

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: P831212

Luminaire Tested: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831212
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-17)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D1195U835-4F0-1E-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: -

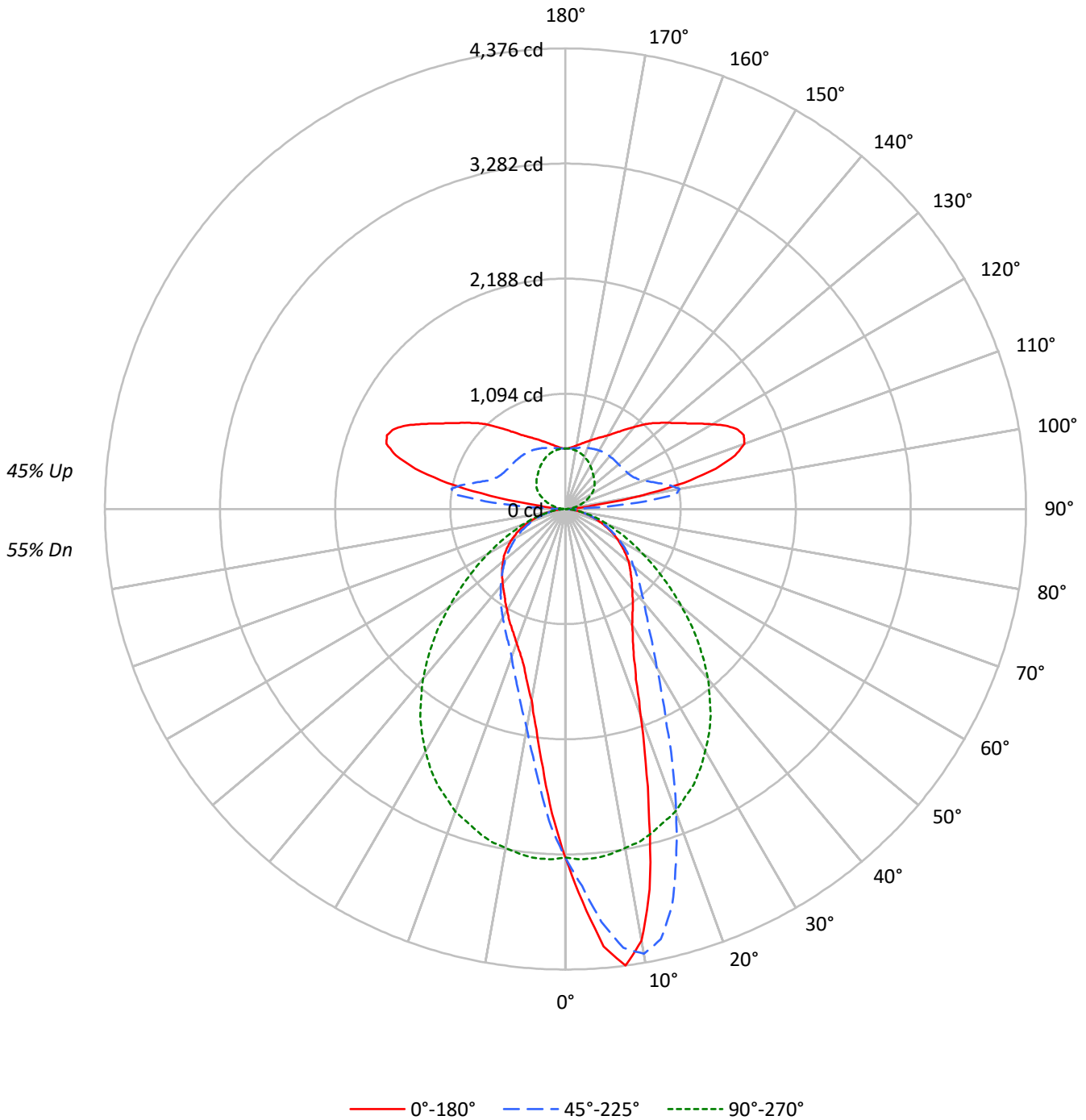
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9645.0 lumens
Efficiency: N/A
Efficacy: 131.8 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

TEST NUMBER: P831212
CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

Luminous Intensity Polar Plot





TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55		
1	100	95	92	88	92	89	86	83	76	74	72	65	64	62	55	54	53	48		
2	91	84	78	73	84	78	73	69	68	64	61	58	55	53	49	47	45	41		
3	84	74	67	62	77	70	63	58	60	56	52	52	48	45	44	41	39	35		
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35	31		
5	71	60	52	46	66	56	49	44	49	43	39	42	38	35	36	33	31	28		
6	66	54	46	40	61	51	44	39	44	39	35	39	34	31	33	30	27	25		
7	61	49	41	36	57	46	39	34	41	35	31	36	31	28	31	27	25	22		
8	57	45	37	32	53	42	35	31	37	32	28	33	28	25	28	25	23	20		
9	53	41	34	29	50	39	32	28	35	29	25	30	26	23	27	23	21	19		
10	50	38	31	26	46	36	30	25	32	27	23	28	24	21	25	21	19	17		

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



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	313.1	3.2
10°-20°	779.0	8.1
20°-30°	922.4	9.6
30°-40°	927.4	9.6
40°-50°	850.9	8.8
50°-60°	702.3	7.3
60°-70°	496.8	5.2
70°-80°	265.2	2.7
80°-90°	70.5	0.7
90°-100°	311.5	3.2
100°-110°	911.8	9.5
110°-120°	890.4	9.2
120°-130°	709.1	7.4
130°-140°	559.5	5.8
140°-150°	417.4	4.3
150°-160°	291.0	3.0
160°-170°	171.0	1.8
170°-180°	55.6	0.6
0°-30°	2014.6	20.9
0°-40°	2942.0	30.5
0°-60°	4495.2	46.6
0°-90°	5327.7	55.2
90°-120°	2113.7	21.9
90°-150°	3799.8	39.4
90°-180°	4317.0	44.8
0°-180°	9645.0	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°	34	29	2	29	34	21
95°	135	689	40	689	135	219
105°	1478	934	135	934	1478	1474
115°	1797	714	238	714	1797	1753
125°	1418	667	331	667	1418	1283
135°	1149	658	388	658	1149	891
145°	898	650	443	650	898	570
155°	745	629	503	629	745	347
165°	650	602	550	602	650	185
175°	584	577	573	577	584	57
180°	574	574	574	574	574	



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

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°	33.7	34.9	33.7	32.5	33.7	31.4	30.2	29.0	27.9	29.0	25.6
92.5°	61.6	63.9	62.7	67.4	69.7	77.8	89.5	115.0	161.5	216.1	239.3
95°	134.8	139.4	147.6	158.0	180.1	221.9	283.5	418.3	558.8	689.0	613.5
97.5°	276.5	289.3	317.2	361.3	439.2	571.6	725.0	960.8	1095.6	1059.6	791.2
100°	728.5	727.3	772.6	857.4	974.8	1139.8	1275.7	1369.8	1329.2	1100.3	743.6
102.5°	1153.7	1187.4	1223.4	1286.2	1371.0	1460.4	1525.5	1505.8	1340.8	1024.7	673.9
105°	1477.9	1483.7	1520.9	1565.0	1618.5	1648.7	1626.6	1510.4	1267.6	934.1	619.3
107.5°	1689.3	1702.1	1717.2	1738.1	1745.1	1713.7	1623.1	1440.7	1163.0	854.0	579.8
110°	1810.2	1812.5	1814.8	1805.5	1773.0	1691.7	1545.3	1331.5	1065.4	787.7	558.8



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	1834.6	1833.4	1821.8	1788.1	1721.9	1611.5	1443.0	1223.4	980.6	743.6	547.2
115°	1797.4	1791.6	1768.3	1717.2	1630.1	1503.4	1332.6	1130.5	915.5	714.5	546.1
117.5°	1716.0	1707.9	1673.1	1616.1	1525.5	1394.2	1237.4	1058.4	872.5	694.8	547.2
120°	1609.2	1602.2	1574.3	1509.2	1417.5	1300.1	1160.7	1003.8	840.0	682.0	551.9
122.5°	1509.2	1499.9	1468.6	1411.6	1332.6	1225.7	1099.1	960.8	813.3	673.9	560.0
125°	1417.5	1409.3	1380.3	1329.2	1254.8	1161.8	1050.3	923.7	791.2	666.9	568.1
127.5°	1338.4	1331.5	1304.8	1260.6	1193.2	1107.2	1005.0	890.0	770.3	663.4	577.4
130°	1273.4	1264.1	1239.7	1197.9	1136.3	1057.3	963.2	858.6	754.0	659.9	586.7
132.5°	1209.5	1203.7	1182.8	1140.9	1084.0	1009.6	923.7	829.6	738.9	658.8	593.7
135°	1149.1	1140.9	1120.0	1085.2	1028.2	962.0	886.5	804.0	726.2	657.6	600.7
137.5°	1085.2	1078.2	1060.8	1024.7	976.0	916.7	849.3	779.6	714.5	655.3	605.3
140°	1017.8	1018.9	1000.4	967.8	923.7	873.7	817.9	758.7	704.1	654.1	610.0
142.5°	955.0	956.2	939.9	912.1	876.0	834.2	787.7	738.9	694.8	651.8	613.5
145°	898.1	895.8	886.5	862.1	833.0	799.4	762.2	723.8	686.7	649.5	614.6
147.5°	849.3	848.1	838.9	821.4	798.2	773.8	742.4	711.1	678.5	646.0	614.6
150°	807.5	807.5	800.5	787.7	770.3	748.2	723.8	697.1	670.4	641.3	614.6
152.5°	772.6	772.6	769.1	757.5	744.7	727.3	706.4	684.3	661.1	635.5	611.1
155°	744.7	743.6	741.3	732.0	721.5	707.6	690.1	671.5	651.8	628.6	608.8
157.5°	718.0	718.0	715.7	708.7	699.4	687.8	673.9	657.6	641.3	622.8	605.3
160°	692.5	693.6	693.6	686.7	678.5	670.4	658.8	646.0	630.9	615.8	603.0
162.5°	669.2	670.4	670.4	664.6	659.9	653.0	642.5	632.0	620.4	608.8	598.4
165°	649.5	649.5	650.6	646.0	641.3	635.5	627.4	620.4	611.1	601.8	593.7
167.5°	629.7	629.7	630.9	627.4	625.1	620.4	615.8	610.0	601.8	594.9	589.1
170°	612.3	612.3	613.5	611.1	610.0	607.6	603.0	599.5	593.7	587.9	584.4
172.5°	596.0	597.2	599.5	597.2	597.2	596.0	592.5	590.2	585.6	582.1	580.9
175°	584.4	585.6	586.7	585.6	585.6	585.6	583.2	582.1	579.8	577.4	577.4
177.5°	576.3	576.3	578.6	577.4	578.6	578.6	577.4	576.3	575.1	574.0	575.1
180°	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

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°	22.1	18.6	15.1	12.8	10.5	7.0	4.6	2.3	4.6	7.0	10.5
92.5°	178.9	117.3	80.2	59.3	47.6	37.2	25.6	17.4	25.6	37.2	47.6
95°	422.9	249.8	151.0	105.7	75.5	55.8	43.0	39.5	43.0	55.8	75.5
97.5°	470.5	269.5	172.0	122.0	91.8	74.4	63.9	62.7	63.9	74.4	91.8
100°	438.0	266.1	184.7	139.4	111.5	95.3	87.1	86.0	87.1	95.3	111.5
102.5°	410.1	270.7	199.8	159.2	134.8	119.7	112.7	110.4	112.7	119.7	134.8
105°	399.7	280.0	217.3	181.2	159.2	145.2	138.3	134.8	138.3	145.2	159.2
107.5°	397.4	295.1	239.3	205.6	184.7	170.8	163.8	160.3	163.8	170.8	184.7
110°	403.2	314.9	262.6	230.0	210.3	197.5	191.7	188.2	191.7	197.5	210.3



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	414.8	334.6	287.0	255.6	235.9	223.1	217.3	213.8	217.3	223.1	235.9
115°	427.6	356.7	312.5	281.2	261.4	249.8	242.8	238.2	242.8	249.8	261.4
117.5°	443.8	379.9	335.8	306.7	284.7	274.2	268.4	262.6	268.4	274.2	284.7
120°	462.4	402.0	360.2	331.1	309.1	297.4	291.6	288.1	291.6	297.4	309.1
122.5°	479.8	425.2	384.6	353.2	332.3	319.5	313.7	310.2	313.7	319.5	332.3
125°	498.4	447.3	406.6	375.3	353.2	340.4	333.5	331.1	333.5	340.4	353.2
127.5°	513.5	467.1	427.6	396.2	371.8	359.0	350.9	347.4	350.9	359.0	371.8
130°	528.6	484.5	446.1	414.8	390.4	376.4	366.0	362.5	366.0	376.4	390.4
132.5°	542.6	499.6	462.4	432.2	407.8	390.4	378.8	374.1	378.8	390.4	407.8
135°	554.2	514.7	478.7	447.3	422.9	405.5	392.7	388.1	392.7	405.5	422.9
137.5°	563.5	525.2	490.3	461.3	436.9	418.3	405.5	400.8	405.5	418.3	436.9
140°	570.5	535.6	501.9	472.9	449.6	431.0	419.4	413.6	419.4	431.0	449.6
142.5°	577.4	543.7	511.2	484.5	461.3	445.0	432.2	427.6	432.2	445.0	461.3
145°	582.1	550.7	520.5	493.8	474.0	456.6	446.1	442.7	446.1	456.6	474.0
147.5°	585.6	556.5	528.6	505.4	485.7	470.5	460.1	457.8	460.1	470.5	485.7
150°	586.7	562.3	535.6	514.7	498.4	483.3	474.0	472.9	474.0	483.3	498.4
152.5°	589.1	565.8	543.7	524.0	510.1	497.3	488.0	488.0	488.0	497.3	510.1
155°	589.1	570.5	550.7	534.4	521.7	510.1	503.1	503.1	503.1	510.1	521.7
157.5°	590.2	572.8	556.5	543.7	532.1	521.7	515.9	514.7	515.9	521.7	532.1
160°	590.2	576.3	562.3	550.7	542.6	533.3	528.6	528.6	528.6	533.3	542.6
162.5°	589.1	577.4	565.8	556.5	549.6	542.6	539.1	539.1	539.1	542.6	549.6
165°	586.7	578.6	569.3	561.2	556.5	550.7	548.4	549.6	548.4	550.7	556.5
167.5°	585.6	578.6	571.6	565.8	562.3	557.7	556.5	557.7	556.5	557.7	562.3
170°	582.1	577.4	571.6	569.3	567.0	563.5	562.3	564.7	562.3	563.5	567.0
172.5°	580.9	577.4	572.8	571.6	570.5	568.1	568.1	569.3	568.1	568.1	570.5
175°	578.6	576.3	574.0	572.8	572.8	570.5	571.6	572.8	571.6	570.5	572.8
177.5°	577.4	575.1	574.0	574.0	574.0	572.8	574.0	575.1	574.0	572.8	574.0
180°	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

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°	12.8	15.1	18.6	22.1	25.6	29.0	27.9	29.0	30.2	31.4	33.7
92.5°	59.3	80.2	117.3	178.9	239.3	216.1	161.5	115.0	89.5	77.8	69.7
95°	105.7	151.0	249.8	422.9	613.5	689.0	558.8	418.3	283.5	221.9	180.1
97.5°	122.0	172.0	269.5	470.5	791.2	1059.6	1095.6	960.8	725.0	571.6	439.2
100°	139.4	184.7	266.1	438.0	743.6	1100.3	1329.2	1369.8	1275.7	1139.8	974.8
102.5°	159.2	199.8	270.7	410.1	673.9	1024.7	1340.8	1505.8	1525.5	1460.4	1371.0
105°	181.2	217.3	280.0	399.7	619.3	934.1	1267.6	1510.4	1626.6	1648.7	1618.5
107.5°	205.6	239.3	295.1	397.4	579.8	854.0	1163.0	1440.7	1623.1	1713.7	1745.1
110°	230.0	262.6	314.9	403.2	558.8	787.7	1065.4	1331.5	1545.3	1691.7	1773.0



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	255.6	287.0	334.6	414.8	547.2	743.6	980.6	1223.4	1443.0	1611.5	1721.9
115°	281.2	312.5	356.7	427.6	546.1	714.5	915.5	1130.5	1332.6	1503.4	1630.1
117.5°	306.7	335.8	379.9	443.8	547.2	694.8	872.5	1058.4	1237.4	1394.2	1525.5
120°	331.1	360.2	402.0	462.4	551.9	682.0	840.0	1003.8	1160.7	1300.1	1417.5
122.5°	353.2	384.6	425.2	479.8	560.0	673.9	813.3	960.8	1099.1	1225.7	1332.6
125°	375.3	406.6	447.3	498.4	568.1	666.9	791.2	923.7	1050.3	1161.8	1254.8
127.5°	396.2	427.6	467.1	513.5	577.4	663.4	770.3	890.0	1005.0	1107.2	1193.2
130°	414.8	446.1	484.5	528.6	586.7	659.9	754.0	858.6	963.2	1057.3	1136.3
132.5°	432.2	462.4	499.6	542.6	593.7	658.8	738.9	829.6	923.7	1009.6	1084.0
135°	447.3	478.7	514.7	554.2	600.7	657.6	726.2	804.0	886.5	962.0	1028.2
137.5°	461.3	490.3	525.2	563.5	605.3	655.3	714.5	779.6	849.3	916.7	976.0
140°	472.9	501.9	535.6	570.5	610.0	654.1	704.1	758.7	817.9	873.7	923.7
142.5°	484.5	511.2	543.7	577.4	613.5	651.8	694.8	738.9	787.7	834.2	876.0
145°	493.8	520.5	550.7	582.1	614.6	649.5	686.7	723.8	762.2	799.4	833.0
147.5°	505.4	528.6	556.5	585.6	614.6	646.0	678.5	711.1	742.4	773.8	798.2
150°	514.7	535.6	562.3	586.7	614.6	641.3	670.4	697.1	723.8	748.2	770.3
152.5°	524.0	543.7	565.8	589.1	611.1	635.5	661.1	684.3	706.4	727.3	744.7
155°	534.4	550.7	570.5	589.1	608.8	628.6	651.8	671.5	690.1	707.6	721.5
157.5°	543.7	556.5	572.8	590.2	605.3	622.8	641.3	657.6	673.9	687.8	699.4
160°	550.7	562.3	576.3	590.2	603.0	615.8	630.9	646.0	658.8	670.4	678.5
162.5°	556.5	565.8	577.4	589.1	598.4	608.8	620.4	632.0	642.5	653.0	659.9
165°	561.2	569.3	578.6	586.7	593.7	601.8	611.1	620.4	627.4	635.5	641.3
167.5°	565.8	571.6	578.6	585.6	589.1	594.9	601.8	610.0	615.8	620.4	625.1
170°	569.3	571.6	577.4	582.1	584.4	587.9	593.7	599.5	603.0	607.6	610.0
172.5°	571.6	572.8	577.4	580.9	580.9	582.1	585.6	590.2	592.5	596.0	597.2
175°	572.8	574.0	576.3	578.6	577.4	577.4	579.8	582.1	583.2	585.6	585.6
177.5°	574.0	574.0	575.1	577.4	575.1	574.0	575.1	576.3	577.4	578.6	578.6
180°	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

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°	32.5	33.7	34.9	33.7
92.5°	67.4	62.7	63.9	61.6
95°	158.0	147.6	139.4	134.8
97.5°	361.3	317.2	289.3	276.5
100°	857.4	772.6	727.3	728.5
102.5°	1286.2	1223.4	1187.4	1153.7
105°	1565.0	1520.9	1483.7	1477.9
107.5°	1738.1	1717.2	1702.1	1689.3
110°	1805.5	1814.8	1812.5	1810.2



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-G4

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	1788.1	1821.8	1833.4	1834.6
115°	1717.2	1768.3	1791.6	1797.4
117.5°	1616.1	1673.1	1707.9	1716.0
120°	1509.2	1574.3	1602.2	1609.2
122.5°	1411.6	1468.6	1499.9	1509.2
125°	1329.2	1380.3	1409.3	1417.5
127.5°	1260.6	1304.8	1331.5	1338.4
130°	1197.9	1239.7	1264.1	1273.4
132.5°	1140.9	1182.8	1203.7	1209.5
135°	1085.2	1120.0	1140.9	1149.1
137.5°	1024.7	1060.8	1078.2	1085.2
140°	967.8	1000.4	1018.9	1017.8
142.5°	912.1	939.9	956.2	955.0
145°	862.1	886.5	895.8	898.1
147.5°	821.4	838.9	848.1	849.3
150°	787.7	800.5	807.5	807.5
152.5°	757.5	769.1	772.6	772.6
155°	732.0	741.3	743.6	744.7
157.5°	708.7	715.7	718.0	718.0
160°	686.7	693.6	693.6	692.5
162.5°	664.6	670.4	670.4	669.2
165°	646.0	650.6	649.5	649.5
167.5°	627.4	630.9	629.7	629.7
170°	611.1	613.5	612.3	612.3
172.5°	597.2	599.5	597.2	596.0
175°	585.6	586.7	585.6	584.4
177.5°	577.4	578.6	576.3	576.3
180°	574.0	574.0	574.0	574.0



TEST NUMBER: P831212

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-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	16.46	17.33	17.38	18.26	19.46	18.70	19.57	19.62	20.50	21.70
	3H	18.11	18.89	19.04	19.83	21.05	20.12	20.90	21.05	21.84	23.06
	4H	18.69	19.42	19.63	20.37	21.60	20.57	21.31	21.52	22.25	23.49
	6H	19.06	19.74	20.01	20.69	21.93	20.85	21.53	21.81	22.48	23.72
	8H	19.15	19.80	20.12	20.77	22.01	20.91	21.56	21.88	22.53	23.77
	12H	19.20	19.81	20.17	20.77	22.04	20.93	21.54	21.90	22.51	23.77
4H	2H	17.04	17.77	17.99	18.72	19.95	18.86	19.60	19.81	20.54	21.78
	3H	18.87	19.48	19.83	20.46	21.70	20.48	21.09	21.44	22.07	23.31
	4H	19.57	20.12	20.53	21.09	22.36	21.07	21.62	22.04	22.59	23.86
	6H	20.04	20.52	21.02	21.52	22.78	21.47	21.95	22.45	22.95	24.21
	8H	20.18	20.63	21.16	21.61	22.90	21.58	22.03	22.57	23.02	24.30
	12H	20.25	20.65	21.25	21.65	22.94	21.63	22.03	22.63	23.04	24.32
8H	4H	19.83	20.28	20.82	21.27	22.55	21.17	21.62	22.16	22.61	23.89
	6H	20.42	20.79	21.43	21.82	23.10	21.68	22.05	22.68	23.07	24.35
	8H	20.63	20.95	21.65	21.97	23.27	21.85	22.18	22.87	23.20	24.50
	12H	20.75	21.04	21.77	22.05	23.39	21.96	22.24	22.98	23.25	24.60
12H	4H	19.83	20.24	20.83	21.24	22.53	21.15	21.55	22.15	22.56	23.84
	6H	20.47	20.80	21.49	21.81	23.11	21.69	22.02	22.71	23.03	24.33
	8H	20.71	20.99	21.73	22.00	23.35	21.89	22.18	22.91	23.19	24.53