

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: P242576

Luminaire Tested: **S123RDR-S775D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242576
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-S775D840-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2937.1 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

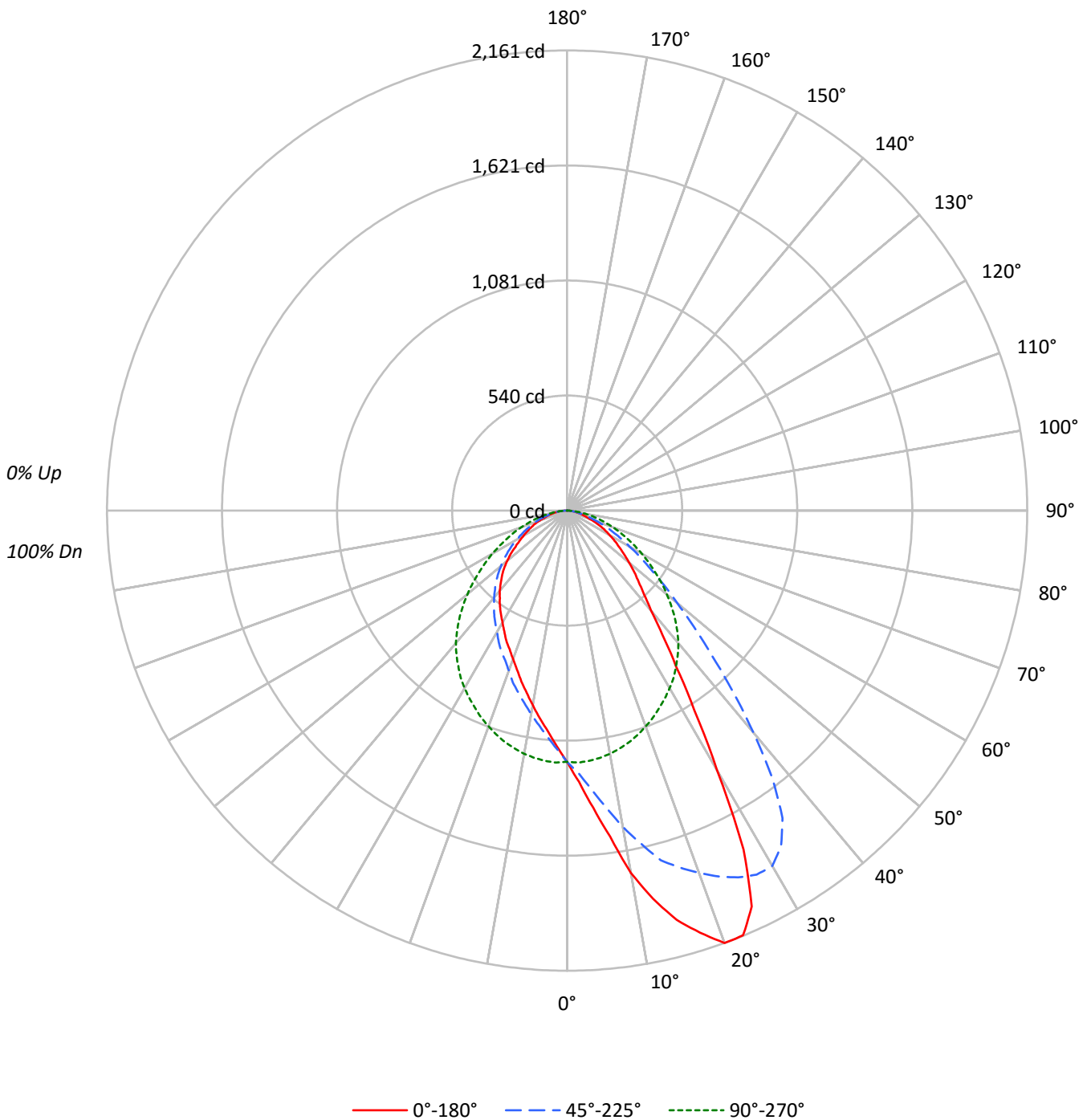
Input Watts (W): 26.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14297	14297	14297
5°	17043	14359	12644
10°	21280	14276	11423
15°	24978	14130	10417
20°	27878	13913	9562
25°	27432	13682	9036
30°	19718	13470	8494
35°	13165	13195	8144
40°	9700	12864	7782
45°	8136	12282	7426
50°	7179	11522	6932
55°	6295	10649	6253
60°	5607	9818	5728
65°	4925	8920	5329
70°	3867	8123	4866
75°	3405	7095	4444
80°	2960	6024	4370
85°	2392	4840	4631



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.8	3.9
10°-20°	362.6	12.3
20°-30°	571.1	19.4
30°-40°	593.9	20.2
40°-50°	508.1	17.3
50°-60°	387.3	13.2
60°-70°	248.1	8.4
70°-80°	118.9	4.0
80°-90°	31.3	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°	1049.6	35.7
0°-40°	1643.5	56.0
0°-60°	2538.8	86.4
0°-90°	2937.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2937.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1180	1180	1180	1180	1180	
5°	1401	1314	1180	1065	1039	144
15°	1990	1700	1126	885	830	565
25°	2051	1901	1023	731	676	891
35°	890	1763	892	597	550	579
45°	475	957	716	472	433	372
55°	298	478	504	340	296	269
65°	172	235	311	213	186	169
75°	73	85	152	108	95	78
85°	17	19	35	32	33	20
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°	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5
2.5°	1275.5	1277.5	1270.9	1269.9	1262.4	1260.3	1260.3	1249.7	1243.2	1234.6	1229.5
5°	1400.7	1408.8	1404.8	1395.7	1380.5	1377.0	1367.4	1352.2	1335.1	1313.9	1303.8
7.5°	1544.1	1560.8	1557.7	1543.6	1527.5	1517.4	1490.6	1468.9	1436.1	1406.3	1383.0
10°	1728.9	1717.3	1708.2	1694.6	1679.9	1656.2	1627.9	1589.1	1544.1	1508.8	1469.4
12.5°	1867.3	1867.8	1855.7	1841.5	1819.3	1797.1	1760.7	1711.3	1657.2	1602.2	1555.7
15°	1990.5	1993.5	1985.9	1971.3	1942.0	1902.1	1849.6	1829.9	1755.2	1699.6	1644.1
17.5°	2078.3	2078.8	2077.3	2057.6	2025.8	1998.6	1949.6	1903.6	1832.9	1757.7	1683.5
20°	2161.2	2156.1	2157.1	2134.4	2112.2	2079.4	2031.9	1956.7	1901.1	1810.7	1733.5
22.5°	2159.1	2159.1	2163.7	2159.6	2145.0	2121.8	2086.9	2026.3	1951.6	1860.2	1770.8
25°	2051.1	2047.0	2070.8	2077.3	2103.1	2107.6	2096.5	2061.7	1994.5	1900.6	1793.1
27.5°	1793.6	1778.9	1828.4	1877.4	1942.5	1983.9	2026.3	2035.9	2004.1	1927.4	1814.8
30°	1408.8	1456.3	1478.5	1558.3	1647.1	1753.2	1846.1	1934.4	1956.1	1926.9	1838.5
32.5°	1109.9	1149.8	1167.4	1233.1	1314.4	1443.1	1594.1	1728.4	1833.4	1868.8	1824.4
35°	889.7	890.2	932.6	962.9	1039.7	1167.4	1302.8	1470.4	1637.0	1763.3	1776.4
37.5°	734.2	736.2	763.5	793.8	855.4	927.1	1052.8	1194.2	1394.7	1583.0	1681.0
40°	613.0	617.5	636.7	666.5	707.9	758.9	851.8	983.1	1143.7	1359.3	1535.5
42.5°	535.2	543.3	550.9	572.1	593.8	640.8	711.5	805.4	947.8	1148.7	1358.8
45°	474.6	478.7	486.3	496.9	520.1	553.4	603.9	672.1	793.3	957.4	1160.9
47.5°	428.2	425.7	434.3	443.3	459.0	483.2	518.6	577.7	668.5	805.9	982.1
50°	380.7	380.2	385.8	392.3	407.0	423.6	451.4	493.3	562.0	671.1	829.1
52.5°	336.3	338.8	342.4	350.9	360.5	373.2	397.4	424.7	481.2	571.6	696.8
55°	297.9	299.4	305.0	309.5	317.1	330.7	346.4	371.6	412.0	477.7	586.2
57.5°	264.6	264.1	269.6	270.1	279.7	291.4	304.0	323.7	354.5	406.5	482.2
60°	231.3	229.7	234.3	237.8	242.4	251.5	261.6	280.7	304.0	339.8	402.4
62.5°	201.0	200.5	203.5	207.0	210.6	218.6	226.7	240.4	257.5	286.3	332.8
65°	171.7	173.2	174.7	176.2	178.2	183.3	191.4	201.5	214.1	235.3	271.2
67.5°	141.4	143.4	143.9	147.4	151.5	154.0	158.6	168.1	177.7	196.9	218.1
70°	109.1	108.6	109.1	110.6	116.1	121.7	128.3	134.8	140.4	153.0	170.2
72.5°	89.9	88.9	90.4	90.4	92.4	92.9	96.4	102.5	110.1	117.7	128.8
75°	72.7	72.7	72.7	72.7	74.7	75.7	77.3	78.8	81.3	85.3	94.4
77.5°	56.6	56.6	57.6	58.1	58.6	59.1	60.1	61.6	62.6	64.6	69.2
80°	42.4	42.9	42.4	42.9	42.9	43.9	44.4	45.9	46.5	49.0	50.5
82.5°	29.3	28.8	29.3	29.8	29.8	30.8	30.8	31.8	31.8	32.8	34.3
85°	17.2	16.2	17.2	16.7	17.7	16.7	17.2	18.2	18.2	18.7	20.7
87.5°	5.0	6.1	5.0	5.6	5.6	6.1	6.1	6.1	7.1	6.6	7.1
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°	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5
2.5°	1227.5	1226.0	1218.9	1210.9	1200.2	1193.2	1187.6	1184.6	1175.5	1164.4	1156.8
5°	1293.2	1278.0	1261.9	1242.2	1224.0	1205.3	1193.7	1180.1	1163.4	1144.7	1131.6
7.5°	1358.3	1332.0	1303.3	1273.5	1243.2	1216.4	1191.7	1171.5	1146.2	1120.5	1102.8
10°	1435.6	1392.1	1347.2	1301.2	1259.3	1219.9	1189.6	1159.9	1128.0	1097.2	1074.0
12.5°	1505.7	1445.1	1391.6	1332.5	1276.0	1227.0	1180.1	1143.7	1103.8	1070.5	1043.2
15°	1562.8	1504.2	1441.6	1355.8	1284.6	1225.0	1172.0	1126.0	1079.6	1039.2	1013.4
17.5°	1622.4	1533.5	1451.2	1384.6	1291.6	1219.4	1157.3	1103.8	1053.3	1011.9	979.6
20°	1656.7	1571.4	1480.0	1388.6	1297.7	1214.4	1139.2	1078.6	1025.5	977.1	947.8
22.5°	1677.4	1577.9	1480.5	1380.5	1282.6	1195.2	1121.0	1052.8	994.2	948.8	910.9
25°	1692.6	1577.4	1471.4	1374.5	1276.0	1182.1	1093.7	1023.0	960.9	911.9	873.6
27.5°	1704.7	1571.4	1449.7	1344.2	1244.7	1149.2	1069.5	993.7	931.6	880.6	838.7
30°	1707.7	1563.8	1423.9	1307.3	1205.8	1120.0	1034.1	962.4	895.8	840.7	802.4
32.5°	1711.8	1545.1	1389.1	1263.4	1158.8	1074.0	998.3	930.6	861.9	807.9	768.5
35°	1697.6	1540.6	1353.8	1211.4	1107.3	1025.0	954.8	891.7	824.6	772.1	732.2
37.5°	1654.7	1515.8	1318.4	1153.3	1045.7	970.0	911.4	853.9	791.7	734.2	697.3
40°	1582.5	1475.4	1276.0	1101.3	987.7	909.4	857.9	813.0	753.4	700.4	660.0
42.5°	1474.9	1420.4	1235.6	1046.7	922.0	847.3	805.9	764.5	714.0	660.0	622.6
45°	1338.6	1347.2	1177.5	988.2	862.4	786.7	745.8	716.5	670.1	625.6	586.7
47.5°	1173.0	1244.7	1115.4	926.6	797.8	726.6	690.8	664.0	631.7	585.7	549.9
50°	1011.4	1126.0	1037.7	864.5	737.7	667.0	631.7	611.0	583.7	549.4	515.5
52.5°	862.4	987.7	943.7	795.3	672.6	609.5	575.1	559.0	538.8	507.0	477.2
55°	727.6	852.3	840.2	725.6	607.4	549.4	523.1	503.9	489.3	465.1	440.8
57.5°	610.5	731.2	733.7	648.3	550.9	491.8	469.1	453.9	443.8	424.7	400.9
60°	500.9	609.5	630.7	570.1	489.3	438.8	416.6	405.0	397.4	382.7	365.6
62.5°	410.0	498.4	523.1	483.7	430.2	383.8	367.6	356.5	351.9	339.8	325.2
65°	327.7	404.5	427.7	403.4	372.6	334.8	320.6	311.0	306.5	299.4	288.3
67.5°	258.5	318.1	343.4	323.2	311.5	284.8	275.2	269.6	265.6	260.6	251.0
70°	197.9	239.3	265.6	261.1	252.0	239.3	232.8	229.2	225.2	221.2	213.1
72.5°	149.5	174.7	198.9	203.0	195.9	195.9	190.4	189.4	187.3	182.3	178.7
75°	105.5	125.2	142.4	149.0	152.0	154.5	152.0	151.5	151.0	146.9	144.4
77.5°	73.2	85.8	97.5	109.1	113.1	116.6	117.1	119.2	117.7	115.1	114.1
80°	53.0	55.5	63.1	72.7	80.3	83.3	85.3	86.3	85.8	85.3	83.3
82.5°	34.8	36.9	39.4	45.4	51.5	57.1	58.1	57.6	59.1	59.6	58.1
85°	20.7	21.2	22.2	23.2	26.8	32.3	33.8	34.8	35.9	35.9	32.8
87.5°	8.1	7.6	8.6	8.6	10.1	10.6	13.6	16.2	16.7	14.6	14.6
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°	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5	1179.5
2.5°	1154.3	1147.7	1143.2	1133.1	1126.5	1119.5	1112.4	1116.9	1116.4	1115.9	1115.9
5°	1120.5	1108.9	1098.3	1084.6	1076.0	1065.4	1057.3	1056.3	1058.4	1051.3	1047.3
7.5°	1088.7	1073.5	1058.4	1044.2	1028.6	1016.4	1008.9	1005.8	1000.3	995.7	991.7
10°	1054.8	1036.1	1021.5	1002.8	985.6	970.5	960.9	954.3	950.8	947.3	940.7
12.5°	1020.0	1001.8	982.1	960.4	944.2	926.1	919.5	911.9	904.4	900.3	890.7
15°	986.2	962.4	942.7	920.5	902.3	885.2	875.1	860.4	858.4	853.4	844.3
17.5°	953.3	927.1	898.3	883.1	865.0	846.8	830.6	826.1	810.9	805.9	797.3
20°	912.9	889.2	868.5	846.8	817.0	800.3	788.2	781.7	770.0	763.0	757.9
22.5°	878.1	853.9	829.1	802.9	779.6	760.4	752.4	741.3	736.2	725.6	720.0
25°	845.3	819.0	790.2	763.0	745.3	731.2	717.0	707.9	698.8	694.3	684.2
27.5°	805.4	779.1	751.4	730.1	709.9	695.8	682.2	674.6	663.0	655.4	649.9
30°	773.6	741.3	718.0	699.3	671.6	658.4	648.9	638.8	630.7	622.6	617.0
32.5°	736.7	707.9	686.2	662.0	642.3	627.6	614.5	605.9	599.4	591.8	586.2
35°	697.8	673.1	650.4	627.1	611.5	596.8	582.2	574.6	568.1	561.0	555.9
37.5°	662.5	639.3	618.0	595.8	576.6	564.0	551.9	546.9	537.8	532.7	527.7
40°	630.2	607.4	584.2	563.0	542.8	533.7	523.1	514.5	506.5	502.9	497.4
42.5°	594.8	572.1	553.4	530.2	514.5	501.4	491.8	482.2	476.7	471.1	468.6
45°	560.0	539.8	520.6	497.9	482.2	471.6	460.5	451.9	446.4	442.8	437.3
47.5°	526.7	506.0	486.8	466.6	451.4	439.3	427.7	422.1	414.6	410.5	406.5
50°	489.8	471.6	450.9	432.7	417.6	405.5	396.4	388.8	382.2	376.7	374.2
52.5°	456.0	436.3	419.1	402.4	386.3	372.1	364.1	356.0	351.4	344.9	341.8
55°	418.1	399.4	384.3	367.6	351.9	340.3	330.2	323.2	318.1	311.0	307.0
57.5°	383.3	367.1	348.4	333.8	317.1	308.0	299.4	289.3	283.3	277.7	273.7
60°	347.9	328.7	313.1	299.4	285.3	272.7	265.1	257.5	251.0	245.4	241.9
62.5°	311.0	294.9	280.2	265.1	252.5	241.9	232.8	226.7	221.2	218.1	214.6
65°	273.2	260.0	244.9	232.8	220.7	212.6	205.5	200.0	195.9	193.4	190.4
67.5°	238.3	225.7	212.1	199.5	191.4	184.8	179.8	174.7	172.7	169.7	167.6
70°	204.5	191.4	179.8	170.7	162.6	158.0	155.0	151.5	149.5	145.4	143.4
72.5°	167.6	159.1	151.5	144.4	138.4	134.3	130.3	125.7	122.2	117.7	115.6
75°	137.8	129.3	122.7	117.7	113.6	108.1	102.5	98.0	96.4	94.9	94.4
77.5°	107.6	102.0	96.9	92.9	87.4	82.3	80.8	79.8	79.3	78.3	78.3
80°	80.3	75.2	71.7	66.7	63.6	63.6	63.6	62.6	63.1	63.1	63.1
82.5°	54.5	50.0	48.5	47.5	47.5	48.0	48.0	48.5	48.0	49.0	48.5
85°	30.8	31.3	32.3	31.8	32.3	32.3	33.3	32.8	33.3	32.3	33.3
87.5°	14.1	15.7	16.2	16.7	17.2	16.7	17.2	17.2	17.7	17.7	17.7
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: P242576

CATALOG NUMBER: S123RDR-S775D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1179.5	1179.5	1179.5	1179.5
2.5°	1109.9	1109.4	1109.9	1107.8
5°	1045.7	1045.2	1043.7	1039.2
7.5°	987.7	986.7	982.6	983.6
10°	937.2	937.7	931.6	928.1
12.5°	888.2	885.2	880.6	876.6
15°	846.3	841.2	829.1	830.1
17.5°	794.3	790.2	789.7	782.7
20°	749.8	747.3	748.3	741.3
22.5°	715.0	712.5	706.9	705.9
25°	681.2	677.1	673.1	675.6
27.5°	646.8	643.8	639.3	639.3
30°	614.5	611.5	609.5	606.9
32.5°	581.7	581.7	577.7	577.7
35°	553.9	550.9	549.9	550.4
37.5°	527.2	523.1	521.1	519.1
40°	497.9	493.8	492.8	491.8
42.5°	465.1	464.0	463.5	461.5
45°	435.8	435.3	432.2	433.2
47.5°	404.5	401.9	400.4	401.9
50°	372.1	371.1	366.6	367.6
52.5°	339.8	335.3	334.3	333.3
55°	303.5	298.9	296.9	295.9
57.5°	267.6	266.1	264.1	265.6
60°	236.8	236.8	236.8	236.3
62.5°	213.1	211.6	211.1	212.1
65°	188.8	188.3	186.3	185.8
67.5°	166.6	164.6	164.6	163.6
70°	140.9	139.9	136.8	137.3
72.5°	113.1	112.1	112.1	111.1
75°	93.9	93.4	92.9	94.9
77.5°	78.3	78.3	78.8	77.8
80°	63.1	63.1	62.6	62.6
82.5°	47.5	48.0	48.5	47.5
85°	33.3	32.8	33.8	33.3
87.5°	18.7	17.7	17.7	18.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)