

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: P831688

Luminaire Tested: S123DIP-S775D585U940-4F0-1E-UDD-G1

Issue Date: 05/03/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P831688  
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-S775D585U940-4F0-1E-UDD-G1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, GRAZE OPTIC  
UPLIGHT 585 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: -

**Summary**

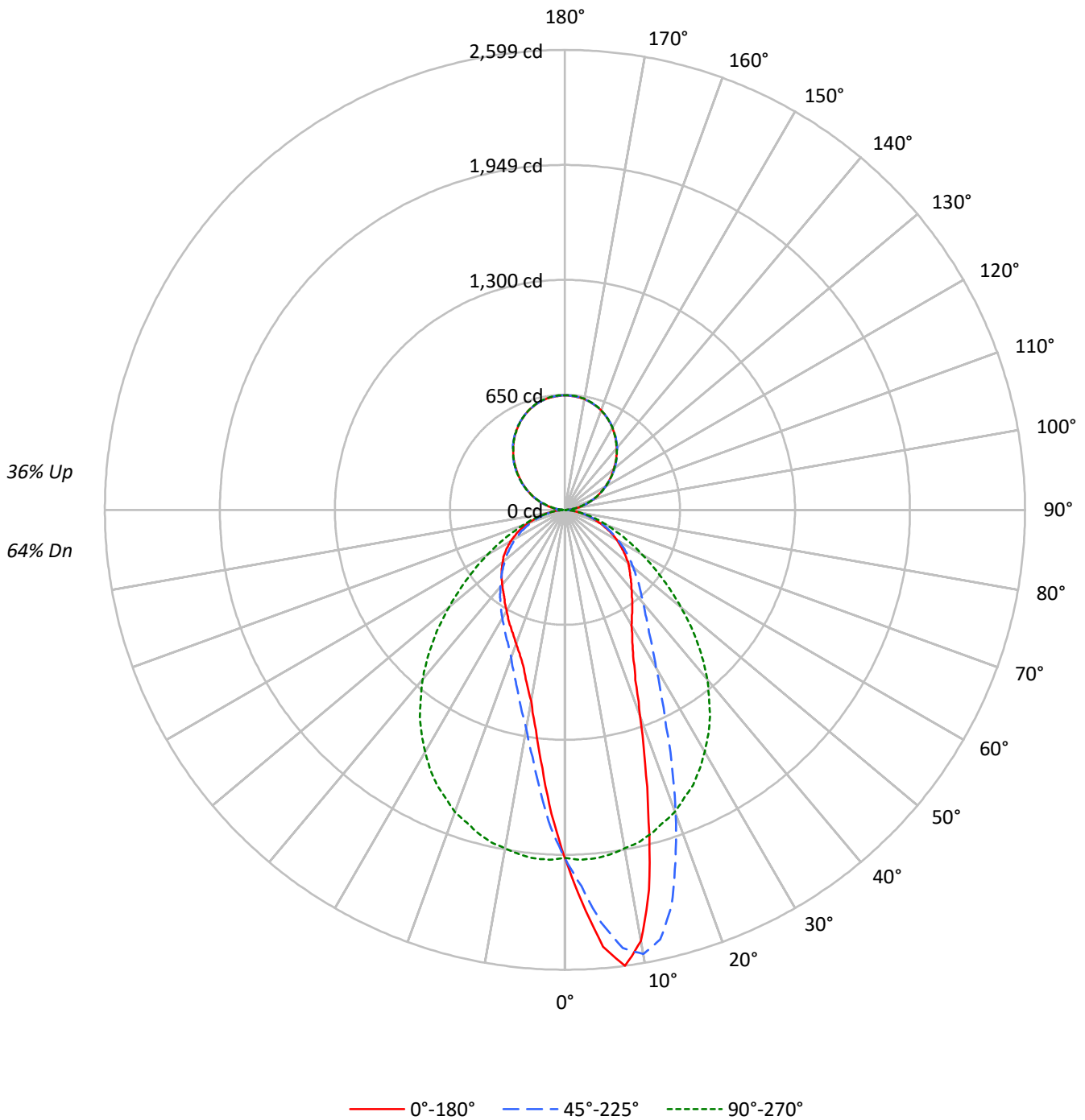
Lumens per Lamp: N/A  
Luminaire Lumens: 4958.1 lumens  
Efficiency: N/A  
Efficacy: 120.6 lumens/watt  
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89  
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 41.1  
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	104	104	104	104	91	91	91	79	79	79	69	69	69	64				
1	102	97	94	90	95	92	88	85	81	78	76	71	69	68	62	61	59	55				
2	93	86	80	75	87	81	76	71	72	68	64	63	60	58	55	53	51	47				
3	85	76	69	63	80	72	66	61	64	59	55	57	53	50	50	47	44	41				
4	79	68	60	55	74	64	58	52	58	52	48	51	47	43	45	42	39	36				
5	73	61	53	48	68	58	51	46	52	46	42	46	42	38	41	38	35	32				
6	67	56	48	42	63	53	46	40	47	42	37	42	38	34	38	34	31	29				
7	63	51	43	37	59	48	41	36	43	38	33	39	34	31	35	31	28	26				
8	58	46	39	34	55	44	37	32	40	34	30	36	31	28	32	28	26	23				
9	55	43	35	30	52	41	34	29	37	31	27	33	29	25	30	26	23	21				
10	51	39	32	28	48	38	31	27	34	29	25	31	27	23	28	24	22	20				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	21177	21177	21177	21177	21177
5°	26782	25278	21367	17219	15823
10°	27042	27860	21225	13726	11995
15°	20367	25867	21080	11624	10143
20°	14191	20931	20811	10165	9213
25°	10821	16096	20352	9352	8641
30°	9362	12788	19619	8777	8181
35°	8686	10797	18775	8361	7858
40°	8223	9686	17588	7966	7748
45°	7949	8965	16079	7657	7700
50°	7812	8393	14294	7376	7659
55°	7522	7976	12542	7111	7692
60°	7253	7528	10809	6859	7567
65°	6813	7103	9324	6592	7417
70°	6291	6565	7931	6150	6980
75°	5693	5885	6796	5714	6380
80°	4699	5151	5374	4978	5374
85°	3717	4174	3952	4224	4286

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 18358 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	186.0	3.8
10°-20°	462.7	9.3
20°-30°	547.9	11.1
30°-40°	550.9	11.1
40°-50°	505.4	10.2
50°-60°	417.2	8.4
60°-70°	295.1	6.0
70°-80°	157.5	3.2
80°-90°	41.3	0.8
90°-100°	41.7	0.8
100°-110°	126.2	2.5
110°-120°	214.8	4.3
120°-130°	282.5	5.7
130°-140°	317.6	6.4
140°-150°	312.2	6.3
150°-160°	262.9	5.3
160°-170°	175.0	3.5
170°-180°	61.3	1.2
0°-30°	1196.6	24.1
0°-40°	1747.5	35.2
0°-60°	2670.1	53.9
0°-90°	3164.0	63.8
90°-120°	382.6	7.7
90°-150°	1294.9	26.1
90°-180°	1794.0	36.2
0°-180°	4958.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1967	1967	1967	1967	1967	
5°	2479	2340	1978	1594	1464	236
15°	1828	2321	1892	1043	910	505
25°	911	1355	1714	787	728	430
35°	661	822	1429	636	598	415
45°	522	589	1056	503	506	404
55°	401	425	668	379	410	359
65°	268	279	366	259	291	266
75°	137	142	163	137	153	144
85°	30	34	32	34	35	34
90°	15	12	0	12	15	9
95°	40	38	30	38	40	40
105°	121	120	114	120	121	128
115°	217	217	216	217	217	215
125°	313	317	316	317	313	280
135°	410	413	410	413	410	315
145°	498	500	498	500	498	311
155°	569	571	570	571	569	262
165°	619	620	621	620	619	175
175°	643	644	646	644	643	61
180°	648	648	648	648	648	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4
2.5°	2217.6	2215.3	2213.0	2201.6	2190.2	2184.7	2179.2	2162.8	2146.4	2128.1	2109.8
5°	2478.7	2485.1	2491.5	2484.2	2476.9	2454.5	2432.1	2402.5	2372.8	2339.5	2306.1
7.5°	2599.2	2602.8	2606.5	2601.9	2597.4	2591.4	2585.5	2559.0	2532.5	2498.3	2464.1
10°	2474.1	2482.3	2490.6	2508.4	2526.2	2546.2	2566.3	2562.7	2559.0	2549.0	2538.9
12.5°	2199.3	2209.4	2219.4	2255.0	2290.6	2336.3	2381.9	2421.2	2460.4	2487.8	2515.2
15°	1827.7	1855.6	1883.4	1915.8	1948.3	2015.4	2082.5	2165.1	2247.7	2321.2	2394.7
17.5°	1505.5	1516.0	1526.5	1561.2	1595.9	1680.3	1764.8	1860.2	1955.6	2077.4	2199.3
20°	1238.9	1248.5	1258.1	1303.7	1349.4	1415.5	1481.7	1589.0	1696.3	1827.3	1958.3
22.5°	1040.8	1055.8	1070.9	1096.5	1122.0	1185.5	1248.9	1344.3	1439.7	1584.4	1729.1
25°	911.1	922.1	933.0	948.6	964.1	1014.8	1065.4	1143.9	1222.5	1355.3	1488.1
27.5°	822.6	827.1	831.7	847.2	862.7	895.6	928.5	996.0	1063.6	1176.3	1289.1
30°	753.2	756.4	759.6	773.3	787.0	809.3	831.7	880.5	929.4	1028.9	1128.4
32.5°	704.8	707.1	709.4	719.9	730.4	746.3	762.3	797.9	833.5	915.7	997.9
35°	661.0	662.4	663.7	671.5	679.2	691.1	703.0	729.9	756.8	821.7	886.5
37.5°	622.6	624.5	626.3	630.9	635.4	645.9	656.4	677.9	699.3	749.1	798.8
40°	585.2	588.4	591.6	594.8	598.0	606.7	615.3	631.8	648.2	689.3	730.4
42.5°	553.3	556.4	559.6	561.0	562.4	567.4	572.4	587.5	602.6	633.1	663.7
45°	522.2	523.6	525.0	526.3	527.7	531.8	535.9	549.1	562.4	588.9	615.3
47.5°	493.9	493.9	493.9	494.8	495.7	499.4	503.0	512.6	522.2	542.8	563.3
50°	466.5	466.5	466.5	465.2	463.8	466.1	468.3	475.7	483.0	501.2	519.5
52.5°	433.7	433.7	433.7	434.1	434.6	434.6	434.6	441.0	447.4	463.8	480.2
55°	400.8	402.6	404.4	403.1	401.7	402.6	403.5	407.6	411.7	425.0	438.2
57.5°	367.9	368.8	369.7	369.3	368.8	369.3	369.7	373.4	377.1	387.1	397.1
60°	336.9	336.9	336.9	336.0	335.1	336.0	336.9	338.7	340.5	349.7	358.8
62.5°	302.2	302.6	303.1	303.6	304.0	303.1	302.2	304.5	306.8	313.6	320.4
65°	267.5	268.0	268.4	269.8	271.1	270.2	269.3	271.6	273.9	278.9	283.9
67.5°	236.5	235.5	234.6	235.1	235.5	236.9	238.3	238.7	239.2	244.7	250.2
70°	199.9	200.9	201.8	201.3	200.9	201.3	201.8	203.1	204.5	208.6	212.7
72.5°	167.1	167.5	168.0	168.0	168.0	168.9	169.8	171.2	172.5	174.8	177.1
75°	136.9	136.9	136.9	137.9	138.8	139.2	139.7	139.7	139.7	141.5	143.3
77.5°	104.1	106.4	108.6	108.2	107.7	108.6	109.6	110.9	112.3	113.2	114.1
80°	75.8	75.8	75.8	76.2	76.7	78.1	79.4	80.3	81.3	83.1	84.9
82.5°	48.4	48.8	49.3	50.7	52.0	53.0	53.9	55.2	56.6	56.6	56.6
85°	30.1	29.2	28.3	29.2	30.1	31.0	32.0	32.4	32.9	33.8	34.7
87.5°	14.6	14.6	14.6	14.6	14.6	15.1	15.5	15.5	15.5	15.5	15.5
90°	15.3	15.0	14.8	14.6	14.4	14.0	13.6	13.1	12.7	12.2	10.7
92.5°	21.9	22.1	22.3	22.5	22.8	22.7	22.4	22.0	21.7	21.4	20.7
95°	39.7	39.7	39.7	39.7	39.7	39.4	39.0	38.5	38.1	37.6	36.7
97.5°	57.0	57.1	57.2	57.3	57.4	57.2	56.6	56.1	55.5	54.9	54.3
100°	77.3	77.1	76.9	76.6	76.4	76.1	75.8	75.4	75.1	74.8	74.2
102.5°	98.2	98.3	98.4	98.5	98.6	98.5	98.2	97.8	97.5	97.1	96.4
105°	121.1	120.8	120.6	120.4	120.1	120.0	120.0	120.0	120.0	120.0	119.0
107.5°	144.4	144.6	144.7	144.8	144.9	144.8	144.4	144.1	143.8	143.4	143.0
110°	168.4	168.6	168.8	169.0	169.3	169.1	168.7	168.2	167.8	167.3	167.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	193.8	193.8	193.8	193.8	193.8	193.5	192.9	192.4	191.8	191.2	191.2
115°	216.7	216.8	216.9	217.0	217.1	217.1	217.0	216.9	216.8	216.7	216.9
117.5°	240.1	240.4	240.7	241.1	241.4	241.6	241.6	241.6	241.6	241.6	241.8
120°	265.0	265.2	265.4	265.7	265.9	266.1	266.2	266.3	266.4	266.5	267.1
122.5°	288.9	289.2	289.6	289.9	290.3	290.6	290.9	291.3	291.6	291.9	292.2
125°	312.8	313.3	313.7	314.2	314.6	315.1	315.5	316.0	316.4	316.9	317.1
127.5°	336.7	337.2	337.6	338.1	338.5	339.1	339.8	340.4	341.1	341.8	342.0
130°	360.1	360.9	361.7	362.5	363.3	363.9	364.3	364.8	365.2	365.7	366.0
132.5°	384.5	385.1	385.6	386.2	386.8	387.3	387.9	388.5	389.0	389.6	389.8
135°	410.0	410.2	410.4	410.6	410.9	411.2	411.6	412.1	412.6	413.0	413.1
137.5°	432.3	432.7	433.0	433.3	433.7	434.1	434.7	435.3	435.8	436.4	436.1
140°	454.2	455.0	455.8	456.6	457.4	457.8	457.9	458.0	458.2	458.3	458.2
142.5°	476.6	477.1	477.7	478.3	478.8	479.2	479.3	479.4	479.5	479.6	479.4
145°	497.9	498.4	498.8	499.3	499.8	500.0	500.1	500.3	500.4	500.5	500.1
147.5°	517.3	517.9	518.6	519.3	520.0	520.3	520.3	520.3	520.3	520.3	520.0
150°	535.6	536.3	536.9	537.6	538.3	538.6	538.6	538.6	538.6	538.6	538.4
152.5°	553.4	553.9	554.5	555.1	555.6	555.8	555.6	555.4	555.1	554.9	554.8
155°	569.1	569.9	570.7	571.5	572.3	572.5	572.0	571.6	571.1	570.7	570.6
157.5°	583.9	584.6	585.3	585.9	586.6	586.7	586.3	585.8	585.4	584.9	584.8
160°	598.1	598.6	599.0	599.5	599.9	599.9	599.3	598.8	598.2	597.6	597.6
162.5°	608.8	609.6	610.4	611.2	612.0	612.1	611.5	611.0	610.4	609.8	609.7
165°	619.0	619.8	620.6	621.4	622.2	622.2	621.5	620.9	620.2	619.5	619.5
167.5°	628.1	628.8	629.5	630.2	630.9	630.9	630.2	629.5	628.8	628.1	628.0
170°	634.8	635.6	636.3	637.1	637.9	637.9	637.1	636.3	635.6	634.8	634.8
172.5°	639.8	640.6	641.4	642.2	643.0	643.1	642.4	641.7	641.0	640.4	640.4
175°	643.4	644.2	645.0	645.8	646.6	646.6	646.0	645.3	644.6	643.9	643.9
177.5°	645.4	646.2	647.0	647.8	648.6	648.7	648.0	647.3	646.6	646.0	646.0
180°	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4
2.5°	2104.4	2098.9	2078.8	2058.7	2035.9	2013.1	1996.2	1979.3	1954.2	1929.1	1908.5
5°	2280.6	2255.0	2212.6	2170.1	2112.6	2055.1	2016.3	1977.5	1925.4	1873.4	1831.9
7.5°	2420.3	2376.4	2317.1	2257.7	2182.4	2107.1	2035.9	1964.7	1885.3	1805.8	1741.0
10°	2509.3	2479.6	2411.1	2342.7	2241.8	2140.9	2041.4	1941.9	1839.6	1737.4	1651.5
12.5°	2517.9	2520.7	2457.7	2394.7	2280.6	2166.5	2045.5	1924.5	1795.8	1667.1	1567.1
15°	2441.7	2488.7	2454.0	2419.3	2304.3	2189.3	2040.5	1891.7	1743.3	1594.9	1479.5
17.5°	2300.2	2401.1	2406.1	2411.1	2296.1	2181.1	2016.3	1851.5	1683.5	1515.5	1394.1
20°	2107.1	2255.9	2307.0	2358.2	2264.6	2171.0	1993.9	1816.8	1628.7	1440.7	1313.3
22.5°	1909.9	2090.7	2184.3	2277.8	2208.4	2139.1	1950.5	1762.0	1563.4	1364.9	1235.7
25°	1685.3	1882.5	2026.3	2170.1	2127.7	2085.2	1899.4	1713.6	1502.3	1290.9	1159.0
27.5°	1489.5	1689.9	1863.4	2036.8	2027.7	2018.6	1834.1	1649.7	1433.3	1217.0	1089.6
30°	1315.1	1501.8	1695.8	1889.8	1912.2	1934.6	1756.5	1578.5	1361.7	1144.9	1022.1
32.5°	1160.8	1323.8	1531.9	1740.1	1783.9	1827.7	1667.1	1506.4	1291.8	1077.3	959.1
35°	1034.4	1182.3	1390.4	1598.6	1653.4	1708.1	1568.5	1428.8	1219.7	1010.6	897.9
37.5°	922.5	1046.3	1249.4	1452.5	1519.6	1586.7	1461.6	1336.6	1140.7	944.9	841.3
40°	829.9	929.4	1116.1	1302.8	1380.4	1458.0	1354.8	1251.7	1065.9	880.1	784.7
42.5°	752.3	840.8	1010.2	1179.5	1253.9	1328.4	1241.2	1154.0	988.7	823.5	736.3
45°	686.1	756.8	910.7	1064.5	1135.3	1206.0	1131.2	1056.3	910.7	765.1	683.8
47.5°	624.0	684.7	816.2	947.7	1010.6	1073.6	1015.2	956.8	833.5	710.3	636.8
50°	568.3	617.2	732.2	847.2	902.0	956.8	905.2	853.6	752.3	650.9	587.0
52.5°	519.9	559.6	656.0	752.3	799.3	846.3	802.0	757.8	677.4	597.1	541.4
55°	472.0	505.8	589.3	672.9	704.8	736.8	702.5	668.3	603.5	538.6	491.6
57.5°	427.3	457.4	525.9	594.3	619.0	643.6	612.6	581.6	532.7	483.9	444.6
60°	383.4	408.1	465.2	522.2	537.3	552.3	527.2	502.1	467.9	433.7	398.5
62.5°	342.8	365.2	407.6	450.1	460.1	470.2	451.0	431.8	405.8	379.8	352.4
65°	300.8	317.7	352.4	387.1	393.5	399.9	383.0	366.1	346.5	326.8	306.8
67.5°	262.0	273.9	302.2	330.5	330.9	331.4	317.7	304.0	293.1	282.1	266.1
70°	224.1	235.5	254.3	273.0	273.4	273.9	262.9	252.0	243.8	235.5	223.7
72.5°	185.3	193.5	207.7	221.8	220.9	220.0	213.2	206.3	199.9	193.5	184.9
75°	150.2	157.0	166.6	176.2	173.5	170.7	167.1	163.4	157.9	152.5	147.0
77.5°	118.2	122.3	127.8	133.3	131.5	129.6	126.4	123.2	119.1	115.0	112.8
80°	86.7	88.6	92.2	95.9	94.9	94.0	90.4	86.7	85.8	84.9	81.7
82.5°	58.9	61.2	62.1	63.0	62.5	62.1	59.3	56.6	55.7	54.8	54.3
85°	35.1	35.6	36.1	36.5	35.1	33.8	32.9	32.0	32.0	32.0	31.5
87.5°	16.0	16.4	16.4	16.4	16.0	15.5	14.6	13.7	14.2	14.6	14.6
90°	9.3	7.8	6.3	5.0	3.9	2.8	1.6	0.5	1.6	2.8	3.9
92.5°	20.0	19.3	18.6	18.0	17.3	16.6	15.9	15.3	15.9	16.6	17.3
95°	35.8	34.9	34.0	33.2	32.4	31.6	30.8	30.0	30.8	31.6	32.4
97.5°	53.6	52.9	52.2	51.6	51.0	50.5	49.9	49.3	49.9	50.5	51.0
100°	73.6	73.1	72.5	71.9	71.2	70.5	69.9	69.2	69.9	70.5	71.2
102.5°	95.6	94.8	94.0	93.4	93.1	92.7	92.4	92.1	92.4	92.7	93.1
105°	118.0	117.0	116.0	115.3	115.1	114.9	114.7	114.4	114.7	114.9	115.1
107.5°	142.5	142.1	141.6	141.3	141.2	141.1	141.0	140.9	141.0	141.1	141.2
110°	166.9	166.7	166.4	166.2	166.0	165.8	165.5	165.3	165.5	165.8	166.0





TEST NUMBER: P831688

CATALOG NUMBER: S123DIP-S775D585U940-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	191.2	191.2	191.2	191.2	191.1	191.0	190.8	190.7	190.8	191.0	191.1
115°	217.1	217.4	217.6	217.5	217.2	216.8	216.5	216.2	216.5	216.8	217.2
117.5°	242.0	242.3	242.5	242.6	242.4	242.3	242.2	242.1	242.2	242.3	242.4
120°	267.6	268.2	268.8	268.7	268.0	267.4	266.7	266.0	266.7	267.4	268.0
122.5°	292.4	292.6	292.9	292.7	292.3	291.8	291.4	290.9	291.4	291.8	292.3
125°	317.3	317.6	317.8	317.7	317.4	317.0	316.7	316.4	316.7	317.0	317.4
127.5°	342.2	342.5	342.7	342.5	341.8	341.1	340.4	339.8	340.4	341.1	341.8
130°	366.4	366.7	367.1	366.8	365.9	365.0	364.1	363.2	364.1	365.0	365.9
132.5°	390.1	390.3	390.5	390.2	389.3	388.4	387.5	386.6	387.5	388.4	389.3
135°	413.2	413.3	413.5	413.2	412.5	411.8	411.1	410.5	411.1	411.8	412.5
137.5°	435.7	435.4	435.0	434.6	434.0	433.5	432.9	432.3	432.9	433.5	434.0
140°	458.0	457.9	457.8	457.5	456.9	456.3	455.8	455.2	455.8	456.3	456.9
142.5°	479.2	479.0	478.7	478.3	477.8	477.2	476.6	476.1	476.6	477.2	477.8
145°	499.8	499.5	499.1	498.8	498.6	498.4	498.2	497.9	498.2	498.4	498.6
147.5°	519.6	519.3	519.0	518.6	518.1	517.7	517.2	516.8	517.2	517.7	518.1
150°	538.2	538.0	537.7	537.5	537.3	537.0	536.8	536.6	536.8	537.0	537.3
152.5°	554.7	554.6	554.5	554.2	553.9	553.6	553.2	552.9	553.2	553.6	553.9
155°	570.4	570.3	570.2	570.2	570.2	570.2	570.2	570.2	570.2	570.2	570.2
157.5°	584.7	584.6	584.5	584.5	584.6	584.7	584.8	584.9	584.8	584.7	584.6
160°	597.6	597.6	597.6	597.7	598.0	598.2	598.4	598.6	598.4	598.2	598.0
162.5°	609.6	609.5	609.4	609.5	609.8	610.2	610.5	610.9	610.5	610.2	609.8
165°	619.5	619.5	619.5	619.7	620.0	620.4	620.7	621.0	620.7	620.4	620.0
167.5°	627.9	627.8	627.7	627.9	628.3	628.8	629.2	629.7	629.2	628.8	628.3
170°	634.8	634.8	634.8	635.0	635.4	635.9	636.3	636.8	636.3	635.9	635.4
172.5°	640.4	640.4	640.4	640.6	641.0	641.5	641.9	642.4	641.9	641.5	641.0
175°	643.9	643.9	643.9	644.1	644.6	645.0	645.5	646.0	645.5	645.0	644.6
177.5°	646.0	646.0	646.0	646.2	646.6	647.1	647.5	648.0	647.5	647.1	646.6
180°	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5



TEST NUMBER: P831688

CATALOG NUMBER: S123DIP-S775D585U940-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4	1967.4
2.5°	1888.0	1870.2	1852.4	1838.7	1825.0	1801.7	1778.4	1773.0	1767.5	1759.7	1752.0
5°	1790.3	1746.5	1702.7	1663.4	1624.2	1593.6	1563.0	1542.9	1522.8	1508.2	1493.6
7.5°	1676.2	1610.5	1544.7	1498.2	1451.6	1407.3	1363.0	1348.9	1334.7	1315.6	1296.4
10°	1565.7	1493.1	1420.6	1359.9	1299.1	1255.8	1212.4	1195.1	1177.7	1153.5	1129.3
12.5°	1467.1	1387.7	1308.3	1247.1	1185.9	1143.9	1101.9	1076.8	1051.7	1038.0	1024.3
15°	1364.0	1279.1	1194.2	1137.5	1080.9	1043.1	1005.2	983.3	961.3	948.1	934.9
17.5°	1272.7	1188.7	1104.7	1050.4	996.0	961.3	926.7	907.5	888.3	878.3	868.2
20°	1185.9	1103.8	1021.6	968.7	915.7	887.4	859.1	846.8	834.4	826.2	818.0
22.5°	1106.5	1025.7	944.9	899.7	854.5	831.7	808.9	800.2	791.5	784.7	777.8
25°	1027.1	955.0	882.8	844.5	806.1	787.4	768.7	760.0	751.4	744.5	737.7
27.5°	962.3	893.3	824.4	791.5	758.7	744.1	729.5	722.6	715.8	709.4	703.0
30°	899.3	837.6	776.0	747.7	719.4	706.2	692.9	686.1	679.2	673.3	667.4
32.5°	840.8	787.9	734.9	708.9	682.9	671.9	661.0	652.8	644.5	640.0	635.4
35°	785.1	737.7	690.2	668.7	647.3	636.3	625.4	618.5	611.7	608.0	604.4
37.5°	737.7	695.2	652.8	632.2	611.7	601.2	590.7	584.8	578.8	577.4	576.1
40°	689.3	652.8	616.2	596.2	576.1	566.9	557.8	554.2	550.5	549.6	548.7
42.5°	649.1	613.5	577.9	559.6	541.4	533.6	525.9	524.0	522.2	523.6	525.0
45°	602.6	572.9	543.2	526.3	509.4	503.0	496.7	495.3	493.9	496.7	499.4
47.5°	563.3	535.9	508.5	492.5	476.6	472.0	467.4	467.0	466.5	470.2	473.8
50°	523.1	496.7	470.2	457.4	444.6	440.5	436.4	437.8	439.1	445.1	451.0
52.5°	485.7	461.0	436.4	424.5	412.7	409.9	407.2	410.4	413.6	420.0	426.4
55°	444.6	422.2	399.9	390.7	381.6	378.9	376.1	382.5	388.9	394.9	400.8
57.5°	405.4	385.7	366.1	357.9	349.7	349.2	348.8	354.7	360.6	367.0	373.4
60°	363.4	346.9	330.5	324.1	317.7	318.6	319.5	326.4	333.2	338.3	343.3
62.5°	325.0	311.3	297.6	291.7	285.8	288.0	290.3	297.2	304.0	309.9	315.9
65°	286.7	275.3	263.8	259.7	255.6	258.8	262.0	268.0	273.9	278.0	282.1
67.5°	250.2	240.6	231.0	227.8	224.6	227.8	231.0	236.9	242.8	247.0	251.1
70°	211.8	204.0	196.3	194.0	191.7	195.4	199.0	204.0	209.1	213.2	217.3
72.5°	176.2	170.3	164.3	163.9	163.4	166.6	169.8	174.8	179.9	182.6	185.3
75°	141.5	138.3	135.1	134.7	134.2	137.4	140.6	143.3	146.1	148.4	150.6
77.5°	110.5	107.7	105.0	105.4	105.9	108.2	110.5	113.2	115.9	117.3	118.7
80°	78.5	77.6	76.7	77.6	78.5	80.3	82.2	84.0	85.8	86.7	87.6
82.5°	53.9	53.0	52.0	53.4	54.8	56.1	57.5	58.9	60.3	60.7	61.2
85°	31.0	32.4	33.8	33.8	33.8	34.2	34.7	35.1	35.6	35.1	34.7
87.5°	14.6	15.1	15.5	15.5	15.5	16.0	16.4	16.4	16.4	16.0	15.5
90°	5.0	6.3	7.8	9.3	10.7	12.2	12.7	13.1	13.6	14.0	14.4
92.5°	18.0	18.6	19.3	20.0	20.7	21.4	21.7	22.0	22.4	22.7	22.8
95°	33.2	34.0	34.9	35.8	36.7	37.6	38.1	38.5	39.0	39.4	39.7
97.5°	51.6	52.2	52.9	53.6	54.3	54.9	55.5	56.1	56.6	57.2	57.4
100°	71.9	72.5	73.1	73.6	74.2	74.8	75.1	75.4	75.8	76.1	76.4
102.5°	93.4	94.0	94.8	95.6	96.4	97.1	97.5	97.8	98.2	98.5	98.6
105°	115.3	116.0	117.0	118.0	119.0	120.0	120.0	120.0	120.0	120.0	120.1
107.5°	141.3	141.6	142.1	142.5	143.0	143.4	143.8	144.1	144.4	144.8	144.9
110°	166.2	166.4	166.7	166.9	167.1	167.3	167.8	168.2	168.7	169.1	169.3



TEST NUMBER: P831688

CATALOG NUMBER: S123DIP-S775D585U940-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	191.2	191.2	191.2	191.2	191.2	191.2	191.8	192.4	192.9	193.5	193.8
115°	217.5	217.6	217.4	217.1	216.9	216.7	216.8	216.9	217.0	217.1	217.1
117.5°	242.6	242.5	242.3	242.0	241.8	241.6	241.6	241.6	241.6	241.6	241.4
120°	268.7	268.8	268.2	267.6	267.1	266.5	266.4	266.3	266.2	266.1	265.9
122.5°	292.7	292.9	292.6	292.4	292.2	291.9	291.6	291.3	290.9	290.6	290.3
125°	317.7	317.8	317.6	317.3	317.1	316.9	316.4	316.0	315.5	315.1	314.6
127.5°	342.5	342.7	342.5	342.2	342.0	341.8	341.1	340.4	339.8	339.1	338.5
130°	366.8	367.1	366.7	366.4	366.0	365.7	365.2	364.8	364.3	363.9	363.3
132.5°	390.2	390.5	390.3	390.1	389.8	389.6	389.0	388.5	387.9	387.3	386.8
135°	413.2	413.5	413.3	413.2	413.1	413.0	412.6	412.1	411.6	411.2	410.9
137.5°	434.6	435.0	435.4	435.7	436.1	436.4	435.8	435.3	434.7	434.1	433.7
140°	457.5	457.8	457.9	458.0	458.2	458.3	458.2	458.0	457.9	457.8	457.4
142.5°	478.3	478.7	479.0	479.2	479.4	479.6	479.5	479.4	479.3	479.2	478.8
145°	498.8	499.1	499.5	499.8	500.1	500.5	500.4	500.3	500.1	500.0	499.8
147.5°	518.6	519.0	519.3	519.6	520.0	520.3	520.3	520.3	520.3	520.3	520.0
150°	537.5	537.7	538.0	538.2	538.4	538.6	538.6	538.6	538.6	538.6	538.3
152.5°	554.2	554.5	554.6	554.7	554.8	554.9	555.1	555.4	555.6	555.8	555.6
155°	570.2	570.2	570.3	570.4	570.6	570.7	571.1	571.6	572.0	572.5	572.3
157.5°	584.5	584.5	584.6	584.7	584.8	584.9	585.4	585.8	586.3	586.7	586.6
160°	597.7	597.6	597.6	597.6	597.6	597.6	598.2	598.8	599.3	599.9	599.9
162.5°	609.5	609.4	609.5	609.6	609.7	609.8	610.4	611.0	611.5	612.1	612.0
165°	619.7	619.5	619.5	619.5	619.5	619.5	620.2	620.9	621.5	622.2	622.2
167.5°	627.9	627.7	627.8	627.9	628.0	628.1	628.8	629.5	630.2	630.9	630.9
170°	635.0	634.8	634.8	634.8	634.8	634.8	635.6	636.3	637.1	637.9	637.9
172.5°	640.6	640.4	640.4	640.4	640.4	640.4	641.0	641.7	642.4	643.1	643.0
175°	644.1	643.9	643.9	643.9	643.9	643.9	644.6	645.3	646.0	646.6	646.6
177.5°	646.2	646.0	646.0	646.0	646.0	646.0	646.6	647.3	648.0	648.7	648.6
180°	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5	647.5



TEST NUMBER: P831688

CATALOG NUMBER: S123DIP-S775D585U940-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1967.4	1967.4	1967.4	1967.4
2.5°	1748.8	1745.6	1732.8	1720.0
5°	1482.6	1471.7	1468.0	1464.4
7.5°	1295.5	1294.6	1275.4	1256.2
10°	1130.7	1132.1	1114.7	1097.4
12.5°	1012.9	1001.5	1000.1	998.8
15°	924.4	913.9	912.0	910.2
17.5°	861.8	855.4	853.6	851.8
20°	814.4	810.7	807.5	804.3
22.5°	773.3	768.7	766.0	763.2
25°	733.6	729.5	728.5	727.6
27.5°	698.0	692.9	692.9	692.9
30°	664.2	661.0	659.6	658.2
32.5°	632.7	629.9	629.9	629.9
35°	603.0	601.6	599.8	598.0
37.5°	576.1	576.1	575.2	574.3
40°	550.1	551.4	551.4	551.4
42.5°	526.3	527.7	527.7	527.7
45°	501.7	504.0	504.9	505.8
47.5°	477.5	481.1	482.0	483.0
50°	453.7	456.5	456.9	457.4
52.5°	429.5	432.7	435.0	437.3
55°	404.0	407.2	408.5	409.9
57.5°	376.6	379.8	380.2	380.7
60°	346.5	349.7	350.6	351.5
62.5°	317.7	319.5	320.4	321.4
65°	284.8	287.6	289.4	291.2
67.5°	253.3	255.6	255.6	255.6
70°	218.2	219.1	220.5	221.8
72.5°	185.8	186.2	186.2	186.2
75°	151.6	152.5	152.9	153.4
77.5°	119.1	119.6	119.6	119.6
80°	87.2	86.7	86.7	86.7
82.5°	59.8	58.4	58.4	58.4
85°	34.2	33.8	34.2	34.7
87.5°	15.5	15.5	15.5	15.5
90°	14.6	14.8	15.0	15.3
92.5°	22.5	22.3	22.1	21.9
95°	39.7	39.7	39.7	39.7
97.5°	57.3	57.2	57.1	57.0
100°	76.6	76.9	77.1	77.3
102.5°	98.5	98.4	98.3	98.2
105°	120.4	120.6	120.8	121.1
107.5°	144.8	144.7	144.6	144.4
110°	169.0	168.8	168.6	168.4



TEST NUMBER: P831688

CATALOG NUMBER: S123DIP-S775D585U940-4F0-1E-UDD-G1

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	193.8	193.8	193.8	193.8
115°	217.0	216.9	216.8	216.7
117.5°	241.1	240.7	240.4	240.1
120°	265.7	265.4	265.2	265.0
122.5°	289.9	289.6	289.2	288.9
125°	314.2	313.7	313.3	312.8
127.5°	338.1	337.6	337.2	336.7
130°	362.5	361.7	360.9	360.1
132.5°	386.2	385.6	385.1	384.5
135°	410.6	410.4	410.2	410.0
137.5°	433.3	433.0	432.7	432.3
140°	456.6	455.8	455.0	454.2
142.5°	478.3	477.7	477.1	476.6
145°	499.3	498.8	498.4	497.9
147.5°	519.3	518.6	517.9	517.3
150°	537.6	536.9	536.3	535.6
152.5°	555.1	554.5	553.9	553.4
155°	571.5	570.7	569.9	569.1
157.5°	585.9	585.3	584.6	583.9
160°	599.5	599.0	598.6	598.1
162.5°	611.2	610.4	609.6	608.8
165°	621.4	620.6	619.8	619.0
167.5°	630.2	629.5	628.8	628.1
170°	637.1	636.3	635.6	634.8
172.5°	642.2	641.4	640.6	639.8
175°	645.8	645.0	644.2	643.4
177.5°	647.8	647.0	646.2	645.4
180°	647.5	647.5	647.5	647.5

TEST NUMBER: P831688

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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	15.38	16.33	16.22	17.18	18.24	17.61	18.56	18.45	19.42	20.48
	3H	17.03	17.88	17.88	18.75	19.84	19.05	19.90	19.90	20.76	21.85
	4H	17.61	18.42	18.48	19.29	20.39	19.50	20.30	20.37	21.17	22.27
	6H	17.99	18.73	18.87	19.61	20.72	19.78	20.52	20.66	21.40	22.51
	8H	18.09	18.79	18.97	19.69	20.80	19.84	20.55	20.73	21.44	22.56
	12H	18.13	18.81	19.03	19.69	20.83	19.87	20.54	20.76	21.43	22.56
4H	2H	15.96	16.77	16.83	17.64	18.74	17.79	18.59	18.66	19.46	20.56
	3H	17.80	18.47	18.68	19.37	20.49	19.41	20.08	20.30	20.99	22.10
	4H	18.50	19.11	19.39	20.01	21.15	20.00	20.61	20.90	21.51	22.65
	6H	18.98	19.51	19.89	20.43	21.57	20.41	20.94	21.32	21.86	23.00
	8H	19.12	19.61	20.03	20.53	21.68	20.52	21.01	21.44	21.93	23.09
	12H	19.19	19.63	20.12	20.57	21.73	20.57	21.01	21.50	21.95	23.11
8H	4H	18.77	19.26	19.68	20.18	21.34	20.11	20.60	21.02	21.52	22.68
	6H	19.37	19.77	20.30	20.73	21.89	20.62	21.02	21.56	21.98	23.14
	8H	19.57	19.93	20.52	20.88	22.06	20.80	21.16	21.75	22.11	23.28
	12H	19.70	20.02	20.65	20.96	22.18	20.91	21.22	21.86	22.16	23.39
12H	4H	18.78	19.22	19.71	20.16	21.32	20.09	20.53	21.02	21.47	22.63
	6H	19.42	19.77	20.36	20.73	21.90	20.63	20.99	21.58	21.94	23.12
	8H	19.66	19.97	20.60	20.91	22.14	20.84	21.15	21.79	22.10	23.32