

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: P332485-940

Luminaire Tested: **S123RDIW-S1165D1320U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332485-940  
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-S1165D1320U940-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7987.8 lumens  
Efficiency: N/A  
Efficacy: 104.8 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

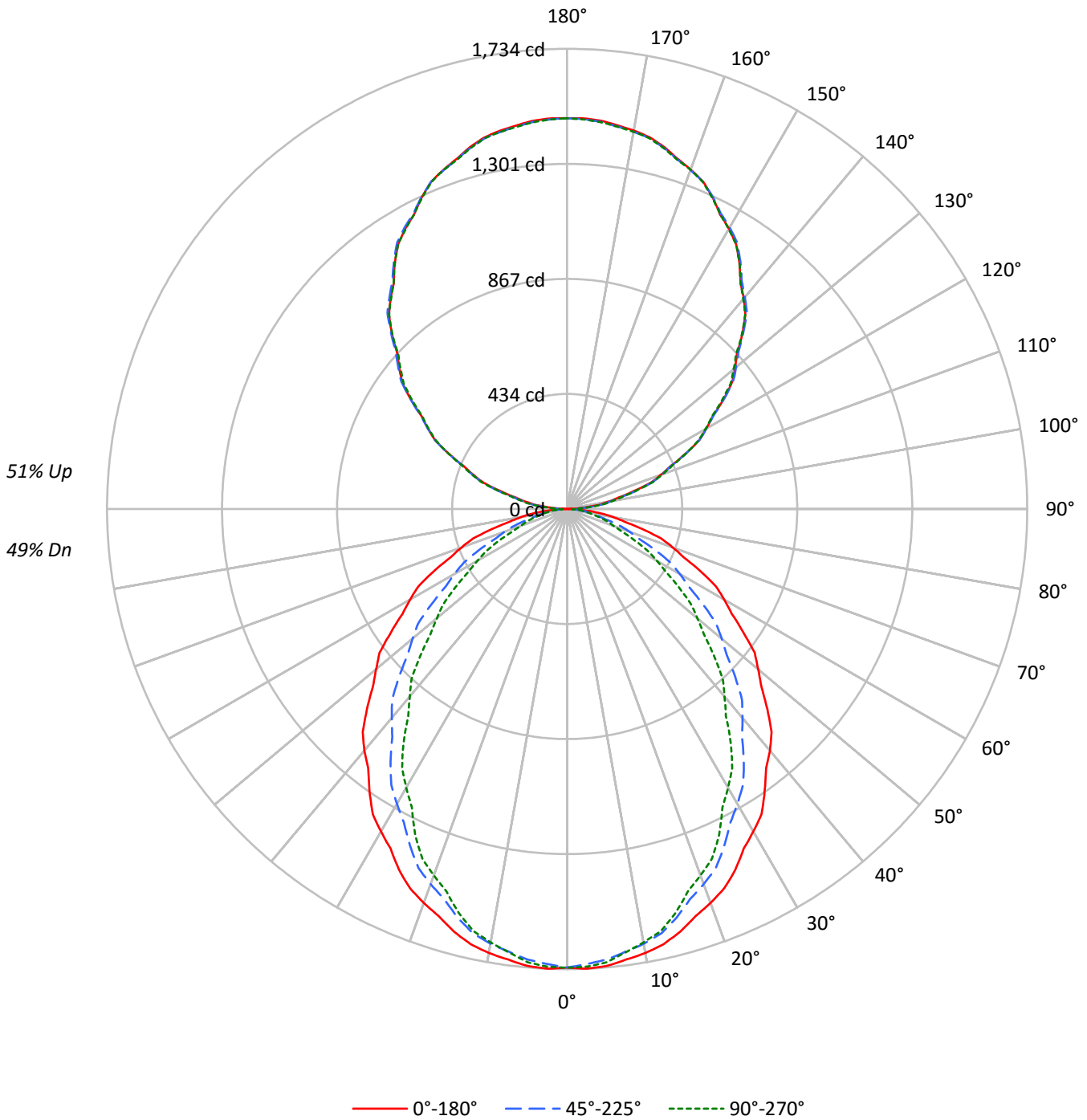
Input Watts (W): 76.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-UDD-F1

### Luminous Intensity Polar Plot





TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-UDD-F1

**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	107	107	107	107	98	98	98	98	83	83	83		68	68	68		55	55	55	49
1	98	94	90	87	90	86	83	80	73	71	69		61	59	58		49	48	47	42
2	89	82	76	71	82	76	71	66	64	61	57		54	51	49		44	42	40	36
3	82	72	65	60	75	67	61	56	57	52	48		48	44	41		39	37	35	30
4	75	64	57	51	69	60	53	48	51	46	42		43	39	36		35	32	30	26
5	69	57	49	44	63	53	46	41	46	40	36		38	34	31		32	29	26	23
6	63	52	44	38	58	48	41	36	41	36	32		35	31	27		29	26	23	20
7	59	47	39	33	54	43	36	32	37	32	28		32	27	24		26	23	21	18
8	55	42	35	30	50	40	33	28	34	29	25		29	25	22		24	21	19	16
9	51	39	31	26	47	36	30	25	31	26	22		27	23	20		22	19	17	15
10	47	36	28	24	44	33	27	23	29	24	20		25	21	18		21	18	15	14

**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



TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.3	2.0
10°-20°	451.6	5.7
20°-30°	650.2	8.1
30°-40°	732.4	9.2
40°-50°	700.7	8.8
50°-60°	573.8	7.2
60°-70°	387.1	4.8
70°-80°	194.8	2.4
80°-90°	55.9	0.7
90°-100°	95.9	1.2
100°-110°	287.1	3.6
110°-120°	488.2	6.1
120°-130°	642.2	8.0
130°-140°	721.9	9.0
140°-150°	709.6	8.9
150°-160°	597.3	7.5
160°-170°	397.6	5.0
170°-180°	139.2	1.7
0°-30°	1264.1	15.8
0°-40°	1996.5	25.0
0°-60°	3270.9	40.9
0°-90°	3908.7	48.9
90°-120°	871.3	10.9
90°-150°	2944.9	36.9
90°-180°	4079.0	51.1
0°-180°	7987.8	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	13	28	32	35	8
95°	68	76	86	90	90	77
105°	260	263	273	273	275	279
115°	492	495	493	494	493	486
125°	719	723	720	716	711	641
135°	933	940	939	935	932	719
145°	1132	1135	1138	1137	1132	707
155°	1296	1297	1298	1302	1294	597
165°	1412	1409	1409	1415	1408	398
175°	1469	1464	1464	1470	1463	139
180°	1472	1472	1472	1472	1472	



TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-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	24.9	22.6	20.4	18.2	17.5	18.1	18.8	19.4	20.2	20.1
90°	1.2	3.7	6.3	8.8	11.4	14.4	17.7	21.0	24.4	27.7	28.8
92.5°	28.0	29.7	31.5	33.3	35.0	36.8	38.7	40.6	42.5	44.4	45.2
95°	68.2	70.0	71.9	73.7	75.4	77.4	79.5	81.5	83.6	85.6	86.6
97.5°	121.2	122.5	123.9	125.2	126.5	128.0	129.5	130.9	132.4	133.9	135.1
100°	157.3	158.8	160.3	161.9	163.5	164.9	166.1	167.5	168.7	170.0	170.8
102.5°	198.9	199.8	200.8	201.7	202.6	203.9	205.6	207.3	209.0	210.7	211.5
105°	260.2	260.7	261.3	261.7	262.3	263.7	266.0	268.3	270.6	273.0	273.0
107.5°	331.4	331.8	332.1	332.4	332.7	333.3	334.2	335.2	336.1	337.0	337.9
110°	375.9	376.4	376.9	377.4	377.9	378.4	379.0	379.5	380.0	380.5	381.6



TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	422.1	422.4	422.8	423.0	423.4	423.6	423.7	423.7	423.9	424.0	425.3
115°	491.5	492.3	493.0	493.8	494.6	494.7	494.2	493.7	493.2	492.7	492.9
117.5°	561.4	561.9	562.4	562.9	563.5	563.4	562.7	562.0	561.3	560.7	560.6
120°	604.8	606.4	608.0	609.5	611.0	611.2	609.8	608.6	607.3	606.0	605.7
122.5°	650.2	651.3	652.5	653.6	654.7	655.0	654.2	653.6	652.9	652.3	651.6
125°	719.3	720.1	720.9	721.7	722.5	722.6	722.0	721.6	721.0	720.5	719.5
127.5°	783.2	784.9	786.5	788.1	789.8	790.3	789.8	789.2	788.6	788.1	786.6
130°	825.7	827.8	829.9	832.0	834.0	834.6	833.8	833.1	832.3	831.5	830.5
132.5°	868.3	870.4	872.4	874.5	876.6	877.3	876.7	876.2	875.6	875.0	873.8
135°	933.4	934.9	936.4	937.9	939.5	940.1	939.9	939.6	939.3	939.1	938.1
137.5°	993.5	994.7	996.0	997.3	998.6	999.6	1000.2	1000.9	1001.6	1002.3	1001.1
140°	1035.1	1036.3	1037.7	1038.9	1040.3	1041.0	1041.3	1041.5	1041.8	1042.1	1041.8
142.5°	1073.0	1074.3	1075.6	1076.9	1078.2	1079.1	1079.5	1080.0	1080.4	1080.9	1080.7
145°	1132.2	1132.7	1133.3	1133.8	1134.3	1135.0	1135.7	1136.5	1137.3	1138.0	1137.7
147.5°	1184.0	1185.0	1185.9	1186.9	1187.8	1188.6	1189.3	1190.0	1190.7	1191.4	1191.4
150°	1220.1	1220.7	1221.2	1221.6	1222.2	1222.7	1223.2	1223.7	1224.2	1224.8	1224.8
152.5°	1249.7	1250.4	1251.2	1251.9	1252.6	1253.1	1253.5	1253.7	1254.1	1254.4	1254.8
155°	1296.5	1296.5	1296.5	1296.5	1296.5	1296.6	1296.8	1297.1	1297.4	1297.6	1298.7
157.5°	1336.2	1336.0	1335.6	1335.3	1335.0	1335.0	1335.2	1335.3	1335.6	1335.8	1336.9
160°	1361.2	1360.8	1360.2	1359.7	1359.1	1358.9	1358.9	1358.9	1358.9	1358.9	1360.2
162.5°	1383.4	1382.7	1382.0	1381.3	1380.5	1380.3	1380.5	1380.7	1380.9	1381.1	1382.4
165°	1412.1	1411.3	1410.6	1409.8	1409.1	1408.6	1408.6	1408.6	1408.6	1408.6	1410.2
167.5°	1435.0	1434.0	1433.0	1431.9	1430.9	1430.5	1430.7	1430.9	1431.1	1431.3	1432.9
170°	1448.0	1447.0	1445.9	1444.9	1443.9	1443.3	1443.3	1443.3	1443.3	1443.3	1445.1
172.5°	1458.1	1457.1	1456.1	1455.1	1454.0	1453.5	1453.5	1453.5	1453.5	1453.5	1455.1
175°	1468.8	1467.8	1466.8	1465.7	1464.6	1464.2	1464.2	1464.2	1464.2	1464.2	1465.7
177.5°	1473.2	1472.4	1471.5	1470.7	1469.9	1469.5	1469.5	1469.5	1469.5	1469.5	1470.7
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3



TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-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°	20.1	20.0	20.0	19.9	19.7	19.5	19.4	19.3
90°	29.8	30.9	31.8	32.6	33.2	33.7	34.2	34.7
92.5°	46.0	46.9	47.7	48.0	47.6	47.3	47.0	46.7
95°	87.7	88.6	89.7	90.2	90.2	90.2	90.2	90.2
97.5°	136.3	137.5	138.7	139.2	139.1	139.0	138.9	138.8
100°	171.6	172.3	173.1	173.7	174.2	174.8	175.3	175.8
102.5°	212.2	213.0	213.8	214.1	214.0	213.9	213.8	213.7
105°	273.0	273.0	273.0	273.2	273.8	274.2	274.7	275.3
107.5°	338.7	339.5	340.3	340.5	340.3	339.9	339.7	339.3
110°	382.5	383.6	384.6	384.9	384.3	383.9	383.3	382.8





TEST NUMBER: P332485-940

CATALOG NUMBER: S123RDIW-S1165D1320U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	426.4	427.7	428.9	429.4	429.4	429.3	429.2	429.1
115°	493.2	493.5	493.7	493.7	493.5	493.2	492.9	492.7
117.5°	560.6	560.5	560.4	560.1	559.4	558.7	557.9	557.2
120°	605.5	605.3	605.0	604.6	604.1	603.6	603.1	602.5
122.5°	650.9	650.2	649.6	648.9	648.2	647.5	646.8	646.0
125°	718.5	717.5	716.4	715.4	714.3	713.3	712.3	711.2
127.5°	785.2	783.7	782.3	781.0	779.8	778.6	777.5	776.2
130°	829.5	828.5	827.4	826.0	824.2	822.4	820.6	818.9
132.5°	872.5	871.3	870.1	868.8	867.4	866.0	864.6	863.3
135°	937.0	936.0	935.0	934.2	933.7	933.2	932.6	932.2
137.5°	1000.1	999.0	997.9	996.9	996.0	995.0	994.0	993.0
140°	1041.5	1041.3	1041.0	1040.0	1038.2	1036.3	1034.6	1032.8
142.5°	1080.4	1080.1	1079.9	1079.1	1077.6	1076.3	1074.9	1073.5
145°	1137.5	1137.3	1137.0	1136.4	1135.3	1134.3	1133.3	1132.2
147.5°	1191.4	1191.4	1191.4	1190.7	1189.2	1187.6	1186.1	1184.5
150°	1224.8	1224.8	1224.8	1224.0	1222.4	1220.9	1219.3	1217.8
152.5°	1255.2	1255.6	1256.0	1255.5	1254.2	1252.9	1251.5	1250.2
155°	1299.7	1300.7	1301.7	1301.4	1299.6	1297.8	1295.9	1294.1
157.5°	1337.9	1339.0	1340.2	1339.9	1338.5	1337.0	1335.6	1334.2
160°	1361.5	1362.8	1364.1	1364.2	1363.2	1362.2	1361.1	1360.0
162.5°	1383.7	1385.0	1386.3	1386.1	1384.5	1382.8	1381.2	1379.5
165°	1411.8	1413.3	1414.8	1414.7	1412.9	1411.1	1409.3	1407.5
167.5°	1434.5	1436.1	1437.7	1437.7	1436.1	1434.5	1432.9	1431.3
170°	1447.0	1448.8	1450.5	1450.5	1448.8	1447.0	1445.1	1443.3
172.5°	1456.7	1458.3	1459.9	1459.8	1458.0	1456.2	1454.4	1452.6
175°	1467.2	1468.8	1470.3	1470.2	1468.4	1466.6	1464.8	1463.0
177.5°	1471.9	1473.2	1474.4	1474.4	1472.8	1471.4	1470.0	1468.6
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3

(END OF REPORT)