

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: P243605

Luminaire Tested: **S124RDR-H1195D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243605
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-H1195D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4661.4 lumens
Efficiency: N/A
Efficacy: 123.6 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

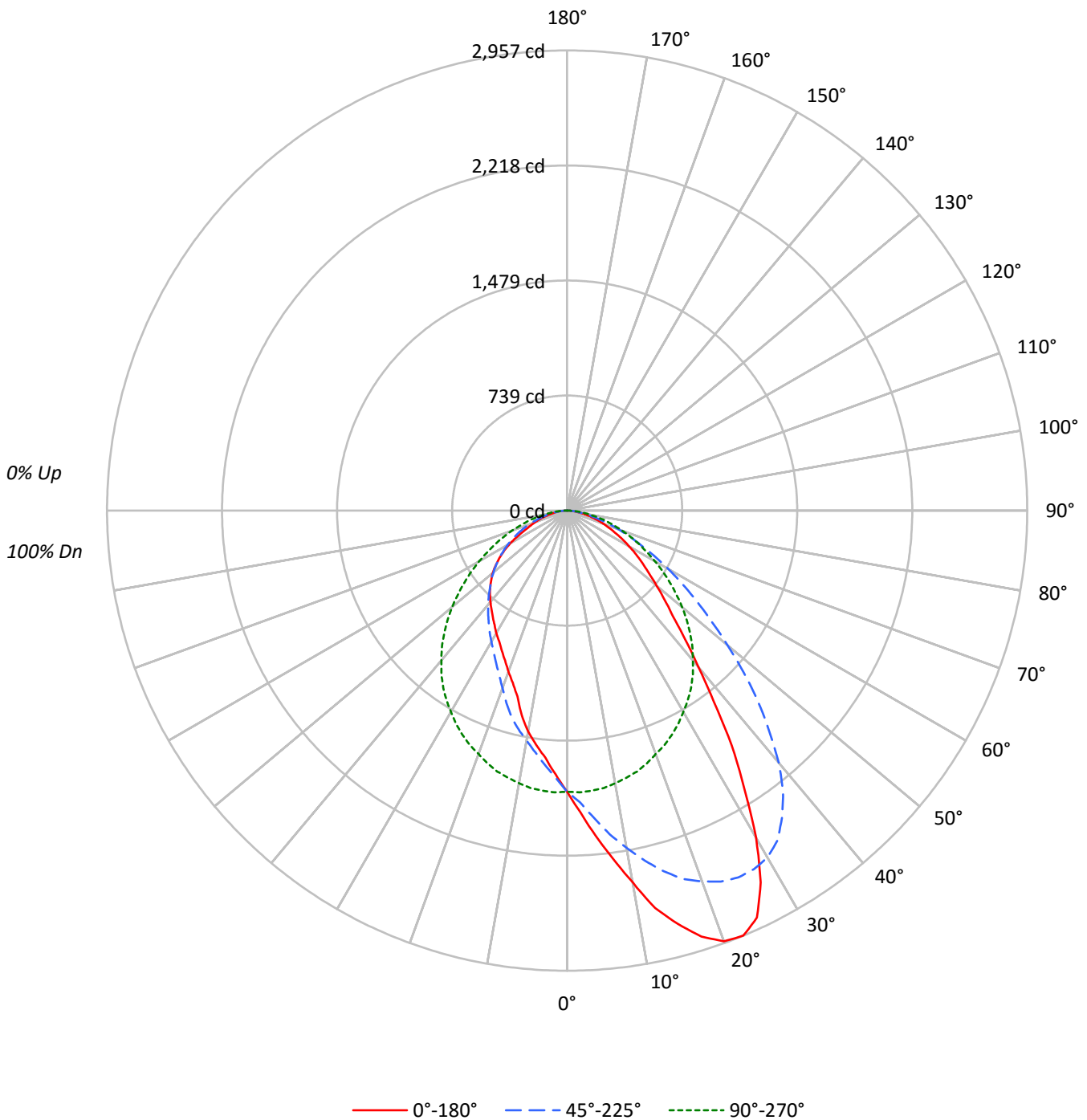
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	16054	16054	16054
5°	18701	16122	14233
10°	21901	16055	13014
15°	25306	15974	11365
20°	27863	15747	10419
25°	28309	15603	9740
30°	24919	15325	9341
35°	19996	15065	9036
40°	15212	14583	8895
45°	12077	14049	8788
50°	10367	13353	8636
55°	9156	12491	8218
60°	8203	11591	7527
65°	7219	10710	6331
70°	6435	9725	5702
75°	5605	8840	5073
80°	4750	7596	4679
85°	4161	6527	4732



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.2	3.8
10°-20°	531.5	11.4
20°-30°	829.4	17.8
30°-40°	924.9	19.8
40°-50°	831.4	17.8
50°-60°	656.9	14.1
60°-70°	436.3	9.4
70°-80°	218.7	4.7
80°-90°	57.0	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°	1536.1	33.0
0°-40°	2461.0	52.8
0°-60°	3949.3	84.7
0°-90°	4661.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4661.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1806	1806	1806	1806	1806	
5°	2096	1983	1807	1640	1595	210
15°	2750	2400	1736	1375	1235	781
25°	2886	2602	1591	1081	993	1292
35°	1843	2407	1388	878	833	1145
45°	961	1734	1118	703	699	761
55°	591	1018	806	532	530	533
65°	343	522	509	349	301	344
75°	163	207	257	172	148	175
85°	41	44	64	48	46	46
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°	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1
2.5°	1939.7	1932.7	1932.0	1922.8	1922.1	1913.0	1910.2	1902.4	1887.0	1875.0	1875.7
5°	2095.9	2090.2	2089.5	2080.4	2077.6	2066.3	2048.7	2027.6	2003.0	1982.6	1969.3
7.5°	2256.2	2266.1	2255.5	2255.5	2235.1	2221.8	2187.3	2169.7	2127.5	2098.0	2067.0
10°	2426.4	2435.6	2431.3	2422.9	2396.2	2368.7	2332.9	2298.4	2247.1	2200.7	2169.7
12.5°	2616.3	2588.9	2606.5	2580.4	2558.6	2515.0	2480.6	2411.6	2370.9	2303.3	2242.9
15°	2749.9	2739.4	2738.7	2721.1	2697.2	2649.4	2612.1	2540.3	2470.7	2399.7	2331.5
17.5°	2869.5	2870.9	2861.1	2832.9	2802.0	2755.6	2704.9	2640.9	2561.4	2482.7	2401.8
20°	2945.5	2946.2	2939.1	2924.4	2890.6	2848.4	2796.4	2712.7	2622.6	2535.4	2454.5
22.5°	2956.7	2958.8	2956.7	2947.6	2924.4	2889.9	2842.1	2771.0	2680.3	2580.4	2484.1
25°	2886.4	2893.4	2894.1	2906.8	2894.8	2881.5	2846.3	2786.5	2702.8	2601.5	2496.7
27.5°	2693.7	2713.4	2731.6	2754.2	2774.6	2792.8	2795.7	2764.0	2692.3	2598.0	2498.2
30°	2427.8	2451.0	2487.6	2511.5	2574.8	2614.9	2669.1	2681.0	2646.5	2574.1	2477.8
32.5°	2118.4	2143.0	2157.0	2235.8	2326.5	2392.0	2482.0	2535.4	2548.8	2514.3	2435.6
35°	1842.7	1846.9	1857.4	1946.8	2036.8	2135.9	2247.8	2340.6	2403.9	2407.4	2368.7
37.5°	1547.3	1552.2	1593.7	1661.9	1740.0	1849.0	1977.7	2109.9	2226.0	2279.4	2268.2
40°	1311.0	1309.6	1353.9	1412.9	1488.9	1602.1	1735.1	1879.2	2003.0	2114.8	2141.6
42.5°	1119.7	1124.6	1162.6	1197.0	1270.2	1349.6	1491.7	1641.5	1800.5	1922.8	2004.4
45°	960.7	973.4	999.4	1031.8	1086.6	1159.8	1275.8	1424.9	1587.4	1734.4	1832.1
47.5°	851.0	854.5	867.9	908.0	944.5	1003.6	1102.8	1229.4	1373.6	1538.1	1666.8
50°	749.7	758.2	763.1	787.0	822.9	879.1	955.8	1050.0	1192.8	1344.0	1505.1
52.5°	662.5	667.4	676.6	698.4	726.5	765.9	826.4	909.4	1028.2	1168.2	1320.1
55°	590.8	591.5	600.6	616.1	637.9	668.1	725.8	785.6	891.1	1018.4	1156.2
57.5°	526.1	521.9	530.3	539.4	560.5	586.6	623.8	685.0	767.3	875.6	1000.1
60°	461.4	464.9	464.2	474.7	486.0	512.0	543.7	583.7	651.3	750.4	855.9
62.5°	400.9	400.2	407.2	413.5	421.3	442.4	468.4	501.5	554.2	627.4	729.3
65°	343.2	344.6	350.2	355.2	363.6	377.0	396.7	423.4	465.6	521.9	607.7
67.5°	291.2	296.1	298.9	300.3	308.0	317.9	334.8	356.6	385.4	430.4	502.2
70°	247.6	249.0	250.4	255.3	258.8	264.4	277.1	289.1	315.1	348.1	400.2
72.5°	206.8	205.4	209.6	211.0	212.4	218.0	225.8	232.1	249.0	277.1	309.5
75°	163.2	163.9	164.6	166.7	172.3	173.0	176.5	183.6	195.5	206.8	228.6
77.5°	122.4	124.5	123.8	125.9	128.0	130.1	131.5	137.8	146.3	155.4	166.0
80°	92.8	92.8	92.8	94.2	92.8	97.8	97.8	99.9	102.0	106.2	113.9
82.5°	63.3	64.7	65.4	66.1	66.8	66.8	67.5	68.9	71.7	73.1	75.3
85°	40.8	39.4	40.1	40.1	40.1	40.1	41.5	42.9	42.9	43.6	45.7
87.5°	18.3	18.3	18.3	18.3	17.6	18.3	19.0	19.0	19.7	19.7	21.1
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°	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1
2.5°	1871.5	1869.4	1858.8	1847.6	1837.0	1826.5	1823.0	1812.4	1799.8	1788.5	1775.9
5°	1955.2	1938.3	1915.1	1891.2	1866.6	1844.1	1826.5	1806.8	1784.3	1757.6	1736.5
7.5°	2039.6	2008.6	1970.7	1935.5	1893.3	1859.5	1825.8	1797.7	1765.3	1727.3	1698.5
10°	2121.9	2070.5	2024.1	1968.6	1915.1	1868.7	1825.8	1778.7	1735.8	1695.0	1654.9
12.5°	2187.3	2135.9	2069.1	2000.9	1932.0	1871.5	1813.8	1758.3	1704.8	1655.6	1611.3
15°	2261.8	2188.0	2105.7	2030.5	1936.2	1861.7	1795.5	1735.8	1674.6	1614.8	1566.3
17.5°	2316.7	2229.5	2127.5	2041.0	1950.3	1857.4	1778.0	1702.7	1632.4	1569.8	1519.8
20°	2358.9	2255.5	2153.5	2043.8	1935.5	1840.6	1751.2	1664.7	1593.7	1525.5	1472.7
22.5°	2377.2	2268.2	2154.9	2036.1	1920.7	1813.1	1720.3	1631.0	1550.8	1480.5	1419.3
25°	2384.9	2265.4	2147.9	2012.9	1896.1	1786.4	1683.0	1590.9	1508.6	1429.1	1368.6
27.5°	2378.6	2250.6	2115.6	1988.3	1856.0	1748.4	1638.7	1545.2	1459.4	1382.7	1315.2
30°	2361.7	2216.8	2082.5	1939.7	1812.4	1699.2	1592.3	1493.1	1406.6	1328.5	1261.7
32.5°	2318.1	2178.8	2026.2	1887.0	1749.8	1638.0	1540.9	1443.2	1355.3	1273.7	1209.0
35°	2263.9	2127.5	1967.9	1822.3	1686.5	1573.3	1475.5	1388.3	1301.8	1215.3	1149.2
37.5°	2195.7	2057.2	1903.2	1746.3	1613.4	1503.7	1414.4	1326.4	1240.6	1161.2	1087.3
40°	2103.6	1977.0	1822.3	1664.7	1531.1	1425.6	1337.7	1256.8	1180.9	1102.8	1023.3
42.5°	1989.0	1892.6	1733.0	1577.5	1446.7	1341.9	1263.8	1191.4	1118.3	1038.1	966.3
45°	1866.6	1784.3	1639.4	1482.6	1358.1	1256.1	1181.6	1117.6	1048.6	977.6	902.3
47.5°	1728.7	1667.5	1542.4	1386.9	1256.1	1168.9	1100.0	1041.6	979.0	915.7	842.6
50°	1573.3	1536.0	1429.1	1287.8	1163.3	1074.7	1017.7	965.6	912.2	848.9	786.3
52.5°	1417.9	1410.8	1311.0	1186.5	1069.0	986.7	931.2	883.4	839.8	780.0	727.2
55°	1254.7	1275.8	1192.8	1078.2	973.4	893.9	844.7	806.0	768.0	717.4	666.7
57.5°	1109.8	1133.7	1076.8	971.3	873.5	806.0	763.8	728.6	695.6	649.2	615.4
60°	949.5	993.1	962.8	866.5	780.0	719.5	680.1	652.0	624.5	584.4	554.9
62.5°	822.9	853.1	835.5	763.8	687.1	637.9	602.7	576.7	554.9	524.0	495.1
65°	687.1	725.1	716.0	668.8	601.3	556.3	529.6	509.2	486.7	462.1	438.2
67.5°	564.8	604.1	602.0	569.7	519.7	482.5	457.2	442.4	424.1	400.2	385.4
70°	454.3	490.9	492.3	476.1	441.0	405.8	387.5	374.2	360.1	342.5	332.0
72.5°	353.1	386.1	391.7	384.0	361.5	338.3	322.1	313.0	301.0	286.2	277.1
75°	263.7	287.7	301.0	297.5	288.4	272.9	263.7	257.4	245.5	234.9	227.2
77.5°	187.8	206.8	220.1	225.8	221.5	215.2	206.8	201.8	189.2	184.3	180.0
80°	125.9	142.8	154.7	158.2	160.4	158.9	151.2	148.4	142.1	140.0	135.7
82.5°	77.4	86.5	94.9	104.1	108.3	108.3	104.1	104.8	99.2	96.4	94.9
85°	47.1	49.2	50.6	57.7	63.3	65.4	63.3	64.0	61.9	59.8	57.7
87.5°	21.8	21.8	22.5	23.9	25.3	29.5	30.9	33.1	30.2	30.2	25.3
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°	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1	1806.1
2.5°	1768.1	1759.0	1751.9	1740.7	1731.5	1716.8	1711.9	1711.9	1714.7	1711.1	1714.7
5°	1721.7	1704.8	1686.5	1670.4	1652.8	1640.1	1627.5	1624.6	1623.2	1614.8	1615.5
7.5°	1675.3	1652.8	1629.6	1608.5	1586.7	1567.0	1553.6	1548.0	1543.1	1537.4	1531.1
10°	1625.3	1599.3	1571.9	1548.0	1526.9	1500.2	1486.8	1482.6	1468.5	1465.7	1455.8
12.5°	1572.6	1545.9	1518.4	1487.5	1467.1	1441.1	1421.4	1412.2	1398.9	1389.0	1374.3
15°	1531.1	1497.3	1460.8	1430.5	1403.8	1375.0	1348.2	1330.7	1313.1	1285.6	1272.3
17.5°	1479.8	1441.1	1409.4	1377.1	1338.4	1296.2	1264.5	1238.5	1219.5	1197.0	1183.7
20°	1424.2	1388.3	1348.9	1303.2	1262.4	1214.6	1185.8	1164.0	1149.2	1135.8	1128.8
22.5°	1375.0	1333.5	1279.3	1235.7	1178.7	1140.8	1117.6	1103.5	1089.4	1075.4	1068.3
25°	1321.5	1273.0	1206.9	1153.4	1110.5	1081.0	1058.5	1045.1	1030.3	1021.9	1011.4
27.5°	1268.8	1206.2	1140.1	1091.5	1057.8	1023.3	1004.3	993.8	982.5	970.6	962.1
30°	1204.8	1133.7	1078.9	1034.6	1000.8	972.0	957.9	942.4	932.6	925.6	920.6
32.5°	1138.0	1069.7	1019.8	981.8	948.8	927.0	909.4	899.5	891.1	883.4	877.7
35°	1075.4	1009.2	967.0	930.5	903.0	878.4	865.1	855.9	848.9	842.6	839.8
37.5°	1013.5	957.2	911.5	882.7	853.8	834.1	821.5	813.0	808.8	802.5	803.2
40°	952.3	901.6	865.1	832.0	805.3	788.4	778.6	775.0	768.7	766.6	768.7
42.5°	897.4	851.0	815.8	784.9	761.7	745.5	737.8	732.8	730.7	730.0	730.7
45°	844.0	800.4	766.6	741.3	717.4	702.6	696.3	692.8	690.6	694.2	694.9
47.5°	790.5	751.1	720.9	691.4	671.7	661.1	654.8	652.0	654.1	655.5	660.4
50°	737.8	701.2	669.5	643.5	628.1	618.2	616.1	611.2	614.7	616.8	620.3
52.5°	684.3	651.3	623.1	598.5	582.3	576.0	571.1	569.0	573.9	573.9	577.4
55°	630.2	601.3	575.3	552.8	540.1	532.4	528.9	526.1	528.9	529.6	528.9
57.5°	579.5	552.1	524.7	505.7	495.1	486.7	483.2	481.8	481.1	483.9	483.2
60°	526.1	500.1	478.2	458.6	448.0	443.1	435.3	436.8	436.8	436.8	429.7
62.5°	472.6	446.6	427.6	414.2	401.6	393.1	391.7	389.6	385.4	384.7	375.6
65°	417.8	398.1	381.9	368.5	355.9	348.8	346.7	340.4	335.5	326.3	320.0
67.5°	367.1	353.1	334.1	322.8	312.3	303.8	296.1	291.2	281.3	272.2	266.6
70°	316.5	301.7	289.1	277.1	266.6	258.8	249.7	240.5	234.2	228.6	224.4
72.5°	265.9	253.2	242.6	231.4	220.1	212.4	205.4	198.3	195.5	192.7	190.6
75°	218.7	206.8	196.9	187.8	181.5	172.3	168.8	166.0	163.2	159.7	155.4
77.5°	173.0	163.9	156.1	148.4	142.8	137.8	135.0	126.6	119.6	118.2	116.7
80°	128.7	121.7	116.7	111.1	104.8	97.8	95.6	92.8	91.4	91.4	92.1
82.5°	90.0	85.8	80.2	75.3	73.1	70.3	70.3	69.6	68.9	69.6	69.6
85°	54.9	49.2	47.8	47.1	47.8	47.8	47.8	47.8	47.1	47.8	46.4
87.5°	23.9	26.0	26.7	24.6	25.3	23.9	24.6	24.6	24.6	25.3	24.6
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: P243605

CATALOG NUMBER: S124RDR-H1195D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1806.1	1806.1	1806.1	1806.1
2.5°	1710.4	1710.4	1703.4	1697.8
5°	1614.1	1604.9	1603.5	1595.1
7.5°	1524.1	1522.7	1519.1	1519.1
10°	1452.3	1447.4	1442.5	1441.8
12.5°	1351.1	1358.1	1349.6	1347.5
15°	1262.4	1256.8	1249.8	1235.0
17.5°	1180.2	1169.6	1166.8	1160.5
20°	1115.4	1107.7	1104.9	1101.4
22.5°	1054.3	1052.9	1044.4	1042.3
25°	1009.2	1002.2	996.6	993.1
27.5°	960.0	955.1	952.3	946.7
30°	915.0	913.6	910.1	910.1
32.5°	874.2	870.0	870.0	869.3
35°	836.9	838.3	834.1	832.7
37.5°	801.8	799.7	800.4	799.0
40°	767.3	765.9	765.9	766.6
42.5°	732.1	732.8	734.3	734.3
45°	697.0	697.7	699.1	699.1
47.5°	663.9	662.5	663.9	662.5
50°	621.7	625.9	625.2	624.5
52.5°	578.8	577.4	580.2	579.5
55°	532.4	530.3	533.1	530.3
57.5°	480.4	481.1	481.1	479.7
60°	428.3	426.2	423.4	423.4
62.5°	367.8	361.5	357.3	360.1
65°	309.5	304.5	303.1	301.0
67.5°	263.0	257.4	255.3	254.6
70°	222.9	220.1	219.4	219.4
72.5°	189.2	189.2	187.1	185.7
75°	154.0	151.2	147.7	147.7
77.5°	115.3	114.6	113.9	113.9
80°	90.0	90.0	90.7	91.4
82.5°	67.5	68.2	68.9	68.9
85°	45.7	45.7	46.4	46.4
87.5°	24.6	24.6	24.6	23.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)