

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: P242582

Luminaire Tested: **S123RDR-S1000D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242582  
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-S1000D930-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3023.9 lumens  
Efficiency: N/A  
Efficacy: 86.9 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

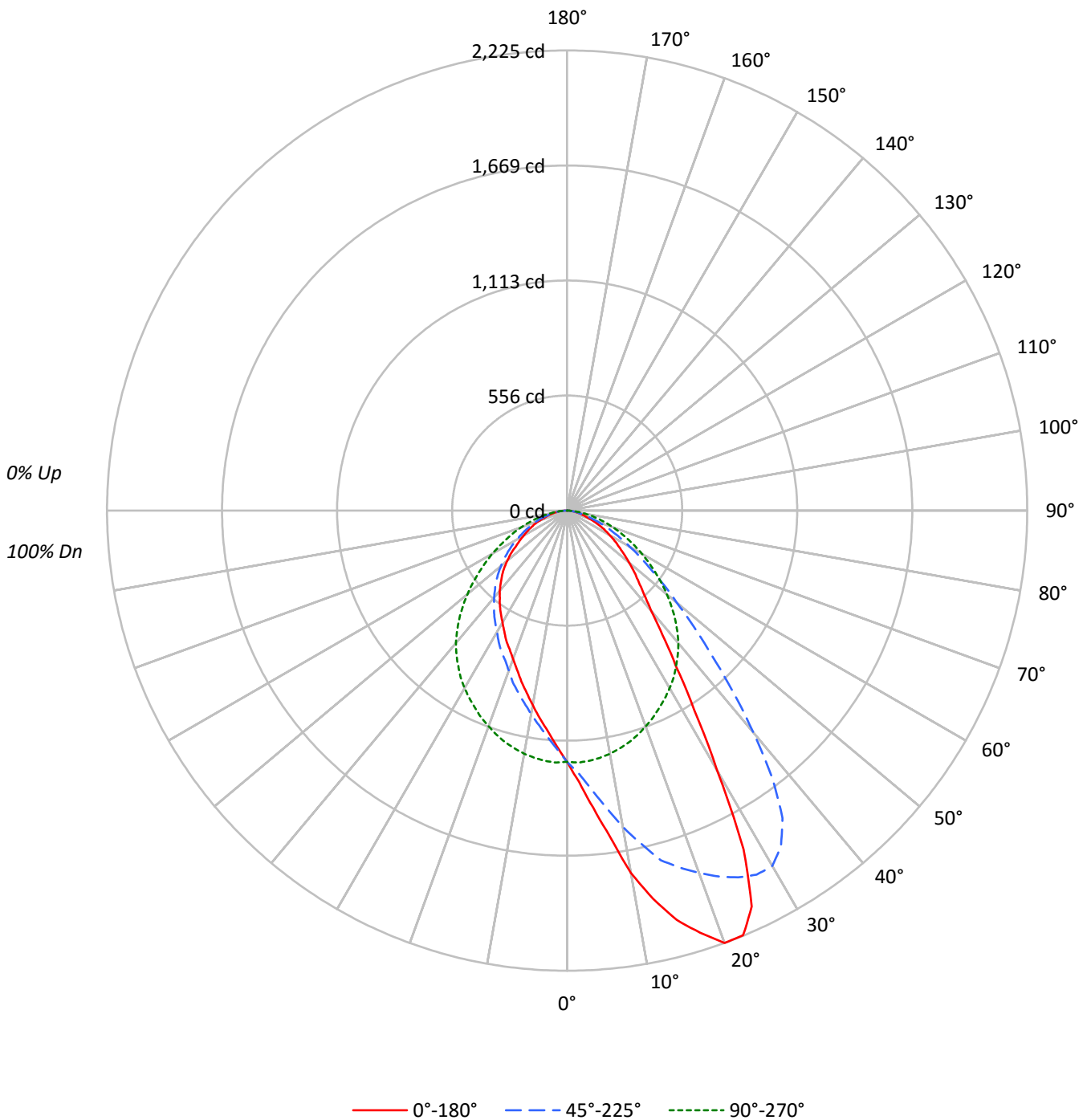
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	14720	14720	14720
5°	17547	14782	13018
10°	21909	14697	11760
15°	25716	14548	10725
20°	28701	14323	9845
25°	28242	14086	9303
30°	20300	13869	8746
35°	13554	13585	8386
40°	9986	13244	8011
45°	8377	12646	7645
50°	7392	11861	7137
55°	6481	10964	6437
60°	5772	10107	5898
65°	5071	9184	5487
70°	3980	8364	5011
75°	3508	7306	4576
80°	3050	6206	4502
85°	2462	4993	4770



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.3	3.9
10°-20°	373.3	12.3
20°-30°	588.0	19.4
30°-40°	611.5	20.2
40°-50°	523.1	17.3
50°-60°	398.7	13.2
60°-70°	255.4	8.4
70°-80°	122.4	4.0
80°-90°	32.2	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°	1080.6	35.7
0°-40°	1692.0	56.0
0°-60°	2613.9	86.4
0°-90°	3023.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3023.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1214	1214	1214	1214	1214	
5°	1442	1353	1215	1097	1070	148
15°	2049	1750	1159	911	855	581
25°	2112	1957	1053	753	696	918
35°	916	1815	918	614	567	596
45°	489	986	738	486	446	383
55°	307	492	519	350	305	277
65°	177	242	320	219	191	174
75°	75	88	156	111	98	80
85°	18	19	36	33	34	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°	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4
2.5°	1313.2	1315.3	1308.5	1307.5	1299.7	1297.6	1297.6	1286.7	1279.9	1271.1	1265.9
5°	1442.1	1450.4	1446.3	1436.9	1421.3	1417.7	1407.8	1392.2	1374.5	1352.7	1342.3
7.5°	1589.7	1606.9	1603.8	1589.2	1572.6	1562.2	1534.6	1512.3	1478.5	1447.8	1423.9
10°	1780.0	1768.1	1758.7	1744.7	1729.6	1705.2	1676.0	1636.0	1589.7	1553.4	1512.8
12.5°	1922.5	1923.0	1910.5	1895.9	1873.1	1850.2	1812.8	1761.8	1706.2	1649.5	1601.7
15°	2049.3	2052.4	2044.6	2029.5	1999.4	1958.3	1904.3	1884.0	1807.0	1749.9	1692.7
17.5°	2139.8	2140.3	2138.7	2118.4	2085.7	2057.6	2007.2	1959.9	1887.1	1809.6	1733.2
20°	2225.0	2219.8	2220.9	2197.5	2174.6	2140.8	2091.9	2014.5	1957.3	1864.2	1784.7
22.5°	2222.9	2222.9	2227.6	2223.5	2208.4	2184.5	2148.6	2086.2	2009.3	1915.2	1823.2
25°	2111.7	2107.5	2132.0	2138.7	2165.2	2169.9	2158.5	2122.6	2053.5	1956.8	1846.0
27.5°	1846.6	1831.5	1882.4	1932.9	1999.9	2042.5	2086.2	2096.1	2063.3	1984.3	1868.4
30°	1450.4	1499.3	1522.2	1604.3	1695.8	1805.0	1900.6	1991.6	2014.0	1983.8	1892.8
32.5°	1142.7	1183.7	1201.9	1269.5	1353.2	1485.8	1641.2	1779.5	1887.6	1924.0	1878.3
35°	916.0	916.5	960.2	991.4	1070.4	1201.9	1341.2	1513.8	1685.4	1815.4	1828.9
37.5°	755.9	758.0	786.0	817.2	880.6	954.5	1083.9	1229.5	1435.9	1629.8	1730.6
40°	631.1	635.8	655.5	686.2	728.8	781.4	877.0	1012.2	1177.5	1399.5	1580.9
42.5°	551.1	559.4	567.2	589.0	611.4	659.7	732.5	829.2	975.8	1182.7	1399.0
45°	488.7	492.8	500.6	511.5	535.5	569.8	621.8	691.9	816.7	985.7	1195.2
47.5°	440.8	438.2	447.1	456.4	472.6	497.5	533.9	594.7	688.3	829.7	1011.1
50°	392.0	391.5	397.2	403.9	419.0	436.2	464.8	507.9	578.6	690.9	853.6
52.5°	346.2	348.8	352.5	361.3	371.2	384.2	409.1	437.2	495.4	588.5	717.4
55°	306.7	308.3	314.0	318.7	326.5	340.5	356.6	382.6	424.2	491.8	603.6
57.5°	272.4	271.9	277.6	278.1	288.0	300.0	313.0	333.2	364.9	418.5	496.5
60°	238.1	236.5	241.2	244.9	249.5	258.9	269.3	289.0	313.0	349.9	414.3
62.5°	206.9	206.4	209.5	213.1	216.8	225.1	233.4	247.5	265.1	294.8	342.6
65°	176.8	178.3	179.9	181.4	183.5	188.7	197.0	207.4	220.4	242.3	279.2
67.5°	145.6	147.6	148.2	151.8	156.0	158.6	163.2	173.1	183.0	202.7	224.6
70°	112.3	111.8	112.3	113.9	119.6	125.3	132.0	138.8	144.5	157.5	175.2
72.5°	92.5	91.5	93.1	93.1	95.1	95.7	99.3	105.5	113.3	121.1	132.6
75°	74.9	74.9	74.9	74.9	76.9	78.0	79.5	81.1	83.7	87.9	97.2
77.5°	58.2	58.2	59.3	59.8	60.3	60.8	61.9	63.4	64.5	66.5	71.2
80°	43.7	44.2	43.7	44.2	44.2	45.2	45.7	47.3	47.8	50.4	52.0
82.5°	30.2	29.6	30.2	30.7	30.7	31.7	31.7	32.8	32.8	33.8	35.4
85°	17.7	16.6	17.7	17.2	18.2	17.2	17.7	18.7	18.7	19.2	21.3
87.5°	5.2	6.2	5.2	5.7	5.7	6.2	6.2	6.2	7.3	6.8	7.3
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4
2.5°	1263.8	1262.2	1255.0	1246.6	1235.7	1228.4	1222.7	1219.6	1210.2	1198.8	1191.0
5°	1331.4	1315.8	1299.1	1278.9	1260.2	1240.9	1229.0	1214.9	1197.8	1178.5	1165.0
7.5°	1398.4	1371.4	1341.8	1311.1	1279.9	1252.4	1226.9	1206.1	1180.1	1153.6	1135.4
10°	1478.0	1433.3	1387.0	1339.7	1296.5	1256.0	1224.8	1194.1	1161.4	1129.7	1105.8
12.5°	1550.2	1487.9	1432.7	1371.9	1313.7	1263.3	1214.9	1177.5	1136.4	1102.1	1074.0
15°	1609.0	1548.7	1484.2	1395.8	1322.5	1261.2	1206.6	1159.3	1111.5	1069.9	1043.4
17.5°	1670.3	1578.8	1494.1	1425.5	1329.8	1255.5	1191.5	1136.4	1084.4	1041.8	1008.5
20°	1705.7	1617.8	1523.7	1429.6	1336.1	1250.3	1172.8	1110.4	1055.8	1005.9	975.8
22.5°	1727.0	1624.6	1524.2	1421.3	1320.5	1230.5	1154.1	1083.9	1023.6	976.8	937.8
25°	1742.6	1624.1	1514.9	1415.1	1313.7	1217.0	1126.0	1053.2	989.3	938.9	899.4
27.5°	1755.1	1617.8	1492.5	1383.9	1281.5	1183.2	1101.1	1023.1	959.1	906.6	863.5
30°	1758.2	1610.0	1466.0	1345.9	1241.4	1153.1	1064.7	990.9	922.2	865.6	826.1
32.5°	1762.3	1590.8	1430.1	1300.7	1193.1	1105.8	1027.8	958.1	887.4	831.8	791.2
35°	1747.8	1586.1	1393.8	1247.2	1140.1	1055.3	983.1	918.1	848.9	794.9	753.8
37.5°	1703.6	1560.6	1357.4	1187.4	1076.6	998.7	938.4	879.1	815.1	755.9	717.9
40°	1629.3	1519.0	1313.7	1133.8	1016.9	936.3	883.2	837.0	775.6	721.1	679.5
42.5°	1518.5	1462.4	1272.1	1077.7	949.3	872.3	829.7	787.1	735.1	679.5	641.0
45°	1378.2	1387.0	1212.3	1017.4	887.9	809.9	767.8	737.7	689.9	644.1	604.1
47.5°	1207.6	1281.5	1148.4	954.0	821.4	748.1	711.2	683.6	650.4	603.0	566.1
50°	1041.3	1159.3	1068.3	890.0	759.5	686.7	650.4	629.0	601.0	565.6	530.8
52.5°	887.9	1016.9	971.6	818.8	692.5	627.5	592.1	575.5	554.7	521.9	491.3
55°	749.1	877.5	865.1	747.0	625.4	565.6	538.6	518.8	503.7	478.8	453.8
57.5°	628.5	752.8	755.4	667.5	567.2	506.3	483.0	467.4	457.0	437.2	412.8
60°	515.7	627.5	649.3	586.9	503.7	451.8	428.9	416.9	409.1	394.1	376.4
62.5°	422.1	513.1	538.6	498.0	442.9	395.1	378.5	367.0	362.3	349.9	334.8
65°	337.4	416.4	440.3	415.4	383.7	344.7	330.1	320.2	315.6	308.3	296.8
67.5°	266.2	327.5	353.5	332.7	320.8	293.2	283.3	277.6	273.4	268.2	258.4
70°	203.8	246.4	273.4	268.8	259.4	246.4	239.7	236.0	231.9	227.7	219.4
72.5°	153.9	179.9	204.8	209.0	201.7	201.7	196.0	194.9	192.9	187.7	184.0
75°	108.7	128.9	146.6	153.4	156.5	159.1	156.5	156.0	155.4	151.3	148.7
77.5°	75.4	88.4	100.3	112.3	116.4	120.1	120.6	122.7	121.1	118.5	117.5
80°	54.6	57.2	65.0	74.9	82.7	85.8	87.9	88.9	88.4	87.9	85.8
82.5°	35.9	38.0	40.5	46.8	53.0	58.7	59.8	59.3	60.8	61.3	59.8
85°	21.3	21.8	22.9	23.9	27.6	33.3	34.8	35.9	36.9	36.9	33.8
87.5°	8.3	7.8	8.8	8.8	10.4	10.9	14.0	16.6	17.2	15.1	15.1
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4	1214.4
2.5°	1188.4	1181.7	1177.0	1166.6	1159.8	1152.5	1145.3	1149.9	1149.4	1148.9	1148.9
5°	1153.6	1141.6	1130.7	1116.7	1107.8	1096.9	1088.6	1087.6	1089.6	1082.4	1078.2
7.5°	1120.8	1105.2	1089.6	1075.1	1059.0	1046.5	1038.7	1035.6	1029.9	1025.2	1021.0
10°	1086.0	1066.8	1051.7	1032.5	1014.8	999.2	989.3	982.5	978.9	975.3	968.5
12.5°	1050.1	1031.4	1011.1	988.8	972.1	953.4	946.7	938.9	931.1	926.9	917.0
15°	1015.3	990.9	970.6	947.7	929.0	911.3	900.9	885.8	883.8	878.6	869.2
17.5°	981.5	954.5	924.8	909.2	890.5	871.8	855.2	850.5	834.9	829.7	820.9
20°	939.9	915.5	894.2	871.8	841.1	824.0	811.5	804.7	792.8	785.5	780.3
22.5°	904.0	879.1	853.6	826.6	802.7	782.9	774.6	763.2	758.0	747.0	741.3
25°	870.3	843.2	813.6	785.5	767.3	752.8	738.2	728.8	719.5	714.8	704.4
27.5°	829.2	802.2	773.6	751.7	730.9	716.4	702.3	694.5	682.6	674.8	669.1
30°	796.4	763.2	739.2	720.0	691.4	677.9	668.0	657.6	649.3	641.0	635.3
32.5°	758.5	728.8	706.5	681.5	661.3	646.2	632.7	623.8	617.1	609.3	603.6
35°	718.5	693.0	669.6	645.7	629.6	614.5	599.4	591.6	584.8	577.6	572.4
37.5°	682.1	658.1	636.3	613.4	593.7	580.7	568.2	563.0	553.7	548.5	543.3
40°	648.8	625.4	601.5	579.6	558.9	549.5	538.6	529.7	521.4	517.8	512.1
42.5°	612.4	589.0	569.8	545.9	529.7	516.2	506.3	496.5	490.8	485.0	482.4
45°	576.5	555.7	536.0	512.6	496.5	485.6	474.1	465.3	459.6	455.9	450.2
47.5°	542.2	520.9	501.1	480.4	464.8	452.3	440.3	434.6	426.8	422.6	418.5
50°	504.3	485.6	464.2	445.5	429.9	417.5	408.1	400.3	393.5	387.8	385.2
52.5°	469.4	449.2	431.5	414.3	397.7	383.1	374.8	366.5	361.8	355.1	351.9
55°	430.4	411.2	395.6	378.5	362.3	350.4	340.0	332.7	327.5	320.2	316.1
57.5°	394.6	377.9	358.7	343.6	326.5	317.1	308.3	297.9	291.6	285.9	281.8
60°	358.2	338.4	322.3	308.3	293.7	280.7	272.9	265.1	258.4	252.7	249.0
62.5°	320.2	303.6	288.5	272.9	259.9	249.0	239.7	233.4	227.7	224.6	220.9
65°	281.2	267.7	252.1	239.7	227.2	218.9	211.6	205.9	201.7	199.1	196.0
67.5°	245.4	232.4	218.3	205.3	197.0	190.3	185.1	179.9	177.8	174.7	172.6
70°	210.5	197.0	185.1	175.7	167.4	162.7	159.6	156.0	153.9	149.7	147.6
72.5°	172.6	163.8	156.0	148.7	142.4	138.3	134.1	129.4	125.8	121.1	119.0
75°	141.9	133.1	126.3	121.1	117.0	111.3	105.5	100.9	99.3	97.7	97.2
77.5°	110.7	105.0	99.8	95.7	89.9	84.7	83.2	82.1	81.6	80.6	80.6
80°	82.7	77.5	73.8	68.6	65.5	65.5	65.5	64.5	65.0	65.0	65.0
82.5°	56.1	51.5	49.9	48.9	48.9	49.4	49.4	49.9	49.4	50.4	49.9
85°	31.7	32.2	33.3	32.8	33.3	33.3	34.3	33.8	34.3	33.3	34.3
87.5°	14.6	16.1	16.6	17.2	17.7	17.2	17.7	17.7	18.2	18.2	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: P242582

CATALOG NUMBER: S123RDR-S1000D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1214.4	1214.4	1214.4	1214.4
2.5°	1142.7	1142.1	1142.7	1140.6
5°	1076.6	1076.1	1074.6	1069.9
7.5°	1016.9	1015.8	1011.7	1012.7
10°	964.9	965.4	959.1	955.5
12.5°	914.4	911.3	906.6	902.5
15°	871.3	866.1	853.6	854.7
17.5°	817.7	813.6	813.1	805.8
20°	772.0	769.4	770.4	763.2
22.5°	736.1	733.5	727.8	726.8
25°	701.3	697.1	693.0	695.6
27.5°	665.9	662.8	658.1	658.1
30°	632.7	629.6	627.5	624.9
32.5°	598.9	598.9	594.7	594.7
35°	570.3	567.2	566.1	566.7
37.5°	542.7	538.6	536.5	534.4
40°	512.6	508.4	507.4	506.3
42.5°	478.8	477.8	477.2	475.2
45°	448.6	448.1	445.0	446.0
47.5°	416.4	413.8	412.3	413.8
50°	383.1	382.1	377.4	378.5
52.5°	349.9	345.2	344.2	343.1
55°	312.4	307.8	305.7	304.6
57.5°	275.5	274.0	271.9	273.4
60°	243.8	243.8	243.8	243.3
62.5°	219.4	217.8	217.3	218.3
65°	194.4	193.9	191.8	191.3
67.5°	171.6	169.5	169.5	168.4
70°	145.0	144.0	140.9	141.4
72.5°	116.4	115.4	115.4	114.4
75°	96.7	96.2	95.7	97.7
77.5°	80.6	80.6	81.1	80.1
80°	65.0	65.0	64.5	64.5
82.5°	48.9	49.4	49.9	48.9
85°	34.3	33.8	34.8	34.3
87.5°	19.2	18.2	18.2	18.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)