

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: P332215-927

Luminaire Tested: **S123DIW-S1165D460U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332215-927  
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-S1165D460U927-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5035.9 lumens  
Efficiency: N/A  
Efficacy: 96.1 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: Semi-Direct

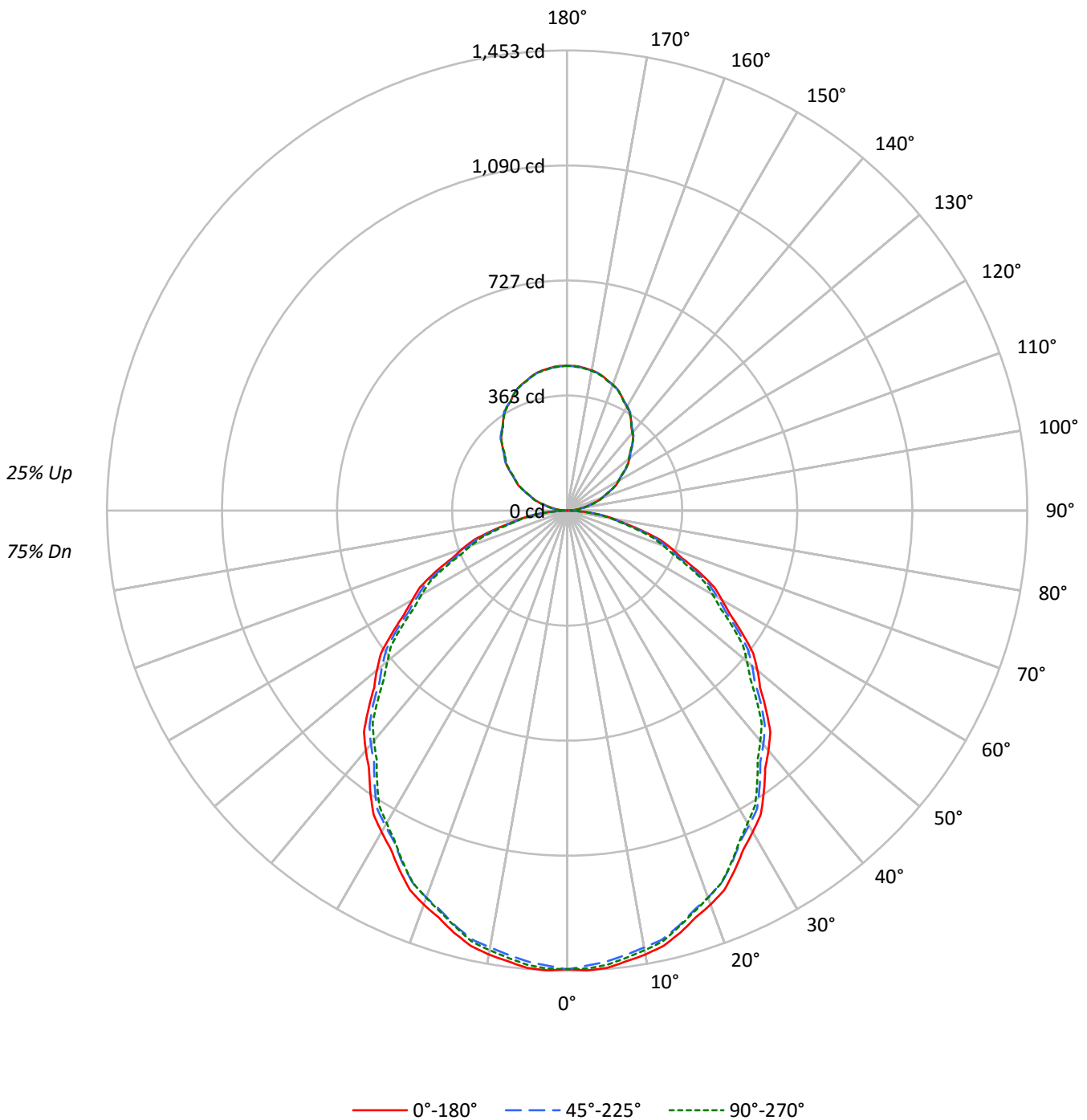
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	113	113	113	108	108	108	108	97	97	97	88	88	88	79	79	79	75
1	103	99	95	91	98	94	90	87	85	82	80	77	75	73	70	68	67	63
2	94	86	80	74	89	82	76	72	75	70	66	68	64	61	61	58	56	53
3	86	76	68	62	81	72	65	60	66	60	56	60	55	52	54	51	48	44
4	79	67	59	53	74	64	57	51	59	52	47	53	48	44	49	44	41	38
5	72	60	51	45	68	57	50	44	53	46	41	48	43	38	44	39	36	33
6	67	54	45	39	63	52	44	38	47	41	36	43	38	34	40	35	32	29
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	36	32	28	26
8	57	45	36	31	54	43	35	30	39	33	28	36	31	27	33	29	25	23
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23	21
10	50	38	30	25	48	36	29	24	34	27	23	31	26	22	29	24	21	19

**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	2.7
10°-20°	385.2	7.6
20°-30°	569.0	11.3
30°-40°	664.6	13.2
40°-50°	668.2	13.3
50°-60°	587.0	11.7
60°-70°	437.3	8.7
70°-80°	249.1	4.9
80°-90°	72.9	1.4
90°-100°	29.8	0.6
100°-110°	89.1	1.8
110°-120°	151.6	3.0
120°-130°	199.4	4.0
130°-140°	224.1	4.4
140°-150°	220.3	4.4
150°-160°	185.4	3.7
160°-170°	123.4	2.5
170°-180°	43.2	0.9
0°-30°	1090.6	21.7
0°-40°	1755.3	34.9
0°-60°	3010.4	59.8
0°-90°	3769.7	74.9
90°-120°	270.4	5.4
90°-150°	914.1	18.2
90°-180°	1266.0	25.1
0°-180°	5035.9	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°	0	4	9	10	11	5
95°	21	24	26	28	28	24
105°	81	82	85	85	86	87
115°	153	154	153	153	153	151
125°	223	224	224	222	221	199
135°	290	292	292	290	289	223
145°	352	352	353	353	352	219
155°	402	402	403	404	402	185
165°	438	437	437	439	437	124
175°	456	455	454	456	454	43
180°	457	457	457	457	457	



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**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°	26.0	25.4	25.0	24.5	23.9	23.7	23.7	23.7	23.7	23.6	23.4
90°	0.4	1.2	2.0	2.8	3.6	4.4	5.5	6.6	7.6	8.6	9.0
92.5°	8.7	9.3	9.7	10.3	10.9	11.4	12.0	12.6	13.2	13.8	14.0
95°	21.2	21.7	22.3	22.9	23.4	24.0	24.6	25.3	25.9	26.5	26.9
97.5°	37.6	38.0	38.4	38.9	39.3	39.7	40.2	40.6	41.1	41.6	41.9
100°	48.8	49.3	49.7	50.2	50.7	51.2	51.6	52.0	52.4	52.8	53.0
102.5°	61.7	62.0	62.3	62.6	62.9	63.3	63.8	64.3	64.9	65.4	65.7
105°	80.8	81.0	81.1	81.3	81.4	81.8	82.5	83.3	84.0	84.7	84.7
107.5°	102.9	103.0	103.1	103.1	103.3	103.5	103.8	104.0	104.3	104.6	104.9
110°	116.7	116.8	117.0	117.2	117.3	117.5	117.6	117.8	118.0	118.1	118.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	131.0	131.1	131.3	131.3	131.4	131.5	131.5	131.6	131.6	131.6	132.0
115°	152.6	152.8	153.0	153.3	153.5	153.6	153.4	153.3	153.1	153.0	153.0
117.5°	174.3	174.4	174.6	174.8	174.9	174.8	174.7	174.4	174.3	174.0	174.0
120°	187.7	188.2	188.7	189.2	189.6	189.7	189.3	188.9	188.5	188.1	188.1
122.5°	201.8	202.2	202.6	202.9	203.2	203.3	203.1	202.9	202.7	202.5	202.2
125°	223.3	223.6	223.8	224.0	224.3	224.3	224.1	223.9	223.8	223.6	223.3
127.5°	243.1	243.6	244.2	244.6	245.2	245.3	245.2	244.9	244.8	244.6	244.2
130°	256.4	257.0	257.6	258.3	258.9	259.0	258.8	258.6	258.3	258.1	257.8
132.5°	269.5	270.1	270.8	271.5	272.1	272.4	272.1	272.0	271.8	271.6	271.2
135°	289.7	290.2	290.7	291.1	291.6	291.8	291.8	291.7	291.6	291.5	291.2
137.5°	308.4	308.8	309.2	309.6	310.0	310.3	310.5	310.7	310.9	311.1	310.8
140°	321.3	321.7	322.1	322.5	322.9	323.1	323.2	323.3	323.4	323.4	323.4
142.5°	333.1	333.5	333.9	334.3	334.7	334.9	335.1	335.3	335.4	335.5	335.4
145°	351.5	351.6	351.8	352.0	352.1	352.3	352.5	352.8	353.0	353.2	353.2
147.5°	367.6	367.8	368.1	368.4	368.7	368.9	369.2	369.4	369.6	369.9	369.9
150°	378.7	378.9	379.1	379.2	379.4	379.5	379.7	379.9	380.0	380.2	380.2
152.5°	387.9	388.2	388.4	388.6	388.8	389.0	389.0	389.2	389.3	389.4	389.5
155°	402.4	402.4	402.4	402.4	402.4	402.5	402.6	402.7	402.7	402.8	403.1
157.5°	414.8	414.7	414.6	414.5	414.4	414.4	414.5	414.5	414.5	414.6	414.9
160°	422.6	422.4	422.2	422.1	421.9	421.8	421.8	421.8	421.8	421.8	422.2
162.5°	429.4	429.2	429.0	428.7	428.6	428.5	428.5	428.6	428.6	428.7	429.1
165°	438.3	438.1	437.8	437.6	437.4	437.3	437.3	437.3	437.3	437.3	437.8
167.5°	445.4	445.1	444.8	444.5	444.2	444.0	444.1	444.2	444.3	444.3	444.8
170°	449.5	449.2	448.9	448.5	448.2	448.1	448.1	448.1	448.1	448.1	448.6
172.5°	452.7	452.3	452.0	451.7	451.3	451.1	451.1	451.1	451.1	451.1	451.7
175°	455.9	455.6	455.3	455.0	454.6	454.5	454.5	454.5	454.5	454.5	455.0
177.5°	457.3	457.0	456.8	456.5	456.3	456.1	456.1	456.1	456.1	456.1	456.5
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0



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**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°	23.3	23.1	23.0	23.0	23.0	23.0	23.1	23.1
90°	9.3	9.6	9.9	10.1	10.3	10.5	10.6	10.8
92.5°	14.3	14.6	14.8	14.9	14.8	14.7	14.6	14.5
95°	27.2	27.5	27.8	28.0	28.0	28.0	28.0	28.0
97.5°	42.3	42.7	43.0	43.2	43.2	43.2	43.1	43.1
100°	53.2	53.5	53.7	53.9	54.1	54.3	54.4	54.6
102.5°	65.9	66.1	66.4	66.5	66.5	66.4	66.4	66.3
105°	84.7	84.7	84.7	84.8	85.0	85.2	85.3	85.5
107.5°	105.1	105.4	105.6	105.7	105.6	105.5	105.4	105.4
110°	118.7	119.1	119.4	119.5	119.3	119.1	119.0	118.8





TEST NUMBER: P332215-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	132.4	132.8	133.2	133.3	133.2	133.2	133.2	133.2
115°	153.1	153.2	153.3	153.3	153.2	153.1	153.0	153.0
117.5°	174.0	174.0	174.0	173.9	173.6	173.4	173.2	172.9
120°	188.0	187.9	187.8	187.7	187.5	187.4	187.2	187.0
122.5°	202.1	201.8	201.6	201.5	201.2	201.0	200.7	200.5
125°	223.0	222.7	222.4	222.0	221.7	221.4	221.1	220.8
127.5°	243.8	243.3	242.8	242.4	242.1	241.7	241.3	241.0
130°	257.5	257.1	256.8	256.4	255.9	255.3	254.8	254.1
132.5°	270.8	270.5	270.1	269.7	269.3	268.8	268.4	267.9
135°	290.9	290.6	290.3	290.0	289.9	289.7	289.5	289.4
137.5°	310.5	310.1	309.7	309.4	309.1	308.9	308.6	308.2
140°	323.3	323.2	323.1	322.8	322.3	321.7	321.2	320.6
142.5°	335.3	335.3	335.2	334.9	334.5	334.1	333.7	333.2
145°	353.1	353.0	352.9	352.8	352.4	352.1	351.8	351.5
147.5°	369.9	369.9	369.9	369.6	369.2	368.6	368.1	367.7
150°	380.2	380.2	380.2	379.9	379.5	379.0	378.5	378.0
152.5°	389.6	389.8	389.9	389.8	389.4	388.9	388.5	388.1
155°	403.5	403.8	404.1	403.9	403.4	402.8	402.3	401.7
157.5°	415.3	415.7	416.0	415.9	415.5	415.0	414.5	414.2
160°	422.6	423.0	423.4	423.4	423.1	422.8	422.5	422.2
162.5°	429.5	429.9	430.3	430.2	429.8	429.2	428.7	428.2
165°	438.2	438.7	439.2	439.1	438.6	438.0	437.4	436.9
167.5°	445.3	445.8	446.2	446.2	445.8	445.3	444.8	444.3
170°	449.2	449.7	450.3	450.3	449.7	449.2	448.6	448.1
172.5°	452.2	452.7	453.1	453.1	452.6	452.0	451.5	450.9
175°	455.4	455.9	456.4	456.4	455.8	455.3	454.7	454.2
177.5°	456.9	457.3	457.6	457.6	457.2	456.8	456.3	455.8
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0

(END OF REPORT)