

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: P243620

Luminaire Tested: **S124RDR-H1195D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243620  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDR-H1195D935-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

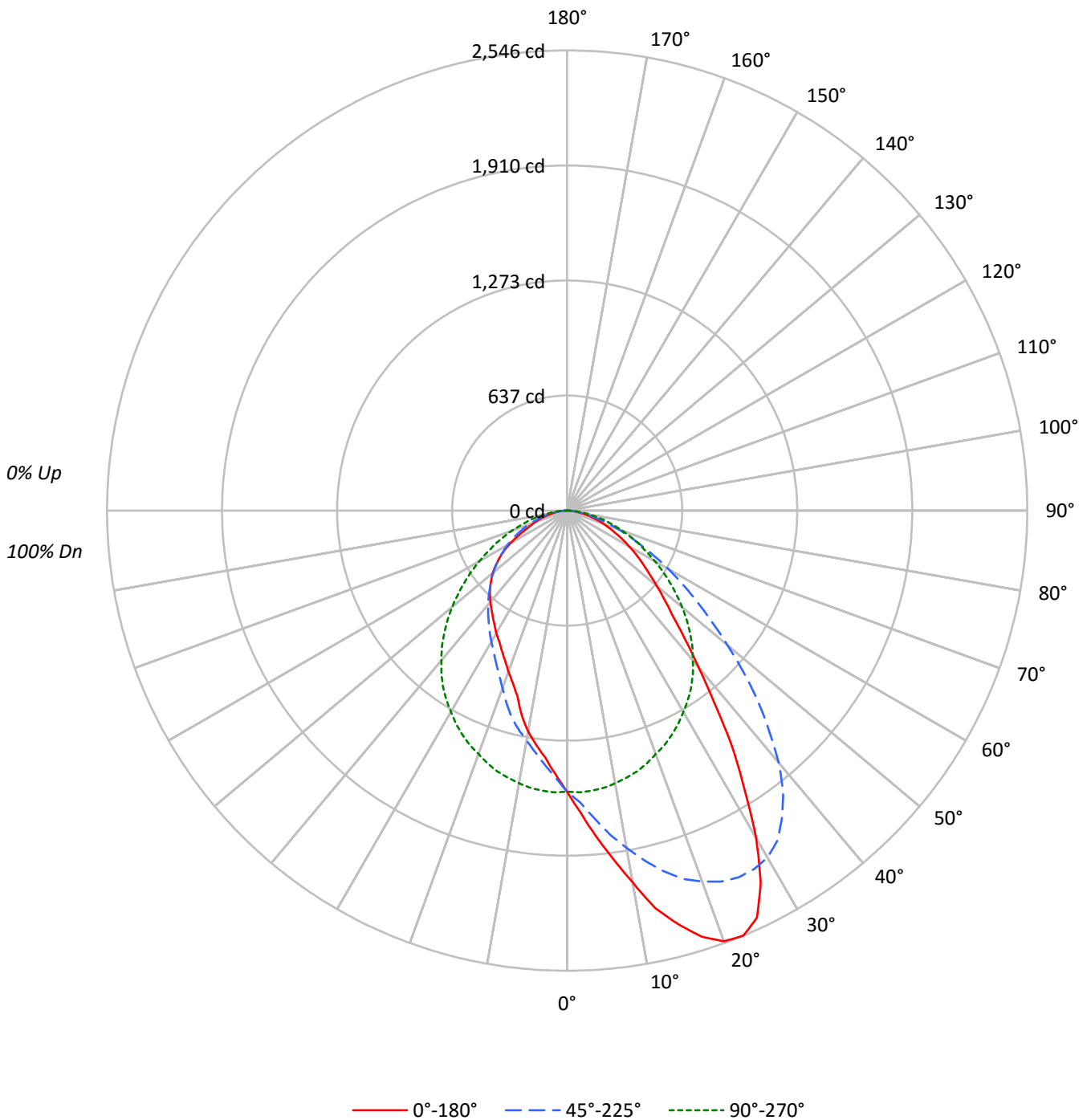
Lumens per Lamp: N/A  
Luminaire Lumens: 4013.4 lumens  
Efficiency: N/A  
Efficacy: 106.5 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (A<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	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28

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

	0°	90°	180°
0°	13822	13822	13822
5°	16101	13881	12255
10°	18856	13822	11205
15°	21789	13753	9785
20°	23989	13558	8970
25°	24374	13435	8386
30°	21456	13195	8043
35°	17216	12972	7780
40°	13097	12556	7658
45°	10399	12096	7566
50°	8926	11497	7436
55°	7883	10755	7076
60°	7061	9979	6480
65°	6215	9221	5452
70°	5541	8374	4909
75°	4825	7611	4369
80°	4090	6542	4029
85°	3580	5620	4080



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CATALOG NUMBER: S124RDR-H1195D935-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.9	3.8
10°-20°	457.6	11.4
20°-30°	714.1	17.8
30°-40°	796.3	19.8
40°-50°	715.8	17.8
50°-60°	565.6	14.1
60°-70°	375.7	9.4
70°-80°	188.3	4.7
80°-90°	49.1	1.2
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°	1322.6	33.0
0°-40°	2118.9	52.8
0°-60°	3400.4	84.7
0°-90°	4013.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4013.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1555	1555	1555	1555	1555	
5°	1804	1707	1556	1412	1373	181
15°	2368	2066	1494	1184	1063	673
25°	2485	2240	1370	931	855	1112
35°	1586	2073	1195	756	717	986
45°	827	1493	962	605	602	655
55°	509	877	694	458	457	458
65°	296	449	438	300	259	296
75°	140	178	222	148	127	150
85°	35	38	55	41	40	40
90°	0	0	0	0	0	



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CATALOG NUMBER: S124RDR-H1195D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1670.1	1664.0	1663.4	1655.6	1655.0	1647.1	1644.7	1638.0	1624.7	1614.4	1615.0
5°	1804.5	1799.7	1799.1	1791.2	1788.8	1779.1	1764.0	1745.8	1724.6	1707.0	1695.5
7.5°	1942.6	1951.1	1942.0	1942.0	1924.4	1912.9	1883.3	1868.1	1831.8	1806.4	1779.7
10°	2089.1	2097.0	2093.4	2086.1	2063.1	2039.5	2008.6	1978.9	1934.7	1894.8	1868.1
12.5°	2252.6	2229.0	2244.2	2221.8	2203.0	2165.4	2135.8	2076.4	2041.3	1983.2	1931.1
15°	2367.7	2358.6	2358.0	2342.9	2322.3	2281.1	2249.0	2187.2	2127.3	2066.1	2007.4
17.5°	2470.6	2471.8	2463.4	2439.1	2412.5	2372.5	2328.9	2273.8	2205.4	2137.6	2067.9
20°	2536.0	2536.6	2530.6	2517.9	2488.8	2452.5	2407.7	2335.6	2258.1	2183.0	2113.4
22.5°	2545.7	2547.5	2545.7	2537.9	2517.9	2488.2	2447.0	2385.9	2307.7	2221.8	2138.8
25°	2485.2	2491.2	2491.8	2502.7	2492.4	2480.9	2450.7	2399.2	2327.1	2239.9	2149.7
27.5°	2319.3	2336.2	2352.0	2371.3	2388.9	2404.6	2407.1	2379.8	2318.0	2236.9	2150.9
30°	2090.4	2110.3	2141.8	2162.4	2216.9	2251.4	2298.1	2308.4	2278.7	2216.3	2133.3
32.5°	1823.9	1845.1	1857.2	1925.0	2003.2	2059.5	2137.0	2183.0	2194.5	2164.8	2097.0
35°	1586.5	1590.2	1599.3	1676.2	1753.7	1839.1	1935.3	2015.3	2069.8	2072.8	2039.5
37.5°	1332.2	1336.4	1372.2	1430.9	1498.1	1592.0	1702.8	1816.6	1916.6	1962.6	1952.9
40°	1128.7	1127.5	1165.7	1216.5	1281.9	1379.4	1493.9	1618.0	1724.6	1820.9	1843.9
42.5°	964.0	968.3	1001.0	1030.6	1093.6	1162.0	1284.4	1413.4	1550.2	1655.6	1725.8
45°	827.2	838.1	860.5	888.3	935.6	998.5	1098.5	1226.8	1366.7	1493.3	1577.5
47.5°	732.7	735.7	747.2	781.8	813.3	864.1	949.5	1058.5	1182.6	1324.3	1435.1
50°	645.5	652.8	657.0	677.6	708.5	756.9	822.9	904.1	1027.0	1157.2	1295.9
52.5°	570.4	574.7	582.5	601.3	625.5	659.4	711.5	783.0	885.3	1005.8	1136.6
55°	508.7	509.3	517.1	530.5	549.2	575.3	624.9	676.4	767.2	876.8	995.5
57.5°	453.0	449.3	456.6	464.5	482.6	505.0	537.1	589.8	660.7	753.9	861.1
60°	397.2	400.3	399.7	408.7	418.4	440.8	468.1	502.6	560.7	646.1	737.0
62.5°	345.2	344.6	350.6	356.1	362.7	380.9	403.3	431.8	477.2	540.1	628.0
65°	295.5	296.7	301.6	305.8	313.1	324.6	341.5	364.5	400.9	449.3	523.2
67.5°	250.7	254.9	257.4	258.6	265.2	273.7	288.2	307.0	331.8	370.6	432.4
70°	213.2	214.4	215.6	219.8	222.8	227.7	238.6	248.9	271.3	299.7	344.6
72.5°	178.0	176.8	180.5	181.7	182.9	187.7	194.4	199.8	214.4	238.6	266.4
75°	140.5	141.1	141.7	143.5	148.4	149.0	152.0	158.0	168.3	178.0	196.8
77.5°	105.4	107.2	106.6	108.4	110.2	112.0	113.2	118.7	126.0	133.8	142.9
80°	79.9	79.9	79.9	81.1	79.9	84.2	84.2	86.0	87.8	91.4	98.1
82.5°	54.5	55.7	56.3	56.9	57.5	57.5	58.1	59.3	61.8	63.0	64.8
85°	35.1	33.9	34.5	34.5	34.5	34.5	35.7	36.9	36.9	37.5	39.4
87.5°	15.7	15.7	15.7	15.7	15.1	15.7	16.3	16.3	17.0	17.0	18.2
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: P243620

CATALOG NUMBER: S124RDR-H1195D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1611.4	1609.5	1600.5	1590.8	1581.7	1572.6	1569.6	1560.5	1549.6	1539.9	1529.0
5°	1683.4	1668.9	1648.9	1628.3	1607.1	1587.7	1572.6	1555.7	1536.3	1513.3	1495.1
7.5°	1756.1	1729.4	1696.7	1666.5	1630.1	1601.1	1572.0	1547.8	1519.9	1487.2	1462.4
10°	1826.9	1782.7	1742.8	1694.9	1648.9	1608.9	1572.0	1531.4	1494.5	1459.4	1424.9
12.5°	1883.3	1839.1	1781.5	1722.8	1663.4	1611.4	1561.7	1513.9	1467.8	1425.5	1387.3
15°	1947.4	1883.9	1813.0	1748.2	1667.1	1602.9	1546.0	1494.5	1441.8	1390.3	1348.6
17.5°	1994.7	1919.6	1831.8	1757.3	1679.2	1599.3	1530.8	1466.0	1405.5	1351.6	1308.6
20°	2031.0	1942.0	1854.2	1759.7	1666.5	1584.7	1507.8	1433.3	1372.2	1313.4	1268.0
22.5°	2046.8	1952.9	1855.4	1753.1	1653.8	1561.1	1481.2	1404.3	1335.2	1274.7	1222.0
25°	2053.4	1950.5	1849.3	1733.1	1632.6	1538.1	1449.1	1369.8	1298.9	1230.5	1178.4
27.5°	2048.0	1937.8	1821.5	1711.9	1598.0	1505.4	1410.9	1330.4	1256.5	1190.5	1132.4
30°	2033.4	1908.7	1793.0	1670.1	1560.5	1463.0	1371.0	1285.6	1211.1	1143.9	1086.4
32.5°	1995.9	1876.0	1744.6	1624.7	1506.6	1410.3	1326.8	1242.6	1166.9	1096.6	1040.9
35°	1949.3	1831.8	1694.3	1569.0	1452.1	1354.6	1270.4	1195.4	1120.9	1046.4	989.5
37.5°	1890.5	1771.2	1638.6	1503.6	1389.1	1294.7	1217.8	1142.1	1068.2	999.8	936.2
40°	1811.2	1702.2	1569.0	1433.3	1318.3	1227.4	1151.8	1082.1	1016.7	949.5	881.1
42.5°	1712.5	1629.5	1492.1	1358.2	1245.6	1155.4	1088.2	1025.8	962.8	893.8	832.0
45°	1607.1	1536.3	1411.5	1276.5	1169.3	1081.5	1017.3	962.2	902.9	841.7	776.9
47.5°	1488.4	1435.8	1328.0	1194.1	1081.5	1006.4	947.1	896.8	842.9	788.4	725.4
50°	1354.6	1322.5	1230.5	1108.8	1001.6	925.3	876.2	831.4	785.4	730.9	677.0
52.5°	1220.8	1214.7	1128.7	1021.6	920.4	849.6	801.7	760.6	723.0	671.6	626.1
55°	1080.3	1098.5	1027.0	928.3	838.1	769.7	727.3	694.0	661.3	617.7	574.1
57.5°	955.6	976.1	927.1	836.3	752.1	694.0	657.6	627.3	598.9	558.9	529.9
60°	817.5	855.0	829.0	746.0	671.6	619.5	585.6	561.3	537.7	503.2	477.8
62.5°	708.5	734.5	719.4	657.6	591.6	549.2	519.0	496.5	477.8	451.1	426.3
65°	591.6	624.3	616.4	575.9	517.7	479.0	456.0	438.4	419.0	397.8	377.3
67.5°	486.3	520.2	518.3	490.5	447.5	415.4	393.6	380.9	365.1	344.6	331.8
70°	391.2	422.7	423.9	410.0	379.7	349.4	333.7	322.2	310.0	294.9	285.8
72.5°	304.0	332.4	337.3	330.6	311.3	291.3	277.3	269.5	259.2	246.5	238.6
75°	227.1	247.7	259.2	256.1	248.3	235.0	227.1	221.6	211.3	202.3	195.6
77.5°	161.7	178.0	189.5	194.4	190.7	185.3	178.0	173.8	162.9	158.7	155.0
80°	108.4	122.9	133.2	136.2	138.1	136.9	130.2	127.8	122.3	120.5	116.9
82.5°	66.6	74.5	81.7	89.6	93.3	93.3	89.6	90.2	85.4	83.0	81.7
85°	40.6	42.4	43.6	49.7	54.5	56.3	54.5	55.1	53.3	51.5	49.7
87.5°	18.8	18.8	19.4	20.6	21.8	25.4	26.6	28.5	26.0	26.0	21.8
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: P243620

CATALOG NUMBER: S124RDR-H1195D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1522.3	1514.5	1508.4	1498.7	1490.9	1478.1	1473.9	1473.9	1476.3	1473.3	1476.3
5°	1482.4	1467.8	1452.1	1438.2	1423.0	1412.1	1401.2	1398.8	1397.6	1390.3	1390.9
7.5°	1442.4	1423.0	1403.1	1384.9	1366.1	1349.2	1337.7	1332.8	1328.6	1323.7	1318.3
10°	1399.4	1377.0	1353.4	1332.8	1314.6	1291.6	1280.1	1276.5	1264.4	1262.0	1253.5
12.5°	1354.0	1331.0	1307.4	1280.7	1263.2	1240.8	1223.8	1215.9	1204.4	1196.0	1183.2
15°	1318.3	1289.2	1257.7	1231.7	1208.7	1183.8	1160.8	1145.7	1130.6	1106.9	1095.4
17.5°	1274.1	1240.8	1213.5	1185.7	1152.4	1116.0	1088.8	1066.4	1050.0	1030.6	1019.1
20°	1226.2	1195.4	1161.4	1122.1	1087.0	1045.8	1021.0	1002.2	989.5	978.0	971.9
22.5°	1183.8	1148.1	1101.5	1063.9	1014.9	982.2	962.2	950.1	938.0	925.9	919.8
25°	1137.8	1096.0	1039.1	993.1	956.2	930.7	911.4	899.8	887.1	879.9	870.8
27.5°	1092.4	1038.5	981.6	939.8	910.7	881.1	864.7	855.6	846.0	835.7	828.4
30°	1037.3	976.1	928.9	890.8	861.7	836.9	824.8	811.4	803.0	796.9	792.7
32.5°	979.8	921.0	878.0	845.3	816.9	798.1	783.0	774.5	767.2	760.6	755.7
35°	925.9	869.0	832.6	801.1	777.5	756.3	744.8	737.0	730.9	725.4	723.0
37.5°	872.6	824.2	784.8	760.0	735.1	718.2	707.3	700.0	696.4	690.9	691.5
40°	819.9	776.3	744.8	716.4	693.4	678.8	670.3	667.3	661.9	660.0	661.9
42.5°	772.7	732.7	702.4	675.8	655.8	641.9	635.2	631.0	629.2	628.6	629.2
45°	726.7	689.1	660.0	638.2	617.7	604.9	599.5	596.5	594.6	597.7	598.3
47.5°	680.6	646.7	620.7	595.3	578.3	569.2	563.8	561.3	563.2	564.4	568.6
50°	635.2	603.7	576.5	554.1	540.8	532.3	530.5	526.2	529.2	531.1	534.1
52.5°	589.2	560.7	536.5	515.3	501.4	495.9	491.7	489.9	494.1	494.1	497.2
55°	542.6	517.7	495.3	476.0	465.1	458.4	455.4	453.0	455.4	456.0	455.4
57.5°	499.0	475.4	451.7	435.4	426.3	419.0	416.0	414.8	414.2	416.6	416.0
60°	453.0	430.5	411.8	394.8	385.7	381.5	374.8	376.0	376.0	376.0	370.0
62.5°	406.9	384.5	368.2	356.7	345.8	338.5	337.3	335.5	331.8	331.2	323.4
65°	359.7	342.7	328.8	317.3	306.4	300.4	298.5	293.1	288.8	281.0	275.5
67.5°	316.1	304.0	287.6	277.9	268.9	261.6	254.9	250.7	242.2	234.3	229.5
70°	272.5	259.8	248.9	238.6	229.5	222.8	215.0	207.1	201.6	196.8	193.2
72.5°	228.9	218.0	208.9	199.2	189.5	182.9	176.8	170.8	168.3	165.9	164.1
75°	188.3	178.0	169.6	161.7	156.2	148.4	145.3	142.9	140.5	137.5	133.8
77.5°	149.0	141.1	134.4	127.8	122.9	118.7	116.3	109.0	102.9	101.7	100.5
80°	110.8	104.8	100.5	95.7	90.2	84.2	82.4	79.9	78.7	78.7	79.3
82.5°	77.5	73.9	69.0	64.8	63.0	60.6	60.6	59.9	59.3	59.9	59.9
85°	47.2	42.4	41.2	40.6	41.2	41.2	41.2	41.2	40.6	41.2	40.0
87.5°	20.6	22.4	23.0	21.2	21.8	20.6	21.2	21.2	21.2	21.8	21.2
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: P243620

CATALOG NUMBER: S124RDR-H1195D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1555.0	1555.0	1555.0	1555.0
2.5°	1472.7	1472.7	1466.6	1461.8
5°	1389.7	1381.9	1380.7	1373.4
7.5°	1312.2	1311.0	1308.0	1308.0
10°	1250.5	1246.2	1242.0	1241.4
12.5°	1163.3	1169.3	1162.0	1160.2
15°	1087.0	1082.1	1076.1	1063.3
17.5°	1016.1	1007.0	1004.6	999.2
20°	960.4	953.7	951.3	948.3
22.5°	907.7	906.5	899.2	897.4
25°	869.0	862.9	858.1	855.0
27.5°	826.6	822.3	819.9	815.1
30°	787.8	786.6	783.6	783.6
32.5°	752.7	749.1	749.1	748.5
35°	720.6	721.8	718.2	717.0
37.5°	690.3	688.5	689.1	687.9
40°	660.7	659.4	659.4	660.0
42.5°	630.4	631.0	632.2	632.2
45°	600.1	600.7	601.9	601.9
47.5°	571.6	570.4	571.6	570.4
50°	535.3	538.9	538.3	537.7
52.5°	498.4	497.2	499.6	499.0
55°	458.4	456.6	459.0	456.6
57.5°	413.6	414.2	414.2	413.0
60°	368.8	367.0	364.5	364.5
62.5°	316.7	311.3	307.6	310.0
65°	266.4	262.2	261.0	259.2
67.5°	226.5	221.6	219.8	219.2
70°	192.0	189.5	188.9	188.9
72.5°	162.9	162.9	161.1	159.9
75°	132.6	130.2	127.2	127.2
77.5°	99.3	98.7	98.1	98.1
80°	77.5	77.5	78.1	78.7
82.5°	58.1	58.7	59.3	59.3
85°	39.4	39.4	40.0	40.0
87.5°	21.2	21.2	21.2	20.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)