102.5°	50.0	49.4	48.9	48.4	47.9	51.9	60.4	68.9	77.5	86.0	130.9
105°	51.1	50.6	50.1	49.6	49.1	71.6	117.3	163.0	208.7	254.4	277.7
107.5°	120.8	154.6	188.5	222.3	256.1	292.9	332.7	372.4	412.2	451.9	448.1
110°	319.5	356.4	393.3	430.3	467.2	489.9	498.4	506.9	515.5	524.0	521.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	605.3	605.8	606.3	606.9	607.4	606.5	604.1	601.8	599.5	597.2	594.3
115°	683.1	682.1	681.1	680.0	679.0	677.2	674.6	672.0	669.5	666.9	664.6
117.5°	745.9	745.6	745.4	745.1	744.8	743.7	741.6	739.6	737.5	735.4	734.1
120°	810.9	810.9	810.9	810.9	810.9	809.9	807.8	805.8	803.7	801.6	800.9
122.5°	874.8	874.6	874.3	874.1	873.8	873.0	871.7	870.5	869.2	867.9	866.8
125°	934.1	933.6	933.1	932.5	932.0	931.5	931.0	930.5	930.0	929.4	928.4
127.5°	992.2	992.7	993.2	993.7	994.3	994.1	993.3	992.6	991.8	991.0	989.7
130°	1048.0	1048.5	1049.0	1049.5	1050.0	1049.8	1048.7	1047.7	1046.7	1045.6	1044.6
132.5°	1099.1	1099.8	1100.6	1101.4	1102.2	1102.0	1101.0	1100.0	1098.9	1097.9	1097.1
135°	1151.4	1152.1	1152.9	1153.7	1154.5	1154.5	1153.7	1152.9	1152.1	1151.4	1150.3
137.5°	1201.3	1201.8	1202.3	1202.9	1203.4	1203.0	1201.7	1200.4	1199.1	1197.8	1197.3
140°	1245.5	1246.0	1246.5	1247.0	1247.5	1247.3	1246.2	1245.2	1244.2	1243.1	1242.4
142.5°	1286.1	1286.9	1287.7	1288.4	1289.2	1289.2	1288.4	1287.7	1286.9	1286.1	1285.3
145°	1327.9	1327.9	1327.9	1327.9	1327.9	1327.7	1327.2	1326.7	1326.1	1325.6	1325.1
147.5°	1358.2	1359.4	1360.7	1362.0	1363.3	1363.7	1363.2	1362.7	1362.2	1361.6	1361.1
150°	1393.0	1393.8	1394.6	1395.3	1396.1	1396.2	1395.7	1395.2	1394.7	1394.2	1393.7
152.5°	1420.9	1422.2	1423.5	1424.8	1426.1	1426.2	1425.2	1424.1	1423.1	1422.1	1421.8
155°	1446.5	1448.0	1449.6	1451.1	1452.6	1452.8	1451.5	1450.2	1448.9	1447.6	1447.4
157.5°	1468.5	1470.6	1472.7	1474.7	1476.8	1477.0	1475.5	1473.9	1472.4	1470.9	1471.1
160°	1489.4	1491.2	1493.1	1494.9	1496.7	1496.8	1495.2	1493.7	1492.2	1490.6	1490.9
162.5°	1509.2	1510.7	1512.3	1513.8	1515.4	1515.3	1513.5	1511.6	1509.8	1508.0	1508.3
165°	1524.3	1526.1	1527.9	1529.7	1531.5	1531.4	1529.3	1527.3	1525.2	1523.1	1523.4
167.5°	1535.9	1538.0	1540.0	1542.1	1544.2	1544.2	1542.1	1540.0	1538.0	1535.9	1535.9
170°	1546.4	1548.4	1550.5	1552.6	1554.6	1554.6	1552.6	1550.5	1548.4	1546.4	1546.4
172.5°	1552.2	1554.5	1556.8	1559.1	1561.5	1561.6	1559.5	1557.5	1555.4	1553.3	1553.1
175°	1558.0	1560.1	1562.1	1564.2	1566.2	1566.4	1564.6	1562.8	1561.0	1559.1	1558.9
177.5°	1559.1	1561.7	1564.3	1566.9	1569.5	1569.7	1567.7	1565.6	1563.5	1561.5	1561.2
180°	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8



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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°	25.6	23.2	20.9	20.5	22.1	23.6	25.2	26.7	25.2	23.6	22.1
95°	30.3	27.5	24.7	28.5	39.1	49.7	60.3	70.9	60.3	49.7	39.1
97.5°	63.5	76.7	89.8	100.0	107.3	114.5	121.7	129.0	121.7	114.5	107.3
100°	118.9	159.2	199.4	217.0	211.8	206.7	201.5	196.3	201.5	206.7	211.8
102.5°	175.8	220.7	265.7	286.5	283.1	279.7	276.4	273.0	276.4	279.7	283.1
105°	300.9	324.1	347.4	357.6	354.7	351.9	349.1	346.2	349.1	351.9	354.7
107.5°	444.2	440.3	436.5	433.4	431.0	428.7	426.4	424.1	426.4	428.7	431.0
110°	518.3	515.5	512.6	510.2	508.1	506.0	504.0	501.9	504.0	506.0	508.1



TEST NUMBER: P831930

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	591.5	588.7	585.8	583.5	581.7	579.9	578.1	576.3	578.1	579.9	581.7
115°	662.2	659.9	657.6	655.6	654.1	652.5	651.0	649.5	651.0	652.5	654.1
117.5°	732.8	731.6	730.3	728.7	726.9	725.1	723.3	721.5	723.3	725.1	726.9
120°	800.1	799.3	798.6	797.0	794.7	792.4	790.0	787.7	790.0	792.4	794.7
122.5°	865.8	864.8	863.7	862.3	860.5	858.7	856.9	855.1	856.9	858.7	860.5
125°	927.4	926.3	925.3	923.8	921.7	919.6	917.6	915.5	917.6	919.6	921.7
127.5°	988.4	987.2	985.9	984.2	982.1	980.1	978.0	975.9	978.0	980.1	982.1
130°	1043.6	1042.5	1041.5	1039.9	1037.9	1035.8	1033.8	1031.7	1033.8	1035.8	1037.9
132.5°	1096.4	1095.6	1094.8	1093.4	1091.3	1089.3	1087.2	1085.1	1087.2	1089.3	1091.3
135°	1149.3	1148.3	1147.2	1145.9	1144.4	1142.8	1141.3	1139.7	1141.3	1142.8	1144.4
137.5°	1196.8	1196.3	1195.8	1194.5	1192.4	1190.3	1188.3	1186.2	1188.3	1190.3	1192.4
140°	1241.6	1240.8	1240.0	1238.9	1237.3	1235.8	1234.2	1232.7	1234.2	1235.8	1237.3
142.5°	1284.6	1283.8	1283.0	1281.9	1280.3	1278.8	1277.2	1275.7	1277.2	1278.8	1280.3
145°	1324.6	1324.1	1323.6	1322.4	1320.6	1318.8	1317.0	1315.2	1317.0	1318.8	1320.6
147.5°	1360.6	1360.1	1359.6	1358.7	1357.4	1356.1	1354.8	1353.5	1354.8	1356.1	1357.4
150°	1393.1	1392.6	1392.1	1391.5	1390.7	1389.9	1389.1	1388.4	1389.1	1389.9	1390.7
152.5°	1421.5	1421.3	1421.0	1420.8	1420.5	1420.2	1420.0	1419.7	1420.0	1420.2	1420.5
155°	1447.1	1446.8	1446.6	1446.7	1447.2	1447.7	1448.3	1448.8	1448.3	1447.7	1447.2
157.5°	1471.4	1471.6	1471.9	1472.0	1472.0	1472.0	1472.0	1472.0	1472.0	1472.0	1472.0
160°	1491.1	1491.4	1491.6	1491.9	1492.2	1492.4	1492.7	1492.9	1492.7	1492.4	1492.2
162.5°	1508.5	1508.8	1509.1	1509.6	1510.4	1511.1	1511.9	1512.7	1511.9	1511.1	1510.4
165°	1523.6	1523.9	1524.2	1524.7	1525.5	1526.2	1527.0	1527.8	1527.0	1526.2	1525.5
167.5°	1535.9	1535.9	1535.9	1536.4	1537.5	1538.5	1539.5	1540.6	1539.5	1538.5	1537.5
170°	1546.4	1546.4	1546.4	1546.9	1547.9	1549.0	1550.0	1551.0	1550.0	1549.0	1547.9
172.5°	1552.8	1552.6	1552.3	1552.8	1554.1	1555.4	1556.7	1558.0	1556.7	1555.4	1554.1
175°	1558.6	1558.4	1558.1	1558.6	1559.9	1561.2	1562.5	1563.8	1562.5	1561.2	1559.9
177.5°	1561.0	1560.7	1560.4	1561.0	1562.2	1563.5	1564.8	1566.1	1564.8	1563.5	1562.2
180°	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8

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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	29.9	31.0	32.0	32.8
92.5°	20.5	20.9	23.2	25.6	27.9	30.2	32.0	33.8	35.6	37.4	38.5
95°	28.5	24.7	27.5	30.3	33.2	36.0	37.8	39.6	41.4	43.2	44.1
97.5°	100.0	89.8	76.7	63.5	50.3	37.2	39.2	41.3	43.4	45.4	46.6
100°	217.0	199.4	159.2	118.9	78.6	38.3	40.4	42.5	44.5	46.6	47.8
102.5°	286.5	265.7	220.7	175.8	130.9	86.0	77.5	68.9	60.4	51.9	47.9
105°	357.6	347.4	324.1	300.9	277.7	254.4	208.7	163.0	117.3	71.6	49.1
107.5°	433.4	436.5	440.3	444.2	448.1	451.9	412.2	372.4	332.7	292.9	256.1
110°	510.2	512.6	515.5	518.3	521.1	524.0	515.5	506.9	498.4	489.9	467.2



TEST NUMBER: P831930

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

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	583.5	585.8	588.7	591.5	594.3	597.2	599.5	601.8	604.1	606.5	607.4
115°	655.6	657.6	659.9	662.2	664.6	666.9	669.5	672.0	674.6	677.2	679.0
117.5°	728.7	730.3	731.6	732.8	734.1	735.4	737.5	739.6	741.6	743.7	744.8
120°	797.0	798.6	799.3	800.1	800.9	801.6	803.7	805.8	807.8	809.9	810.9
122.5°	862.3	863.7	864.8	865.8	866.8	867.9	869.2	870.5	871.7	873.0	873.8
125°	923.8	925.3	926.3	927.4	928.4	929.4	930.0	930.5	931.0	931.5	932.0
127.5°	984.2	985.9	987.2	988.4	989.7	991.0	991.8	992.6	993.3	994.1	994.3
130°	1039.9	1041.5	1042.5	1043.6	1044.6	1045.6	1046.7	1047.7	1048.7	1049.8	1050.0
132.5°	1093.4	1094.8	1095.6	1096.4	1097.1	1097.9	1098.9	1100.0	1101.0	1102.0	1102.2
135°	1145.9	1147.2	1148.3	1149.3	1150.3	1151.4	1152.1	1152.9	1153.7	1154.5	1154.5
137.5°	1194.5	1195.8	1196.3	1196.8	1197.3	1197.8	1199.1	1200.4	1201.7	1203.0	1203.4
140°	1238.9	1240.0	1240.8	1241.6	1242.4	1243.1	1244.2	1245.2	1246.2	1247.3	1247.5
142.5°	1281.9	1283.0	1283.8	1284.6	1285.3	1286.1	1286.9	1287.7	1288.4	1289.2	1289.2
145°	1322.4	1323.6	1324.1	1324.6	1325.1	1325.6	1326.1	1326.7	1327.2	1327.7	1327.9
147.5°	1358.7	1359.6	1360.1	1360.6	1361.1	1361.6	1362.2	1362.7	1363.2	1363.7	1363.3
150°	1391.5	1392.1	1392.6	1393.1	1393.7	1394.2	1394.7	1395.2	1395.7	1396.2	1396.1
152.5°	1420.8	1421.0	1421.3	1421.5	1421.8	1422.1	1423.1	1424.1	1425.2	1426.2	1426.1
155°	1446.7	1446.6	1446.8	1447.1	1447.4	1447.6	1448.9	1450.2	1451.5	1452.8	1452.6
157.5°	1472.0	1471.9	1471.6	1471.4	1471.1	1470.9	1472.4	1473.9	1475.5	1477.0	1476.8
160°	1491.9	1491.6	1491.4	1491.1	1490.9	1490.6	1492.2	1493.7	1495.2	1496.8	1496.7
162.5°	1509.6	1509.1	1508.8	1508.5	1508.3	1508.0	1509.8	1511.6	1513.5	1515.3	1515.4
165°	1524.7	1524.2	1523.9	1523.6	1523.4	1523.1	1525.2	1527.3	1529.3	1531.4	1531.5
167.5°	1536.4	1535.9	1535.9	1535.9	1535.9	1535.9	1538.0	1540.0	1542.1	1544.2	1544.2
170°	1546.9	1546.4	1546.4	1546.4	1546.4	1546.4	1548.4	1550.5	1552.6	1554.6	1554.6
172.5°	1552.8	1552.3	1552.6	1552.8	1553.1	1553.3	1555.4	1557.5	1559.5	1561.6	1561.5
175°	1558.6	1558.1	1558.4	1558.6	1558.9	1559.1	1561.0	1562.8	1564.6	1566.4	1566.2
177.5°	1561.0	1560.4	1560.7	1561.0	1561.2	1561.5	1563.5	1565.6	1567.7	1569.7	1569.5
180°	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8



TEST NUMBER: P831930

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

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°	38.7	39.0	39.2	39.5
95°	44.1	44.1	44.1	44.1
97.5°	46.9	47.1	47.4	47.6
100°	48.0	48.3	48.5	48.8
102.5°	48.4	48.9	49.4	50.0
105°	49.6	50.1	50.6	51.1
107.5°	222.3	188.5	154.6	120.8
110°	430.3	393.3	356.4	319.5



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	606.9	606.3	605.8	605.3
115°	680.0	681.1	682.1	683.1
117.5°	745.1	745.4	745.6	745.9
120°	810.9	810.9	810.9	810.9
122.5°	874.1	874.3	874.6	874.8
125°	932.5	933.1	933.6	934.1
127.5°	993.7	993.2	992.7	992.2
130°	1049.5	1049.0	1048.5	1048.0
132.5°	1101.4	1100.6	1099.8	1099.1
135°	1153.7	1152.9	1152.1	1151.4
137.5°	1202.9	1202.3	1201.8	1201.3
140°	1247.0	1246.5	1246.0	1245.5
142.5°	1288.4	1287.7	1286.9	1286.1
145°	1327.9	1327.9	1327.9	1327.9
147.5°	1362.0	1360.7	1359.4	1358.2
150°	1395.3	1394.6	1393.8	1393.0
152.5°	1424.8	1423.5	1422.2	1420.9
155°	1451.1	1449.6	1448.0	1446.5
157.5°	1474.7	1472.7	1470.6	1468.5
160°	1494.9	1493.1	1491.2	1489.4
162.5°	1513.8	1512.3	1510.7	1509.2
165°	1529.7	1527.9	1526.1	1524.3
167.5°	1542.1	1540.0	1538.0	1535.9
170°	1552.6	1550.5	1548.4	1546.4
172.5°	1559.1	1556.8	1554.5	1552.2
175°	1564.2	1562.1	1560.1	1558.0
177.5°	1566.9	1564.3	1561.7	1559.1
180°	1563.8	1563.8	1563.8	1563.8



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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	13.69	14.51	14.65	15.47	16.73	18.35	19.17	19.31	20.14	21.40
	3H	14.91	15.64	15.88	16.62	17.90	19.85	20.58	20.82	21.56	22.84
	4H	15.29	15.98	16.28	16.96	18.25	20.34	21.03	21.33	22.01	23.30
	6H	15.57	16.21	16.57	17.19	18.50	20.65	21.29	21.65	22.27	23.58
	8H	15.66	16.26	16.66	17.26	18.56	20.73	21.33	21.73	22.33	23.64
	12H	15.71	16.28	16.72	17.28	18.60	20.76	21.34	21.77	22.33	23.65
4H	2H	14.41	15.10	15.40	16.08	17.37	18.35	19.04	19.34	20.02	21.31
	3H	15.78	16.35	16.78	17.36	18.67	20.00	20.58	21.00	21.59	22.89
	4H	16.23	16.76	17.24	17.76	19.09	20.61	21.13	21.62	22.14	23.46
	6H	16.60	17.05	17.62	18.08	19.40	21.05	21.50	22.07	22.52	23.85
	8H	16.73	17.15	17.75	18.16	19.50	21.18	21.60	22.20	22.62	23.96
	12H	16.80	17.18	17.84	18.21	19.56	21.24	21.62	22.28	22.65	24.00
8H	4H	16.55	16.97	17.57	17.98	19.33	20.58	21.00	21.60	22.01	23.35
	6H	17.01	17.36	18.05	18.42	19.76	21.07	21.42	22.12	22.48	23.82
	8H	17.20	17.51	18.26	18.55	19.91	21.26	21.56	22.31	22.61	23.97
	12H	17.34	17.61	18.40	18.65	20.05	21.37	21.64	22.43	22.68	24.08
12H	4H	16.56	16.94	17.59	17.97	19.31	20.53	20.90	21.56	21.94	23.28
	6H	17.07	17.37	18.12	18.42	19.78	21.05	21.35	22.10	22.40	23.75
	8H	17.29	17.55	18.34	18.59	20.00	21.24	21.51	22.29	22.55	23.95