

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: P242572

Luminaire Tested: **S123RDR-S1000D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242572  
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-S1000D835-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3708.9 lumens  
Efficiency: N/A  
Efficacy: 106.6 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

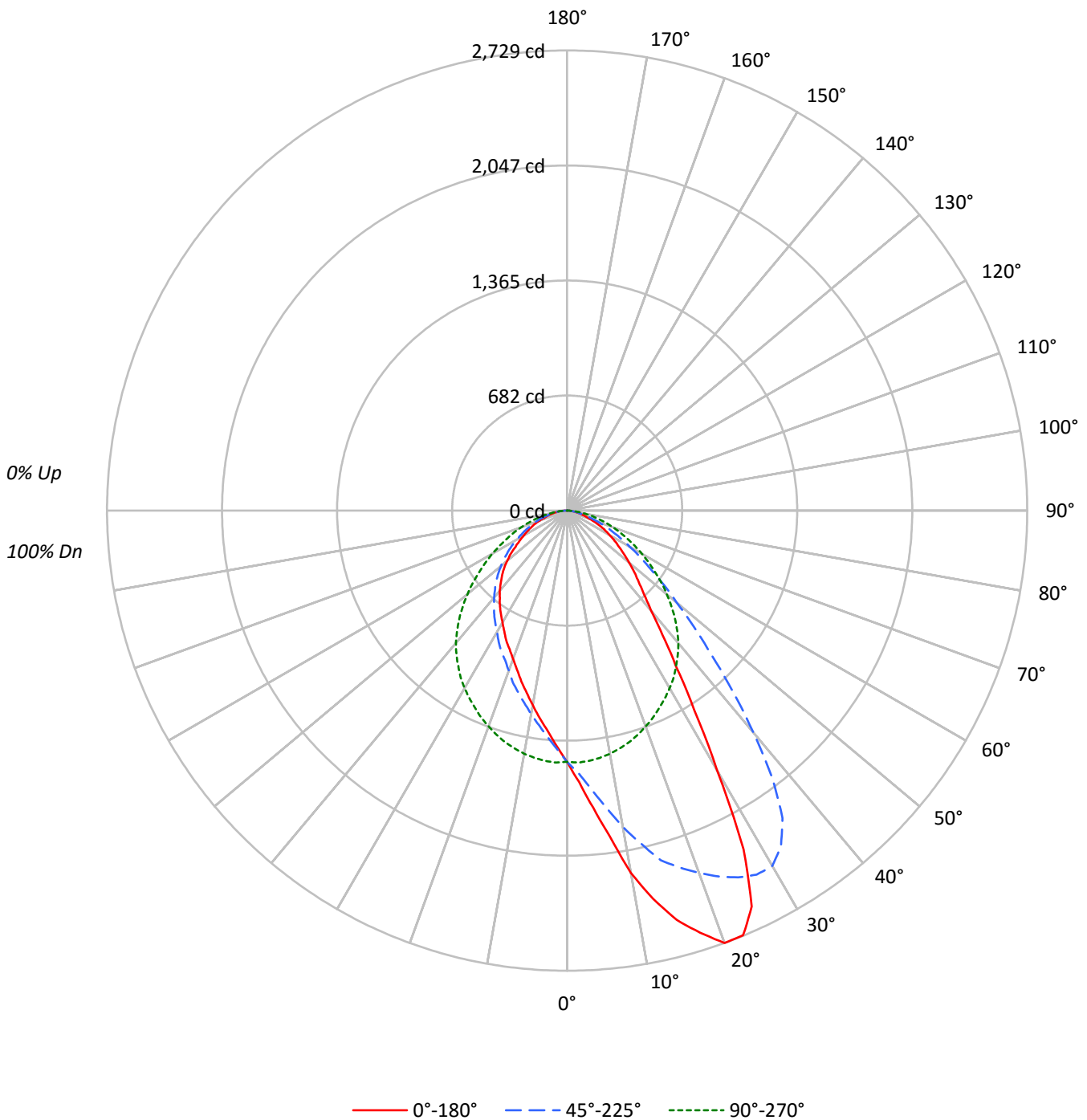
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	18055	18055	18055
5°	21522	18132	15967
10°	26873	18027	14425
15°	31543	17843	13155
20°	35203	17569	12074
25°	34641	17278	11411
30°	24900	17010	10727
35°	16625	16663	10284
40°	12249	16244	9828
45°	10275	15510	9378
50°	9067	14548	8754
55°	7950	13449	7897
60°	7079	12398	7234
65°	6218	11266	6731
70°	4880	10260	6145
75°	4299	8959	5615
80°	3741	7609	5521
85°	3018	6119	5855



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.3	3.9
10°-20°	457.9	12.3
20°-30°	721.2	19.4
30°-40°	750.0	20.2
40°-50°	641.6	17.3
50°-60°	489.0	13.2
60°-70°	313.3	8.4
70°-80°	150.1	4.0
80°-90°	39.5	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°	1325.4	35.7
0°-40°	2075.4	56.0
0°-60°	3206.0	86.4
0°-90°	3708.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3708.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1490	1490	1490	1490	1490	
5°	1769	1659	1490	1345	1312	181
15°	2514	2146	1422	1118	1048	713
25°	2590	2400	1292	923	853	1125
35°	1124	2227	1126	754	695	731
45°	599	1209	905	596	547	470
55°	376	603	636	430	374	340
65°	217	297	393	268	235	213
75°	92	108	191	136	120	98
85°	22	24	44	41	42	25
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°	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5
2.5°	1610.7	1613.2	1604.9	1603.7	1594.1	1591.5	1591.5	1578.1	1569.9	1559.0	1552.6
5°	1768.8	1779.0	1773.9	1762.4	1743.3	1738.8	1726.7	1707.6	1685.9	1659.1	1646.4
7.5°	1949.9	1970.9	1967.1	1949.3	1928.8	1916.1	1882.3	1854.9	1813.4	1775.8	1746.5
10°	2183.3	2168.6	2157.1	2139.9	2121.4	2091.4	2055.7	2006.6	1949.9	1905.3	1855.5
12.5°	2358.0	2358.6	2343.3	2325.5	2297.4	2269.3	2223.4	2160.9	2092.7	2023.2	1964.6
15°	2513.6	2517.4	2507.8	2489.3	2452.3	2402.0	2335.7	2310.8	2216.4	2146.3	2076.1
17.5°	2624.5	2625.1	2623.2	2598.4	2558.2	2523.8	2461.9	2403.9	2314.6	2219.6	2125.9
20°	2729.1	2722.7	2724.0	2695.3	2667.2	2625.8	2565.8	2470.8	2400.7	2286.6	2189.0
22.5°	2726.5	2726.5	2732.3	2727.2	2708.7	2679.3	2635.3	2558.8	2464.5	2349.1	2236.2
25°	2590.1	2585.0	2614.9	2623.2	2655.8	2661.5	2647.5	2603.5	2518.7	2400.1	2264.2
27.5°	2264.9	2246.4	2308.9	2370.7	2453.0	2505.3	2558.8	2570.9	2530.8	2433.9	2291.7
30°	1779.0	1838.9	1867.0	1967.7	2080.0	2213.9	2331.2	2442.8	2470.2	2433.2	2321.6
32.5°	1401.5	1451.9	1474.2	1557.1	1659.8	1822.4	2013.0	2182.6	2315.3	2359.9	2303.8
35°	1123.5	1124.2	1177.7	1216.0	1312.9	1474.2	1645.1	1856.8	2067.2	2226.6	2243.2
37.5°	927.1	929.7	964.1	1002.4	1080.2	1170.7	1329.5	1508.0	1761.2	1999.0	2122.7
40°	774.1	779.8	804.1	841.7	894.0	958.4	1075.7	1241.5	1444.2	1716.5	1939.1
42.5°	675.9	686.1	695.7	722.4	749.9	809.2	898.4	1017.0	1196.8	1450.6	1715.9
45°	599.4	604.5	614.0	627.4	656.8	698.8	762.6	848.7	1001.7	1209.0	1465.9
47.5°	540.7	537.5	548.4	559.8	579.6	610.2	654.9	729.5	844.2	1017.7	1240.2
50°	480.8	480.1	487.2	495.4	513.9	535.0	570.0	623.0	709.7	847.4	1047.0
52.5°	424.7	427.9	432.3	443.2	455.3	471.2	501.8	536.3	607.7	721.8	879.9
55°	376.2	378.1	385.1	390.9	400.4	417.7	437.4	469.3	520.3	603.2	740.3
57.5°	334.1	333.5	340.5	341.1	353.3	367.9	383.9	408.7	447.6	513.3	608.9
60°	292.0	290.1	295.9	300.3	306.1	317.5	330.3	354.5	383.9	429.1	508.2
62.5°	253.8	253.1	257.0	261.4	265.9	276.1	286.3	303.5	325.2	361.5	420.2
65°	216.8	218.7	220.6	222.5	225.1	231.5	241.7	254.4	270.4	297.1	342.4
67.5°	178.5	181.1	181.7	186.2	191.3	194.5	200.2	212.3	224.4	248.7	275.5
70°	137.7	137.1	137.7	139.6	146.7	153.7	162.0	170.2	177.3	193.2	214.9
72.5°	113.5	112.2	114.1	114.1	116.7	117.3	121.8	129.4	139.0	148.6	162.6
75°	91.8	91.8	91.8	91.8	94.4	95.6	97.6	99.5	102.7	107.8	119.2
77.5°	71.4	71.4	72.7	73.3	74.0	74.6	75.9	77.8	79.1	81.6	87.4
80°	53.6	54.2	53.6	54.2	54.2	55.5	56.1	58.0	58.7	61.9	63.8
82.5°	37.0	36.3	37.0	37.6	37.6	38.9	38.9	40.2	40.2	41.4	43.4
85°	21.7	20.4	21.7	21.0	22.3	21.0	21.7	23.0	23.0	23.6	26.1
87.5°	6.4	7.7	6.4	7.0	7.0	7.7	7.7	7.7	8.9	8.3	8.9
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°	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5
2.5°	1550.1	1548.2	1539.3	1529.1	1515.7	1506.7	1499.7	1495.9	1484.4	1470.4	1460.8
5°	1633.0	1613.9	1593.5	1568.6	1545.6	1522.0	1507.4	1490.2	1469.1	1445.5	1428.9
7.5°	1715.2	1682.1	1645.7	1608.1	1569.9	1536.1	1504.8	1479.3	1447.4	1414.9	1392.6
10°	1812.8	1758.0	1701.2	1643.2	1590.3	1540.5	1502.3	1464.6	1424.5	1385.6	1356.3
12.5°	1901.4	1824.9	1757.3	1682.7	1611.3	1549.5	1490.2	1444.2	1393.9	1351.8	1317.4
15°	1973.5	1899.5	1820.5	1712.1	1622.1	1546.9	1480.0	1421.9	1363.3	1312.3	1279.7
17.5°	2048.7	1936.5	1832.6	1748.4	1631.1	1539.9	1461.5	1393.9	1330.1	1277.8	1237.0
20°	2092.1	1984.3	1868.9	1753.5	1638.7	1533.5	1438.5	1362.0	1295.0	1233.8	1196.8
22.5°	2118.2	1992.6	1869.5	1743.3	1619.6	1509.3	1415.6	1329.5	1255.5	1198.1	1150.3
25°	2137.4	1992.0	1858.1	1735.6	1611.3	1492.7	1381.1	1291.9	1213.4	1151.6	1103.1
27.5°	2152.7	1984.3	1830.7	1697.4	1571.8	1451.3	1350.5	1254.9	1176.4	1112.0	1059.1
30°	2156.5	1974.8	1798.1	1650.8	1522.7	1414.3	1305.9	1215.3	1131.2	1061.7	1013.2
32.5°	2161.6	1951.2	1754.1	1595.4	1463.4	1356.3	1260.6	1175.2	1088.4	1020.2	970.5
35°	2143.7	1945.4	1709.5	1529.7	1398.3	1294.4	1205.8	1126.1	1041.3	974.9	924.6
37.5°	2089.5	1914.2	1664.9	1456.4	1320.5	1224.9	1150.9	1078.2	999.8	927.1	880.6
40°	1998.4	1863.2	1611.3	1390.7	1247.2	1148.4	1083.3	1026.6	951.4	884.4	833.4
42.5°	1862.5	1793.7	1560.3	1321.8	1164.3	1070.0	1017.7	965.4	901.6	833.4	786.2
45°	1690.4	1701.2	1487.0	1247.9	1089.1	993.4	941.8	904.8	846.1	790.0	740.9
47.5°	1481.2	1571.8	1408.5	1170.1	1007.5	917.6	872.3	838.5	797.7	739.7	694.4
50°	1277.2	1421.9	1310.3	1091.6	931.6	842.3	797.7	771.5	737.1	693.7	651.0
52.5°	1089.1	1247.2	1191.7	1004.3	849.3	769.6	726.3	705.9	680.4	640.2	602.6
55°	918.8	1076.3	1061.0	916.3	767.1	693.7	660.6	636.4	617.9	587.3	556.7
57.5°	770.9	923.3	926.5	818.7	695.7	621.1	592.4	573.2	560.5	536.3	506.3
60°	632.5	769.6	796.4	719.9	617.9	554.1	526.0	511.4	501.8	483.3	461.6
62.5°	517.8	629.3	660.6	610.9	543.3	484.6	464.2	450.2	444.4	429.1	410.6
65°	413.8	510.7	540.1	509.5	470.6	422.8	404.9	392.8	387.0	378.1	364.1
67.5°	326.5	401.7	433.6	408.1	393.4	359.6	347.5	340.5	335.4	329.0	316.9
70°	250.0	302.2	335.4	329.7	318.2	302.2	294.0	289.5	284.4	279.3	269.1
72.5°	188.7	220.6	251.2	256.3	247.4	247.4	240.4	239.1	236.6	230.2	225.7
75°	133.3	158.1	179.8	188.1	191.9	195.1	191.9	191.3	190.7	185.6	182.4
77.5°	92.5	108.4	123.1	137.7	142.8	147.3	147.9	150.5	148.6	145.4	144.1
80°	67.0	70.1	79.7	91.8	101.4	105.2	107.8	109.0	108.4	107.8	105.2
82.5°	44.0	46.5	49.7	57.4	65.0	72.1	73.3	72.7	74.6	75.2	73.3
85°	26.1	26.8	28.1	29.3	33.8	40.8	42.7	44.0	45.3	45.3	41.4
87.5°	10.2	9.6	10.8	10.8	12.8	13.4	17.2	20.4	21.0	18.5	18.5
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°	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5	1489.5
2.5°	1457.6	1449.3	1443.6	1430.9	1422.6	1413.6	1404.7	1410.5	1409.8	1409.2	1409.2
5°	1414.9	1400.2	1386.9	1369.6	1358.8	1345.4	1335.2	1333.9	1336.5	1327.6	1322.5
7.5°	1374.7	1355.6	1336.5	1318.6	1298.9	1283.6	1274.0	1270.2	1263.2	1257.4	1252.3
10°	1332.0	1308.4	1289.9	1266.3	1244.7	1225.5	1213.4	1205.1	1200.7	1196.2	1187.9
12.5°	1288.0	1265.1	1240.2	1212.8	1192.4	1169.4	1161.1	1151.6	1142.0	1136.9	1124.8
15°	1245.3	1215.3	1190.5	1162.4	1139.5	1117.8	1105.0	1086.5	1084.0	1077.6	1066.1
17.5°	1203.9	1170.7	1134.4	1115.2	1092.3	1069.3	1048.9	1043.2	1024.0	1017.7	1006.8
20°	1152.8	1122.9	1096.7	1069.3	1031.7	1010.7	995.3	987.1	972.4	963.5	957.1
22.5°	1108.8	1078.2	1047.0	1013.8	984.5	960.3	950.1	936.0	929.7	916.3	909.3
25°	1067.4	1034.2	997.9	963.5	941.2	923.3	905.4	894.0	882.5	876.7	864.0
27.5°	1017.0	983.9	948.8	922.0	896.5	878.7	861.4	851.9	837.2	827.7	820.6
30°	976.9	936.0	906.7	883.1	848.1	831.5	819.4	806.6	796.4	786.2	779.2
32.5°	930.3	894.0	866.5	835.9	811.1	792.6	776.0	765.2	756.9	747.3	740.3
35°	881.2	850.0	821.3	791.9	772.2	753.7	735.2	725.6	717.3	708.4	702.0
37.5°	836.6	807.2	780.5	752.4	728.2	712.2	696.9	690.6	679.1	672.7	666.3
40°	795.8	767.1	737.7	711.0	685.5	674.0	660.6	649.8	639.5	635.1	628.1
42.5°	751.1	722.4	698.8	669.5	649.8	633.2	621.1	608.9	601.9	594.9	591.7
45°	707.1	681.6	657.4	628.7	608.9	595.6	581.5	570.7	563.7	559.2	552.2
47.5°	665.1	638.9	614.7	589.2	570.0	554.7	540.1	533.1	523.5	518.4	513.3
50°	618.5	595.6	569.4	546.5	527.3	512.0	500.5	491.0	482.7	475.7	472.5
52.5°	575.8	550.9	529.2	508.2	487.8	469.9	459.7	449.5	443.8	435.5	431.7
55°	528.0	504.4	485.2	464.2	444.4	429.8	417.0	408.1	401.7	392.8	387.7
57.5°	484.0	463.6	440.0	421.5	400.4	389.0	378.1	365.4	357.7	350.7	345.6
60°	439.3	415.1	395.3	378.1	360.3	344.3	334.8	325.2	316.9	309.9	305.4
62.5°	392.8	372.4	353.9	334.8	318.8	305.4	294.0	286.3	279.3	275.5	271.0
65°	345.0	328.4	309.3	294.0	278.6	268.4	259.5	252.5	247.4	244.2	240.4
67.5°	301.0	285.0	267.8	251.9	241.7	233.4	227.0	220.6	218.1	214.2	211.7
70°	258.2	241.7	227.0	215.5	205.3	199.6	195.8	191.3	188.7	183.6	181.1
72.5°	211.7	200.9	191.3	182.4	174.7	169.6	164.5	158.8	154.3	148.6	146.0
75°	174.1	163.2	154.9	148.6	143.5	136.5	129.4	123.7	121.8	119.9	119.2
77.5°	135.8	128.8	122.4	117.3	110.3	103.9	102.0	100.7	100.1	98.8	98.8
80°	101.4	95.0	90.5	84.2	80.3	80.3	80.3	79.1	79.7	79.7	79.7
82.5°	68.9	63.1	61.2	59.9	59.9	60.6	60.6	61.2	60.6	61.9	61.2
85°	38.9	39.5	40.8	40.2	40.8	40.8	42.1	41.4	42.1	40.8	42.1
87.5°	17.9	19.8	20.4	21.0	21.7	21.0	21.7	21.7	22.3	22.3	22.3
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: P242572

CATALOG NUMBER: S123RDR-S1000D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1489.5	1489.5	1489.5	1489.5
2.5°	1401.5	1400.9	1401.5	1399.0
5°	1320.5	1319.9	1318.0	1312.3
7.5°	1247.2	1245.9	1240.8	1242.1
10°	1183.5	1184.1	1176.4	1172.0
12.5°	1121.6	1117.8	1112.0	1106.9
15°	1068.7	1062.3	1047.0	1048.3
17.5°	1003.0	997.9	997.3	988.3
20°	946.9	943.7	945.0	936.0
22.5°	902.9	899.7	892.7	891.4
25°	860.2	855.1	850.0	853.2
27.5°	816.8	813.0	807.2	807.2
30°	776.0	772.2	769.6	766.4
32.5°	734.6	734.6	729.5	729.5
35°	699.5	695.7	694.4	695.0
37.5°	665.7	660.6	658.0	655.5
40°	628.7	623.6	622.3	621.1
42.5°	587.3	586.0	585.3	582.8
45°	550.3	549.6	545.8	547.1
47.5°	510.7	507.6	505.6	507.6
50°	469.9	468.7	462.9	464.2
52.5°	429.1	423.4	422.1	420.8
55°	383.2	377.5	374.9	373.7
57.5°	337.9	336.0	333.5	335.4
60°	299.1	299.1	299.1	298.4
62.5°	269.1	267.2	266.5	267.8
65°	238.5	237.8	235.3	234.7
67.5°	210.4	207.9	207.9	206.6
70°	177.9	176.6	172.8	173.4
72.5°	142.8	141.6	141.6	140.3
75°	118.6	118.0	117.3	119.9
77.5°	98.8	98.8	99.5	98.2
80°	79.7	79.7	79.1	79.1
82.5°	59.9	60.6	61.2	59.9
85°	42.1	41.4	42.7	42.1
87.5°	23.6	22.3	22.3	23.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)