

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: P242587

Luminaire Tested: **S123RDR-S1000D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242587
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-S1000D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3193.4 lumens
Efficiency: N/A
Efficacy: 91.8 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

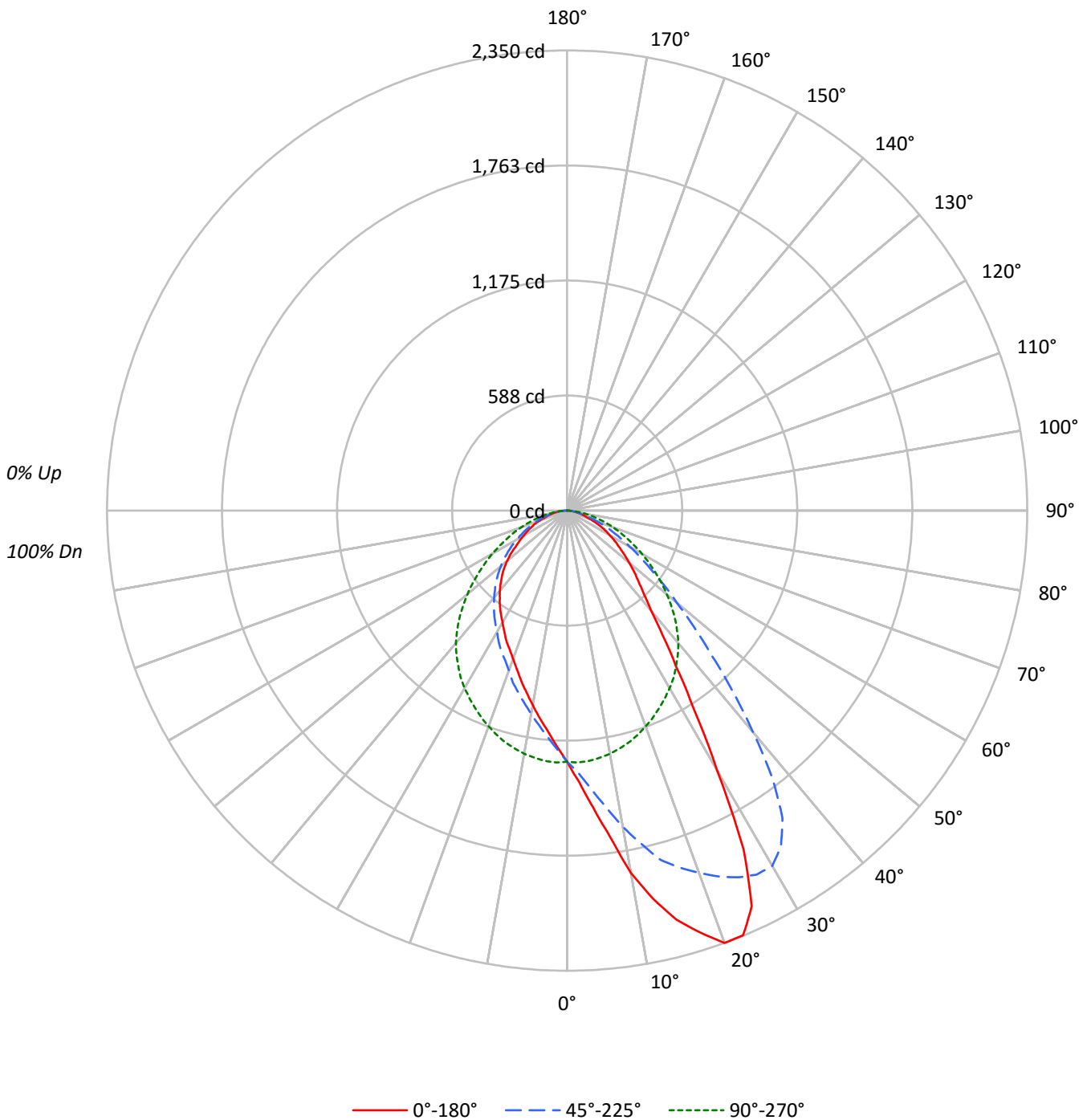
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74	74	74	74	74	74	74		
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64	64	64	64	64	64	64		
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39	39	39	39	39	39	39		
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36	36	36	36	36	36	36		
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32	32	32	32	32	32	32		
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29	29	29	29	29	29	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15545	15545	15545
5°	18530	15611	13748
10°	23137	15522	12420
15°	27158	15364	11327
20°	30309	15127	10395
25°	29826	14876	9825
30°	21438	14646	9236
35°	14313	14346	8855
40°	10546	13986	8461
45°	8847	13354	8074
50°	7805	12527	7537
55°	6845	11579	6798
60°	6095	10674	6228
65°	5355	9700	5794
70°	4203	8832	5291
75°	3704	7713	4833
80°	3218	6555	4754
85°	2601	5271	5035



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.9	3.9
10°-20°	394.2	12.3
20°-30°	620.9	19.4
30°-40°	645.7	20.2
40°-50°	552.4	17.3
50°-60°	421.1	13.2
60°-70°	269.8	8.4
70°-80°	129.2	4.0
80°-90°	34.0	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°	1141.1	35.7
0°-40°	1786.9	56.0
0°-60°	2760.4	86.4
0°-90°	3193.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3193.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1282	1282	1282	1282	1282	
5°	1523	1428	1283	1158	1130	156
15°	2164	1848	1224	962	903	614
25°	2230	2066	1112	795	735	969
35°	967	1917	970	649	598	629
45°	516	1041	779	513	471	405
55°	324	519	548	370	322	292
65°	187	256	338	231	202	184
75°	79	93	165	118	103	85
85°	19	20	38	35	36	21
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°	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5
2.5°	1386.8	1389.0	1381.8	1380.7	1372.5	1370.3	1370.3	1358.8	1351.6	1342.3	1336.8
5°	1522.9	1531.7	1527.3	1517.4	1501.0	1497.1	1486.7	1470.2	1451.6	1428.5	1417.5
7.5°	1678.9	1697.0	1693.7	1678.3	1660.7	1649.8	1620.7	1597.1	1561.4	1529.0	1503.7
10°	1879.8	1867.2	1857.3	1842.5	1826.5	1800.7	1770.0	1727.7	1678.9	1640.4	1597.6
12.5°	2030.2	2030.8	2017.6	2002.2	1978.1	1953.9	1914.4	1860.6	1801.8	1742.0	1691.5
15°	2164.2	2167.5	2159.2	2143.3	2111.5	2068.1	2011.0	1989.6	1908.3	1847.9	1787.6
17.5°	2259.7	2260.3	2258.6	2237.2	2202.6	2173.0	2119.7	2069.7	1992.9	1911.1	1830.4
20°	2349.7	2344.2	2345.3	2320.6	2296.5	2260.8	2209.2	2127.4	2067.0	1968.7	1884.7
22.5°	2347.5	2347.5	2352.5	2348.1	2332.2	2306.9	2269.0	2203.2	2121.9	2022.5	1925.4
25°	2230.1	2225.7	2251.5	2258.6	2286.6	2291.5	2279.5	2241.6	2168.6	2066.5	1949.5
27.5°	1950.1	1934.1	1987.9	2041.2	2112.0	2157.0	2203.2	2213.6	2179.0	2095.6	1973.1
30°	1531.7	1583.3	1607.5	1694.2	1790.9	1906.1	2007.2	2103.2	2126.8	2095.0	1998.9
32.5°	1206.7	1250.1	1269.3	1340.7	1429.1	1569.1	1733.2	1879.2	1993.4	2031.9	1983.6
35°	967.3	967.9	1014.0	1047.0	1130.4	1269.3	1416.4	1598.7	1779.9	1917.1	1931.4
37.5°	798.3	800.4	830.1	863.0	930.0	1008.0	1144.7	1298.4	1516.4	1721.1	1827.6
40°	666.5	671.4	692.3	724.7	769.7	825.2	926.2	1068.9	1243.5	1477.9	1669.5
42.5°	581.9	590.7	599.0	622.0	645.6	696.7	773.5	875.7	1030.5	1249.0	1477.4
45°	516.1	520.5	528.7	540.2	565.5	601.7	656.6	730.7	862.5	1040.9	1262.2
47.5°	465.6	462.8	472.1	482.0	499.0	525.4	563.8	628.1	726.9	876.2	1067.8
50°	413.9	413.4	419.4	426.6	442.5	460.6	490.8	536.4	611.0	729.6	901.5
52.5°	365.6	368.4	372.2	381.6	392.0	405.7	432.1	461.7	523.2	621.5	757.6
55°	323.9	325.6	331.6	336.5	344.8	359.6	376.6	404.1	448.0	519.4	637.4
57.5°	287.7	287.1	293.2	293.7	304.1	316.8	330.5	351.9	385.4	441.9	524.3
60°	251.4	249.8	254.7	258.6	263.5	273.4	284.4	305.2	330.5	369.5	437.6
62.5°	218.5	218.0	221.2	225.1	228.9	237.7	246.5	261.3	280.0	311.3	361.8
65°	186.7	188.3	190.0	191.6	193.8	199.3	208.1	219.1	232.8	255.8	294.8
67.5°	153.7	155.9	156.5	160.3	164.7	167.4	172.4	182.8	193.2	214.1	237.2
70°	118.6	118.0	118.6	120.2	126.3	132.3	139.4	146.6	152.6	166.3	185.0
72.5°	97.7	96.6	98.3	98.3	100.5	101.0	104.9	111.4	119.7	127.9	140.0
75°	79.1	79.1	79.1	79.1	81.3	82.4	84.0	85.6	88.4	92.8	102.7
77.5°	61.5	61.5	62.6	63.1	63.7	64.2	65.3	67.0	68.1	70.3	75.2
80°	46.1	46.7	46.1	46.7	46.7	47.8	48.3	50.0	50.5	53.3	54.9
82.5°	31.8	31.3	31.8	32.4	32.4	33.5	33.5	34.6	34.6	35.7	37.3
85°	18.7	17.6	18.7	18.1	19.2	18.1	18.7	19.8	19.8	20.3	22.5
87.5°	5.5	6.6	5.5	6.0	6.0	6.6	6.6	6.6	7.7	7.1	7.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5
2.5°	1334.6	1333.0	1325.3	1316.5	1305.0	1297.3	1291.3	1288.0	1278.1	1266.0	1257.8
5°	1406.0	1389.5	1372.0	1350.6	1330.8	1310.5	1297.8	1283.0	1264.9	1244.6	1230.3
7.5°	1476.8	1448.3	1417.0	1384.6	1351.6	1322.6	1295.7	1273.7	1246.2	1218.2	1199.0
10°	1560.8	1513.6	1464.7	1414.8	1369.2	1326.4	1293.5	1261.1	1226.5	1193.0	1167.7
12.5°	1637.1	1571.3	1513.1	1448.8	1387.3	1334.1	1283.0	1243.5	1200.1	1163.9	1134.2
15°	1699.2	1635.5	1567.4	1474.1	1396.7	1331.9	1274.2	1224.3	1173.8	1129.9	1101.9
17.5°	1764.0	1667.3	1577.8	1505.4	1404.4	1325.8	1258.3	1200.1	1145.2	1100.2	1065.1
20°	1801.3	1708.5	1609.1	1509.8	1410.9	1320.4	1238.6	1172.7	1115.0	1062.3	1030.5
22.5°	1823.8	1715.6	1609.7	1501.0	1394.5	1299.5	1218.8	1144.7	1081.0	1031.6	990.4
25°	1840.3	1715.1	1599.8	1494.4	1387.3	1285.2	1189.1	1112.3	1044.8	991.5	949.8
27.5°	1853.4	1708.5	1576.2	1461.5	1353.3	1249.5	1162.8	1080.4	1012.9	957.5	911.9
30°	1856.7	1700.3	1548.2	1421.4	1311.0	1217.7	1124.4	1046.4	973.9	914.1	872.4
32.5°	1861.1	1680.0	1510.3	1373.6	1260.0	1167.7	1085.4	1011.8	937.2	878.4	835.6
35°	1845.8	1675.0	1471.9	1317.1	1204.0	1114.5	1038.2	969.5	896.5	839.4	796.1
37.5°	1799.1	1648.1	1433.5	1253.9	1137.0	1054.6	991.0	928.4	860.8	798.3	758.2
40°	1720.6	1604.2	1387.3	1197.4	1073.9	988.8	932.8	883.9	819.1	761.5	717.5
42.5°	1603.6	1544.3	1343.4	1138.1	1002.5	921.2	876.2	831.2	776.3	717.5	676.9
45°	1455.4	1464.7	1280.3	1074.4	937.7	855.3	810.9	779.0	728.5	680.2	637.9
47.5°	1275.3	1353.3	1212.8	1007.4	867.4	790.0	751.0	721.9	686.8	636.8	597.9
50°	1099.7	1224.3	1128.2	939.9	802.1	725.2	686.8	664.3	634.6	597.3	560.5
52.5°	937.7	1073.9	1026.1	864.7	731.3	662.6	625.3	607.7	585.8	551.2	518.8
55°	791.1	926.7	913.5	788.9	660.5	597.3	568.8	547.9	532.0	505.6	479.3
57.5°	663.7	795.0	797.7	704.9	599.0	534.7	510.0	493.6	482.6	461.7	435.9
60°	544.6	662.6	685.7	619.8	532.0	477.1	452.9	440.3	432.1	416.1	397.5
62.5°	445.8	541.9	568.8	525.9	467.8	417.2	399.7	387.6	382.7	369.5	353.6
65°	356.3	439.8	465.0	438.7	405.2	364.0	348.6	338.2	333.2	325.6	313.5
67.5°	281.1	345.9	373.3	351.4	338.7	309.6	299.2	293.2	288.8	283.3	272.9
70°	215.2	260.2	288.8	283.8	274.0	260.2	253.1	249.2	244.9	240.5	231.7
72.5°	162.5	190.0	216.3	220.7	213.0	213.0	207.0	205.9	203.7	198.2	194.3
75°	114.7	136.2	154.8	162.0	165.3	168.0	165.3	164.7	164.2	159.8	157.0
77.5°	79.6	93.3	106.0	118.6	123.0	126.8	127.4	129.6	127.9	125.2	124.1
80°	57.6	60.4	68.6	79.1	87.3	90.6	92.8	93.9	93.3	92.8	90.6
82.5°	37.9	40.1	42.8	49.4	56.0	62.0	63.1	62.6	64.2	64.8	63.1
85°	22.5	23.1	24.2	25.3	29.1	35.1	36.8	37.9	39.0	39.0	35.7
87.5°	8.8	8.2	9.3	9.3	11.0	11.5	14.8	17.6	18.1	15.9	15.9
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°	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5	1282.5
2.5°	1255.0	1247.9	1242.9	1232.0	1224.8	1217.1	1209.5	1214.4	1213.8	1213.3	1213.3
5°	1218.2	1205.6	1194.1	1179.3	1169.9	1158.4	1149.6	1148.5	1150.7	1143.0	1138.6
7.5°	1183.7	1167.2	1150.7	1135.3	1118.3	1105.1	1096.9	1093.6	1087.6	1082.6	1078.2
10°	1146.9	1126.6	1110.6	1090.3	1071.7	1055.2	1044.8	1037.6	1033.8	1029.9	1022.8
12.5°	1109.0	1089.2	1067.8	1044.2	1026.6	1006.9	999.7	991.5	983.3	978.9	968.4
15°	1072.2	1046.4	1025.0	1000.8	981.1	962.4	951.4	935.5	933.3	927.8	917.9
17.5°	1036.5	1008.0	976.7	960.2	940.4	920.7	903.1	898.2	881.7	876.2	866.9
20°	992.6	966.8	944.3	920.7	888.3	870.2	857.0	849.9	837.2	829.5	824.1
22.5°	954.7	928.4	901.5	872.9	847.7	826.8	818.0	805.9	800.4	788.9	782.9
25°	919.0	890.5	859.2	829.5	810.3	795.0	779.6	769.7	759.8	754.9	743.9
27.5°	875.7	847.1	816.9	793.9	771.9	756.5	741.7	733.5	720.8	712.6	706.6
30°	841.1	805.9	780.7	760.4	730.2	715.9	705.5	694.5	685.7	676.9	670.9
32.5°	801.0	769.7	746.1	719.7	698.3	682.4	668.1	658.8	651.7	643.4	637.4
35°	758.7	731.8	707.1	681.9	664.8	648.9	633.0	624.8	617.6	609.9	604.5
37.5°	720.3	695.0	672.0	647.8	627.0	613.2	600.1	594.6	584.7	579.2	573.7
40°	685.2	660.5	635.2	612.1	590.2	580.3	568.8	559.4	550.7	546.8	540.8
42.5°	646.7	622.0	601.7	576.5	559.4	545.2	534.7	524.3	518.3	512.2	509.5
45°	608.8	586.9	566.0	541.3	524.3	512.8	500.7	491.4	485.3	481.5	475.4
47.5°	572.6	550.1	529.2	507.3	490.8	477.6	465.0	459.0	450.7	446.3	441.9
50°	532.5	512.8	490.3	470.5	454.0	440.9	431.0	422.7	415.6	409.6	406.8
52.5°	495.8	474.3	455.7	437.6	420.0	404.6	395.8	387.0	382.1	375.0	371.7
55°	454.6	434.3	417.8	399.7	382.7	370.0	359.0	351.4	345.9	338.2	333.8
57.5°	416.7	399.1	378.8	362.9	344.8	334.9	325.6	314.6	308.0	302.0	297.6
60°	378.3	357.4	340.4	325.6	310.2	296.5	288.2	280.0	272.9	266.8	263.0
62.5°	338.2	320.6	304.7	288.2	274.5	263.0	253.1	246.5	240.5	237.2	233.3
65°	297.0	282.7	266.3	253.1	239.9	231.1	223.4	217.4	213.0	210.3	207.0
67.5°	259.1	245.4	230.6	216.9	208.1	200.9	195.4	190.0	187.8	184.5	182.3
70°	222.3	208.1	195.4	185.6	176.8	171.8	168.5	164.7	162.5	158.1	155.9
72.5°	182.3	172.9	164.7	157.0	150.4	146.0	141.6	136.7	132.9	127.9	125.7
75°	149.9	140.5	133.4	127.9	123.5	117.5	111.4	106.5	104.9	103.2	102.7
77.5°	116.9	110.9	105.4	101.0	95.0	89.5	87.8	86.7	86.2	85.1	85.1
80°	87.3	81.8	78.0	72.5	69.2	69.2	69.2	68.1	68.6	68.6	68.6
82.5°	59.3	54.4	52.7	51.6	51.6	52.2	52.2	52.7	52.2	53.3	52.7
85°	33.5	34.0	35.1	34.6	35.1	35.1	36.2	35.7	36.2	35.1	36.2
87.5°	15.4	17.0	17.6	18.1	18.7	18.1	18.7	18.7	19.2	19.2	19.2
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: P242587

CATALOG NUMBER: S123RDR-S1000D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1282.5	1282.5	1282.5	1282.5
2.5°	1206.7	1206.2	1206.7	1204.5
5°	1137.0	1136.4	1134.8	1129.9
7.5°	1073.9	1072.8	1068.4	1069.5
10°	1019.0	1019.5	1012.9	1009.1
12.5°	965.7	962.4	957.5	953.1
15°	920.1	914.6	901.5	902.6
17.5°	863.6	859.2	858.6	851.0
20°	815.3	812.5	813.6	805.9
22.5°	777.4	774.6	768.6	767.5
25°	740.6	736.2	731.8	734.6
27.5°	703.3	700.0	695.0	695.0
30°	668.1	664.8	662.6	659.9
32.5°	632.5	632.5	628.1	628.1
35°	602.3	599.0	597.9	598.4
37.5°	573.2	568.8	566.6	564.4
40°	541.3	536.9	535.8	534.7
42.5°	505.6	504.5	504.0	501.8
45°	473.8	473.2	469.9	471.0
47.5°	439.8	437.0	435.4	437.0
50°	404.6	403.5	398.6	399.7
52.5°	369.5	364.5	363.4	362.3
55°	330.0	325.0	322.8	321.7
57.5°	291.0	289.3	287.1	288.8
60°	257.5	257.5	257.5	256.9
62.5°	231.7	230.0	229.5	230.6
65°	205.3	204.8	202.6	202.0
67.5°	181.2	179.0	179.0	177.9
70°	153.2	152.1	148.8	149.3
72.5°	123.0	121.9	121.9	120.8
75°	102.1	101.6	101.0	103.2
77.5°	85.1	85.1	85.6	84.5
80°	68.6	68.6	68.1	68.1
82.5°	51.6	52.2	52.7	51.6
85°	36.2	35.7	36.8	36.2
87.5°	20.3	19.2	19.2	19.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)