

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: P332209-940

Luminaire Tested: **S123DIW-S1000D1535U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332209-940  
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: S123DIW-S1000D1535U940-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 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: 8420.5 lumens  
Efficiency: N/A  
Efficacy: 109.9 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

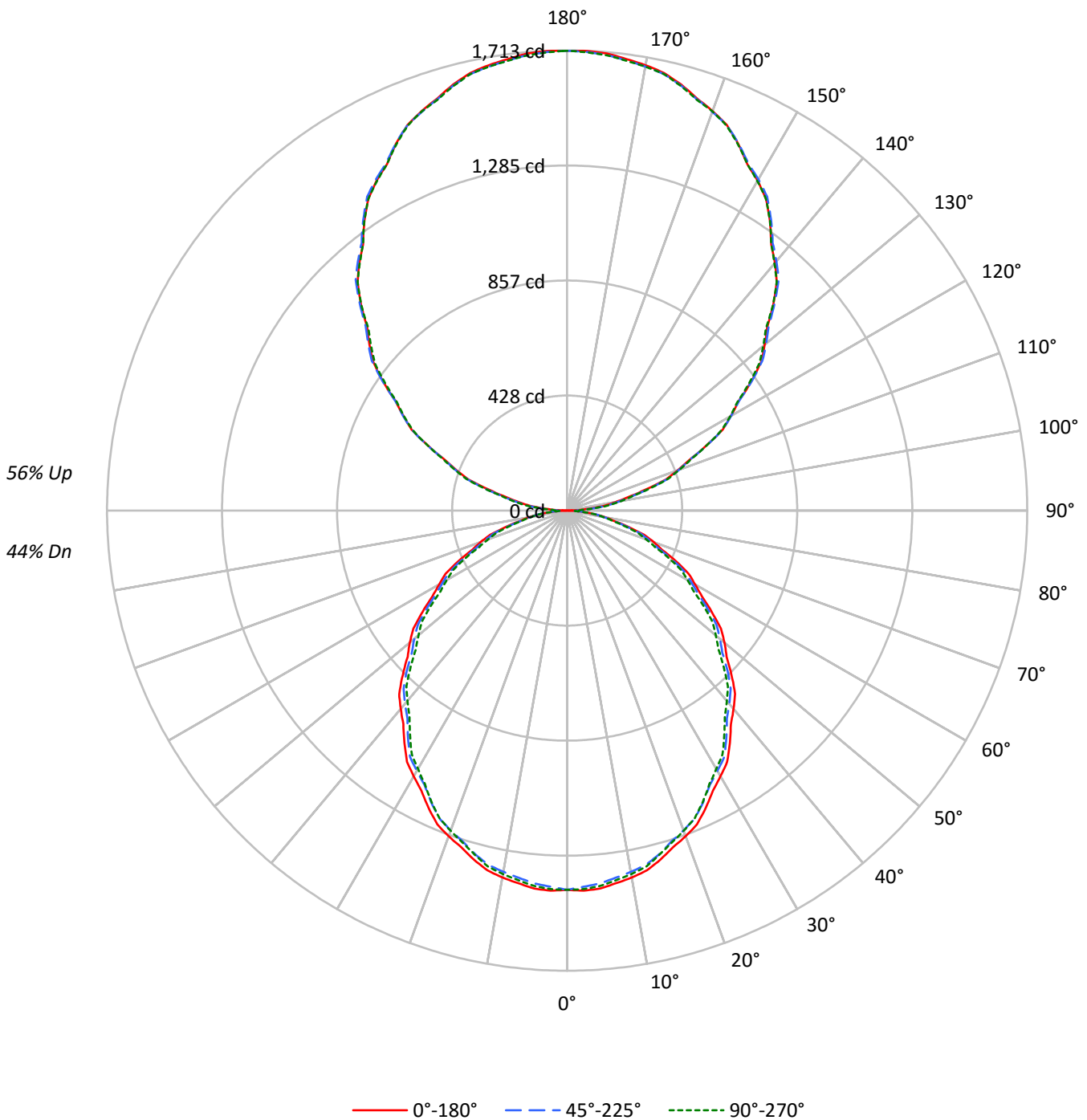
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

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

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

	0°	45°	90°
0°	15193	15193	15193
5°	15263	15055	15159
10°	15162	14924	15017
15°	14985	14755	14782
20°	14778	14513	14528
25°	14500	14226	14197
30°	14194	13908	13801
35°	13875	13571	13397
40°	13541	13198	12995
45°	13172	12858	12543
50°	12804	12439	12092
55°	12322	12003	11639
60°	11834	11496	11130
65°	11405	10942	10603
70°	10770	10313	9854
75°	9844	9491	9087
80°	8877	8498	8424
85°	7793	7497	7188



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.0	1.6
10°-20°	375.4	4.5
20°-30°	554.6	6.6
30°-40°	647.8	7.7
40°-50°	651.3	7.7
50°-60°	572.1	6.8
60°-70°	426.2	5.1
70°-80°	242.8	2.9
80°-90°	74.8	0.9
90°-100°	111.5	1.3
100°-110°	333.8	4.0
110°-120°	567.7	6.7
120°-130°	746.7	8.9
130°-140°	839.3	10.0
140°-150°	825.0	9.8
150°-160°	694.5	8.2
160°-170°	462.3	5.5
170°-180°	161.9	1.9
0°-30°	1062.9	12.6
0°-40°	1710.7	20.3
0°-60°	2934.1	34.8
0°-90°	3677.8	43.7
90°-120°	1013.0	12.0
90°-150°	3423.9	40.7
90°-180°	4743.0	56.3
0°-180°	8420.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1412	1412	1412	1412	1412	
5°	1413	1406	1393	1405	1403	134
15°	1345	1339	1324	1333	1326	379
25°	1221	1213	1198	1199	1195	562
35°	1056	1048	1033	1026	1020	660
45°	865	860	845	831	824	668
55°	657	655	640	627	620	588
65°	448	441	430	420	416	442
75°	237	232	228	222	218	253
85°	63	61	61	58	58	69
90°	1	15	32	38	40	8
95°	79	89	100	105	105	89
105°	303	306	317	318	320	324
115°	572	575	573	574	573	565
125°	836	840	838	832	827	746
135°	1085	1093	1092	1087	1084	836
145°	1316	1319	1323	1322	1316	822
155°	1507	1507	1509	1513	1505	694
165°	1642	1638	1638	1645	1636	463
175°	1708	1703	1702	1709	1701	162
180°	1712	1712	1712	1712	1712	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1416.3	1415.5	1414.6	1413.7	1412.9	1411.2	1408.9	1406.5	1404.2	1401.8	1403.9
5°	1412.6	1411.3	1410.0	1408.6	1407.3	1405.2	1402.2	1399.2	1396.2	1393.3	1396.0
7.5°	1398.8	1397.5	1396.2	1394.8	1393.5	1391.2	1388.2	1385.1	1382.1	1378.9	1381.3
10°	1387.2	1385.9	1384.5	1383.1	1381.8	1379.4	1375.9	1372.3	1368.9	1365.4	1367.8
12.5°	1371.6	1370.6	1369.4	1368.2	1367.2	1364.9	1361.6	1358.3	1355.0	1351.7	1353.5
15°	1344.7	1343.6	1342.6	1341.5	1340.4	1338.1	1334.6	1331.1	1327.6	1324.1	1326.2
17.5°	1313.4	1312.0	1310.6	1309.2	1307.8	1305.4	1301.8	1298.3	1294.9	1291.3	1292.8
20°	1290.1	1288.5	1286.9	1285.2	1283.6	1281.0	1277.6	1274.1	1270.6	1267.0	1268.1
22.5°	1263.9	1262.3	1260.7	1259.0	1257.4	1254.9	1251.3	1247.9	1244.4	1240.8	1241.7
25°	1220.9	1219.3	1217.7	1216.1	1214.4	1211.9	1208.4	1204.9	1201.4	1197.8	1198.1
27.5°	1175.1	1173.5	1171.9	1170.4	1168.8	1166.1	1162.3	1158.6	1154.8	1151.0	1151.2
30°	1142.0	1140.7	1139.3	1138.0	1136.7	1134.1	1130.3	1126.5	1122.8	1119.0	1119.0
32.5°	1109.0	1107.2	1105.5	1103.7	1101.9	1099.6	1096.6	1093.8	1090.8	1087.9	1086.4
35°	1055.9	1054.3	1052.7	1051.1	1049.4	1046.9	1043.3	1039.8	1036.3	1032.8	1031.2
37.5°	1001.5	999.4	997.4	995.3	993.3	990.5	986.9	983.4	979.8	976.2	974.3
40°	963.7	962.0	960.4	958.8	957.2	954.5	950.7	946.9	943.2	939.3	937.2
42.5°	925.8	923.9	922.1	920.2	918.5	915.6	911.9	908.1	904.3	900.5	898.4
45°	865.3	864.2	863.2	862.1	861.0	858.7	855.2	851.7	848.2	844.7	841.5
47.5°	805.4	803.8	802.3	800.7	799.2	796.7	793.4	790.1	786.8	783.5	780.3
50°	764.6	763.2	761.9	760.5	759.2	756.8	753.2	749.8	746.3	742.8	739.8
52.5°	721.8	720.9	720.1	719.2	718.2	715.9	712.2	708.5	704.7	701.0	698.5
55°	656.6	656.3	656.0	655.8	655.5	653.6	650.1	646.6	643.1	639.6	636.6
57.5°	594.4	593.5	592.6	591.7	590.8	588.9	586.1	583.3	580.5	577.7	575.1
60°	549.7	549.5	549.2	548.9	548.7	547.0	543.7	540.5	537.3	534.0	531.5
62.5°	510.0	509.3	508.5	507.8	507.2	505.2	501.9	498.7	495.5	492.2	489.8
65°	447.8	446.5	445.1	443.8	442.5	440.4	437.7	435.1	432.3	429.6	427.5
67.5°	382.1	380.8	379.7	378.5	377.3	375.7	373.6	371.6	369.5	367.5	365.6
70°	342.2	340.6	339.0	337.4	335.8	334.1	332.5	330.9	329.3	327.7	325.8
72.5°	300.5	299.3	298.1	296.9	295.8	294.3	292.4	290.6	288.7	286.9	285.3
75°	236.7	235.6	234.5	233.4	232.4	231.4	230.6	229.8	229.0	228.2	226.9
77.5°	180.1	179.5	178.9	178.3	177.7	176.9	176.0	175.0	174.1	173.1	172.2
80°	143.2	142.4	141.6	140.8	140.0	139.3	138.8	138.2	137.7	137.1	136.9
82.5°	107.3	107.1	107.0	106.8	106.6	106.5	106.4	106.3	106.2	106.1	105.6
85°	63.1	62.6	62.1	61.5	61.0	60.7	60.7	60.7	60.7	60.7	60.1
87.5°	25.5	25.5	25.4	25.3	25.3	25.6	26.1	26.7	27.3	27.8	27.8
90°	1.3	4.4	7.3	10.3	13.3	16.8	20.6	24.5	28.4	32.3	33.4
92.5°	32.5	34.6	36.6	38.6	40.7	42.8	45.0	47.2	49.4	51.6	52.6
95°	79.4	81.4	83.6	85.6	87.7	90.0	92.3	94.7	97.1	99.5	100.7
97.5°	140.9	142.5	144.0	145.6	147.1	148.7	150.5	152.2	154.0	155.7	157.1
100°	182.9	184.7	186.5	188.2	190.0	191.7	193.1	194.7	196.2	197.7	198.6
102.5°	231.3	232.4	233.4	234.5	235.6	237.1	239.1	241.0	243.0	245.0	245.9
105°	302.6	303.2	303.7	304.3	305.0	306.6	309.2	311.9	314.7	317.4	317.4
107.5°	385.4	385.8	386.1	386.5	386.8	387.5	388.6	389.7	390.7	391.8	392.8
110°	437.0	437.7	438.2	438.8	439.4	440.0	440.6	441.2	441.8	442.4	443.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.8	491.2	491.5	491.9	492.2	492.5	492.6	492.7	492.8	492.9	494.4
115°	571.5	572.4	573.3	574.2	575.1	575.2	574.6	574.0	573.5	572.8	573.1
117.5°	652.7	653.3	653.9	654.5	655.1	655.0	654.2	653.4	652.6	651.9	651.8
120°	703.3	705.1	706.9	708.6	710.4	710.6	709.1	707.6	706.1	704.6	704.3
122.5°	756.0	757.2	758.6	759.9	761.3	761.5	760.7	759.9	759.2	758.4	757.6
125°	836.3	837.2	838.2	839.1	840.0	840.1	839.5	838.9	838.3	837.8	836.5
127.5°	910.6	912.5	914.4	916.3	918.3	918.9	918.2	917.6	916.9	916.2	914.5
130°	960.1	962.5	964.8	967.2	969.6	970.4	969.5	968.6	967.7	966.8	965.6
132.5°	1009.6	1011.9	1014.3	1016.7	1019.1	1020.0	1019.3	1018.7	1018.0	1017.4	1015.9
135°	1085.1	1086.9	1088.7	1090.5	1092.3	1093.1	1092.8	1092.4	1092.2	1091.9	1090.7
137.5°	1155.0	1156.5	1158.1	1159.6	1161.0	1162.2	1163.0	1163.7	1164.5	1165.3	1164.0
140°	1203.5	1205.0	1206.5	1207.9	1209.4	1210.3	1210.7	1210.9	1211.2	1211.6	1211.2
142.5°	1247.6	1249.0	1250.5	1252.1	1253.6	1254.5	1255.1	1255.6	1256.2	1256.7	1256.4
145°	1316.4	1317.1	1317.6	1318.2	1318.8	1319.6	1320.4	1321.3	1322.2	1323.1	1322.9
147.5°	1376.6	1377.7	1378.8	1379.9	1381.0	1381.9	1382.8	1383.6	1384.4	1385.3	1385.3
150°	1418.6	1419.2	1419.8	1420.4	1421.0	1421.6	1422.2	1422.8	1423.3	1424.0	1424.0
152.5°	1453.0	1453.8	1454.7	1455.5	1456.3	1457.0	1457.3	1457.7	1458.0	1458.4	1458.9
155°	1507.3	1507.3	1507.3	1507.3	1507.3	1507.5	1507.8	1508.1	1508.4	1508.7	1509.9
157.5°	1553.6	1553.3	1552.9	1552.6	1552.2	1552.1	1552.4	1552.6	1552.8	1553.1	1554.3
160°	1582.7	1582.1	1581.4	1580.8	1580.3	1579.9	1579.9	1579.9	1579.9	1579.9	1581.4
162.5°	1608.5	1607.7	1606.8	1606.0	1605.2	1604.8	1605.1	1605.3	1605.5	1605.8	1607.3
165°	1641.8	1640.9	1640.0	1639.1	1638.3	1637.8	1637.8	1637.8	1637.8	1637.8	1639.6
167.5°	1668.5	1667.2	1666.1	1664.8	1663.7	1663.2	1663.4	1663.7	1663.9	1664.1	1666.0
170°	1683.5	1682.3	1681.1	1679.9	1678.7	1678.1	1678.1	1678.1	1678.1	1678.1	1680.3
172.5°	1695.3	1694.2	1692.9	1691.8	1690.6	1690.0	1690.0	1690.0	1690.0	1690.0	1691.8
175°	1707.7	1706.6	1705.3	1704.1	1702.9	1702.4	1702.4	1702.4	1702.4	1702.4	1704.1
177.5°	1712.8	1711.9	1710.9	1709.9	1709.0	1708.5	1708.5	1708.5	1708.5	1708.5	1709.9
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1406.0	1408.3	1410.4	1411.4	1411.1	1411.0	1410.7	1410.5
5°	1398.6	1401.3	1404.1	1405.2	1404.6	1404.1	1403.6	1403.0
7.5°	1383.8	1386.3	1388.7	1389.7	1389.4	1389.1	1388.8	1388.4
10°	1370.2	1372.6	1375.1	1376.0	1375.5	1374.9	1374.4	1373.9
12.5°	1355.3	1357.1	1358.9	1359.6	1359.3	1359.0	1358.6	1358.3
15°	1328.4	1330.5	1332.8	1333.0	1331.4	1329.7	1328.1	1326.5
17.5°	1294.3	1295.8	1297.4	1297.8	1297.3	1296.6	1296.0	1295.5
20°	1269.2	1270.3	1271.4	1271.5	1270.7	1269.9	1269.1	1268.3
22.5°	1242.6	1243.4	1244.3	1244.2	1243.2	1242.2	1241.2	1240.1
25°	1198.4	1198.7	1199.0	1198.7	1197.8	1197.0	1196.2	1195.4
27.5°	1151.5	1151.6	1151.9	1151.5	1150.5	1149.4	1148.4	1147.4
30°	1119.0	1119.0	1119.0	1118.0	1116.2	1114.3	1112.4	1110.4
32.5°	1084.9	1083.4	1081.9	1080.6	1079.6	1078.5	1077.5	1076.5
35°	1029.6	1028.0	1026.4	1024.8	1023.5	1022.2	1020.8	1019.5
37.5°	972.4	970.4	968.5	967.1	966.3	965.4	964.5	963.7
40°	935.0	932.9	930.8	929.1	928.0	926.9	925.9	924.8
42.5°	896.2	894.0	891.9	890.3	889.2	888.1	887.1	886.0
45°	838.2	835.0	831.8	829.5	828.1	826.8	825.5	824.0
47.5°	777.1	774.0	770.8	768.7	767.4	766.2	765.1	763.8
50°	736.8	733.9	730.8	728.6	727.0	725.3	723.7	722.1
52.5°	695.9	693.4	690.9	688.8	687.2	685.5	683.9	682.3
55°	633.6	630.7	627.8	625.5	624.2	622.9	621.5	620.2
57.5°	572.4	569.8	567.1	565.0	563.5	561.9	560.4	558.7
60°	529.1	526.7	524.3	522.5	521.0	519.7	518.4	517.0
62.5°	487.4	485.0	482.5	480.9	479.9	479.0	478.1	477.2
65°	425.3	423.1	421.0	419.5	418.7	417.9	417.1	416.3
67.5°	363.7	361.9	360.0	358.5	357.3	356.1	355.0	353.9
70°	323.9	322.0	320.1	318.5	317.2	315.8	314.5	313.1
72.5°	283.6	281.9	280.2	279.0	278.3	277.6	277.0	276.3
75°	225.5	224.1	222.7	221.7	220.9	220.1	219.3	218.5
77.5°	171.2	170.3	169.4	169.0	169.0	169.0	169.0	169.0
80°	136.6	136.3	136.1	135.9	135.9	135.9	135.9	135.9
82.5°	105.1	104.6	104.2	103.8	103.5	103.3	103.2	102.9
85°	59.6	59.0	58.5	58.2	58.2	58.2	58.2	58.2
87.5°	27.8	27.9	27.9	28.0	28.1	28.2	28.4	28.4
90°	34.7	35.8	37.1	38.0	38.5	39.1	39.8	40.3
92.5°	53.5	54.5	55.5	55.7	55.4	55.0	54.7	54.3
95°	101.9	103.1	104.2	104.9	104.9	104.9	104.9	104.9
97.5°	158.5	159.8	161.2	161.8	161.8	161.6	161.5	161.4
100°	199.5	200.4	201.3	202.0	202.6	203.2	203.8	204.4
102.5°	246.8	247.7	248.6	249.0	248.9	248.7	248.6	248.5
105°	317.4	317.4	317.4	317.6	318.3	318.9	319.4	320.0
107.5°	393.8	394.7	395.7	395.9	395.6	395.2	394.8	394.5
110°	444.8	445.9	447.2	447.5	446.8	446.3	445.7	445.1





TEST NUMBER: P332209-940

CATALOG NUMBER: S123DIW-S1000D1535U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	495.8	497.2	498.6	499.4	499.3	499.1	499.0	498.8
115°	573.5	573.7	574.0	574.0	573.7	573.5	573.1	572.8
117.5°	651.8	651.8	651.7	651.2	650.3	649.5	648.7	647.8
120°	704.0	703.7	703.4	702.9	702.4	701.8	701.2	700.5
122.5°	756.8	756.1	755.3	754.5	753.7	752.8	752.0	751.1
125°	835.4	834.1	832.9	831.7	830.5	829.4	828.1	827.0
127.5°	912.9	911.2	909.5	908.0	906.7	905.3	903.9	902.5
130°	964.4	963.2	962.1	960.4	958.3	956.2	954.1	952.0
132.5°	1014.5	1013.1	1011.6	1010.1	1008.5	1006.9	1005.2	1003.6
135°	1089.5	1088.2	1087.1	1086.2	1085.6	1084.9	1084.4	1083.8
137.5°	1162.8	1161.5	1160.3	1159.0	1157.9	1156.8	1155.7	1154.5
140°	1210.9	1210.7	1210.3	1209.2	1207.0	1205.0	1202.8	1200.8
142.5°	1256.2	1255.8	1255.5	1254.5	1252.9	1251.3	1249.7	1248.1
145°	1322.5	1322.2	1322.0	1321.2	1320.0	1318.8	1317.6	1316.4
147.5°	1385.3	1385.3	1385.3	1384.4	1382.6	1380.8	1378.9	1377.2
150°	1424.0	1424.0	1424.0	1423.1	1421.3	1419.5	1417.7	1415.9
152.5°	1459.4	1459.8	1460.4	1459.8	1458.2	1456.7	1455.1	1453.6
155°	1511.1	1512.3	1513.5	1513.1	1510.9	1508.9	1506.7	1504.7
157.5°	1555.6	1556.8	1558.1	1557.9	1556.2	1554.5	1552.8	1551.2
160°	1583.0	1584.5	1585.9	1586.1	1584.9	1583.7	1582.5	1581.3
162.5°	1608.7	1610.3	1611.8	1611.6	1609.6	1607.8	1605.8	1603.9
165°	1641.4	1643.2	1644.9	1644.8	1642.7	1640.7	1638.5	1636.5
167.5°	1667.9	1669.7	1671.5	1671.5	1669.7	1667.9	1666.0	1664.1
170°	1682.3	1684.4	1686.5	1686.5	1684.4	1682.3	1680.3	1678.1
172.5°	1693.6	1695.5	1697.4	1697.3	1695.1	1693.1	1691.0	1688.9
175°	1705.9	1707.7	1709.5	1709.3	1707.3	1705.1	1703.1	1701.0
177.5°	1711.4	1712.8	1714.2	1714.1	1712.4	1710.7	1709.1	1707.4
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7

(END OF REPORT)