

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: P831938

Luminaire Tested: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

Issue Date: 05/03/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P831938  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2, G3-1807-864-17)  
Test Lab: INNOVATION CENTER  
Issue Date: 05/03/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC  
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: -

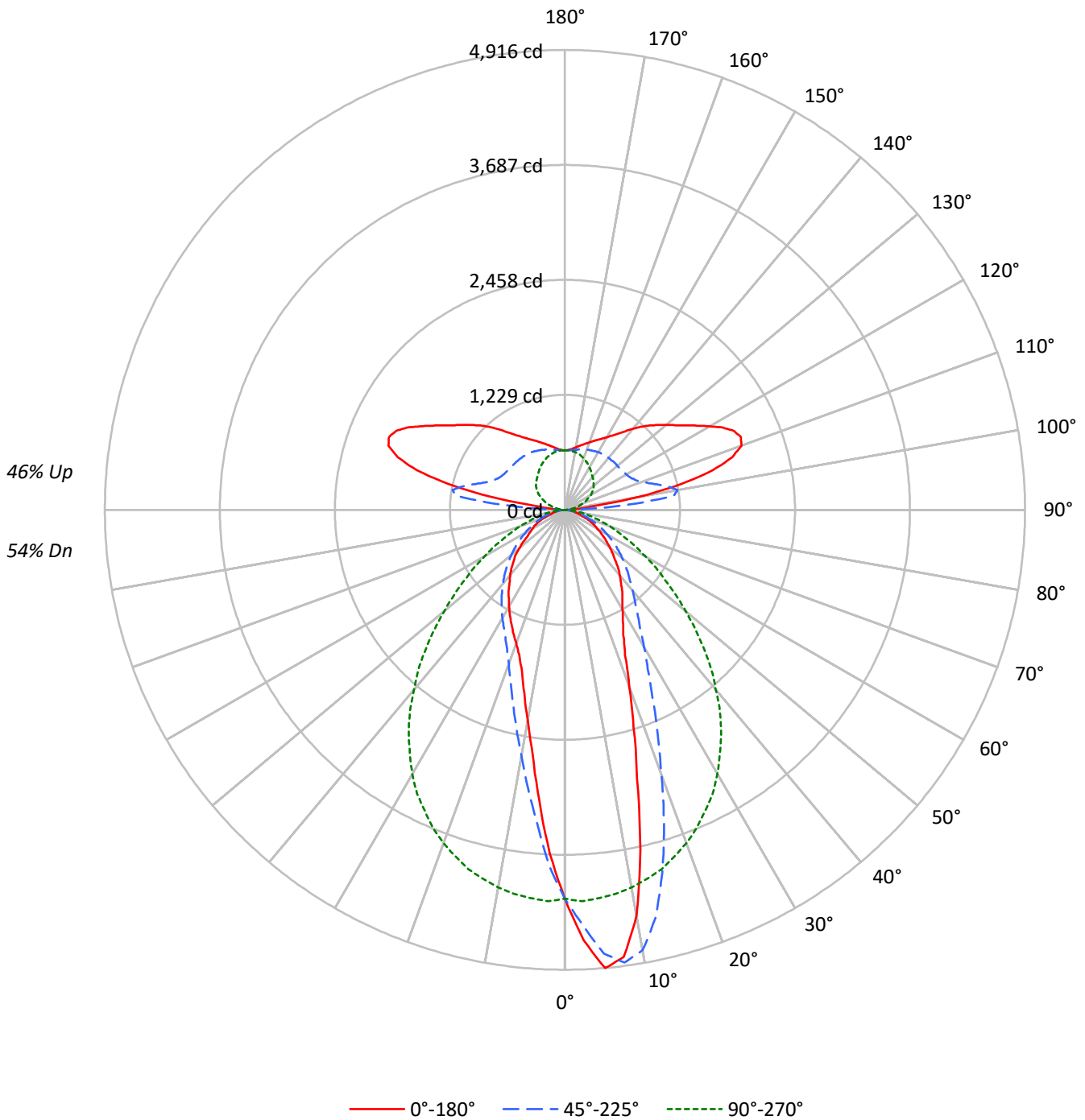
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10302.1 lumens  
Efficiency: N/A  
Efficacy: 140.7 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	100	100	100	100	85	85	85	72	72	72	59	59	59	54	54	54	54	
1	99	95	92	89	92	89	86	83	76	74	72	64	63	61	54	53	52	47	47	47	47	
2	91	84	79	74	84	79	74	69	68	64	61	58	55	53	48	47	45	41	41	41	41	
3	84	75	68	63	78	70	64	59	61	56	52	52	49	46	44	41	39	36	36	36	36	
4	77	67	60	54	72	63	56	51	55	50	46	47	43	40	40	37	35	31	31	31	31	
5	71	60	53	47	66	57	50	45	49	44	40	43	39	36	36	34	31	28	28	28	28	
6	66	55	47	42	61	51	45	40	45	40	36	39	35	32	34	30	28	25	25	25	25	
7	62	50	42	37	57	47	40	35	41	36	32	36	32	29	31	28	25	23	23	23	23	
8	57	46	38	33	53	43	36	32	38	33	29	33	29	26	29	26	23	21	21	21	21	
9	54	42	35	30	50	40	33	29	35	30	26	31	27	24	27	24	21	19	19	19	19	
10	50	39	32	27	47	37	30	26	33	28	24	29	25	22	25	22	20	18	18	18	18	

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

	0°	45°	90°	135°	180°
0°	44738	44738	44738	44738	44738
5°	53121	51427	45019	36392	33787
10°	48129	52235	44794	29159	25014
15°	33137	44787	44323	23832	19788
20°	23053	34482	43432	20096	17392
25°	17568	26281	42137	17861	16029
30°	15293	21011	40518	16584	14848
35°	14040	17724	38224	15507	13771
40°	12811	15827	35222	14450	12787
45°	11569	14475	31984	13451	11804
50°	10501	13355	28165	12471	10587
55°	9498	12264	24496	11513	9083
60°	8510	11151	21278	10456	8585
65°	7855	9895	18315	9396	8117
70°	6382	8554	15981	8500	6596
75°	5598	6804	13537	7053	5810
80°	5071	5759	11089	5914	5492
85°	4631	5051	8423	5372	5051

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 33748 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	378.8	3.7
10°-20°	876.6	8.5
20°-30°	1005.8	9.8
30°-40°	991.4	9.6
40°-50°	874.3	8.5
50°-60°	672.6	6.5
60°-70°	442.2	4.3
70°-80°	214.8	2.1
80°-90°	57.7	0.6
90°-100°	345.4	3.4
100°-110°	1011.2	9.8
110°-120°	987.5	9.6
120°-130°	786.4	7.6
130°-140°	620.5	6.0
140°-150°	462.9	4.5
150°-160°	322.7	3.1
160°-170°	189.6	1.8
170°-180°	61.7	0.6
0°-30°	2261.3	21.9
0°-40°	3252.7	31.6
0°-60°	4799.5	46.6
0°-90°	5514.1	53.5
90°-120°	2344.1	22.8
90°-150°	4213.9	40.9
90°-180°	4788.0	46.5
0°-180°	10302.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	4156	4156	4156	4156	4156	
5°	4916	4760	4166	3368	3127	449
15°	2974	4019	3977	2139	1776	839
25°	1479	2213	3548	1504	1350	699
35°	1068	1349	2909	1180	1048	666
45°	760	951	2101	884	775	590
55°	506	654	1305	614	484	454
65°	308	388	719	369	319	302
75°	135	164	326	170	140	145
85°	38	41	68	44	41	40
90°	37	32	3	32	37	22
95°	150	764	44	764	150	243
105°	1639	1036	150	1036	1639	1635
115°	1993	792	264	792	1993	1944
125°	1572	740	367	740	1572	1423
135°	1274	729	430	729	1274	988
145°	996	720	491	720	996	632
155°	826	697	558	697	826	385
165°	720	667	610	667	720	206
175°	648	640	635	640	648	63
180°	636	636	636	636	636	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3
2.5°	4606.2	4591.7	4577.2	4572.9	4568.7	4555.0	4541.4	4510.7	4480.1	4448.5	4417.0
5°	4916.3	4918.0	4919.7	4915.5	4911.2	4893.3	4875.4	4837.9	4800.4	4759.5	4718.6
7.5°	4820.9	4848.1	4875.4	4880.5	4885.6	4899.3	4912.9	4904.4	4895.9	4880.5	4865.2
10°	4403.4	4401.7	4400.0	4430.6	4461.3	4552.5	4643.7	4690.5	4737.4	4779.1	4820.9
12.5°	3721.7	3724.3	3726.9	3827.4	3927.9	4014.0	4100.1	4219.3	4338.6	4467.3	4595.9
15°	2973.6	3015.4	3057.1	3146.6	3236.1	3365.6	3495.1	3655.3	3815.5	4019.1	4222.7
17.5°	2442.0	2459.9	2477.8	2563.8	2649.9	2772.6	2895.3	3076.7	3258.2	3520.7	3783.1
20°	2012.5	2028.7	2044.9	2107.1	2169.3	2286.9	2404.5	2577.4	2750.4	3010.3	3270.2
22.5°	1680.2	1711.8	1743.3	1785.0	1826.8	1912.0	1997.2	2173.6	2349.9	2586.8	2823.7
25°	1479.2	1493.6	1508.1	1543.9	1579.7	1661.5	1743.3	1860.0	1976.7	2212.8	2448.8
27.5°	1342.8	1347.1	1351.3	1377.8	1404.2	1457.0	1509.8	1618.0	1726.2	1920.5	2114.8
30°	1230.4	1238.0	1245.7	1266.1	1286.6	1324.9	1363.3	1440.0	1516.6	1690.5	1864.3
32.5°	1143.4	1147.7	1152.0	1169.0	1186.0	1214.2	1242.3	1302.8	1363.3	1496.2	1629.1
35°	1068.5	1069.3	1070.2	1083.0	1095.7	1123.0	1150.3	1200.5	1250.8	1348.8	1446.8
37.5°	983.3	989.2	995.2	1004.6	1013.9	1037.8	1061.7	1102.5	1143.4	1224.4	1305.3
40°	911.7	916.8	921.9	933.0	944.1	962.8	981.6	1019.0	1056.5	1126.4	1196.3
42.5°	840.1	843.5	846.9	858.0	869.1	892.1	915.1	944.9	974.7	1032.7	1090.6
45°	760.0	768.5	777.1	789.0	800.9	820.5	840.1	870.8	901.5	950.9	1000.3
47.5°	693.6	697.8	702.1	712.3	722.5	746.4	770.3	797.5	824.8	870.8	916.8
50°	627.1	628.8	630.5	639.9	649.3	670.6	691.9	723.4	754.9	797.5	840.1
52.5°	564.1	568.3	572.6	581.9	591.3	605.8	620.3	652.7	685.0	726.8	768.5
55°	506.1	508.7	511.2	518.0	524.9	541.9	558.9	587.1	615.2	653.5	691.9
57.5°	451.6	455.0	458.4	463.5	468.6	484.0	499.3	524.0	548.7	587.1	625.4
60°	395.3	399.6	403.9	409.8	415.8	427.7	439.7	461.8	484.0	518.0	552.1
62.5°	354.5	355.3	356.2	361.3	366.4	374.9	383.4	401.3	419.2	453.3	487.4
65°	308.4	311.0	313.6	316.1	318.7	325.5	332.3	347.6	363.0	388.5	414.1
67.5°	260.7	263.3	265.8	270.1	274.4	280.3	286.3	296.5	306.7	330.6	354.5
70°	202.8	202.8	202.8	209.6	216.4	226.6	236.9	244.5	252.2	271.8	291.4
72.5°	165.3	166.1	167.0	167.9	168.7	174.7	180.6	193.4	206.2	218.1	230.1
75°	134.6	135.5	136.3	137.2	138.0	139.7	141.4	145.7	150.0	163.6	177.2
77.5°	107.4	108.2	109.1	109.9	110.8	112.5	114.2	115.9	117.6	122.7	127.8
80°	81.8	82.6	83.5	84.4	85.2	86.1	86.9	88.6	90.3	92.9	95.4
82.5°	59.6	59.6	59.6	59.6	59.6	61.3	63.1	63.1	63.1	64.8	66.5
85°	37.5	37.5	37.5	38.3	39.2	39.2	39.2	40.0	40.9	40.9	40.9
87.5°	17.0	16.2	15.3	16.2	17.0	17.0	17.0	17.9	18.7	18.7	18.7
90°	37.4	38.7	37.4	36.1	37.4	34.8	33.5	32.2	30.9	32.2	28.3
92.5°	68.3	70.9	69.6	74.7	77.3	86.3	99.2	127.6	179.1	239.7	265.4
95°	149.5	154.6	163.6	175.2	199.7	246.1	314.4	463.9	619.8	764.1	680.3
97.5°	306.7	320.8	351.8	400.7	487.0	633.9	804.0	1065.6	1215.0	1175.1	877.5
100°	807.9	806.6	856.8	950.9	1081.0	1264.0	1414.8	1519.1	1474.0	1220.2	824.6
102.5°	1279.5	1316.8	1356.8	1426.4	1520.4	1619.6	1691.8	1669.9	1486.9	1136.4	747.3
105°	1639.0	1645.4	1686.6	1735.6	1794.9	1828.4	1803.9	1675.0	1405.7	1035.9	686.8
107.5°	1873.5	1887.6	1904.4	1927.6	1935.3	1900.5	1800.0	1597.7	1289.8	947.0	643.0
110°	2007.5	2010.0	2012.6	2002.3	1966.2	1876.0	1713.7	1476.6	1181.5	873.6	619.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	2034.5	2033.2	2020.4	1983.0	1909.5	1787.1	1600.3	1356.8	1087.5	824.6	606.9
115°	1993.3	1986.9	1961.1	1904.4	1807.8	1667.3	1477.9	1253.7	1015.3	792.4	605.6
117.5°	1903.1	1894.1	1855.4	1792.3	1691.8	1546.2	1372.2	1173.8	967.7	770.5	606.9
120°	1784.6	1776.8	1745.9	1673.7	1572.0	1441.8	1287.2	1113.3	931.6	756.3	612.0
122.5°	1673.7	1663.4	1628.7	1565.5	1477.9	1359.4	1218.9	1065.6	901.9	747.3	621.1
125°	1572.0	1562.9	1530.7	1474.0	1391.6	1288.5	1164.8	1024.3	877.5	739.6	630.1
127.5°	1484.3	1476.6	1447.0	1398.0	1323.3	1227.9	1114.5	987.0	854.3	735.7	640.4
130°	1412.2	1401.9	1374.8	1328.4	1260.1	1172.5	1068.2	952.2	836.2	731.9	650.7
132.5°	1341.3	1334.9	1311.7	1265.3	1202.2	1119.7	1024.3	920.0	819.5	730.6	658.4
135°	1274.3	1265.3	1242.1	1203.4	1140.3	1066.9	983.1	891.6	805.3	729.3	666.1
137.5°	1203.4	1195.7	1176.4	1136.4	1082.3	1016.6	941.9	864.6	792.4	726.7	671.3
140°	1128.7	1130.0	1109.4	1073.3	1024.3	968.9	907.1	841.4	780.8	725.4	676.5
142.5°	1059.1	1060.4	1042.4	1011.5	971.5	925.1	873.6	819.5	770.5	722.8	680.3
145°	996.0	993.4	983.1	956.1	923.8	886.5	845.2	802.7	761.5	720.3	681.6
147.5°	941.9	940.6	930.3	911.0	885.2	858.1	823.3	788.6	752.5	716.4	681.6
150°	895.5	895.5	887.8	873.6	854.3	829.8	802.7	773.1	743.5	711.2	681.6
152.5°	856.8	856.8	853.0	840.1	825.9	806.6	783.4	758.9	733.2	704.8	677.7
155°	825.9	824.6	822.1	811.7	800.2	784.7	765.4	744.7	722.8	697.1	675.2
157.5°	796.3	796.3	793.7	786.0	775.7	762.8	747.3	729.3	711.2	690.6	671.3
160°	767.9	769.2	769.2	761.5	752.5	743.5	730.6	716.4	699.6	682.9	668.7
162.5°	742.2	743.5	743.5	737.0	731.9	724.1	712.5	700.9	688.1	675.2	663.6
165°	720.3	720.3	721.6	716.4	711.2	704.8	695.8	688.1	677.7	667.4	658.4
167.5°	698.4	698.4	699.6	695.8	693.2	688.1	682.9	676.5	667.4	659.7	653.3
170°	679.0	679.0	680.3	677.7	676.5	673.9	668.7	664.9	658.4	652.0	648.1
172.5°	661.0	662.3	664.9	662.3	662.3	661.0	657.1	654.6	649.4	645.5	644.2
175°	648.1	649.4	650.7	649.4	649.4	649.4	646.8	645.5	643.0	640.4	640.4
177.5°	639.1	639.1	641.7	640.4	641.7	641.7	640.4	639.1	637.8	636.5	637.8
180°	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3
2.5°	4412.8	4408.5	4367.6	4326.7	4286.6	4246.6	4216.8	4187.0	4136.7	4086.4	4054.9
5°	4686.3	4653.9	4589.1	4524.4	4427.2	4330.1	4248.3	4166.5	4062.6	3958.6	3871.7
7.5°	4838.8	4812.4	4734.0	4655.6	4526.9	4398.3	4270.5	4142.7	3989.3	3835.9	3704.7
10°	4843.0	4865.2	4800.4	4735.7	4590.8	4446.0	4272.2	4098.3	3892.2	3686.0	3516.4
12.5°	4691.4	4786.8	4773.2	4759.5	4612.1	4464.7	4253.4	4042.1	3789.1	3536.0	3323.8
15°	4407.6	4592.5	4647.1	4701.6	4579.8	4457.9	4217.6	3977.4	3680.0	3382.6	3138.9
17.5°	4042.1	4301.1	4445.1	4589.1	4500.5	4411.9	4148.6	3885.3	3550.5	3215.6	2950.6
20°	3609.3	3948.4	4174.2	4400.0	4367.6	4335.2	4063.4	3791.6	3430.3	3069.1	2781.9
22.5°	3181.5	3539.4	3851.3	4163.1	4196.3	4229.6	3955.2	3680.8	3285.5	2890.1	2597.9
25°	2812.6	3176.4	3547.9	3919.4	3994.4	4069.4	3808.7	3547.9	3138.1	2728.3	2437.7
27.5°	2460.7	2806.6	3215.6	3624.6	3760.9	3897.3	3658.7	3420.1	2993.2	2566.4	2276.7
30°	2173.6	2482.9	2900.4	3317.9	3507.9	3697.9	3478.9	3259.9	2836.5	2413.0	2129.3
32.5°	1906.0	2182.9	2602.2	3021.4	3242.0	3462.7	3273.6	3084.4	2677.1	2269.9	1989.5
35°	1694.7	1942.7	2333.8	2724.8	2971.9	3219.0	3064.0	2908.9	2511.0	2113.1	1848.1
37.5°	1513.2	1721.1	2088.4	2455.6	2718.0	2980.5	2850.9	2721.4	2347.4	1973.3	1722.8
40°	1363.3	1530.3	1871.9	2213.6	2470.9	2728.3	2617.5	2506.7	2171.9	1837.0	1602.7
42.5°	1234.6	1378.6	1685.3	1992.1	2228.1	2464.1	2390.8	2317.6	2014.2	1710.9	1493.6
45°	1121.3	1242.3	1512.4	1782.5	1999.8	2217.0	2159.1	2101.1	1839.6	1578.0	1378.6
47.5°	1020.8	1124.7	1365.8	1607.0	1802.1	1997.2	1943.5	1889.8	1673.4	1457.0	1275.5
50°	928.7	1017.3	1218.4	1419.5	1595.0	1770.6	1726.2	1681.9	1503.0	1324.1	1167.3
52.5°	841.8	915.1	1095.7	1276.4	1417.8	1559.2	1525.2	1491.1	1353.1	1215.0	1072.7
55°	759.2	826.5	979.0	1131.5	1252.5	1373.5	1339.4	1305.3	1198.0	1090.6	965.4
57.5°	684.2	743.0	866.5	990.1	1086.4	1182.6	1166.5	1150.3	1060.8	971.3	868.2
60°	605.0	657.8	764.3	870.8	948.3	1025.9	1007.1	988.4	924.5	860.6	772.0
62.5°	534.2	581.1	666.3	751.5	814.6	877.6	864.0	850.3	801.8	753.2	679.9
65°	460.1	506.1	575.1	644.1	693.6	743.0	731.1	719.1	682.5	645.9	587.1
67.5°	392.8	431.1	490.8	550.4	583.7	616.9	610.1	603.2	575.1	547.0	501.0
70°	324.6	357.9	407.3	456.7	479.7	502.7	505.3	507.8	482.3	456.7	422.6
72.5°	256.5	282.9	328.9	374.9	392.8	410.7	409.8	409.0	393.6	378.3	347.6
75°	196.8	216.4	252.2	288.0	303.3	318.7	322.1	325.5	311.0	296.5	279.5
77.5°	141.4	155.1	182.3	209.6	226.6	243.7	245.4	247.1	240.3	233.5	217.3
80°	99.7	103.9	121.0	138.0	155.9	173.8	176.4	178.9	172.1	165.3	155.1
82.5°	69.0	71.6	77.5	83.5	98.0	112.5	115.9	119.3	115.9	112.5	101.4
85°	41.8	42.6	45.2	47.7	54.5	61.3	64.8	68.2	66.5	64.8	58.8
87.5°	18.7	18.7	19.6	20.4	22.2	23.9	28.1	32.4	29.8	27.3	24.7
90°	24.5	20.6	16.8	14.2	11.6	7.7	5.2	2.6	5.2	7.7	11.6
92.5°	198.4	130.1	88.9	65.7	52.8	41.2	28.3	19.3	28.3	41.2	52.8
95°	469.0	277.0	167.5	117.3	83.8	61.8	47.7	43.8	47.7	61.8	83.8
97.5°	521.8	298.9	190.7	135.3	101.8	82.5	70.9	69.6	70.9	82.5	101.8
100°	485.8	295.1	204.9	154.6	123.7	105.7	96.6	95.3	96.6	105.7	123.7
102.5°	454.8	300.2	221.6	176.5	149.5	132.7	125.0	122.4	125.0	132.7	149.5
105°	443.2	310.5	240.9	201.0	176.5	161.1	153.3	149.5	153.3	161.1	176.5
107.5°	440.7	327.3	265.4	228.1	204.9	189.4	181.7	177.8	181.7	189.4	204.9
110°	447.1	349.2	291.2	255.1	233.2	219.0	212.6	208.7	212.6	219.0	233.2





TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	460.0	371.1	318.3	283.5	261.6	247.4	240.9	237.1	240.9	247.4	261.6
115°	474.2	395.6	346.6	311.8	289.9	277.0	269.3	264.1	269.3	277.0	289.9
117.5°	492.2	421.3	372.4	340.2	315.7	304.1	297.6	291.2	297.6	304.1	315.7
120°	512.8	445.8	399.4	367.2	342.7	329.9	323.4	319.5	323.4	329.9	342.7
122.5°	532.1	471.6	426.5	391.7	368.5	354.3	347.9	344.0	347.9	354.3	368.5
125°	552.8	496.1	451.0	416.2	391.7	377.5	369.8	367.2	369.8	377.5	391.7
127.5°	569.5	518.0	474.2	439.4	412.3	398.1	389.1	385.3	389.1	398.1	412.3
130°	586.3	537.3	494.8	460.0	432.9	417.5	405.9	402.0	405.9	417.5	432.9
132.5°	601.7	554.1	512.8	479.3	452.3	432.9	420.0	414.9	420.0	432.9	452.3
135°	614.6	570.8	530.9	496.1	469.0	449.7	435.5	430.4	435.5	449.7	469.0
137.5°	624.9	582.4	543.7	511.5	484.5	463.9	449.7	444.5	449.7	463.9	484.5
140°	632.6	594.0	556.6	524.4	498.6	478.0	465.1	458.7	465.1	478.0	498.6
142.5°	640.4	603.0	566.9	537.3	511.5	493.5	479.3	474.2	479.3	493.5	511.5
145°	645.5	610.7	577.2	547.6	525.7	506.4	494.8	490.9	494.8	506.4	525.7
147.5°	649.4	617.2	586.3	560.5	538.6	521.8	510.2	507.7	510.2	521.8	538.6
150°	650.7	623.6	594.0	570.8	552.8	536.0	525.7	524.4	525.7	536.0	552.8
152.5°	653.3	627.5	603.0	581.1	565.6	551.5	541.2	541.2	541.2	551.5	565.6
155°	653.3	632.6	610.7	592.7	578.5	565.6	557.9	557.9	557.9	565.6	578.5
157.5°	654.6	635.2	617.2	603.0	590.1	578.5	572.1	570.8	572.1	578.5	590.1
160°	654.6	639.1	623.6	610.7	601.7	591.4	586.3	586.3	586.3	591.4	601.7
162.5°	653.3	640.4	627.5	617.2	609.5	601.7	597.9	597.9	597.9	601.7	609.5
165°	650.7	641.7	631.4	622.3	617.2	610.7	608.2	609.5	608.2	610.7	617.2
167.5°	649.4	641.7	633.9	627.5	623.6	618.5	617.2	618.5	617.2	618.5	623.6
170°	645.5	640.4	633.9	631.4	628.8	624.9	623.6	626.2	623.6	624.9	628.8
172.5°	644.2	640.4	635.2	633.9	632.6	630.1	630.1	631.4	630.1	630.1	632.6
175°	641.7	639.1	636.5	635.2	635.2	632.6	633.9	635.2	633.9	632.6	635.2
177.5°	640.4	637.8	636.5	636.5	636.5	635.2	636.5	637.8	636.5	635.2	636.5
180°	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5

TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3	4156.3
2.5°	4023.4	3974.8	3926.2	3891.3	3856.4	3812.9	3769.5	3767.8	3766.0	3733.7	3701.3
5°	3784.8	3700.4	3616.1	3533.4	3450.8	3368.1	3285.5	3266.7	3248.0	3219.9	3191.8
7.5°	3573.5	3438.9	3304.2	3198.6	3092.9	3010.3	2927.6	2871.4	2815.2	2771.7	2728.3
10°	3346.8	3179.8	3012.8	2885.0	2757.2	2667.8	2578.3	2513.5	2448.8	2418.1	2387.4
12.5°	3111.7	2930.2	2748.7	2623.5	2498.2	2390.8	2283.5	2224.7	2165.9	2123.3	2080.7
15°	2895.3	2700.1	2505.0	2372.1	2239.2	2138.6	2038.1	1979.3	1920.5	1877.9	1835.3
17.5°	2685.7	2488.8	2292.0	2157.4	2022.8	1931.6	1840.4	1783.3	1726.2	1699.8	1673.4
20°	2494.8	2296.3	2097.7	1970.8	1843.8	1754.4	1664.9	1634.2	1603.6	1578.8	1554.1
22.5°	2305.6	2114.8	1923.9	1802.1	1680.2	1615.5	1550.7	1526.0	1501.3	1482.6	1463.8
25°	2147.2	1957.2	1767.1	1660.6	1554.1	1503.9	1453.6	1437.4	1421.2	1402.5	1383.7
27.5°	1987.0	1806.3	1625.7	1540.5	1455.3	1414.4	1373.5	1353.1	1332.6	1317.3	1301.9
30°	1845.5	1678.5	1511.5	1440.8	1370.1	1334.3	1298.5	1276.4	1254.2	1239.7	1225.2
32.5°	1709.2	1561.0	1412.7	1352.2	1291.7	1256.8	1221.8	1200.5	1179.2	1162.2	1145.2
35°	1583.1	1454.4	1325.8	1270.4	1215.0	1180.1	1145.2	1123.9	1102.5	1085.5	1068.5
37.5°	1472.3	1355.6	1238.9	1186.9	1134.9	1104.3	1073.6	1051.4	1029.3	1011.4	993.5
40°	1368.4	1265.3	1162.2	1111.9	1061.7	1028.4	995.2	975.6	956.0	939.8	923.6
42.5°	1276.4	1181.8	1087.2	1037.8	988.4	956.8	925.3	902.3	879.3	869.9	860.6
45°	1179.2	1095.7	1012.2	964.5	916.8	883.6	850.3	830.7	811.1	802.6	794.1
47.5°	1094.0	1016.5	939.0	892.1	845.2	815.4	785.6	770.3	754.9	743.0	731.1
50°	1010.5	935.5	860.6	815.4	770.3	744.7	719.1	700.4	681.6	673.1	664.6
52.5°	930.4	862.3	794.1	748.1	702.1	677.4	652.7	636.5	620.3	602.4	584.5
55°	840.1	780.5	720.8	679.9	639.0	613.5	587.9	569.2	550.4	531.7	512.9
57.5°	765.1	706.3	647.6	610.9	574.3	549.6	524.9	504.4	484.0	468.6	453.3
60°	683.3	632.2	581.1	545.3	509.5	485.7	461.8	442.2	422.6	414.9	407.3
62.5°	606.7	558.9	511.2	479.7	448.2	425.2	402.2	389.4	376.6	371.5	366.4
65°	528.3	487.4	446.5	417.5	388.5	368.9	349.3	343.4	337.4	333.2	328.9
67.5°	455.0	420.1	385.1	359.6	334.0	320.4	306.7	299.9	293.1	288.0	282.9
70°	388.5	357.9	327.2	305.0	282.9	270.1	257.3	251.4	245.4	236.0	226.6
72.5°	317.0	293.1	269.2	252.2	235.2	224.1	213.0	201.1	189.2	180.6	172.1
75°	262.4	238.6	214.7	198.5	182.3	169.6	156.8	152.5	148.3	145.7	143.1
77.5°	201.1	180.6	160.2	147.4	134.6	128.7	122.7	120.1	117.6	116.7	115.9
80°	144.8	127.8	110.8	103.9	97.1	95.4	93.7	92.0	90.3	89.5	88.6
82.5°	90.3	81.8	73.3	71.6	69.9	69.0	68.2	67.3	66.5	65.6	64.8
85°	52.8	49.4	46.0	45.2	44.3	43.5	42.6	42.6	42.6	42.6	42.6
87.5°	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	21.3	20.4
90°	14.2	16.8	20.6	24.5	28.3	32.2	30.9	32.2	33.5	34.8	37.4
92.5°	65.7	88.9	130.1	198.4	265.4	239.7	179.1	127.6	99.2	86.3	77.3
95°	117.3	167.5	277.0	469.0	680.3	764.1	619.8	463.9	314.4	246.1	199.7
97.5°	135.3	190.7	298.9	521.8	877.5	1175.1	1215.0	1065.6	804.0	633.9	487.0
100°	154.6	204.9	295.1	485.8	824.6	1220.2	1474.0	1519.1	1414.8	1264.0	1081.0
102.5°	176.5	221.6	300.2	454.8	747.3	1136.4	1486.9	1669.9	1691.8	1619.6	1520.4
105°	201.0	240.9	310.5	443.2	686.8	1035.9	1405.7	1675.0	1803.9	1828.4	1794.9
107.5°	228.1	265.4	327.3	440.7	643.0	947.0	1289.8	1597.7	1800.0	1900.5	1935.3
110°	255.1	291.2	349.2	447.1	619.8	873.6	1181.5	1476.6	1713.7	1876.0	1966.2



TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	283.5	318.3	371.1	460.0	606.9	824.6	1087.5	1356.8	1600.3	1787.1	1909.5
115°	311.8	346.6	395.6	474.2	605.6	792.4	1015.3	1253.7	1477.9	1667.3	1807.8
117.5°	340.2	372.4	421.3	492.2	606.9	770.5	967.7	1173.8	1372.2	1546.2	1691.8
120°	367.2	399.4	445.8	512.8	612.0	756.3	931.6	1113.3	1287.2	1441.8	1572.0
122.5°	391.7	426.5	471.6	532.1	621.1	747.3	901.9	1065.6	1218.9	1359.4	1477.9
125°	416.2	451.0	496.1	552.8	630.1	739.6	877.5	1024.3	1164.8	1288.5	1391.6
127.5°	439.4	474.2	518.0	569.5	640.4	735.7	854.3	987.0	1114.5	1227.9	1323.3
130°	460.0	494.8	537.3	586.3	650.7	731.9	836.2	952.2	1068.2	1172.5	1260.1
132.5°	479.3	512.8	554.1	601.7	658.4	730.6	819.5	920.0	1024.3	1119.7	1202.2
135°	496.1	530.9	570.8	614.6	666.1	729.3	805.3	891.6	983.1	1066.9	1140.3
137.5°	511.5	543.7	582.4	624.9	671.3	726.7	792.4	864.6	941.9	1016.6	1082.3
140°	524.4	556.6	594.0	632.6	676.5	725.4	780.8	841.4	907.1	968.9	1024.3
142.5°	537.3	566.9	603.0	640.4	680.3	722.8	770.5	819.5	873.6	925.1	971.5
145°	547.6	577.2	610.7	645.5	681.6	720.3	761.5	802.7	845.2	886.5	923.8
147.5°	560.5	586.3	617.2	649.4	681.6	716.4	752.5	788.6	823.3	858.1	885.2
150°	570.8	594.0	623.6	650.7	681.6	711.2	743.5	773.1	802.7	829.8	854.3
152.5°	581.1	603.0	627.5	653.3	677.7	704.8	733.2	758.9	783.4	806.6	825.9
155°	592.7	610.7	632.6	653.3	675.2	697.1	722.8	744.7	765.4	784.7	800.2
157.5°	603.0	617.2	635.2	654.6	671.3	690.6	711.2	729.3	747.3	762.8	775.7
160°	610.7	623.6	639.1	654.6	668.7	682.9	699.6	716.4	730.6	743.5	752.5
162.5°	617.2	627.5	640.4	653.3	663.6	675.2	688.1	700.9	712.5	724.1	731.9
165°	622.3	631.4	641.7	650.7	658.4	667.4	677.7	688.1	695.8	704.8	711.2
167.5°	627.5	633.9	641.7	649.4	653.3	659.7	667.4	676.5	682.9	688.1	693.2
170°	631.4	633.9	640.4	645.5	648.1	652.0	658.4	664.9	668.7	673.9	676.5
172.5°	633.9	635.2	640.4	644.2	644.2	645.5	649.4	654.6	657.1	661.0	662.3
175°	635.2	636.5	639.1	641.7	640.4	640.4	643.0	645.5	646.8	649.4	649.4
177.5°	636.5	636.5	637.8	640.4	637.8	636.5	637.8	639.1	640.4	641.7	641.7
180°	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5	636.5



TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	4156.3	4156.3	4156.3	4156.3
2.5°	3692.8	3684.3	3680.8	3677.4
5°	3165.4	3138.9	3133.0	3127.0
7.5°	2717.2	2706.1	2669.5	2632.8
10°	2353.4	2319.3	2303.9	2288.6
12.5°	2049.2	2017.6	2012.5	2007.4
15°	1813.2	1791.0	1783.3	1775.7
17.5°	1658.1	1642.7	1633.4	1624.0
20°	1543.1	1532.0	1525.2	1518.3
22.5°	1455.3	1446.8	1441.7	1436.6
25°	1370.9	1358.2	1353.9	1349.6
27.5°	1290.9	1279.8	1275.5	1271.3
30°	1215.9	1206.5	1200.5	1194.6
32.5°	1134.1	1123.0	1119.6	1116.2
35°	1061.7	1054.8	1051.4	1048.0
37.5°	985.0	976.4	971.3	966.2
40°	919.4	915.1	912.5	910.0
42.5°	852.9	845.2	844.4	843.5
45°	786.4	778.8	777.1	775.4
47.5°	724.2	717.4	716.6	715.7
50°	655.2	645.9	639.0	632.2
52.5°	576.0	567.5	561.5	555.5
55°	503.6	494.2	489.1	484.0
57.5°	449.0	444.8	442.2	439.7
60°	404.7	402.2	400.5	398.8
62.5°	363.8	361.3	361.3	361.3
65°	326.3	323.8	321.2	318.7
67.5°	277.8	272.7	271.8	271.0
70°	219.0	211.3	210.5	209.6
72.5°	171.3	170.4	168.7	167.0
75°	141.4	139.7	139.7	139.7
77.5°	114.2	112.5	112.5	112.5
80°	87.8	86.9	87.8	88.6
82.5°	64.8	64.8	63.9	63.1
85°	41.8	40.9	40.9	40.9
87.5°	20.4	20.4	20.4	20.4
90°	36.1	37.4	38.7	37.4
92.5°	74.7	69.6	70.9	68.3
95°	175.2	163.6	154.6	149.5
97.5°	400.7	351.8	320.8	306.7
100°	950.9	856.8	806.6	807.9
102.5°	1426.4	1356.8	1316.8	1279.5
105°	1735.6	1686.6	1645.4	1639.0
107.5°	1927.6	1904.4	1887.6	1873.5
110°	2002.3	2012.6	2010.0	2007.5



TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	1983.0	2020.4	2033.2	2034.5
115°	1904.4	1961.1	1986.9	1993.3
117.5°	1792.3	1855.4	1894.1	1903.1
120°	1673.7	1745.9	1776.8	1784.6
122.5°	1565.5	1628.7	1663.4	1673.7
125°	1474.0	1530.7	1562.9	1572.0
127.5°	1398.0	1447.0	1476.6	1484.3
130°	1328.4	1374.8	1401.9	1412.2
132.5°	1265.3	1311.7	1334.9	1341.3
135°	1203.4	1242.1	1265.3	1274.3
137.5°	1136.4	1176.4	1195.7	1203.4
140°	1073.3	1109.4	1130.0	1128.7
142.5°	1011.5	1042.4	1060.4	1059.1
145°	956.1	983.1	993.4	996.0
147.5°	911.0	930.3	940.6	941.9
150°	873.6	887.8	895.5	895.5
152.5°	840.1	853.0	856.8	856.8
155°	811.7	822.1	824.6	825.9
157.5°	786.0	793.7	796.3	796.3
160°	761.5	769.2	769.2	767.9
162.5°	737.0	743.5	743.5	742.2
165°	716.4	721.6	720.3	720.3
167.5°	695.8	699.6	698.4	698.4
170°	677.7	680.3	679.0	679.0
172.5°	662.3	664.9	662.3	661.0
175°	649.4	650.7	649.4	648.1
177.5°	640.4	641.7	639.1	639.1
180°	636.5	636.5	636.5	636.5



TEST NUMBER: P831938

CATALOG NUMBER: S123RDIP-S1165D1195U850-4F0-1E-UDD-G4

**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	14.28	15.11	15.22	16.06	17.28	18.94	19.78	19.88	20.72	21.95
	3H	15.50	16.24	16.45	17.20	18.45	20.44	21.19	21.39	22.14	23.39
	4H	15.88	16.59	16.85	17.55	18.80	20.93	21.64	21.89	22.60	23.85
	6H	16.16	16.81	17.14	17.78	19.05	21.24	21.89	22.22	22.86	24.13
	8H	16.25	16.87	17.23	17.85	19.12	21.32	21.94	22.30	22.92	24.19
	12H	16.30	16.89	17.29	17.86	19.15	21.35	21.94	22.34	22.92	24.21
4H	2H	15.00	15.70	15.97	16.67	17.92	18.94	19.64	19.91	20.60	21.86
	3H	16.37	16.96	17.35	17.95	19.22	20.60	21.18	21.57	22.17	23.44
	4H	16.83	17.36	17.81	18.34	19.64	21.20	21.74	22.19	22.72	24.02
	6H	17.19	17.65	18.19	18.66	19.95	21.64	22.10	22.64	23.11	24.40
	8H	17.32	17.75	18.32	18.75	20.05	21.77	22.20	22.77	23.20	24.51
	12H	17.40	17.78	18.41	18.80	20.11	21.83	22.22	22.85	23.24	24.55
8H	4H	17.14	17.57	18.14	18.57	19.88	21.17	21.60	22.17	22.60	23.91
	6H	17.60	17.96	18.63	19.00	20.30	21.67	22.02	22.69	23.06	24.37
	8H	17.80	18.11	18.83	19.14	20.46	21.85	22.16	22.88	23.19	24.52
	12H	17.94	18.21	18.97	19.23	20.60	21.97	22.24	23.00	23.26	24.63
12H	4H	17.15	17.54	18.17	18.55	19.87	21.12	21.51	22.14	22.52	23.83
	6H	17.66	17.97	18.70	19.00	20.33	21.64	21.95	22.67	22.98	24.30
	8H	17.88	18.15	18.92	19.18	20.55	21.83	22.11	22.87	23.13	24.50