

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: P332238-927

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332238-927
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: S123DIW-S1165D1535U927-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8634.0 lumens
Efficiency: N/A
Efficacy: 104.1 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

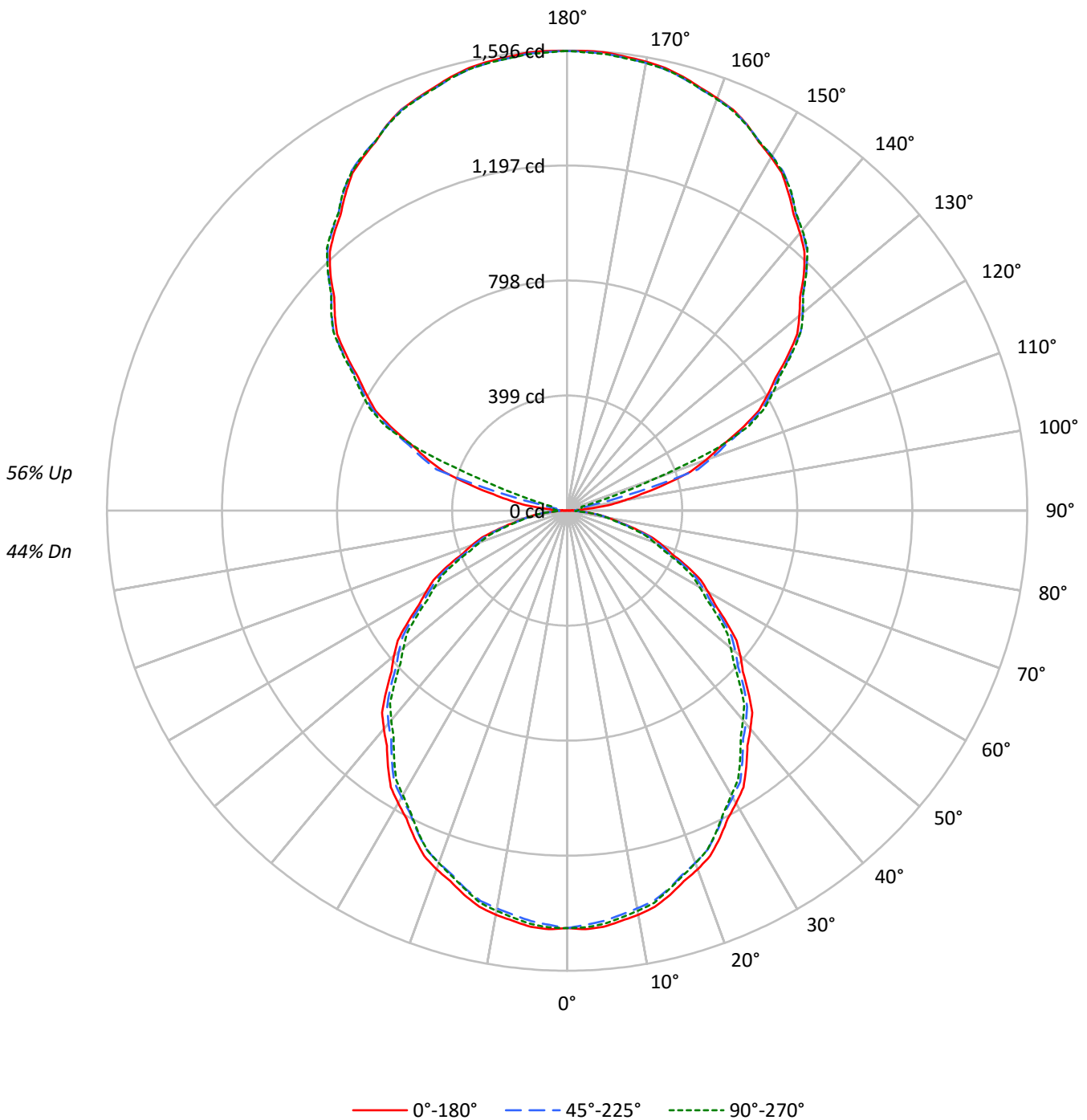
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44				44
1	96	92	88	85	88	84	81	78	70	68	65	57	55	54	44	43	42				37	
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36				31	
3	80	71	63	57	73	65	58	53	54	49	45	44	41	38	35	32	30				26	
4	73	62	55	49	67	57	50	45	48	43	39	39	35	32	31	28	26				22	
5	67	56	47	41	61	51	44	39	43	37	33	35	31	28	28	25	23				19	
6	62	50	42	36	56	46	39	34	38	33	29	32	28	24	25	22	20				17	
7	57	45	37	31	52	41	34	29	35	29	25	29	25	22	23	20	18				15	
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16				13	
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14				12	
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13				11	

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	1.6
10°-20°	385.2	4.5
20°-30°	569.0	6.6
30°-40°	664.6	7.7
40°-50°	668.2	7.7
50°-60°	587.0	6.8
60°-70°	437.3	5.1
70°-80°	249.1	2.9
80°-90°	76.0	0.9
90°-100°	58.0	0.7
100°-110°	276.2	3.2
110°-120°	663.5	7.7
120°-130°	844.9	9.8
130°-140°	902.7	10.5
140°-150°	844.1	9.8
150°-160°	680.9	7.9
160°-170°	439.5	5.1
170°-180°	151.5	1.8
0°-30°	1090.6	12.6
0°-40°	1755.3	20.3
0°-60°	3010.4	34.9
0°-90°	3772.8	43.7
90°-120°	997.6	11.6
90°-150°	3589.3	41.6
90°-180°	4861.0	56.3
0°-180°	8634.0	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	28	33	36	7
95°	72	27	37	44	45	89
105°	353	359	259	62	52	374
115°	662	669	680	691	696	653
125°	933	942	948	950	952	833
135°	1162	1169	1174	1177	1174	894
145°	1341	1349	1351	1354	1354	839
155°	1477	1475	1476	1481	1474	680
165°	1557	1554	1553	1561	1554	440
175°	1594	1588	1589	1597	1588	152
180°	1594	1594	1594	1594	1594	



TEST NUMBER: P332238-927

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

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	25.8	25.7	25.6	25.7	26.2	26.7	27.2	27.6	27.6
90°	1.2	3.8	6.4	9.1	11.7	14.7	18.1	21.5	25.0	28.4	29.5
92.5°	22.0	21.3	20.5	19.8	19.1	20.0	22.6	25.2	27.7	30.3	32.0
95°	72.2	61.5	50.7	39.8	29.1	25.1	28.0	30.9	33.8	36.7	38.6
97.5°	145.2	140.4	135.5	130.6	125.8	113.9	95.0	76.0	57.1	38.1	40.2
100°	200.2	205.4	210.6	215.9	221.2	203.3	162.2	121.2	80.2	39.1	41.2
102.5°	262.7	266.5	270.3	274.0	277.8	257.3	212.5	167.6	122.8	78.0	71.4
105°	352.9	355.8	358.7	361.6	364.5	354.1	330.4	306.7	283.0	259.4	212.8
107.5°	448.1	450.4	452.7	455.1	457.4	460.4	464.1	467.9	471.7	475.4	441.2
110°	511.6	513.7	515.8	517.9	520.1	522.5	525.5	528.3	531.2	534.1	525.5



TEST NUMBER: P332238-927

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	572.3	574.2	576.1	578.0	579.8	582.3	585.1	588.0	590.9	593.8	594.0
115°	662.0	663.6	665.2	666.8	668.4	670.3	672.7	675.0	677.4	679.8	682.4
117.5°	748.9	750.9	752.8	754.8	756.8	758.4	759.5	760.7	761.9	763.2	765.2
120°	803.0	805.3	807.7	810.1	812.5	814.0	814.8	815.6	816.3	817.1	819.3
122.5°	857.9	859.8	861.8	863.7	865.7	867.2	868.2	869.2	870.1	871.2	872.7
125°	933.2	935.3	937.5	939.5	941.7	943.3	944.3	945.3	946.4	947.5	948.0
127.5°	1006.2	1008.3	1010.4	1012.5	1014.6	1016.3	1017.6	1018.8	1020.1	1021.4	1022.2
130°	1051.6	1053.8	1055.9	1058.0	1060.1	1061.7	1062.7	1063.7	1064.9	1065.9	1066.9
132.5°	1095.3	1097.3	1099.5	1101.5	1103.7	1105.2	1106.0	1106.8	1107.6	1108.5	1109.5
135°	1161.8	1163.4	1165.0	1166.6	1168.2	1169.4	1170.4	1171.6	1172.6	1173.6	1174.4
137.5°	1218.6	1220.7	1222.7	1224.6	1226.6	1228.0	1228.5	1229.1	1229.7	1230.3	1231.5
140°	1256.6	1258.1	1259.7	1261.3	1262.9	1264.0	1264.8	1265.6	1266.4	1267.2	1268.3
142.5°	1291.6	1293.2	1294.7	1296.3	1297.9	1299.1	1299.9	1300.7	1301.5	1302.3	1303.1
145°	1340.6	1342.4	1344.3	1346.2	1348.0	1349.2	1349.7	1350.2	1350.8	1351.3	1351.8
147.5°	1386.8	1388.1	1389.3	1390.4	1391.6	1392.5	1393.1	1393.6	1394.1	1394.6	1395.2
150°	1415.2	1416.0	1416.8	1417.6	1418.4	1419.0	1419.6	1420.1	1420.6	1421.2	1421.7
152.5°	1440.8	1441.2	1441.5	1441.9	1442.3	1442.6	1443.0	1443.3	1443.6	1443.9	1444.9
155°	1476.8	1476.3	1475.8	1475.3	1474.7	1474.6	1474.9	1475.1	1475.4	1475.6	1476.9
157.5°	1504.8	1504.8	1504.7	1504.6	1504.6	1504.4	1504.1	1503.9	1503.6	1503.3	1504.9
160°	1521.9	1521.5	1521.3	1521.1	1520.8	1520.5	1520.3	1520.0	1519.7	1519.5	1521.1
162.5°	1537.9	1537.2	1536.6	1535.9	1535.2	1534.7	1534.5	1534.2	1533.9	1533.7	1535.5
165°	1557.4	1556.6	1555.8	1555.0	1554.2	1553.7	1553.4	1553.2	1552.9	1552.6	1554.7
167.5°	1572.5	1571.5	1570.4	1569.4	1568.3	1567.8	1567.8	1567.8	1567.8	1567.8	1569.9
170°	1581.0	1580.0	1578.9	1577.9	1576.8	1576.3	1576.3	1576.3	1576.3	1576.3	1578.4
172.5°	1586.7	1585.5	1584.2	1582.9	1581.7	1581.1	1581.4	1581.6	1581.8	1582.0	1584.1
175°	1594.0	1592.8	1591.4	1590.1	1588.8	1588.2	1588.6	1588.8	1589.0	1589.4	1591.2
177.5°	1595.9	1594.9	1593.9	1592.8	1591.7	1591.3	1591.6	1591.7	1592.0	1592.2	1593.9
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0



TEST NUMBER: P332238-927

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

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	27.7	27.8	27.9	28.0
90°	30.5	31.6	32.6	33.4	34.0	34.5	35.0	35.5
92.5°	33.7	35.4	37.1	38.0	38.3	38.7	39.0	39.3
95°	40.4	42.2	44.0	45.0	45.0	45.0	45.0	45.0
97.5°	42.4	44.4	46.6	47.8	48.0	48.2	48.6	48.8
100°	43.3	45.4	47.5	48.7	49.0	49.2	49.5	49.7
102.5°	64.9	58.4	51.8	48.8	49.3	49.7	50.2	50.7
105°	166.2	119.6	73.0	50.0	50.5	51.1	51.6	52.1
107.5°	407.0	372.9	338.7	304.1	269.0	233.9	198.8	163.7
110°	516.7	508.0	499.4	476.2	438.6	400.9	363.3	325.7



TEST NUMBER: P332238-927

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	594.1	594.3	594.5	590.6	582.6	574.6	566.7	558.7
115°	685.1	687.7	690.3	692.1	693.2	694.3	695.3	696.4
117.5°	767.4	769.4	771.6	772.8	772.9	773.2	773.4	773.6
120°	821.4	823.5	825.6	826.6	826.6	826.6	826.6	826.6
122.5°	874.1	875.6	877.1	877.9	878.1	878.3	878.5	878.8
125°	948.5	949.0	949.5	950.1	950.6	951.1	951.6	952.2
127.5°	1023.0	1023.9	1024.7	1024.8	1024.4	1023.8	1023.3	1022.8
130°	1067.9	1069.1	1070.1	1070.3	1069.8	1069.3	1068.7	1068.3
132.5°	1110.6	1111.7	1112.7	1112.9	1112.1	1111.4	1110.6	1109.9
135°	1175.2	1176.0	1176.8	1176.8	1176.0	1175.2	1174.4	1173.6
137.5°	1232.8	1234.1	1235.3	1235.6	1235.2	1234.6	1234.1	1233.6
140°	1269.3	1270.3	1271.4	1271.7	1271.1	1270.7	1270.1	1269.6
142.5°	1303.9	1304.8	1305.6	1305.7	1305.0	1304.2	1303.5	1302.7
145°	1352.3	1352.9	1353.4	1353.7	1353.7	1353.7	1353.7	1353.7
147.5°	1395.7	1396.2	1396.8	1396.4	1395.2	1394.0	1392.7	1391.5
150°	1422.2	1422.8	1423.2	1423.2	1422.4	1421.6	1420.8	1420.0
152.5°	1445.8	1446.8	1447.7	1447.6	1446.4	1445.1	1443.9	1442.7
155°	1478.3	1479.6	1480.9	1480.7	1479.2	1477.6	1476.0	1474.5
157.5°	1506.5	1508.1	1509.7	1509.4	1507.4	1505.3	1503.2	1501.2
160°	1522.7	1524.2	1525.7	1525.7	1523.8	1521.9	1520.1	1518.3
162.5°	1537.2	1539.1	1540.8	1540.9	1539.3	1537.6	1536.0	1534.4
165°	1556.8	1558.9	1561.1	1561.2	1559.3	1557.5	1555.6	1553.8
167.5°	1572.0	1574.1	1576.2	1576.2	1574.1	1572.0	1569.9	1567.8
170°	1580.5	1582.6	1584.8	1584.8	1582.6	1580.5	1578.4	1576.3
172.5°	1586.2	1588.3	1590.4	1590.3	1588.0	1585.7	1583.3	1581.0
175°	1593.0	1594.8	1596.7	1596.6	1594.4	1592.4	1590.2	1588.2
177.5°	1595.5	1597.2	1598.9	1598.7	1596.6	1594.5	1592.4	1590.3
180°	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0	1594.0

(END OF REPORT)