

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: P242401

Luminaire Tested: **S122RDR-S1005D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242401
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S1005D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 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: 3685.6 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

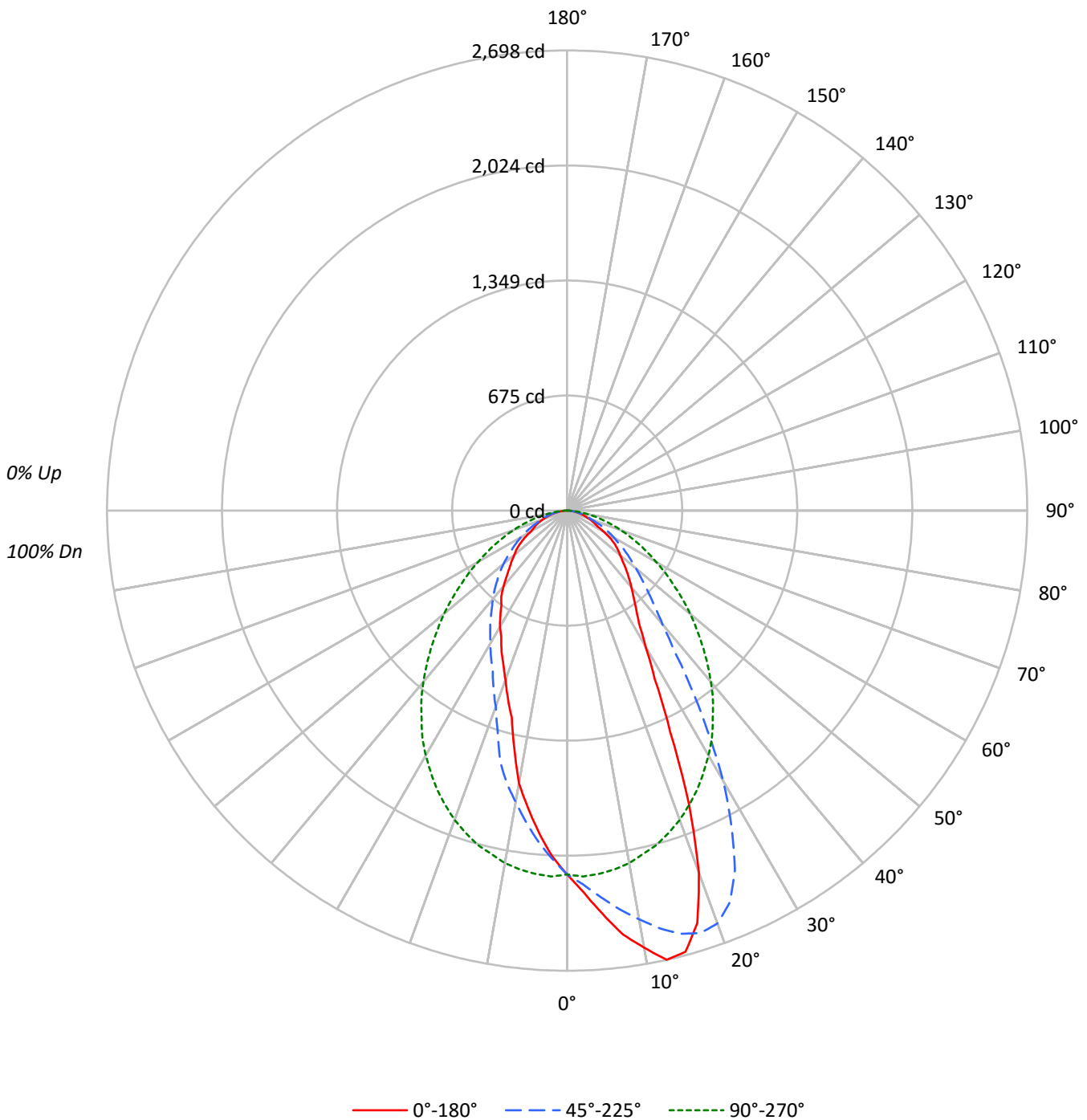
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

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	111	106	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	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	40625	40625	40625
5°	45371	40880	36247
10°	50340	40592	31418
15°	52815	39997	24756
20°	45786	39117	21421
25°	30029	37910	19125
30°	20211	36447	17310
35°	16370	34603	15612
40°	14558	32598	14447
45°	13175	30243	12895
50°	11990	27911	11945
55°	11271	25325	11125
60°	9429	22952	9318
65°	7950	20841	9019
70°	7346	18612	8504
75°	6874	16198	7853
80°	6340	13328	6987
85°	5835	10534	6163



TEST NUMBER: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	202.3	5.5
10°-20°	564.7	15.3
20°-30°	726.7	19.7
30°-40°	689.4	18.7
40°-50°	590.7	16.0
50°-60°	450.0	12.2
60°-70°	283.8	7.7
70°-80°	141.6	3.8
80°-90°	36.4	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°	1493.6	40.5
0°-40°	2183.0	59.2
0°-60°	3223.7	87.5
0°-90°	3685.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3685.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2133	2133	2133	2133	2133	
5°	2373	2275	2138	1948	1896	234
15°	2678	2569	2028	1518	1255	728
25°	1429	2328	1804	1033	910	675
35°	704	1265	1488	784	671	448
45°	489	667	1123	579	479	378
55°	339	415	763	392	335	299
65°	176	237	462	236	200	178
75°	93	104	220	120	107	99
85°	27	27	48	28	28	30
90°	0	0	0	0	0	



TEST NUMBER: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8
2.5°	2241.0	2243.2	2245.5	2240.3	2240.3	2235.8	2226.2	2218.8	2198.0	2195.1	2195.1
5°	2372.9	2371.5	2374.4	2364.8	2351.4	2348.5	2334.4	2315.9	2296.6	2275.1	2270.7
7.5°	2506.3	2497.4	2493.7	2498.2	2484.1	2464.8	2441.1	2418.9	2385.5	2358.1	2341.1
10°	2602.7	2627.1	2612.3	2586.4	2591.6	2556.7	2538.2	2506.3	2479.6	2433.0	2422.6
12.5°	2697.5	2703.5	2701.2	2689.4	2679.7	2658.2	2631.6	2604.9	2550.1	2509.3	2466.3
15°	2678.3	2692.3	2696.0	2691.6	2695.3	2693.8	2680.5	2657.5	2614.5	2568.6	2528.6
17.5°	2536.0	2552.3	2565.6	2577.5	2596.0	2632.3	2643.4	2647.9	2630.1	2597.5	2564.1
20°	2258.8	2242.5	2310.7	2345.5	2375.2	2449.3	2513.0	2537.5	2576.7	2576.0	2568.6
22.5°	1866.0	1874.9	1938.7	1981.6	2082.4	2156.5	2231.4	2340.3	2425.6	2488.5	2527.1
25°	1428.8	1457.0	1521.4	1577.8	1674.1	1811.9	1937.2	2082.4	2219.5	2327.7	2430.7
27.5°	1111.6	1115.3	1173.9	1230.9	1290.2	1409.5	1577.0	1751.2	1946.8	2087.6	2265.5
30°	918.9	914.5	936.0	967.8	1016.8	1104.2	1222.8	1393.2	1588.1	1831.2	2047.6
32.5°	782.6	784.1	798.9	820.4	858.9	910.8	982.7	1113.1	1294.7	1532.6	1795.6
35°	704.0	703.3	715.1	732.2	749.2	787.0	842.6	915.2	1042.0	1265.0	1524.4
37.5°	638.8	642.5	647.7	658.8	679.6	701.8	736.6	787.8	884.1	1022.7	1255.4
40°	585.5	586.9	595.1	604.0	615.1	631.4	658.8	698.1	764.1	869.3	1028.6
42.5°	536.5	538.0	543.2	551.4	559.5	575.8	597.3	629.9	680.3	756.6	881.1
45°	489.1	489.1	494.3	498.0	507.6	522.5	541.0	569.1	606.2	667.0	754.4
47.5°	443.2	443.2	446.9	453.5	460.2	472.1	491.3	515.0	541.7	591.4	669.2
50°	404.6	405.4	407.6	412.8	416.5	426.9	440.9	461.0	489.1	525.4	587.7
52.5°	373.5	372.8	375.7	377.2	379.4	386.1	395.7	412.8	437.2	467.6	516.5
55°	339.4	336.4	340.9	344.6	346.8	349.8	355.7	366.8	388.3	415.0	453.5
57.5°	299.4	297.9	300.1	303.8	310.5	317.9	321.6	329.0	340.2	360.9	401.7
60°	247.5	247.5	254.2	256.4	264.6	274.9	285.3	291.2	302.4	315.0	343.1
62.5°	201.6	202.3	204.5	206.8	210.5	223.8	239.4	254.2	264.6	276.4	292.7
65°	176.4	177.9	177.9	179.3	182.3	185.3	191.2	201.6	220.1	237.1	251.2
67.5°	154.1	154.1	154.9	156.4	157.1	160.8	163.0	168.2	171.9	191.2	210.5
70°	131.9	134.1	133.4	134.9	135.6	137.1	140.1	142.3	149.0	152.7	163.0
72.5°	111.2	112.6	112.6	113.4	115.6	115.6	117.8	120.1	123.8	126.7	131.2
75°	93.4	92.6	93.4	94.9	95.6	96.3	96.3	99.3	101.5	104.5	108.2
77.5°	75.6	76.3	76.3	76.3	76.3	77.8	77.8	79.3	81.5	83.0	85.2
80°	57.8	58.5	57.8	58.5	59.3	60.0	59.3	60.0	62.3	63.7	63.7
82.5°	41.5	41.5	42.2	42.2	42.2	42.2	43.7	43.7	45.2	44.5	45.2
85°	26.7	25.9	25.9	25.9	26.7	27.4	26.7	26.7	27.4	27.4	27.4
87.5°	11.9	12.6	12.6	12.6	12.6	12.6	12.6	13.3	12.6	13.3	12.6
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: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8
2.5°	2196.6	2190.6	2185.4	2172.1	2165.4	2150.6	2148.4	2147.6	2128.4	2109.9	2104.7
5°	2258.8	2247.0	2229.2	2208.4	2186.9	2164.7	2149.9	2138.0	2108.4	2080.2	2063.9
7.5°	2320.3	2298.8	2270.7	2235.1	2204.7	2169.1	2144.7	2122.4	2081.7	2044.6	2020.2
10°	2390.7	2349.2	2308.5	2254.4	2212.1	2170.6	2132.1	2098.7	2051.3	1997.9	1960.2
12.5°	2434.4	2387.8	2327.7	2275.1	2217.3	2161.7	2106.9	2061.7	2003.9	1948.3	1901.6
15°	2473.0	2424.1	2355.9	2280.3	2209.9	2141.0	2081.7	2028.3	1955.7	1889.8	1834.9
17.5°	2508.6	2441.1	2370.7	2283.3	2205.5	2121.7	2046.9	1980.2	1900.9	1823.1	1760.8
20°	2524.1	2457.4	2372.9	2285.5	2189.1	2086.1	2003.9	1929.8	1843.1	1756.4	1682.2
22.5°	2514.5	2466.3	2370.0	2261.0	2161.7	2052.8	1957.2	1868.3	1769.7	1680.8	1591.8
25°	2464.1	2446.3	2357.4	2243.2	2130.6	2005.4	1897.9	1803.8	1694.1	1599.2	1505.9
27.5°	2371.5	2397.4	2334.4	2210.6	2089.1	1954.2	1837.1	1731.2	1619.3	1513.3	1419.9
30°	2224.7	2312.9	2289.2	2176.5	2036.5	1904.6	1769.0	1657.1	1535.5	1425.8	1333.9
32.5°	2023.9	2184.0	2218.8	2129.1	1983.1	1834.9	1691.1	1580.0	1451.8	1334.7	1245.8
35°	1808.2	2026.1	2126.2	2066.1	1920.9	1764.5	1617.8	1488.1	1360.6	1246.5	1157.6
37.5°	1552.6	1843.1	1997.2	1990.5	1852.0	1692.6	1533.3	1405.1	1273.9	1161.3	1068.6
40°	1305.0	1626.7	1843.8	1892.0	1779.3	1603.7	1442.1	1311.0	1183.5	1073.8	963.4
42.5°	1082.7	1402.9	1682.2	1774.9	1691.1	1517.0	1354.7	1216.1	1093.1	990.8	877.4
45°	911.5	1191.7	1485.9	1635.6	1585.9	1424.4	1253.2	1122.7	1006.4	916.7	808.5
47.5°	789.2	993.0	1288.7	1484.4	1478.5	1325.0	1154.6	1029.4	919.7	836.7	744.8
50°	687.7	859.7	1100.5	1330.2	1349.5	1225.7	1065.7	941.9	841.1	752.9	682.5
52.5°	596.6	730.7	941.2	1159.0	1222.8	1119.8	965.6	853.7	756.6	677.3	619.5
55°	519.5	629.2	793.7	999.7	1082.7	1007.1	869.3	762.6	683.3	615.1	563.2
57.5°	452.1	538.0	675.1	847.8	941.9	890.8	772.9	684.8	614.4	550.6	509.1
60°	389.1	456.5	568.4	707.0	813.7	780.4	683.3	602.5	544.7	491.3	452.8
62.5°	329.8	385.4	477.3	583.2	678.8	669.9	595.1	530.6	481.7	434.3	403.1
65°	274.9	317.2	392.0	480.2	558.8	565.4	508.4	462.4	417.2	378.7	349.8
67.5°	227.5	256.4	312.7	390.5	450.6	471.3	432.8	395.7	358.7	327.6	301.6
70°	184.5	206.8	245.3	305.3	359.4	381.7	361.6	334.2	303.1	278.6	257.2
72.5°	140.8	162.3	188.2	228.3	272.7	297.2	293.5	275.7	252.0	232.7	212.7
75°	112.6	119.3	138.6	168.2	204.5	225.3	230.5	220.1	200.1	184.5	172.7
77.5°	87.4	91.9	102.3	120.1	145.3	163.8	171.9	170.4	155.6	145.3	134.1
80°	66.7	68.9	73.4	80.0	97.8	116.3	121.5	121.5	111.9	108.2	97.1
82.5°	46.7	48.2	50.4	53.4	59.3	74.8	80.8	82.3	77.1	71.9	63.7
85°	28.9	28.2	29.6	31.9	33.3	37.8	46.7	48.2	46.7	40.8	38.5
87.5°	12.6	13.3	13.3	12.6	13.3	14.1	17.8	21.5	18.5	16.3	14.8
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: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8	2132.8
2.5°	2095.0	2089.8	2080.2	2065.4	2056.5	2040.9	2030.6	2036.5	2038.0	2036.5	2035.0
5°	2046.1	2030.6	2009.1	1988.3	1969.0	1948.3	1936.4	1931.3	1920.9	1914.9	1912.0
7.5°	1990.5	1967.6	1937.2	1903.8	1872.7	1843.1	1829.7	1819.3	1800.1	1789.7	1780.1
10°	1926.8	1884.6	1854.2	1806.7	1777.8	1735.6	1706.7	1707.4	1678.5	1662.2	1650.4
12.5°	1856.4	1809.0	1753.4	1711.9	1668.9	1637.0	1600.7	1582.9	1551.8	1536.3	1499.2
15°	1777.1	1723.0	1669.7	1611.8	1571.1	1518.5	1468.1	1406.6	1356.9	1313.9	1302.1
17.5°	1692.6	1625.9	1573.3	1514.0	1450.3	1354.7	1292.4	1254.6	1225.0	1202.8	1185.0
20°	1605.2	1537.0	1479.9	1377.7	1283.5	1223.5	1180.5	1153.1	1122.0	1097.5	1084.2
22.5°	1513.3	1441.4	1358.4	1241.3	1173.1	1127.9	1090.9	1058.3	1039.7	1021.9	1010.1
25°	1427.3	1349.5	1221.3	1142.7	1083.5	1033.1	1006.4	987.1	964.9	938.9	927.1
27.5°	1337.6	1213.9	1116.8	1059.7	999.0	967.1	944.1	912.3	892.3	882.6	869.3
30°	1234.6	1110.9	1039.0	975.3	935.2	898.9	870.8	854.5	835.2	815.2	807.0
32.5°	1119.8	1027.1	959.0	908.6	867.8	838.2	817.4	788.5	775.9	765.5	746.3
35°	1028.6	953.8	890.8	847.8	809.3	784.1	758.1	742.6	717.4	707.0	700.3
37.5°	945.6	880.4	833.0	785.5	755.9	726.3	711.4	685.5	675.9	659.6	646.2
40°	877.4	813.7	768.5	731.4	697.4	676.6	656.6	636.6	620.3	613.6	596.6
42.5°	807.8	758.9	713.7	672.2	652.1	629.9	603.2	589.9	572.9	561.0	552.1
45°	744.8	698.8	660.3	627.0	601.8	578.8	562.5	538.0	528.4	506.9	498.0
47.5°	689.2	644.7	607.7	575.1	549.9	536.5	512.8	491.3	478.0	463.2	450.6
50°	629.2	593.6	558.0	529.9	507.6	486.1	461.7	452.1	428.3	421.7	415.0
52.5°	574.3	541.0	509.1	481.7	459.5	438.7	418.0	404.6	390.5	383.9	379.4
55°	523.9	491.3	460.2	435.8	413.5	392.0	378.7	363.1	355.7	350.5	344.6
57.5°	472.1	442.4	418.0	392.8	370.5	352.8	336.4	327.6	320.1	314.2	306.1
60°	423.2	395.0	373.5	350.5	327.6	313.5	301.6	290.5	281.6	271.2	268.3
62.5°	371.3	347.6	328.3	306.1	286.8	274.2	263.1	252.7	241.6	225.3	220.8
65°	324.6	305.3	284.6	266.0	248.3	235.7	219.4	207.5	203.1	201.6	200.8
67.5°	281.6	263.1	245.3	226.0	209.7	195.6	186.0	184.5	181.6	180.8	178.6
70°	238.6	221.6	203.8	186.0	170.4	168.2	165.3	162.3	158.6	157.1	155.6
72.5°	200.1	182.3	164.5	151.2	146.7	143.8	140.8	137.8	135.6	134.1	133.4
75°	159.3	143.0	131.2	126.0	122.3	120.1	115.6	113.4	111.9	109.7	108.9
77.5°	121.5	111.2	105.2	102.3	97.8	95.6	92.6	90.4	88.2	88.2	86.7
80°	87.4	83.0	79.3	74.8	73.4	70.4	69.7	67.4	68.2	66.0	66.0
82.5°	63.0	57.1	54.1	52.6	51.1	48.9	48.2	47.4	47.4	45.9	45.9
85°	34.8	33.3	31.9	30.4	30.4	28.2	28.9	28.2	28.2	26.7	25.9
87.5°	14.1	13.3	11.9	11.9	11.9	11.1	11.1	10.4	10.4	10.4	9.6
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: P242401

CATALOG NUMBER: S122RDR-S1005D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2132.8	2132.8	2132.8	2132.8
2.5°	2026.9	2028.3	2026.1	2027.6
5°	1908.3	1899.4	1897.9	1895.7
7.5°	1768.2	1767.5	1763.0	1757.8
10°	1634.1	1630.4	1629.6	1624.4
12.5°	1477.0	1448.1	1445.1	1430.3
15°	1284.3	1279.8	1265.0	1255.4
17.5°	1176.8	1162.0	1156.8	1154.6
20°	1073.8	1060.5	1058.3	1056.8
22.5°	1002.7	988.6	981.9	976.7
25°	919.7	914.5	911.5	910.0
27.5°	854.5	841.1	839.6	835.9
30°	800.4	796.7	791.5	787.0
32.5°	736.6	733.7	729.2	727.7
35°	692.9	682.5	678.1	671.4
37.5°	644.7	638.8	631.4	634.4
40°	586.9	583.2	581.7	581.0
42.5°	541.0	529.1	524.7	524.7
45°	494.3	484.7	478.0	478.7
47.5°	443.9	444.6	440.2	441.7
50°	409.8	405.4	402.4	403.1
52.5°	377.2	373.5	371.3	375.0
55°	340.9	336.4	335.7	335.0
57.5°	301.6	299.4	295.7	293.5
60°	258.6	252.7	245.3	244.6
62.5°	219.4	219.4	219.4	219.4
65°	199.4	198.6	199.4	200.1
67.5°	178.6	177.1	175.6	176.4
70°	154.1	153.4	152.7	152.7
72.5°	130.4	130.4	129.7	128.9
75°	108.2	106.7	106.7	106.7
77.5°	86.7	86.0	85.2	84.5
80°	65.2	64.5	63.7	63.7
82.5°	45.9	45.2	45.2	44.5
85°	26.7	27.4	26.7	28.2
87.5°	9.6	8.9	9.6	8.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)