

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: P831198

Luminaire Tested: S123DIP-S1165D1025U935-4F0-1E-UDD-G

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831198
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-5)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D1025U935-4F0-1E-UDD-G
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1025 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: -

Summary

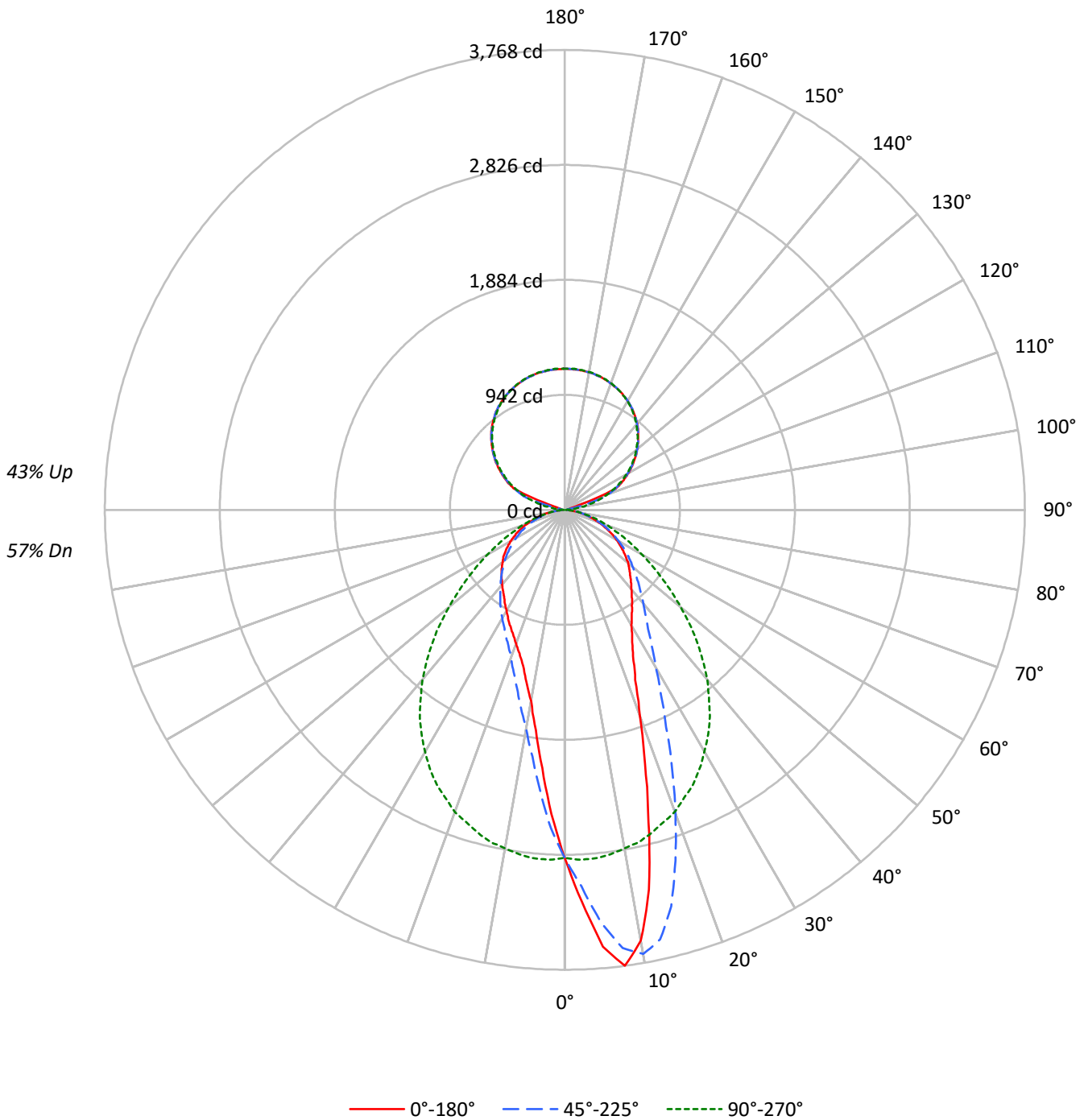
Lumens per Lamp: N/A
Luminaire Lumens: 8113.0 lumens
Efficiency: N/A
Efficacy: 119.1 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 68.1
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57				
1	100	96	92	89	93	89	86	83	77	75	73	66	64	63	56	55	54	49				
2	91	84	78	73	85	79	74	69	68	65	61	59	56	53	50	48	46	42				
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	42	40	36				
4	77	67	59	53	72	63	56	51	55	49	45	47	43	40	41	38	35	32				
5	71	60	52	46	66	56	49	44	49	44	40	43	39	35	37	34	31	28				
6	66	54	46	41	61	51	44	39	45	39	35	39	35	32	34	31	28	25				
7	61	49	42	36	57	46	39	35	41	35	31	36	32	28	31	28	25	23				
8	57	45	38	32	53	43	36	31	38	32	28	33	29	26	29	26	23	21				
9	53	41	34	29	50	39	33	28	35	29	26	31	27	23	27	24	21	19				
10	50	38	31	27	47	36	30	26	32	27	23	29	24	21	25	22	19	18				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	30697	30697	30697	30697	30697
5°	38821	36641	30972	24959	22936
10°	39198	40384	30766	19896	17386
15°	29524	37494	30556	16848	14703
20°	20570	30340	30166	14734	13355
25°	15686	23332	29500	13556	12526
30°	13570	18537	28439	12722	11859
35°	12590	15650	27215	12121	11390
40°	11920	14039	25493	11547	11231
45°	11523	12994	23307	11100	11160
50°	11323	12166	20719	10692	11102
55°	10903	11560	18179	10306	11151
60°	10512	10910	15668	9944	10968
65°	9875	10297	13517	9556	10753
70°	9120	9517	11493	8913	10121
75°	8255	8530	9852	8284	9245
80°	6806	7463	7792	7221	7792
85°	5397	6052	5718	6126	6212

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 26612 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	269.6	3.3
10°-20°	670.7	8.3
20°-30°	794.2	9.8
30°-40°	798.5	9.8
40°-50°	732.6	9.0
50°-60°	604.7	7.5
60°-70°	427.7	5.3
70°-80°	228.3	2.8
80°-90°	60.2	0.7
90°-100°	40.8	0.5
100°-110°	197.2	2.4
110°-120°	483.3	6.0
120°-130°	613.5	7.6
130°-140°	655.4	8.1
140°-150°	612.9	7.6
150°-160°	494.3	6.1
160°-170°	319.0	3.9
170°-180°	109.9	1.4
0°-30°	1734.5	21.4
0°-40°	2533.1	31.2
0°-60°	3870.4	47.7
0°-90°	4586.7	56.5
90°-120°	721.2	8.9
90°-150°	2603.0	32.1
90°-180°	3526.0	43.5
0°-180°	8113.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2852	2852	2852	2852	2852	
5°	3593	3391	2866	2310	2123	342
15°	2649	3365	2742	1512	1319	732
25°	1321	1964	2484	1141	1055	623
35°	958	1191	2071	922	867	602
45°	757	854	1531	729	733	586
55°	581	616	969	549	594	520
65°	388	404	531	375	422	385
75°	198	205	237	199	222	209
85°	44	49	46	50	50	49
90°	26	21	1	21	26	14
95°	33	27	52	27	33	27
105°	38	188	256	188	38	79
115°	505	493	480	493	505	475
125°	691	688	677	688	691	617
135°	852	852	843	852	852	657
145°	982	981	973	981	982	613
155°	1070	1071	1072	1071	1070	494
165°	1128	1127	1130	1127	1128	319
175°	1152	1153	1157	1153	1152	110
180°	1157	1157	1157	1157	1157	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8
2.5°	3214.4	3211.1	3207.8	3191.3	3174.7	3166.8	3158.9	3135.0	3111.2	3084.7	3058.3
5°	3592.9	3602.2	3611.4	3600.9	3590.3	3557.8	3525.4	3482.4	3439.4	3391.1	3342.8
7.5°	3767.6	3772.9	3778.2	3771.6	3764.9	3756.3	3747.7	3709.4	3671.0	3621.4	3571.7
10°	3586.3	3598.2	3610.1	3635.9	3661.7	3690.8	3720.0	3714.7	3709.4	3694.8	3680.3
12.5°	3188.0	3202.5	3217.1	3268.7	3320.3	3386.5	3452.6	3509.5	3566.4	3606.1	3645.8
15°	2649.4	2689.7	2730.1	2777.1	2824.0	2921.3	3018.6	3138.3	3258.1	3364.6	3471.2
17.5°	2182.2	2197.4	2212.7	2262.9	2313.2	2435.6	2558.0	2696.3	2834.6	3011.3	3188.0
20°	1795.8	1809.7	1823.6	1889.8	1955.9	2051.9	2147.8	2303.3	2458.8	2648.7	2838.6
22.5°	1508.6	1530.5	1552.3	1589.4	1626.4	1718.4	1810.4	1948.6	2086.9	2296.7	2506.4
25°	1320.7	1336.6	1352.5	1375.0	1397.5	1470.9	1544.4	1658.2	1772.0	1964.5	2157.1
27.5°	1192.3	1199.0	1205.6	1228.1	1250.6	1298.2	1345.9	1443.8	1541.7	1705.1	1868.6
30°	1091.8	1096.4	1101.0	1120.9	1140.7	1173.2	1205.6	1276.4	1347.2	1491.4	1635.7
32.5°	1021.6	1024.9	1028.2	1043.5	1058.7	1081.8	1105.0	1156.6	1208.2	1327.3	1446.4
35°	958.1	960.1	962.1	973.3	984.6	1001.8	1019.0	1058.0	1097.1	1191.0	1285.0
37.5°	902.5	905.2	907.8	914.4	921.1	936.3	951.5	982.6	1013.7	1085.8	1157.9
40°	848.3	852.9	857.5	862.2	866.8	879.4	891.9	915.8	939.6	999.1	1058.7
42.5°	802.0	806.6	811.2	813.2	815.2	822.5	829.7	851.6	873.4	917.7	962.1
45°	757.0	758.9	760.9	762.9	764.9	770.9	776.8	796.0	815.2	853.6	891.9
47.5°	715.9	715.9	715.9	717.3	718.6	723.9	729.2	743.1	757.0	786.7	816.5
50°	676.2	676.2	676.2	674.3	672.3	675.6	678.9	689.5	700.1	726.5	753.0
52.5°	628.6	628.6	628.6	629.3	629.9	629.9	629.9	639.2	648.4	672.3	696.1
55°	581.0	583.6	586.2	584.3	582.3	583.6	584.9	590.9	596.8	616.0	635.2
57.5°	533.3	534.6	536.0	535.3	534.6	535.3	536.0	541.3	546.5	561.1	575.7
60°	488.3	488.3	488.3	487.0	485.7	487.0	488.3	491.0	493.6	506.8	520.1
62.5°	438.0	438.7	439.4	440.0	440.7	439.4	438.0	441.3	444.6	454.6	464.5
65°	387.7	388.4	389.1	391.1	393.0	391.7	390.4	393.7	397.0	404.3	411.6
67.5°	342.7	341.4	340.1	340.8	341.4	343.4	345.4	346.1	346.7	354.7	362.6
70°	289.8	291.1	292.5	291.8	291.1	291.8	292.5	294.4	296.4	302.4	308.3
72.5°	242.2	242.8	243.5	243.5	243.5	244.8	246.1	248.1	250.1	253.4	256.7
75°	198.5	198.5	198.5	199.8	201.2	201.8	202.5	202.5	202.5	205.1	207.8
77.5°	150.9	154.2	157.5	156.8	156.2	157.5	158.8	160.8	162.8	164.1	165.4
80°	109.8	109.8	109.8	110.5	111.2	113.1	115.1	116.5	117.8	120.4	123.1
82.5°	70.1	70.8	71.5	73.4	75.4	76.8	78.1	80.1	82.0	82.0	82.0
85°	43.7	42.3	41.0	42.3	43.7	45.0	46.3	47.0	47.6	49.0	50.3
87.5°	21.2	21.2	21.2	21.2	21.2	21.8	22.5	22.5	22.5	22.5	22.5
90°	25.8	25.4	25.0	24.6	24.3	23.7	22.9	22.2	21.4	20.6	18.1
92.5°	29.2	29.0	28.8	28.6	28.5	27.7	26.4	25.0	23.7	22.3	20.6
95°	32.7	32.7	32.7	32.7	32.7	32.0	30.7	29.3	28.0	26.6	24.5
97.5°	35.2	35.0	34.9	34.7	34.5	33.6	32.1	30.6	29.0	27.5	37.2
100°	36.1	35.9	35.7	35.5	35.3	34.5	32.9	31.4	29.9	28.4	58.2
102.5°	37.0	36.6	36.2	35.8	35.4	38.4	44.7	51.0	57.3	63.6	96.8
105°	37.8	37.4	37.0	36.7	36.3	53.0	86.8	120.6	154.4	188.2	205.4
107.5°	89.4	114.4	139.4	164.4	189.5	216.7	246.1	275.5	304.9	334.3	331.4
110°	236.3	263.6	291.0	318.3	345.6	362.4	368.7	375.0	381.3	387.6	385.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	447.7	448.1	448.5	448.9	449.3	448.6	446.9	445.2	443.5	441.7	439.6
115°	505.3	504.6	503.8	503.0	502.3	500.9	499.0	497.1	495.2	493.3	491.6
117.5°	551.7	551.5	551.4	551.2	551.0	550.1	548.6	547.1	545.5	544.0	543.0
120°	599.9	599.9	599.9	599.9	599.9	599.1	597.6	596.0	594.5	593.0	592.4
122.5°	647.1	646.9	646.7	646.6	646.4	645.8	644.8	643.9	642.9	642.0	641.2
125°	691.0	690.6	690.2	689.8	689.4	689.0	688.7	688.3	687.9	687.5	686.8
127.5°	733.9	734.3	734.7	735.1	735.5	735.4	734.8	734.2	733.6	733.1	732.1
130°	775.2	775.6	775.9	776.3	776.7	776.5	775.8	775.0	774.2	773.5	772.7
132.5°	813.0	813.6	814.1	814.7	815.3	815.2	814.4	813.7	812.9	812.1	811.6
135°	851.7	852.2	852.8	853.4	854.0	854.0	853.4	852.8	852.2	851.7	850.9
137.5°	888.6	889.0	889.4	889.8	890.1	889.9	888.9	888.0	887.0	886.0	885.7
140°	921.3	921.7	922.0	922.4	922.8	922.6	921.9	921.1	920.3	919.6	919.0
142.5°	951.4	951.9	952.5	953.1	953.6	953.6	953.1	952.5	951.9	951.4	950.8
145°	982.3	982.3	982.3	982.3	982.3	982.1	981.7	981.3	981.0	980.6	980.2
147.5°	1004.6	1005.6	1006.6	1007.5	1008.5	1008.7	1008.4	1008.0	1007.6	1007.2	1006.8
150°	1030.4	1031.0	1031.6	1032.1	1032.7	1032.8	1032.4	1032.0	1031.7	1031.3	1030.9
152.5°	1051.0	1052.0	1053.0	1053.9	1054.9	1055.0	1054.2	1053.4	1052.7	1051.9	1051.7
155°	1070.0	1071.1	1072.2	1073.4	1074.5	1074.6	1073.7	1072.7	1071.8	1070.8	1070.6
157.5°	1086.3	1087.8	1089.3	1090.9	1092.4	1092.6	1091.4	1090.3	1089.1	1088.0	1088.2
160°	1101.8	1103.1	1104.4	1105.8	1107.1	1107.2	1106.1	1104.9	1103.8	1102.6	1102.8
162.5°	1116.4	1117.5	1118.7	1119.8	1120.9	1120.9	1119.5	1118.2	1116.8	1115.5	1115.7
165°	1127.5	1128.9	1130.2	1131.5	1132.9	1132.8	1131.3	1129.7	1128.2	1126.7	1126.9
167.5°	1136.1	1137.7	1139.2	1140.7	1142.2	1142.2	1140.7	1139.2	1137.7	1136.1	1136.1
170°	1143.9	1145.4	1146.9	1148.4	1150.0	1150.0	1148.4	1146.9	1145.4	1143.9	1143.9
172.5°	1148.2	1149.9	1151.6	1153.3	1155.0	1155.1	1153.6	1152.1	1150.5	1149.0	1148.8
175°	1152.5	1154.0	1155.5	1157.0	1158.6	1158.7	1157.3	1156.0	1154.7	1153.3	1153.1
177.5°	1153.3	1155.2	1157.1	1159.0	1161.0	1161.1	1159.6	1158.1	1156.6	1155.0	1154.8
180°	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8
2.5°	3050.3	3042.4	3013.3	2984.2	2951.1	2918.0	2893.5	2869.0	2832.6	2796.3	2766.5
5°	3305.7	3268.7	3207.2	3145.6	3062.2	2978.9	2922.6	2866.4	2791.0	2715.5	2655.3
7.5°	3508.2	3444.7	3358.7	3272.7	3163.5	3054.3	2951.1	2847.9	2732.7	2617.6	2523.6
10°	3637.2	3594.2	3495.0	3395.7	3249.5	3103.3	2959.0	2814.8	2666.6	2518.3	2394.0
12.5°	3649.8	3653.8	3562.5	3471.2	3305.7	3140.3	2965.0	2789.6	2603.0	2416.4	2271.5
15°	3539.3	3607.5	3557.2	3506.9	3340.2	3173.4	2957.7	2742.0	2526.9	2311.9	2144.5
17.5°	3334.2	3480.4	3487.7	3495.0	3328.2	3161.5	2922.6	2683.8	2440.3	2196.8	2020.8
20°	3054.3	3270.0	3344.1	3418.2	3282.6	3146.9	2890.2	2633.5	2360.9	2088.3	1903.6
22.5°	2768.5	3030.5	3166.1	3301.8	3201.2	3100.6	2827.4	2554.1	2266.2	1978.4	1791.2
25°	2442.9	2728.8	2937.2	3145.6	3084.1	3022.5	2753.2	2483.9	2177.6	1871.2	1680.0
27.5°	2159.1	2449.5	2701.0	2952.4	2939.2	2925.9	2658.6	2391.3	2077.7	1764.0	1579.4
30°	1906.3	2176.9	2458.1	2739.3	2771.8	2804.2	2546.1	2288.1	1973.8	1659.5	1481.5
32.5°	1682.6	1918.9	2220.6	2522.3	2585.8	2649.4	2416.4	2183.5	1872.5	1561.6	1390.2
35°	1499.4	1713.7	2015.5	2317.2	2396.6	2476.0	2273.5	2071.1	1768.0	1465.0	1301.5
37.5°	1337.3	1516.6	1811.0	2105.5	2202.7	2300.0	2118.7	1937.4	1653.5	1369.7	1219.5
40°	1202.9	1347.2	1617.8	1888.4	2000.9	2113.4	1963.9	1814.3	1545.0	1275.7	1137.4
42.5°	1090.4	1218.8	1464.3	1709.8	1817.6	1925.5	1799.1	1672.7	1433.2	1193.7	1067.3
45°	994.5	1097.1	1320.0	1543.0	1645.6	1748.2	1639.6	1531.1	1320.0	1109.0	991.2
47.5°	904.5	992.5	1183.1	1373.6	1465.0	1556.3	1471.6	1386.9	1208.2	1029.6	923.0
50°	823.8	894.6	1061.3	1228.1	1307.5	1386.9	1312.1	1237.3	1090.4	943.6	850.9
52.5°	753.7	811.2	950.8	1090.4	1158.6	1226.8	1162.6	1098.4	981.9	865.5	784.8
55°	684.2	733.1	854.2	975.3	1021.6	1067.9	1018.3	968.7	874.7	780.8	712.6
57.5°	619.3	663.0	762.3	861.5	897.2	933.0	888.0	843.0	772.2	701.4	644.5
60°	555.8	591.5	674.3	757.0	778.8	800.6	764.2	727.8	678.2	628.6	577.6
62.5°	496.9	529.3	590.9	652.4	667.0	681.5	653.7	625.9	588.2	550.5	510.8
65°	436.0	460.5	510.8	561.1	570.4	579.6	555.1	530.7	502.2	473.8	444.6
67.5°	379.8	397.0	438.0	479.1	479.7	480.4	460.5	440.7	424.8	408.9	385.8
70°	324.9	341.4	368.6	395.7	396.3	397.0	381.1	365.2	353.3	341.4	324.2
72.5°	268.6	280.6	301.1	321.6	320.3	318.9	309.0	299.1	289.8	280.6	268.0
75°	217.7	227.6	241.5	255.4	251.4	247.5	242.2	236.9	228.9	221.0	213.1
77.5°	171.4	177.3	185.3	193.2	190.6	187.9	183.3	178.7	172.7	166.7	163.4
80°	125.7	128.4	133.7	139.0	137.6	136.3	131.0	125.7	124.4	123.1	118.4
82.5°	85.4	88.7	90.0	91.3	90.6	90.0	86.0	82.0	80.7	79.4	78.7
85°	50.9	51.6	52.3	52.9	50.9	49.0	47.6	46.3	46.3	46.3	45.7
87.5°	23.2	23.8	23.8	23.8	23.2	22.5	21.2	19.9	20.5	21.2	21.2
90°	15.7	13.2	10.7	8.5	6.6	4.7	2.8	0.9	2.8	4.7	6.6
92.5°	18.9	17.2	15.5	15.2	16.3	17.5	18.6	19.8	18.6	17.5	16.3
95°	22.4	20.3	18.2	21.1	28.9	36.8	44.6	52.4	44.6	36.8	28.9
97.5°	47.0	56.7	66.5	74.0	79.4	84.7	90.0	95.4	90.0	84.7	79.4
100°	87.9	117.7	147.5	160.5	156.7	152.9	149.1	145.2	149.1	152.9	156.7
102.5°	130.1	163.3	196.5	211.9	209.4	206.9	204.4	202.0	204.4	206.9	209.4
105°	222.6	239.8	257.0	264.5	262.4	260.3	258.2	256.1	258.2	260.3	262.4
107.5°	328.6	325.7	322.8	320.6	318.8	317.1	315.4	313.7	315.4	317.1	318.8
110°	383.4	381.3	379.2	377.4	375.8	374.3	372.8	371.3	372.8	374.3	375.8



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	437.5	435.4	433.3	431.6	430.3	428.9	427.6	426.3	427.6	428.9	430.3
115°	489.9	488.1	486.4	485.0	483.8	482.7	481.6	480.4	481.6	482.7	483.8
117.5°	542.1	541.1	540.2	539.0	537.7	536.4	535.0	533.7	535.0	536.4	537.7
120°	591.8	591.3	590.7	589.5	587.8	586.1	584.4	582.7	584.4	586.1	587.8
122.5°	640.4	639.7	638.9	637.9	636.5	635.2	633.9	632.5	633.9	635.2	636.5
125°	686.0	685.2	684.5	683.3	681.8	680.3	678.7	677.2	678.7	680.3	681.8
127.5°	731.2	730.2	729.3	728.0	726.5	725.0	723.4	721.9	723.4	725.0	726.5
130°	771.9	771.2	770.4	769.3	767.7	766.2	764.7	763.1	764.7	766.2	767.7
132.5°	811.0	810.4	809.8	808.8	807.3	805.7	804.2	802.7	804.2	805.7	807.3
135°	850.1	849.4	848.6	847.7	846.5	845.4	844.2	843.1	844.2	845.4	846.5
137.5°	885.3	884.9	884.5	883.6	882.0	880.5	879.0	877.4	879.0	880.5	882.0
140°	918.4	917.8	917.3	916.4	915.3	914.1	913.0	911.8	913.0	914.1	915.3
142.5°	950.2	949.6	949.1	948.2	947.1	945.9	944.8	943.6	944.8	945.9	947.1
145°	979.8	979.4	979.1	978.2	976.9	975.5	974.2	972.8	974.2	975.5	976.9
147.5°	1006.5	1006.1	1005.7	1005.0	1004.1	1003.1	1002.2	1001.2	1002.2	1003.1	1004.1
150°	1030.5	1030.1	1029.8	1029.3	1028.7	1028.1	1027.6	1027.0	1027.6	1028.1	1028.7
152.5°	1051.5	1051.3	1051.1	1051.0	1050.8	1050.6	1050.4	1050.2	1050.4	1050.6	1050.8
155°	1070.4	1070.2	1070.1	1070.1	1070.5	1070.9	1071.3	1071.7	1071.3	1070.9	1070.5
157.5°	1088.4	1088.6	1088.8	1088.9	1088.9	1088.9	1088.9	1088.9	1088.9	1088.9	1088.9
160°	1103.0	1103.2	1103.4	1103.6	1103.8	1103.9	1104.1	1104.3	1104.1	1103.9	1103.8
162.5°	1115.9	1116.1	1116.3	1116.6	1117.2	1117.8	1118.4	1118.9	1118.4	1117.8	1117.2
165°	1127.1	1127.2	1127.4	1127.8	1128.4	1129.0	1129.5	1130.1	1129.5	1129.0	1128.4
167.5°	1136.1	1136.1	1136.1	1136.5	1137.3	1138.0	1138.8	1139.6	1138.8	1138.0	1137.3
170°	1143.9	1143.9	1143.9	1144.2	1145.0	1145.8	1146.5	1147.3	1146.5	1145.8	1145.0
172.5°	1148.6	1148.4	1148.3	1148.6	1149.6	1150.5	1151.5	1152.5	1151.5	1150.5	1149.6
175°	1152.9	1152.7	1152.6	1152.9	1153.9	1154.8	1155.8	1156.8	1155.8	1154.8	1153.9
177.5°	1154.7	1154.5	1154.3	1154.7	1155.6	1156.6	1157.5	1158.5	1157.5	1156.6	1155.6
180°	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8	2851.8
2.5°	2736.7	2710.9	2685.1	2665.2	2645.4	2611.6	2577.9	2570.0	2562.0	2550.8	2539.5
5°	2595.1	2531.6	2468.1	2411.2	2354.3	2309.9	2265.6	2236.5	2207.4	2186.2	2165.0
7.5°	2429.7	2334.4	2239.1	2171.6	2104.1	2040.0	1975.8	1955.3	1934.7	1907.0	1879.2
10°	2269.6	2164.3	2059.1	1971.1	1883.1	1820.3	1757.4	1732.3	1707.1	1672.1	1637.0
12.5°	2126.6	2011.5	1896.4	1807.7	1719.0	1658.2	1597.3	1560.9	1524.5	1504.7	1484.8
15°	1977.1	1854.0	1731.0	1648.9	1566.9	1511.9	1457.0	1425.3	1393.5	1374.3	1355.1
17.5°	1844.8	1723.0	1601.3	1522.5	1443.8	1393.5	1343.2	1315.4	1287.6	1273.1	1258.5
20°	1719.0	1599.9	1480.8	1404.1	1327.3	1286.3	1245.3	1227.4	1209.5	1197.6	1185.7
22.5°	1603.9	1486.8	1369.7	1304.2	1238.7	1205.6	1172.5	1159.9	1147.4	1137.4	1127.5
25°	1488.8	1384.2	1279.7	1224.1	1168.5	1141.4	1114.3	1101.7	1089.1	1079.2	1069.3
27.5°	1394.8	1294.9	1195.0	1147.4	1099.7	1078.5	1057.4	1047.4	1037.5	1028.2	1019.0
30°	1303.5	1214.2	1124.9	1083.8	1042.8	1023.6	1004.4	994.5	984.6	976.0	967.4
32.5°	1218.8	1142.1	1065.3	1027.6	989.9	974.0	958.1	946.2	934.3	927.7	921.1
35°	1138.1	1069.3	1000.5	969.4	938.3	922.4	906.5	896.6	886.6	881.4	876.1
37.5°	1069.3	1007.7	946.2	916.4	886.6	871.4	856.2	847.6	839.0	837.0	835.0
40°	999.1	946.2	893.3	864.2	835.0	821.8	808.6	803.3	798.0	796.7	795.3
42.5°	940.9	889.3	837.7	811.2	784.8	773.5	762.3	759.6	757.0	758.9	760.9
45°	873.4	830.4	787.4	762.9	738.4	729.2	719.9	717.9	715.9	719.9	723.9
47.5°	816.5	776.8	737.1	714.0	690.8	684.2	677.6	676.9	676.2	681.5	686.8
50°	758.3	719.9	681.5	663.0	644.5	638.5	632.6	634.5	636.5	645.1	653.7
52.5°	704.0	668.3	632.6	615.4	598.2	594.2	590.2	594.8	599.5	608.7	618.0
55°	644.5	612.1	579.6	566.4	553.2	549.2	545.2	554.5	563.7	572.4	581.0
57.5°	587.6	559.1	530.7	518.8	506.8	506.2	505.5	514.1	522.7	532.0	541.3
60°	526.7	502.9	479.1	469.8	460.5	461.9	463.2	473.1	483.0	490.3	497.6
62.5°	471.1	451.3	431.4	422.8	414.2	417.5	420.8	430.8	440.7	449.3	457.9
65°	415.5	399.0	382.5	376.5	370.5	375.2	379.8	388.4	397.0	403.0	408.9
67.5°	362.6	348.7	334.8	330.2	325.5	330.2	334.8	343.4	352.0	358.0	363.9
70°	307.0	295.8	284.5	281.2	277.9	283.2	288.5	295.8	303.0	309.0	315.0
72.5°	255.4	246.8	238.2	237.5	236.9	241.5	246.1	253.4	260.7	264.7	268.6
75°	205.1	200.5	195.9	195.2	194.5	199.2	203.8	207.8	211.7	215.0	218.4
77.5°	160.1	156.2	152.2	152.8	153.5	156.8	160.1	164.1	168.1	170.1	172.0
80°	113.8	112.5	111.2	112.5	113.8	116.5	119.1	121.7	124.4	125.7	127.0
82.5°	78.1	76.8	75.4	77.4	79.4	81.4	83.4	85.4	87.3	88.0	88.7
85°	45.0	47.0	49.0	49.0	49.0	49.6	50.3	50.9	51.6	50.9	50.3
87.5°	21.2	21.8	22.5	22.5	22.5	23.2	23.8	23.8	23.8	23.2	22.5
90°	8.5	10.7	13.2	15.7	18.1	20.6	21.4	22.2	22.9	23.7	24.3
92.5°	15.2	15.5	17.2	18.9	20.6	22.3	23.7	25.0	26.4	27.7	28.5
95°	21.1	18.2	20.3	22.4	24.5	26.6	28.0	29.3	30.7	32.0	32.7
97.5°	74.0	66.5	56.7	47.0	37.2	27.5	29.0	30.6	32.1	33.6	34.5
100°	160.5	147.5	117.7	87.9	58.2	28.4	29.9	31.4	32.9	34.5	35.3
102.5°	211.9	196.5	163.3	130.1	96.8	63.6	57.3	51.0	44.7	38.4	35.4
105°	264.5	257.0	239.8	222.6	205.4	188.2	154.4	120.6	86.8	53.0	36.3
107.5°	320.6	322.8	325.7	328.6	331.4	334.3	304.9	275.5	246.1	216.7	189.5
110°	377.4	379.2	381.3	383.4	385.5	387.6	381.3	375.0	368.7	362.4	345.6



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	431.6	433.3	435.4	437.5	439.6	441.7	443.5	445.2	446.9	448.6	449.3
115°	485.0	486.4	488.1	489.9	491.6	493.3	495.2	497.1	499.0	500.9	502.3
117.5°	539.0	540.2	541.1	542.1	543.0	544.0	545.5	547.1	548.6	550.1	551.0
120°	589.5	590.7	591.3	591.8	592.4	593.0	594.5	596.0	597.6	599.1	599.9
122.5°	637.9	638.9	639.7	640.4	641.2	642.0	642.9	643.9	644.8	645.8	646.4
125°	683.3	684.5	685.2	686.0	686.8	687.5	687.9	688.3	688.7	689.0	689.4
127.5°	728.0	729.3	730.2	731.2	732.1	733.1	733.6	734.2	734.8	735.4	735.5
130°	769.3	770.4	771.2	771.9	772.7	773.5	774.2	775.0	775.8	776.5	776.7
132.5°	808.8	809.8	810.4	811.0	811.6	812.1	812.9	813.7	814.4	815.2	815.3
135°	847.7	848.6	849.4	850.1	850.9	851.7	852.2	852.8	853.4	854.0	854.0
137.5°	883.6	884.5	884.9	885.3	885.7	886.0	887.0	888.0	888.9	889.9	890.1
140°	916.4	917.3	917.8	918.4	919.0	919.6	920.3	921.1	921.9	922.6	922.8
142.5°	948.2	949.1	949.6	950.2	950.8	951.4	951.9	952.5	953.1	953.6	953.6
145°	978.2	979.1	979.4	979.8	980.2	980.6	981.0	981.3	981.7	982.1	982.3
147.5°	1005.0	1005.7	1006.1	1006.5	1006.8	1007.2	1007.6	1008.0	1008.4	1008.7	1008.5
150°	1029.3	1029.8	1030.1	1030.5	1030.9	1031.3	1031.7	1032.0	1032.4	1032.8	1032.7
152.5°	1051.0	1051.1	1051.3	1051.5	1051.7	1051.9	1052.7	1053.4	1054.2	1055.0	1054.9
155°	1070.1	1070.1	1070.2	1070.4	1070.6	1070.8	1071.8	1072.7	1073.7	1074.6	1074.5
157.5°	1088.9	1088.8	1088.6	1088.4	1088.2	1088.0	1089.1	1090.3	1091.4	1092.6	1092.4
160°	1103.6	1103.4	1103.2	1103.0	1102.8	1102.6	1103.8	1104.9	1106.1	1107.2	1107.1
162.5°	1116.6	1116.3	1116.1	1115.9	1115.7	1115.5	1116.8	1118.2	1119.5	1120.9	1120.9
165°	1127.8	1127.4	1127.2	1127.1	1126.9	1126.7	1128.2	1129.7	1131.3	1132.8	1132.9
167.5°	1136.5	1136.1	1136.1	1136.1	1136.1	1136.1	1137.7	1139.2	1140.7	1142.2	1142.2
170°	1144.2	1143.9	1143.9	1143.9	1143.9	1143.9	1145.4	1146.9	1148.4	1150.0	1150.0
172.5°	1148.6	1148.3	1148.4	1148.6	1148.8	1149.0	1150.5	1152.1	1153.6	1155.1	1155.0
175°	1152.9	1152.6	1152.7	1152.9	1153.1	1153.3	1154.7	1156.0	1157.3	1158.7	1158.6
177.5°	1154.7	1154.3	1154.5	1154.7	1154.8	1155.0	1156.6	1158.1	1159.6	1161.1	1161.0
180°	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8	1156.8



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2851.8	2851.8	2851.8	2851.8
2.5°	2534.9	2530.3	2511.7	2493.2
5°	2149.1	2133.3	2128.0	2122.7
7.5°	1877.8	1876.5	1848.7	1820.9
10°	1639.0	1641.0	1615.8	1590.7
12.5°	1468.3	1451.7	1449.7	1447.8
15°	1339.9	1324.7	1322.0	1319.4
17.5°	1249.2	1240.0	1237.3	1234.7
20°	1180.4	1175.1	1170.5	1165.9
22.5°	1120.9	1114.3	1110.3	1106.3
25°	1063.3	1057.4	1056.0	1054.7
27.5°	1011.7	1004.4	1004.4	1004.4
30°	962.7	958.1	956.1	954.1
32.5°	917.1	913.1	913.1	913.1
35°	874.1	872.1	869.4	866.8
37.5°	835.0	835.0	833.7	832.4
40°	797.3	799.3	799.3	799.3
42.5°	762.9	764.9	764.9	764.9
45°	727.2	730.5	731.8	733.1
47.5°	692.1	697.4	698.7	700.1
50°	657.7	661.7	662.3	663.0
52.5°	622.6	627.3	630.6	633.9
55°	585.6	590.2	592.2	594.2
57.5°	545.9	550.5	551.2	551.8
60°	502.2	506.8	508.2	509.5
62.5°	460.5	463.2	464.5	465.8
65°	412.9	416.9	419.5	422.2
67.5°	367.2	370.5	370.5	370.5
70°	316.3	317.6	319.6	321.6
72.5°	269.3	270.0	270.0	270.0
75°	219.7	221.0	221.7	222.3
77.5°	172.7	173.4	173.4	173.4
80°	126.4	125.7	125.7	125.7
82.5°	86.7	84.7	84.7	84.7
85°	49.6	49.0	49.6	50.3
87.5°	22.5	22.5	22.5	22.5
90°	24.6	25.0	25.4	25.8
92.5°	28.6	28.8	29.0	29.2
95°	32.7	32.7	32.7	32.7
97.5°	34.7	34.9	35.0	35.2
100°	35.5	35.7	35.9	36.1
102.5°	35.8	36.2	36.6	37.0
105°	36.7	37.0	37.4	37.8
107.5°	164.4	139.4	114.4	89.4
110°	318.3	291.0	263.6	236.3



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	448.9	448.5	448.1	447.7
115°	503.0	503.8	504.6	505.3
117.5°	551.2	551.4	551.5	551.7
120°	599.9	599.9	599.9	599.9
122.5°	646.6	646.7	646.9	647.1
125°	689.8	690.2	690.6	691.0
127.5°	735.1	734.7	734.3	733.9
130°	776.3	775.9	775.6	775.2
132.5°	814.7	814.1	813.6	813.0
135°	853.4	852.8	852.2	851.7
137.5°	889.8	889.4	889.0	888.6
140°	922.4	922.0	921.7	921.3
142.5°	953.1	952.5	951.9	951.4
145°	982.3	982.3	982.3	982.3
147.5°	1007.5	1006.6	1005.6	1004.6
150°	1032.1	1031.6	1031.0	1030.4
152.5°	1053.9	1053.0	1052.0	1051.0
155°	1073.4	1072.2	1071.1	1070.0
157.5°	1090.9	1089.3	1087.8	1086.3
160°	1105.8	1104.4	1103.1	1101.8
162.5°	1119.8	1118.7	1117.5	1116.4
165°	1131.5	1130.2	1128.9	1127.5
167.5°	1140.7	1139.2	1137.7	1136.1
170°	1148.4	1146.9	1145.4	1143.9
172.5°	1153.3	1151.6	1149.9	1148.2
175°	1157.0	1155.5	1154.0	1152.5
177.5°	1159.0	1157.1	1155.2	1153.3
180°	1156.8	1156.8	1156.8	1156.8



TEST NUMBER: P831198

CATALOG NUMBER: S123DIP-S1165D1025U935-4F0-1E-UDD-G

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	16.05	16.94	16.96	17.86	19.03	18.29	19.17	19.20	20.09	21.27
	3H	17.70	18.49	18.62	19.42	20.63	19.72	20.51	20.64	21.44	22.64
	4H	18.28	19.03	19.22	19.96	21.17	20.17	20.91	21.10	21.85	23.06
	6H	18.65	19.34	19.60	20.28	21.51	20.45	21.13	21.39	22.07	23.30
	8H	18.75	19.40	19.70	20.36	21.58	20.51	21.16	21.46	22.12	23.34
	12H	18.80	19.42	19.75	20.37	21.62	20.53	21.15	21.49	22.10	23.35
4H	2H	16.63	17.38	17.57	18.31	19.52	18.46	19.20	19.40	20.14	21.35
	3H	18.46	19.08	19.41	20.05	21.28	20.08	20.70	21.03	21.66	22.89
	4H	19.16	19.73	20.12	20.69	21.94	20.66	21.23	21.62	22.19	23.44
	6H	19.64	20.13	20.61	21.11	22.36	21.07	21.56	22.04	22.54	23.79
	8H	19.78	20.23	20.75	21.21	22.47	21.18	21.63	22.15	22.61	23.88
	12H	19.84	20.25	20.83	21.25	22.52	21.23	21.64	22.22	22.63	23.90
8H	4H	19.43	19.88	20.40	20.86	22.13	20.77	21.22	21.74	22.20	23.47
	6H	20.02	20.39	21.02	21.41	22.68	21.27	21.65	22.27	22.67	23.93
	8H	20.23	20.56	21.23	21.56	22.85	21.45	21.78	22.46	22.79	24.07
	12H	20.35	20.64	21.36	21.64	22.97	21.56	21.85	22.56	22.85	24.17
12H	4H	19.43	19.84	20.42	20.83	22.10	20.75	21.16	21.74	22.15	23.42
	6H	20.07	20.40	21.08	21.41	22.69	21.29	21.62	22.29	22.63	23.91
	8H	20.30	20.60	21.31	21.60	22.92	21.49	21.78	22.50	22.78	24.11