

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: P332239-927

Luminaire Tested: **S123DIW-S1165D1535U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332239-927  
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: S123DIW-S1165D1535U927-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7986.2 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

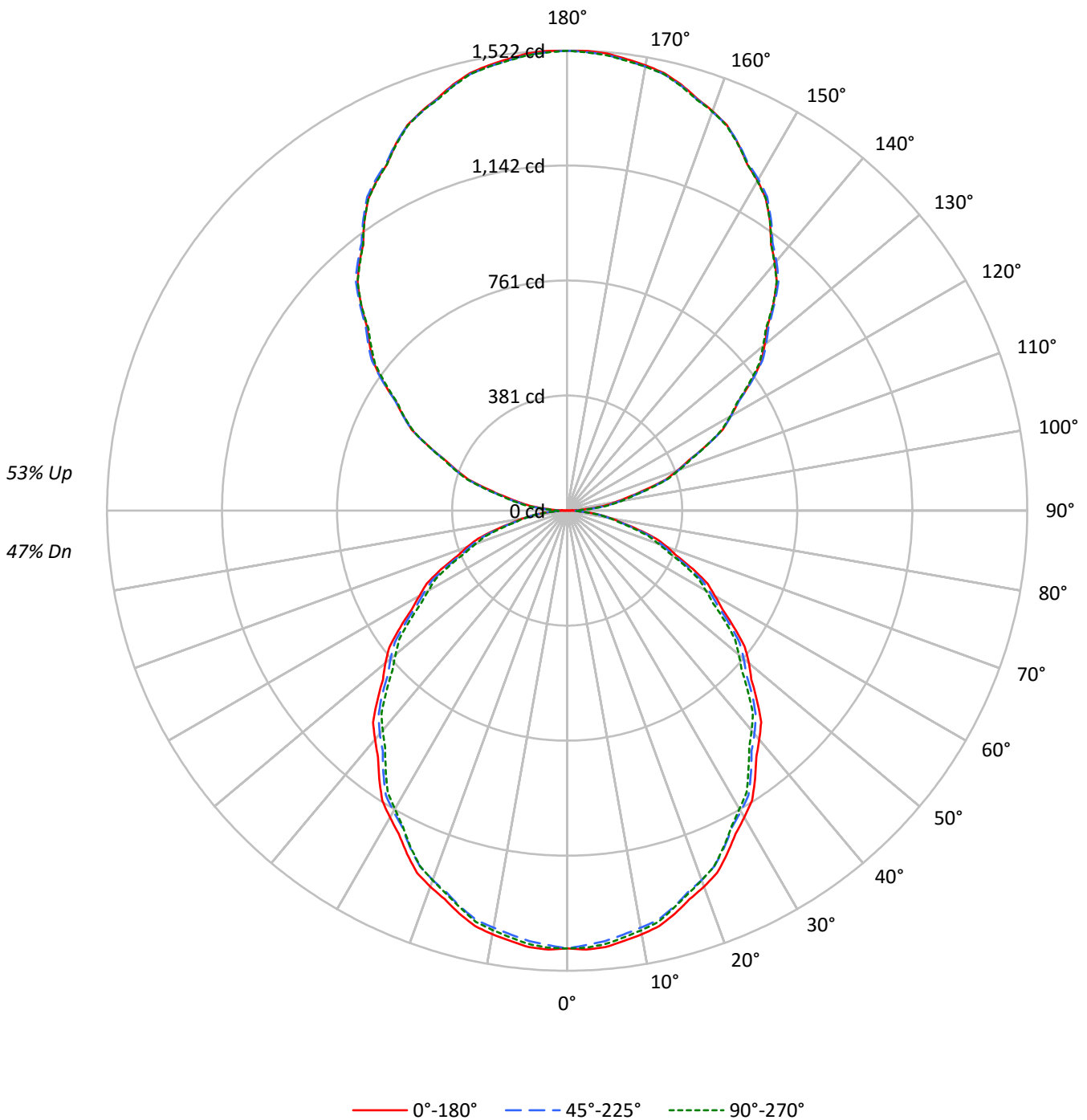
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45	40
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	42	40	38	33
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	30	27	24	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12

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

	0°	45°	90°
0°	15588	15588	15588
5°	15662	15446	15554
10°	15557	15312	15407
15°	15375	15139	15166
20°	15163	14892	14905
25°	14878	14598	14567
30°	14564	14270	14162
35°	14236	13925	13745
40°	13893	13543	13333
45°	13516	13192	12871
50°	13137	12762	12407
55°	12643	12314	11941
60°	12144	11795	11418
65°	11703	11227	10878
70°	11053	10581	10112
75°	10098	9736	9320
80°	9106	8722	8647
85°	7991	7694	7385



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.4	1.7
10°-20°	385.2	4.8
20°-30°	569.0	7.1
30°-40°	664.6	8.3
40°-50°	668.2	8.4
50°-60°	587.0	7.3
60°-70°	437.3	5.5
70°-80°	249.1	3.1
80°-90°	76.0	1.0
90°-100°	99.1	1.2
100°-110°	296.5	3.7
110°-120°	504.3	6.3
120°-130°	663.4	8.3
130°-140°	745.6	9.3
140°-150°	732.9	9.2
150°-160°	617.0	7.7
160°-170°	410.7	5.1
170°-180°	143.8	1.8
0°-30°	1090.6	13.7
0°-40°	1755.3	22.0
0°-60°	3010.4	37.7
0°-90°	3772.9	47.2
90°-120°	899.9	11.3
90°-150°	3041.8	38.1
90°-180°	4213.0	52.8
0°-180°	7986.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1448	1448	1448	1448	1448	
5°	1450	1443	1430	1441	1440	137
15°	1380	1374	1358	1368	1361	389
25°	1253	1245	1229	1230	1226	577
35°	1083	1075	1060	1052	1046	677
45°	888	882	867	852	846	685
55°	674	672	656	643	636	603
65°	460	453	441	431	427	453
75°	243	238	234	228	224	260
85°	65	62	62	60	60	71
90°	1	13	29	33	36	8
95°	70	79	88	93	93	79
105°	269	272	282	282	284	288
115°	508	511	509	510	509	502
125°	743	746	744	739	735	662
135°	964	971	970	965	963	743
145°	1170	1172	1175	1174	1170	730
155°	1339	1339	1340	1344	1337	616
165°	1459	1455	1455	1461	1454	411
175°	1517	1513	1512	1519	1511	144
180°	1521	1521	1521	1521	1521	



TEST NUMBER: P332239-927

CATALOG NUMBER: S123DIW-S1165D1535U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2
2.5°	1453.2	1452.3	1451.4	1450.6	1449.6	1448.0	1445.6	1443.1	1440.7	1438.2	1440.4
5°	1449.5	1448.1	1446.7	1445.3	1443.9	1441.7	1438.7	1435.6	1432.6	1429.5	1432.3
7.5°	1435.3	1433.8	1432.5	1431.1	1429.7	1427.4	1424.3	1421.2	1418.0	1414.8	1417.3
10°	1423.3	1421.9	1420.5	1419.1	1417.8	1415.3	1411.7	1408.1	1404.5	1400.9	1403.4
12.5°	1407.4	1406.2	1405.0	1403.9	1402.7	1400.4	1397.1	1393.7	1390.3	1387.0	1388.8
15°	1379.7	1378.6	1377.5	1376.4	1375.3	1372.9	1369.4	1365.7	1362.2	1358.5	1360.7
17.5°	1347.6	1346.2	1344.7	1343.3	1341.8	1339.3	1335.7	1332.1	1328.5	1324.9	1326.5
20°	1323.7	1322.0	1320.3	1318.7	1317.1	1314.4	1310.8	1307.3	1303.6	1300.1	1301.2
22.5°	1296.8	1295.1	1293.5	1291.8	1290.1	1287.5	1283.9	1280.3	1276.8	1273.1	1274.0
25°	1252.7	1251.0	1249.4	1247.7	1246.1	1243.4	1239.8	1236.3	1232.6	1229.1	1229.3
27.5°	1205.6	1204.0	1202.5	1200.8	1199.2	1196.5	1192.6	1188.7	1184.9	1181.0	1181.2
30°	1171.8	1170.4	1169.0	1167.6	1166.3	1163.6	1159.8	1155.9	1152.0	1148.1	1148.1
32.5°	1137.9	1136.1	1134.2	1132.4	1130.6	1128.1	1125.2	1122.2	1119.2	1116.3	1114.7
35°	1083.4	1081.7	1080.1	1078.4	1076.7	1074.1	1070.5	1066.9	1063.3	1059.7	1058.0
37.5°	1027.5	1025.5	1023.3	1021.3	1019.1	1016.3	1012.6	1009.0	1005.4	1001.6	999.7
40°	988.7	987.1	985.4	983.7	982.1	979.3	975.4	971.5	967.7	963.8	961.6
42.5°	949.8	948.0	946.1	944.2	942.3	939.4	935.6	931.7	927.8	924.0	921.8
45°	887.9	886.8	885.7	884.6	883.4	881.1	877.5	873.9	870.3	866.6	863.4
47.5°	826.3	824.7	823.2	821.5	819.9	817.5	814.0	810.6	807.3	803.9	800.7
50°	784.5	783.2	781.7	780.4	779.0	776.5	772.9	769.3	765.6	762.1	759.1
52.5°	740.7	739.7	738.8	737.8	736.9	734.5	730.7	726.9	723.1	719.2	716.6
55°	673.7	673.4	673.1	672.9	672.6	670.7	667.0	663.5	659.8	656.2	653.2
57.5°	609.9	609.0	608.0	607.1	606.2	604.3	601.3	598.5	595.6	592.7	590.0
60°	564.1	563.8	563.6	563.2	563.0	561.2	557.9	554.5	551.2	547.9	545.4
62.5°	523.2	522.5	521.8	521.1	520.4	518.3	515.0	511.7	508.4	505.1	502.6
65°	459.5	458.1	456.7	455.3	453.9	451.9	449.1	446.3	443.5	440.8	438.6
67.5°	392.0	390.8	389.6	388.3	387.1	385.5	383.3	381.3	379.1	377.1	375.1
70°	351.2	349.5	347.8	346.2	344.5	342.9	341.2	339.5	337.9	336.2	334.3
72.5°	308.3	307.1	305.9	304.7	303.5	301.9	300.0	298.1	296.3	294.4	292.6
75°	242.8	241.7	240.6	239.5	238.4	237.4	236.6	235.8	235.0	234.1	232.7
77.5°	184.8	184.2	183.5	183.0	182.4	181.6	180.5	179.6	178.6	177.6	176.7
80°	146.9	146.1	145.3	144.4	143.6	142.9	142.4	141.8	141.2	140.7	140.5
82.5°	110.1	109.9	109.7	109.6	109.4	109.2	109.2	109.1	108.9	108.8	108.4
85°	64.7	64.2	63.6	63.1	62.5	62.3	62.3	62.3	62.3	62.3	61.7
87.5°	26.1	26.0	25.9	25.7	25.6	25.7	26.2	26.7	27.2	27.6	27.6
90°	1.2	3.9	6.5	9.2	11.8	14.9	18.3	21.8	25.2	28.7	29.7
92.5°	28.9	30.7	32.5	34.3	36.1	38.0	40.0	41.9	43.9	45.9	46.7
95°	70.5	72.3	74.2	76.0	78.0	79.9	82.0	84.1	86.3	88.4	89.4
97.5°	125.2	126.6	127.9	129.4	130.7	132.1	133.7	135.2	136.8	138.3	139.6
100°	162.5	164.1	165.6	167.2	168.8	170.3	171.6	172.9	174.3	175.6	176.4
102.5°	205.5	206.4	207.4	208.3	209.3	210.6	212.4	214.1	215.9	217.6	218.5
105°	268.8	269.3	269.8	270.4	270.9	272.4	274.7	277.1	279.6	281.9	281.9
107.5°	342.4	342.7	343.0	343.3	343.6	344.3	345.2	346.2	347.1	348.1	349.0
110°	388.2	388.8	389.3	389.8	390.4	390.9	391.4	392.0	392.4	393.0	394.1



TEST NUMBER: P332239-927

CATALOG NUMBER: S123DIW-S1165D1535U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	436.0	436.3	436.7	437.0	437.3	437.5	437.6	437.7	437.8	437.9	439.2
115°	507.7	508.5	509.3	510.1	510.9	511.0	510.5	509.9	509.5	508.9	509.1
117.5°	579.9	580.4	580.9	581.5	581.9	581.9	581.2	580.5	579.8	579.2	579.1
120°	624.8	626.4	628.0	629.5	631.1	631.3	629.9	628.6	627.2	626.0	625.7
122.5°	671.6	672.7	673.9	675.1	676.3	676.5	675.8	675.1	674.5	673.8	673.0
125°	743.0	743.8	744.7	745.4	746.2	746.3	745.8	745.3	744.7	744.3	743.1
127.5°	809.0	810.6	812.4	814.0	815.8	816.3	815.7	815.2	814.6	814.0	812.5
130°	852.9	855.1	857.1	859.3	861.4	862.1	861.3	860.5	859.7	858.9	857.9
132.5°	896.9	899.0	901.1	903.2	905.4	906.2	905.5	905.0	904.4	903.8	902.5
135°	964.0	965.6	967.2	968.8	970.4	971.1	970.8	970.5	970.3	970.0	968.9
137.5°	1026.1	1027.5	1028.8	1030.2	1031.4	1032.5	1033.2	1033.8	1034.5	1035.2	1034.1
140°	1069.1	1070.5	1071.8	1073.1	1074.4	1075.2	1075.5	1075.8	1076.0	1076.3	1076.0
142.5°	1108.3	1109.6	1111.0	1112.3	1113.6	1114.5	1115.0	1115.5	1115.9	1116.4	1116.2
145°	1169.5	1170.1	1170.5	1171.1	1171.6	1172.3	1173.1	1173.9	1174.6	1175.4	1175.2
147.5°	1223.0	1223.9	1224.9	1225.9	1226.9	1227.6	1228.4	1229.2	1229.9	1230.7	1230.7
150°	1260.3	1260.8	1261.3	1261.9	1262.4	1262.9	1263.5	1264.0	1264.5	1265.0	1265.0
152.5°	1290.9	1291.6	1292.4	1293.1	1293.8	1294.3	1294.7	1295.0	1295.3	1295.6	1296.1
155°	1339.1	1339.1	1339.1	1339.1	1339.1	1339.3	1339.5	1339.7	1340.1	1340.3	1341.4
157.5°	1380.2	1379.9	1379.6	1379.3	1379.0	1378.9	1379.1	1379.3	1379.5	1379.7	1380.9
160°	1406.0	1405.5	1404.9	1404.4	1403.9	1403.6	1403.6	1403.6	1403.6	1403.6	1404.9
162.5°	1428.9	1428.2	1427.4	1426.7	1426.0	1425.7	1425.9	1426.2	1426.3	1426.6	1427.9
165°	1458.6	1457.8	1457.0	1456.2	1455.4	1455.0	1455.0	1455.0	1455.0	1455.0	1456.6
167.5°	1482.3	1481.1	1480.1	1479.0	1478.0	1477.6	1477.7	1478.0	1478.2	1478.4	1480.0
170°	1495.6	1494.5	1493.5	1492.4	1491.4	1490.8	1490.8	1490.8	1490.8	1490.8	1492.7
172.5°	1506.1	1505.1	1504.0	1502.9	1501.9	1501.3	1501.3	1501.3	1501.3	1501.3	1503.0
175°	1517.1	1516.1	1515.0	1513.9	1512.8	1512.4	1512.4	1512.4	1512.4	1512.4	1513.9
177.5°	1521.6	1520.8	1520.0	1519.1	1518.2	1517.8	1517.8	1517.8	1517.8	1517.8	1519.1
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7



TEST NUMBER: P332239-927

CATALOG NUMBER: S123DIW-S1165D1535U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2
2.5°	1442.6	1444.9	1447.1	1448.1	1447.9	1447.6	1447.4	1447.2
5°	1435.0	1437.8	1440.6	1441.7	1441.1	1440.6	1440.0	1439.5
7.5°	1419.8	1422.3	1424.8	1425.8	1425.5	1425.2	1424.9	1424.6
10°	1405.9	1408.3	1410.9	1411.8	1411.3	1410.7	1410.2	1409.6
12.5°	1390.6	1392.4	1394.2	1395.0	1394.6	1394.3	1394.0	1393.7
15°	1362.9	1365.2	1367.4	1367.7	1366.0	1364.4	1362.7	1361.0
17.5°	1328.0	1329.6	1331.1	1331.6	1331.0	1330.4	1329.8	1329.2
20°	1302.3	1303.4	1304.5	1304.6	1303.8	1302.9	1302.1	1301.2
22.5°	1274.9	1275.8	1276.7	1276.6	1275.6	1274.5	1273.4	1272.4
25°	1229.6	1229.9	1230.2	1229.9	1229.1	1228.2	1227.4	1226.5
27.5°	1181.5	1181.6	1181.9	1181.5	1180.4	1179.3	1178.3	1177.3
30°	1148.1	1148.1	1148.1	1147.2	1145.2	1143.3	1141.3	1139.4
32.5°	1113.1	1111.6	1110.0	1108.7	1107.7	1106.6	1105.6	1104.5
35°	1056.4	1054.7	1053.0	1051.5	1050.1	1048.8	1047.3	1046.0
37.5°	997.7	995.7	993.7	992.3	991.3	990.5	989.6	988.7
40°	959.4	957.2	955.0	953.3	952.2	951.1	950.0	948.9
42.5°	919.6	917.3	915.1	913.5	912.4	911.2	910.1	909.0
45°	860.1	856.7	853.4	851.0	849.7	848.3	846.9	845.5
47.5°	797.4	794.2	790.8	788.6	787.4	786.2	785.0	783.8
50°	756.0	753.0	749.9	747.6	745.9	744.3	742.6	740.9
52.5°	714.1	711.5	708.8	706.7	705.0	703.4	701.7	700.1
55°	650.1	647.1	644.0	641.8	640.5	639.1	637.7	636.3
57.5°	587.3	584.6	581.9	579.7	578.1	576.6	574.9	573.3
60°	543.0	540.4	538.0	536.0	534.6	533.2	531.9	530.4
62.5°	500.1	497.6	495.1	493.4	492.4	491.5	490.6	489.6
65°	436.4	434.2	432.0	430.5	429.6	428.8	427.9	427.1
67.5°	373.2	371.2	369.3	367.7	366.6	365.4	364.2	363.1
70°	332.3	330.4	328.4	326.8	325.4	324.0	322.7	321.3
72.5°	291.0	289.2	287.5	286.3	285.6	284.9	284.2	283.4
75°	231.3	230.0	228.5	227.4	226.6	225.8	225.0	224.1
77.5°	175.7	174.8	173.8	173.3	173.3	173.3	173.3	173.3
80°	140.1	139.9	139.6	139.5	139.5	139.5	139.5	139.5
82.5°	107.8	107.3	106.9	106.5	106.2	106.1	105.8	105.6
85°	61.2	60.6	60.0	59.8	59.8	59.8	59.8	59.8
87.5°	27.6	27.6	27.6	27.6	27.8	27.9	28.0	28.1
90°	30.8	31.8	33.0	33.7	34.2	34.8	35.3	35.8
92.5°	47.5	48.4	49.3	49.5	49.2	48.9	48.6	48.2
95°	90.5	91.6	92.6	93.2	93.2	93.2	93.2	93.2
97.5°	140.8	142.0	143.2	143.8	143.7	143.5	143.5	143.4
100°	177.2	178.0	178.8	179.4	180.0	180.5	181.0	181.6
102.5°	219.3	220.1	220.9	221.2	221.1	220.9	220.9	220.8
105°	281.9	281.9	281.9	282.2	282.7	283.3	283.8	284.3
107.5°	349.8	350.6	351.5	351.7	351.4	351.1	350.8	350.5
110°	395.1	396.2	397.3	397.5	397.0	396.5	395.9	395.4





TEST NUMBER: P332239-927

CATALOG NUMBER: S123DIW-S1165D1535U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	440.5	441.7	443.0	443.6	443.5	443.4	443.3	443.1
115°	509.5	509.7	509.9	509.9	509.7	509.5	509.1	508.9
117.5°	579.0	579.0	578.9	578.5	577.7	577.0	576.3	575.5
120°	625.4	625.2	624.9	624.5	624.0	623.4	622.9	622.3
122.5°	672.3	671.7	671.0	670.3	669.6	668.8	668.0	667.3
125°	742.1	741.0	740.0	738.9	737.8	736.8	735.7	734.7
127.5°	811.0	809.5	808.0	806.7	805.5	804.2	803.0	801.8
130°	856.7	855.7	854.7	853.2	851.4	849.5	847.6	845.7
132.5°	901.3	900.0	898.7	897.4	896.0	894.5	893.0	891.6
135°	967.9	966.8	965.7	965.0	964.4	963.8	963.4	962.8
137.5°	1033.0	1031.9	1030.8	1029.7	1028.6	1027.7	1026.7	1025.6
140°	1075.8	1075.5	1075.2	1074.2	1072.3	1070.5	1068.6	1066.8
142.5°	1115.9	1115.6	1115.4	1114.5	1113.1	1111.7	1110.2	1108.8
145°	1174.9	1174.6	1174.4	1173.7	1172.7	1171.6	1170.5	1169.5
147.5°	1230.7	1230.7	1230.7	1229.9	1228.3	1226.7	1225.0	1223.4
150°	1265.0	1265.0	1265.0	1264.2	1262.7	1261.1	1259.5	1257.9
152.5°	1296.5	1296.9	1297.4	1296.9	1295.5	1294.1	1292.7	1291.3
155°	1342.4	1343.5	1344.6	1344.2	1342.3	1340.5	1338.6	1336.7
157.5°	1382.0	1383.1	1384.2	1384.0	1382.5	1381.0	1379.5	1378.1
160°	1406.3	1407.6	1408.9	1409.1	1408.0	1406.9	1405.9	1404.8
162.5°	1429.2	1430.5	1431.9	1431.7	1430.0	1428.3	1426.6	1424.9
165°	1458.2	1459.8	1461.3	1461.3	1459.4	1457.5	1455.6	1453.8
167.5°	1481.7	1483.4	1484.9	1484.9	1483.4	1481.7	1480.0	1478.4
170°	1494.5	1496.4	1498.3	1498.3	1496.4	1494.5	1492.7	1490.8
172.5°	1504.6	1506.3	1507.9	1507.8	1505.9	1504.1	1502.2	1500.4
175°	1515.5	1517.1	1518.7	1518.5	1516.7	1514.8	1513.0	1511.2
177.5°	1520.4	1521.6	1522.9	1522.8	1521.3	1519.8	1518.4	1516.9
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7

(END OF REPORT)