

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: P332203-935

Luminaire Tested: **S123DIW-S1000D1320U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332203-935  
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-S1000D1320U935-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

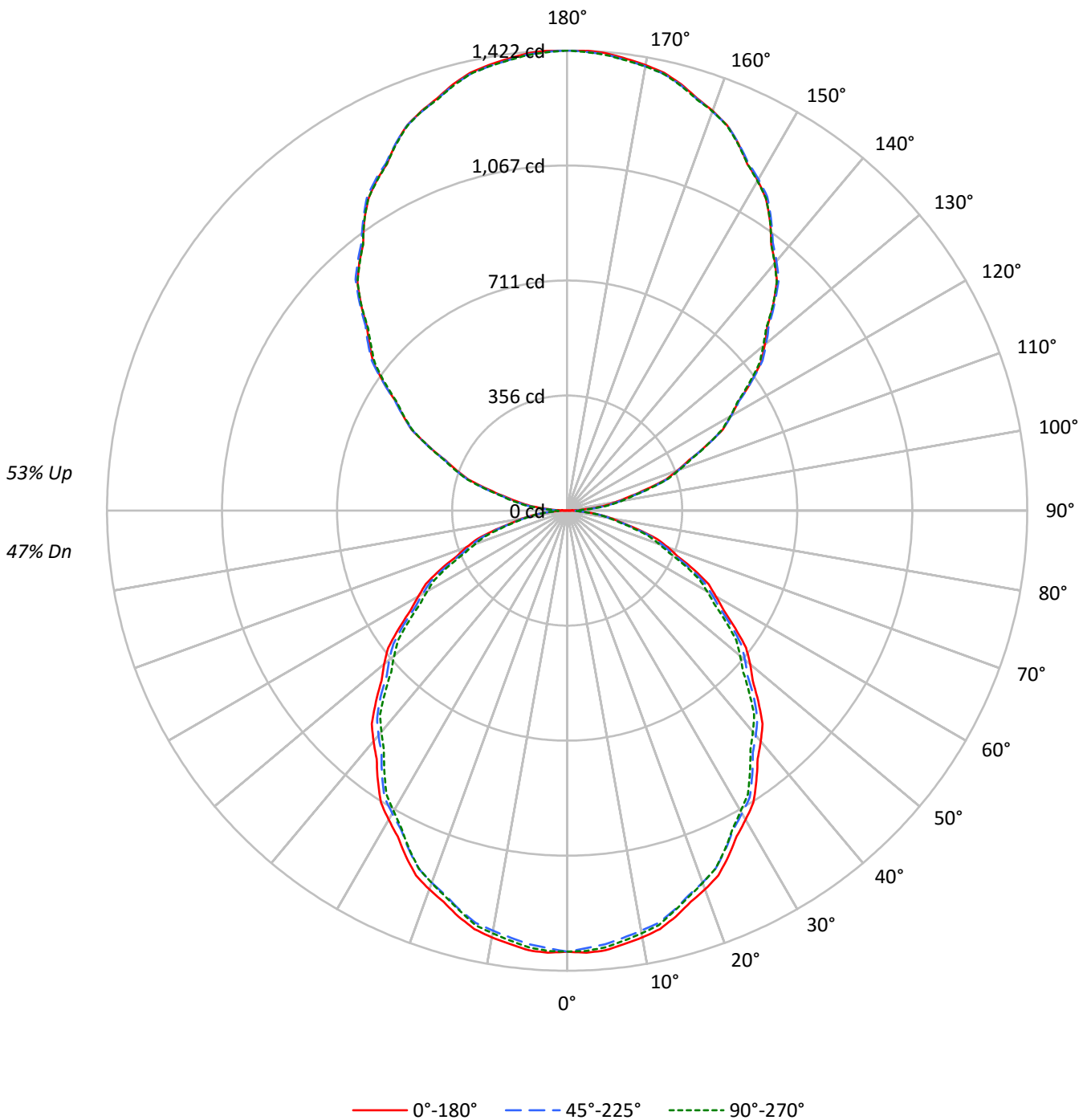
Lumens per Lamp: N/A  
Luminaire Lumens: 7489.1 lumens  
Efficiency: N/A  
Efficacy: 107.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 69.8  
Input Voltage (V): 120  
Input Current (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	107	107	107	107	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	47	42	40	38	33
3	81	71	64	58	74	66	59	54	55	51	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	37	32	29	30	27	24	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	25	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	23	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°	14670	14670	14670
5°	14738	14536	14638
10°	14641	14410	14499
15°	14469	14247	14273
20°	14269	14014	14027
25°	14001	13737	13709
30°	13706	13430	13326
35°	13397	13104	12935
40°	13075	12745	12546
45°	12718	12415	12113
50°	12363	12010	11675
55°	11898	11590	11237
60°	11427	11102	10747
65°	11013	10565	10236
70°	10401	9958	9514
75°	9503	9162	8771
80°	8573	8207	8133
85°	7534	7237	6941



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.4	1.7
10°-20°	362.5	4.8
20°-30°	535.5	7.1
30°-40°	625.5	8.4
40°-50°	628.8	8.4
50°-60°	552.4	7.4
60°-70°	411.5	5.5
70°-80°	234.5	3.1
80°-90°	71.5	1.0
90°-100°	92.6	1.2
100°-110°	277.2	3.7
110°-120°	471.4	6.3
120°-130°	620.1	8.3
130°-140°	697.0	9.3
140°-150°	685.1	9.1
150°-160°	576.8	7.7
160°-170°	383.9	5.1
170°-180°	134.4	1.8
0°-30°	1026.3	13.7
0°-40°	1651.8	22.1
0°-60°	2833.0	37.8
0°-90°	3550.5	47.4
90°-120°	841.3	11.2
90°-150°	2843.5	38.0
90°-180°	3939.0	52.6
0°-180°	7489.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1363	1363	1363	1363	1363	
5°	1364	1358	1345	1356	1355	129
15°	1298	1293	1278	1287	1281	366
25°	1179	1171	1157	1158	1154	543
35°	1020	1012	997	990	984	638
45°	836	830	816	802	796	645
55°	634	632	618	605	599	568
65°	432	426	415	406	402	427
75°	228	224	220	215	211	244
85°	61	59	59	56	56	67
90°	1	12	27	31	34	7
95°	66	74	83	87	87	74
105°	251	254	264	264	266	269
115°	475	478	476	477	476	469
125°	695	698	696	691	687	619
135°	901	907	907	902	900	694
145°	1093	1096	1099	1098	1093	683
155°	1252	1252	1253	1257	1250	576
165°	1364	1360	1360	1366	1359	384
175°	1418	1414	1414	1420	1413	135
180°	1422	1422	1422	1422	1422	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9
2.5°	1367.5	1366.8	1365.9	1365.0	1364.3	1362.6	1360.4	1358.1	1355.8	1353.5	1355.6
5°	1364.0	1362.7	1361.4	1360.1	1358.8	1356.8	1353.9	1351.0	1348.2	1345.3	1347.9
7.5°	1350.7	1349.4	1348.1	1346.8	1345.5	1343.3	1340.4	1337.4	1334.5	1331.5	1333.8
10°	1339.5	1338.2	1336.8	1335.5	1334.2	1331.9	1328.5	1325.1	1321.7	1318.4	1320.7
12.5°	1324.4	1323.4	1322.2	1321.1	1320.1	1317.9	1314.7	1311.6	1308.4	1305.2	1306.9
15°	1298.4	1297.4	1296.3	1295.3	1294.3	1292.0	1288.7	1285.3	1281.9	1278.5	1280.6
17.5°	1268.2	1266.8	1265.5	1264.1	1262.7	1260.4	1257.0	1253.6	1250.3	1246.8	1248.3
20°	1245.7	1244.1	1242.6	1241.0	1239.4	1236.9	1233.6	1230.2	1226.8	1223.4	1224.4
22.5°	1220.4	1218.8	1217.3	1215.6	1214.1	1211.7	1208.2	1204.9	1201.5	1198.1	1198.9
25°	1178.9	1177.3	1175.8	1174.2	1172.6	1170.2	1166.7	1163.4	1160.0	1156.6	1156.8
27.5°	1134.6	1133.1	1131.5	1130.1	1128.5	1125.9	1122.3	1118.7	1115.0	1111.4	1111.6
30°	1102.7	1101.4	1100.1	1098.8	1097.5	1095.0	1091.4	1087.7	1084.1	1080.5	1080.5
32.5°	1070.8	1069.1	1067.4	1065.7	1063.9	1061.7	1058.9	1056.1	1053.3	1050.4	1049.0
35°	1019.5	1018.0	1016.4	1014.9	1013.2	1010.8	1007.4	1004.0	1000.7	997.2	995.7
37.5°	967.0	965.0	963.0	961.0	959.1	956.4	953.0	949.5	946.1	942.6	940.7
40°	930.5	928.8	927.3	925.7	924.2	921.6	917.9	914.3	910.7	907.0	904.9
42.5°	893.9	892.1	890.4	888.6	886.8	884.1	880.5	876.8	873.1	869.5	867.5
45°	835.5	834.5	833.4	832.4	831.4	829.1	825.8	822.3	819.0	815.6	812.5
47.5°	777.7	776.1	774.6	773.1	771.6	769.2	766.1	762.9	759.7	756.6	753.5
50°	738.3	736.9	735.6	734.3	733.1	730.7	727.3	723.9	720.6	717.2	714.3
52.5°	697.0	696.1	695.3	694.4	693.4	691.2	687.7	684.1	680.4	676.8	674.4
55°	634.0	633.7	633.4	633.2	632.9	631.1	627.8	624.3	621.0	617.6	614.7
57.5°	573.9	573.1	572.2	571.4	570.4	568.6	565.9	563.2	560.5	557.8	555.3
60°	530.8	530.5	530.3	530.0	529.8	528.1	525.0	521.9	518.8	515.7	513.2
62.5°	492.4	491.7	491.0	490.3	489.7	487.8	484.7	481.6	478.5	475.3	472.9
65°	432.4	431.1	429.8	428.5	427.2	425.2	422.7	420.1	417.4	414.8	412.8
67.5°	368.9	367.7	366.6	365.5	364.3	362.7	360.8	358.8	356.8	354.8	353.0
70°	330.5	328.9	327.4	325.8	324.3	322.6	321.1	319.5	318.0	316.4	314.6
72.5°	290.2	289.0	287.8	286.7	285.6	284.1	282.3	280.6	278.8	277.0	275.4
75°	228.5	227.5	226.4	225.4	224.4	223.4	222.7	221.9	221.1	220.3	219.0
77.5°	173.9	173.3	172.7	172.2	171.6	170.8	170.0	169.0	168.1	167.1	166.3
80°	138.3	137.5	136.7	136.0	135.2	134.5	134.0	133.5	132.9	132.4	132.2
82.5°	103.6	103.4	103.3	103.1	103.0	102.8	102.7	102.6	102.5	102.5	101.9
85°	61.0	60.4	59.9	59.4	58.9	58.6	58.6	58.6	58.6	58.6	58.0
87.5°	24.6	24.5	24.4	24.2	24.1	24.3	24.7	25.1	25.6	26.0	26.0
90°	1.1	3.6	6.1	8.5	11.0	13.9	17.1	20.3	23.6	26.8	27.8
92.5°	27.0	28.7	30.4	32.1	33.8	35.6	37.4	39.2	41.1	42.9	43.7
95°	65.9	67.6	69.4	71.1	72.8	74.7	76.7	78.7	80.7	82.7	83.6
97.5°	117.0	118.3	119.6	120.9	122.2	123.6	125.0	126.4	127.9	129.3	130.4
100°	151.9	153.3	154.8	156.4	157.8	159.2	160.4	161.7	162.9	164.2	164.9
102.5°	192.1	193.0	193.9	194.8	195.6	196.9	198.5	200.2	201.8	203.5	204.2
105°	251.2	251.8	252.3	252.7	253.2	254.6	256.8	259.1	261.3	263.6	263.6
107.5°	320.0	320.4	320.6	321.0	321.2	321.8	322.7	323.6	324.5	325.4	326.2
110°	362.9	363.4	363.9	364.4	364.9	365.4	365.9	366.4	366.9	367.4	368.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	407.6	407.9	408.2	408.5	408.8	409.0	409.1	409.1	409.3	409.4	410.6
115°	474.6	475.4	476.0	476.8	477.6	477.7	477.2	476.7	476.2	475.7	476.0
117.5°	542.1	542.5	543.0	543.5	544.1	544.0	543.3	542.7	542.0	541.4	541.3
120°	584.0	585.5	587.0	588.5	590.0	590.1	588.8	587.6	586.4	585.1	584.9
122.5°	627.8	628.9	630.0	631.1	632.1	632.4	631.7	631.1	630.4	629.8	629.1
125°	694.6	695.3	696.0	696.8	697.6	697.7	697.2	696.7	696.2	695.7	694.7
127.5°	756.2	757.9	759.4	761.0	762.6	763.1	762.6	762.0	761.5	761.0	759.5
130°	797.3	799.3	801.3	803.3	805.3	805.9	805.1	804.4	803.7	802.9	801.9
132.5°	838.4	840.4	842.4	844.4	846.4	847.1	846.5	846.0	845.4	844.9	843.7
135°	901.2	902.7	904.1	905.6	907.1	907.8	907.5	907.2	907.0	906.7	905.8
137.5°	959.2	960.4	961.7	962.9	964.2	965.2	965.8	966.5	967.1	967.8	966.6
140°	999.4	1000.7	1001.9	1003.2	1004.4	1005.1	1005.4	1005.6	1005.9	1006.2	1005.9
142.5°	1036.0	1037.3	1038.5	1039.8	1041.0	1041.9	1042.3	1042.8	1043.2	1043.7	1043.4
145°	1093.2	1093.7	1094.2	1094.8	1095.2	1095.9	1096.6	1097.3	1098.1	1098.8	1098.5
147.5°	1143.2	1144.2	1145.0	1146.0	1146.9	1147.6	1148.3	1149.0	1149.7	1150.4	1150.4
150°	1178.1	1178.6	1179.1	1179.6	1180.1	1180.6	1181.1	1181.6	1182.1	1182.6	1182.6
152.5°	1206.7	1207.4	1208.1	1208.8	1209.4	1210.0	1210.3	1210.6	1210.9	1211.2	1211.6
155°	1251.8	1251.8	1251.8	1251.8	1251.8	1252.0	1252.2	1252.4	1252.7	1252.9	1254.0
157.5°	1290.2	1290.0	1289.6	1289.3	1289.0	1289.0	1289.2	1289.3	1289.6	1289.8	1290.8
160°	1314.3	1313.9	1313.4	1312.9	1312.3	1312.1	1312.1	1312.1	1312.1	1312.1	1313.4
162.5°	1335.8	1335.1	1334.4	1333.7	1333.0	1332.7	1333.0	1333.2	1333.3	1333.5	1334.8
165°	1363.5	1362.7	1362.0	1361.2	1360.6	1360.1	1360.1	1360.1	1360.1	1360.1	1361.6
167.5°	1385.6	1384.6	1383.6	1382.6	1381.6	1381.2	1381.4	1381.6	1381.8	1382.0	1383.5
170°	1398.1	1397.1	1396.1	1395.2	1394.1	1393.6	1393.6	1393.6	1393.6	1393.6	1395.3
172.5°	1407.9	1407.0	1405.9	1405.0	1403.9	1403.4	1403.4	1403.4	1403.4	1403.4	1405.0
175°	1418.2	1417.2	1416.3	1415.2	1414.2	1413.8	1413.8	1413.8	1413.8	1413.8	1415.2
177.5°	1422.5	1421.7	1420.8	1420.0	1419.3	1418.8	1418.8	1418.8	1418.8	1418.8	1420.0
180°	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9	1362.9
2.5°	1357.6	1359.8	1361.8	1362.8	1362.5	1362.4	1362.1	1361.9
5°	1350.5	1353.1	1355.7	1356.8	1356.2	1355.7	1355.2	1354.7
7.5°	1336.2	1338.5	1340.8	1341.9	1341.5	1341.3	1340.9	1340.6
10°	1323.0	1325.3	1327.7	1328.6	1328.1	1327.6	1327.1	1326.5
12.5°	1308.6	1310.4	1312.1	1312.8	1312.5	1312.2	1311.8	1311.6
15°	1282.6	1284.7	1286.9	1287.1	1285.6	1283.9	1282.4	1280.8
17.5°	1249.7	1251.2	1252.7	1253.1	1252.6	1252.0	1251.4	1250.9
20°	1225.5	1226.6	1227.6	1227.7	1226.9	1226.2	1225.4	1224.6
22.5°	1199.8	1200.6	1201.4	1201.4	1200.4	1199.4	1198.4	1197.4
25°	1157.1	1157.4	1157.7	1157.4	1156.6	1155.8	1155.0	1154.3
27.5°	1111.8	1112.0	1112.2	1111.8	1110.9	1109.8	1108.9	1107.8
30°	1080.5	1080.5	1080.5	1079.5	1077.7	1075.9	1074.1	1072.2
32.5°	1047.5	1046.1	1044.7	1043.4	1042.4	1041.4	1040.4	1039.4
35°	994.1	992.6	991.0	989.5	988.3	987.0	985.7	984.4
37.5°	938.9	937.0	935.1	933.8	933.0	932.1	931.3	930.5
40°	902.8	900.8	898.7	897.1	896.0	895.0	894.0	892.9
42.5°	865.3	863.2	861.2	859.6	858.6	857.6	856.5	855.5
45°	809.3	806.2	803.1	800.9	799.6	798.3	797.0	795.7
47.5°	750.4	747.3	744.2	742.2	741.0	739.9	738.7	737.5
50°	711.4	708.6	705.7	703.5	702.0	700.3	698.8	697.2
52.5°	671.9	669.5	667.1	665.0	663.5	661.9	660.4	658.8
55°	611.8	609.0	606.1	604.0	602.7	601.4	600.1	598.8
57.5°	552.7	550.2	547.6	545.5	544.1	542.5	541.1	539.5
60°	510.9	508.6	506.3	504.5	503.1	501.8	500.5	499.2
62.5°	470.6	468.3	465.9	464.3	463.4	462.5	461.7	460.8
65°	410.7	408.5	406.5	405.1	404.3	403.6	402.7	401.9
67.5°	351.2	349.4	347.6	346.1	345.0	343.9	342.8	341.7
70°	312.7	310.9	309.1	307.5	306.3	305.0	303.7	302.3
72.5°	273.8	272.2	270.5	269.4	268.7	268.0	267.4	266.7
75°	217.7	216.4	215.1	214.0	213.3	212.5	211.7	210.9
77.5°	165.3	164.5	163.6	163.2	163.2	163.2	163.2	163.2
80°	131.9	131.6	131.4	131.2	131.2	131.2	131.2	131.2
82.5°	101.5	101.0	100.6	100.2	100.0	99.8	99.6	99.4
85°	57.5	57.0	56.5	56.2	56.2	56.2	56.2	56.2
87.5°	26.0	25.9	25.9	26.0	26.1	26.2	26.3	26.3
90°	28.8	29.8	30.7	31.5	32.0	32.5	33.0	33.5
92.5°	44.4	45.3	46.1	46.3	46.0	45.7	45.4	45.1
95°	84.6	85.6	86.6	87.1	87.1	87.1	87.1	87.1
97.5°	131.6	132.8	133.9	134.4	134.3	134.2	134.1	134.0
100°	165.7	166.3	167.1	167.7	168.2	168.8	169.3	169.7
102.5°	204.9	205.7	206.5	206.7	206.6	206.6	206.5	206.4
105°	263.6	263.6	263.6	263.8	264.3	264.8	265.3	265.8
107.5°	327.0	327.8	328.6	328.8	328.6	328.2	328.0	327.6
110°	369.4	370.4	371.3	371.6	371.1	370.7	370.1	369.6





TEST NUMBER: P332203-935

CATALOG NUMBER: S123DIW-S1000D1320U935-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	411.7	412.9	414.1	414.7	414.6	414.5	414.4	414.3
115°	476.2	476.5	476.7	476.7	476.5	476.2	476.0	475.7
117.5°	541.3	541.2	541.1	540.8	540.1	539.4	538.7	538.0
120°	584.6	584.4	584.2	583.8	583.3	582.8	582.3	581.8
122.5°	628.5	627.8	627.2	626.5	625.9	625.2	624.5	623.8
125°	693.7	692.8	691.7	690.8	689.7	688.7	687.8	686.7
127.5°	758.1	756.7	755.4	754.1	752.9	751.8	750.7	749.5
130°	800.9	800.0	798.9	797.5	795.8	794.1	792.4	790.7
132.5°	842.5	841.3	840.2	838.9	837.5	836.2	834.8	833.5
135°	904.7	903.8	902.8	902.1	901.6	901.0	900.5	900.1
137.5°	965.6	964.6	963.5	962.6	961.7	960.7	959.8	958.8
140°	1005.6	1005.4	1005.1	1004.2	1002.5	1000.7	998.9	997.2
142.5°	1043.2	1042.9	1042.7	1041.9	1040.5	1039.2	1037.8	1036.6
145°	1098.3	1098.1	1097.9	1097.3	1096.2	1095.2	1094.2	1093.2
147.5°	1150.4	1150.4	1150.4	1149.7	1148.2	1146.7	1145.2	1143.8
150°	1182.6	1182.6	1182.6	1181.8	1180.3	1178.9	1177.3	1175.9
152.5°	1211.9	1212.4	1212.7	1212.3	1211.0	1209.7	1208.4	1207.1
155°	1254.9	1255.9	1256.9	1256.5	1254.8	1253.1	1251.3	1249.6
157.5°	1291.8	1292.9	1294.0	1293.7	1292.4	1291.0	1289.6	1288.2
160°	1314.6	1315.9	1317.1	1317.2	1316.2	1315.3	1314.2	1313.2
162.5°	1336.0	1337.3	1338.5	1338.3	1336.8	1335.2	1333.6	1332.0
165°	1363.1	1364.6	1366.1	1366.0	1364.3	1362.5	1360.7	1359.0
167.5°	1385.1	1386.6	1388.2	1388.2	1386.6	1385.1	1383.5	1382.0
170°	1397.1	1398.9	1400.6	1400.6	1398.9	1397.1	1395.3	1393.6
172.5°	1406.5	1408.1	1409.6	1409.5	1407.8	1406.0	1404.3	1402.6
175°	1416.7	1418.2	1419.7	1419.5	1417.8	1416.1	1414.4	1412.6
177.5°	1421.3	1422.5	1423.7	1423.6	1422.1	1420.7	1419.4	1418.0
180°	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6

(END OF REPORT)