

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: P242735

Luminaire Tested: **S124RDR-S1195D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242735  
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-S1195D927-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3683.2 lumens  
Efficiency: N/A  
Efficacy: 89.6 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

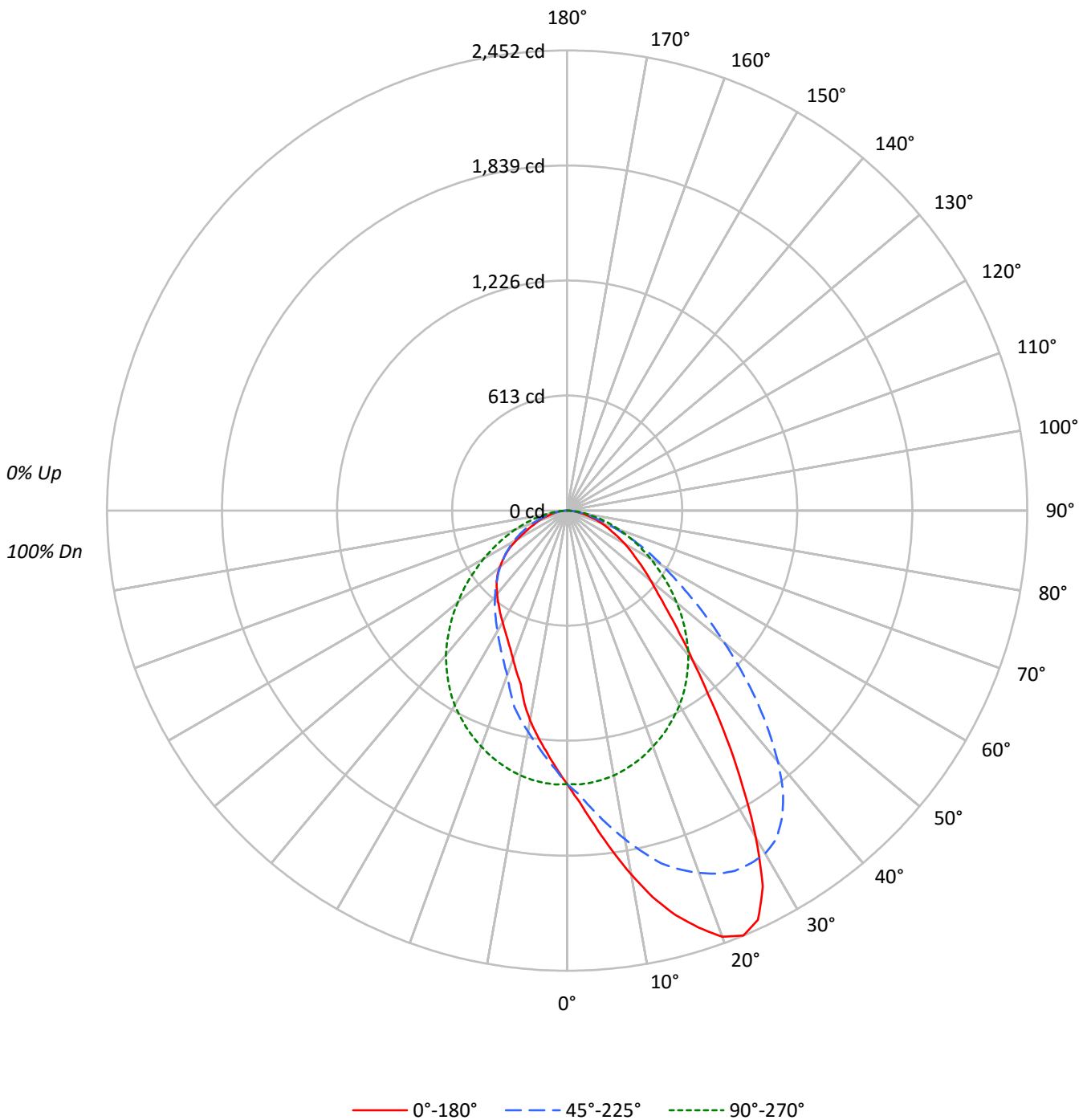
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	12951	12951	12951
5°	15023	12991	11482
10°	17771	12934	10247
15°	20529	12814	8806
20°	22857	12650	7963
25°	23595	12488	7393
30°	20655	12292	7049
35°	16078	12002	6842
40°	12057	11669	6730
45°	9520	11135	6671
50°	8037	10521	6479
55°	7005	9844	6132
60°	6304	9141	5428
65°	5557	8384	4667
70°	5003	7597	4210
75°	4193	6735	3589
80°	3547	5738	3363
85°	2998	4488	2998



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.1	3.8
10°-20°	426.0	11.6
20°-30°	667.4	18.1
30°-40°	741.1	20.1
40°-50°	656.7	17.8
50°-60°	511.8	13.9
60°-70°	334.8	9.1
70°-80°	164.3	4.5
80°-90°	40.0	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°	1234.5	33.5
0°-40°	1975.6	53.6
0°-60°	3144.2	85.4
0°-90°	3683.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3683.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1457	1457	1457	1457	1457	
5°	1684	1603	1456	1317	1287	170
15°	2231	1948	1392	1085	957	635
25°	2406	2118	1273	830	754	1074
35°	1482	1998	1106	667	630	927
45°	757	1424	886	530	531	597
55°	452	805	635	400	396	411
65°	264	414	399	259	222	265
75°	122	157	196	126	104	134
85°	29	32	44	31	29	34
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°	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0
2.5°	1556.8	1562.1	1556.8	1556.2	1550.4	1548.6	1546.3	1538.6	1524.5	1516.3	1518.1
5°	1683.6	1698.3	1690.1	1688.9	1676.0	1663.1	1654.9	1636.1	1616.1	1602.6	1591.5
7.5°	1824.5	1833.3	1827.5	1821.0	1798.7	1791.6	1772.3	1750.0	1716.5	1691.3	1668.4
10°	1968.9	1976.0	1973.6	1958.4	1943.1	1912.0	1894.4	1859.7	1814.5	1778.7	1745.3
12.5°	2111.0	2118.6	2093.4	2098.1	2065.8	2042.9	2012.4	1966.6	1912.6	1863.9	1819.8
15°	2230.8	2221.4	2221.4	2209.6	2177.3	2143.3	2114.5	2068.7	2003.0	1947.8	1889.7
17.5°	2329.4	2333.5	2328.8	2298.8	2275.4	2240.7	2189.1	2136.8	2079.9	2005.9	1948.4
20°	2416.3	2416.3	2411.0	2392.2	2359.3	2321.7	2264.8	2206.7	2129.2	2054.6	1987.7
22.5°	2451.5	2453.8	2447.4	2432.7	2403.9	2367.5	2321.2	2261.9	2181.4	2095.1	2008.3
25°	2405.7	2416.8	2418.0	2413.9	2405.1	2382.8	2341.1	2280.6	2209.0	2118.0	2028.8
27.5°	2257.8	2272.4	2278.3	2291.2	2315.3	2324.1	2318.8	2278.3	2209.0	2119.2	2030.6
30°	2012.4	2024.1	2062.3	2112.2	2150.9	2186.1	2216.7	2224.9	2189.7	2111.0	2016.5
32.5°	1740.0	1757.0	1795.2	1849.8	1920.8	1986.5	2064.6	2106.3	2113.9	2074.6	1988.9
35°	1481.7	1493.4	1528.7	1585.0	1662.5	1751.1	1859.7	1944.3	2001.8	1997.7	1944.3
37.5°	1234.0	1250.4	1286.2	1332.6	1408.9	1522.2	1624.9	1738.2	1841.5	1892.0	1865.0
40°	1039.1	1039.6	1074.3	1122.4	1192.9	1288.6	1403.0	1532.2	1650.8	1747.6	1766.4
42.5°	885.3	885.3	905.2	958.0	1003.8	1092.5	1200.5	1328.5	1472.3	1587.9	1645.5
45°	757.3	762.6	781.3	812.5	852.4	928.7	1016.2	1135.3	1290.9	1423.6	1506.3
47.5°	656.3	665.7	676.9	705.0	737.9	791.3	865.9	977.4	1106.6	1253.9	1368.4
50°	581.2	582.3	597.6	611.7	639.3	679.8	743.2	832.4	948.7	1089.0	1219.9
52.5°	516.6	516.0	523.6	542.4	563.6	592.9	641.0	720.3	820.1	942.2	1078.4
55°	452.0	455.0	462.0	476.1	493.1	515.4	555.9	617.0	698.0	805.4	928.1
57.5°	402.7	404.5	410.9	416.2	432.6	449.1	482.0	526.0	597.0	686.8	807.2
60°	354.6	355.2	356.9	365.7	378.1	393.3	413.9	449.7	507.2	587.6	678.0
62.5°	307.6	308.8	311.7	317.6	326.4	335.8	357.5	384.5	429.7	495.5	574.7
65°	264.2	264.8	268.9	271.2	278.8	288.2	304.1	323.5	356.3	413.9	475.5
67.5°	227.8	227.8	227.8	231.3	237.2	243.6	254.2	270.6	297.0	334.0	391.6
70°	192.5	192.5	193.7	195.5	198.4	203.7	209.0	220.7	238.9	267.7	309.4
72.5°	159.7	160.3	161.4	161.4	162.6	166.7	170.2	176.7	189.0	209.0	240.7
75°	122.1	123.9	126.8	129.1	132.1	131.5	135.6	140.3	144.4	157.3	176.7
77.5°	96.3	95.1	95.1	97.4	98.0	98.6	101.6	105.7	109.2	116.2	123.3
80°	69.3	69.3	71.0	71.6	71.0	71.6	74.6	76.3	77.5	79.8	86.3
82.5°	48.1	49.3	48.1	48.7	49.3	49.9	52.2	52.2	53.4	54.0	55.8
85°	29.4	29.9	30.5	29.4	29.4	29.4	30.5	31.1	32.3	31.7	32.9
87.5°	12.9	12.3	12.9	12.9	13.5	12.9	13.5	14.7	13.5	14.1	14.1
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°	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0
2.5°	1512.2	1504.0	1499.9	1490.5	1479.3	1473.5	1468.2	1460.6	1450.6	1440.0	1432.4
5°	1577.4	1563.3	1545.7	1524.5	1505.8	1487.6	1471.7	1455.9	1437.7	1418.9	1400.1
7.5°	1642.0	1616.7	1589.7	1557.4	1526.3	1497.5	1471.7	1446.5	1417.7	1391.9	1367.8
10°	1710.0	1672.5	1630.8	1586.8	1542.7	1504.6	1467.0	1433.0	1395.4	1361.9	1333.8
12.5°	1765.2	1719.4	1667.2	1609.7	1554.5	1506.3	1461.7	1414.8	1370.7	1333.8	1293.8
15°	1827.5	1767.0	1699.5	1633.7	1565.0	1502.2	1444.1	1392.5	1343.7	1292.7	1256.9
17.5°	1870.3	1800.5	1720.6	1644.3	1565.6	1492.8	1427.1	1367.2	1311.4	1260.4	1218.1
20°	1907.9	1828.6	1737.6	1647.8	1556.8	1477.6	1405.4	1337.3	1279.2	1222.8	1178.8
22.5°	1929.0	1839.2	1737.6	1642.5	1547.4	1460.0	1379.0	1307.3	1242.8	1186.4	1136.5
25°	1930.2	1836.3	1734.7	1626.7	1523.4	1432.4	1350.2	1273.3	1202.8	1146.5	1094.8
27.5°	1925.5	1816.9	1714.7	1605.0	1498.7	1401.9	1316.7	1235.1	1165.3	1105.4	1052.6
30°	1911.4	1792.8	1681.3	1566.2	1458.2	1366.0	1275.1	1197.6	1124.2	1061.4	1007.9
32.5°	1880.9	1763.5	1641.4	1522.8	1413.0	1317.3	1232.2	1154.1	1082.5	1017.9	960.4
35°	1838.6	1719.4	1589.1	1468.2	1360.8	1262.1	1181.1	1106.0	1037.3	968.6	908.7
37.5°	1789.9	1665.4	1536.9	1404.2	1297.4	1203.4	1127.7	1055.5	988.6	925.8	859.4
40°	1714.7	1603.8	1469.9	1338.5	1228.1	1138.3	1069.6	1005.6	938.1	875.9	809.5
42.5°	1623.8	1533.3	1397.7	1265.7	1157.1	1071.3	1008.5	946.3	886.4	826.6	756.7
45°	1520.4	1448.8	1322.0	1195.2	1085.4	999.7	941.0	885.8	831.8	774.3	709.1
47.5°	1405.4	1352.5	1242.2	1109.5	1006.8	928.1	871.8	826.0	778.4	720.3	661.6
50°	1284.4	1253.3	1147.7	1029.1	932.2	861.2	803.1	760.8	722.6	667.5	616.4
52.5°	1155.3	1142.4	1057.3	945.1	852.4	783.1	735.6	698.6	659.8	616.4	569.4
55°	1023.8	1032.6	956.9	858.8	770.8	712.1	666.9	635.2	602.3	563.6	526.6
57.5°	887.0	920.5	864.1	775.5	690.4	635.2	600.5	572.4	544.8	511.9	478.4
60°	766.7	793.7	764.9	689.2	617.0	566.5	534.8	514.2	486.7	457.3	433.2
62.5°	649.3	678.6	664.5	607.0	541.3	499.6	472.6	453.8	435.0	410.3	385.1
65°	554.8	573.5	565.3	523.1	475.5	438.5	412.7	398.6	379.8	361.0	338.7
67.5°	443.8	480.8	474.9	451.4	405.6	376.3	358.1	345.2	327.6	313.5	297.6
70°	349.3	382.7	382.2	364.0	341.7	314.7	302.9	292.3	277.1	263.6	251.3
72.5°	270.0	300.0	305.8	292.9	279.4	260.6	249.5	243.0	228.4	220.1	210.7
75°	200.2	222.5	228.4	228.4	221.3	210.7	200.8	196.1	185.5	177.3	171.4
77.5°	140.9	156.2	165.0	166.7	167.3	163.2	153.8	150.3	142.1	139.1	132.7
80°	92.8	102.1	112.7	116.2	119.2	118.0	114.5	112.1	104.5	101.6	99.2
82.5°	56.9	61.1	69.3	78.1	76.3	80.4	77.5	75.7	70.4	69.9	67.5
85°	33.5	34.0	35.2	40.5	43.4	44.6	45.2	44.0	42.3	42.3	38.2
87.5°	14.1	13.5	14.7	14.7	15.3	17.6	19.4	20.0	18.2	16.4	14.7
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°	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0	1457.0
2.5°	1424.2	1418.3	1410.7	1401.9	1391.3	1381.9	1377.8	1381.3	1383.1	1378.4	1377.8
5°	1387.2	1372.5	1360.8	1343.1	1329.1	1317.3	1309.1	1305.6	1306.8	1297.4	1295.0
7.5°	1346.1	1330.2	1310.9	1290.9	1272.1	1255.7	1246.9	1242.8	1232.8	1228.7	1222.2
10°	1306.8	1283.3	1264.5	1239.8	1217.5	1197.0	1187.0	1178.8	1168.8	1164.1	1154.1
12.5°	1266.2	1238.1	1216.9	1191.1	1168.2	1142.4	1133.0	1116.0	1098.9	1087.8	1074.3
15°	1228.7	1195.8	1170.6	1140.0	1113.0	1084.8	1059.6	1031.4	1020.9	998.6	985.6
17.5°	1184.1	1150.0	1121.8	1082.5	1042.0	1007.9	979.8	950.4	934.6	919.3	912.8
20°	1140.0	1109.5	1066.1	1018.5	972.1	933.4	911.7	894.1	876.5	866.5	859.4
22.5°	1098.4	1057.3	1005.0	952.8	906.4	878.2	860.6	842.4	828.9	819.5	809.5
25°	1050.8	999.7	946.3	887.6	855.9	829.5	809.5	794.9	786.0	773.7	769.0
27.5°	1004.4	942.8	882.3	842.4	809.5	784.3	766.1	755.5	743.8	735.6	729.1
30°	949.2	886.4	833.6	796.0	762.6	742.6	728.5	715.6	706.8	700.3	695.6
32.5°	894.6	831.8	789.6	748.5	723.8	704.4	689.2	680.4	673.9	665.1	662.8
35°	842.4	786.6	747.9	711.5	684.5	666.9	655.1	645.2	639.3	636.9	635.2
37.5°	791.3	745.0	702.1	672.7	647.5	634.0	618.7	614.0	609.9	604.7	607.0
40°	743.2	700.3	663.4	631.7	612.3	597.0	588.8	582.9	579.4	579.4	579.4
42.5°	701.5	659.8	624.0	596.4	577.1	564.7	555.3	550.6	550.1	549.5	553.0
45°	658.1	619.3	582.9	559.4	543.0	530.1	524.8	520.7	520.7	523.1	523.6
47.5°	614.6	578.2	548.9	521.9	506.6	498.4	493.7	491.4	491.4	494.3	496.6
50°	575.3	539.5	510.7	487.2	473.2	465.5	461.4	460.2	461.4	461.4	465.5
52.5°	532.4	501.3	473.2	454.4	437.9	430.9	429.1	427.4	428.0	430.3	431.5
55°	490.8	462.0	435.0	416.2	404.5	399.8	394.5	395.1	393.9	395.1	395.1
57.5°	448.5	423.3	396.8	381.6	371.6	364.6	358.7	360.4	358.7	358.7	358.1
60°	408.0	379.8	359.9	346.4	334.6	328.7	323.5	324.6	322.9	321.7	319.3
62.5°	364.0	341.7	322.9	310.0	301.2	294.1	288.8	287.1	282.4	277.7	271.8
65°	321.7	302.3	285.3	273.0	264.2	258.9	254.8	251.3	242.4	233.1	228.4
67.5°	280.0	265.9	249.5	238.9	231.9	224.8	217.2	210.7	201.9	196.1	193.1
70°	240.1	226.6	213.1	203.1	195.5	189.0	180.2	176.1	170.2	167.9	165.0
72.5°	201.9	189.6	177.3	168.5	160.3	155.6	149.1	145.0	143.2	142.7	139.7
75°	163.2	153.2	143.8	135.6	129.1	125.6	122.7	119.8	118.6	113.3	110.4
77.5°	125.6	118.6	112.7	106.3	102.1	99.8	93.3	89.2	86.9	83.9	83.4
80°	92.8	88.1	82.2	78.7	72.2	69.9	67.5	66.9	66.3	65.7	65.2
82.5°	64.0	59.3	53.4	51.7	51.1	49.9	48.7	48.1	47.6	48.1	48.1
85°	35.2	32.9	32.9	32.3	31.7	31.1	30.5	30.5	29.9	30.5	29.9
87.5°	14.7	14.1	14.1	12.9	13.5	13.5	12.9	12.9	13.5	12.3	12.3
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: P242735

CATALOG NUMBER: S124RDR-S1195D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1457.0	1457.0	1457.0	1457.0
2.5°	1374.3	1375.4	1371.3	1370.2
5°	1290.3	1289.1	1286.2	1286.8
7.5°	1217.5	1213.4	1216.3	1211.6
10°	1151.8	1145.3	1140.0	1135.3
12.5°	1062.0	1056.7	1049.0	1052.0
15°	978.0	969.2	955.1	956.9
17.5°	902.9	904.0	895.8	898.2
20°	847.1	843.0	843.6	841.8
22.5°	808.4	803.1	797.8	793.7
25°	763.7	760.2	754.9	753.8
27.5°	724.4	723.8	721.5	718.5
30°	690.9	689.8	688.6	686.8
32.5°	661.0	660.4	659.2	659.8
35°	632.8	632.2	631.1	630.5
37.5°	606.4	608.2	607.0	607.0
40°	578.8	579.4	580.6	580.0
42.5°	555.9	555.9	557.7	555.3
45°	527.7	531.3	530.7	530.7
47.5°	497.8	501.9	502.5	502.5
50°	468.5	467.3	469.0	468.5
52.5°	432.6	433.2	432.6	432.1
55°	395.7	396.3	395.1	395.7
57.5°	356.3	354.0	355.7	354.6
60°	313.5	308.8	307.6	305.3
62.5°	265.3	262.4	257.7	260.6
65°	223.7	221.3	219.6	221.9
67.5°	190.2	189.0	189.0	187.9
70°	165.0	163.2	163.2	162.0
72.5°	139.1	137.4	138.0	137.4
75°	106.8	103.9	103.9	104.5
77.5°	83.4	82.8	83.9	82.2
80°	65.2	64.6	64.0	65.7
82.5°	47.0	47.0	47.0	49.3
85°	30.5	29.4	30.5	29.4
87.5°	13.5	12.9	12.3	12.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)