

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: P832481

Luminaire Tested: S123RDP-S775D930-4F0-1E-UDD-G

Issue Date: 05/03/2024

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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**Test Information**

Test Method: LM-79-2019  
 Report Number: P832481  
 Test Lab: INNOVATION CENTER  
 Issue Date: 05/03/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: NEO-RAY  
 Catalog Number: S123RDP-S775D930-4F0-1E-UDD-G  
 Description: DEFINE 3 DIRECT PENDANT LED LUMINAIRE  
 DOWNLIGHT 775 LUMENS PER FOOT, GRAZE OPTIC

Light Source: -  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 2698.6 lumens  
 Efficiency: N/A  
 Efficacy: 104.2 lumens/watt  
 Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.8  
 Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')  
 CIE Type: Direct

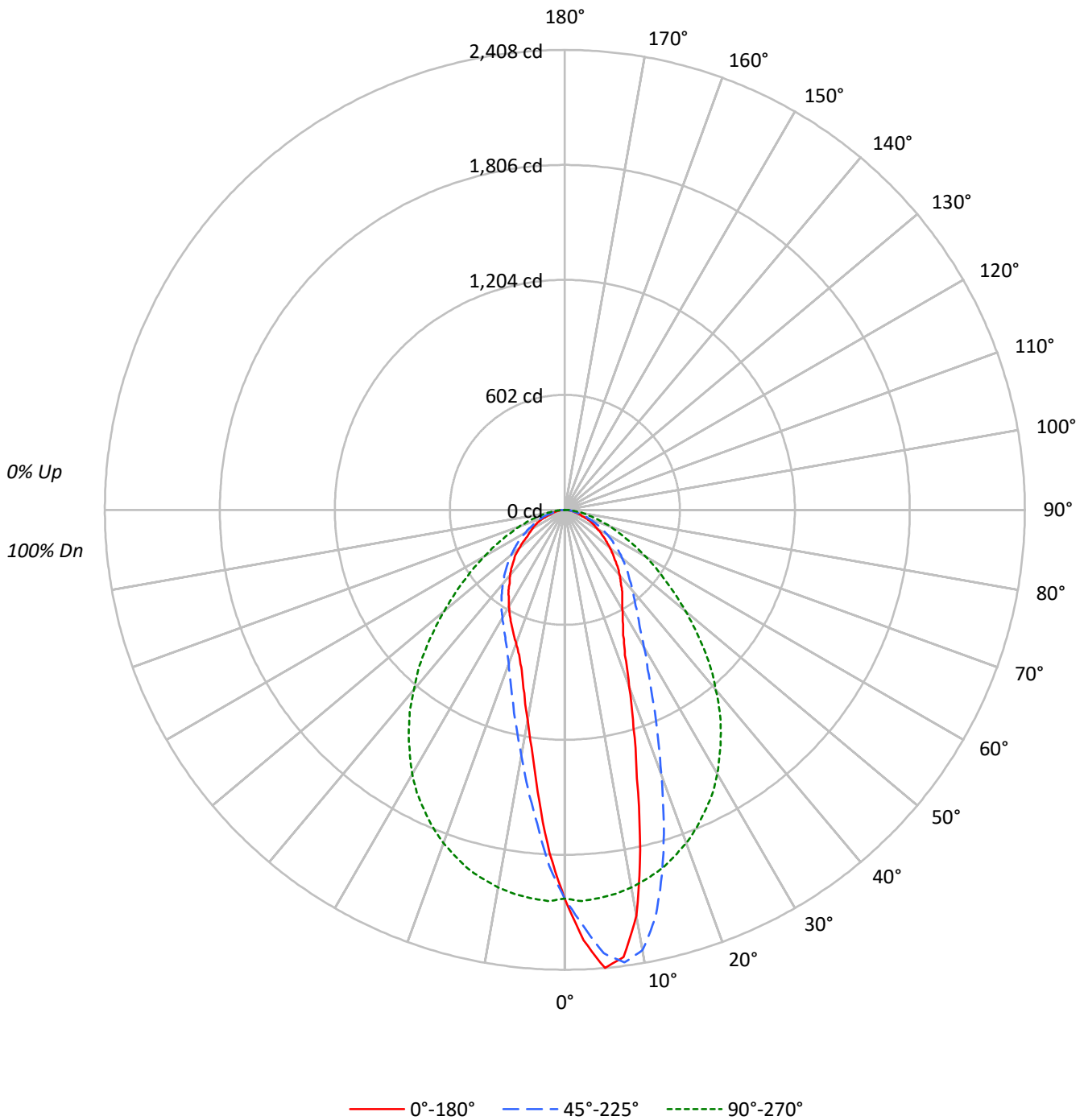
Input Watts (W): 25.9  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59				
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	63	58	54	53				
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	59	53	49	47				
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	43				
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39				
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36				
10	60	47	40	35	58	47	40	35	46	40	35	45	39	35	44	39	35	33				

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

	0°	45°	90°	135°	180°
0°	21909	21909	21909	21909	21909
5°	26014	25184	22047	17822	16546
10°	23569	25580	21936	14279	12249
15°	16227	21933	21704	11671	9690
20°	11290	16887	21269	9841	8517
25°	8603	12870	20635	8747	7849
30°	7489	10289	19842	8121	7271
35°	6875	8679	18718	7594	6744
40°	6274	7751	17249	7076	6261
45°	5666	7089	15664	6587	5780
50°	5143	6541	13793	6107	5184
55°	4650	6005	11995	5637	4448
60°	4168	5462	10419	5119	4204
65°	3846	4847	8970	4602	3976
70°	3125	4189	7827	4164	3229
75°	2741	3331	6629	3452	2845
80°	2486	2820	5430	2895	2690
85°	2272	2470	4125	2631	2470

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 16527 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	185.5	6.9
10°-20°	429.3	15.9
20°-30°	492.6	18.3
30°-40°	485.5	18.0
40°-50°	428.1	15.9
50°-60°	329.4	12.2
60°-70°	216.5	8.0
70°-80°	105.2	3.9
80°-90°	26.5	1.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1107.4	41.0
0°-40°	1592.9	59.0
0°-60°	2350.4	87.1
0°-90°	2698.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2698.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2035	2035	2035	2035	2035	
5°	2408	2331	2040	1649	1531	220
15°	1456	1968	1948	1047	870	411
25°	724	1084	1737	736	661	342
35°	523	660	1424	578	513	326
45°	372	466	1029	433	380	289
55°	248	320	639	300	237	222
65°	151	190	352	181	156	148
75°	66	80	159	83	68	71
85°	18	20	33	21	20	21
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4
2.5°	2255.7	2248.6	2241.5	2239.4	2237.3	2230.6	2224.0	2208.9	2193.9	2178.5	2163.0
5°	2407.6	2408.4	2409.2	2407.1	2405.1	2396.3	2387.5	2369.2	2350.8	2330.8	2310.8
7.5°	2360.8	2374.2	2387.5	2390.0	2392.5	2399.2	2405.9	2401.7	2397.5	2390.0	2382.5
10°	2156.4	2155.5	2154.7	2169.7	2184.7	2229.4	2274.0	2297.0	2319.9	2340.4	2360.8
12.5°	1822.6	1823.8	1825.1	1874.3	1923.5	1965.7	2007.8	2066.2	2124.7	2187.7	2250.7
15°	1456.2	1476.7	1497.1	1540.9	1584.7	1648.2	1711.6	1790.0	1868.5	1968.2	2067.9
17.5°	1195.9	1204.6	1213.4	1255.5	1297.7	1357.7	1417.8	1506.7	1595.6	1724.1	1852.6
20°	985.6	993.5	1001.4	1031.9	1062.3	1119.9	1177.5	1262.2	1346.9	1474.2	1601.4
22.5°	822.8	838.3	853.7	874.1	894.6	936.3	978.0	1064.4	1150.8	1266.8	1382.8
25°	724.4	731.4	738.5	756.1	773.6	813.6	853.7	910.9	968.0	1083.6	1199.2
27.5°	657.6	659.7	661.8	674.7	687.6	713.5	739.4	792.4	845.4	940.5	1035.6
30°	602.5	606.3	610.0	620.0	630.1	648.8	667.6	705.2	742.7	827.8	913.0
32.5°	560.0	562.0	564.1	572.5	580.8	594.6	608.4	638.0	667.6	732.7	797.8
35°	523.2	523.7	524.1	530.3	536.6	549.9	563.3	587.9	612.5	660.5	708.5
37.5°	481.5	484.4	487.4	491.9	496.5	508.2	519.9	539.9	560.0	599.6	639.2
40°	446.5	449.0	451.5	456.9	462.3	471.5	480.7	499.0	517.4	551.6	585.8
42.5°	411.4	413.1	414.8	420.2	425.6	436.9	448.1	462.7	477.3	505.7	534.1
45°	372.2	376.4	380.5	386.4	392.2	401.8	411.4	426.4	441.5	465.7	489.9
47.5°	339.6	341.7	343.8	348.8	353.8	365.5	377.2	390.6	403.9	426.4	449.0
50°	307.1	307.9	308.8	313.4	317.9	328.4	338.8	354.2	369.7	390.6	411.4
52.5°	276.2	278.3	280.4	285.0	289.6	296.7	303.8	319.6	335.5	355.9	376.4
55°	247.8	249.1	250.4	253.7	257.0	265.4	273.7	287.5	301.3	320.0	338.8
57.5°	221.1	222.8	224.5	227.0	229.5	237.0	244.5	256.6	268.7	287.5	306.3
60°	193.6	195.7	197.8	200.7	203.6	209.5	215.3	226.2	237.0	253.7	270.4
62.5°	173.6	174.0	174.4	176.9	179.4	183.6	187.8	196.5	205.3	222.0	238.7
65°	151.0	152.3	153.5	154.8	156.1	159.4	162.7	170.2	177.8	190.3	202.8
67.5°	127.7	128.9	130.2	132.3	134.4	137.3	140.2	145.2	150.2	161.9	173.6
70°	99.3	99.3	99.3	102.6	106.0	111.0	116.0	119.8	123.5	133.1	142.7
72.5°	80.9	81.4	81.8	82.2	82.6	85.5	88.5	94.7	101.0	106.8	112.7
75°	65.9	66.3	66.8	67.2	67.6	68.4	69.3	71.4	73.4	80.1	86.8
77.5°	52.6	53.0	53.4	53.8	54.2	55.1	55.9	56.7	57.6	60.1	62.6
80°	40.1	40.5	40.9	41.3	41.7	42.1	42.6	43.4	44.2	45.5	46.7
82.5°	29.2	29.2	29.2	29.2	29.2	30.0	30.9	30.9	30.9	31.7	32.5
85°	18.4	18.4	18.4	18.8	19.2	19.2	19.2	19.6	20.0	20.0	20.0
87.5°	8.3	7.9	7.5	7.9	8.3	8.3	8.3	8.8	9.2	9.2	9.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4
2.5°	2161.0	2158.9	2138.8	2118.8	2099.2	2079.6	2065.0	2050.4	2025.8	2001.2	1985.7
5°	2294.9	2279.0	2247.3	2215.6	2168.1	2120.5	2080.4	2040.4	1989.5	1938.6	1896.0
7.5°	2369.6	2356.7	2318.3	2279.9	2216.9	2153.9	2091.3	2028.7	1953.6	1878.5	1814.2
10°	2371.7	2382.5	2350.8	2319.1	2248.2	2177.2	2092.1	2007.0	1906.0	1805.0	1722.0
12.5°	2297.4	2344.1	2337.5	2330.8	2258.6	2186.4	2082.9	1979.5	1855.5	1731.6	1627.7
15°	2158.5	2249.0	2275.7	2302.4	2242.7	2183.1	2065.4	1947.7	1802.1	1656.5	1537.2
17.5°	1979.5	2106.3	2176.8	2247.3	2203.9	2160.5	2031.6	1902.7	1738.7	1574.7	1445.0
20°	1767.5	1933.6	2044.1	2154.7	2138.8	2123.0	1989.9	1856.8	1679.9	1503.0	1362.3
22.5°	1558.0	1733.3	1886.0	2038.7	2055.0	2071.3	1936.9	1802.5	1608.9	1415.3	1272.2
25°	1377.4	1555.5	1737.4	1919.4	1956.1	1992.8	1865.1	1737.4	1536.7	1336.1	1193.8
27.5°	1205.0	1374.4	1574.7	1775.0	1841.8	1908.5	1791.7	1674.9	1465.8	1256.8	1114.9
30°	1064.4	1215.9	1420.3	1624.8	1717.8	1810.9	1703.7	1596.4	1389.0	1181.7	1042.7
32.5°	933.4	1069.0	1274.3	1479.6	1587.7	1695.7	1603.1	1510.5	1311.0	1111.6	974.3
35°	829.9	951.3	1142.9	1334.4	1455.4	1576.4	1500.4	1424.5	1229.7	1034.8	905.0
37.5°	741.0	842.9	1022.7	1202.5	1331.0	1459.6	1396.1	1332.7	1149.5	966.4	843.7
40°	667.6	749.4	916.7	1084.0	1210.0	1336.1	1281.8	1227.6	1063.6	899.6	784.9
42.5°	604.6	675.1	825.3	975.5	1091.1	1206.7	1170.8	1134.9	986.4	837.8	731.4
45°	549.1	608.4	740.6	872.9	979.3	1085.7	1057.3	1029.0	900.9	772.8	675.1
47.5°	499.9	550.8	668.9	786.9	882.5	978.0	951.8	925.5	819.5	713.5	624.6
50°	454.8	498.2	596.7	695.1	781.1	867.1	845.4	823.7	736.0	648.4	571.6
52.5°	412.2	448.1	536.6	625.0	694.3	763.6	746.9	730.2	662.6	595.0	525.3
55°	371.8	404.7	479.4	554.1	613.4	672.6	655.9	639.2	586.7	534.1	472.7
57.5°	335.1	363.8	424.3	484.9	532.0	579.1	571.2	563.3	519.5	475.7	425.2
60°	296.3	322.1	374.3	426.4	464.4	502.4	493.2	484.0	452.7	421.4	378.0
62.5°	261.6	284.6	326.3	368.0	398.9	429.8	423.1	416.4	392.6	368.9	333.0
65°	225.3	247.8	281.6	315.4	339.6	363.8	358.0	352.2	334.2	316.3	287.5
67.5°	192.4	211.1	240.3	269.5	285.8	302.1	298.8	295.4	281.6	267.9	245.3
70°	159.0	175.2	199.4	223.6	234.9	246.2	247.4	248.7	236.2	223.6	207.0
72.5°	125.6	138.5	161.1	183.6	192.4	201.1	200.7	200.3	192.8	185.3	170.2
75°	96.4	106.0	123.5	141.0	148.5	156.1	157.7	159.4	152.3	145.2	136.9
77.5°	69.3	75.9	89.3	102.6	111.0	119.3	120.2	121.0	117.7	114.3	106.4
80°	48.8	50.9	59.3	67.6	76.4	85.1	86.4	87.6	84.3	80.9	75.9
82.5°	33.8	35.0	38.0	40.9	48.0	55.1	56.7	58.4	56.7	55.1	49.7
85°	20.4	20.9	22.1	23.4	26.7	30.0	31.7	33.4	32.5	31.7	28.8
87.5°	9.2	9.2	9.6	10.0	10.8	11.7	13.8	15.9	14.6	13.4	12.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4	2035.4
2.5°	1970.3	1946.5	1922.7	1905.6	1888.5	1867.2	1845.9	1845.1	1844.3	1828.4	1812.6
5°	1853.4	1812.1	1770.8	1730.4	1689.9	1649.4	1608.9	1599.8	1590.6	1576.8	1563.0
7.5°	1750.0	1684.0	1618.1	1566.4	1514.6	1474.2	1433.7	1406.1	1378.6	1357.3	1336.1
10°	1639.0	1557.2	1475.4	1412.8	1350.2	1306.4	1262.6	1230.9	1199.2	1184.2	1169.1
12.5°	1523.8	1434.9	1346.1	1284.7	1223.4	1170.8	1118.2	1089.5	1060.7	1039.8	1018.9
15°	1417.8	1322.3	1226.7	1161.6	1096.5	1047.3	998.1	969.3	940.5	919.6	898.8
17.5°	1315.2	1218.8	1122.4	1056.5	990.6	945.9	901.3	873.3	845.4	832.4	819.5
20°	1221.7	1124.5	1027.3	965.1	902.9	859.1	815.3	800.3	785.3	773.2	761.1
22.5°	1129.1	1035.6	942.2	882.5	822.8	791.1	759.4	747.3	735.2	726.0	716.8
25°	1051.5	958.4	865.4	813.2	761.1	736.5	711.8	703.9	696.0	686.8	677.6
27.5°	973.0	884.6	796.1	754.4	712.7	692.6	672.6	662.6	652.6	645.1	637.6
30°	903.8	822.0	740.2	705.6	670.9	653.4	635.9	625.0	614.2	607.1	600.0
32.5°	837.0	764.4	691.8	662.2	632.6	615.5	598.3	587.9	577.5	569.1	560.8
35°	775.3	712.3	649.2	622.1	595.0	577.9	560.8	550.4	539.9	531.6	523.2
37.5°	721.0	663.9	606.7	581.2	555.8	540.8	525.7	514.9	504.0	495.3	486.5
40°	670.1	619.6	569.1	544.5	519.9	503.6	487.4	477.8	468.2	460.2	452.3
42.5°	625.0	578.7	532.4	508.2	484.0	468.6	453.1	441.9	430.6	426.0	421.4
45°	577.5	536.6	495.7	472.3	449.0	432.7	416.4	406.8	397.2	393.1	388.9
47.5°	535.8	497.8	459.8	436.9	413.9	399.3	384.7	377.2	369.7	363.8	358.0
50°	494.9	458.1	421.4	399.3	377.2	364.7	352.2	343.0	333.8	329.6	325.5
52.5°	455.6	422.3	388.9	366.3	343.8	331.7	319.6	311.7	303.8	295.0	286.2
55°	411.4	382.2	353.0	333.0	312.9	300.4	287.9	278.7	269.5	260.4	251.2
57.5°	374.7	345.9	317.1	299.2	281.2	269.1	257.0	247.0	237.0	229.5	222.0
60°	334.6	309.6	284.6	267.0	249.5	237.8	226.2	216.6	207.0	203.2	199.4
62.5°	297.1	273.7	250.4	234.9	219.5	208.2	196.9	190.7	184.4	181.9	179.4
65°	258.7	238.7	218.6	204.5	190.3	180.7	171.1	168.2	165.2	163.1	161.1
67.5°	222.8	205.7	188.6	176.1	163.6	156.9	150.2	146.9	143.5	141.0	138.5
70°	190.3	175.2	160.2	149.4	138.5	132.3	126.0	123.1	120.2	115.6	111.0
72.5°	155.2	143.5	131.9	123.5	115.2	109.7	104.3	98.5	92.6	88.5	84.3
75°	128.5	116.8	105.1	97.2	89.3	83.0	76.8	74.7	72.6	71.4	70.1
77.5°	98.5	88.5	78.4	72.2	65.9	63.0	60.1	58.8	57.6	57.2	56.7
80°	70.9	62.6	54.2	50.9	47.6	46.7	45.9	45.1	44.2	43.8	43.4
82.5°	44.2	40.1	35.9	35.0	34.2	33.8	33.4	33.0	32.5	32.1	31.7
85°	25.9	24.2	22.5	22.1	21.7	21.3	20.9	20.9	20.9	20.9	20.9
87.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.4	10.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P832481

CATALOG NUMBER: S123RDP-S775D930-4F0-1E-UDD-G

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	2035.4	2035.4	2035.4	2035.4
2.5°	1808.4	1804.2	1802.5	1800.9
5°	1550.1	1537.2	1534.2	1531.3
7.5°	1330.6	1325.2	1307.3	1289.3
10°	1152.5	1135.8	1128.3	1120.7
12.5°	1003.5	988.1	985.6	983.1
15°	887.9	877.1	873.3	869.6
17.5°	812.0	804.5	799.9	795.3
20°	755.6	750.2	746.9	743.5
22.5°	712.7	708.5	706.0	703.5
25°	671.4	665.1	663.0	660.9
27.5°	632.1	626.7	624.6	622.5
30°	595.4	590.8	587.9	585.0
32.5°	555.4	549.9	548.3	546.6
35°	519.9	516.6	514.9	513.2
37.5°	482.3	478.2	475.7	473.2
40°	450.2	448.1	446.9	445.6
42.5°	417.7	413.9	413.5	413.1
45°	385.1	381.4	380.5	379.7
47.5°	354.7	351.3	350.9	350.5
50°	320.9	316.3	312.9	309.6
52.5°	282.1	277.9	275.0	272.1
55°	246.6	242.0	239.5	237.0
57.5°	219.9	217.8	216.6	215.3
60°	198.2	196.9	196.1	195.3
62.5°	178.2	176.9	176.9	176.9
65°	159.8	158.6	157.3	156.1
67.5°	136.0	133.5	133.1	132.7
70°	107.2	103.5	103.1	102.6
72.5°	83.9	83.5	82.6	81.8
75°	69.3	68.4	68.4	68.4
77.5°	55.9	55.1	55.1	55.1
80°	43.0	42.6	43.0	43.4
82.5°	31.7	31.7	31.3	30.9
85°	20.4	20.0	20.0	20.0
87.5°	10.0	10.0	10.0	10.0
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P832481

CATALOG NUMBER: S123RDP-S775D930-4F0-1E-UDD-G

**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	15.43	16.89	15.80	17.20	17.51	20.09	21.55	20.46	21.86	22.18
	3H	16.69	18.00	17.07	18.32	18.69	21.64	22.94	22.01	23.27	23.63
	4H	17.10	18.32	17.50	18.67	19.05	22.15	23.37	22.55	23.72	24.10
	6H	17.41	18.54	17.82	18.90	19.30	22.49	23.62	22.91	23.99	24.38
	8H	17.52	18.59	17.94	18.98	19.38	22.59	23.66	23.02	24.05	24.45
	12H	17.59	18.61	18.02	18.99	19.42	22.64	23.66	23.07	24.04	24.47
4H	2H	16.22	17.44	16.62	17.79	18.17	20.16	21.38	20.56	21.73	22.11
	3H	17.64	18.65	18.05	19.05	19.45	21.87	22.88	22.28	23.28	23.68
	4H	18.12	19.03	18.55	19.44	19.88	22.50	23.40	22.93	23.82	24.26
	6H	18.52	19.30	18.98	19.75	20.21	22.96	23.75	23.42	24.19	24.66
	8H	18.65	19.39	19.12	19.83	20.30	23.10	23.84	23.57	24.28	24.75
	12H	18.76	19.41	19.24	19.89	20.36	23.19	23.85	23.68	24.33	24.80
8H	4H	18.47	19.21	18.94	19.65	20.12	22.50	23.24	22.97	23.68	24.15
	6H	18.96	19.56	19.46	20.06	20.53	23.02	23.62	23.52	24.12	24.60
	8H	19.15	19.69	19.67	20.21	20.70	23.21	23.75	23.72	24.26	24.75
	12H	19.32	19.80	19.83	20.29	20.86	23.35	23.83	23.86	24.32	24.89
12H	4H	18.51	19.17	19.00	19.65	20.12	22.48	23.13	22.96	23.61	24.09
	6H	19.02	19.56	19.53	20.07	20.56	22.99	23.54	23.51	24.05	24.54
	8H	19.26	19.74	19.77	20.23	20.80	23.21	23.69	23.73	24.19	24.75