

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: P334029

Luminaire Tested: **S123RDS-S1165D835-4F0-1E-UDD-A**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P334029  
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: S123RDS-S1165D835-4F0-1E-UDD-A  
Description: DEFINE 3 REGRESSED DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 1165 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4310.4 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')  
CIE Type: Direct

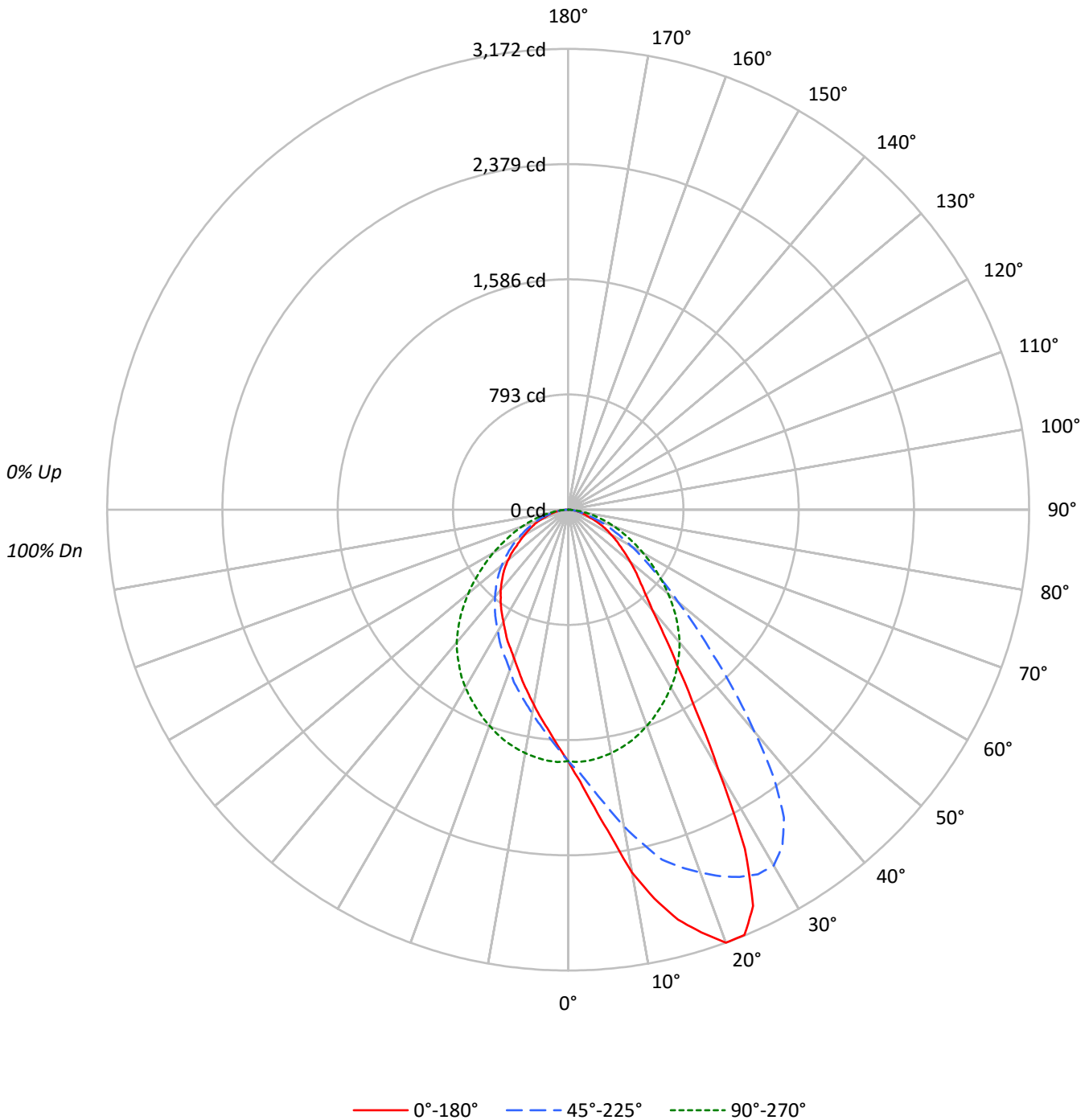
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	90°	180°
0°	18633	18633	18633
5°	22212	18712	16479
10°	27734	18605	14888
15°	32553	18415	13576
20°	36331	18132	12462
25°	35751	17832	11776
30°	25697	17555	11071
35°	17157	17197	10613
40°	12641	16765	10142
45°	10604	16008	9678
50°	9357	15016	9034
55°	8205	13880	8150
60°	7307	12794	7466
65°	6418	11627	6946
70°	5039	10587	6345
75°	4438	9245	5793
80°	3856	7854	5697
85°	3112	6311	6039



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.0	3.9
10°-20°	532.2	12.3
20°-30°	838.2	19.4
30°-40°	871.6	20.2
40°-50°	745.7	17.3
50°-60°	568.3	13.2
60°-70°	364.1	8.4
70°-80°	174.4	4.0
80°-90°	45.9	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°	1540.3	35.7
0°-40°	2412.0	56.0
0°-60°	3726.0	86.4
0°-90°	4310.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4310.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1731	1731	1731	1731	1731	
5°	2056	1928	1732	1564	1525	211
15°	2921	2494	1652	1299	1218	829
25°	3010	2789	1501	1073	992	1308
35°	1306	2588	1309	876	808	849
45°	697	1405	1052	692	636	546
55°	437	701	740	500	434	395
65°	252	345	456	312	273	248
75°	107	125	222	159	139	114
85°	25	27	51	47	49	29
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°	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1
2.5°	1871.9	1874.9	1865.2	1863.7	1852.6	1849.7	1849.7	1834.1	1824.5	1811.9	1804.5
5°	2055.7	2067.5	2061.6	2048.3	2026.0	2020.9	2006.8	1984.5	1959.3	1928.2	1913.4
7.5°	2266.1	2290.6	2286.2	2265.4	2241.7	2226.9	2187.6	2155.7	2107.6	2063.8	2029.7
10°	2537.4	2520.3	2507.0	2487.0	2465.5	2430.7	2389.2	2332.1	2266.1	2214.3	2156.5
12.5°	2740.4	2741.2	2723.4	2702.6	2670.0	2637.4	2584.1	2511.4	2432.1	2351.4	2283.2
15°	2921.2	2925.7	2914.6	2893.1	2850.1	2791.5	2714.5	2685.6	2575.9	2494.4	2412.9
17.5°	3050.2	3050.9	3048.7	3019.8	2973.1	2933.1	2861.2	2793.8	2690.0	2579.6	2470.7
20°	3171.7	3164.3	3165.8	3132.4	3099.8	3051.7	2982.0	2871.6	2790.1	2657.4	2544.0
22.5°	3168.7	3168.7	3175.4	3169.5	3148.0	3113.9	3062.8	2973.8	2864.2	2730.0	2598.9
25°	3010.2	3004.2	3039.1	3048.7	3086.5	3093.2	3076.9	3025.7	2927.2	2789.3	2631.5
27.5°	2632.2	2610.7	2683.4	2755.2	2850.8	2911.6	2973.8	2987.9	2941.2	2828.6	2663.3
30°	2067.5	2137.2	2169.8	2286.9	2417.3	2572.9	2709.3	2839.0	2870.8	2827.9	2698.2
32.5°	1628.8	1687.4	1713.3	1809.7	1929.0	2117.9	2339.5	2536.6	2690.8	2742.6	2677.4
35°	1305.7	1306.5	1368.7	1413.2	1525.8	1713.3	1911.9	2157.9	2402.5	2587.8	2607.0
37.5°	1077.5	1080.5	1120.5	1164.9	1255.3	1360.6	1545.1	1752.6	2046.8	2323.2	2467.0
40°	899.6	906.3	934.5	978.2	1039.0	1113.8	1250.2	1442.8	1678.5	1994.9	2253.5
42.5°	785.5	797.4	808.5	839.6	871.5	940.4	1044.1	1182.0	1391.0	1685.9	1994.2
45°	696.6	702.5	713.6	729.2	763.3	812.2	886.3	986.3	1164.2	1405.0	1703.7
47.5°	628.4	624.7	637.3	650.6	673.6	709.2	761.1	847.8	981.2	1182.7	1441.3
50°	558.8	558.0	566.2	575.8	597.3	621.7	662.5	724.0	824.8	984.9	1216.8
52.5°	493.5	497.2	502.4	515.0	529.1	547.6	583.2	623.2	706.2	838.9	1022.7
55°	437.2	439.4	447.6	454.3	465.4	485.4	508.4	545.4	604.7	701.0	860.4
57.5°	388.3	387.6	395.7	396.5	410.5	427.6	446.1	475.0	520.2	596.5	707.7
60°	339.4	337.2	343.8	349.0	355.7	369.0	383.9	412.0	446.1	498.7	590.6
62.5°	294.9	294.2	298.6	303.8	309.0	320.9	332.7	352.7	377.9	420.2	488.4
65°	252.0	254.2	256.4	258.6	261.6	269.0	280.9	295.7	314.2	345.3	397.9
67.5°	207.5	210.5	211.2	216.4	222.3	226.0	232.7	246.8	260.9	289.0	320.1
70°	160.1	159.3	160.1	162.3	170.4	178.6	188.2	197.9	206.0	224.5	249.7
72.5°	131.9	130.4	132.6	132.6	135.6	136.4	141.5	150.4	161.5	172.7	189.0
75°	106.7	106.7	106.7	106.7	109.7	111.2	113.4	115.6	119.3	125.2	138.6
77.5°	83.0	83.0	84.5	85.2	86.0	86.7	88.2	90.4	91.9	94.9	101.5
80°	62.2	63.0	62.2	63.0	63.0	64.5	65.2	67.4	68.2	71.9	74.1
82.5°	43.0	42.2	43.0	43.7	43.7	45.2	45.2	46.7	46.7	48.2	50.4
85°	25.2	23.7	25.2	24.5	25.9	24.5	25.2	26.7	26.7	27.4	30.4
87.5°	7.4	8.9	7.4	8.2	8.2	8.9	8.9	8.9	10.4	9.6	10.4
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°	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1
2.5°	1801.5	1799.3	1788.9	1777.0	1761.5	1751.1	1743.0	1738.5	1725.2	1708.9	1697.8
5°	1897.8	1875.6	1851.9	1823.0	1796.3	1768.9	1751.9	1731.8	1707.4	1680.0	1660.7
7.5°	1993.4	1954.9	1912.7	1868.9	1824.5	1785.2	1748.9	1719.2	1682.2	1644.4	1618.5
10°	2106.8	2043.1	1977.1	1909.7	1848.2	1790.4	1745.9	1702.2	1655.5	1610.3	1576.2
12.5°	2209.8	2120.9	2042.3	1955.6	1872.6	1800.8	1731.8	1678.5	1619.9	1571.0	1531.0
15°	2293.6	2207.6	2115.7	1989.7	1885.2	1797.8	1720.0	1652.5	1584.4	1525.1	1487.3
17.5°	2381.0	2250.6	2129.8	2032.0	1895.6	1789.6	1698.5	1619.9	1545.8	1485.1	1437.6
20°	2431.4	2306.2	2172.0	2037.9	1904.5	1782.2	1671.8	1582.9	1505.1	1433.9	1391.0
22.5°	2461.8	2315.8	2172.8	2026.0	1882.3	1754.1	1645.1	1545.1	1459.1	1392.4	1336.9
25°	2484.0	2315.1	2159.4	2017.1	1872.6	1734.8	1605.1	1501.4	1410.2	1338.3	1282.0
27.5°	2501.8	2306.2	2127.6	1972.7	1826.7	1686.6	1569.6	1458.4	1367.2	1292.4	1230.9
30°	2506.2	2295.0	2089.8	1918.6	1769.6	1643.7	1517.7	1412.4	1314.6	1233.9	1177.5
32.5°	2512.2	2267.6	2038.6	1854.1	1700.7	1576.2	1465.1	1365.8	1265.0	1185.7	1127.9
35°	2491.4	2261.0	1986.8	1777.8	1625.1	1504.3	1401.3	1308.7	1210.1	1133.1	1074.5
37.5°	2428.4	2224.6	1934.9	1692.6	1534.7	1423.6	1337.6	1253.1	1162.0	1077.5	1023.4
40°	2322.5	2165.4	1872.6	1616.2	1449.5	1334.6	1259.1	1193.1	1105.7	1027.8	968.6
42.5°	2164.6	2084.6	1813.4	1536.2	1353.2	1243.5	1182.7	1122.0	1047.8	968.6	913.7
45°	1964.5	1977.1	1728.1	1450.2	1265.7	1154.6	1094.5	1051.6	983.4	918.2	861.1
47.5°	1721.5	1826.7	1637.0	1359.8	1170.9	1066.4	1013.8	974.5	927.1	859.6	807.0
50°	1484.3	1652.5	1522.9	1268.7	1082.7	978.9	927.1	896.7	856.7	806.3	756.6
52.5°	1265.7	1449.5	1385.0	1167.2	987.1	894.5	844.1	820.3	790.7	744.0	700.3
55°	1067.9	1250.9	1233.1	1064.9	891.5	806.3	767.7	739.6	718.1	682.5	646.9
57.5°	895.9	1073.0	1076.8	951.5	808.5	721.8	688.4	666.2	651.4	623.2	588.4
60°	735.1	894.5	925.6	836.6	718.1	644.0	611.4	594.3	583.2	561.7	536.5
62.5°	601.7	731.4	767.7	709.9	631.4	563.2	539.5	523.2	516.5	498.7	477.2
65°	480.9	593.6	627.7	592.1	546.9	491.3	470.6	456.5	449.8	439.4	423.1
67.5°	379.4	466.9	503.9	474.3	457.2	418.0	403.9	395.7	389.8	382.4	368.3
70°	290.5	351.3	389.8	383.1	369.8	351.3	341.6	336.4	330.5	324.6	312.7
72.5°	219.4	256.4	292.0	297.9	287.5	287.5	279.4	277.9	274.9	267.5	262.3
75°	154.9	183.8	209.0	218.6	223.1	226.8	223.1	222.3	221.6	215.6	211.9
77.5°	107.5	126.0	143.0	160.1	166.0	171.2	171.9	174.9	172.7	169.0	167.5
80°	77.8	81.5	92.6	106.7	117.8	122.3	125.2	126.7	126.0	125.2	122.3
82.5°	51.1	54.1	57.8	66.7	75.6	83.7	85.2	84.5	86.7	87.4	85.2
85°	30.4	31.1	32.6	34.1	39.3	47.4	49.7	51.1	52.6	52.6	48.2
87.5°	11.9	11.1	12.6	12.6	14.8	15.6	20.0	23.7	24.5	21.5	21.5
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°	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1	1731.1
2.5°	1694.0	1684.4	1677.7	1662.9	1653.3	1642.9	1632.5	1639.2	1638.5	1637.7	1637.7
5°	1644.4	1627.4	1611.8	1591.8	1579.2	1563.6	1551.8	1550.3	1553.2	1542.9	1536.9
7.5°	1597.7	1575.5	1553.2	1532.5	1509.5	1491.7	1480.6	1476.2	1468.0	1461.4	1455.4
10°	1548.1	1520.6	1499.2	1471.7	1446.5	1424.3	1410.2	1400.6	1395.4	1390.2	1380.6
12.5°	1496.9	1470.3	1441.3	1409.5	1385.8	1359.1	1349.5	1338.3	1327.2	1321.3	1307.2
15°	1447.3	1412.4	1383.5	1350.9	1324.3	1299.1	1284.2	1262.8	1259.8	1252.4	1239.0
17.5°	1399.1	1360.6	1318.3	1296.1	1269.4	1242.7	1219.0	1212.4	1190.1	1182.7	1170.1
20°	1339.8	1305.0	1274.6	1242.7	1199.0	1174.6	1156.8	1147.2	1130.1	1119.7	1112.3
22.5°	1288.7	1253.1	1216.8	1178.3	1144.2	1116.0	1104.2	1087.9	1080.5	1064.9	1056.7
25°	1240.5	1202.0	1159.7	1119.7	1093.8	1073.0	1052.3	1039.0	1025.6	1018.9	1004.1
27.5°	1182.0	1143.4	1102.7	1071.6	1041.9	1021.2	1001.2	990.0	973.0	961.9	953.7
30°	1135.3	1087.9	1053.8	1026.4	985.6	966.3	952.3	937.4	925.6	913.7	905.6
32.5°	1081.2	1039.0	1007.1	971.5	942.6	921.1	901.9	889.3	879.6	868.5	860.4
35°	1024.1	987.8	954.5	920.4	897.4	875.9	854.4	843.3	833.7	823.3	815.9
37.5°	972.3	938.2	907.0	874.4	846.3	827.8	810.0	802.6	789.2	781.8	774.4
40°	924.8	891.5	857.4	826.3	796.6	783.3	767.7	755.1	743.3	738.1	729.9
42.5°	873.0	839.6	812.2	778.1	755.1	735.9	721.8	707.7	699.6	691.4	687.7
45°	821.8	792.2	764.0	730.7	707.7	692.1	675.8	663.2	655.1	649.9	641.8
47.5°	772.9	742.5	714.4	684.7	662.5	644.7	627.7	619.5	608.4	602.5	596.5
50°	718.8	692.1	661.8	635.1	612.9	595.1	581.7	570.6	561.0	552.8	549.1
52.5°	669.2	640.3	615.1	590.6	566.9	546.2	534.3	522.4	515.8	506.1	501.7
55°	613.6	586.2	563.9	539.5	516.5	499.5	484.6	474.3	466.9	456.5	450.6
57.5°	562.5	538.7	511.3	489.8	465.4	452.0	439.4	424.6	415.7	407.6	401.7
60°	510.6	482.4	459.5	439.4	418.7	400.2	389.1	377.9	368.3	360.2	355.0
62.5°	456.5	432.8	411.3	389.1	370.5	355.0	341.6	332.7	324.6	320.1	314.9
65°	400.9	381.6	359.4	341.6	323.8	312.0	301.6	293.5	287.5	283.8	279.4
67.5°	349.8	331.3	311.2	292.7	280.9	271.2	263.8	256.4	253.4	249.0	246.0
70°	300.1	280.9	263.8	250.5	238.6	231.9	227.5	222.3	219.4	213.4	210.5
72.5°	246.0	233.4	222.3	211.9	203.0	197.1	191.2	184.5	179.3	172.7	169.7
75°	202.3	189.7	180.1	172.7	166.7	158.6	150.4	143.8	141.5	139.3	138.6
77.5°	157.8	149.7	142.3	136.4	128.2	120.8	118.6	117.1	116.3	114.9	114.9
80°	117.8	110.4	105.2	97.8	93.4	93.4	93.4	91.9	92.6	92.6	92.6
82.5°	80.0	73.4	71.1	69.7	69.7	70.4	70.4	71.1	70.4	71.9	71.1
85°	45.2	45.9	47.4	46.7	47.4	47.4	48.9	48.2	48.9	47.4	48.9
87.5°	20.7	23.0	23.7	24.5	25.2	24.5	25.2	25.2	25.9	25.9	25.9
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: P334029

CATALOG NUMBER: S123RDS-S1165D835-4F0-1E-UDD-A

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1731.1	1731.1	1731.1	1731.1
2.5°	1628.8	1628.1	1628.8	1625.9
5°	1534.7	1534.0	1531.8	1525.1
7.5°	1449.5	1448.0	1442.1	1443.6
10°	1375.4	1376.1	1367.2	1362.1
12.5°	1303.5	1299.1	1292.4	1286.5
15°	1242.0	1234.6	1216.8	1218.3
17.5°	1165.7	1159.7	1159.0	1148.6
20°	1100.5	1096.8	1098.2	1087.9
22.5°	1049.3	1045.6	1037.5	1036.0
25°	999.7	993.8	987.8	991.5
27.5°	949.3	944.8	938.2	938.2
30°	901.9	897.4	894.5	890.7
32.5°	853.7	853.7	847.8	847.8
35°	812.9	808.5	807.0	807.7
37.5°	773.7	767.7	764.8	761.8
40°	730.7	724.8	723.3	721.8
42.5°	682.5	681.0	680.3	677.3
45°	639.5	638.8	634.3	635.8
47.5°	593.6	589.9	587.7	589.9
50°	546.2	544.7	538.0	539.5
52.5°	498.7	492.1	490.6	489.1
55°	445.4	438.7	435.7	434.3
57.5°	392.8	390.5	387.6	389.8
60°	347.6	347.6	347.6	346.8
62.5°	312.7	310.5	309.8	311.2
65°	277.2	276.4	273.4	272.7
67.5°	244.5	241.6	241.6	240.1
70°	206.8	205.3	200.8	201.6
72.5°	166.0	164.5	164.5	163.0
75°	137.8	137.1	136.4	139.3
77.5°	114.9	114.9	115.6	114.1
80°	92.6	92.6	91.9	91.9
82.5°	69.7	70.4	71.1	69.7
85°	48.9	48.2	49.7	48.9
87.5°	27.4	25.9	25.9	26.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)