

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: P831184

Luminaire Tested: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831184
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-S1165D1025U835-4F0-1E-UDD-G1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1025 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: -

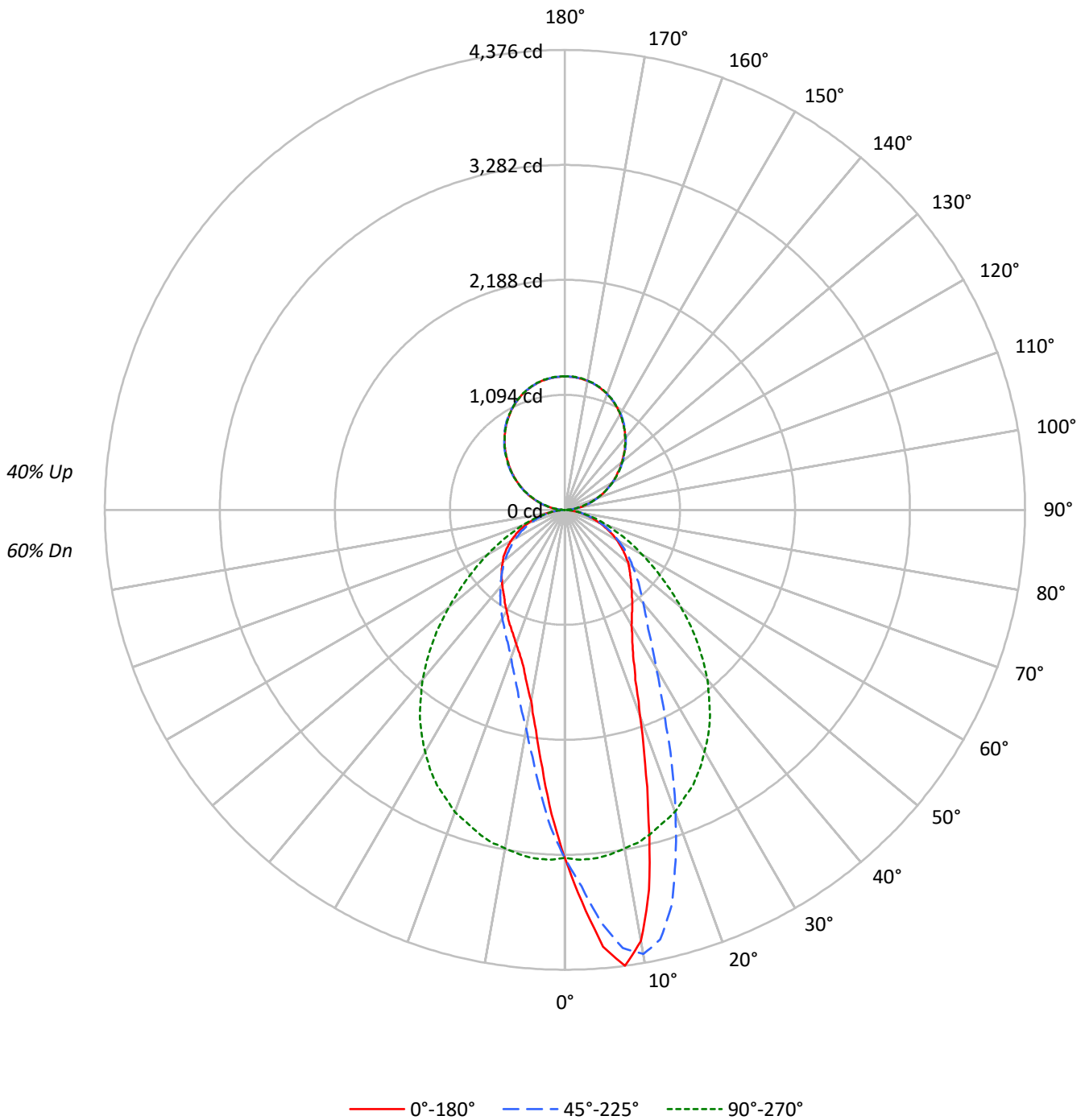
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8848.1 lumens
Efficiency: N/A
Efficacy: 129.9 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: Semi-Direct

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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65	60				
1	101	97	93	89	94	90	87	84	79	77	74	69	67	65	59	58	57	52				
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49	45				
3	85	75	68	63	79	71	65	60	62	58	54	55	51	48	47	45	42	39				
4	78	67	60	54	73	64	57	51	56	51	47	49	45	42	43	40	37	34				
5	72	61	53	47	67	57	50	45	51	45	41	45	40	37	39	36	33	30				
6	67	55	47	41	62	52	45	40	46	40	36	41	36	33	36	32	30	27				
7	62	50	42	37	58	47	40	35	42	37	32	38	33	30	33	29	27	24				
8	58	46	38	33	54	43	36	32	39	33	29	35	30	27	31	27	24	22				
9	54	42	35	30	51	40	33	29	36	30	27	32	28	24	29	25	22	20				
10	51	39	32	27	48	37	31	26	33	28	24	30	26	22	27	23	21	19				

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	3.5
10°-20°	779.0	8.8
20°-30°	922.4	10.4
30°-40°	927.4	10.5
40°-50°	850.9	9.6
50°-60°	702.3	7.9
60°-70°	496.8	5.6
70°-80°	265.2	3.0
80°-90°	70.0	0.8
90°-100°	81.8	0.9
100°-110°	247.6	2.8
110°-120°	421.5	4.8
120°-130°	554.5	6.3
130°-140°	623.3	7.0
140°-150°	612.7	6.9
150°-160°	515.9	5.8
160°-170°	343.4	3.9
170°-180°	120.3	1.4
0°-30°	2014.6	22.8
0°-40°	2942.0	33.3
0°-60°	4495.2	50.8
0°-90°	5327.2	60.2
90°-120°	750.9	8.5
90°-150°	2541.3	28.7
90°-180°	3521.0	39.8
0°-180°	8848.1	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°	30	24	1	24	30	17
95°	78	74	59	74	78	78
105°	238	236	225	236	238	252
115°	425	425	424	425	425	421
125°	614	622	621	622	614	549
135°	805	810	806	810	805	619
145°	977	982	977	982	977	610
155°	1117	1120	1119	1120	1117	515
165°	1215	1216	1219	1216	1215	343
175°	1263	1264	1268	1264	1263	120
180°	1271	1271	1271	1271	1271	



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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°	29.9	29.5	29.1	28.6	28.2	27.5	26.6	25.7	24.8	24.0	21.1
92.5°	42.9	43.4	43.8	44.3	44.7	44.6	43.9	43.3	42.6	41.9	40.6
95°	77.9	77.9	77.9	77.9	77.9	77.4	76.5	75.6	74.8	73.9	72.1
97.5°	111.8	112.0	112.2	112.5	112.7	112.2	111.1	110.0	108.9	107.8	106.5
100°	151.7	151.3	150.8	150.4	150.0	149.4	148.7	148.1	147.4	146.7	145.6
102.5°	192.7	192.9	193.1	193.3	193.5	193.3	192.7	192.0	191.3	190.7	189.1
105°	237.6	237.1	236.7	236.2	235.8	235.6	235.6	235.6	235.6	235.6	233.6
107.5°	283.5	283.7	283.9	284.2	284.4	284.2	283.5	282.8	282.2	281.5	280.6
110°	330.4	330.9	331.3	331.7	332.2	332.0	331.1	330.2	329.3	328.4	328.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	380.3	380.3	380.3	380.3	380.3	379.8	378.7	377.5	376.4	375.3	375.3
115°	425.2	425.5	425.7	425.9	426.1	426.1	425.9	425.7	425.5	425.2	425.7
117.5°	471.2	471.8	472.5	473.2	473.8	474.1	474.1	474.1	474.1	474.1	474.6
120°	520.1	520.5	521.0	521.4	521.8	522.2	522.4	522.6	522.8	523.1	524.2
122.5°	567.0	567.6	568.3	569.0	569.6	570.3	571.0	571.6	572.3	573.0	573.4
125°	613.9	614.8	615.7	616.6	617.4	618.3	619.2	620.1	621.0	621.9	622.3
127.5°	660.8	661.7	662.6	663.5	664.4	665.5	666.8	668.1	669.5	670.8	671.2
130°	706.7	708.3	709.8	711.4	712.9	714.2	715.0	715.9	716.8	717.7	718.4
132.5°	754.6	755.8	756.9	758.0	759.1	760.2	761.3	762.4	763.5	764.6	765.1
135°	804.6	805.0	805.4	805.9	806.3	807.0	807.9	808.8	809.7	810.5	810.8
137.5°	848.5	849.1	849.8	850.5	851.1	852.0	853.1	854.2	855.4	856.5	855.8
140°	891.4	893.0	894.5	896.1	897.6	898.5	898.7	898.9	899.2	899.4	899.2
142.5°	935.3	936.4	937.5	938.6	939.8	940.4	940.6	940.9	941.1	941.3	940.9
145°	977.2	978.1	979.0	979.9	980.8	981.3	981.6	981.8	982.0	982.2	981.6
147.5°	1015.2	1016.5	1017.8	1019.2	1020.5	1021.2	1021.2	1021.2	1021.2	1021.2	1020.5
150°	1051.1	1052.4	1053.8	1055.1	1056.4	1057.1	1057.1	1057.1	1057.1	1057.1	1056.7
152.5°	1086.1	1087.2	1088.3	1089.4	1090.5	1090.8	1090.4	1089.9	1089.5	1089.0	1088.8
155°	1117.0	1118.5	1120.1	1121.7	1123.2	1123.5	1122.7	1121.8	1120.9	1120.0	1119.8
157.5°	1145.9	1147.3	1148.6	1149.9	1151.3	1151.5	1150.6	1149.7	1148.8	1147.9	1147.7
160°	1173.9	1174.8	1175.7	1176.6	1177.4	1177.3	1176.2	1175.1	1174.0	1172.9	1172.9
162.5°	1194.9	1196.4	1198.0	1199.5	1201.1	1201.3	1200.2	1199.1	1198.0	1196.9	1196.6
165°	1214.8	1216.4	1217.9	1219.5	1221.0	1221.1	1219.8	1218.5	1217.1	1215.8	1215.8
167.5°	1232.8	1234.1	1235.4	1236.8	1238.1	1238.1	1236.8	1235.4	1234.1	1232.8	1232.6
170°	1245.8	1247.3	1248.9	1250.4	1252.0	1252.0	1250.4	1248.9	1247.3	1245.8	1245.8
172.5°	1255.7	1257.3	1258.9	1260.4	1262.0	1262.1	1260.7	1259.4	1258.1	1256.7	1256.7
175°	1262.7	1264.3	1265.8	1267.4	1268.9	1269.1	1267.7	1266.4	1265.1	1263.7	1263.7
177.5°	1266.7	1268.3	1269.8	1271.4	1272.9	1273.0	1271.7	1270.4	1269.1	1267.7	1267.7
180°	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7



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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°	18.2	15.3	12.4	9.9	7.7	5.4	3.2	1.0	3.2	5.4	7.7
92.5°	39.3	37.9	36.6	35.3	33.9	32.6	31.3	29.9	31.3	32.6	33.9
95°	70.3	68.5	66.8	65.1	63.6	62.0	60.4	58.9	60.4	62.0	63.6
97.5°	105.1	103.8	102.5	101.3	100.2	99.0	97.9	96.8	97.9	99.0	100.2
100°	144.5	143.4	142.3	141.1	139.7	138.4	137.1	135.8	137.1	138.4	139.7
102.5°	187.6	186.0	184.4	183.3	182.7	182.0	181.3	180.7	181.3	182.0	182.7
105°	231.6	229.6	227.6	226.4	225.9	225.5	225.0	224.6	225.0	225.5	225.9
107.5°	279.7	278.8	277.9	277.4	277.2	276.9	276.7	276.5	276.7	276.9	277.2
110°	327.5	327.1	326.6	326.2	325.7	325.3	324.9	324.4	324.9	325.3	325.7



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	375.3	375.3	375.3	375.2	375.0	374.8	374.5	374.3	374.5	374.8	375.0
115°	426.1	426.6	427.0	426.9	426.2	425.6	424.9	424.2	424.9	425.6	426.2
117.5°	475.0	475.5	475.9	476.0	475.8	475.6	475.4	475.1	475.4	475.6	475.8
120°	525.3	526.4	527.5	527.4	526.1	524.7	523.4	522.1	523.4	524.7	526.1
122.5°	573.9	574.3	574.7	574.5	573.6	572.7	571.9	571.0	571.9	572.7	573.6
125°	622.8	623.2	623.7	623.5	622.9	622.2	621.6	620.9	621.6	622.2	622.9
127.5°	671.7	672.1	672.6	672.1	670.8	669.5	668.1	666.8	668.1	669.5	670.8
130°	719.0	719.7	720.4	719.8	718.0	716.3	714.5	712.7	714.5	716.3	718.0
132.5°	765.5	766.0	766.4	765.7	764.0	762.2	760.4	758.6	760.4	762.2	764.0
135°	811.0	811.2	811.4	810.9	809.5	808.2	806.9	805.6	806.9	808.2	809.5
137.5°	855.1	854.5	853.8	852.9	851.8	850.7	849.6	848.5	849.6	850.7	851.8
140°	898.9	898.7	898.5	897.8	896.7	895.6	894.5	893.4	894.5	895.6	896.7
142.5°	940.4	940.0	939.5	938.8	937.7	936.5	935.4	934.3	935.4	936.5	937.7
145°	980.9	980.2	979.6	979.0	978.6	978.1	977.7	977.2	977.7	978.1	978.6
147.5°	1019.8	1019.2	1018.5	1017.7	1016.8	1016.0	1015.1	1014.2	1015.1	1016.0	1016.8
150°	1056.2	1055.8	1055.3	1054.9	1054.4	1054.0	1053.6	1053.1	1053.6	1054.0	1054.4
152.5°	1088.6	1088.4	1088.2	1087.7	1087.0	1086.4	1085.7	1085.1	1085.7	1086.4	1087.0
155°	1119.5	1119.3	1119.1	1119.0	1119.0	1119.0	1119.0	1119.0	1119.0	1119.0	1119.0
157.5°	1147.5	1147.3	1147.1	1147.1	1147.3	1147.5	1147.7	1147.9	1147.7	1147.5	1147.3
160°	1172.9	1172.9	1172.9	1173.1	1173.6	1174.0	1174.4	1174.9	1174.4	1174.0	1173.6
162.5°	1196.4	1196.2	1196.0	1196.2	1196.9	1197.5	1198.2	1198.8	1198.2	1197.5	1196.9
165°	1215.8	1215.8	1215.8	1216.2	1216.8	1217.5	1218.1	1218.8	1218.1	1217.5	1216.8
167.5°	1232.3	1232.1	1231.9	1232.2	1233.1	1234.0	1234.9	1235.8	1234.9	1234.0	1233.1
170°	1245.8	1245.8	1245.8	1246.2	1247.1	1248.0	1248.9	1249.8	1248.9	1248.0	1247.1
172.5°	1256.7	1256.7	1256.7	1257.2	1258.1	1259.0	1259.8	1260.7	1259.8	1259.0	1258.1
175°	1263.7	1263.7	1263.7	1264.2	1265.1	1265.9	1266.8	1267.7	1266.8	1265.9	1265.1
177.5°	1267.7	1267.7	1267.7	1268.2	1269.1	1269.9	1270.8	1271.7	1270.8	1269.9	1269.1
180°	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

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°	9.9	12.4	15.3	18.2	21.1	24.0	24.8	25.7	26.6	27.5	28.2
92.5°	35.3	36.6	37.9	39.3	40.6	41.9	42.6	43.3	43.9	44.6	44.7
95°	65.1	66.8	68.5	70.3	72.1	73.9	74.8	75.6	76.5	77.4	77.9
97.5°	101.3	102.5	103.8	105.1	106.5	107.8	108.9	110.0	111.1	112.2	112.7
100°	141.1	142.3	143.4	144.5	145.6	146.7	147.4	148.1	148.7	149.4	150.0
102.5°	183.3	184.4	186.0	187.6	189.1	190.7	191.3	192.0	192.7	193.3	193.5
105°	226.4	227.6	229.6	231.6	233.6	235.6	235.6	235.6	235.6	235.6	235.8
107.5°	277.4	277.9	278.8	279.7	280.6	281.5	282.2	282.8	283.5	284.2	284.4
110°	326.2	326.6	327.1	327.5	328.0	328.4	329.3	330.2	331.1	332.0	332.2



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	375.2	375.3	375.3	375.3	375.3	375.3	376.4	377.5	378.7	379.8	380.3
115°	426.9	427.0	426.6	426.1	425.7	425.2	425.5	425.7	425.9	426.1	426.1
117.5°	476.0	475.9	475.5	475.0	474.6	474.1	474.1	474.1	474.1	474.1	473.8
120°	527.4	527.5	526.4	525.3	524.2	523.1	522.8	522.6	522.4	522.2	521.8
122.5°	574.5	574.7	574.3	573.9	573.4	573.0	572.3	571.6	571.0	570.3	569.6
125°	623.5	623.7	623.2	622.8	622.3	621.9	621.0	620.1	619.2	618.3	617.4
127.5°	672.1	672.6	672.1	671.7	671.2	670.8	669.5	668.1	666.8	665.5	664.4
130°	719.8	720.4	719.7	719.0	718.4	717.7	716.8	715.9	715.0	714.2	712.9
132.5°	765.7	766.4	766.0	765.5	765.1	764.6	763.5	762.4	761.3	760.2	759.1
135°	810.9	811.4	811.2	811.0	810.8	810.5	809.7	808.8	807.9	807.0	806.3
137.5°	852.9	853.8	854.5	855.1	855.8	856.5	855.4	854.2	853.1	852.0	851.1
140°	897.8	898.5	898.7	898.9	899.2	899.4	899.2	898.9	898.7	898.5	897.6
142.5°	938.8	939.5	940.0	940.4	940.9	941.3	941.1	940.9	940.6	940.4	939.8
145°	979.0	979.6	980.2	980.9	981.6	982.2	982.0	981.8	981.6	981.3	980.8
147.5°	1017.7	1018.5	1019.2	1019.8	1020.5	1021.2	1021.2	1021.2	1021.2	1021.2	1020.5
150°	1054.9	1055.3	1055.8	1056.2	1056.7	1057.1	1057.1	1057.1	1057.1	1057.1	1056.4
152.5°	1087.7	1088.2	1088.4	1088.6	1088.8	1089.0	1089.5	1089.9	1090.4	1090.8	1090.5
155°	1119.0	1119.1	1119.3	1119.5	1119.8	1120.0	1120.9	1121.8	1122.7	1123.5	1123.2
157.5°	1147.1	1147.1	1147.3	1147.5	1147.7	1147.9	1148.8	1149.7	1150.6	1151.5	1151.3
160°	1173.1	1172.9	1172.9	1172.9	1172.9	1172.9	1174.0	1175.1	1176.2	1177.3	1177.4
162.5°	1196.2	1196.0	1196.2	1196.4	1196.6	1196.9	1198.0	1199.1	1200.2	1201.3	1201.1
165°	1216.2	1215.8	1215.8	1215.8	1215.8	1215.8	1217.1	1218.5	1219.8	1221.1	1221.0
167.5°	1232.2	1231.9	1232.1	1232.3	1232.6	1232.8	1234.1	1235.4	1236.8	1238.1	1238.1
170°	1246.2	1245.8	1245.8	1245.8	1245.8	1245.8	1247.3	1248.9	1250.4	1252.0	1252.0
172.5°	1257.2	1256.7	1256.7	1256.7	1256.7	1256.7	1258.1	1259.4	1260.7	1262.1	1262.0
175°	1264.2	1263.7	1263.7	1263.7	1263.7	1263.7	1265.1	1266.4	1267.7	1269.1	1268.9
177.5°	1268.2	1267.7	1267.7	1267.7	1267.7	1267.7	1269.1	1270.4	1271.7	1273.0	1272.9
180°	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7	1270.7



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

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°	28.6	29.1	29.5	29.9
92.5°	44.3	43.8	43.4	42.9
95°	77.9	77.9	77.9	77.9
97.5°	112.5	112.2	112.0	111.8
100°	150.4	150.8	151.3	151.7
102.5°	193.3	193.1	192.9	192.7
105°	236.2	236.7	237.1	237.6
107.5°	284.2	283.9	283.7	283.5
110°	331.7	331.3	330.9	330.4



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	380.3	380.3	380.3	380.3
115°	425.9	425.7	425.5	425.2
117.5°	473.2	472.5	471.8	471.2
120°	521.4	521.0	520.5	520.1
122.5°	569.0	568.3	567.6	567.0
125°	616.6	615.7	614.8	613.9
127.5°	663.5	662.6	661.7	660.8
130°	711.4	709.8	708.3	706.7
132.5°	758.0	756.9	755.8	754.6
135°	805.9	805.4	805.0	804.6
137.5°	850.5	849.8	849.1	848.5
140°	896.1	894.5	893.0	891.4
142.5°	938.6	937.5	936.4	935.3
145°	979.9	979.0	978.1	977.2
147.5°	1019.2	1017.8	1016.5	1015.2
150°	1055.1	1053.8	1052.4	1051.1
152.5°	1089.4	1088.3	1087.2	1086.1
155°	1121.7	1120.1	1118.5	1117.0
157.5°	1149.9	1148.6	1147.3	1145.9
160°	1176.6	1175.7	1174.8	1173.9
162.5°	1199.5	1198.0	1196.4	1194.9
165°	1219.5	1217.9	1216.4	1214.8
167.5°	1236.8	1235.4	1234.1	1232.8
170°	1250.4	1248.9	1247.3	1245.8
172.5°	1260.4	1258.9	1257.3	1255.7
175°	1267.4	1265.8	1264.3	1262.7
177.5°	1271.4	1269.8	1268.3	1266.7
180°	1270.7	1270.7	1270.7	1270.7



TEST NUMBER: P831184

CATALOG NUMBER: S123DIP-S1165D1025U835-4F0-1E-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	16.89	17.80	17.76	18.69	19.81	19.12	20.04	20.00	20.93	22.05
	3H	18.54	19.36	19.42	20.26	21.40	20.55	21.37	21.44	22.27	23.42
	4H	19.12	19.89	20.02	20.80	21.95	21.01	21.78	21.91	22.68	23.84
	6H	19.49	20.21	20.41	21.12	22.29	21.28	22.00	22.20	22.91	24.08
	8H	19.59	20.27	20.51	21.20	22.36	21.35	22.03	22.27	22.95	24.12
	12H	19.64	20.28	20.56	21.20	22.40	21.37	22.02	22.29	22.94	24.13
4H	2H	17.47	18.24	18.38	19.15	20.30	19.30	20.07	20.20	20.97	22.13
	3H	19.30	19.95	20.22	20.88	22.05	20.92	21.56	21.83	22.50	23.67
	4H	20.00	20.59	20.93	21.52	22.72	21.50	22.09	22.43	23.02	24.22
	6H	20.48	20.99	21.42	21.94	23.14	21.91	22.42	22.85	23.37	24.57
	8H	20.62	21.09	21.56	22.04	23.25	22.02	22.50	22.97	23.44	24.66
	12H	20.69	21.11	21.65	22.08	23.30	22.07	22.50	23.03	23.46	24.68
8H	4H	20.27	20.75	21.22	21.69	22.90	21.61	22.09	22.56	23.03	24.25
	6H	20.86	21.25	21.83	22.24	23.45	22.12	22.51	23.09	23.50	24.71
	8H	21.07	21.42	22.05	22.40	23.62	22.30	22.64	23.28	23.62	24.85
	12H	21.20	21.50	22.18	22.47	23.75	22.40	22.71	23.38	23.68	24.95
12H	4H	20.28	20.70	21.24	21.67	22.88	21.59	22.02	22.55	22.98	24.20
	6H	20.92	21.26	21.89	22.24	23.47	22.13	22.48	23.11	23.46	24.68
	8H	21.15	21.45	22.13	22.43	23.70	22.34	22.64	23.32	23.61	24.89