

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: P332481-940

Luminaire Tested: **S123RDIW-S1165D1030U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332481-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S1165D1030U940-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7094.1 lumens  
Efficiency: N/A  
Efficacy: 105.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

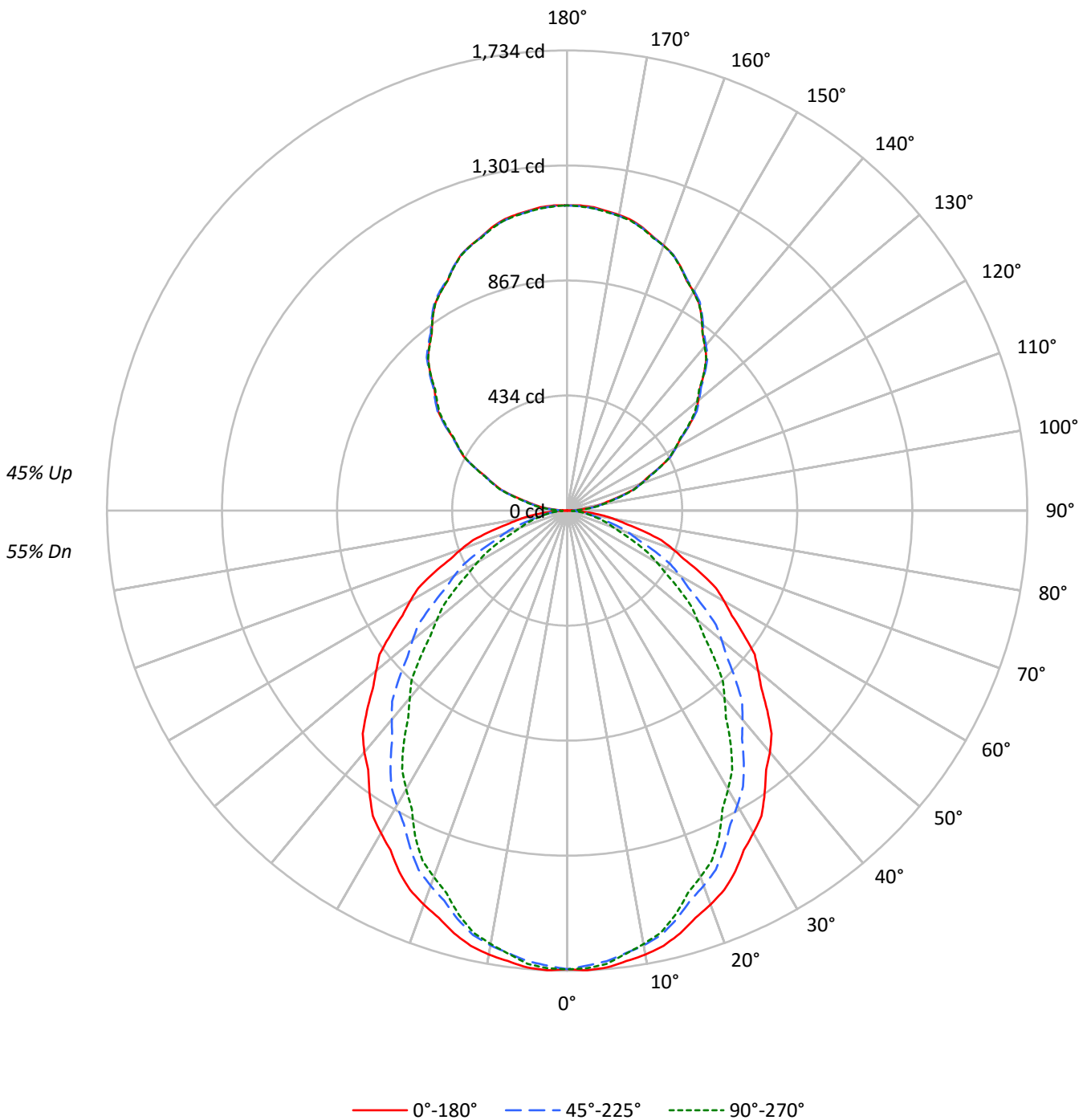
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	88	92	88	85	82	76	74	72	65	63	61	54	53	52	47
2	91	83	77	72	84	78	73	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	55	45	38	33	39	33	29	34	30	26	29	26	23	20
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	18
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	24	45	34	28	23	30	25	21	27	22	19	23	20	17	15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	18603	18603	18603
5°	18674	18416	18522
10°	18569	18185	18124
15°	18369	17761	17572
20°	18095	17228	16827
25°	17813	16631	16098
30°	17439	15940	15070
35°	17056	15251	14127
40°	16703	14436	12960
45°	16238	13633	11905
50°	15726	12722	10727
55°	15204	11678	9627
60°	14725	10562	8420
65°	14103	9352	7210
70°	13322	7852	5822
75°	12181	6180	5481
80°	10860	5473	5040
85°	9176	4841	4508



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.3	2.3
10°-20°	451.6	6.4
20°-30°	650.2	9.2
30°-40°	732.4	10.3
40°-50°	700.7	9.9
50°-60°	573.8	8.1
60°-70°	387.1	5.5
70°-80°	194.8	2.7
80°-90°	54.9	0.8
90°-100°	74.9	1.1
100°-110°	224.2	3.2
110°-120°	381.4	5.4
120°-130°	501.7	7.1
130°-140°	563.9	7.9
140°-150°	554.3	7.8
150°-160°	466.6	6.6
160°-170°	310.6	4.4
170°-180°	108.8	1.5
0°-30°	1264.1	17.8
0°-40°	1996.5	28.1
0°-60°	3270.9	46.1
0°-90°	3907.7	55.1
90°-120°	680.6	9.6
90°-150°	2300.3	32.4
90°-180°	3186.0	44.9
0°-180°	7094.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1728	1728	1728	1728	1728	
5°	1728	1721	1704	1716	1714	164
15°	1648	1632	1594	1587	1577	464
25°	1500	1463	1400	1372	1355	689
35°	1298	1246	1161	1102	1075	812
45°	1067	1001	896	818	782	823
55°	810	739	622	544	513	726
65°	554	475	367	302	283	548
75°	293	225	149	135	132	312
85°	74	45	39	37	36	83
90°	1	10	22	25	27	7
95°	53	60	67	70	70	60
105°	203	205	213	213	215	218
115°	384	386	385	386	385	380
125°	562	564	563	559	556	501
135°	729	734	734	730	728	562
145°	884	886	889	888	884	552
155°	1013	1013	1014	1017	1011	466
165°	1103	1100	1100	1105	1100	311
175°	1147	1144	1144	1148	1143	109
180°	1150	1150	1150	1150	1150	



TEST NUMBER: P332481-940

CATALOG NUMBER: S123RDIW-S1165D1030U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1733.9	1732.9	1731.9	1730.9	1729.9	1727.9	1724.9	1721.9	1719.0	1715.9	1718.7
5°	1728.3	1726.7	1725.2	1723.6	1722.1	1719.4	1715.7	1711.9	1708.2	1704.4	1707.3
7.5°	1712.3	1710.7	1709.0	1707.3	1705.6	1702.3	1697.5	1692.6	1687.7	1682.8	1684.4
10°	1698.9	1696.7	1694.5	1692.3	1690.1	1686.2	1680.6	1675.0	1669.4	1663.8	1664.1
12.5°	1679.8	1677.4	1674.9	1672.5	1670.1	1665.4	1658.6	1651.7	1644.8	1638.0	1637.8
15°	1648.4	1644.9	1641.6	1638.1	1634.7	1628.6	1619.9	1611.1	1602.4	1593.8	1592.1
17.5°	1608.8	1604.9	1600.9	1596.9	1593.0	1585.4	1574.3	1563.2	1552.1	1541.1	1537.8
20°	1579.7	1574.8	1569.8	1564.8	1559.8	1551.4	1539.5	1527.7	1515.8	1504.0	1499.9
22.5°	1547.2	1541.4	1535.7	1530.0	1524.3	1515.1	1502.5	1490.0	1477.4	1464.7	1459.7
25°	1499.8	1492.0	1484.3	1476.4	1468.6	1457.6	1443.2	1429.0	1414.6	1400.3	1393.7
27.5°	1442.3	1433.8	1425.1	1416.6	1407.9	1395.7	1379.7	1363.8	1347.8	1331.9	1322.8
30°	1403.1	1393.7	1384.4	1375.0	1365.7	1352.3	1334.9	1317.4	1300.0	1282.5	1271.9
32.5°	1363.9	1353.3	1342.6	1332.0	1321.5	1307.0	1288.5	1270.1	1251.6	1233.2	1221.6
35°	1298.0	1286.7	1275.5	1264.4	1253.1	1237.9	1218.5	1199.3	1179.9	1160.6	1147.2
37.5°	1231.3	1218.8	1206.3	1193.8	1181.4	1164.8	1144.2	1123.6	1103.0	1082.4	1067.2
40°	1188.7	1174.9	1161.2	1147.5	1133.8	1115.9	1093.8	1071.7	1049.5	1027.4	1011.2
42.5°	1140.4	1126.7	1113.0	1099.3	1085.6	1067.3	1044.5	1021.5	998.7	975.9	958.1
45°	1066.7	1052.7	1038.7	1024.7	1010.6	991.6	967.6	943.6	919.6	895.6	877.9
47.5°	992.9	977.6	962.2	946.8	931.4	911.7	887.7	863.7	839.7	815.8	796.5
50°	939.1	924.5	909.8	895.2	880.6	860.7	835.4	810.2	785.0	759.7	740.4
52.5°	890.9	875.0	859.2	843.3	827.3	806.9	781.9	757.0	732.0	707.0	687.0
55°	810.2	794.9	779.6	764.4	749.1	728.3	701.8	675.3	648.8	622.3	604.3
57.5°	735.6	719.0	702.3	685.7	669.1	647.5	620.9	594.2	567.7	541.1	524.0
60°	684.0	666.9	649.8	632.7	615.5	594.0	568.1	542.3	516.5	490.6	473.8
62.5°	632.4	615.3	598.2	581.0	563.9	542.4	516.6	490.7	464.8	439.0	423.2
65°	553.7	536.5	519.4	502.3	485.2	464.4	440.1	415.8	391.6	367.2	352.0
67.5°	474.9	457.5	440.2	422.9	405.6	385.3	362.0	338.7	315.4	292.1	280.7
70°	423.3	406.5	389.7	372.8	356.1	336.7	315.0	293.1	271.3	249.5	238.6
72.5°	371.8	355.2	338.6	322.0	305.4	287.2	267.4	247.6	227.8	208.0	199.1
75°	292.9	278.0	263.1	248.1	233.2	217.1	200.0	182.8	165.7	148.6	145.4
77.5°	221.1	207.7	194.1	180.7	167.1	154.8	143.8	132.8	121.7	110.8	109.1
80°	175.2	162.5	149.6	136.9	124.1	114.5	107.9	101.4	94.9	88.3	87.4
82.5°	131.4	120.5	109.4	98.4	87.4	80.3	77.3	74.2	71.2	68.1	67.1
85°	74.3	67.4	60.5	53.8	46.9	43.0	42.1	41.1	40.2	39.2	38.6
87.5°	27.1	24.8	22.4	20.1	17.7	16.9	17.4	17.8	18.4	18.9	18.8
90°	0.9	2.9	4.9	7.0	8.9	11.2	13.8	16.5	19.1	21.7	22.5
92.5°	21.8	23.2	24.6	25.9	27.3	28.7	30.2	31.7	33.2	34.7	35.3
95°	53.3	54.7	56.1	57.5	58.9	60.5	62.1	63.7	65.3	66.9	67.7
97.5°	94.7	95.7	96.8	97.8	98.9	100.0	101.1	102.3	103.4	104.6	105.6
100°	122.9	124.0	125.3	126.4	127.7	128.8	129.8	130.8	131.8	132.8	133.4
102.5°	155.4	156.1	156.9	157.6	158.3	159.3	160.6	161.9	163.3	164.6	165.2
105°	203.3	203.7	204.1	204.5	204.9	206.0	207.8	209.6	211.4	213.2	213.2
107.5°	259.0	259.1	259.4	259.7	259.8	260.4	261.1	261.8	262.5	263.2	263.9
110°	293.6	294.0	294.4	294.8	295.2	295.6	296.0	296.4	296.9	297.2	298.0



TEST NUMBER: P332481-940

CATALOG NUMBER: S123RDIW-S1165D1030U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	329.8	330.0	330.2	330.5	330.7	330.8	330.9	331.0	331.1	331.2	332.2
115°	384.0	384.5	385.1	385.8	386.4	386.5	386.0	385.7	385.2	384.9	385.0
117.5°	438.5	438.9	439.3	439.7	440.1	440.1	439.5	439.0	438.5	438.0	437.9
120°	472.5	473.7	474.9	476.1	477.3	477.4	476.4	475.4	474.4	473.4	473.1
122.5°	507.9	508.8	509.7	510.5	511.4	511.6	511.1	510.6	510.1	509.5	509.0
125°	562.0	562.5	563.1	563.7	564.4	564.5	564.0	563.7	563.2	562.8	562.0
127.5°	611.8	613.1	614.4	615.6	616.9	617.3	616.9	616.4	616.0	615.5	614.5
130°	645.1	646.7	648.3	649.9	651.5	651.9	651.4	650.8	650.1	649.5	648.7
132.5°	678.2	679.8	681.4	683.1	684.7	685.3	684.8	684.4	683.9	683.5	682.5
135°	729.1	730.2	731.5	732.6	733.9	734.3	734.1	734.0	733.8	733.5	732.7
137.5°	776.1	777.0	778.0	779.0	780.1	780.8	781.3	781.9	782.4	782.9	782.0
140°	808.5	809.6	810.6	811.5	812.5	813.2	813.3	813.6	813.8	814.0	813.8
142.5°	838.2	839.2	840.2	841.2	842.2	842.8	843.2	843.6	844.0	844.4	844.1
145°	884.4	884.8	885.2	885.6	886.0	886.5	887.2	887.8	888.3	888.9	888.8
147.5°	924.9	925.6	926.3	927.1	927.8	928.4	929.0	929.6	930.1	930.7	930.7
150°	953.1	953.5	953.9	954.3	954.7	955.1	955.5	955.9	956.3	956.7	956.7
152.5°	976.2	976.8	977.3	977.9	978.5	978.8	979.1	979.4	979.6	979.8	980.2
155°	1012.7	1012.7	1012.7	1012.7	1012.7	1012.8	1013.0	1013.3	1013.4	1013.6	1014.4
157.5°	1043.8	1043.6	1043.3	1043.0	1042.9	1042.8	1042.9	1043.1	1043.3	1043.4	1044.3
160°	1063.3	1062.9	1062.5	1062.1	1061.7	1061.5	1061.5	1061.5	1061.5	1061.5	1062.5
162.5°	1080.7	1080.1	1079.5	1079.0	1078.4	1078.2	1078.3	1078.5	1078.7	1078.9	1079.9
165°	1103.0	1102.4	1101.9	1101.3	1100.6	1100.4	1100.4	1100.4	1100.4	1100.4	1101.5
167.5°	1121.0	1120.2	1119.4	1118.6	1117.8	1117.4	1117.6	1117.8	1117.9	1118.0	1119.3
170°	1131.0	1130.2	1129.4	1128.6	1127.8	1127.5	1127.5	1127.5	1127.5	1127.5	1128.8
172.5°	1139.0	1138.2	1137.4	1136.6	1135.8	1135.4	1135.4	1135.4	1135.4	1135.4	1136.7
175°	1147.4	1146.6	1145.8	1145.0	1144.2	1143.7	1143.7	1143.7	1143.7	1143.7	1145.0
177.5°	1150.8	1150.1	1149.5	1148.8	1148.2	1147.9	1147.9	1147.9	1147.9	1147.9	1148.8
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0



TEST NUMBER: P332481-940

CATALOG NUMBER: S123RDIW-S1165D1030U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3	1728.3
2.5°	1721.4	1724.2	1726.9	1728.0	1727.5	1727.1	1726.5	1726.0
5°	1710.0	1712.9	1715.7	1716.7	1716.1	1715.5	1714.8	1714.2
7.5°	1686.0	1687.6	1689.1	1689.3	1688.3	1687.2	1686.1	1685.1
10°	1664.5	1664.7	1665.1	1664.5	1662.9	1661.3	1659.7	1658.2
12.5°	1637.6	1637.4	1637.3	1636.3	1634.5	1632.6	1630.8	1629.1
15°	1590.6	1589.0	1587.5	1585.6	1583.4	1581.3	1579.0	1576.9
17.5°	1534.5	1531.1	1527.8	1524.6	1521.3	1518.0	1514.8	1511.5
20°	1495.9	1491.8	1487.8	1483.9	1480.2	1476.4	1472.7	1469.0
22.5°	1454.6	1449.7	1444.6	1440.3	1436.8	1433.3	1429.9	1426.4
25°	1387.2	1380.6	1374.1	1369.1	1365.7	1362.3	1358.9	1355.4
27.5°	1313.7	1304.6	1295.5	1288.3	1283.1	1277.9	1272.6	1267.4
30°	1261.3	1250.8	1240.2	1232.4	1227.4	1222.4	1217.5	1212.5
32.5°	1210.1	1198.5	1186.9	1178.5	1173.2	1168.0	1162.8	1157.5
35°	1133.8	1120.4	1107.1	1097.5	1091.9	1086.3	1080.7	1075.1
37.5°	1052.0	1036.8	1021.5	1010.5	1003.6	996.7	989.8	982.8
40°	995.1	978.8	962.7	951.0	943.8	936.7	929.5	922.3
42.5°	940.5	922.7	905.1	893.0	886.6	880.2	873.8	867.4
45°	860.1	842.4	824.7	812.1	804.6	797.1	789.6	782.1
47.5°	777.1	757.9	738.5	725.6	718.9	712.2	705.5	698.9
50°	721.1	701.8	682.4	669.2	662.1	654.9	647.7	640.6
52.5°	666.9	646.8	626.8	613.5	607.1	600.7	594.3	587.9
55°	586.2	568.1	550.1	538.0	531.7	525.5	519.2	513.0
57.5°	506.9	489.8	472.8	461.5	456.3	451.0	445.7	440.4
60°	456.9	440.1	423.3	412.2	407.0	401.6	396.4	391.1
62.5°	407.3	391.6	375.7	365.1	359.4	353.9	348.4	342.9
65°	336.7	321.5	306.2	296.9	293.5	290.0	286.6	283.1
67.5°	269.3	257.9	246.5	239.0	235.3	231.6	227.9	224.3
70°	227.7	216.8	205.9	198.8	195.3	191.9	188.4	185.0
72.5°	190.2	181.3	172.4	167.2	165.8	164.3	162.9	161.5
75°	142.3	139.2	136.1	134.3	133.7	133.0	132.4	131.8
77.5°	107.4	105.7	104.0	102.8	102.2	101.6	100.9	100.3
80°	86.4	85.5	84.5	83.8	83.2	82.6	81.9	81.3
82.5°	66.3	65.4	64.4	63.8	63.8	63.6	63.5	63.4
85°	38.0	37.4	36.7	36.5	36.5	36.5	36.5	36.5
87.5°	18.7	18.6	18.5	18.5	18.3	18.1	17.9	17.7
90°	23.3	24.1	24.9	25.5	25.9	26.3	26.7	27.1
92.5°	35.9	36.6	37.3	37.5	37.2	37.0	36.7	36.5
95°	68.5	69.3	70.1	70.4	70.4	70.4	70.4	70.4
97.5°	106.5	107.4	108.3	108.7	108.6	108.6	108.5	108.4
100°	134.0	134.6	135.2	135.7	136.1	136.5	136.9	137.3
102.5°	165.8	166.4	167.0	167.3	167.2	167.1	167.0	166.9
105°	213.2	213.2	213.2	213.4	213.8	214.2	214.6	215.0
107.5°	264.6	265.2	265.8	266.0	265.8	265.6	265.3	265.0
110°	298.8	299.6	300.4	300.6	300.2	299.8	299.4	299.0





TEST NUMBER: P332481-940

CATALOG NUMBER: S123RDIW-S1165D1030U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	333.1	334.0	335.0	335.5	335.4	335.3	335.3	335.2
115°	385.2	385.5	385.7	385.7	385.5	385.2	385.0	384.9
117.5°	437.9	437.8	437.8	437.5	436.9	436.4	435.8	435.2
120°	473.0	472.8	472.6	472.3	471.9	471.4	471.1	470.6
122.5°	508.5	507.9	507.5	506.8	506.3	505.8	505.2	504.6
125°	561.2	560.4	559.6	558.8	558.0	557.2	556.4	555.6
127.5°	613.3	612.2	611.1	610.0	609.1	608.2	607.3	606.4
130°	647.9	647.1	646.3	645.2	643.8	642.4	641.1	639.6
132.5°	681.6	680.6	679.7	678.7	677.5	676.5	675.4	674.3
135°	731.9	731.1	730.3	729.8	729.3	729.0	728.5	728.2
137.5°	781.2	780.3	779.5	778.7	777.9	777.2	776.4	775.7
140°	813.6	813.3	813.2	812.3	810.9	809.6	808.2	806.7
142.5°	843.9	843.7	843.6	842.8	841.8	840.7	839.6	838.6
145°	888.6	888.3	888.1	887.6	886.8	886.0	885.2	884.4
147.5°	930.7	930.7	930.7	930.1	928.9	927.6	926.5	925.2
150°	956.7	956.7	956.7	956.1	954.9	953.7	952.5	951.3
152.5°	980.4	980.8	981.1	980.8	979.7	978.7	977.6	976.6
155°	1015.2	1016.0	1016.8	1016.6	1015.1	1013.7	1012.4	1010.9
157.5°	1045.1	1046.0	1046.8	1046.7	1045.5	1044.5	1043.3	1042.1
160°	1063.5	1064.5	1065.5	1065.6	1064.8	1064.0	1063.2	1062.4
162.5°	1080.8	1081.8	1082.9	1082.7	1081.5	1080.1	1078.9	1077.5
165°	1102.8	1103.9	1105.2	1105.1	1103.7	1102.2	1100.8	1099.5
167.5°	1120.5	1121.8	1123.0	1123.0	1121.8	1120.5	1119.3	1118.0
170°	1130.2	1131.7	1133.1	1133.1	1131.7	1130.2	1128.8	1127.5
172.5°	1137.9	1139.2	1140.4	1140.3	1138.9	1137.5	1136.0	1134.7
175°	1146.1	1147.4	1148.5	1148.4	1147.0	1145.6	1144.2	1142.8
177.5°	1149.8	1150.8	1151.7	1151.6	1150.5	1149.4	1148.3	1147.2
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0

(END OF REPORT)