

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: P831230

Luminaire Tested: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

Issue Date: 05/03/2024

**Test Information**

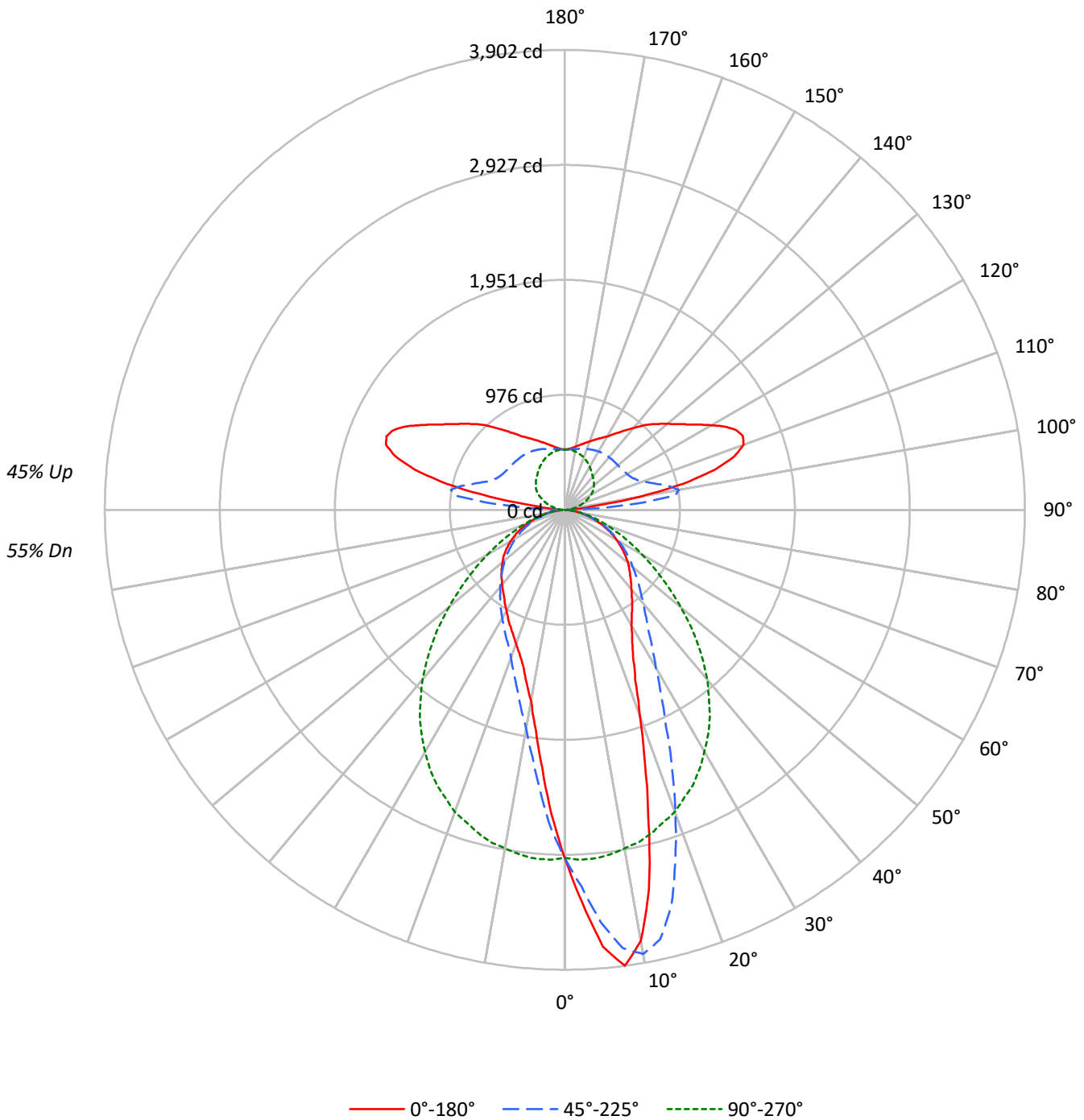
Test Method: LM-79-2019  
Report Number: P831230  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-17)  
Test Lab: INNOVATION CENTER  
Issue Date: 05/03/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S1165D1195U940-4F0-1E-UDD-G4  
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: 8600.6 lumens  
Efficiency: N/A  
Efficacy: 117.5 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: P831230  
CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

### Luminous Intensity Polar Plot





TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**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	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°	31792	31792	31792	31792	31792
5°	40207	37948	32076	25849	23754
10°	40596	41825	31863	20605	18006
15°	30577	38832	31646	17450	15228
20°	21305	31423	31242	15260	13832
25°	16245	24164	30553	14039	12973
30°	14054	19198	29453	13176	12282
35°	13039	16209	28185	12553	11796
40°	12344	14540	26402	11959	11632
45°	11934	13457	24138	11496	11558
50°	11729	12599	21460	11074	11499
55°	11292	11973	18828	10674	11549
60°	10887	11300	16228	10297	11360
65°	10229	10664	13998	9897	11135
70°	9448	9857	11906	9231	10480
75°	8551	8833	10202	8580	9578
80°	7054	7730	8071	7476	8071
85°	5582	6262	5928	6348	6434

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 27560 cd/sqm



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	279.2	3.2
10°-20°	694.7	8.1
20°-30°	822.5	9.6
30°-40°	827.0	9.6
40°-50°	758.8	8.8
50°-60°	626.3	7.3
60°-70°	443.0	5.2
70°-80°	236.5	2.7
80°-90°	62.8	0.7
90°-100°	277.7	3.2
100°-110°	813.1	9.5
110°-120°	794.0	9.2
120°-130°	632.3	7.4
130°-140°	498.9	5.8
140°-150°	372.2	4.3
150°-160°	259.5	3.0
160°-170°	152.4	1.8
170°-180°	49.6	0.6
0°-30°	1796.4	20.9
0°-40°	2623.4	30.5
0°-60°	4008.4	46.6
0°-90°	4750.8	55.2
90°-120°	1884.8	21.9
90°-150°	3388.3	39.4
90°-180°	3850.0	44.8
0°-180°	8600.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2954	2954	2954	2954	2954	
5°	3721	3512	2969	2392	2198	355
15°	2744	3485	2840	1566	1366	758
25°	1368	2035	2572	1182	1092	646
35°	992	1234	2145	955	898	624
45°	784	884	1586	755	759	607
55°	602	638	1003	569	615	538
65°	402	419	550	389	437	399
75°	206	212	245	206	230	216
85°	45	51	48	51	52	50
90°	30	26	2	26	30	19
95°	120	614	35	614	120	195
105°	1318	833	120	833	1318	1315
115°	1603	637	212	637	1603	1563
125°	1264	595	295	595	1264	1144
135°	1025	586	346	586	1025	795
145°	801	579	395	579	801	509
155°	664	560	449	560	664	309
165°	579	537	490	537	579	165
175°	521	515	511	515	521	51
180°	512	512	512	512	512	



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6
2.5°	3329.1	3325.7	3322.2	3305.1	3288.0	3279.8	3271.5	3246.9	3222.2	3194.8	3167.4
5°	3721.1	3730.7	3740.3	3729.3	3718.3	3684.8	3651.2	3606.6	3562.1	3512.1	3462.0
7.5°	3902.0	3907.5	3913.0	3906.1	3899.2	3890.3	3881.4	3841.7	3801.9	3750.5	3699.1
10°	3714.2	3726.6	3738.9	3765.6	3792.3	3822.5	3852.6	3847.2	3841.7	3826.6	3811.5
12.5°	3301.7	3316.8	3331.8	3385.3	3438.7	3507.3	3575.8	3634.7	3693.7	3734.8	3775.9
15°	2743.9	2785.7	2827.5	2876.1	2924.8	3025.5	3126.3	3250.3	3374.3	3484.7	3595.0
17.5°	2260.1	2275.8	2291.6	2343.7	2395.7	2522.5	2649.3	2792.5	2935.7	3118.7	3301.7
20°	1859.9	1874.2	1888.6	1957.2	2025.7	2125.1	2224.4	2385.5	2546.5	2743.2	2939.9
22.5°	1562.4	1585.1	1607.7	1646.0	1684.4	1779.7	1874.9	2018.2	2161.4	2378.6	2595.8
25°	1367.8	1384.3	1400.7	1424.0	1447.3	1523.4	1599.4	1717.3	1835.2	2034.6	2234.0
27.5°	1234.9	1241.7	1248.6	1271.9	1295.2	1344.5	1393.9	1495.3	1596.7	1766.0	1935.2
30°	1130.7	1135.5	1140.3	1160.9	1181.4	1215.0	1248.6	1321.9	1395.2	1544.6	1694.0
32.5°	1058.1	1061.5	1064.9	1080.7	1096.4	1120.4	1144.4	1197.9	1251.3	1374.7	1498.0
35°	992.3	994.3	996.4	1008.0	1019.7	1037.5	1055.3	1095.8	1136.2	1233.5	1330.8
37.5°	934.7	937.5	940.2	947.1	953.9	969.7	985.4	1017.6	1049.9	1124.5	1199.2
40°	878.5	883.3	888.1	892.9	897.7	910.7	923.8	948.4	973.1	1034.8	1096.4
42.5°	830.6	835.4	840.2	842.2	844.3	851.8	859.3	882.0	904.6	950.5	996.4
45°	784.0	786.0	788.1	790.1	792.2	798.4	804.5	824.4	844.3	884.0	923.8
47.5°	741.5	741.5	741.5	742.8	744.2	749.7	755.2	769.6	784.0	814.8	845.6
50°	700.4	700.4	700.4	698.3	696.2	699.7	703.1	714.1	725.0	752.4	779.8
52.5°	651.0	651.0	651.0	651.7	652.4	652.4	652.4	662.0	671.6	696.2	720.9
55°	601.7	604.4	607.2	605.1	603.0	604.4	605.8	612.0	618.1	638.0	657.9
57.5°	552.3	553.7	555.1	554.4	553.7	554.4	555.1	560.6	566.0	581.1	596.2
60°	505.7	505.7	505.7	504.4	503.0	504.4	505.7	508.5	511.2	524.9	538.6
62.5°	453.7	454.3	455.0	455.7	456.4	455.0	453.7	457.1	460.5	470.8	481.1
65°	401.6	402.3	402.9	405.0	407.1	405.7	404.3	407.7	411.2	418.7	426.2
67.5°	355.0	353.6	352.2	352.9	353.6	355.7	357.7	358.4	359.1	367.3	375.5
70°	300.2	301.5	302.9	302.2	301.5	302.2	302.9	305.0	307.0	313.2	319.3
72.5°	250.8	251.5	252.2	252.2	252.2	253.6	254.9	257.0	259.0	262.5	265.9
75°	205.6	205.6	205.6	207.0	208.3	209.0	209.7	209.7	209.7	212.4	215.2
77.5°	156.2	159.7	163.1	162.4	161.7	163.1	164.5	166.5	168.6	169.9	171.3
80°	113.8	113.8	113.8	114.4	115.1	117.2	119.2	120.6	122.0	124.7	127.5
82.5°	72.6	73.3	74.0	76.1	78.1	79.5	80.9	82.9	85.0	85.0	85.0
85°	45.2	43.9	42.5	43.9	45.2	46.6	48.0	48.7	49.3	50.7	52.1
87.5°	21.9	21.9	21.9	21.9	21.9	22.6	23.3	23.3	23.3	23.3	23.3
90°	30.0	31.1	30.0	29.0	30.0	28.0	26.9	25.9	24.9	25.9	22.8
92.5°	54.9	57.0	55.9	60.1	62.2	69.4	79.8	102.6	144.0	192.7	213.4
95°	120.2	124.3	131.6	140.9	160.6	197.9	252.8	373.0	498.3	614.4	547.0
97.5°	246.6	258.0	282.8	322.2	391.6	509.7	646.5	856.8	977.0	944.9	705.5
100°	649.6	648.6	689.0	764.6	869.2	1016.3	1137.6	1221.5	1185.2	981.1	663.1
102.5°	1028.8	1058.8	1090.9	1146.9	1222.5	1302.3	1360.3	1342.7	1195.6	913.8	600.9
105°	1317.8	1323.0	1356.2	1395.5	1443.2	1470.1	1450.4	1346.8	1130.3	833.0	552.2
107.5°	1506.4	1517.8	1531.3	1549.9	1556.1	1528.1	1447.3	1284.7	1037.1	761.5	517.0
110°	1614.1	1616.2	1618.3	1610.0	1581.0	1508.5	1377.9	1187.3	950.0	702.4	498.3



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	1635.9	1634.9	1624.5	1594.5	1535.4	1437.0	1286.8	1090.9	874.4	663.1	488.0
115°	1602.7	1597.6	1576.8	1531.3	1453.6	1340.6	1188.3	1008.1	816.4	637.2	486.9
117.5°	1530.2	1523.0	1491.9	1441.1	1360.3	1243.2	1103.4	943.8	778.1	619.5	488.0
120°	1434.9	1428.7	1403.8	1345.8	1264.0	1159.3	1035.0	895.1	749.1	608.2	492.1
122.5°	1345.8	1337.5	1309.5	1258.8	1188.3	1093.0	980.1	856.8	725.2	600.9	499.4
125°	1264.0	1256.7	1230.8	1185.2	1118.9	1036.0	936.6	823.6	705.5	594.7	506.6
127.5°	1193.5	1187.3	1163.5	1124.1	1064.0	987.3	896.2	793.6	686.9	591.6	514.9
130°	1135.5	1127.2	1105.4	1068.1	1013.2	942.8	858.9	765.6	672.4	588.5	523.2
132.5°	1078.5	1073.3	1054.7	1017.4	966.6	900.3	823.6	739.7	658.9	587.4	529.4
135°	1024.6	1017.4	998.7	967.7	916.9	857.8	790.5	716.9	647.5	586.4	535.6
137.5°	967.7	961.4	945.9	913.8	870.3	817.4	757.3	695.2	637.2	584.3	539.8
140°	907.6	908.6	892.0	863.0	823.6	779.1	729.4	676.5	627.8	583.3	543.9
142.5°	851.6	852.7	838.1	813.3	781.2	743.9	702.4	658.9	619.5	581.2	547.0
145°	800.9	798.8	790.5	768.7	742.8	712.8	679.6	645.4	612.3	579.1	548.1
147.5°	757.3	756.3	748.0	732.5	711.8	690.0	662.0	634.1	605.0	576.0	548.1
150°	720.0	720.0	713.8	702.4	686.9	667.2	645.4	621.6	597.8	571.9	548.1
152.5°	689.0	689.0	685.9	675.5	664.1	648.6	629.9	610.2	589.5	566.7	545.0
155°	664.1	663.1	661.0	652.7	643.4	630.9	615.4	598.8	581.2	560.5	542.9
157.5°	640.3	640.3	638.2	632.0	623.7	613.3	600.9	586.4	571.9	555.3	539.8
160°	617.5	618.5	618.5	612.3	605.0	597.8	587.4	576.0	562.6	549.1	537.7
162.5°	596.8	597.8	597.8	592.6	588.5	582.2	572.9	563.6	553.2	542.9	533.6
165°	579.1	579.1	580.2	576.0	571.9	566.7	559.5	553.2	545.0	536.7	529.4
167.5°	561.5	561.5	562.6	559.5	557.4	553.2	549.1	543.9	536.7	530.4	525.3
170°	546.0	546.0	547.0	545.0	543.9	541.8	537.7	534.6	529.4	524.2	521.1
172.5°	531.5	532.5	534.6	532.5	532.5	531.5	528.4	526.3	522.2	519.1	518.0
175°	521.1	522.2	523.2	522.2	522.2	522.2	520.1	519.1	517.0	514.9	514.9
177.5°	513.9	513.9	515.9	514.9	515.9	515.9	514.9	513.9	512.8	511.8	512.8
180°	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6
2.5°	3159.1	3150.9	3120.8	3090.6	3056.4	3022.1	2996.7	2971.4	2933.7	2896.0	2865.2
5°	3423.7	3385.3	3321.6	3257.8	3171.5	3085.1	3026.9	2968.6	2890.5	2812.4	2750.0
7.5°	3633.4	3567.6	3478.5	3389.4	3276.3	3163.3	3056.4	2949.4	2830.2	2711.0	2613.7
10°	3767.0	3722.4	3619.7	3516.9	3365.4	3214.0	3064.6	2915.2	2761.7	2608.2	2479.3
12.5°	3780.0	3784.1	3689.6	3595.0	3423.7	3252.3	3070.7	2889.1	2695.9	2502.6	2352.6
15°	3665.6	3736.2	3684.1	3632.0	3459.3	3286.6	3063.2	2839.8	2617.1	2394.4	2221.0
17.5°	3453.1	3604.6	3612.1	3619.7	3447.0	3274.3	3026.9	2779.5	2527.3	2275.1	2092.8
20°	3163.3	3386.7	3463.4	3540.2	3399.7	3259.2	2993.3	2727.4	2445.1	2162.7	1971.6
22.5°	2867.2	3138.6	3279.1	3419.6	3315.4	3211.2	2928.2	2645.2	2347.1	2049.0	1855.1
25°	2530.1	2826.1	3042.0	3257.8	3194.1	3130.4	2851.5	2572.5	2255.3	1938.0	1739.9
27.5°	2236.1	2536.9	2797.3	3057.7	3044.0	3030.3	2753.5	2476.6	2151.8	1827.0	1635.8
30°	1974.3	2254.6	2545.8	2837.1	2870.6	2904.2	2637.0	2369.7	2044.2	1718.7	1534.3
32.5°	1742.7	1987.3	2299.8	2612.3	2678.1	2743.9	2502.6	2261.4	1939.3	1617.3	1439.8
35°	1552.8	1774.9	2087.4	2399.9	2482.1	2564.3	2354.6	2144.9	1831.1	1517.2	1347.9
37.5°	1385.0	1570.7	1875.6	2180.6	2281.3	2382.0	2194.3	2006.5	1712.5	1418.5	1263.0
40°	1245.8	1395.2	1675.5	1955.8	2072.3	2188.8	2033.9	1879.0	1600.1	1321.2	1178.0
42.5°	1129.3	1262.3	1516.5	1770.8	1882.5	1994.2	1863.3	1732.4	1484.3	1236.2	1105.4
45°	1030.0	1136.2	1367.1	1598.1	1704.3	1810.5	1698.1	1585.7	1367.1	1148.5	1026.6
47.5°	936.8	1027.9	1225.3	1422.6	1517.2	1611.8	1524.1	1436.3	1251.3	1066.3	956.0
50°	853.2	926.5	1099.2	1271.9	1354.1	1436.3	1358.9	1281.5	1129.3	977.2	881.3
52.5°	780.5	840.2	984.7	1129.3	1199.9	1270.5	1204.0	1137.6	1017.0	896.3	812.7
55°	708.6	759.3	884.7	1010.1	1058.1	1106.0	1054.6	1003.3	905.9	808.6	738.0
57.5°	641.4	686.7	789.4	892.2	929.2	966.2	919.6	873.0	799.7	726.4	667.5
60°	575.6	612.6	698.3	784.0	806.6	829.2	791.5	753.8	702.4	651.0	598.3
62.5°	514.6	548.2	612.0	675.7	690.8	705.8	677.1	648.3	609.2	570.2	529.0
65°	451.6	477.0	529.0	581.1	590.7	600.3	575.0	549.6	520.1	490.7	460.5
67.5°	393.4	411.2	453.7	496.1	496.8	497.5	477.0	456.4	440.0	423.5	399.5
70°	336.5	353.6	381.7	409.8	410.5	411.2	394.7	378.3	365.9	353.6	335.8
72.5°	278.2	290.6	311.8	333.0	331.7	330.3	320.0	309.7	300.2	290.6	277.5
75°	225.5	235.7	250.1	264.5	260.4	256.3	250.8	245.3	237.1	228.9	220.7
77.5°	177.5	183.7	191.9	200.1	197.4	194.6	189.8	185.0	178.9	172.7	169.3
80°	130.2	132.9	138.4	143.9	142.5	141.2	135.7	130.2	128.8	127.5	122.7
82.5°	88.4	91.8	93.2	94.6	93.9	93.2	89.1	85.0	83.6	82.2	81.5
85°	52.8	53.5	54.1	54.8	52.8	50.7	49.3	48.0	48.0	48.0	47.3
87.5°	24.0	24.7	24.7	24.7	24.0	23.3	21.9	20.6	21.2	21.9	21.9
90°	19.7	16.6	13.5	11.4	9.3	6.2	4.1	2.1	4.1	6.2	9.3
92.5°	159.5	104.6	71.5	52.8	42.5	33.2	22.8	15.5	22.8	33.2	42.5
95°	377.1	222.7	134.7	94.3	67.3	49.7	38.3	35.2	38.3	49.7	67.3
97.5°	419.6	240.4	153.3	108.8	81.8	66.3	57.0	55.9	57.0	66.3	81.8
100°	390.6	237.3	164.7	124.3	99.5	85.0	77.7	76.7	77.7	85.0	99.5
102.5°	365.7	241.4	178.2	141.9	120.2	106.7	100.5	98.4	100.5	106.7	120.2
105°	356.4	249.7	193.7	161.6	141.9	129.5	123.3	120.2	123.3	129.5	141.9
107.5°	354.3	263.2	213.4	183.4	164.7	152.3	146.1	143.0	146.1	152.3	164.7
110°	359.5	280.8	234.1	205.1	187.5	176.1	170.9	167.8	170.9	176.1	187.5





TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	369.9	298.4	255.9	227.9	210.3	198.9	193.7	190.6	193.7	198.9	210.3
115°	381.3	318.1	278.7	250.7	233.1	222.7	216.5	212.4	216.5	222.7	233.1
117.5°	395.8	338.8	299.4	273.5	253.8	244.5	239.3	234.1	239.3	244.5	253.8
120°	412.3	358.5	321.2	295.3	275.6	265.2	260.0	256.9	260.0	265.2	275.6
122.5°	427.9	379.2	342.9	315.0	296.3	284.9	279.7	276.6	279.7	284.9	296.3
125°	444.5	398.9	362.6	334.6	315.0	303.6	297.3	295.3	297.3	303.6	315.0
127.5°	457.9	416.5	381.3	353.3	331.5	320.1	312.9	309.8	312.9	320.1	331.5
130°	471.4	432.0	397.8	369.9	348.1	335.7	326.3	323.2	326.3	335.7	348.1
132.5°	483.8	445.5	412.3	385.4	363.6	348.1	337.7	333.6	337.7	348.1	363.6
135°	494.2	459.0	426.8	398.9	377.1	361.6	350.2	346.0	350.2	361.6	377.1
137.5°	502.5	468.3	437.2	411.3	389.5	373.0	361.6	357.4	361.6	373.0	389.5
140°	508.7	477.6	447.6	421.7	400.9	384.4	374.0	368.8	374.0	384.4	400.9
142.5°	514.9	484.9	455.9	432.0	411.3	396.8	385.4	381.3	385.4	396.8	411.3
145°	519.1	491.1	464.1	440.3	422.7	407.2	397.8	394.7	397.8	407.2	422.7
147.5°	522.2	496.3	471.4	450.7	433.1	419.6	410.3	408.2	410.3	419.6	433.1
150°	523.2	501.4	477.6	459.0	444.5	431.0	422.7	421.7	422.7	431.0	444.5
152.5°	525.3	504.5	484.9	467.3	454.8	443.4	435.1	435.1	435.1	443.4	454.8
155°	525.3	508.7	491.1	476.6	465.2	454.8	448.6	448.6	448.6	454.8	465.2
157.5°	526.3	510.8	496.3	484.9	474.5	465.2	460.0	459.0	460.0	465.2	474.5
160°	526.3	513.9	501.4	491.1	483.8	475.5	471.4	471.4	471.4	475.5	483.8
162.5°	525.3	514.9	504.5	496.3	490.0	483.8	480.7	480.7	480.7	483.8	490.0
165°	523.2	515.9	507.7	500.4	496.3	491.1	489.0	490.0	489.0	491.1	496.3
167.5°	522.2	515.9	509.7	504.5	501.4	497.3	496.3	497.3	496.3	497.3	501.4
170°	519.1	514.9	509.7	507.7	505.6	502.5	501.4	503.5	501.4	502.5	505.6
172.5°	518.0	514.9	510.8	509.7	508.7	506.6	506.6	507.7	506.6	506.6	508.7
175°	515.9	513.9	511.8	510.8	510.8	508.7	509.7	510.8	509.7	508.7	510.8
177.5°	514.9	512.8	511.8	511.8	511.8	510.8	511.8	512.8	511.8	510.8	511.8
180°	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6	2953.6
2.5°	2834.3	2807.6	2780.9	2760.3	2739.8	2704.8	2669.9	2661.6	2653.4	2641.8	2630.1
5°	2687.7	2621.9	2556.1	2497.2	2438.2	2392.3	2346.4	2316.2	2286.1	2264.2	2242.2
7.5°	2516.4	2417.7	2319.0	2249.1	2179.2	2112.7	2046.2	2025.0	2003.8	1975.0	1946.2
10°	2350.5	2241.6	2132.6	2041.5	1950.3	1885.2	1820.1	1794.1	1768.0	1731.7	1695.4
12.5°	2202.5	2083.3	1964.0	1872.2	1780.4	1717.3	1654.3	1616.6	1578.9	1558.3	1537.8
15°	2047.6	1920.2	1792.7	1707.7	1622.7	1565.9	1509.0	1476.1	1443.2	1423.3	1403.5
17.5°	1910.6	1784.5	1658.4	1576.8	1495.3	1443.2	1391.1	1362.3	1333.6	1318.5	1303.4
20°	1780.4	1657.0	1533.7	1454.2	1374.7	1332.2	1289.7	1271.2	1252.7	1240.4	1228.0
22.5°	1661.1	1539.8	1418.5	1350.7	1282.8	1248.6	1214.3	1201.3	1188.3	1178.0	1167.7
25°	1541.9	1433.6	1325.3	1267.8	1210.2	1182.1	1154.0	1141.0	1128.0	1117.7	1107.4
27.5°	1444.6	1341.1	1237.6	1188.3	1138.9	1117.0	1095.1	1084.8	1074.5	1064.9	1055.3
30°	1350.0	1257.5	1165.0	1122.5	1080.0	1060.1	1040.3	1030.0	1019.7	1010.8	1001.9
32.5°	1262.3	1182.8	1103.3	1064.2	1025.2	1008.7	992.3	980.0	967.6	960.8	953.9
35°	1178.7	1107.4	1036.1	1003.9	971.7	955.3	938.8	928.6	918.3	912.8	907.3
37.5°	1107.4	1043.7	980.0	949.1	918.3	902.5	886.8	877.8	868.9	866.9	864.8
40°	1034.8	980.0	925.1	895.0	864.8	851.1	837.4	831.9	826.4	825.1	823.7
42.5°	974.5	921.0	867.6	840.2	812.7	801.1	789.4	786.7	784.0	786.0	788.1
45°	904.6	860.0	815.5	790.1	764.8	755.2	745.6	743.5	741.5	745.6	749.7
47.5°	845.6	804.5	763.4	739.4	715.4	708.6	701.7	701.0	700.4	705.8	711.3
50°	785.3	745.6	705.8	686.7	667.5	661.3	655.1	657.2	659.2	668.1	677.1
52.5°	729.1	692.1	655.1	637.3	619.5	615.4	611.3	616.1	620.9	630.5	640.1
55°	667.5	633.9	600.3	586.6	572.9	568.8	564.7	574.3	583.9	592.8	601.7
57.5°	608.5	579.1	549.6	537.3	524.9	524.2	523.6	532.5	541.4	551.0	560.6
60°	545.5	520.8	496.1	486.5	477.0	478.3	479.7	490.0	500.3	507.8	515.3
62.5°	487.9	467.4	446.8	437.9	429.0	432.4	435.8	446.1	456.4	465.3	474.2
65°	430.4	413.2	396.1	389.9	383.8	388.6	393.4	402.3	411.2	417.3	423.5
67.5°	375.5	361.1	346.8	342.0	337.2	342.0	346.8	355.7	364.6	370.7	376.9
70°	318.0	306.3	294.7	291.2	287.8	293.3	298.8	306.3	313.9	320.0	326.2
72.5°	264.5	255.6	246.7	246.0	245.3	250.1	254.9	262.5	270.0	274.1	278.2
75°	212.4	207.6	202.8	202.2	201.5	206.3	211.1	215.2	219.3	222.7	226.1
77.5°	165.8	161.7	157.6	158.3	159.0	162.4	165.8	169.9	174.1	176.1	178.2
80°	117.9	116.5	115.1	116.5	117.9	120.6	123.4	126.1	128.8	130.2	131.6
82.5°	80.9	79.5	78.1	80.2	82.2	84.3	86.3	88.4	90.5	91.1	91.8
85°	46.6	48.7	50.7	50.7	50.7	51.4	52.1	52.8	53.5	52.8	52.1
87.5°	21.9	22.6	23.3	23.3	23.3	24.0	24.7	24.7	24.7	24.0	23.3
90°	11.4	13.5	16.6	19.7	22.8	25.9	24.9	25.9	26.9	28.0	30.0
92.5°	52.8	71.5	104.6	159.5	213.4	192.7	144.0	102.6	79.8	69.4	62.2
95°	94.3	134.7	222.7	377.1	547.0	614.4	498.3	373.0	252.8	197.9	160.6
97.5°	108.8	153.3	240.4	419.6	705.5	944.9	977.0	856.8	646.5	509.7	391.6
100°	124.3	164.7	237.3	390.6	663.1	981.1	1185.2	1221.5	1137.6	1016.3	869.2
102.5°	141.9	178.2	241.4	365.7	600.9	913.8	1195.6	1342.7	1360.3	1302.3	1222.5
105°	161.6	193.7	249.7	356.4	552.2	833.0	1130.3	1346.8	1450.4	1470.1	1443.2
107.5°	183.4	213.4	263.2	354.3	517.0	761.5	1037.1	1284.7	1447.3	1528.1	1556.1
110°	205.1	234.1	280.8	359.5	498.3	702.4	950.0	1187.3	1377.9	1508.5	1581.0



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	227.9	255.9	298.4	369.9	488.0	663.1	874.4	1090.9	1286.8	1437.0	1535.4
115°	250.7	278.7	318.1	381.3	486.9	637.2	816.4	1008.1	1188.3	1340.6	1453.6
117.5°	273.5	299.4	338.8	395.8	488.0	619.5	778.1	943.8	1103.4	1243.2	1360.3
120°	295.3	321.2	358.5	412.3	492.1	608.2	749.1	895.1	1035.0	1159.3	1264.0
122.5°	315.0	342.9	379.2	427.9	499.4	600.9	725.2	856.8	980.1	1093.0	1188.3
125°	334.6	362.6	398.9	444.5	506.6	594.7	705.5	823.6	936.6	1036.0	1118.9
127.5°	353.3	381.3	416.5	457.9	514.9	591.6	686.9	793.6	896.2	987.3	1064.0
130°	369.9	397.8	432.0	471.4	523.2	588.5	672.4	765.6	858.9	942.8	1013.2
132.5°	385.4	412.3	445.5	483.8	529.4	587.4	658.9	739.7	823.6	900.3	966.6
135°	398.9	426.8	459.0	494.2	535.6	586.4	647.5	716.9	790.5	857.8	916.9
137.5°	411.3	437.2	468.3	502.5	539.8	584.3	637.2	695.2	757.3	817.4	870.3
140°	421.7	447.6	477.6	508.7	543.9	583.3	627.8	676.5	729.4	779.1	823.6
142.5°	432.0	455.9	484.9	514.9	547.0	581.2	619.5	658.9	702.4	743.9	781.2
145°	440.3	464.1	491.1	519.1	548.1	579.1	612.3	645.4	679.6	712.8	742.8
147.5°	450.7	471.4	496.3	522.2	548.1	576.0	605.0	634.1	662.0	690.0	711.8
150°	459.0	477.6	501.4	523.2	548.1	571.9	597.8	621.6	645.4	667.2	686.9
152.5°	467.3	484.9	504.5	525.3	545.0	566.7	589.5	610.2	629.9	648.6	664.1
155°	476.6	491.1	508.7	525.3	542.9	560.5	581.2	598.8	615.4	630.9	643.4
157.5°	484.9	496.3	510.8	526.3	539.8	555.3	571.9	586.4	600.9	613.3	623.7
160°	491.1	501.4	513.9	526.3	537.7	549.1	562.6	576.0	587.4	597.8	605.0
162.5°	496.3	504.5	514.9	525.3	533.6	542.9	553.2	563.6	572.9	582.2	588.5
165°	500.4	507.7	515.9	523.2	529.4	536.7	545.0	553.2	559.5	566.7	571.9
167.5°	504.5	509.7	515.9	522.2	525.3	530.4	536.7	543.9	549.1	553.2	557.4
170°	507.7	509.7	514.9	519.1	521.1	524.2	529.4	534.6	537.7	541.8	543.9
172.5°	509.7	510.8	514.9	518.0	518.0	519.1	522.2	526.3	528.4	531.5	532.5
175°	510.8	511.8	513.9	515.9	514.9	514.9	517.0	519.1	520.1	522.2	522.2
177.5°	511.8	511.8	512.8	514.9	512.8	511.8	512.8	513.9	514.9	515.9	515.9
180°	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8	511.8

TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	2953.6	2953.6	2953.6	2953.6
2.5°	2625.3	2620.5	2601.3	2582.1
5°	2225.8	2209.3	2203.9	2198.4
7.5°	1944.8	1943.5	1914.7	1885.9
10°	1697.4	1699.5	1673.5	1647.4
12.5°	1520.6	1503.5	1501.5	1499.4
15°	1387.7	1371.9	1369.2	1366.5
17.5°	1293.8	1284.2	1281.5	1278.7
20°	1222.5	1217.1	1212.3	1207.5
22.5°	1160.9	1154.0	1149.9	1145.8
25°	1101.2	1095.1	1093.7	1092.3
27.5°	1047.8	1040.3	1040.3	1040.3
30°	997.1	992.3	990.2	988.2
32.5°	949.8	945.7	945.7	945.7
35°	905.3	903.2	900.5	897.7
37.5°	864.8	864.8	863.5	862.1
40°	825.8	827.8	827.8	827.8
42.5°	790.1	792.2	792.2	792.2
45°	753.1	756.6	757.9	759.3
47.5°	716.8	722.3	723.7	725.0
50°	681.2	685.3	686.0	686.7
52.5°	644.8	649.6	653.1	656.5
55°	606.5	611.3	613.3	615.4
57.5°	565.4	570.2	570.8	571.5
60°	520.1	524.9	526.3	527.7
62.5°	477.0	479.7	481.1	482.4
65°	427.6	431.7	434.5	437.2
67.5°	380.3	383.8	383.8	383.8
70°	327.6	328.9	331.0	333.0
72.5°	278.9	279.6	279.6	279.6
75°	227.5	228.9	229.6	230.3
77.5°	178.9	179.5	179.5	179.5
80°	130.9	130.2	130.2	130.2
82.5°	89.8	87.7	87.7	87.7
85°	51.4	50.7	51.4	52.1
87.5°	23.3	23.3	23.3	23.3
90°	29.0	30.0	31.1	30.0
92.5°	60.1	55.9	57.0	54.9
95°	140.9	131.6	124.3	120.2
97.5°	322.2	282.8	258.0	246.6
100°	764.6	689.0	648.6	649.6
102.5°	1146.9	1090.9	1058.8	1028.8
105°	1395.5	1356.2	1323.0	1317.8
107.5°	1549.9	1531.3	1517.8	1506.4
110°	1610.0	1618.3	1616.2	1614.1



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-UDD-G4

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	1594.5	1624.5	1634.9	1635.9
115°	1531.3	1576.8	1597.6	1602.7
117.5°	1441.1	1491.9	1523.0	1530.2
120°	1345.8	1403.8	1428.7	1434.9
122.5°	1258.8	1309.5	1337.5	1345.8
125°	1185.2	1230.8	1256.7	1264.0
127.5°	1124.1	1163.5	1187.3	1193.5
130°	1068.1	1105.4	1127.2	1135.5
132.5°	1017.4	1054.7	1073.3	1078.5
135°	967.7	998.7	1017.4	1024.6
137.5°	913.8	945.9	961.4	967.7
140°	863.0	892.0	908.6	907.6
142.5°	813.3	838.1	852.7	851.6
145°	768.7	790.5	798.8	800.9
147.5°	732.5	748.0	756.3	757.3
150°	702.4	713.8	720.0	720.0
152.5°	675.5	685.9	689.0	689.0
155°	652.7	661.0	663.1	664.1
157.5°	632.0	638.2	640.3	640.3
160°	612.3	618.5	618.5	617.5
162.5°	592.6	597.8	597.8	596.8
165°	576.0	580.2	579.1	579.1
167.5°	559.5	562.6	561.5	561.5
170°	545.0	547.0	546.0	546.0
172.5°	532.5	534.6	532.5	531.5
175°	522.2	523.2	522.2	521.1
177.5°	514.9	515.9	513.9	513.9
180°	511.8	511.8	511.8	511.8



TEST NUMBER: P831230

CATALOG NUMBER: S123DIP-S1165D1195U940-4F0-1E-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	16.06	16.93	16.98	17.86	19.06	18.30	19.17	19.22	20.10	21.30
	3H	17.71	18.49	18.64	19.43	20.65	19.72	20.50	20.66	21.44	22.67
	4H	18.29	19.02	19.23	19.97	21.20	20.18	20.91	21.12	21.86	23.09
	6H	18.66	19.34	19.62	20.29	21.53	20.45	21.13	21.41	22.08	23.32
	8H	18.76	19.40	19.72	20.37	21.61	20.51	21.16	21.48	22.13	23.37
	12H	18.80	19.41	19.77	20.38	21.64	20.53	21.15	21.50	22.11	23.37
4H	2H	16.64	17.37	17.59	18.32	19.55	18.46	19.20	19.42	20.15	21.38
	3H	18.47	19.08	19.43	20.06	21.30	20.08	20.70	21.04	21.67	22.92
	4H	19.17	19.73	20.14	20.70	21.97	20.67	21.23	21.64	22.20	23.47
	6H	19.64	20.12	20.62	21.12	22.39	21.07	21.55	22.05	22.55	23.82
	8H	19.78	20.23	20.76	21.22	22.50	21.18	21.63	22.17	22.62	23.90
	12H	19.85	20.25	20.85	21.25	22.54	21.23	21.63	22.23	22.64	23.93
8H	4H	19.43	19.88	20.42	20.87	22.15	20.77	21.22	21.76	22.21	23.49
	6H	20.02	20.39	21.03	21.42	22.70	21.28	21.65	22.28	22.68	23.96
	8H	20.23	20.56	21.25	21.57	22.87	21.46	21.78	22.47	22.80	24.10
	12H	20.35	20.64	21.37	21.65	23.00	21.56	21.85	22.58	22.86	24.20
12H	4H	19.44	19.84	20.44	20.84	22.13	20.75	21.15	21.75	22.16	23.44
	6H	20.07	20.40	21.09	21.42	22.72	21.29	21.62	22.31	22.63	23.93
	8H	20.31	20.59	21.33	21.61	22.95	21.49	21.78	22.51	22.79	24.13