

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: P831210

Luminaire Tested: S123DIP-S1165D1195U835-4F0-1E-UDD-G

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831210
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-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

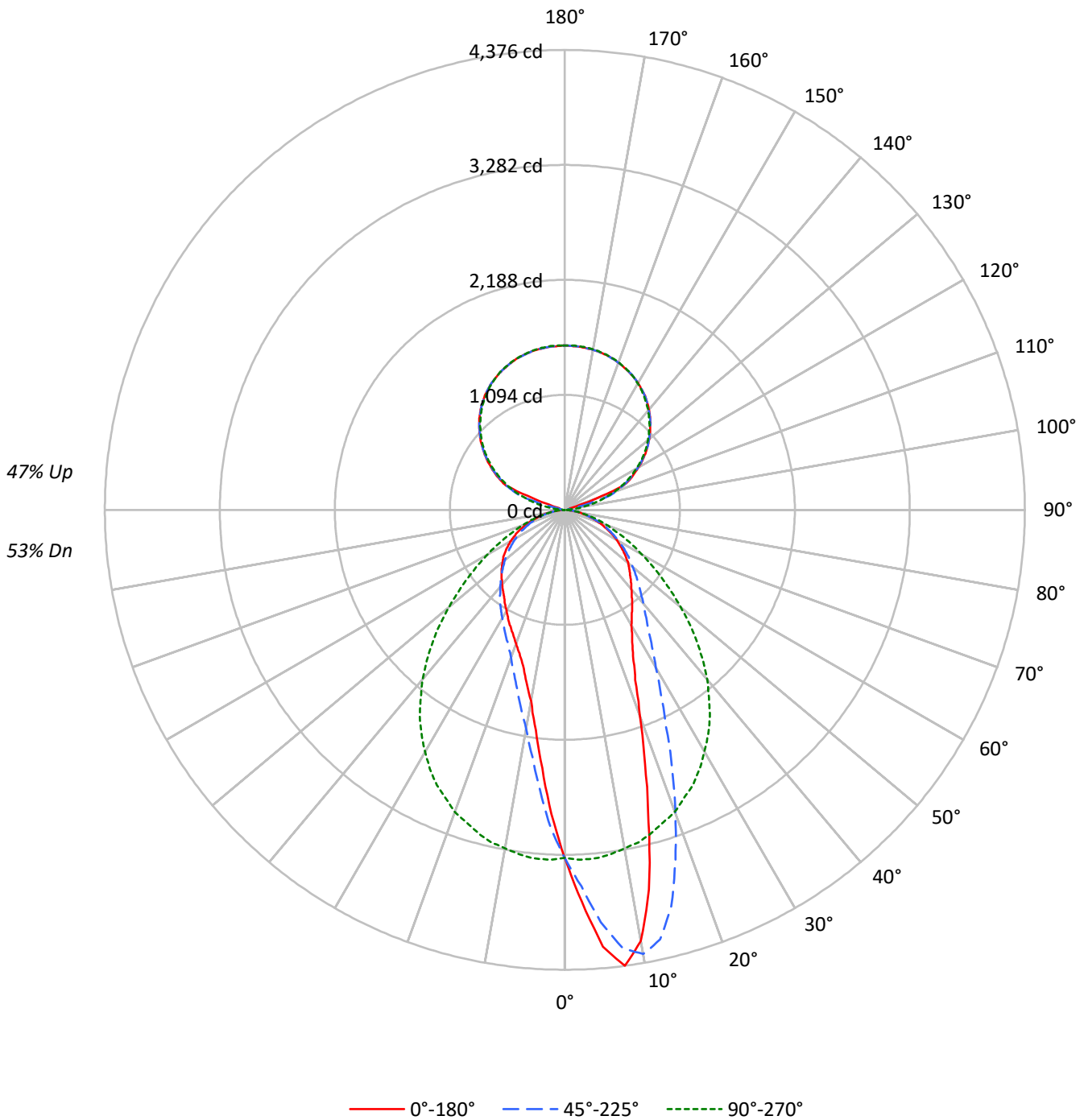
Lumens per Lamp: N/A
Luminaire Lumens: 10094.8 lumens
Efficiency: N/A
Efficacy: 137.9 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 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	71	71	71	59	59	59	53				
1	99	95	91	88	92	88	85	82	75	73	71	63	62	60	53	52	51	46				
2	91	83	78	73	84	78	73	68	67	63	60	56	54	51	47	45	44	39				
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38	34				
4	76	66	58	53	71	62	55	50	53	48	44	46	42	39	38	36	33	30				
5	70	59	51	46	65	55	48	43	48	43	39	41	37	34	35	32	29	26				
6	65	53	46	40	60	50	43	38	44	38	34	38	33	30	32	29	26	24				
7	61	49	41	36	56	46	39	34	40	34	30	35	30	27	30	26	24	21				
8	56	44	37	32	52	42	35	30	37	31	27	32	28	25	27	24	22	19				
9	53	41	34	29	49	38	32	27	34	29	25	30	25	22	25	22	20	18				
10	49	38	31	26	46	36	29	25	31	26	23	28	23	20	24	21	18	16				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	35652	35652	35652	35652	35652
5°	45089	42557	35971	28988	26639
10°	45527	46904	35732	23107	20193
15°	34290	43547	35489	19568	17076
20°	23891	35238	35035	17113	15511
25°	18218	27099	34264	15745	14549
30°	15760	21530	33030	14777	13774
35°	14623	18177	31608	14077	13228
40°	13843	16305	29609	13412	13045
45°	13384	15092	27070	12892	12962
50°	13152	14130	24065	12419	12894
55°	12662	13427	21114	11971	12951
60°	12211	12673	18200	11548	12738
65°	11469	11961	15697	11097	12488
70°	10593	11053	13350	10351	11755
75°	9590	9906	11441	9619	10738
80°	7910	8672	9050	8387	9050
85°	6262	7027	6644	7114	7213

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 30908 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	313.1	3.1
10°-20°	779.0	7.7
20°-30°	922.4	9.1
30°-40°	927.4	9.2
40°-50°	850.9	8.4
50°-60°	702.3	7.0
60°-70°	496.8	4.9
70°-80°	265.2	2.6
80°-90°	70.4	0.7
90°-100°	55.1	0.5
100°-110°	266.5	2.6
110°-120°	653.3	6.5
120°-130°	829.4	8.2
130°-140°	886.0	8.8
140°-150°	828.5	8.2
150°-160°	668.3	6.6
160°-170°	431.3	4.3
170°-180°	148.6	1.5
0°-30°	2014.6	20.0
0°-40°	2942.0	29.1
0°-60°	4495.2	44.5
0°-90°	5327.6	52.8
90°-120°	975.0	9.7
90°-150°	3518.9	34.9
90°-180°	4767.0	47.2
0°-180°	10094.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3312	3312	3312	3312	3312	
5°	4173	3939	3329	2683	2465	398
15°	3077	3908	3185	1756	1532	850
25°	1534	2282	2885	1326	1225	724
35°	1113	1383	2405	1071	1007	699
45°	879	991	1778	847	852	681
55°	675	716	1125	638	690	604
65°	450	470	616	436	490	447
75°	231	238	275	231	258	242
85°	51	57	54	58	58	57
90°	35	28	1	28	35	18
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°	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2
2.5°	3733.4	3729.5	3725.7	3706.5	3687.3	3678.0	3668.8	3641.2	3613.5	3582.8	3552.0
5°	4173.0	4183.7	4194.5	4182.2	4169.9	4132.2	4094.6	4044.6	3994.7	3938.6	3882.5
7.5°	4375.8	4382.0	4388.1	4380.5	4372.8	4362.8	4352.8	4308.2	4263.6	4206.0	4148.4
10°	4165.3	4179.1	4192.9	4222.9	4252.9	4286.7	4320.5	4314.4	4308.2	4291.3	4274.4
12.5°	3702.6	3719.5	3736.5	3796.4	3856.3	3933.2	4010.0	4076.1	4142.2	4188.3	4234.4
15°	3077.1	3124.0	3170.8	3225.4	3280.0	3392.9	3505.9	3645.0	3784.1	3907.8	4031.6
17.5°	2534.5	2552.2	2569.9	2628.3	2686.7	2828.9	2971.0	3131.6	3292.3	3497.5	3702.6
20°	2085.7	2101.9	2118.0	2194.8	2271.7	2383.1	2494.6	2675.2	2855.8	3076.3	3296.9
22.5°	1752.2	1777.5	1802.9	1845.9	1889.0	1995.8	2102.6	2263.2	2423.9	2667.5	2911.1
25°	1533.9	1552.4	1570.8	1596.9	1623.1	1708.4	1793.7	1925.9	2058.0	2281.7	2505.3
27.5°	1384.8	1392.5	1400.2	1426.3	1452.5	1507.8	1563.1	1676.9	1790.6	1980.4	2170.2
30°	1268.0	1273.4	1278.8	1301.8	1324.9	1362.6	1400.2	1482.4	1564.7	1732.2	1899.7
32.5°	1186.6	1190.4	1194.3	1211.9	1229.6	1256.5	1283.4	1343.3	1403.3	1541.6	1679.9
35°	1112.8	1115.1	1117.4	1130.5	1143.5	1163.5	1183.5	1228.8	1274.2	1383.3	1492.4
37.5°	1048.2	1051.3	1054.4	1062.1	1069.8	1087.4	1105.1	1141.2	1177.3	1261.1	1344.9
40°	985.2	990.6	996.0	1001.4	1006.7	1021.3	1035.9	1063.6	1091.3	1160.4	1229.6
42.5°	931.4	936.8	942.2	944.5	946.8	955.2	963.7	989.1	1014.4	1065.9	1117.4
45°	879.2	881.5	883.8	886.1	888.4	895.3	902.2	924.5	946.8	991.4	1035.9
47.5°	831.5	831.5	831.5	833.1	834.6	840.7	846.9	863.0	879.2	913.7	948.3
50°	785.4	785.4	785.4	783.1	780.8	784.6	788.5	800.8	813.1	843.8	874.6
52.5°	730.1	730.1	730.1	730.8	731.6	731.6	731.6	742.4	753.1	780.8	808.5
55°	674.7	677.8	680.9	678.6	676.3	677.8	679.4	686.3	693.2	715.5	737.8
57.5°	619.4	620.9	622.5	621.7	620.9	621.7	622.5	628.6	634.8	651.7	668.6
60°	567.2	567.2	567.2	565.6	564.1	565.6	567.2	570.2	573.3	588.7	604.0
62.5°	508.7	509.5	510.3	511.1	511.8	510.3	508.7	512.6	516.4	528.0	539.5
65°	450.3	451.1	451.9	454.2	456.5	455.0	453.4	457.3	461.1	469.6	478.0
67.5°	398.1	396.5	395.0	395.8	396.5	398.9	401.2	401.9	402.7	411.9	421.1
70°	336.6	338.1	339.7	338.9	338.1	338.9	339.7	342.0	344.3	351.2	358.1
72.5°	281.3	282.0	282.8	282.8	282.8	284.3	285.9	288.2	290.5	294.3	298.2
75°	230.6	230.6	230.6	232.1	233.6	234.4	235.2	235.2	235.2	238.2	241.3
77.5°	175.2	179.1	182.9	182.1	181.4	182.9	184.4	186.7	189.1	190.6	192.1
80°	127.6	127.6	127.6	128.3	129.1	131.4	133.7	135.3	136.8	139.9	142.9
82.5°	81.5	82.2	83.0	85.3	87.6	89.1	90.7	93.0	95.3	95.3	95.3
85°	50.7	49.2	47.6	49.2	50.7	52.3	53.8	54.6	55.3	56.9	58.4
87.5°	24.6	24.6	24.6	24.6	24.6	25.4	26.1	26.1	26.1	26.1	26.1
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°	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2
2.5°	3542.8	3533.6	3499.8	3465.9	3427.5	3389.1	3360.7	3332.2	3290.0	3247.7	3213.1
5°	3839.4	3796.4	3724.9	3653.5	3556.6	3459.8	3394.5	3329.1	3241.5	3153.9	3084.0
7.5°	4074.6	4000.8	3900.9	3801.0	3674.2	3547.4	3427.5	3307.6	3173.9	3040.2	2931.1
10°	4224.5	4174.5	4059.2	3944.0	3774.1	3604.3	3436.7	3269.2	3097.1	2924.9	2780.4
12.5°	4239.1	4243.7	4137.6	4031.6	3839.4	3647.3	3443.7	3240.0	3023.3	2806.6	2638.3
15°	4110.7	4189.9	4131.5	4073.1	3879.4	3685.7	3435.2	3184.7	2934.9	2685.1	2490.7
17.5°	3872.5	4042.3	4050.8	4059.2	3865.6	3671.9	3394.5	3117.0	2834.2	2551.4	2347.0
20°	3547.4	3797.9	3884.0	3970.1	3812.5	3655.0	3356.8	3058.6	2742.0	2425.4	2211.0
22.5°	3215.4	3519.7	3677.3	3834.8	3718.0	3601.2	3283.8	2966.4	2632.1	2297.8	2080.3
25°	2837.3	3169.3	3411.4	3653.5	3582.0	3510.5	3197.7	2885.0	2529.1	2173.3	1951.2
27.5°	2507.6	2845.0	3137.0	3429.1	3413.7	3398.3	3087.8	2777.4	2413.1	2048.8	1834.4
30°	2214.1	2528.4	2855.0	3181.6	3219.3	3256.9	2957.2	2657.5	2292.4	1927.4	1720.7
32.5°	1954.3	2228.7	2579.1	2929.5	3003.3	3077.1	2806.6	2536.1	2174.9	1813.7	1614.6
35°	1741.4	1990.4	2340.9	2691.3	2783.5	2875.7	2640.6	2405.4	2053.4	1701.5	1511.6
37.5°	1553.1	1761.4	2103.4	2445.4	2558.3	2671.3	2460.7	2250.2	1920.5	1590.8	1416.3
40°	1397.1	1564.7	1879.0	2193.3	2323.9	2454.6	2280.9	2107.2	1794.5	1481.7	1321.1
42.5°	1266.5	1415.6	1700.7	1985.8	2111.1	2236.3	2089.6	1942.8	1664.6	1386.4	1239.6
45°	1155.1	1274.2	1533.2	1792.1	1911.3	2030.4	1904.3	1778.3	1533.2	1288.0	1151.2
47.5°	1050.5	1152.8	1374.1	1595.4	1701.5	1807.5	1709.1	1610.8	1403.3	1195.8	1072.1
50°	956.8	1039.0	1232.7	1426.3	1518.6	1610.8	1523.9	1437.1	1266.5	1095.9	988.3
52.5°	875.3	942.2	1104.3	1266.5	1345.6	1424.8	1350.3	1275.7	1140.5	1005.2	911.4
55°	794.6	851.5	992.1	1132.8	1186.6	1240.4	1182.7	1125.1	1016.0	906.8	827.7
57.5°	719.3	770.0	885.3	1000.6	1042.1	1083.6	1031.3	979.1	896.8	814.6	748.5
60°	645.5	687.0	783.1	879.2	904.5	929.9	887.6	845.4	787.7	730.1	670.9
62.5°	577.1	614.8	686.3	757.7	774.6	791.6	759.3	727.0	683.2	639.4	593.3
65°	506.4	534.9	593.3	651.7	662.4	673.2	644.8	616.3	583.3	550.2	516.4
67.5°	441.1	461.1	508.7	556.4	557.2	557.9	534.9	511.8	493.4	474.9	448.0
70°	377.3	396.5	428.1	459.6	460.3	461.1	442.7	424.2	410.4	396.5	376.6
72.5°	312.0	325.8	349.7	373.5	372.0	370.4	358.9	347.4	336.6	325.8	311.2
75°	252.8	264.4	280.5	296.6	292.0	287.4	281.3	275.1	265.9	256.7	247.5
77.5°	199.0	206.0	215.2	224.4	221.3	218.3	212.9	207.5	200.6	193.7	189.8
80°	146.0	149.1	155.2	161.4	159.8	158.3	152.2	146.0	144.5	142.9	137.6
82.5°	99.1	103.0	104.5	106.1	105.3	104.5	99.9	95.3	93.8	92.2	91.5
85°	59.2	59.9	60.7	61.5	59.2	56.9	55.3	53.8	53.8	53.8	53.0
87.5°	26.9	27.7	27.7	27.7	26.9	26.1	24.6	23.1	23.8	24.6	24.6
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: P831210

CATALOG NUMBER: S123DIP-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



TEST NUMBER: P831210

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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2	3312.2
2.5°	3178.5	3148.6	3118.6	3095.5	3072.5	3033.3	2994.1	2984.9	2975.6	2962.6	2949.5
5°	3014.1	2940.3	2866.5	2800.4	2734.3	2682.8	2631.4	2597.5	2563.7	2539.1	2514.5
7.5°	2821.9	2711.3	2600.6	2522.2	2443.8	2369.3	2294.7	2270.9	2247.1	2214.8	2182.5
10°	2636.0	2513.8	2391.6	2289.4	2187.2	2114.1	2041.1	2011.9	1982.7	1942.0	1901.3
12.5°	2470.0	2336.2	2202.5	2099.5	1996.6	1925.9	1855.2	1812.9	1770.6	1747.6	1724.5
15°	2296.3	2153.3	2010.4	1915.1	1819.8	1756.0	1692.2	1655.4	1618.5	1596.2	1573.9
17.5°	2142.6	2001.2	1859.8	1768.3	1676.9	1618.5	1560.1	1527.8	1495.5	1478.6	1461.7
20°	1996.6	1858.2	1719.9	1630.8	1541.6	1494.0	1446.3	1425.6	1404.8	1391.0	1377.2
22.5°	1862.8	1726.8	1590.8	1514.7	1438.6	1400.2	1361.8	1347.2	1332.6	1321.1	1309.5
25°	1729.1	1607.7	1486.3	1421.7	1357.2	1325.7	1294.2	1279.6	1265.0	1253.4	1241.9
27.5°	1620.0	1504.0	1387.9	1332.6	1277.2	1252.7	1228.1	1216.5	1205.0	1194.3	1183.5
30°	1513.9	1410.2	1306.5	1258.8	1211.2	1188.9	1166.6	1155.1	1143.5	1133.5	1123.5
32.5°	1415.6	1326.4	1237.3	1193.5	1149.7	1131.2	1112.8	1099.0	1085.1	1077.4	1069.8
35°	1321.8	1241.9	1162.0	1125.9	1089.7	1071.3	1052.8	1041.3	1029.8	1023.6	1017.5
37.5°	1241.9	1170.4	1099.0	1064.4	1029.8	1012.1	994.4	984.5	974.5	972.2	969.8
40°	1160.4	1099.0	1037.5	1003.7	969.8	954.5	939.1	933.0	926.8	925.3	923.7
42.5°	1092.8	1032.9	972.9	942.2	911.4	898.4	885.3	882.2	879.2	881.5	883.8
45°	1014.4	964.5	914.5	886.1	857.6	846.9	836.1	833.8	831.5	836.1	840.7
47.5°	948.3	902.2	856.1	829.2	802.3	794.6	786.9	786.2	785.4	791.6	797.7
50°	880.7	836.1	791.6	770.0	748.5	741.6	734.7	737.0	739.3	749.3	759.3
52.5°	817.7	776.2	734.7	714.7	694.7	690.1	685.5	690.9	696.3	707.0	717.8
55°	748.5	710.9	673.2	657.8	642.5	637.9	633.2	644.0	654.8	664.8	674.7
57.5°	682.4	649.4	616.3	602.5	588.7	587.9	587.1	597.1	607.1	617.9	628.6
60°	611.7	584.1	556.4	545.6	534.9	536.4	538.0	549.5	561.0	569.5	577.9
62.5°	547.2	524.1	501.1	491.1	481.1	484.9	488.8	500.3	511.8	521.8	531.8
65°	482.6	463.4	444.2	437.3	430.4	435.7	441.1	451.1	461.1	468.0	474.9
67.5°	421.1	405.0	388.9	383.5	378.1	383.5	388.9	398.9	408.8	415.8	422.7
70°	356.6	343.5	330.5	326.6	322.8	328.9	335.1	343.5	352.0	358.9	365.8
72.5°	296.6	286.7	276.7	275.9	275.1	280.5	285.9	294.3	302.8	307.4	312.0
75°	238.2	232.9	227.5	226.7	225.9	231.3	236.7	241.3	245.9	249.8	253.6
77.5°	186.0	181.4	176.8	177.5	178.3	182.1	186.0	190.6	195.2	197.5	199.8
80°	132.2	130.6	129.1	130.6	132.2	135.3	138.3	141.4	144.5	146.0	147.6
82.5°	90.7	89.1	87.6	89.9	92.2	94.5	96.8	99.1	101.4	102.2	103.0
85°	52.3	54.6	56.9	56.9	56.9	57.6	58.4	59.2	59.9	59.2	58.4
87.5°	24.6	25.4	26.1	26.1	26.1	26.9	27.7	27.7	27.7	26.9	26.1
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: P831210

CATALOG NUMBER: S123DIP-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: P831210

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3312.2	3312.2	3312.2	3312.2
2.5°	2944.1	2938.8	2917.2	2895.7
5°	2496.1	2477.6	2471.5	2465.4
7.5°	2181.0	2179.5	2147.2	2114.9
10°	1903.6	1905.9	1876.7	1847.5
12.5°	1705.3	1686.1	1683.8	1681.5
15°	1556.2	1538.5	1535.5	1532.4
17.5°	1450.9	1440.2	1437.1	1434.0
20°	1371.0	1364.9	1359.5	1354.1
22.5°	1301.8	1294.2	1289.5	1284.9
25°	1235.0	1228.1	1226.5	1225.0
27.5°	1175.0	1166.6	1166.6	1166.6
30°	1118.2	1112.8	1110.5	1108.2
32.5°	1065.1	1060.5	1060.5	1060.5
35°	1015.2	1012.9	1009.8	1006.7
37.5°	969.8	969.8	968.3	966.8
40°	926.0	928.4	928.4	928.4
42.5°	886.1	888.4	888.4	888.4
45°	844.6	848.4	850.0	851.5
47.5°	803.9	810.0	811.5	813.1
50°	763.9	768.5	769.3	770.0
52.5°	723.2	728.5	732.4	736.2
55°	680.1	685.5	687.8	690.1
57.5°	634.0	639.4	640.2	640.9
60°	583.3	588.7	590.2	591.7
62.5°	534.9	538.0	539.5	541.0
65°	479.5	484.2	487.2	490.3
67.5°	426.5	430.4	430.4	430.4
70°	367.3	368.9	371.2	373.5
72.5°	312.8	313.5	313.5	313.5
75°	255.1	256.7	257.4	258.2
77.5°	200.6	201.3	201.3	201.3
80°	146.8	146.0	146.0	146.0
82.5°	100.7	98.4	98.4	98.4
85°	57.6	56.9	57.6	58.4
87.5°	26.1	26.1	26.1	26.1
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



TEST NUMBER: P831210

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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	16.24	17.09	17.18	18.04	19.28	18.48	19.33	19.42	20.28	21.51
	3H	17.89	18.65	18.84	19.61	20.87	19.90	20.66	20.85	21.62	22.88
	4H	18.46	19.18	19.43	20.15	21.41	20.35	21.07	21.32	22.03	23.30
	6H	18.83	19.49	19.81	20.47	21.74	20.63	21.29	21.60	22.26	23.54
	8H	18.93	19.56	19.91	20.55	21.82	20.69	21.32	21.67	22.30	23.58
	12H	18.98	19.57	19.96	20.55	21.85	20.71	21.30	21.70	22.29	23.59
4H	2H	16.81	17.53	17.79	18.50	19.76	18.64	19.36	19.61	20.32	21.59
	3H	18.64	19.24	19.62	20.24	21.52	20.26	20.85	21.24	21.85	23.13
	4H	19.34	19.89	20.33	20.87	22.18	20.84	21.39	21.83	22.38	23.68
	6H	19.81	20.28	20.82	21.30	22.60	21.24	21.71	22.25	22.73	24.03
	8H	19.95	20.39	20.95	21.39	22.71	21.36	21.79	22.36	22.80	24.12
	12H	20.02	20.41	21.04	21.43	22.75	21.40	21.80	22.42	22.82	24.14
8H	4H	19.61	20.04	20.61	21.05	22.36	20.95	21.38	21.95	22.39	23.71
	6H	20.19	20.55	21.22	21.60	22.92	21.45	21.81	22.47	22.86	24.17
	8H	20.40	20.72	21.44	21.75	23.09	21.63	21.94	22.66	22.98	24.31
	12H	20.52	20.80	21.56	21.83	23.21	21.73	22.01	22.77	23.04	24.41
12H	4H	19.61	20.00	20.63	21.02	22.34	20.92	21.31	21.94	22.34	23.66
	6H	20.24	20.56	21.28	21.60	22.93	21.46	21.78	22.50	22.81	24.15
	8H	20.48	20.76	21.52	21.79	23.16	21.66	21.94	22.70	22.97	24.35