

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: P242745

Luminaire Tested: **S124RDR-S1195D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242745  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDR-S1195D835-X4F0-XX-UDD-A-W  
Description: DEFINE 4 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: 4649.4 lumens  
Efficiency: N/A  
Efficacy: 113.1 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct

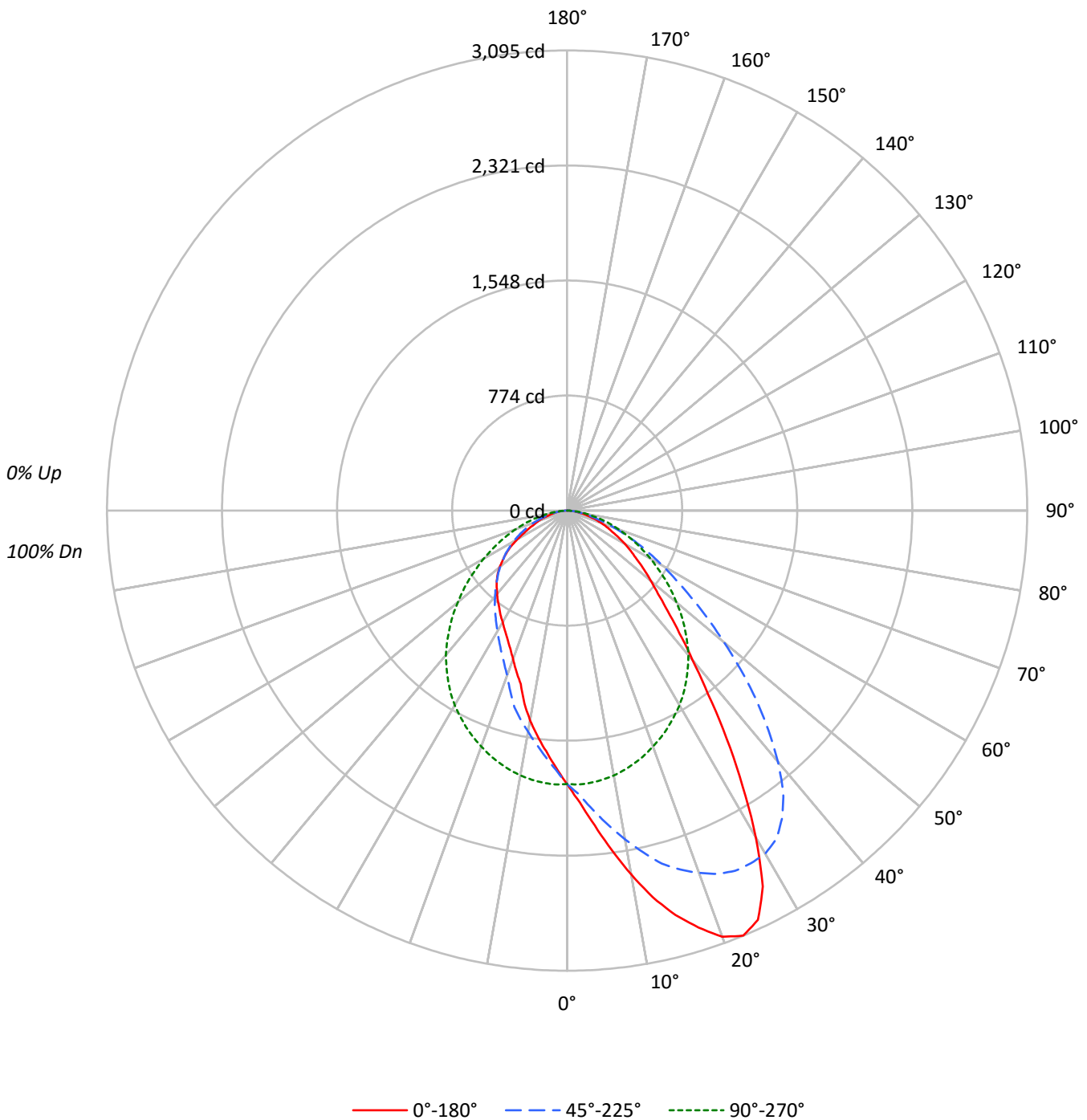
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

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

	0°	90°	180°
0°	16349	16349	16349
5°	18964	16398	14494
10°	22434	16327	12936
15°	25914	16175	11116
20°	28852	15968	10052
25°	29784	15764	9332
30°	26074	15516	8899
35°	20296	15150	8637
40°	15219	14730	8495
45°	12016	14057	8421
50°	10145	13281	8178
55°	8843	12426	7741
60°	7957	11541	6850
65°	7014	10584	5891
70°	6318	9590	5315
75°	5292	8500	4530
80°	4474	7243	4249
85°	3784	5671	3784



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.1	3.8
10°-20°	537.8	11.6
20°-30°	842.5	18.1
30°-40°	935.5	20.1
40°-50°	829.0	17.8
50°-60°	646.1	13.9
60°-70°	422.6	9.1
70°-80°	207.3	4.5
80°-90°	50.5	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°	1558.4	33.5
0°-40°	2493.9	53.6
0°-60°	3969.0	85.4
0°-90°	4649.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4649.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1839	1839	1839	1839	1839	
5°	2125	2023	1838	1663	1624	214
15°	2816	2459	1758	1369	1208	801
25°	3037	2674	1607	1047	952	1356
35°	1870	2522	1396	842	796	1171
45°	956	1797	1118	669	670	754
55°	571	1017	802	505	500	518
65°	334	522	503	327	280	335
75°	154	199	248	159	132	169
85°	37	40	56	39	37	43
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°	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3
2.5°	1965.2	1971.9	1965.2	1964.5	1957.1	1954.9	1951.9	1942.3	1924.5	1914.1	1916.3
5°	2125.3	2143.8	2133.5	2132.0	2115.7	2099.4	2089.0	2065.3	2040.1	2023.0	2009.0
7.5°	2303.2	2314.3	2306.9	2298.7	2270.6	2261.7	2237.2	2209.0	2166.8	2134.9	2106.0
10°	2485.5	2494.3	2491.4	2472.1	2452.8	2413.6	2391.3	2347.6	2290.6	2245.4	2203.1
12.5°	2664.8	2674.4	2642.6	2648.5	2607.7	2578.8	2540.3	2482.5	2414.3	2352.8	2297.2
15°	2816.0	2804.1	2804.1	2789.3	2748.5	2705.5	2669.2	2611.4	2528.4	2458.8	2385.4
17.5°	2940.5	2945.6	2939.7	2901.9	2872.3	2828.6	2763.3	2697.4	2625.5	2532.1	2459.5
20°	3050.1	3050.1	3043.5	3019.7	2978.2	2930.8	2858.9	2785.6	2687.8	2593.6	2509.2
22.5°	3094.6	3097.6	3089.4	3070.9	3034.6	2988.6	2930.1	2855.2	2753.7	2644.8	2535.1
25°	3036.8	3050.9	3052.3	3047.2	3036.0	3007.9	2955.3	2878.9	2788.5	2673.7	2561.0
27.5°	2850.0	2868.6	2876.0	2892.3	2922.7	2933.8	2927.1	2876.0	2788.5	2675.2	2563.3
30°	2540.3	2555.1	2603.3	2666.3	2715.2	2759.6	2798.2	2808.5	2764.1	2664.8	2545.5
32.5°	2196.4	2217.9	2266.1	2335.0	2424.7	2507.7	2606.2	2658.9	2668.5	2618.8	2510.6
35°	1870.4	1885.2	1929.7	2000.8	2098.6	2210.5	2347.6	2454.3	2527.0	2521.8	2454.3
37.5°	1557.7	1578.4	1623.6	1682.2	1778.5	1921.5	2051.2	2194.2	2324.6	2388.4	2354.3
40°	1311.6	1312.4	1356.1	1416.9	1505.8	1626.6	1771.1	1934.1	2083.8	2206.1	2229.8
42.5°	1117.5	1117.5	1142.7	1209.4	1267.2	1379.1	1515.4	1677.0	1858.5	2004.5	2077.1
45°	955.9	962.6	986.3	1025.6	1076.0	1172.3	1282.7	1433.2	1629.5	1797.0	1901.5
47.5°	828.5	840.3	854.4	890.0	931.5	998.9	1093.0	1233.8	1396.9	1582.9	1727.4
50°	733.6	735.1	754.4	772.2	807.0	858.1	938.2	1050.8	1197.5	1374.6	1539.9
52.5°	652.1	651.4	661.0	684.7	711.4	748.5	809.2	909.3	1035.2	1189.4	1361.3
55°	570.6	574.3	583.2	601.0	622.5	650.6	701.8	778.8	881.1	1016.7	1171.6
57.5°	508.4	510.6	518.7	525.4	546.1	566.9	608.4	664.0	753.6	867.0	1018.9
60°	447.6	448.3	450.6	461.7	477.2	496.5	522.4	567.6	640.3	741.8	855.9
62.5°	388.3	389.8	393.5	400.9	412.0	423.9	451.3	485.4	542.4	625.4	725.5
65°	333.5	334.2	339.4	342.4	352.0	363.9	383.9	408.3	449.8	522.4	600.2
67.5°	287.5	287.5	287.5	292.0	299.4	307.5	320.9	341.6	375.0	421.7	494.3
70°	243.1	243.1	244.5	246.8	250.5	257.1	263.8	278.6	301.6	337.9	390.5
72.5°	201.6	202.3	203.8	203.8	205.3	210.5	214.9	223.1	238.6	263.8	303.8
75°	154.1	156.4	160.1	163.0	166.7	166.0	171.2	177.1	182.3	198.6	223.1
77.5°	121.5	120.0	120.0	123.0	123.8	124.5	128.2	133.4	137.8	146.7	155.6
80°	87.4	87.4	89.7	90.4	89.7	90.4	94.1	96.3	97.8	100.8	108.9
82.5°	60.8	62.2	60.8	61.5	62.2	63.0	66.0	66.0	67.4	68.2	70.4
85°	37.1	37.8	38.5	37.1	37.1	37.1	38.5	39.3	40.8	40.0	41.5
87.5°	16.3	15.6	16.3	16.3	17.0	16.3	17.0	18.5	17.0	17.8	17.8
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°	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3
2.5°	1908.9	1898.5	1893.4	1881.5	1867.4	1860.0	1853.3	1843.7	1831.1	1817.8	1808.1
5°	1991.2	1973.4	1951.2	1924.5	1900.8	1877.8	1857.8	1837.8	1814.8	1791.1	1767.4
7.5°	2072.7	2040.8	2006.7	1966.0	1926.7	1890.4	1857.8	1825.9	1789.6	1757.0	1726.6
10°	2158.7	2111.2	2058.6	2003.0	1947.5	1899.3	1851.9	1808.9	1761.5	1719.2	1683.6
12.5°	2228.3	2170.5	2104.6	2031.9	1962.3	1901.5	1845.2	1785.9	1730.3	1683.6	1633.3
15°	2306.9	2230.5	2145.3	2062.3	1975.6	1896.3	1823.0	1757.7	1696.2	1631.8	1586.6
17.5°	2361.0	2272.8	2172.0	2075.7	1976.4	1884.5	1801.5	1725.9	1655.5	1591.0	1537.7
20°	2408.4	2308.3	2193.5	2080.1	1965.2	1865.2	1774.1	1688.1	1614.7	1543.6	1488.0
22.5°	2435.1	2321.7	2193.5	2073.4	1953.4	1843.0	1740.7	1650.3	1568.8	1497.6	1434.7
25°	2436.5	2318.0	2189.8	2053.4	1923.0	1808.1	1704.4	1607.3	1518.4	1447.3	1382.0
27.5°	2430.6	2293.5	2164.6	2026.0	1891.9	1769.6	1662.2	1559.2	1471.0	1395.4	1328.7
30°	2412.8	2263.1	2122.3	1977.1	1840.7	1724.4	1609.5	1511.7	1419.1	1339.8	1272.4
32.5°	2374.3	2226.1	2072.0	1922.3	1783.7	1662.9	1555.4	1456.9	1366.5	1285.0	1212.3
35°	2320.9	2170.5	2006.0	1853.3	1717.7	1593.2	1491.0	1396.1	1309.4	1222.7	1147.1
37.5°	2259.4	2102.3	1940.0	1772.6	1637.7	1519.1	1423.5	1332.4	1247.9	1168.6	1084.9
40°	2164.6	2024.5	1855.6	1689.6	1550.3	1436.9	1350.2	1269.4	1184.2	1105.6	1021.9
42.5°	2049.7	1935.6	1764.4	1597.7	1460.6	1352.4	1273.1	1194.6	1119.0	1043.4	955.2
45°	1919.3	1828.9	1668.8	1508.8	1370.2	1262.0	1187.9	1118.2	1050.1	977.4	895.2
47.5°	1774.1	1707.4	1568.0	1400.6	1270.9	1171.6	1100.4	1042.6	982.6	909.3	835.2
50°	1621.4	1582.1	1448.7	1299.0	1176.8	1087.1	1013.7	960.4	912.2	842.6	778.1
52.5°	1458.4	1442.1	1334.6	1193.1	1076.0	988.5	928.5	881.8	832.9	778.1	718.8
55°	1292.4	1303.5	1207.9	1084.1	973.0	898.9	841.8	801.8	760.3	711.4	664.7
57.5°	1119.7	1162.0	1090.8	978.9	871.5	801.8	758.1	722.5	687.7	646.2	603.9
60°	967.8	1001.9	965.6	870.0	778.8	715.1	675.1	649.2	614.3	577.3	546.9
62.5°	819.6	856.6	838.9	766.2	683.2	630.6	596.5	572.8	549.1	518.0	486.1
65°	700.3	724.0	713.6	660.3	600.2	553.6	521.0	503.2	479.5	455.7	427.6
67.5°	560.2	606.9	599.5	569.9	512.1	475.0	452.0	435.7	413.5	395.7	375.7
70°	440.9	483.2	482.4	459.4	431.3	397.2	382.4	369.0	349.8	332.7	317.2
72.5°	340.9	378.7	386.1	369.8	352.7	329.0	314.9	306.8	288.3	277.9	266.0
75°	252.7	280.9	288.3	288.3	279.4	266.0	253.4	247.5	234.2	223.8	216.4
77.5°	177.8	197.1	208.2	210.5	211.2	206.0	194.2	189.7	179.3	175.6	167.5
80°	117.1	128.9	142.3	146.7	150.4	148.9	144.5	141.5	131.9	128.2	125.2
82.5°	71.9	77.1	87.4	98.6	96.3	101.5	97.8	95.6	88.9	88.2	85.2
85°	42.2	43.0	44.5	51.1	54.8	56.3	57.1	55.6	53.4	53.4	48.2
87.5°	17.8	17.0	18.5	18.5	19.3	22.2	24.5	25.2	23.0	20.7	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°	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3	1839.3
2.5°	1797.8	1790.4	1780.7	1769.6	1756.3	1744.4	1739.2	1743.7	1745.9	1740.0	1739.2
5°	1751.1	1732.6	1717.7	1695.5	1677.7	1662.9	1652.5	1648.1	1649.6	1637.7	1634.7
7.5°	1699.2	1679.2	1654.7	1629.5	1605.8	1585.1	1574.0	1568.8	1556.2	1551.0	1542.8
10°	1649.6	1619.9	1596.2	1565.1	1536.9	1511.0	1498.4	1488.0	1475.4	1469.5	1456.9
12.5°	1598.4	1562.9	1536.2	1503.6	1474.7	1442.1	1430.2	1408.7	1387.2	1373.1	1356.1
15°	1551.0	1509.5	1477.6	1439.1	1405.0	1369.4	1337.6	1302.0	1288.7	1260.5	1244.2
17.5°	1494.7	1451.7	1416.1	1366.5	1315.3	1272.4	1236.8	1199.7	1179.7	1160.5	1152.3
20°	1439.1	1400.6	1345.7	1285.7	1227.2	1178.3	1150.8	1128.6	1106.4	1093.8	1084.9
22.5°	1386.5	1334.6	1268.7	1202.7	1144.2	1108.6	1086.4	1063.4	1046.4	1034.5	1021.9
25°	1326.5	1262.0	1194.6	1120.5	1080.4	1047.1	1021.9	1003.4	992.3	976.7	970.8
27.5°	1267.9	1190.1	1113.8	1063.4	1021.9	990.0	967.1	953.7	938.9	928.5	920.4
30°	1198.3	1119.0	1052.3	1004.9	962.6	937.4	919.6	903.3	892.2	884.1	878.1
32.5°	1129.3	1050.1	996.7	944.8	913.7	889.2	870.0	858.9	850.7	839.6	836.6
35°	1063.4	993.0	944.1	898.1	864.1	841.8	827.0	814.4	807.0	804.0	801.8
37.5°	998.9	940.4	886.3	849.2	817.4	800.3	781.1	775.1	769.9	763.3	766.2
40°	938.2	884.1	837.4	797.4	772.9	753.6	743.3	735.9	731.4	731.4	731.4
42.5°	885.5	832.9	787.7	752.9	728.4	712.9	701.0	695.1	694.4	693.6	698.1
45°	830.7	781.8	735.9	706.2	685.5	669.2	662.5	657.3	657.3	660.3	661.0
47.5°	775.9	729.9	692.9	658.8	639.5	629.1	623.2	620.3	620.3	624.0	626.9
50°	726.2	681.0	644.7	615.1	597.3	587.6	582.5	581.0	582.5	582.5	587.6
52.5°	672.1	632.8	597.3	573.6	552.8	543.9	541.7	539.5	540.2	543.2	544.7
55°	619.5	583.2	549.1	525.4	510.6	504.6	498.0	498.7	497.2	498.7	498.7
57.5°	566.2	534.3	500.9	481.7	469.1	460.2	452.8	455.0	452.8	452.8	452.0
60°	515.0	479.5	454.3	437.2	422.4	415.0	408.3	409.8	407.6	406.1	403.1
62.5°	459.4	431.3	407.6	391.3	380.2	371.3	364.6	362.4	356.4	350.5	343.1
65°	406.1	381.6	360.1	344.6	333.5	326.8	321.6	317.2	306.1	294.2	288.3
67.5°	353.5	335.7	314.9	301.6	292.7	283.8	274.2	266.0	254.9	247.5	243.8
70°	303.1	286.0	269.0	256.4	246.8	238.6	227.5	222.3	214.9	211.9	208.2
72.5°	254.9	239.4	223.8	212.7	202.3	196.4	188.2	183.0	180.8	180.1	176.4
75°	206.0	193.4	181.6	171.2	163.0	158.6	154.9	151.2	149.7	143.0	139.3
77.5°	158.6	149.7	142.3	134.1	128.9	126.0	117.8	112.6	109.7	106.0	105.2
80°	117.1	111.2	103.7	99.3	91.1	88.2	85.2	84.5	83.7	83.0	82.3
82.5°	80.8	74.8	67.4	65.2	64.5	63.0	61.5	60.8	60.0	60.8	60.8
85°	44.5	41.5	41.5	40.8	40.0	39.3	38.5	38.5	37.8	38.5	37.8
87.5°	18.5	17.8	17.8	16.3	17.0	17.0	16.3	16.3	17.0	15.6	15.6
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: P242745

CATALOG NUMBER: S124RDR-S1195D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1839.3	1839.3	1839.3	1839.3
2.5°	1734.8	1736.3	1731.1	1729.6
5°	1628.8	1627.3	1623.6	1624.4
7.5°	1536.9	1531.7	1535.4	1529.5
10°	1453.9	1445.8	1439.1	1433.2
12.5°	1340.5	1333.9	1324.2	1327.9
15°	1234.6	1223.5	1205.7	1207.9
17.5°	1139.7	1141.2	1130.8	1133.8
20°	1069.3	1064.1	1064.9	1062.7
22.5°	1020.4	1013.7	1007.1	1001.9
25°	964.1	959.6	953.0	951.5
27.5°	914.4	913.7	910.7	907.0
30°	872.2	870.7	869.2	867.0
32.5°	834.4	833.7	832.2	832.9
35°	798.8	798.1	796.6	795.9
37.5°	765.5	767.7	766.2	766.2
40°	730.7	731.4	732.9	732.1
42.5°	701.8	701.8	704.0	701.0
45°	666.2	670.6	669.9	669.9
47.5°	628.4	633.6	634.3	634.3
50°	591.4	589.9	592.1	591.4
52.5°	546.1	546.9	546.1	545.4
55°	499.5	500.2	498.7	499.5
57.5°	449.8	446.8	449.1	447.6
60°	395.7	389.8	388.3	385.3
62.5°	335.0	331.2	325.3	329.0
65°	282.3	279.4	277.1	280.1
67.5°	240.1	238.6	238.6	237.1
70°	208.2	206.0	206.0	204.5
72.5°	175.6	173.4	174.1	173.4
75°	134.9	131.2	131.2	131.9
77.5°	105.2	104.5	106.0	103.7
80°	82.3	81.5	80.8	83.0
82.5°	59.3	59.3	59.3	62.2
85°	38.5	37.1	38.5	37.1
87.5°	17.0	16.3	15.6	16.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)