

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: P831208

Luminaire Tested: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831208
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-9)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D1195U830-4F0-1E-UDD-G1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: -

Summary

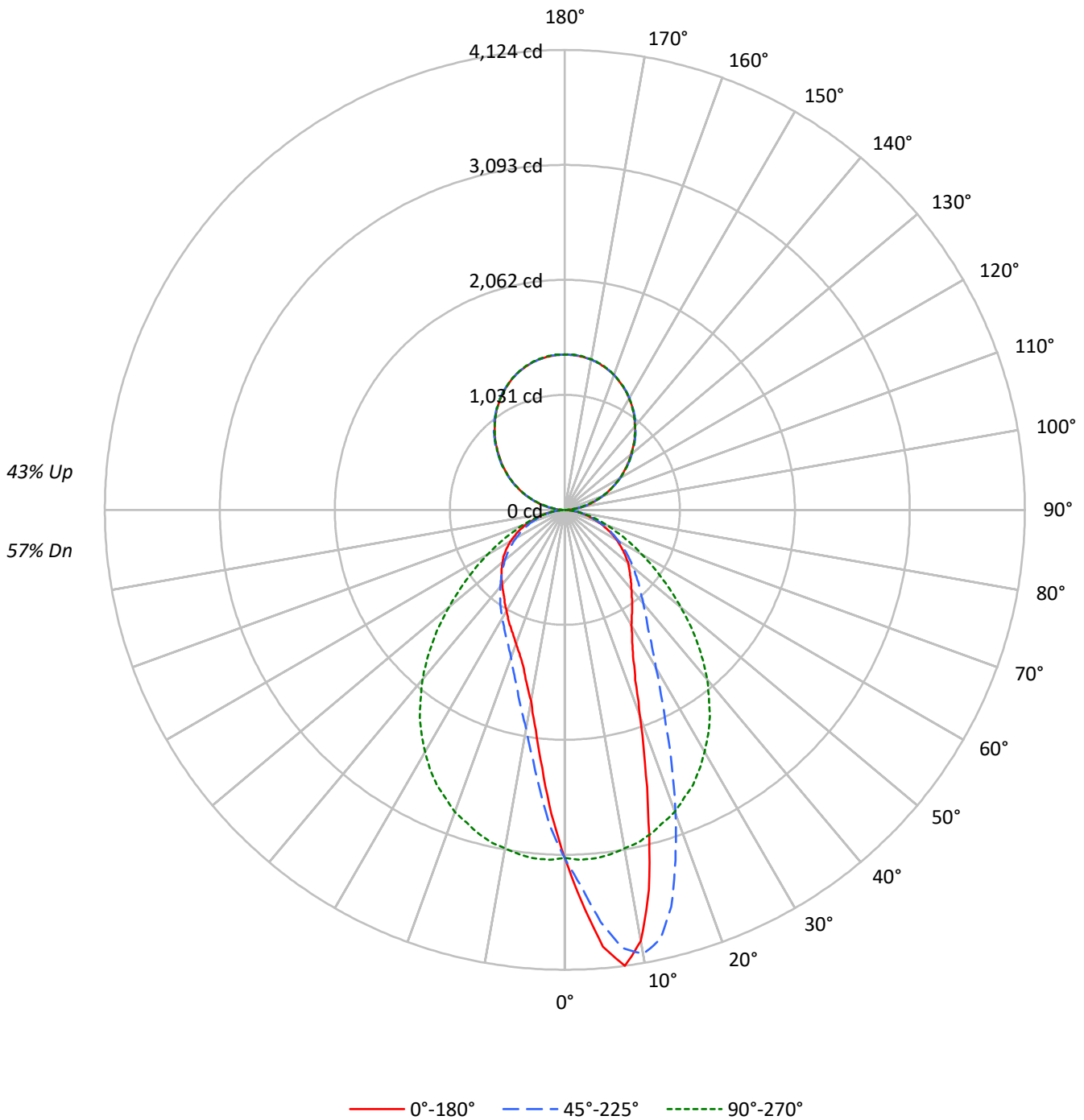
Lumens per Lamp: N/A
Luminaire Lumens: 8884.2 lumens
Efficiency: N/A
Efficacy: 121.4 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

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				
RC	80					70					50					30				
RW	70	50	30	10	70	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	64	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	26	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°	33604	33604	33604	33604	33604
5°	42498	40112	33905	27323	25108
10°	42911	44208	33680	21780	19032
15°	32320	41045	33450	18444	16095
20°	22519	33214	33023	16129	14620
25°	17171	25542	32295	14840	13713
30°	14855	20293	31132	13928	12982
35°	13783	17132	29792	13268	12469
40°	13048	15369	27909	12641	12295
45°	12615	14224	25514	12151	12218
50°	12397	13318	22682	11705	12154
55°	11935	12656	19900	11282	12207
60°	11509	11944	17153	10884	12006
65°	10812	11273	14795	10460	11769
70°	9986	10417	12582	9756	11078
75°	9037	9337	10784	9066	10123
80°	7451	8170	8529	7903	8529
85°	5903	6620	6262	6706	6805

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 29131 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.1	3.3
10°-20°	734.3	8.3
20°-30°	869.4	9.8
30°-40°	874.2	9.8
40°-50°	802.0	9.0
50°-60°	662.0	7.5
60°-70°	468.3	5.3
70°-80°	250.0	2.8
80°-90°	66.4	0.7
90°-100°	89.7	1.0
100°-110°	271.6	3.1
110°-120°	462.4	5.2
120°-130°	608.3	6.8
130°-140°	683.8	7.7
140°-150°	672.2	7.6
150°-160°	565.9	6.4
160°-170°	376.8	4.2
170°-180°	131.9	1.5
0°-30°	1898.8	21.4
0°-40°	2773.0	31.2
0°-60°	4236.9	47.7
0°-90°	5021.5	56.5
90°-120°	823.8	9.3
90°-150°	2788.1	31.4
90°-180°	3863.0	43.5
0°-180°	8884.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3122	3122	3122	3122	3122	
5°	3933	3712	3138	2529	2324	375
15°	2900	3683	3002	1655	1444	801
25°	1446	2151	2719	1250	1155	682
35°	1049	1304	2267	1010	949	659
45°	829	934	1676	798	803	642
55°	636	674	1060	601	650	569
65°	424	443	581	411	462	422
75°	217	224	259	218	243	228
85°	48	54	51	54	55	53
90°	33	26	1	26	33	19
95°	85	81	65	81	85	86
105°	261	258	246	258	261	276
115°	466	466	465	466	466	462
125°	674	682	681	682	674	602
135°	883	889	884	889	883	679
145°	1072	1078	1072	1078	1072	670
155°	1225	1229	1228	1229	1225	565
165°	1333	1334	1337	1334	1333	376
175°	1385	1386	1391	1386	1385	132
180°	1394	1394	1394	1394	1394	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9
2.5°	3518.9	3515.2	3511.6	3493.5	3475.4	3466.7	3458.0	3431.9	3405.9	3376.9	3347.9
5°	3933.2	3943.3	3953.5	3941.9	3930.3	3894.8	3859.3	3812.2	3765.1	3712.3	3659.4
7.5°	4124.4	4130.2	4136.0	4128.8	4121.5	4112.1	4102.7	4060.7	4018.7	3964.3	3910.0
10°	3926.0	3939.0	3952.0	3980.3	4008.5	4040.4	4072.3	4066.5	4060.7	4044.7	4028.8
12.5°	3489.9	3505.8	3521.8	3578.3	3634.8	3707.2	3779.6	3841.9	3904.2	3947.7	3991.1
15°	2900.3	2944.5	2988.6	3040.1	3091.5	3198.0	3304.5	3435.6	3566.7	3683.3	3799.9
17.5°	2388.9	2405.6	2422.2	2477.3	2532.3	2666.3	2800.3	2951.7	3103.1	3296.5	3489.9
20°	1965.9	1981.1	1996.3	2068.7	2141.2	2246.2	2351.2	2521.4	2691.7	2899.6	3107.4
22.5°	1651.5	1675.4	1699.3	1739.9	1780.4	1881.1	1981.8	2133.2	2284.6	2514.2	2743.8
25°	1445.8	1463.2	1480.6	1505.2	1529.8	1610.2	1690.6	1815.2	1939.8	2150.6	2361.4
27.5°	1305.3	1312.5	1319.8	1344.4	1369.0	1421.2	1473.3	1580.5	1687.7	1866.6	2045.6
30°	1195.2	1200.2	1205.3	1227.0	1248.8	1284.3	1319.8	1397.3	1474.8	1632.7	1790.6
32.5°	1118.4	1122.0	1125.6	1142.3	1159.0	1184.3	1209.7	1266.2	1322.7	1453.0	1583.4
35°	1048.9	1051.0	1053.2	1065.5	1077.8	1096.7	1115.5	1158.2	1201.0	1303.8	1406.7
37.5°	988.0	990.9	993.8	1001.0	1008.3	1024.9	1041.6	1075.7	1109.7	1188.7	1267.6
40°	928.6	933.7	938.8	943.8	948.9	962.7	976.4	1002.5	1028.6	1093.8	1159.0
42.5°	877.9	883.0	888.0	890.2	892.4	900.4	908.3	932.2	956.1	1004.7	1053.2
45°	828.7	830.8	833.0	835.2	837.3	843.9	850.4	871.4	892.4	934.4	976.4
47.5°	783.7	783.7	783.7	785.2	786.6	792.4	798.2	813.4	828.7	861.2	893.8
50°	740.3	740.3	740.3	738.1	735.9	739.6	743.2	754.8	766.4	795.3	824.3
52.5°	688.1	688.1	688.1	688.9	689.6	689.6	689.6	699.7	709.9	735.9	762.0
55°	636.0	638.9	641.8	639.6	637.4	638.9	640.3	646.8	653.4	674.4	695.4
57.5°	583.8	585.3	586.7	586.0	585.3	586.0	586.7	592.5	598.3	614.2	630.2
60°	534.6	534.6	534.6	533.1	531.7	533.1	534.6	537.5	540.4	554.8	569.3
62.5°	479.5	480.2	481.0	481.7	482.4	481.0	479.5	483.1	486.8	497.6	508.5
65°	424.5	425.2	425.9	428.1	430.3	428.8	427.4	431.0	434.6	442.6	450.5
67.5°	375.2	373.8	372.3	373.0	373.8	375.9	378.1	378.8	379.6	388.2	396.9
70°	317.3	318.7	320.2	319.4	318.7	319.4	320.2	322.3	324.5	331.0	337.5
72.5°	265.1	265.8	266.6	266.6	266.6	268.0	269.5	271.6	273.8	277.4	281.0
75°	217.3	217.3	217.3	218.8	220.2	220.9	221.6	221.6	221.6	224.5	227.4
77.5°	165.2	168.8	172.4	171.7	170.9	172.4	173.8	176.0	178.2	179.6	181.1
80°	120.2	120.2	120.2	121.0	121.7	123.9	126.0	127.5	128.9	131.8	134.7
82.5°	76.8	77.5	78.2	80.4	82.6	84.0	85.5	87.6	89.8	89.8	89.8
85°	47.8	46.4	44.9	46.4	47.8	49.3	50.7	51.4	52.2	53.6	55.1
87.5°	23.2	23.2	23.2	23.2	23.2	23.9	24.6	24.6	24.6	24.6	24.6
90°	32.9	32.4	31.9	31.4	30.9	30.2	29.2	28.2	27.3	26.3	23.1
92.5°	47.1	47.6	48.1	48.6	49.0	48.9	48.2	47.5	46.7	46.0	44.5
95°	85.4	85.4	85.4	85.4	85.4	84.9	84.0	83.0	82.0	81.0	79.1
97.5°	122.7	122.9	123.1	123.4	123.6	123.1	121.9	120.7	119.5	118.3	116.8
100°	166.5	166.0	165.5	165.0	164.5	163.9	163.2	162.4	161.7	161.0	159.8
102.5°	211.4	211.6	211.8	212.1	212.3	212.1	211.4	210.6	209.9	209.2	207.5
105°	260.6	260.2	259.7	259.2	258.7	258.4	258.4	258.4	258.4	258.4	256.3
107.5°	311.0	311.3	311.5	311.7	312.0	311.7	311.0	310.3	309.6	308.8	307.9
110°	362.5	363.0	363.5	363.9	364.4	364.2	363.2	362.2	361.3	360.3	359.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	417.2	417.2	417.2	417.2	417.2	416.6	415.4	414.2	413.0	411.8	411.8
115°	466.5	466.8	467.0	467.3	467.5	467.5	467.3	467.0	466.8	466.5	467.0
117.5°	516.9	517.6	518.4	519.1	519.8	520.2	520.2	520.2	520.2	520.2	520.7
120°	570.6	571.0	571.5	572.0	572.5	572.9	573.1	573.4	573.6	573.8	575.1
122.5°	622.0	622.8	623.5	624.2	624.9	625.7	626.4	627.1	627.9	628.6	629.1
125°	673.5	674.5	675.4	676.4	677.4	678.4	679.3	680.3	681.3	682.3	682.7
127.5°	725.0	725.9	726.9	727.9	728.9	730.1	731.5	733.0	734.5	735.9	736.4
130°	775.3	777.1	778.8	780.5	782.2	783.5	784.5	785.4	786.4	787.4	788.1
132.5°	827.9	829.1	830.3	831.6	832.8	834.0	835.2	836.4	837.6	838.9	839.4
135°	882.7	883.2	883.6	884.1	884.6	885.3	886.3	887.3	888.3	889.2	889.5
137.5°	930.9	931.6	932.3	933.0	933.8	934.7	936.0	937.2	938.4	939.6	938.9
140°	977.9	979.6	981.4	983.1	984.8	985.7	986.0	986.2	986.5	986.7	986.5
142.5°	1026.1	1027.3	1028.6	1029.8	1031.0	1031.7	1032.0	1032.2	1032.5	1032.7	1032.2
145°	1072.1	1073.1	1074.1	1075.0	1076.0	1076.6	1076.9	1077.1	1077.4	1077.6	1076.9
147.5°	1113.7	1115.2	1116.7	1118.1	1119.6	1120.3	1120.3	1120.3	1120.3	1120.3	1119.6
150°	1153.2	1154.6	1156.1	1157.5	1159.0	1159.7	1159.7	1159.7	1159.7	1159.7	1159.2
152.5°	1191.5	1192.7	1193.9	1195.1	1196.4	1196.7	1196.2	1195.8	1195.3	1194.8	1194.5
155°	1225.4	1227.1	1228.8	1230.6	1232.3	1232.6	1231.6	1230.7	1229.7	1228.7	1228.5
157.5°	1257.2	1258.7	1260.1	1261.6	1263.0	1263.3	1262.3	1261.3	1260.4	1259.4	1259.1
160°	1287.9	1288.8	1289.8	1290.8	1291.8	1291.6	1290.4	1289.2	1288.0	1286.8	1286.8
162.5°	1310.9	1312.6	1314.3	1316.0	1317.7	1317.9	1316.7	1315.5	1314.3	1313.1	1312.8
165°	1332.8	1334.5	1336.2	1337.9	1339.6	1339.7	1338.2	1336.8	1335.3	1333.9	1333.9
167.5°	1352.5	1353.9	1355.4	1356.9	1358.3	1358.3	1356.9	1355.4	1353.9	1352.5	1352.2
170°	1366.7	1368.4	1370.1	1371.8	1373.5	1373.5	1371.8	1370.1	1368.4	1366.7	1366.7
172.5°	1377.7	1379.4	1381.1	1382.8	1384.5	1384.6	1383.1	1381.7	1380.2	1378.8	1378.8
175°	1385.3	1387.0	1388.7	1390.4	1392.1	1392.3	1390.8	1389.3	1387.9	1386.4	1386.4
177.5°	1389.7	1391.4	1393.1	1394.8	1396.5	1396.6	1395.2	1393.7	1392.3	1390.8	1390.8
180°	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9
2.5°	3339.2	3330.5	3298.7	3266.8	3230.6	3194.4	3167.6	3140.8	3100.9	3061.1	3028.5
5°	3618.8	3578.3	3510.9	3443.5	3352.3	3261.0	3199.4	3137.9	3055.3	2972.7	2906.8
7.5°	3840.5	3770.9	3676.8	3582.6	3463.1	3343.6	3230.6	3117.6	2991.5	2865.5	2762.7
10°	3981.7	3934.6	3826.0	3717.3	3557.3	3397.2	3239.3	3081.4	2919.1	2756.9	2620.7
12.5°	3995.5	3999.8	3899.9	3799.9	3618.8	3437.7	3245.8	3053.8	2849.6	2645.3	2486.7
15°	3874.5	3949.1	3894.1	3839.0	3656.5	3474.0	3237.8	3001.7	2766.3	2530.9	2347.6
17.5°	3650.0	3810.1	3818.0	3826.0	3643.5	3460.9	3199.4	2937.9	2671.4	2404.8	2212.2
20°	3343.6	3579.7	3660.8	3742.0	3593.5	3445.0	3163.9	2882.9	2584.5	2286.0	2083.9
22.5°	3030.7	3317.5	3466.0	3614.5	3504.4	3394.3	3095.1	2796.0	2480.9	2165.8	1960.8
25°	2674.3	2987.2	3215.4	3443.5	3376.2	3308.8	3014.0	2719.2	2383.8	2048.4	1839.1
27.5°	2363.5	2681.5	2956.8	3232.0	3217.5	3203.1	2910.4	2617.8	2274.4	1931.1	1729.0
30°	2086.8	2383.1	2690.9	2998.8	3034.3	3069.8	2787.3	2504.8	2160.7	1816.7	1621.8
32.5°	1842.0	2100.6	2430.9	2761.2	2830.7	2900.3	2645.3	2390.3	2049.9	1709.5	1521.8
35°	1641.4	1876.1	2206.4	2536.7	2623.6	2710.5	2488.9	2267.2	1935.5	1603.7	1424.8
37.5°	1463.9	1660.2	1982.5	2304.9	2411.3	2517.8	2319.4	2120.9	1810.1	1499.4	1335.0
40°	1316.9	1474.8	1771.0	2067.3	2190.4	2313.6	2149.9	1986.2	1691.3	1396.5	1245.1
42.5°	1193.7	1334.2	1603.0	1871.7	1989.8	2107.8	1969.5	1831.1	1568.9	1306.7	1168.4
45°	1088.7	1201.0	1445.1	1689.2	1801.4	1913.7	1794.9	1676.1	1445.1	1214.0	1085.1
47.5°	990.2	1086.5	1295.1	1503.7	1603.7	1703.7	1610.9	1518.2	1322.7	1127.1	1010.5
50°	901.8	979.3	1161.9	1344.4	1431.3	1518.2	1436.4	1354.5	1193.7	1032.9	931.5
52.5°	825.0	888.0	1040.9	1193.7	1268.3	1342.9	1272.7	1202.4	1074.9	947.4	859.1
55°	749.0	802.6	935.1	1067.7	1118.4	1169.1	1114.8	1060.4	957.6	854.7	780.1
57.5°	678.0	725.8	834.4	943.1	982.2	1021.3	972.1	922.8	845.3	767.8	705.5
60°	608.5	647.6	738.1	828.7	852.6	876.5	836.6	796.8	742.5	688.1	632.4
62.5°	544.0	579.5	646.8	714.2	730.1	746.1	715.7	685.2	643.9	602.7	559.2
65°	477.3	504.1	559.2	614.2	624.4	634.5	607.7	580.9	549.8	518.6	486.8
67.5°	415.8	434.6	479.5	524.4	525.2	525.9	504.1	482.4	465.0	447.6	422.3
70°	355.7	373.8	403.5	433.2	433.9	434.6	417.2	399.8	386.8	373.8	354.9
72.5°	294.1	307.1	329.6	352.0	350.6	349.1	338.3	327.4	317.3	307.1	293.4
75°	238.3	249.2	264.4	279.6	275.3	270.9	265.1	259.3	250.6	241.9	233.2
77.5°	187.6	194.1	202.8	211.5	208.6	205.7	200.6	195.6	189.1	182.5	178.9
80°	137.6	140.5	146.3	152.1	150.7	149.2	143.4	137.6	136.2	134.7	129.7
82.5°	93.4	97.1	98.5	100.0	99.2	98.5	94.2	89.8	88.4	86.9	86.2
85°	55.8	56.5	57.2	57.9	55.8	53.6	52.2	50.7	50.7	50.7	50.0
87.5°	25.4	26.1	26.1	26.1	25.4	24.6	23.2	21.7	22.5	23.2	23.2
90°	20.0	16.8	13.6	10.8	8.4	6.0	3.5	1.1	3.5	6.0	8.4
92.5°	43.1	41.6	40.2	38.7	37.2	35.8	34.3	32.9	34.3	35.8	37.2
95°	77.1	75.2	73.3	71.4	69.7	68.0	66.3	64.6	66.3	68.0	69.7
97.5°	115.4	113.9	112.4	111.1	109.9	108.7	107.4	106.2	107.4	108.7	109.9
100°	158.5	157.3	156.1	154.8	153.3	151.9	150.4	148.9	150.4	151.9	153.3
102.5°	205.8	204.1	202.4	201.1	200.4	199.7	198.9	198.2	198.9	199.7	200.4
105°	254.1	251.9	249.7	248.3	247.9	247.4	246.9	246.4	246.9	247.4	247.9
107.5°	306.9	305.9	304.9	304.3	304.1	303.8	303.6	303.3	303.6	303.8	304.1
110°	359.3	358.8	358.3	357.9	357.4	356.9	356.4	355.9	356.4	356.9	357.4



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	411.8	411.8	411.8	411.6	411.4	411.2	410.9	410.7	410.9	411.2	411.4
115°	467.5	468.0	468.5	468.3	467.6	466.9	466.2	465.4	466.2	466.9	467.6
117.5°	521.2	521.6	522.1	522.3	522.0	521.8	521.5	521.3	521.5	521.8	522.0
120°	576.3	577.5	578.7	578.6	577.1	575.7	574.2	572.7	574.2	575.7	577.1
122.5°	629.6	630.1	630.5	630.3	629.3	628.4	627.4	626.4	627.4	628.4	629.3
125°	683.2	683.7	684.2	684.1	683.4	682.6	681.9	681.2	681.9	682.6	683.4
127.5°	736.9	737.4	737.9	737.4	735.9	734.5	733.0	731.5	733.0	734.5	735.9
130°	788.9	789.6	790.3	789.7	787.8	785.8	783.9	781.9	783.9	785.8	787.8
132.5°	839.8	840.3	840.8	840.1	838.1	836.2	834.2	832.3	834.2	836.2	838.1
135°	889.7	890.0	890.2	889.6	888.1	886.7	885.2	883.8	885.2	886.7	888.1
137.5°	938.2	937.4	936.7	935.7	934.5	933.3	932.1	930.9	932.1	933.3	934.5
140°	986.2	986.0	985.7	985.0	983.8	982.6	981.4	980.1	981.4	982.6	983.8
142.5°	1031.7	1031.2	1030.8	1029.9	1028.7	1027.5	1026.3	1025.0	1026.3	1027.5	1028.7
145°	1076.1	1075.4	1074.7	1074.1	1073.6	1073.1	1072.6	1072.1	1072.6	1073.1	1073.6
147.5°	1118.9	1118.1	1117.4	1116.5	1115.6	1114.6	1113.6	1112.6	1113.6	1114.6	1115.6
150°	1158.8	1158.3	1157.8	1157.3	1156.8	1156.3	1155.8	1155.4	1155.8	1156.3	1156.8
152.5°	1194.3	1194.0	1193.8	1193.3	1192.6	1191.9	1191.1	1190.4	1191.1	1191.9	1192.6
155°	1228.2	1228.0	1227.8	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6
157.5°	1258.9	1258.7	1258.4	1258.4	1258.7	1258.9	1259.1	1259.4	1259.1	1258.9	1258.7
160°	1286.8	1286.8	1286.8	1287.0	1287.5	1288.0	1288.5	1289.0	1288.5	1288.0	1287.5
162.5°	1312.6	1312.3	1312.1	1312.3	1313.1	1313.8	1314.5	1315.2	1314.5	1313.8	1313.1
165°	1333.9	1333.9	1333.9	1334.2	1335.0	1335.7	1336.4	1337.1	1336.4	1335.7	1335.0
167.5°	1352.0	1351.7	1351.5	1351.9	1352.8	1353.8	1354.8	1355.8	1354.8	1353.8	1352.8
170°	1366.7	1366.7	1366.7	1367.2	1368.2	1369.1	1370.1	1371.1	1370.1	1369.1	1368.2
172.5°	1378.8	1378.8	1378.8	1379.2	1380.2	1381.2	1382.2	1383.1	1382.2	1381.2	1380.2
175°	1386.4	1386.4	1386.4	1386.9	1387.9	1388.9	1389.8	1390.8	1389.8	1388.9	1387.9
177.5°	1390.8	1390.8	1390.8	1391.3	1392.3	1393.2	1394.2	1395.2	1394.2	1393.2	1392.3
180°	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9	3121.9
2.5°	2995.9	2967.6	2939.4	2917.7	2895.9	2859.0	2822.0	2813.4	2804.7	2792.4	2780.0
5°	2840.9	2771.3	2701.8	2639.5	2577.2	2528.7	2480.2	2448.3	2416.4	2393.2	2370.1
7.5°	2659.8	2555.5	2451.2	2377.3	2303.4	2233.2	2162.9	2140.4	2118.0	2087.6	2057.1
10°	2484.5	2369.3	2254.2	2157.8	2061.5	1992.7	1923.9	1896.3	1868.8	1830.4	1792.0
12.5°	2328.0	2202.0	2076.0	1978.9	1881.8	1815.2	1748.6	1708.7	1668.9	1647.2	1625.4
15°	2164.3	2029.6	1894.9	1805.1	1715.2	1655.1	1595.0	1560.2	1525.5	1504.5	1483.5
17.5°	2019.5	1886.2	1752.9	1666.7	1580.5	1525.5	1470.4	1440.0	1409.6	1393.6	1377.7
20°	1881.8	1751.5	1621.1	1537.1	1453.0	1408.1	1363.2	1343.7	1324.1	1311.1	1298.0
22.5°	1755.8	1627.6	1499.4	1427.7	1356.0	1319.8	1283.5	1269.8	1256.0	1245.1	1234.3
25°	1629.8	1515.3	1400.9	1340.0	1279.2	1249.5	1219.8	1206.0	1192.3	1181.4	1170.5
27.5°	1526.9	1417.5	1308.2	1256.0	1203.9	1180.7	1157.5	1146.6	1135.8	1125.6	1115.5
30°	1427.0	1329.2	1231.4	1186.5	1141.6	1120.6	1099.6	1088.7	1077.8	1068.4	1059.0
32.5°	1334.2	1250.2	1166.2	1124.9	1083.6	1066.2	1048.9	1035.8	1022.8	1015.5	1008.3
35°	1245.9	1170.5	1095.2	1061.2	1027.1	1009.7	992.4	981.5	970.6	964.8	959.0
37.5°	1170.5	1103.2	1035.8	1003.2	970.6	954.0	937.3	927.9	918.5	916.3	914.1
40°	1093.8	1035.8	977.9	946.0	914.1	899.6	885.2	879.4	873.6	872.1	870.7
42.5°	1030.0	973.5	917.0	888.0	859.1	846.8	834.4	831.5	828.7	830.8	833.0
45°	956.1	909.1	862.0	835.2	808.4	798.2	788.1	785.9	783.7	788.1	792.4
47.5°	893.8	850.4	806.9	781.6	756.2	749.0	741.7	741.0	740.3	746.1	751.9
50°	830.1	788.1	746.1	725.8	705.5	699.0	692.5	694.6	696.8	706.2	715.7
52.5°	770.7	731.6	692.5	673.6	654.8	650.5	646.1	651.2	656.3	666.4	676.5
55°	705.5	670.0	634.5	620.0	605.6	601.2	596.9	607.0	617.1	626.6	636.0
57.5°	643.2	612.1	580.9	567.9	554.8	554.1	553.4	562.8	572.2	582.4	592.5
60°	576.6	550.5	524.4	514.3	504.1	505.6	507.0	517.9	528.8	536.7	544.7
62.5°	515.7	494.0	472.3	462.9	453.4	457.1	460.7	471.5	482.4	491.8	501.2
65°	454.9	436.8	418.7	412.2	405.6	410.7	415.8	425.2	434.6	441.1	447.6
67.5°	396.9	381.7	366.5	361.4	356.4	361.4	366.5	375.9	385.4	391.9	398.4
70°	336.1	323.8	311.5	307.8	304.2	310.0	315.8	323.8	331.8	338.3	344.8
72.5°	279.6	270.2	260.8	260.0	259.3	264.4	269.5	277.4	285.4	289.7	294.1
75°	224.5	219.5	214.4	213.7	213.0	218.0	223.1	227.4	231.8	235.4	239.0
77.5°	175.3	170.9	166.6	167.3	168.0	171.7	175.3	179.6	184.0	186.2	188.3
80°	124.6	123.1	121.7	123.1	124.6	127.5	130.4	133.3	136.2	137.6	139.1
82.5°	85.5	84.0	82.6	84.7	86.9	89.1	91.3	93.4	95.6	96.3	97.1
85°	49.3	51.4	53.6	53.6	53.6	54.3	55.1	55.8	56.5	55.8	55.1
87.5°	23.2	23.9	24.6	24.6	24.6	25.4	26.1	26.1	26.1	25.4	24.6
90°	10.8	13.6	16.8	20.0	23.1	26.3	27.3	28.2	29.2	30.2	30.9
92.5°	38.7	40.2	41.6	43.1	44.5	46.0	46.7	47.5	48.2	48.9	49.0
95°	71.4	73.3	75.2	77.1	79.1	81.0	82.0	83.0	84.0	84.9	85.4
97.5°	111.1	112.4	113.9	115.4	116.8	118.3	119.5	120.7	121.9	123.1	123.6
100°	154.8	156.1	157.3	158.5	159.8	161.0	161.7	162.4	163.2	163.9	164.5
102.5°	201.1	202.4	204.1	205.8	207.5	209.2	209.9	210.6	211.4	212.1	212.3
105°	248.3	249.7	251.9	254.1	256.3	258.4	258.4	258.4	258.4	258.4	258.7
107.5°	304.3	304.9	305.9	306.9	307.9	308.8	309.6	310.3	311.0	311.7	312.0
110°	357.9	358.3	358.8	359.3	359.8	360.3	361.3	362.2	363.2	364.2	364.4



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	411.6	411.8	411.8	411.8	411.8	411.8	413.0	414.2	415.4	416.6	417.2
115°	468.3	468.5	468.0	467.5	467.0	466.5	466.8	467.0	467.3	467.5	467.5
117.5°	522.3	522.1	521.6	521.2	520.7	520.2	520.2	520.2	520.2	520.2	519.8
120°	578.6	578.7	577.5	576.3	575.1	573.8	573.6	573.4	573.1	572.9	572.5
122.5°	630.3	630.5	630.1	629.6	629.1	628.6	627.9	627.1	626.4	625.7	624.9
125°	684.1	684.2	683.7	683.2	682.7	682.3	681.3	680.3	679.3	678.4	677.4
127.5°	737.4	737.9	737.4	736.9	736.4	735.9	734.5	733.0	731.5	730.1	728.9
130°	789.7	790.3	789.6	788.9	788.1	787.4	786.4	785.4	784.5	783.5	782.2
132.5°	840.1	840.8	840.3	839.8	839.4	838.9	837.6	836.4	835.2	834.0	832.8
135°	889.6	890.2	890.0	889.7	889.5	889.2	888.3	887.3	886.3	885.3	884.6
137.5°	935.7	936.7	937.4	938.2	938.9	939.6	938.4	937.2	936.0	934.7	933.8
140°	985.0	985.7	986.0	986.2	986.5	986.7	986.5	986.2	986.0	985.7	984.8
142.5°	1029.9	1030.8	1031.2	1031.7	1032.2	1032.7	1032.5	1032.2	1032.0	1031.7	1031.0
145°	1074.1	1074.7	1075.4	1076.1	1076.9	1077.6	1077.4	1077.1	1076.9	1076.6	1076.0
147.5°	1116.5	1117.4	1118.1	1118.9	1119.6	1120.3	1120.3	1120.3	1120.3	1120.3	1119.6
150°	1157.3	1157.8	1158.3	1158.8	1159.2	1159.7	1159.7	1159.7	1159.7	1159.7	1159.0
152.5°	1193.3	1193.8	1194.0	1194.3	1194.5	1194.8	1195.3	1195.8	1196.2	1196.7	1196.4
155°	1227.6	1227.8	1228.0	1228.2	1228.5	1228.7	1229.7	1230.7	1231.6	1232.6	1232.3
157.5°	1258.4	1258.4	1258.7	1258.9	1259.1	1259.4	1260.4	1261.3	1262.3	1263.3	1263.0
160°	1287.0	1286.8	1286.8	1286.8	1286.8	1286.8	1288.0	1289.2	1290.4	1291.6	1291.8
162.5°	1312.3	1312.1	1312.3	1312.6	1312.8	1313.1	1314.3	1315.5	1316.7	1317.9	1317.7
165°	1334.2	1333.9	1333.9	1333.9	1333.9	1333.9	1335.3	1336.8	1338.2	1339.7	1339.6
167.5°	1351.9	1351.5	1351.7	1352.0	1352.2	1352.5	1353.9	1355.4	1356.9	1358.3	1358.3
170°	1367.2	1366.7	1366.7	1366.7	1366.7	1366.7	1368.4	1370.1	1371.8	1373.5	1373.5
172.5°	1379.2	1378.8	1378.8	1378.8	1378.8	1378.8	1380.2	1381.7	1383.1	1384.6	1384.5
175°	1386.9	1386.4	1386.4	1386.4	1386.4	1386.4	1387.9	1389.3	1390.8	1392.3	1392.1
177.5°	1391.3	1390.8	1390.8	1390.8	1390.8	1390.8	1392.3	1393.7	1395.2	1396.6	1396.5
180°	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3121.9	3121.9	3121.9	3121.9
2.5°	2775.0	2769.9	2749.6	2729.3
5°	2352.7	2335.3	2329.5	2323.7
7.5°	2055.7	2054.2	2023.8	1993.4
10°	1794.2	1796.4	1768.9	1741.3
12.5°	1607.3	1589.2	1587.0	1584.9
15°	1466.8	1450.1	1447.2	1444.3
17.5°	1367.6	1357.4	1354.5	1351.6
20°	1292.2	1286.4	1281.4	1276.3
22.5°	1227.0	1219.8	1215.5	1211.1
25°	1164.0	1157.5	1156.1	1154.6
27.5°	1107.5	1099.6	1099.6	1099.6
30°	1053.9	1048.9	1046.7	1044.5
32.5°	1003.9	999.6	999.6	999.6
35°	956.9	954.7	951.8	948.9
37.5°	914.1	914.1	912.7	911.2
40°	872.8	875.0	875.0	875.0
42.5°	835.2	837.3	837.3	837.3
45°	796.1	799.7	801.1	802.6
47.5°	757.7	763.5	764.9	766.4
50°	720.0	724.3	725.1	725.8
52.5°	681.6	686.7	690.3	693.9
55°	641.0	646.1	648.3	650.5
57.5°	597.6	602.7	603.4	604.1
60°	549.8	554.8	556.3	557.7
62.5°	504.1	507.0	508.5	509.9
65°	452.0	456.3	459.2	462.1
67.5°	402.0	405.6	405.6	405.6
70°	346.2	347.7	349.9	352.0
72.5°	294.8	295.5	295.5	295.5
75°	240.5	241.9	242.7	243.4
77.5°	189.1	189.8	189.8	189.8
80°	138.3	137.6	137.6	137.6
82.5°	94.9	92.7	92.7	92.7
85°	54.3	53.6	54.3	55.1
87.5°	24.6	24.6	24.6	24.6
90°	31.4	31.9	32.4	32.9
92.5°	48.6	48.1	47.6	47.1
95°	85.4	85.4	85.4	85.4
97.5°	123.4	123.1	122.9	122.7
100°	165.0	165.5	166.0	166.5
102.5°	212.1	211.8	211.6	211.4
105°	259.2	259.7	260.2	260.6
107.5°	311.7	311.5	311.3	311.0
110°	363.9	363.5	363.0	362.5



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	417.2	417.2	417.2	417.2
115°	467.3	467.0	466.8	466.5
117.5°	519.1	518.4	517.6	516.9
120°	572.0	571.5	571.0	570.6
122.5°	624.2	623.5	622.8	622.0
125°	676.4	675.4	674.5	673.5
127.5°	727.9	726.9	725.9	725.0
130°	780.5	778.8	777.1	775.3
132.5°	831.6	830.3	829.1	827.9
135°	884.1	883.6	883.2	882.7
137.5°	933.0	932.3	931.6	930.9
140°	983.1	981.4	979.6	977.9
142.5°	1029.8	1028.6	1027.3	1026.1
145°	1075.0	1074.1	1073.1	1072.1
147.5°	1118.1	1116.7	1115.2	1113.7
150°	1157.5	1156.1	1154.6	1153.2
152.5°	1195.1	1193.9	1192.7	1191.5
155°	1230.6	1228.8	1227.1	1225.4
157.5°	1261.6	1260.1	1258.7	1257.2
160°	1290.8	1289.8	1288.8	1287.9
162.5°	1316.0	1314.3	1312.6	1310.9
165°	1337.9	1336.2	1334.5	1332.8
167.5°	1356.9	1355.4	1353.9	1352.5
170°	1371.8	1370.1	1368.4	1366.7
172.5°	1382.8	1381.1	1379.4	1377.7
175°	1390.4	1388.7	1387.0	1385.3
177.5°	1394.8	1393.1	1391.4	1389.7
180°	1394.1	1394.1	1394.1	1394.1



TEST NUMBER: P831208

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-G1

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	16.37	17.25	17.27	18.17	19.35	18.60	19.49	19.51	20.41	21.58
	3H	18.02	18.81	18.94	19.74	20.94	20.03	20.82	20.95	21.75	22.95
	4H	18.59	19.34	19.53	20.28	21.49	20.48	21.23	21.42	22.16	23.37
	6H	18.97	19.65	19.91	20.59	21.82	20.76	21.44	21.70	22.39	23.61
	8H	19.06	19.72	20.02	20.67	21.90	20.82	21.47	21.77	22.43	23.66
	12H	19.11	19.73	20.07	20.68	21.93	20.84	21.46	21.80	22.41	23.66
4H	2H	16.95	17.69	17.88	18.63	19.84	18.77	19.52	19.71	20.45	21.66
	3H	18.78	19.40	19.72	20.36	21.59	20.39	21.01	21.34	21.98	23.20
	4H	19.47	20.04	20.43	21.00	22.25	20.98	21.54	21.93	22.50	23.75
	6H	19.95	20.44	20.92	21.42	22.67	21.38	21.87	22.35	22.85	24.10
	8H	20.09	20.54	21.06	21.52	22.78	21.49	21.95	22.47	22.93	24.19
	12H	20.16	20.57	21.15	21.56	22.83	21.54	21.95	22.53	22.94	24.21
8H	4H	19.74	20.20	20.72	21.17	22.44	21.08	21.54	22.06	22.51	23.78
	6H	20.33	20.71	21.33	21.73	22.99	21.59	21.96	22.58	22.98	24.24
	8H	20.54	20.87	21.55	21.88	23.16	21.77	22.10	22.77	23.10	24.38
	12H	20.66	20.96	21.67	21.96	23.28	21.87	22.16	22.88	23.16	24.49
12H	4H	19.74	20.15	20.74	21.15	22.42	21.06	21.47	22.05	22.46	23.73
	6H	20.38	20.71	21.39	21.72	23.00	21.60	21.93	22.61	22.94	24.22
	8H	20.62	20.91	21.63	21.91	23.24	21.80	22.09	22.81	23.09	24.42