

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: P831929

Luminaire Tested: S123RDIP-S1165D1195U830-4F0-1E-UDD-G4

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831929
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-S1165D1195U830-4F0-1E-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

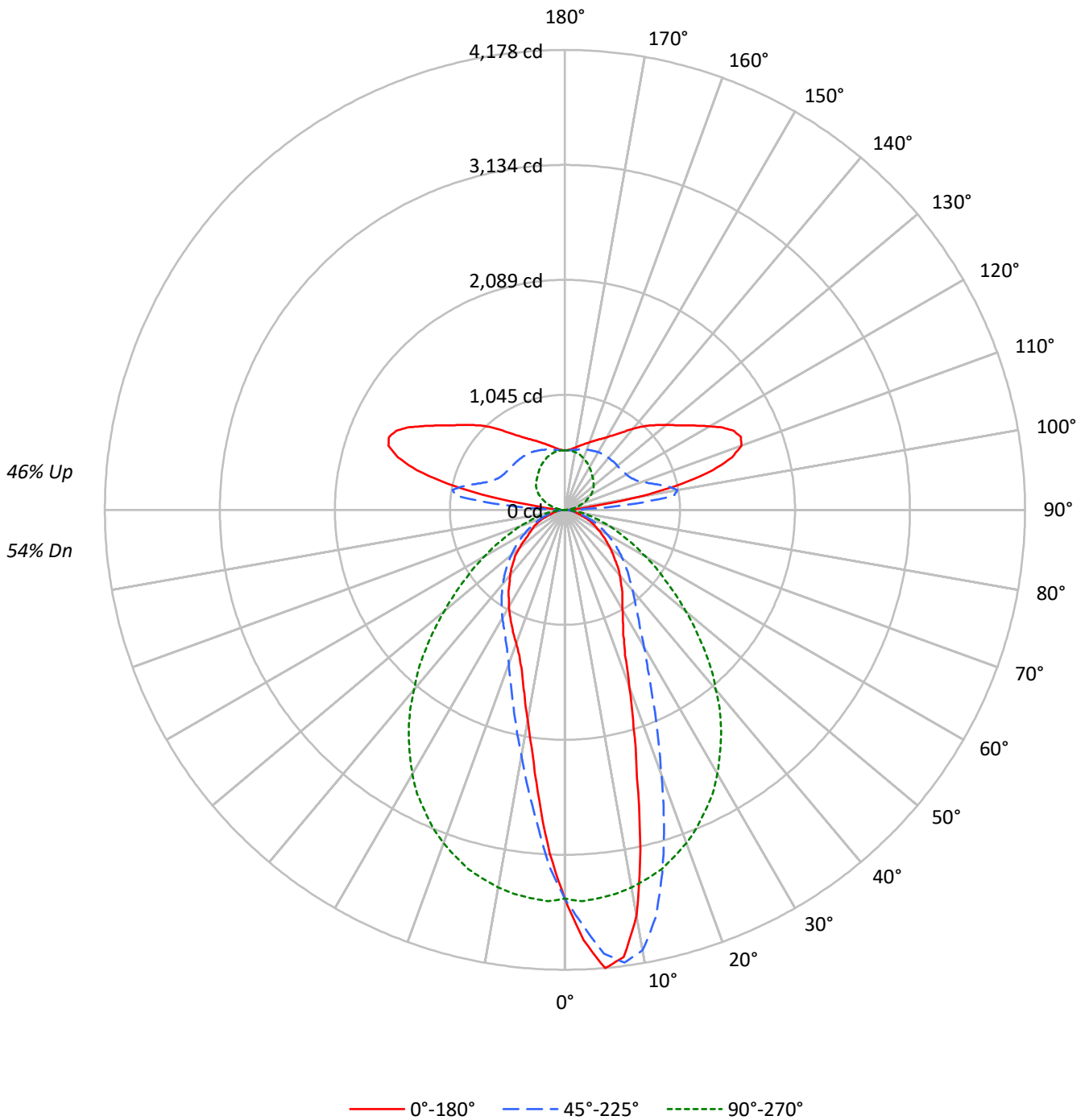
Lumens per Lamp: N/A
Luminaire Lumens: 8755.7 lumens
Efficiency: N/A
Efficacy: 119.6 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

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°	38022	38022	38022	38022	38022
5°	45148	43707	38262	30930	28717
10°	40904	44395	38071	24782	21260
15°	28163	38066	37670	20255	16817
20°	19593	29306	36913	17079	14781
25°	14930	22335	35813	15180	13624
30°	12997	17857	34436	14095	12619
35°	11933	15063	32487	13180	11704
40°	10887	13451	29936	12282	10867
45°	9832	12303	27184	11432	10032
50°	8925	11350	23938	10598	8997
55°	8071	10423	20819	9785	7719
60°	7233	9479	18083	8887	7296
65°	6676	8410	15567	7987	6897
70°	5423	7270	13583	7226	5605
75°	4758	5781	11503	5993	4941
80°	4308	4891	9428	5027	4668
85°	3940	4298	7151	4557	4298

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 28684 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	322.0	3.7
10°-20°	745.0	8.5
20°-30°	854.8	9.8
30°-40°	842.6	9.6
40°-50°	743.0	8.5
50°-60°	571.6	6.5
60°-70°	375.8	4.3
70°-80°	182.5	2.1
80°-90°	49.0	0.6
90°-100°	293.6	3.4
100°-110°	859.4	9.8
110°-120°	839.3	9.6
120°-130°	668.4	7.6
130°-140°	527.4	6.0
140°-150°	393.4	4.5
150°-160°	274.3	3.1
160°-170°	161.1	1.8
170°-180°	52.4	0.6
0°-30°	1921.9	21.9
0°-40°	2764.4	31.6
0°-60°	4079.1	46.6
0°-90°	4686.5	53.5
90°-120°	1992.3	22.8
90°-150°	3581.4	40.9
90°-180°	4069.0	46.5
0°-180°	8755.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3532	3532	3532	3532	3532	
5°	4178	4045	3541	2863	2658	382
15°	2527	3416	3380	1818	1509	713
25°	1257	1881	3015	1278	1147	594
35°	908	1146	2472	1003	891	566
45°	646	808	1786	751	659	501
55°	430	555	1109	521	411	386
65°	262	330	611	314	271	257
75°	114	139	277	144	119	123
85°	32	35	58	37	35	34
90°	32	27	2	27	32	19
95°	127	649	37	649	127	206
105°	1393	880	127	880	1393	1390
115°	1694	674	224	674	1694	1652
125°	1336	629	312	629	1336	1209
135°	1083	620	366	620	1083	840
145°	846	612	417	612	846	538
155°	702	592	474	592	702	327
165°	612	567	518	567	612	175
175°	551	544	540	544	551	53
180°	541	541	541	541	541	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4
2.5°	3914.8	3902.5	3890.2	3886.6	3882.9	3871.3	3859.8	3833.7	3807.6	3780.8	3754.0
5°	4178.4	4179.8	4181.3	4177.7	4174.0	4158.8	4143.6	4111.8	4079.9	4045.1	4010.4
7.5°	4097.3	4120.5	4143.6	4148.0	4152.3	4163.9	4175.5	4168.2	4161.0	4148.0	4134.9
10°	3742.4	3741.0	3739.5	3765.6	3791.7	3869.2	3946.7	3986.5	4026.3	4061.8	4097.3
12.5°	3163.1	3165.3	3167.5	3252.9	3338.4	3411.5	3484.6	3586.0	3687.4	3796.8	3906.1
15°	2527.3	2562.8	2598.3	2674.3	2750.3	2860.4	2970.5	3106.6	3242.8	3415.9	3588.9
17.5°	2075.4	2090.6	2105.8	2179.0	2252.1	2356.4	2460.7	2614.9	2769.2	2992.2	3215.3
20°	1710.5	1724.2	1738.0	1790.8	1843.7	1943.6	2043.6	2190.6	2337.6	2558.4	2779.3
22.5°	1428.0	1454.8	1481.6	1517.1	1552.6	1625.0	1697.4	1847.3	1997.2	2198.5	2399.9
25°	1257.1	1269.4	1281.8	1312.2	1342.6	1412.1	1481.6	1580.8	1680.0	1880.6	2081.2
27.5°	1141.3	1144.9	1148.5	1171.0	1193.4	1238.3	1283.2	1375.2	1467.1	1632.3	1797.4
30°	1045.7	1052.2	1058.7	1076.1	1093.5	1126.1	1158.7	1223.8	1289.0	1436.7	1584.5
32.5°	971.8	975.4	979.1	993.5	1008.0	1031.9	1055.8	1107.2	1158.7	1271.6	1384.6
35°	908.1	908.8	909.5	920.4	931.3	954.4	977.6	1020.3	1063.1	1146.3	1229.6
37.5°	835.7	840.7	845.8	853.8	861.7	882.0	902.3	937.1	971.8	1040.6	1109.4
40°	774.8	779.2	783.5	793.0	802.4	818.3	834.2	866.1	898.0	957.3	1016.7
42.5°	714.0	716.9	719.8	729.2	738.6	758.2	777.7	803.1	828.4	877.7	926.9
45°	645.9	653.2	660.4	670.6	680.7	697.4	714.0	740.1	766.2	808.2	850.2
47.5°	589.5	593.1	596.7	605.4	614.1	634.4	654.6	677.8	701.0	740.1	779.2
50°	533.0	534.4	535.9	543.8	551.8	569.9	588.0	614.8	641.6	677.8	714.0
52.5°	479.4	483.0	486.6	494.6	502.6	514.9	527.2	554.7	582.2	617.7	653.2
55°	430.1	432.3	434.5	440.3	446.1	460.6	475.0	498.9	522.8	555.4	588.0
57.5°	383.8	386.7	389.6	393.9	398.3	411.3	424.4	445.4	466.4	498.9	531.5
60°	336.0	339.6	343.3	348.3	353.4	363.5	373.7	392.5	411.3	440.3	469.3
62.5°	301.2	302.0	302.7	307.0	311.4	318.6	325.9	341.1	356.3	385.3	414.2
65°	262.1	264.3	266.5	268.7	270.8	276.6	282.4	295.5	308.5	330.2	351.9
67.5°	221.6	223.8	225.9	229.6	233.2	238.2	243.3	252.0	260.7	281.0	301.2
70°	172.3	172.3	172.3	178.1	183.9	192.6	201.3	207.8	214.4	231.0	247.7
72.5°	140.5	141.2	141.9	142.7	143.4	148.5	153.5	164.4	175.2	185.4	195.5
75°	114.4	115.1	115.9	116.6	117.3	118.8	120.2	123.8	127.5	139.0	150.6
77.5°	91.2	92.0	92.7	93.4	94.1	95.6	97.0	98.5	99.9	104.3	108.6
80°	69.5	70.2	71.0	71.7	72.4	73.1	73.9	75.3	76.8	78.9	81.1
82.5°	50.7	50.7	50.7	50.7	50.7	52.1	53.6	53.6	53.6	55.0	56.5
85°	31.9	31.9	31.9	32.6	33.3	33.3	33.3	34.0	34.8	34.8	34.8
87.5°	14.5	13.8	13.0	13.8	14.5	14.5	14.5	15.2	15.9	15.9	15.9
90°	31.8	32.9	31.8	30.7	31.8	29.6	28.5	27.4	26.3	27.4	24.1
92.5°	58.0	60.2	59.1	63.5	65.7	73.4	84.3	108.4	152.2	203.7	225.6
95°	127.0	131.4	139.1	148.9	169.7	209.2	267.2	394.2	526.7	649.4	578.2
97.5°	260.6	272.7	299.0	340.6	413.9	538.8	683.3	905.6	1032.7	998.7	745.8
100°	686.6	685.5	728.2	808.2	918.8	1074.3	1202.4	1291.1	1252.8	1037.1	700.9
102.5°	1087.4	1119.2	1153.1	1212.3	1292.2	1376.5	1437.9	1419.2	1263.7	965.9	635.2
105°	1393.0	1398.4	1433.5	1475.1	1525.5	1553.9	1533.1	1423.6	1194.7	880.5	583.7
107.5°	1592.3	1604.3	1618.5	1638.3	1644.8	1615.3	1529.8	1357.9	1096.2	804.9	546.5
110°	1706.2	1708.3	1710.5	1701.8	1671.1	1594.5	1456.5	1255.0	1004.2	742.5	526.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	1729.1	1728.1	1717.1	1685.3	1622.9	1518.9	1360.1	1153.1	924.3	700.9	515.8
115°	1694.1	1688.6	1666.7	1618.5	1536.4	1417.0	1256.1	1065.5	862.9	673.5	514.7
117.5°	1617.4	1609.8	1576.9	1523.3	1437.9	1314.1	1166.3	997.6	822.4	654.9	515.8
120°	1516.7	1510.1	1483.8	1422.5	1336.0	1225.4	1094.0	946.2	791.8	642.8	520.2
122.5°	1422.5	1413.8	1384.2	1330.5	1256.1	1155.3	1036.0	905.6	766.6	635.2	527.8
125°	1336.0	1328.3	1301.0	1252.8	1182.7	1095.1	990.0	870.6	745.8	628.6	535.5
127.5°	1261.5	1255.0	1229.8	1188.2	1124.7	1043.6	947.3	838.8	726.0	625.3	544.3
130°	1200.2	1191.5	1168.5	1129.0	1071.0	996.5	907.8	809.3	710.7	622.0	553.0
132.5°	1140.0	1134.5	1114.8	1075.4	1021.7	951.6	870.6	781.9	696.5	620.9	559.6
135°	1083.0	1075.4	1055.7	1022.8	969.2	906.7	835.6	757.8	684.4	619.8	566.2
137.5°	1022.8	1016.2	999.8	965.9	919.9	864.0	800.5	734.8	673.5	617.6	570.5
140°	959.3	960.4	942.9	912.2	870.6	823.5	770.9	715.1	663.6	616.5	574.9
142.5°	900.2	901.3	885.9	859.6	825.7	786.3	742.5	696.5	654.9	614.3	578.2
145°	846.5	844.3	835.6	812.6	785.2	753.4	718.4	682.2	647.2	612.2	579.3
147.5°	800.5	799.4	790.7	774.2	752.3	729.3	699.8	670.2	639.5	608.9	579.3
150°	761.1	761.1	754.5	742.5	726.0	705.2	682.2	657.1	631.9	604.5	579.3
152.5°	728.2	728.2	724.9	714.0	702.0	685.5	665.8	645.0	623.1	599.0	576.0
155°	702.0	700.9	698.7	689.9	680.1	666.9	650.5	633.0	614.3	592.4	573.8
157.5°	676.8	676.8	674.6	668.0	659.2	648.3	635.2	619.8	604.5	587.0	570.5
160°	652.7	653.8	653.8	647.2	639.5	631.9	620.9	608.9	594.6	580.4	568.4
162.5°	630.8	631.9	631.9	626.4	622.0	615.4	605.6	595.7	584.8	573.8	564.0
165°	612.2	612.2	613.3	608.9	604.5	599.0	591.3	584.8	576.0	567.3	559.6
167.5°	593.5	593.5	594.6	591.3	589.2	584.8	580.4	574.9	567.3	560.7	555.2
170°	577.1	577.1	578.2	576.0	574.9	572.7	568.4	565.1	559.6	554.1	550.8
172.5°	561.8	562.9	565.1	562.9	562.9	561.8	558.5	556.3	551.9	548.6	547.5
175°	550.8	551.9	553.0	551.9	551.9	551.9	549.7	548.6	546.5	544.3	544.3
177.5°	543.2	543.2	545.4	544.3	545.4	545.4	544.3	543.2	542.1	541.0	542.1
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4
2.5°	3750.4	3746.8	3712.0	3677.3	3643.2	3609.2	3583.9	3558.5	3515.8	3473.1	3446.3
5°	3982.9	3955.3	3900.3	3845.3	3762.7	3680.2	3610.6	3541.1	3452.8	3364.4	3290.6
7.5°	4112.5	4090.0	4023.4	3956.8	3847.4	3738.1	3629.5	3520.9	3390.5	3260.2	3148.6
10°	4116.1	4134.9	4079.9	4024.9	3901.8	3778.7	3630.9	3483.2	3308.0	3132.7	2988.6
12.5°	3987.2	4068.3	4056.7	4045.1	3919.9	3794.6	3615.0	3435.4	3220.3	3005.3	2824.9
15°	3746.1	3903.2	3949.6	3995.9	3892.3	3788.8	3584.6	3380.4	3127.6	2874.9	2667.8
17.5°	3435.4	3655.5	3777.9	3900.3	3825.0	3749.7	3525.9	3302.2	3017.6	2733.0	2507.8
20°	3067.5	3355.7	3547.6	3739.5	3712.0	3684.5	3453.5	3222.5	2915.5	2608.4	2364.4
22.5°	2704.0	3008.1	3273.2	3538.2	3566.5	3594.7	3361.5	3128.4	2792.4	2456.3	2208.0
25°	2390.4	2699.7	3015.4	3331.1	3394.8	3458.6	3237.0	3015.4	2667.1	2318.8	2071.8
27.5°	2091.4	2385.4	2733.0	3080.6	3196.4	3312.3	3109.5	2906.8	2544.0	2181.2	1934.9
30°	1847.3	2110.2	2465.0	2819.9	2981.4	3142.8	2956.7	2770.6	2410.7	2050.8	1809.7
32.5°	1619.9	1855.3	2211.6	2567.9	2755.4	2943.0	2782.2	2621.4	2275.3	1929.2	1690.9
35°	1440.3	1651.1	1983.5	2315.9	2525.9	2735.9	2604.1	2472.3	2134.1	1795.9	1570.7
37.5°	1286.1	1462.8	1774.9	2087.0	2310.1	2533.1	2423.0	2313.0	1995.1	1677.1	1464.2
40°	1158.7	1300.6	1591.0	1881.4	2100.1	2318.8	2224.6	2130.5	1845.9	1561.3	1362.1
42.5°	1049.3	1171.7	1432.4	1693.1	1893.7	2094.3	2032.0	1969.7	1711.9	1454.1	1269.4
45°	953.0	1055.8	1285.4	1514.9	1699.6	1884.3	1835.0	1785.8	1563.5	1341.1	1171.7
47.5°	867.5	955.9	1160.8	1365.8	1531.6	1697.4	1651.8	1606.2	1422.2	1238.3	1084.1
50°	789.3	864.6	1035.5	1206.4	1355.6	1504.8	1467.1	1429.5	1277.4	1125.3	992.1
52.5°	715.5	777.7	931.3	1084.8	1205.0	1325.2	1296.2	1267.3	1150.0	1032.6	911.7
55°	645.2	702.4	832.1	961.7	1064.5	1167.3	1138.4	1109.4	1018.2	926.9	820.5
57.5°	581.5	631.5	736.5	841.5	923.3	1005.1	991.4	977.6	901.6	825.5	737.9
60°	514.2	559.0	649.6	740.1	806.0	871.9	856.0	840.0	785.7	731.4	656.1
62.5°	454.0	493.9	566.3	638.7	692.3	745.9	734.3	722.7	681.4	640.2	577.9
65°	391.0	430.1	488.8	547.5	589.5	631.5	621.3	611.2	580.1	548.9	498.9
67.5°	333.8	366.4	417.1	467.8	496.0	524.3	518.5	512.7	488.8	464.9	425.8
70°	275.9	304.1	346.1	388.1	407.7	427.3	429.4	431.6	409.9	388.1	359.2
72.5°	218.0	240.4	279.5	318.6	333.8	349.0	348.3	347.6	334.6	321.5	295.5
75°	167.3	183.9	214.4	244.8	257.8	270.8	273.7	276.6	264.3	252.0	237.5
77.5°	120.2	131.8	155.0	178.1	192.6	207.1	208.6	210.0	204.2	198.4	184.7
80°	84.7	88.3	102.8	117.3	132.5	147.7	149.9	152.1	146.3	140.5	131.8
82.5°	58.7	60.8	65.9	71.0	83.3	95.6	98.5	101.4	98.5	95.6	86.2
85°	35.5	36.2	38.4	40.6	46.3	52.1	55.0	57.9	56.5	55.0	50.0
87.5°	15.9	15.9	16.7	17.4	18.8	20.3	23.9	27.5	25.3	23.2	21.0
90°	20.8	17.5	14.2	12.0	9.9	6.6	4.4	2.2	4.4	6.6	9.9
92.5°	168.6	110.6	75.6	55.8	44.9	35.0	24.1	16.4	24.1	35.0	44.9
95°	398.6	235.4	142.4	99.7	71.2	52.6	40.5	37.2	40.5	52.6	71.2
97.5°	443.5	254.1	162.1	115.0	86.5	70.1	60.2	59.1	60.2	70.1	86.5
100°	412.8	250.8	174.1	131.4	105.1	89.8	82.1	81.0	82.1	89.8	105.1
102.5°	386.6	255.2	188.4	150.0	127.0	112.8	106.2	104.0	106.2	112.8	127.0
105°	376.7	263.9	204.8	170.8	150.0	136.9	130.3	127.0	130.3	136.9	150.0
107.5°	374.5	278.2	225.6	193.8	174.1	161.0	154.4	151.1	154.4	161.0	174.1
110°	380.0	296.8	247.5	216.8	198.2	186.2	180.7	177.4	180.7	186.2	198.2



TEST NUMBER: P831929

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	390.9	315.4	270.5	240.9	222.3	210.3	204.8	201.5	204.8	210.3	222.3
115°	403.0	336.2	294.6	265.0	246.4	235.4	228.9	224.5	228.9	235.4	246.4
117.5°	418.3	358.1	316.5	289.1	268.3	258.4	253.0	247.5	253.0	258.4	268.3
120°	435.8	378.9	339.5	312.1	291.3	280.3	274.9	271.6	274.9	280.3	291.3
122.5°	452.3	400.8	362.5	332.9	313.2	301.1	295.7	292.4	295.7	301.1	313.2
125°	469.8	421.6	383.3	353.7	332.9	320.9	314.3	312.1	314.3	320.9	332.9
127.5°	484.0	440.2	403.0	373.4	350.4	338.4	330.7	327.4	330.7	338.4	350.4
130°	498.3	456.7	420.5	390.9	368.0	354.8	345.0	341.7	345.0	354.8	368.0
132.5°	511.4	470.9	435.8	407.4	384.4	368.0	357.0	352.6	357.0	368.0	384.4
135°	522.4	485.1	451.2	421.6	398.6	382.2	370.1	365.8	370.1	382.2	398.6
137.5°	531.1	495.0	462.1	434.8	411.8	394.2	382.2	377.8	382.2	394.2	411.8
140°	537.7	504.8	473.1	445.7	423.8	406.3	395.3	389.9	395.3	406.3	423.8
142.5°	544.3	512.5	481.8	456.7	434.8	419.4	407.4	403.0	407.4	419.4	434.8
145°	548.6	519.1	490.6	465.4	446.8	430.4	420.5	417.2	420.5	430.4	446.8
147.5°	551.9	524.5	498.3	476.4	457.7	443.5	433.7	431.5	433.7	443.5	457.7
150°	553.0	530.0	504.8	485.1	469.8	455.6	446.8	445.7	446.8	455.6	469.8
152.5°	555.2	533.3	512.5	493.9	480.7	468.7	459.9	459.9	459.9	468.7	480.7
155°	555.2	537.7	519.1	503.7	491.7	480.7	474.2	474.2	474.2	480.7	491.7
157.5°	556.3	539.9	524.5	512.5	501.6	491.7	486.2	485.1	486.2	491.7	501.6
160°	556.3	543.2	530.0	519.1	511.4	502.6	498.3	498.3	498.3	502.6	511.4
162.5°	555.2	544.3	533.3	524.5	518.0	511.4	508.1	508.1	508.1	511.4	518.0
165°	553.0	545.4	536.6	528.9	524.5	519.1	516.9	518.0	516.9	519.1	524.5
167.5°	551.9	545.4	538.8	533.3	530.0	525.6	524.5	525.6	524.5	525.6	530.0
170°	548.6	544.3	538.8	536.6	534.4	531.1	530.0	532.2	530.0	531.1	534.4
172.5°	547.5	544.3	539.9	538.8	537.7	535.5	535.5	536.6	535.5	535.5	537.7
175°	545.4	543.2	541.0	539.9	539.9	537.7	538.8	539.9	538.8	537.7	539.9
177.5°	544.3	542.1	541.0	541.0	541.0	539.9	541.0	542.1	541.0	539.9	541.0
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0

TEST NUMBER: P831929

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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4	3532.4
2.5°	3419.5	3378.2	3336.9	3307.2	3277.5	3240.6	3203.7	3202.2	3200.8	3173.3	3145.7
5°	3216.7	3145.0	3073.3	3003.1	2932.8	2862.6	2792.4	2776.4	2760.5	2736.6	2712.7
7.5°	3037.1	2922.7	2808.3	2718.5	2628.7	2558.4	2488.2	2440.4	2392.6	2355.7	2318.8
10°	2844.5	2702.6	2560.6	2452.0	2343.4	2267.3	2191.3	2136.3	2081.2	2055.2	2029.1
12.5°	2644.6	2490.4	2336.1	2229.7	2123.2	2032.0	1940.7	1890.8	1840.8	1804.6	1768.4
15°	2460.7	2294.9	2129.0	2016.1	1903.1	1817.6	1732.2	1682.2	1632.3	1596.0	1559.8
17.5°	2282.5	2115.3	1948.0	1833.6	1719.1	1641.7	1564.2	1515.7	1467.1	1444.7	1422.2
20°	2120.3	1951.6	1782.9	1675.0	1567.1	1491.0	1415.0	1388.9	1362.9	1341.9	1320.9
22.5°	1959.6	1797.4	1635.1	1531.6	1428.0	1373.0	1318.0	1297.0	1276.0	1260.0	1244.1
25°	1824.9	1663.4	1501.9	1411.4	1320.9	1278.1	1235.4	1221.7	1207.9	1192.0	1176.0
27.5°	1688.7	1535.2	1381.7	1309.3	1236.9	1202.1	1167.3	1150.0	1132.6	1119.5	1106.5
30°	1568.5	1426.6	1284.7	1224.6	1164.4	1134.0	1103.6	1084.8	1066.0	1053.6	1041.3
32.5°	1452.7	1326.7	1200.7	1149.2	1097.8	1068.1	1038.4	1020.3	1002.2	987.8	973.3
35°	1345.5	1236.1	1126.8	1079.7	1032.6	1003.0	973.3	955.2	937.1	922.6	908.1
37.5°	1251.3	1152.1	1052.9	1008.8	964.6	938.5	912.4	893.6	874.8	859.6	844.4
40°	1163.0	1075.4	987.8	945.0	902.3	874.1	845.8	829.2	812.5	798.7	785.0
42.5°	1084.8	1004.4	924.0	882.0	840.0	813.2	786.4	766.9	747.3	739.4	731.4
45°	1002.2	931.3	860.3	819.7	779.2	751.0	722.7	706.1	689.4	682.2	674.9
47.5°	929.8	863.9	798.0	758.2	718.4	693.0	667.7	654.6	641.6	631.5	621.3
50°	858.9	795.1	731.4	693.0	654.6	632.9	611.2	595.3	579.3	572.1	564.8
52.5°	790.8	732.8	674.9	635.8	596.7	575.7	554.7	540.9	527.2	512.0	496.8
55°	714.0	663.3	612.6	577.9	543.1	521.4	499.7	483.7	467.8	451.9	435.9
57.5°	650.3	600.3	550.4	519.2	488.1	467.1	446.1	428.7	411.3	398.3	385.3
60°	580.8	537.3	493.9	463.5	433.0	412.8	392.5	375.8	359.2	352.7	346.1
62.5°	515.6	475.0	434.5	407.7	380.9	361.4	341.8	330.9	320.1	315.7	311.4
65°	449.0	414.2	379.5	354.8	330.2	313.6	296.9	291.8	286.8	283.1	279.5
67.5°	386.7	357.0	327.3	305.6	283.9	272.3	260.7	254.9	249.1	244.8	240.4
70°	330.2	304.1	278.1	259.2	240.4	229.6	218.7	213.6	208.6	200.6	192.6
72.5°	269.4	249.1	228.8	214.4	199.9	190.5	181.0	170.9	160.8	153.5	146.3
75°	223.0	202.8	182.5	168.7	155.0	144.1	133.2	129.6	126.0	123.8	121.7
77.5°	170.9	153.5	136.1	125.3	114.4	109.3	104.3	102.1	99.9	99.2	98.5
80°	123.1	108.6	94.1	88.3	82.6	81.1	79.7	78.2	76.8	76.0	75.3
82.5°	76.8	69.5	62.3	60.8	59.4	58.7	57.9	57.2	56.5	55.8	55.0
85°	44.9	42.0	39.1	38.4	37.7	36.9	36.2	36.2	36.2	36.2	36.2
87.5°	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.1	17.4
90°	12.0	14.2	17.5	20.8	24.1	27.4	26.3	27.4	28.5	29.6	31.8
92.5°	55.8	75.6	110.6	168.6	225.6	203.7	152.2	108.4	84.3	73.4	65.7
95°	99.7	142.4	235.4	398.6	578.2	649.4	526.7	394.2	267.2	209.2	169.7
97.5°	115.0	162.1	254.1	443.5	745.8	998.7	1032.7	905.6	683.3	538.8	413.9
100°	131.4	174.1	250.8	412.8	700.9	1037.1	1252.8	1291.1	1202.4	1074.3	918.8
102.5°	150.0	188.4	255.2	386.6	635.2	965.9	1263.7	1419.2	1437.9	1376.5	1292.2
105°	170.8	204.8	263.9	376.7	583.7	880.5	1194.7	1423.6	1533.1	1553.9	1525.5
107.5°	193.8	225.6	278.2	374.5	546.5	804.9	1096.2	1357.9	1529.8	1615.3	1644.8
110°	216.8	247.5	296.8	380.0	526.7	742.5	1004.2	1255.0	1456.5	1594.5	1671.1



TEST NUMBER: P831929

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	240.9	270.5	315.4	390.9	515.8	700.9	924.3	1153.1	1360.1	1518.9	1622.9
115°	265.0	294.6	336.2	403.0	514.7	673.5	862.9	1065.5	1256.1	1417.0	1536.4
117.5°	289.1	316.5	358.1	418.3	515.8	654.9	822.4	997.6	1166.3	1314.1	1437.9
120°	312.1	339.5	378.9	435.8	520.2	642.8	791.8	946.2	1094.0	1225.4	1336.0
122.5°	332.9	362.5	400.8	452.3	527.8	635.2	766.6	905.6	1036.0	1155.3	1256.1
125°	353.7	383.3	421.6	469.8	535.5	628.6	745.8	870.6	990.0	1095.1	1182.7
127.5°	373.4	403.0	440.2	484.0	544.3	625.3	726.0	838.8	947.3	1043.6	1124.7
130°	390.9	420.5	456.7	498.3	553.0	622.0	710.7	809.3	907.8	996.5	1071.0
132.5°	407.4	435.8	470.9	511.4	559.6	620.9	696.5	781.9	870.6	951.6	1021.7
135°	421.6	451.2	485.1	522.4	566.2	619.8	684.4	757.8	835.6	906.7	969.2
137.5°	434.8	462.1	495.0	531.1	570.5	617.6	673.5	734.8	800.5	864.0	919.9
140°	445.7	473.1	504.8	537.7	574.9	616.5	663.6	715.1	770.9	823.5	870.6
142.5°	456.7	481.8	512.5	544.3	578.2	614.3	654.9	696.5	742.5	786.3	825.7
145°	465.4	490.6	519.1	548.6	579.3	612.2	647.2	682.2	718.4	753.4	785.2
147.5°	476.4	498.3	524.5	551.9	579.3	608.9	639.5	670.2	699.8	729.3	752.3
150°	485.1	504.8	530.0	553.0	579.3	604.5	631.9	657.1	682.2	705.2	726.0
152.5°	493.9	512.5	533.3	555.2	576.0	599.0	623.1	645.0	665.8	685.5	702.0
155°	503.7	519.1	537.7	555.2	573.8	592.4	614.3	633.0	650.5	666.9	680.1
157.5°	512.5	524.5	539.9	556.3	570.5	587.0	604.5	619.8	635.2	648.3	659.2
160°	519.1	530.0	543.2	556.3	568.4	580.4	594.6	608.9	620.9	631.9	639.5
162.5°	524.5	533.3	544.3	555.2	564.0	573.8	584.8	595.7	605.6	615.4	622.0
165°	528.9	536.6	545.4	553.0	559.6	567.3	576.0	584.8	591.3	599.0	604.5
167.5°	533.3	538.8	545.4	551.9	555.2	560.7	567.3	574.9	580.4	584.8	589.2
170°	536.6	538.8	544.3	548.6	550.8	554.1	559.6	565.1	568.4	572.7	574.9
172.5°	538.8	539.9	544.3	547.5	547.5	548.6	551.9	556.3	558.5	561.8	562.9
175°	539.9	541.0	543.2	545.4	544.3	544.3	546.5	548.6	549.7	551.9	551.9
177.5°	541.0	541.0	542.1	544.3	542.1	541.0	542.1	543.2	544.3	545.4	545.4
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0



TEST NUMBER: P831929

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3532.4	3532.4	3532.4	3532.4
2.5°	3138.5	3131.3	3128.4	3125.5
5°	2690.2	2667.8	2662.7	2657.7
7.5°	2309.3	2299.9	2268.8	2237.6
10°	2000.1	1971.2	1958.1	1945.1
12.5°	1741.6	1714.8	1710.5	1706.1
15°	1541.0	1522.2	1515.7	1509.1
17.5°	1409.2	1396.2	1388.2	1380.2
20°	1311.4	1302.0	1296.2	1290.4
22.5°	1236.9	1229.6	1225.3	1220.9
25°	1165.2	1154.3	1150.7	1147.1
27.5°	1097.1	1087.7	1084.1	1080.4
30°	1033.4	1025.4	1020.3	1015.3
32.5°	963.9	954.4	951.5	948.6
35°	902.3	896.5	893.6	890.7
37.5°	837.1	829.9	825.5	821.2
40°	781.4	777.7	775.6	773.4
42.5°	724.9	718.4	717.6	716.9
45°	668.4	661.9	660.4	659.0
47.5°	615.5	609.7	609.0	608.3
50°	556.9	548.9	543.1	537.3
52.5°	489.5	482.3	477.2	472.2
55°	428.0	420.0	415.7	411.3
57.5°	381.6	378.0	375.8	373.7
60°	344.0	341.8	340.4	338.9
62.5°	309.2	307.0	307.0	307.0
65°	277.4	275.2	273.0	270.8
67.5°	236.1	231.7	231.0	230.3
70°	186.1	179.6	178.9	178.1
72.5°	145.6	144.8	143.4	141.9
75°	120.2	118.8	118.8	118.8
77.5°	97.0	95.6	95.6	95.6
80°	74.6	73.9	74.6	75.3
82.5°	55.0	55.0	54.3	53.6
85°	35.5	34.8	34.8	34.8
87.5°	17.4	17.4	17.4	17.4
90°	30.7	31.8	32.9	31.8
92.5°	63.5	59.1	60.2	58.0
95°	148.9	139.1	131.4	127.0
97.5°	340.6	299.0	272.7	260.6
100°	808.2	728.2	685.5	686.6
102.5°	1212.3	1153.1	1119.2	1087.4
105°	1475.1	1433.5	1398.4	1393.0
107.5°	1638.3	1618.5	1604.3	1592.3
110°	1701.8	1710.5	1708.3	1706.2



TEST NUMBER: P831929

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	1685.3	1717.1	1728.1	1729.1
115°	1618.5	1666.7	1688.6	1694.1
117.5°	1523.3	1576.9	1609.8	1617.4
120°	1422.5	1483.8	1510.1	1516.7
122.5°	1330.5	1384.2	1413.8	1422.5
125°	1252.8	1301.0	1328.3	1336.0
127.5°	1188.2	1229.8	1255.0	1261.5
130°	1129.0	1168.5	1191.5	1200.2
132.5°	1075.4	1114.8	1134.5	1140.0
135°	1022.8	1055.7	1075.4	1083.0
137.5°	965.9	999.8	1016.2	1022.8
140°	912.2	942.9	960.4	959.3
142.5°	859.6	885.9	901.3	900.2
145°	812.6	835.6	844.3	846.5
147.5°	774.2	790.7	799.4	800.5
150°	742.5	754.5	761.1	761.1
152.5°	714.0	724.9	728.2	728.2
155°	689.9	698.7	700.9	702.0
157.5°	668.0	674.6	676.8	676.8
160°	647.2	653.8	653.8	652.7
162.5°	626.4	631.9	631.9	630.8
165°	608.9	613.3	612.2	612.2
167.5°	591.3	594.6	593.5	593.5
170°	576.0	578.2	577.1	577.1
172.5°	562.9	565.1	562.9	561.8
175°	551.9	553.0	551.9	550.8
177.5°	544.3	545.4	543.2	543.2
180°	541.0	541.0	541.0	541.0



TEST NUMBER: P831929

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-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	13.71	14.55	14.65	15.49	16.72	18.38	19.21	19.31	20.16	21.38
	3H	14.93	15.68	15.88	16.64	17.88	19.88	20.62	20.83	21.58	22.83
	4H	15.32	16.02	16.28	16.98	18.24	20.37	21.07	21.33	22.03	23.29
	6H	15.60	16.25	16.57	17.21	18.48	20.68	21.33	21.65	22.29	23.56
	8H	15.68	16.30	16.67	17.28	18.55	20.76	21.37	21.74	22.36	23.62
	12H	15.74	16.32	16.72	17.30	18.59	20.79	21.37	21.77	22.35	23.64
4H	2H	14.44	15.14	15.41	16.10	17.36	18.37	19.08	19.34	20.04	21.29
	3H	15.80	16.39	16.78	17.38	18.65	20.03	20.62	21.01	21.61	22.88
	4H	16.26	16.79	17.25	17.78	19.07	20.64	21.17	21.62	22.15	23.45
	6H	16.63	17.09	17.63	18.09	19.39	21.08	21.53	22.07	22.54	23.83
	8H	16.75	17.18	17.75	18.18	19.49	21.21	21.63	22.21	22.63	23.94
	12H	16.83	17.22	17.85	18.23	19.54	21.27	21.65	22.29	22.67	23.98
8H	4H	16.58	17.00	17.58	18.00	19.31	20.60	21.03	21.60	22.03	23.34
	6H	17.04	17.39	18.06	18.43	19.74	21.10	21.45	22.13	22.50	23.80
	8H	17.23	17.54	18.27	18.57	19.90	21.29	21.60	22.32	22.63	23.95
	12H	17.37	17.65	18.41	18.67	20.04	21.40	21.68	22.44	22.70	24.07
12H	4H	16.59	16.97	17.60	17.99	19.30	20.55	20.94	21.57	21.96	23.27
	6H	17.10	17.41	18.13	18.44	19.76	21.08	21.39	22.11	22.42	23.74
	8H	17.32	17.59	18.35	18.61	19.98	21.27	21.54	22.30	22.56	23.93