

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242562

Luminaire Tested: **S123RDR-S1000D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242562  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-S1000D927-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2938.1 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct

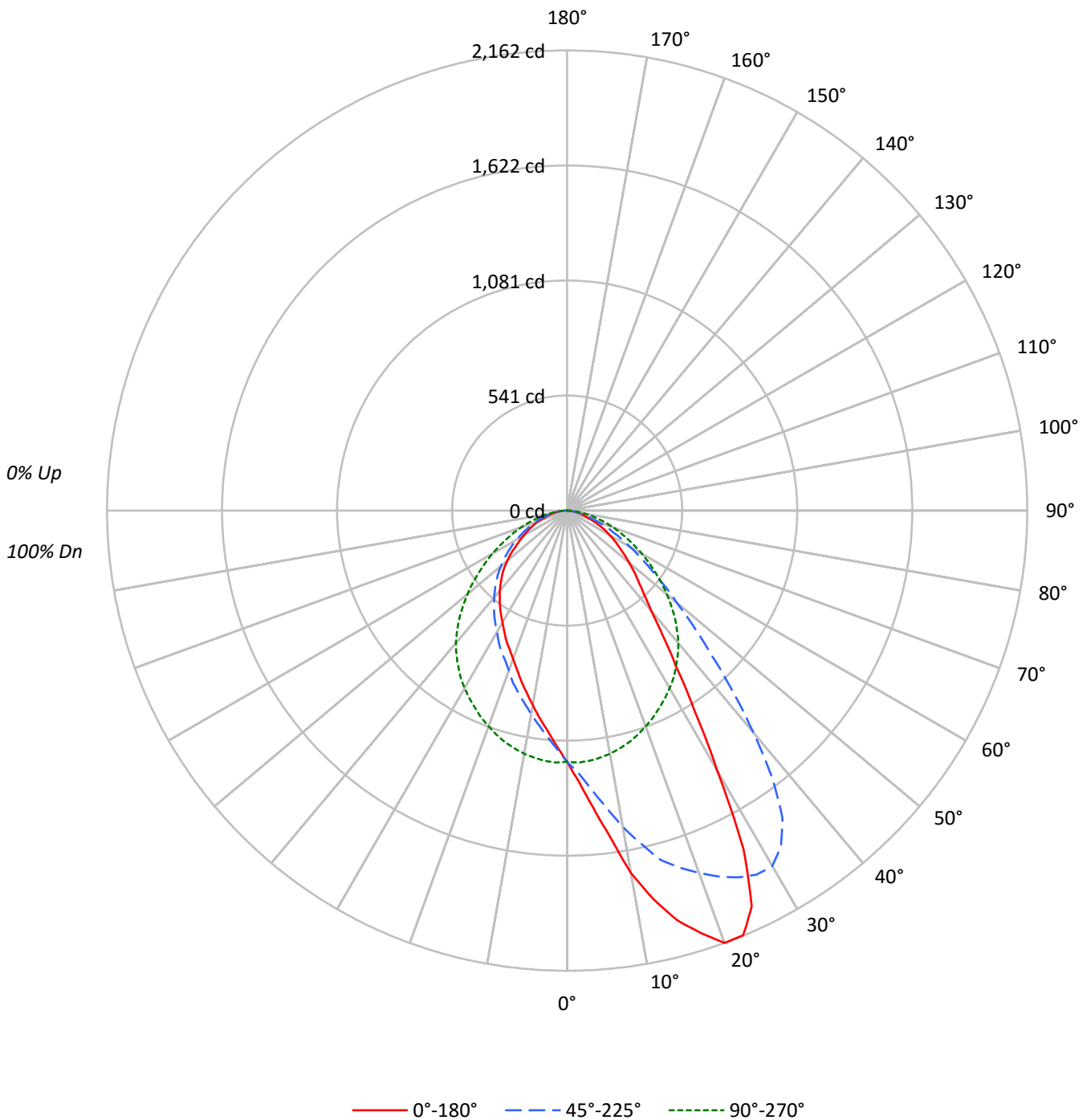
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74					74			
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64					64			
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44					44			
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39					39			
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36					36			
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32					32			
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29					29			

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

	0°	90°	180°
0°	14303	14303	14303
5°	17049	14364	12648
10°	21287	14281	11427
15°	24987	14135	10421
20°	27887	13917	9565
25°	27441	13687	9040
30°	19725	13476	8499
35°	13170	13199	8147
40°	9703	12867	7785
45°	8139	12287	7429
50°	7183	11526	6934
55°	6298	10653	6255
60°	5607	9821	5731
65°	4925	8926	5332
70°	3867	8126	4869
75°	3405	7095	4449
80°	2960	6031	4370
85°	2392	4854	4631



TEST NUMBER: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.9	3.9
10°-20°	362.7	12.3
20°-30°	571.3	19.4
30°-40°	594.1	20.2
40°-50°	508.3	17.3
50°-60°	387.4	13.2
60°-70°	248.2	8.4
70°-80°	118.9	4.0
80°-90°	31.3	1.1
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°	1049.9	35.7
0°-40°	1644.1	56.0
0°-60°	2539.7	86.4
0°-90°	2938.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2938.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1180	1180	1180	1180	1180	
5°	1401	1314	1180	1066	1040	144
15°	1991	1700	1126	886	830	565
25°	2052	1901	1023	731	676	892
35°	890	1764	892	597	551	579
45°	475	958	717	472	433	372
55°	298	478	504	340	296	269
65°	172	235	311	213	186	169
75°	73	85	152	108	95	78
85°	17	19	35	32	33	20
90°	0	0	0	0	0	



TEST NUMBER: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0
2.5°	1275.9	1278.0	1271.4	1270.4	1262.8	1260.8	1260.8	1250.2	1243.6	1235.0	1230.0
5°	1401.2	1409.3	1405.3	1396.2	1381.0	1377.5	1367.9	1352.7	1335.5	1314.3	1304.2
7.5°	1544.7	1561.3	1558.3	1544.2	1528.0	1517.9	1491.1	1469.4	1436.6	1406.8	1383.5
10°	1729.5	1717.9	1708.8	1695.2	1680.5	1656.8	1628.5	1589.6	1544.7	1509.3	1469.9
12.5°	1867.9	1868.5	1856.3	1842.2	1820.0	1797.7	1761.4	1711.9	1657.8	1602.8	1556.3
15°	1991.2	1994.2	1986.7	1972.0	1942.7	1902.8	1850.3	1830.6	1755.8	1700.2	1644.7
17.5°	2079.1	2079.6	2078.1	2058.4	2026.6	1999.3	1950.3	1904.3	1833.6	1758.3	1684.1
20°	2161.9	2156.9	2157.9	2135.2	2112.9	2080.1	2032.6	1957.4	1901.8	1811.4	1734.1
22.5°	2159.9	2159.9	2164.5	2160.4	2145.8	2122.5	2087.7	2027.1	1952.3	1860.9	1771.5
25°	2051.8	2047.8	2071.5	2078.1	2103.8	2108.4	2097.3	2062.4	1995.2	1901.3	1793.7
27.5°	1794.2	1779.6	1829.1	1878.1	1943.2	1984.6	2027.1	2036.7	2004.8	1928.1	1815.4
30°	1409.3	1456.8	1479.0	1558.8	1647.7	1753.8	1846.7	1935.1	1956.8	1927.6	1839.2
32.5°	1110.3	1150.2	1167.8	1233.5	1314.8	1443.6	1594.7	1729.0	1834.1	1869.5	1825.0
35°	890.0	890.5	933.0	963.3	1040.1	1167.8	1303.2	1470.9	1637.6	1763.9	1777.0
37.5°	734.5	736.5	763.7	794.1	855.7	927.4	1053.2	1194.6	1395.2	1583.6	1681.6
40°	613.2	617.8	637.0	666.8	708.2	759.2	852.1	983.5	1144.1	1359.8	1536.1
42.5°	535.4	543.5	551.1	572.3	594.0	641.0	711.7	805.7	948.1	1149.2	1359.3
45°	474.8	478.9	486.4	497.0	520.3	553.6	604.1	672.3	793.5	957.7	1161.3
47.5°	428.3	425.8	434.4	443.5	459.2	483.4	518.8	577.9	668.8	806.2	982.5
50°	380.9	380.4	385.9	392.5	407.1	423.8	451.6	493.5	562.2	671.3	829.4
52.5°	336.4	338.9	342.5	351.1	360.7	373.3	397.5	424.8	481.4	571.8	697.1
55°	298.0	299.5	305.1	309.6	317.2	330.9	346.5	371.8	412.2	477.8	586.4
57.5°	264.7	264.2	269.7	270.2	279.8	291.5	304.1	323.8	354.6	406.6	482.4
60°	231.3	229.8	234.4	237.9	242.5	251.6	261.7	280.8	304.1	339.9	402.6
62.5°	201.0	200.5	203.6	207.1	210.6	218.7	226.8	240.4	257.6	286.4	332.9
65°	171.7	173.3	174.8	176.3	178.3	183.4	191.4	201.5	214.2	235.4	271.3
67.5°	141.4	143.5	144.0	147.5	151.5	154.1	158.6	168.2	177.8	197.0	218.2
70°	109.1	108.6	109.1	110.6	116.2	121.7	128.3	134.9	140.4	153.1	170.2
72.5°	89.9	88.9	90.4	90.4	92.4	92.9	96.5	102.5	110.1	117.7	128.8
75°	72.7	72.7	72.7	72.7	74.8	75.8	77.3	78.8	81.3	85.4	94.5
77.5°	56.6	56.6	57.6	58.1	58.6	59.1	60.1	61.6	62.6	64.7	69.2
80°	42.4	42.9	42.4	42.9	42.9	43.9	44.5	46.0	46.5	49.0	50.5
82.5°	29.3	28.8	29.3	29.8	29.8	30.8	30.8	31.8	31.8	32.8	34.3
85°	17.2	16.2	17.2	16.7	17.7	16.7	17.2	18.2	18.2	18.7	20.7
87.5°	5.1	6.1	5.1	5.6	5.6	6.1	6.1	6.1	7.1	6.6	7.1
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: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0
2.5°	1228.0	1226.4	1219.4	1211.3	1200.7	1193.6	1188.1	1185.0	1175.9	1164.8	1157.2
5°	1293.6	1278.5	1262.3	1242.6	1224.4	1205.7	1194.1	1180.5	1163.8	1145.1	1132.0
7.5°	1358.8	1332.5	1303.7	1273.9	1243.6	1216.8	1192.1	1171.9	1146.6	1120.9	1103.2
10°	1436.1	1392.6	1347.7	1301.7	1259.8	1220.4	1190.1	1160.3	1128.4	1097.6	1074.4
12.5°	1506.3	1445.7	1392.1	1333.0	1276.4	1227.5	1180.5	1144.1	1104.2	1070.9	1043.6
15°	1563.4	1504.8	1442.1	1356.3	1285.0	1225.4	1172.4	1126.4	1080.0	1039.5	1013.8
17.5°	1623.0	1534.1	1451.7	1385.0	1292.1	1219.9	1157.7	1104.2	1053.7	1012.3	979.9
20°	1657.3	1571.9	1480.5	1389.1	1298.2	1214.8	1139.6	1078.9	1025.9	977.4	948.1
22.5°	1678.0	1578.5	1481.0	1381.0	1283.0	1195.6	1121.4	1053.2	994.6	949.1	911.2
25°	1693.2	1578.0	1471.9	1374.9	1276.4	1182.5	1094.1	1023.4	961.3	912.3	873.9
27.5°	1705.3	1571.9	1450.2	1344.6	1245.1	1149.7	1069.9	994.1	932.0	880.9	839.0
30°	1708.3	1564.4	1424.4	1307.8	1206.2	1120.4	1034.5	962.8	896.1	841.0	802.6
32.5°	1712.4	1545.7	1389.6	1263.8	1159.3	1074.4	998.6	930.9	862.2	808.2	768.8
35°	1698.2	1541.1	1354.2	1211.8	1107.7	1025.4	955.2	892.0	824.9	772.3	732.4
37.5°	1655.3	1516.4	1318.9	1153.7	1046.1	970.3	911.7	854.2	792.0	734.5	697.6
40°	1583.1	1476.0	1276.4	1101.7	988.0	909.7	858.2	813.2	753.6	700.6	660.2
42.5°	1475.5	1420.9	1236.0	1047.1	922.4	847.6	806.2	764.8	714.2	660.2	622.8
45°	1339.1	1347.7	1177.9	988.5	862.8	787.0	746.1	716.8	670.3	625.8	587.0
47.5°	1173.4	1245.1	1115.8	926.9	798.1	726.9	691.0	664.2	631.9	585.9	550.1
50°	1011.8	1126.4	1038.0	864.8	738.0	667.3	631.9	611.2	583.9	549.6	515.7
52.5°	862.8	988.0	944.1	795.6	672.8	609.7	575.3	559.2	539.0	507.1	477.3
55°	727.9	852.6	840.5	725.9	607.7	549.6	523.3	504.1	489.5	465.2	441.0
57.5°	610.7	731.4	733.9	648.6	551.1	492.0	469.3	454.1	444.0	424.8	401.1
60°	501.1	609.7	630.9	570.3	489.5	439.0	416.7	405.1	397.5	382.9	365.7
62.5°	410.2	498.6	523.3	483.9	430.4	383.9	367.7	356.6	352.1	339.9	325.3
65°	327.8	404.6	427.8	403.6	372.8	334.9	320.8	311.2	306.6	299.5	288.4
67.5°	258.6	318.2	343.5	323.3	311.7	284.9	275.3	269.7	265.7	260.6	251.0
70°	198.0	239.4	265.7	261.1	252.1	239.4	232.9	229.3	225.3	221.2	213.2
72.5°	149.5	174.8	199.0	203.1	196.0	196.0	190.4	189.4	187.4	182.3	178.8
75°	105.6	125.3	142.4	149.0	152.0	154.6	152.0	151.5	151.0	147.0	144.5
77.5°	73.2	85.9	97.5	109.1	113.1	116.7	117.2	119.2	117.7	115.2	114.2
80°	53.0	55.6	63.1	72.7	80.3	83.3	85.4	86.4	85.9	85.4	83.3
82.5°	34.9	36.9	39.4	45.5	51.5	57.1	58.1	57.6	59.1	59.6	58.1
85°	20.7	21.2	22.2	23.2	26.8	32.3	33.8	34.9	35.9	35.9	32.8
87.5°	8.1	7.6	8.6	8.6	10.1	10.6	13.6	16.2	16.7	14.6	14.6
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: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0	1180.0
2.5°	1154.7	1148.1	1143.6	1133.5	1126.9	1119.9	1112.8	1117.3	1116.8	1116.3	1116.3
5°	1120.9	1109.3	1098.6	1085.0	1076.4	1065.8	1057.7	1056.7	1058.7	1051.7	1047.6
7.5°	1089.0	1073.9	1058.7	1044.6	1028.9	1016.8	1009.2	1006.2	1000.7	996.1	992.1
10°	1055.2	1036.5	1021.9	1003.2	986.0	970.8	961.3	954.7	951.1	947.6	941.0
12.5°	1020.4	1002.2	982.5	960.7	944.6	926.4	919.8	912.3	904.7	900.6	891.0
15°	986.5	962.8	943.1	920.8	902.7	885.5	875.4	860.7	858.7	853.7	844.6
17.5°	953.7	927.4	898.6	883.5	865.3	847.1	830.9	826.4	811.2	806.2	797.6
20°	913.3	889.5	868.8	847.1	817.3	800.6	788.5	781.9	770.3	763.2	758.2
22.5°	878.4	854.2	829.4	803.1	779.9	760.7	752.6	741.5	736.5	725.9	720.3
25°	845.6	819.3	790.5	763.2	745.6	731.4	717.3	708.2	699.1	694.5	684.4
27.5°	805.7	779.4	751.6	730.4	710.2	696.1	682.4	674.8	663.2	655.7	650.1
30°	773.8	741.5	718.3	699.6	671.8	658.7	649.1	639.0	630.9	622.8	617.3
32.5°	737.0	708.2	686.5	662.2	642.5	627.9	614.7	606.1	599.6	592.0	586.4
35°	698.1	673.3	650.6	627.4	611.7	597.1	582.4	574.8	568.3	561.2	556.1
37.5°	662.7	639.5	618.3	596.0	576.9	564.2	552.1	547.0	538.0	532.9	527.9
40°	630.4	607.7	584.4	563.2	543.0	533.9	523.3	514.7	506.6	503.1	497.5
42.5°	595.0	572.3	553.6	530.4	514.7	501.6	492.0	482.4	476.8	471.3	468.8
45°	560.2	540.0	520.8	498.1	482.4	471.8	460.7	452.1	446.5	443.0	437.4
47.5°	526.8	506.1	486.9	466.7	451.6	439.5	427.8	422.3	414.7	410.7	406.6
50°	490.0	471.8	451.1	432.9	417.7	405.6	396.5	388.9	382.4	376.8	374.3
52.5°	456.1	436.4	419.3	402.6	386.4	372.3	364.2	356.1	351.6	345.0	342.0
55°	418.2	399.6	384.4	367.7	352.1	340.5	330.4	323.3	318.2	311.2	307.1
57.5°	383.4	367.2	348.5	333.9	317.2	308.1	299.5	289.4	283.4	277.8	273.8
60°	348.0	328.8	313.2	299.5	285.4	272.8	265.2	257.6	251.0	245.5	242.0
62.5°	311.2	295.0	280.3	265.2	252.6	242.0	232.9	226.8	221.2	218.2	214.7
65°	273.3	260.1	245.0	232.9	220.7	212.7	205.6	200.0	196.0	193.5	190.4
67.5°	238.4	225.8	212.2	199.5	191.4	184.9	179.8	174.8	172.8	169.7	167.7
70°	204.6	191.4	179.8	170.7	162.6	158.1	155.1	151.5	149.5	145.5	143.5
72.5°	167.7	159.1	151.5	144.5	138.4	134.4	130.3	125.8	122.2	117.7	115.7
75°	137.9	129.3	122.7	117.7	113.7	108.1	102.5	98.0	96.5	95.0	94.5
77.5°	107.6	102.0	97.0	92.9	87.4	82.3	80.8	79.8	79.3	78.3	78.3
80°	80.3	75.3	71.7	66.7	63.6	63.6	63.6	62.6	63.1	63.1	63.1
82.5°	54.6	50.0	48.5	47.5	47.5	48.0	48.0	48.5	48.0	49.0	48.5
85°	30.8	31.3	32.3	31.8	32.3	32.3	33.3	32.8	33.3	32.3	33.3
87.5°	14.1	15.7	16.2	16.7	17.2	16.7	17.2	17.2	17.7	17.7	17.7
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: P242562

CATALOG NUMBER: S123RDR-S1000D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1180.0	1180.0	1180.0	1180.0
2.5°	1110.3	1109.8	1110.3	1108.2
5°	1046.1	1045.6	1044.1	1039.5
7.5°	988.0	987.0	983.0	984.0
10°	937.5	938.0	932.0	928.4
12.5°	888.5	885.5	880.9	876.9
15°	846.6	841.5	829.4	830.4
17.5°	794.6	790.5	790.0	782.9
20°	750.1	747.6	748.6	741.5
22.5°	715.3	712.7	707.2	706.2
25°	681.4	677.4	673.3	675.9
27.5°	647.1	644.0	639.5	639.5
30°	614.7	611.7	609.7	607.2
32.5°	581.9	581.9	577.9	577.9
35°	554.1	551.1	550.1	550.6
37.5°	527.3	523.3	521.3	519.3
40°	498.1	494.0	493.0	492.0
42.5°	465.2	464.2	463.7	461.7
45°	435.9	435.4	432.4	433.4
47.5°	404.6	402.1	400.6	402.1
50°	372.3	371.3	366.7	367.7
52.5°	339.9	335.4	334.4	333.4
55°	303.6	299.0	297.0	296.0
57.5°	267.7	266.2	264.2	265.7
60°	236.9	236.9	236.9	236.4
62.5°	213.2	211.6	211.1	212.2
65°	188.9	188.4	186.4	185.9
67.5°	166.7	164.7	164.7	163.7
70°	140.9	139.9	136.9	137.4
72.5°	113.1	112.1	112.1	111.1
75°	94.0	93.4	92.9	95.0
77.5°	78.3	78.3	78.8	77.8
80°	63.1	63.1	62.6	62.6
82.5°	47.5	48.0	48.5	47.5
85°	33.3	32.8	33.8	33.3
87.5°	18.7	17.7	17.7	18.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)