

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: P332484-927

Luminaire Tested: **S123RDIW-S1165D1320U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332484-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S1165D1320U927-4F0-1E-UDD-F  
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, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7653.4 lumens  
Efficiency: N/A  
Efficacy: 100.4 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

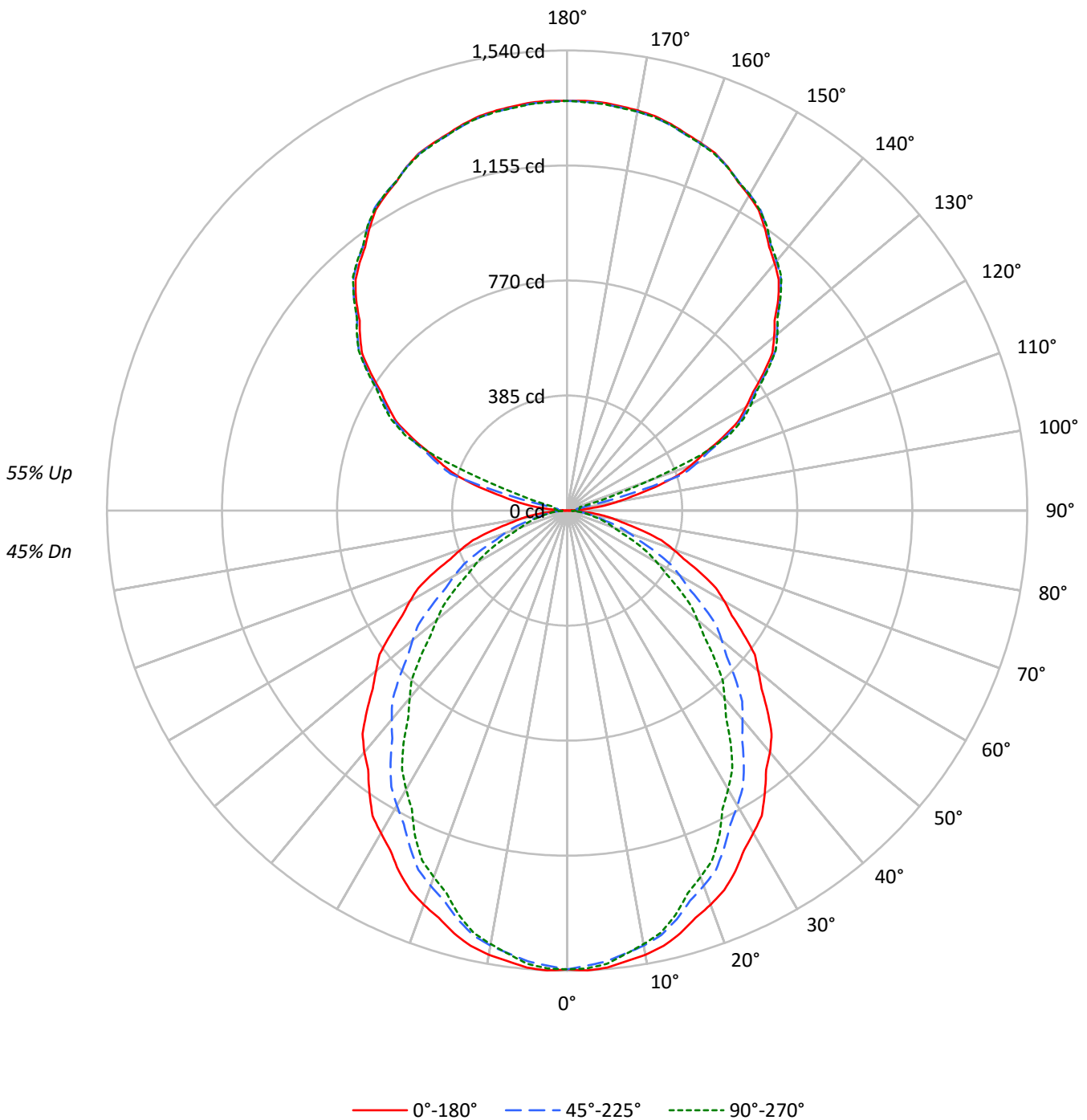
Input Watts (W): 76.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39
2	89	81	75	70	81	75	70	65	63	59	56	51	49	47	41	39	38	33
3	81	72	65	59	74	66	60	55	56	51	47	46	42	40	37	34	32	28
4	74	64	56	50	68	59	52	47	50	44	40	41	37	34	33	30	28	24
5	68	57	49	43	62	53	46	40	44	39	35	37	33	30	30	27	25	21
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	20	17
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	31	26	46	36	29	25	30	25	22	26	22	19	21	18	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	14	13

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

	0°	45°	90°
0°	16527	16527	16527
5°	16590	16361	16455
10°	16497	16156	16101
15°	16319	15778	15611
20°	16076	15306	14948
25°	15824	14775	14301
30°	15493	14162	13387
35°	15152	13548	12550
40°	14838	12826	11514
45°	14425	12113	10577
50°	13971	11302	9530
55°	13508	10376	8552
60°	13082	9384	7481
65°	12528	8308	6406
70°	11833	6977	5174
75°	10821	5490	4870
80°	9651	4860	4475
85°	8151	4310	4001



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.2	1.9
10°-20°	401.2	5.2
20°-30°	577.6	7.5
30°-40°	650.7	8.5
40°-50°	622.5	8.1
50°-60°	509.7	6.7
60°-70°	343.9	4.5
70°-80°	173.0	2.3
80°-90°	49.6	0.6
90°-100°	49.8	0.7
100°-110°	237.6	3.1
110°-120°	570.6	7.5
120°-130°	726.7	9.5
130°-140°	776.4	10.1
140°-150°	726.0	9.5
150°-160°	585.6	7.7
160°-170°	378.0	4.9
170°-180°	130.3	1.7
0°-30°	1123.0	14.7
0°-40°	1773.6	23.2
0°-60°	2905.8	38.0
0°-90°	3472.4	45.4
90°-120°	858.1	11.2
90°-150°	3087.2	40.3
90°-180°	4181.0	54.6
0°-180°	7653.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1535	1535	1535	1535	1535	
5°	1535	1529	1514	1525	1523	146
15°	1464	1450	1416	1410	1401	412
25°	1332	1300	1244	1219	1204	613
35°	1153	1106	1031	979	955	721
45°	948	889	796	727	695	731
55°	720	656	553	483	456	645
65°	492	422	326	268	252	487
75°	260	200	132	120	117	278
85°	66	40	35	32	32	74
90°	1	11	24	28	31	6
95°	62	23	32	38	39	77
105°	304	309	223	53	45	322
115°	569	576	585	594	599	562
125°	803	811	815	817	819	717
135°	999	1005	1010	1012	1010	769
145°	1153	1160	1162	1164	1164	722
155°	1270	1268	1269	1274	1268	585
165°	1340	1336	1335	1343	1336	378
175°	1371	1366	1367	1373	1366	130
180°	1371	1371	1371	1371	1371	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1540.4	1539.4	1538.6	1537.7	1536.8	1535.0	1532.4	1529.7	1527.1	1524.4	1526.9
5°	1535.4	1534.0	1532.6	1531.2	1529.9	1527.5	1524.2	1520.8	1517.5	1514.2	1516.7
7.5°	1521.1	1519.7	1518.2	1516.7	1515.2	1512.3	1508.0	1503.6	1499.4	1495.0	1496.4
10°	1509.3	1507.3	1505.4	1503.4	1501.5	1498.0	1493.0	1488.0	1483.0	1478.1	1478.4
12.5°	1492.3	1490.2	1488.0	1485.8	1483.7	1479.6	1473.5	1467.4	1461.3	1455.2	1455.0
15°	1464.4	1461.3	1458.3	1455.2	1452.2	1446.8	1439.1	1431.3	1423.6	1415.9	1414.4
17.5°	1429.3	1425.8	1422.2	1418.6	1415.2	1408.4	1398.6	1388.7	1378.9	1369.0	1366.1
20°	1403.4	1399.0	1394.6	1390.1	1385.7	1378.2	1367.7	1357.2	1346.6	1336.2	1332.5
22.5°	1374.5	1369.4	1364.3	1359.2	1354.2	1346.0	1334.8	1323.7	1312.5	1301.2	1296.8
25°	1332.4	1325.5	1318.6	1311.6	1304.7	1294.9	1282.1	1269.5	1256.7	1244.0	1238.2
27.5°	1281.4	1273.7	1266.1	1258.5	1250.8	1239.9	1225.7	1211.6	1197.4	1183.2	1175.1
30°	1246.5	1238.2	1229.9	1221.5	1213.3	1201.3	1185.9	1170.4	1154.9	1139.4	1130.0
32.5°	1211.6	1202.2	1192.8	1183.4	1174.0	1161.1	1144.7	1128.3	1111.9	1095.6	1085.3
35°	1153.1	1143.1	1133.1	1123.2	1113.3	1099.7	1082.5	1065.4	1048.2	1031.0	1019.1
37.5°	1093.8	1082.8	1071.7	1060.6	1049.6	1034.8	1016.5	998.2	979.9	961.6	948.1
40°	1056.0	1043.8	1031.6	1019.5	1007.3	991.3	971.7	952.0	932.4	912.8	898.3
42.5°	1013.1	1000.9	988.8	976.6	964.4	948.2	927.9	907.5	887.2	867.0	851.2
45°	947.6	935.2	922.7	910.3	897.8	880.9	859.6	838.3	817.0	795.7	779.9
47.5°	882.1	868.5	854.8	841.1	827.4	809.9	788.6	767.3	746.0	724.8	707.6
50°	834.3	821.3	808.3	795.3	782.3	764.6	742.2	719.8	697.4	674.9	657.7
52.5°	791.5	777.4	763.3	749.2	735.0	716.8	694.7	672.5	650.3	628.1	610.3
55°	719.8	706.2	692.6	679.1	665.5	647.0	623.4	599.9	576.4	552.9	536.9
57.5°	653.5	638.7	623.9	609.2	594.4	575.2	551.6	527.9	504.3	480.7	465.5
60°	607.7	592.5	577.3	562.1	546.8	527.7	504.7	481.8	458.8	435.9	420.9
62.5°	561.8	546.6	531.4	516.2	501.0	481.9	458.9	435.9	413.0	390.0	376.0
65°	491.9	476.7	461.4	446.2	431.0	412.6	391.0	369.4	347.8	326.2	312.7
67.5°	421.9	406.5	391.1	375.7	360.4	342.3	321.6	300.9	280.2	259.5	249.4
70°	376.0	361.2	346.2	331.2	316.3	299.1	279.8	260.4	241.1	221.7	212.0
72.5°	330.3	315.5	300.8	286.1	271.3	255.2	237.6	220.0	202.4	184.8	176.9
75°	260.2	247.0	233.7	220.4	207.2	192.9	177.7	162.4	147.2	132.0	129.2
77.5°	196.5	184.5	172.5	160.5	148.5	137.5	127.8	118.0	108.1	98.4	96.9
80°	155.7	144.3	132.9	121.6	110.3	101.7	95.9	90.1	84.3	78.4	77.6
82.5°	116.8	107.0	97.2	87.4	77.6	71.4	68.7	65.9	63.2	60.5	59.7
85°	66.0	59.9	53.8	47.8	41.7	38.2	37.4	36.5	35.7	34.9	34.3
87.5°	24.1	22.1	20.1	18.1	16.2	15.4	16.1	16.6	17.3	17.8	17.8
90°	1.0	3.2	5.5	7.8	10.1	12.7	15.6	18.5	21.5	24.5	25.3
92.5°	18.9	18.3	17.7	17.0	16.4	17.2	19.4	21.6	23.8	26.1	27.5
95°	62.1	52.8	43.6	34.3	25.0	21.6	24.1	26.6	29.1	31.6	33.2
97.5°	124.8	120.7	116.5	112.4	108.2	98.0	81.7	65.4	49.1	32.8	34.6
100°	172.1	176.7	181.2	185.7	190.3	174.8	139.6	104.3	68.9	33.6	35.4
102.5°	225.9	229.2	232.4	235.7	239.0	221.3	182.8	144.2	105.6	67.0	61.4
105°	303.6	306.0	308.6	311.0	313.5	304.6	284.2	263.8	243.4	223.1	183.0
107.5°	385.5	387.5	389.4	391.4	393.4	396.0	399.3	402.4	405.7	408.8	379.5
110°	440.1	441.9	443.6	445.4	447.3	449.4	451.9	454.4	456.9	459.4	451.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	492.2	493.8	495.4	497.1	498.7	500.7	503.3	505.7	508.3	510.7	510.9
115°	569.4	570.8	572.1	573.5	574.8	576.6	578.5	580.6	582.7	584.7	586.9
117.5°	644.2	645.9	647.5	649.2	650.9	652.2	653.2	654.3	655.4	656.4	658.2
120°	690.6	692.7	694.7	696.7	698.8	700.1	700.8	701.5	702.2	702.8	704.6
122.5°	737.9	739.6	741.2	742.9	744.6	745.8	746.7	747.6	748.5	749.3	750.6
125°	802.6	804.5	806.3	808.1	809.9	811.3	812.1	813.1	814.0	814.9	815.3
127.5°	865.4	867.2	869.0	870.8	872.7	874.1	875.2	876.3	877.3	878.5	879.2
130°	904.5	906.3	908.2	910.0	911.8	913.1	914.0	915.0	915.8	916.7	917.7
132.5°	942.0	943.8	945.6	947.5	949.3	950.5	951.3	952.0	952.7	953.4	954.3
135°	999.3	1000.6	1002.0	1003.3	1004.7	1005.8	1006.7	1007.7	1008.5	1009.5	1010.1
137.5°	1048.1	1049.9	1051.6	1053.3	1055.0	1056.1	1056.6	1057.2	1057.6	1058.1	1059.2
140°	1080.8	1082.1	1083.5	1084.8	1086.2	1087.2	1087.9	1088.5	1089.3	1089.9	1090.8
142.5°	1110.9	1112.2	1113.6	1115.0	1116.3	1117.4	1118.0	1118.7	1119.4	1120.1	1120.8
145°	1153.1	1154.7	1156.3	1157.9	1159.4	1160.4	1160.9	1161.3	1161.8	1162.2	1162.7
147.5°	1192.8	1193.8	1194.8	1195.9	1197.0	1197.7	1198.2	1198.6	1199.0	1199.5	1200.0
150°	1217.3	1217.9	1218.6	1219.2	1220.0	1220.5	1221.0	1221.4	1221.9	1222.3	1222.8
152.5°	1239.2	1239.5	1239.8	1240.2	1240.5	1240.8	1241.1	1241.3	1241.6	1241.9	1242.7
155°	1270.2	1269.8	1269.3	1268.8	1268.4	1268.3	1268.5	1268.8	1269.0	1269.2	1270.3
157.5°	1294.3	1294.2	1294.2	1294.1	1294.0	1294.0	1293.7	1293.5	1293.2	1293.0	1294.3
160°	1308.9	1308.7	1308.4	1308.2	1308.0	1307.8	1307.6	1307.3	1307.1	1306.9	1308.2
162.5°	1322.8	1322.2	1321.6	1321.0	1320.4	1320.0	1319.8	1319.5	1319.3	1319.1	1320.6
165°	1339.5	1338.8	1338.1	1337.4	1336.7	1336.3	1336.1	1335.9	1335.6	1335.4	1337.2
167.5°	1352.5	1351.6	1350.7	1349.8	1348.8	1348.5	1348.5	1348.5	1348.5	1348.5	1350.3
170°	1359.9	1358.9	1358.0	1357.2	1356.2	1355.7	1355.7	1355.7	1355.7	1355.7	1357.6
172.5°	1364.8	1363.7	1362.6	1361.4	1360.4	1359.9	1360.1	1360.3	1360.5	1360.7	1362.5
175°	1371.0	1369.9	1368.8	1367.6	1366.5	1366.0	1366.3	1366.5	1366.8	1367.0	1368.6
177.5°	1372.7	1371.7	1370.9	1370.0	1369.0	1368.7	1368.9	1369.0	1369.2	1369.4	1370.9
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1529.3	1531.8	1534.1	1535.2	1534.7	1534.3	1533.8	1533.3
5°	1519.2	1521.7	1524.2	1525.1	1524.6	1524.0	1523.4	1522.9
7.5°	1497.8	1499.2	1500.6	1500.8	1499.8	1498.9	1497.9	1497.0
10°	1478.7	1478.9	1479.2	1478.7	1477.3	1475.9	1474.5	1473.1
12.5°	1454.8	1454.7	1454.5	1453.7	1452.1	1450.4	1448.8	1447.2
15°	1413.1	1411.7	1410.3	1408.7	1406.7	1404.8	1402.8	1400.9
17.5°	1363.2	1360.2	1357.2	1354.4	1351.5	1348.6	1345.8	1342.8
20°	1329.0	1325.3	1321.8	1318.3	1314.9	1311.6	1308.4	1305.0
22.5°	1292.3	1287.9	1283.3	1279.5	1276.4	1273.4	1270.3	1267.2
25°	1232.4	1226.5	1220.8	1216.3	1213.3	1210.2	1207.2	1204.1
27.5°	1167.0	1159.0	1150.9	1144.5	1139.9	1135.3	1130.6	1125.9
30°	1120.5	1111.2	1101.8	1094.9	1090.4	1086.0	1081.6	1077.1
32.5°	1075.0	1064.7	1054.4	1046.9	1042.3	1037.6	1033.0	1028.3
35°	1007.3	995.4	983.5	975.0	970.0	965.0	960.0	955.1
37.5°	934.5	921.1	907.5	897.7	891.6	885.4	879.3	873.1
40°	884.0	869.6	855.2	844.9	838.4	832.1	825.8	819.4
42.5°	835.5	819.8	804.1	793.4	787.7	782.0	776.3	770.6
45°	764.1	748.4	732.6	721.4	714.8	708.1	701.5	694.8
47.5°	690.4	673.3	656.1	644.6	638.7	632.7	626.8	620.9
50°	640.6	623.4	606.3	594.5	588.2	581.8	575.4	569.1
52.5°	592.5	574.6	556.8	545.0	539.3	533.7	528.0	522.3
55°	520.8	504.7	488.7	477.9	472.4	466.8	461.3	455.7
57.5°	450.4	435.1	420.0	410.0	405.4	400.7	395.9	391.3
60°	405.9	391.0	376.0	366.2	361.6	356.8	352.1	347.5
62.5°	361.9	347.8	333.7	324.3	319.3	314.4	309.5	304.6
65°	299.1	285.6	272.0	263.7	260.7	257.6	254.6	251.5
67.5°	239.2	229.1	219.0	212.3	209.1	205.7	202.5	199.2
70°	202.2	192.6	182.9	176.6	173.5	170.5	167.4	164.4
72.5°	169.0	161.1	153.1	148.5	147.3	146.0	144.7	143.5
75°	126.4	123.7	120.9	119.3	118.7	118.2	117.6	117.1
77.5°	95.4	93.9	92.4	91.3	90.8	90.2	89.7	89.1
80°	76.8	76.0	75.1	74.5	73.9	73.4	72.8	72.2
82.5°	58.9	58.1	57.2	56.7	56.6	56.5	56.4	56.3
85°	33.7	33.2	32.6	32.4	32.4	32.4	32.4	32.4
87.5°	17.7	17.7	17.7	17.6	17.4	17.3	17.2	17.0
90°	26.2	27.2	28.0	28.8	29.2	29.6	30.1	30.6
92.5°	29.0	30.4	31.8	32.7	33.0	33.3	33.5	33.8
95°	34.8	36.4	37.9	38.7	38.7	38.7	38.7	38.7
97.5°	36.4	38.3	40.0	41.0	41.3	41.5	41.7	42.0
100°	37.2	39.1	40.9	41.9	42.1	42.3	42.5	42.8
102.5°	55.8	50.1	44.6	42.0	42.4	42.8	43.2	43.6
105°	142.9	102.9	62.8	43.0	43.5	43.9	44.4	44.8
107.5°	350.1	320.8	291.4	261.6	231.4	201.1	171.0	140.8
110°	444.4	437.0	429.5	409.6	377.2	344.8	312.5	280.1





TEST NUMBER: P332484-927

CATALOG NUMBER: S123RDIW-S1165D1320U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	511.0	511.1	511.3	507.9	501.1	494.2	487.4	480.6
115°	589.2	591.4	593.7	595.3	596.2	597.1	598.0	599.0
117.5°	660.0	661.8	663.6	664.6	664.8	665.0	665.2	665.4
120°	706.5	708.3	710.1	711.0	711.0	711.0	711.0	711.0
122.5°	751.9	753.1	754.4	755.1	755.3	755.4	755.7	755.8
125°	815.8	816.3	816.7	817.1	817.6	818.1	818.5	819.0
127.5°	879.9	880.6	881.4	881.5	881.1	880.6	880.1	879.6
130°	918.5	919.5	920.4	920.6	920.1	919.7	919.2	918.8
132.5°	955.2	956.2	957.0	957.2	956.6	955.9	955.3	954.7
135°	1010.8	1011.5	1012.2	1012.2	1011.5	1010.8	1010.1	1009.5
137.5°	1060.3	1061.4	1062.5	1062.8	1062.3	1061.9	1061.4	1061.0
140°	1091.7	1092.7	1093.5	1093.8	1093.3	1092.8	1092.4	1091.9
142.5°	1121.5	1122.2	1123.0	1123.0	1122.4	1121.7	1121.1	1120.5
145°	1163.2	1163.6	1164.0	1164.3	1164.3	1164.3	1164.3	1164.3
147.5°	1200.4	1200.9	1201.3	1201.0	1200.0	1199.0	1197.9	1196.8
150°	1223.2	1223.7	1224.2	1224.0	1223.4	1222.7	1222.0	1221.3
152.5°	1243.5	1244.4	1245.2	1245.1	1244.0	1242.9	1241.9	1240.9
155°	1271.5	1272.6	1273.7	1273.6	1272.2	1270.9	1269.6	1268.2
157.5°	1295.8	1297.1	1298.5	1298.2	1296.5	1294.7	1292.9	1291.2
160°	1309.6	1311.0	1312.3	1312.2	1310.6	1309.0	1307.4	1305.8
162.5°	1322.2	1323.7	1325.2	1325.3	1323.9	1322.5	1321.1	1319.7
165°	1339.0	1340.8	1342.7	1342.7	1341.2	1339.6	1338.0	1336.4
167.5°	1352.1	1353.8	1355.7	1355.7	1353.8	1352.1	1350.3	1348.5
170°	1359.4	1361.2	1363.0	1363.0	1361.2	1359.4	1357.6	1355.7
172.5°	1364.3	1366.1	1367.9	1367.8	1365.8	1363.8	1361.8	1359.9
175°	1370.2	1371.7	1373.3	1373.2	1371.4	1369.6	1367.8	1366.0
177.5°	1372.3	1373.8	1375.2	1375.1	1373.2	1371.4	1369.6	1367.8
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0

(END OF REPORT)