

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: P332230-927

Luminaire Tested: **S123DIW-S1165D1320U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332230-927
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-S1165D1320U927-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8026.3 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

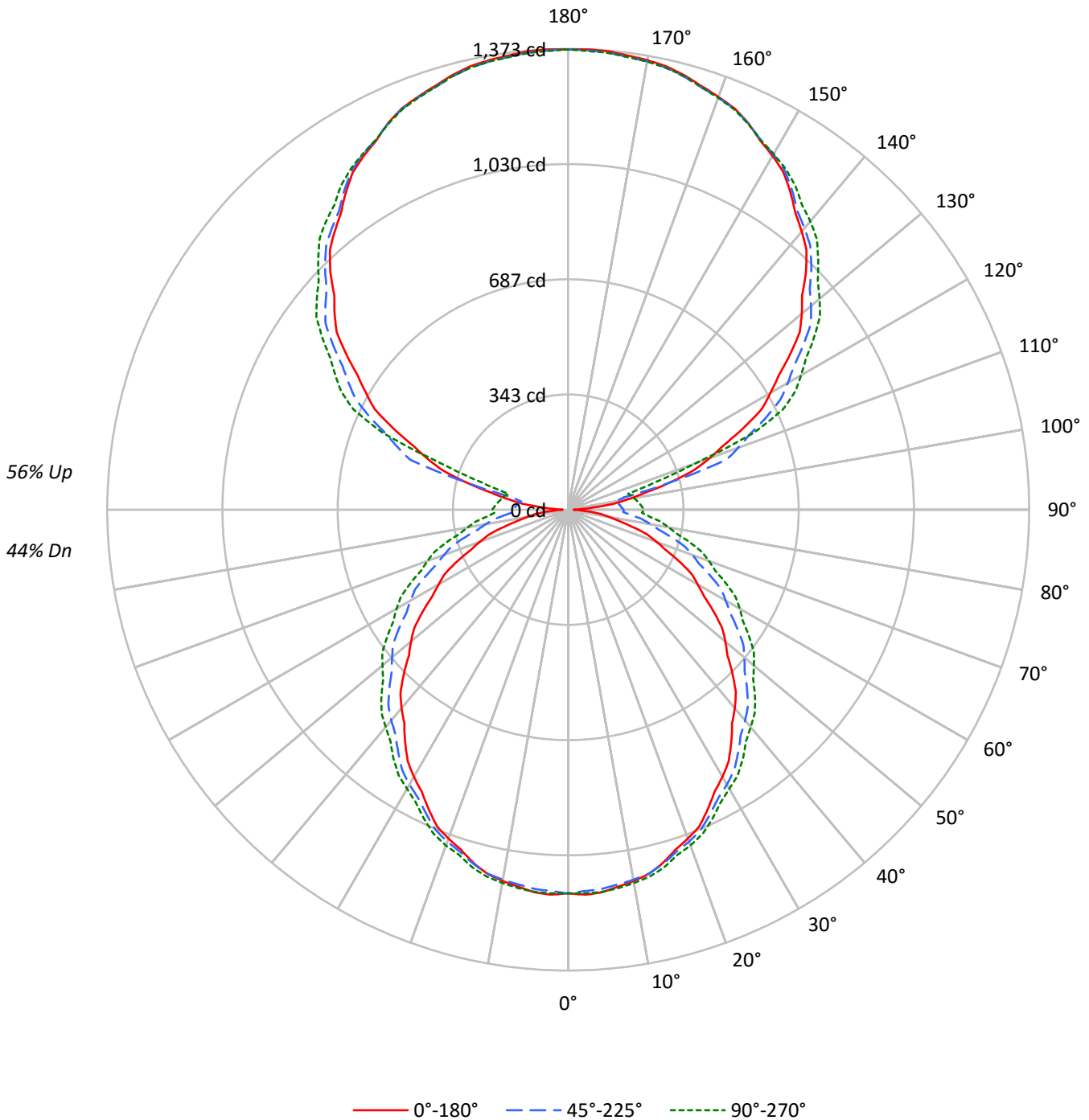
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332230-927

CATALOG NUMBER: S123DIW-S1165D1320U927-4F0-1E-UDD-D

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	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	95	91	87	83	87	83	79	76	69	66	64	55	54	52	43	42	41	35
2	87	79	72	67	79	72	67	62	60	55	52	48	45	43	37	35	34	29
3	79	69	61	55	72	63	56	51	52	47	43	42	39	36	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20
5	66	54	46	40	60	50	42	37	41	36	31	33	29	26	26	23	21	17
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12
9	48	36	28	23	44	33	26	22	28	23	19	23	19	16	18	15	13	11
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12304	12304	12304
5°	12343	11994	12001
10°	12232	11718	11659
15°	12075	11405	11287
20°	11849	11047	10876
25°	11571	10634	10444
30°	11287	10264	10006
35°	10967	9871	9658
40°	10663	9514	9284
45°	10325	9172	8985
50°	9990	8832	8655
55°	9622	8486	8359
60°	9263	8134	8056
65°	8896	7758	7694
70°	8341	7336	7323
75°	7640	6853	6946
80°	6835	6380	6515
85°	6085	6053	6268



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.4	1.4
10°-20°	308.9	3.8
20°-30°	462.0	5.8
30°-40°	551.8	6.9
40°-50°	577.3	7.2
50°-60°	541.7	6.7
60°-70°	452.5	5.6
70°-80°	323.7	4.0
80°-90°	196.9	2.5
90°-100°	171.0	2.1
100°-110°	326.6	4.1
110°-120°	630.1	7.9
120°-130°	760.6	9.5
130°-140°	791.7	9.9
140°-150°	729.3	9.1
150°-160°	585.7	7.3
160°-170°	378.0	4.7
170°-180°	130.3	1.6
0°-30°	879.3	11.0
0°-40°	1431.1	17.8
0°-60°	2550.1	31.8
0°-90°	3523.2	43.9
90°-120°	1127.7	14.0
90°-150°	3409.2	42.5
90°-180°	4503.0	56.1
0°-180°	8026.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1143	1143	1143	1143	1143	
5°	1144	1142	1134	1144	1143	108
15°	1090	1093	1092	1104	1103	307
25°	984	996	1000	1015	1016	453
35°	847	866	883	901	906	529
45°	692	722	753	776	787	534
55°	528	569	614	646	658	473
65°	365	414	468	504	518	360
75°	198	257	319	358	375	212
85°	61	124	189	230	244	64
90°	17	89	165	210	226	14
95°	76	86	155	199	213	87
105°	314	350	316	180	184	332
115°	576	599	651	689	705	568
125°	806	816	855	882	894	720
135°	1002	1007	1024	1049	1053	771
145°	1154	1160	1162	1174	1179	722
155°	1270	1268	1269	1274	1268	585
165°	1340	1336	1335	1343	1336	378
175°	1371	1366	1367	1373	1366	130
180°	1371	1371	1371	1371	1371	



TEST NUMBER: P332230-927

CATALOG NUMBER: S123DIW-S1165D1320U927-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1148.1	1147.5	1146.8	1146.1	1145.4	1144.2	1142.5	1140.7	1138.9	1137.2	1138.9
5°	1144.4	1143.8	1143.3	1142.7	1142.2	1141.1	1139.4	1137.7	1136.1	1134.4	1136.6
7.5°	1133.1	1133.3	1133.4	1133.5	1133.6	1132.9	1131.2	1129.7	1128.1	1126.4	1129.2
10°	1123.2	1123.8	1124.3	1124.9	1125.5	1125.0	1123.6	1122.2	1120.9	1119.4	1122.2
12.5°	1111.3	1112.0	1112.8	1113.6	1114.4	1114.3	1113.3	1112.4	1111.4	1110.5	1113.0
15°	1089.6	1090.4	1091.2	1092.1	1092.9	1093.2	1092.9	1092.7	1092.3	1092.1	1094.9
17.5°	1062.2	1063.8	1065.5	1067.1	1068.8	1069.6	1069.5	1069.4	1069.3	1069.1	1071.7
20°	1042.3	1043.9	1045.6	1047.3	1048.9	1050.0	1050.6	1051.1	1051.7	1052.3	1054.7
22.5°	1021.4	1023.0	1024.7	1026.4	1028.0	1029.2	1030.0	1030.8	1031.5	1032.3	1035.5
25°	983.7	986.5	989.3	992.0	994.8	996.6	997.4	998.2	999.1	999.9	1003.5
27.5°	945.9	949.0	952.2	955.4	958.5	961.0	962.7	964.5	966.3	968.0	971.1
30°	919.0	922.6	926.1	929.8	933.3	936.3	938.5	940.7	942.9	945.2	948.5
32.5°	889.1	893.1	897.1	901.2	905.2	908.7	911.6	914.5	917.3	920.2	923.8
35°	846.8	851.2	855.6	860.1	864.5	868.5	872.1	875.7	879.2	882.9	887.0
37.5°	801.9	806.9	811.9	816.9	821.9	826.6	831.0	835.4	839.9	844.3	849.0
40°	772.1	777.1	782.0	787.0	791.9	797.3	802.8	808.3	813.8	819.4	824.1
42.5°	739.2	745.3	751.4	757.4	763.5	769.4	775.2	780.9	786.7	792.5	797.6
45°	692.4	699.0	705.6	712.3	718.9	725.7	732.6	739.5	746.5	753.4	758.6
47.5°	643.3	650.8	658.3	665.9	673.4	681.1	689.0	697.0	704.9	712.8	718.7
50°	611.4	619.2	626.9	634.6	642.4	650.5	659.2	667.7	676.3	684.8	691.3
52.5°	577.6	585.7	593.9	602.1	610.3	619.2	628.6	638.0	647.5	657.0	663.6
55°	528.0	537.1	546.2	555.4	564.5	574.0	584.0	594.0	604.0	613.9	621.4
57.5°	479.7	489.2	498.7	508.2	517.8	528.0	538.8	549.8	560.6	571.6	579.1
60°	445.8	455.7	465.7	475.7	485.6	496.3	507.6	519.0	530.4	541.7	549.5
62.5°	413.9	424.1	434.3	444.5	454.6	465.7	477.8	489.7	501.8	513.8	521.5
65°	364.9	375.7	386.4	397.2	408.1	419.5	431.7	443.9	456.1	468.2	476.5
67.5°	315.1	326.5	337.9	349.4	360.8	372.8	385.2	397.6	410.0	422.4	431.4
70°	280.2	292.1	304.0	315.8	327.8	340.4	353.6	366.9	380.2	393.5	402.3
72.5°	248.3	260.2	272.1	284.0	295.9	308.7	322.4	336.1	349.9	363.6	372.7
75°	198.0	211.0	224.0	237.0	250.0	263.4	277.3	291.1	304.9	318.8	327.9
77.5°	154.2	167.3	180.4	193.5	206.6	220.1	234.1	248.0	262.0	275.9	285.6
80°	123.3	136.8	150.4	164.0	177.5	191.5	205.9	220.3	234.6	249.1	258.5
82.5°	96.4	110.2	124.0	137.8	151.5	165.7	180.3	195.0	209.5	224.1	233.5
85°	61.0	74.9	88.7	102.5	116.4	130.6	145.3	159.9	174.6	189.3	198.7
87.5°	33.4	47.5	61.8	76.0	90.2	104.7	119.5	134.1	148.9	163.5	173.1
90°	17.2	33.0	48.9	64.6	80.5	97.0	114.0	131.0	148.1	165.2	175.5
92.5°	34.1	45.7	57.4	68.9	80.6	94.3	110.5	126.6	142.7	158.8	169.4
95°	75.8	77.3	78.8	80.4	81.9	90.6	106.7	122.8	138.8	154.9	165.0
97.5°	137.0	142.7	148.2	153.8	159.4	160.5	157.2	153.8	150.4	147.1	157.2
100°	183.4	196.7	210.1	223.5	236.9	232.3	209.7	187.1	164.5	142.0	151.8
102.5°	236.1	247.4	258.6	269.8	281.1	273.6	247.6	221.5	195.4	169.4	171.6
105°	313.5	322.7	331.8	340.9	350.1	350.4	341.9	333.4	325.0	316.5	284.2
107.5°	393.9	401.6	409.2	416.8	424.5	435.5	450.0	464.5	479.0	493.5	471.6
110°	447.5	454.3	461.1	467.9	474.7	484.8	498.4	512.0	525.5	539.1	538.8



TEST NUMBER: P332230-927

CATALOG NUMBER: S123DIW-S1165D1320U927-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	499.6	505.4	511.1	516.8	522.6	532.0	545.1	558.3	571.3	584.5	591.5
115°	575.6	580.3	584.9	589.7	594.4	602.7	614.7	626.7	638.7	650.7	659.6
117.5°	650.1	653.9	657.6	661.3	665.0	672.1	682.5	692.9	703.3	713.7	722.1
120°	695.6	699.0	702.4	705.8	709.3	715.9	725.7	735.5	745.4	755.1	763.3
122.5°	742.8	745.3	747.7	750.0	752.4	758.4	767.9	777.5	787.0	796.6	804.0
125°	806.4	808.2	810.0	811.8	813.7	819.0	827.9	836.9	845.8	854.8	861.0
127.5°	869.2	870.7	872.2	873.8	875.3	879.9	887.6	895.4	903.1	910.9	917.0
130°	908.2	909.8	911.3	912.8	914.4	918.4	924.8	931.3	937.7	944.1	950.3
132.5°	944.8	946.5	948.2	950.0	951.8	955.2	960.4	965.5	970.7	975.8	981.8
135°	1001.7	1002.8	1003.9	1005.0	1006.1	1008.6	1012.6	1016.4	1020.4	1024.4	1030.1
137.5°	1050.4	1051.9	1053.4	1054.9	1056.4	1058.3	1060.5	1062.6	1064.9	1067.1	1072.5
140°	1082.0	1083.3	1084.7	1086.1	1087.4	1088.9	1090.4	1091.9	1093.4	1094.9	1099.9
142.5°	1112.1	1113.3	1114.4	1115.6	1116.7	1117.7	1118.6	1119.4	1120.2	1121.1	1125.5
145°	1154.3	1155.6	1156.9	1158.2	1159.5	1160.4	1160.9	1161.3	1161.8	1162.2	1164.9
147.5°	1192.8	1193.8	1194.8	1195.9	1197.0	1197.7	1198.2	1198.6	1199.0	1199.5	1200.6
150°	1217.3	1217.9	1218.6	1219.2	1220.0	1220.5	1221.0	1221.4	1221.9	1222.3	1222.8
152.5°	1239.2	1239.5	1239.8	1240.2	1240.5	1240.8	1241.1	1241.3	1241.6	1241.9	1242.7
155°	1270.2	1269.8	1269.3	1268.8	1268.4	1268.3	1268.5	1268.8	1269.0	1269.2	1270.3
157.5°	1294.3	1294.2	1294.2	1294.1	1294.0	1294.0	1293.7	1293.5	1293.2	1293.0	1294.3
160°	1308.9	1308.7	1308.4	1308.2	1308.0	1307.8	1307.6	1307.3	1307.1	1306.9	1308.2
162.5°	1322.8	1322.2	1321.6	1321.0	1320.4	1320.0	1319.8	1319.5	1319.3	1319.1	1320.6
165°	1339.5	1338.8	1338.1	1337.4	1336.7	1336.3	1336.1	1335.9	1335.6	1335.4	1337.2
167.5°	1352.5	1351.6	1350.7	1349.8	1348.8	1348.5	1348.5	1348.5	1348.5	1348.5	1350.3
170°	1359.9	1358.9	1358.0	1357.2	1356.2	1355.7	1355.7	1355.7	1355.7	1355.7	1357.6
172.5°	1364.8	1363.7	1362.6	1361.4	1360.4	1359.9	1360.1	1360.3	1360.5	1360.7	1362.5
175°	1371.0	1369.9	1368.8	1367.6	1366.5	1366.0	1366.3	1366.5	1366.8	1367.0	1368.6
177.5°	1372.7	1371.7	1370.9	1370.0	1369.0	1368.7	1368.9	1369.0	1369.2	1369.4	1370.9
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0



TEST NUMBER: P332230-927

CATALOG NUMBER: S123DIW-S1165D1320U927-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1140.7	1142.5	1144.2	1145.0	1144.8	1144.5	1144.3	1144.1
5°	1138.8	1141.1	1143.3	1144.2	1144.0	1143.7	1143.4	1143.1
7.5°	1131.9	1134.7	1137.5	1138.8	1138.4	1138.0	1137.7	1137.4
10°	1125.0	1127.8	1130.5	1131.6	1131.1	1130.5	1130.0	1129.4
12.5°	1115.6	1118.2	1120.7	1121.7	1121.1	1120.5	1120.0	1119.4
15°	1097.6	1100.3	1103.1	1104.4	1104.1	1103.8	1103.6	1103.3
17.5°	1074.1	1076.7	1079.1	1080.1	1079.8	1079.4	1079.0	1078.6
20°	1057.2	1059.7	1062.2	1063.6	1063.8	1064.1	1064.4	1064.7
22.5°	1038.6	1041.8	1044.9	1046.4	1046.2	1046.1	1045.9	1045.8
25°	1007.1	1010.7	1014.3	1016.1	1016.1	1016.1	1016.1	1016.1
27.5°	974.2	977.3	980.4	982.1	982.3	982.5	982.8	983.0
30°	951.8	955.1	958.4	960.0	960.0	960.0	960.0	960.0
32.5°	927.3	930.9	934.4	936.5	937.2	937.9	938.5	939.1
35°	891.2	895.3	899.4	902.1	903.2	904.4	905.5	906.5
37.5°	853.7	858.4	863.1	865.9	866.8	867.7	868.5	869.4
40°	828.8	833.5	838.2	841.1	842.2	843.3	844.4	845.5
42.5°	802.8	807.9	813.1	816.4	817.9	819.5	821.0	822.6
45°	763.9	769.1	774.4	778.2	780.4	782.6	784.8	787.0
47.5°	724.6	730.6	736.5	740.3	742.0	743.7	745.4	747.1
50°	697.6	704.0	710.3	714.5	716.4	718.4	720.3	722.2
52.5°	670.2	676.8	683.3	687.9	690.2	692.6	695.0	697.4
55°	628.8	636.3	643.8	648.6	650.9	653.1	655.3	657.5
57.5°	586.6	594.1	601.7	606.7	609.3	612.0	614.6	617.1
60°	557.1	564.9	572.7	578.1	581.1	584.2	587.2	590.3
62.5°	529.3	537.0	544.8	550.1	552.9	555.7	558.6	561.3
65°	484.8	493.1	501.5	506.9	509.7	512.5	515.2	518.0
67.5°	440.5	449.6	458.7	464.4	466.8	469.1	471.3	473.7
70°	411.2	420.1	428.9	434.7	437.5	440.3	443.0	445.8
72.5°	381.8	390.9	399.9	405.8	408.6	411.4	414.2	416.9
75°	337.1	346.2	355.3	361.6	364.9	368.2	371.5	374.8
77.5°	295.2	304.8	314.5	320.5	323.1	325.7	328.2	330.7
80°	267.8	277.3	286.7	292.8	295.6	298.3	301.1	303.8
82.5°	243.0	252.4	261.7	267.8	270.6	273.4	276.2	278.9
85°	208.1	217.5	226.9	233.0	235.8	238.5	241.3	244.1
87.5°	182.7	192.3	201.9	208.1	211.0	213.8	216.7	219.5
90°	185.8	196.1	206.4	213.2	216.4	219.6	222.8	226.1
92.5°	180.1	190.8	201.4	208.1	210.9	213.7	216.5	219.4
95°	175.2	185.4	195.5	202.0	204.7	207.5	210.2	213.0
97.5°	167.2	177.3	187.4	193.8	196.9	199.9	202.9	205.8
100°	161.6	171.4	181.3	187.7	190.7	193.7	196.7	199.7
102.5°	173.7	175.9	178.2	180.9	184.0	187.2	190.4	193.5
105°	251.8	219.5	187.2	172.5	175.5	178.4	181.3	184.3
107.5°	449.6	427.6	405.7	380.8	353.1	325.3	297.5	269.8
110°	538.5	538.3	538.0	522.8	492.6	462.5	432.3	402.1



TEST NUMBER: P332230-927

CATALOG NUMBER: S123DIW-S1165D1320U927-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	598.7	605.8	612.9	614.3	609.8	605.5	601.0	596.7
115°	668.5	677.4	686.3	692.3	695.5	698.5	701.6	704.8
117.5°	730.5	738.9	747.3	752.7	754.9	757.3	759.6	762.0
120°	771.5	779.7	787.8	792.9	794.8	796.8	798.7	800.7
122.5°	811.4	818.9	826.2	831.0	833.1	835.3	837.3	839.5
125°	867.3	873.5	879.8	884.2	886.5	888.9	891.3	893.7
127.5°	923.2	929.5	935.6	939.4	940.9	942.3	943.7	945.2
130°	956.5	962.7	968.8	972.5	973.7	974.9	976.1	977.3
132.5°	987.7	993.6	999.6	1003.2	1004.4	1005.7	1006.9	1008.2
135°	1035.7	1041.4	1047.0	1050.2	1050.9	1051.6	1052.3	1053.0
137.5°	1078.0	1083.5	1088.9	1092.1	1093.1	1094.0	1095.0	1095.8
140°	1105.0	1110.1	1115.2	1118.1	1119.0	1120.0	1120.9	1121.8
142.5°	1129.9	1134.3	1138.8	1141.4	1142.2	1142.9	1143.6	1144.4
145°	1167.6	1170.2	1172.9	1174.8	1175.9	1177.0	1178.1	1179.2
147.5°	1201.7	1202.8	1204.0	1204.5	1204.4	1204.4	1204.4	1204.4
150°	1223.2	1223.7	1224.2	1224.3	1224.2	1224.1	1223.9	1223.8
152.5°	1243.5	1244.4	1245.2	1245.1	1244.1	1243.3	1242.3	1241.3
155°	1271.5	1272.6	1273.7	1273.6	1272.2	1270.9	1269.6	1268.2
157.5°	1295.8	1297.1	1298.5	1298.2	1296.5	1294.7	1292.9	1291.2
160°	1309.6	1311.0	1312.3	1312.2	1310.6	1309.0	1307.4	1305.8
162.5°	1322.2	1323.7	1325.2	1325.3	1323.9	1322.5	1321.1	1319.7
165°	1339.0	1340.8	1342.7	1342.7	1341.2	1339.6	1338.0	1336.4
167.5°	1352.1	1353.8	1355.7	1355.7	1353.8	1352.1	1350.3	1348.5
170°	1359.4	1361.2	1363.0	1363.0	1361.2	1359.4	1357.6	1355.7
172.5°	1364.3	1366.1	1367.9	1367.8	1365.8	1363.8	1361.8	1359.9
175°	1370.2	1371.7	1373.3	1373.2	1371.4	1369.6	1367.8	1366.0
177.5°	1372.3	1373.8	1375.2	1375.1	1373.2	1371.4	1369.6	1367.8
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0

(END OF REPORT)