

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: P332231-935

Luminaire Tested: **S123DIW-S1165D1320U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332231-935
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-S1165D1320U935-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP 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: 8118.0 lumens
Efficiency: N/A
Efficacy: 106.5 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

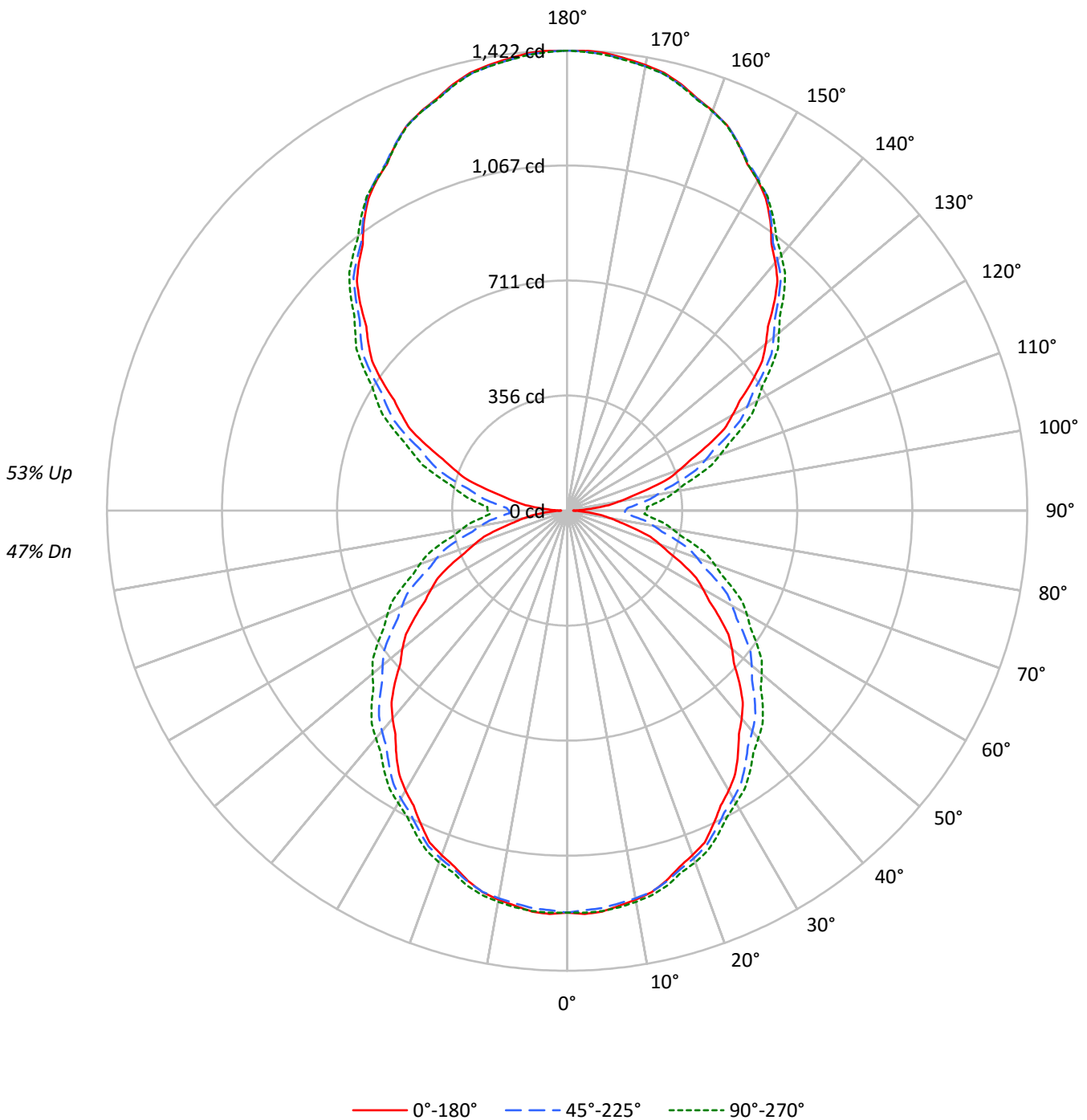
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	96	91	87	83	88	84	80	77	70	67	65	57	56	54	46	44	43	38
2	87	79	73	67	80	73	67	62	61	57	53	50	47	44	40	38	36	31
3	79	69	62	56	72	64	57	52	53	48	44	44	40	37	35	32	30	26
4	72	61	53	47	66	56	49	44	47	42	37	39	35	31	31	28	25	22
5	66	54	46	40	61	50	43	37	42	36	32	35	30	27	28	25	22	19
6	61	49	40	34	56	45	37	32	38	32	28	31	27	23	25	22	19	16
7	56	44	36	30	51	40	33	28	34	29	24	28	24	21	23	20	17	14
8	52	40	32	26	48	37	30	25	31	26	22	26	22	18	21	18	15	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	16	19	16	14	11
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13373	13373	13373
5°	13415	13037	13044
10°	13294	12736	12672
15°	13123	12396	12267
20°	12878	12006	11821
25°	12576	11558	11352
30°	12267	11155	10876
35°	11919	10728	10496
40°	11588	10340	10090
45°	11221	9968	9765
50°	10858	9599	9408
55°	10459	9224	9085
60°	10067	8841	8755
65°	9669	8433	8362
70°	9064	7974	7959
75°	8304	7449	7549
80°	7429	6933	7081
85°	6613	6577	6812



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.8	1.5
10°-20°	335.7	4.1
20°-30°	502.2	6.2
30°-40°	599.7	7.4
40°-50°	627.4	7.7
50°-60°	588.8	7.3
60°-70°	491.8	6.1
70°-80°	351.8	4.3
80°-90°	214.0	2.6
90°-100°	224.3	2.8
100°-110°	373.9	4.6
110°-120°	536.0	6.6
120°-130°	657.0	8.1
130°-140°	713.6	8.8
140°-150°	688.7	8.5
150°-160°	576.8	7.1
160°-170°	383.9	4.7
170°-180°	134.4	1.7
0°-30°	955.7	11.8
0°-40°	1555.4	19.2
0°-60°	2771.6	34.1
0°-90°	3829.3	47.2
90°-120°	1134.3	14.0
90°-150°	3193.5	39.3
90°-180°	4289.0	52.8
0°-180°	8118.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1244	1241	1233	1243	1242	118
15°	1184	1188	1187	1200	1199	333
25°	1069	1082	1087	1103	1104	492
35°	920	942	960	979	985	575
45°	752	785	819	844	855	580
55°	574	619	667	702	715	514
65°	397	450	509	548	563	392
75°	215	279	346	390	407	230
85°	66	134	206	250	265	70
90°	19	97	180	228	246	16
95°	81	142	217	261	277	86
105°	262	299	365	402	417	280
115°	481	502	547	580	591	476
125°	699	704	739	762	768	623
135°	904	910	923	942	947	696
145°	1095	1096	1099	1108	1110	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	



TEST NUMBER: P332231-935

CATALOG NUMBER: S123DIW-S1165D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1247.8	1247.2	1246.4	1245.7	1244.9	1243.6	1241.7	1239.8	1237.9	1236.0	1237.9
5°	1243.8	1243.2	1242.6	1242.0	1241.4	1240.2	1238.4	1236.6	1234.8	1233.0	1235.4
7.5°	1231.6	1231.7	1231.8	1232.0	1232.1	1231.3	1229.5	1227.8	1226.1	1224.3	1227.3
10°	1220.8	1221.4	1222.0	1222.6	1223.2	1222.7	1221.2	1219.7	1218.2	1216.7	1219.7
12.5°	1207.8	1208.6	1209.4	1210.3	1211.2	1211.1	1210.0	1209.0	1208.0	1206.9	1209.7
15°	1184.2	1185.2	1186.0	1187.0	1187.8	1188.2	1187.8	1187.6	1187.2	1187.0	1190.0
17.5°	1154.4	1156.2	1158.0	1159.9	1161.7	1162.5	1162.4	1162.3	1162.2	1162.0	1164.8
20°	1132.8	1134.6	1136.4	1138.2	1140.1	1141.3	1141.9	1142.5	1143.1	1143.7	1146.3
22.5°	1110.1	1111.9	1113.7	1115.5	1117.3	1118.6	1119.5	1120.3	1121.1	1122.0	1125.4
25°	1069.2	1072.2	1075.2	1078.2	1081.2	1083.1	1084.1	1084.9	1085.9	1086.8	1090.7
27.5°	1028.0	1031.5	1034.9	1038.4	1041.7	1044.5	1046.4	1048.3	1050.2	1052.1	1055.5
30°	998.8	1002.7	1006.6	1010.6	1014.4	1017.6	1020.0	1022.4	1024.8	1027.3	1030.9
32.5°	966.3	970.7	975.1	979.5	983.9	987.7	990.8	993.9	997.0	1000.1	1004.0
35°	920.3	925.1	930.0	934.8	939.6	943.9	947.9	951.7	955.6	959.6	964.1
37.5°	871.6	877.0	882.4	887.9	893.3	898.4	903.2	908.0	912.8	917.7	922.7
40°	839.1	844.6	850.0	855.3	860.7	866.5	872.5	878.5	884.5	890.5	895.7
42.5°	803.4	810.0	816.7	823.2	829.8	836.3	842.6	848.8	855.1	861.3	866.9
45°	752.5	759.7	766.9	774.1	781.4	788.8	796.3	803.7	811.3	818.8	824.5
47.5°	699.1	707.3	715.5	723.8	731.9	740.3	748.9	757.5	766.1	774.7	781.1
50°	664.5	673.0	681.4	689.7	698.2	707.1	716.4	725.7	735.0	744.3	751.3
52.5°	627.8	636.6	645.5	654.4	663.3	673.0	683.2	693.4	703.8	714.0	721.3
55°	573.9	583.8	593.7	603.6	613.5	623.9	634.7	645.6	656.4	667.3	675.4
57.5°	521.3	531.7	542.0	552.3	562.7	573.9	585.7	597.5	609.3	621.2	629.4
60°	484.5	495.3	506.2	517.0	527.8	539.4	551.7	564.0	576.4	588.8	597.2
62.5°	449.9	461.0	472.0	483.1	494.1	506.2	519.3	532.3	545.4	558.4	566.8
65°	396.6	408.3	420.0	431.7	443.5	456.0	469.2	482.4	495.7	508.9	517.9
67.5°	342.4	354.9	367.3	379.8	392.2	405.2	418.6	432.1	445.6	459.1	468.9
70°	304.5	317.5	330.4	343.3	356.3	370.0	384.4	398.8	413.3	427.7	437.3
72.5°	269.8	282.8	295.8	308.7	321.6	335.5	350.4	365.3	380.3	395.2	405.1
75°	215.2	229.4	243.5	257.6	271.7	286.3	301.4	316.4	331.4	346.5	356.4
77.5°	167.6	181.8	196.0	210.3	224.5	239.3	254.4	269.6	284.7	299.9	310.4
80°	134.0	148.7	163.5	178.2	193.0	208.1	223.8	239.4	255.0	270.7	280.9
82.5°	104.8	119.8	134.7	149.7	164.6	180.1	196.0	211.9	227.7	243.6	253.8
85°	66.3	81.4	96.4	111.4	126.5	142.0	157.9	173.8	189.8	205.7	215.9
87.5°	36.2	51.7	67.2	82.7	98.2	113.8	129.8	145.9	161.8	177.8	188.2
90°	18.7	35.9	53.1	70.3	87.6	105.5	124.1	142.6	161.2	179.8	191.0
92.5°	43.6	58.5	73.5	88.5	103.5	119.4	136.4	153.3	170.2	187.2	197.9
95°	80.8	94.3	107.7	121.1	134.7	149.7	166.4	183.2	199.9	216.6	227.0
97.5°	130.3	142.2	154.0	165.9	177.8	191.5	207.0	222.6	238.1	253.6	263.6
100°	164.0	175.1	186.3	197.4	208.5	221.6	236.7	251.8	266.8	281.9	291.4
102.5°	203.2	212.8	222.3	231.9	241.4	253.8	269.0	284.2	299.5	314.7	323.9
105°	262.1	269.8	277.5	285.2	292.9	304.4	319.5	334.8	349.9	365.1	373.5
107.5°	329.2	335.7	342.1	348.5	355.0	364.8	378.0	391.1	404.2	417.4	426.3
110°	371.0	376.9	382.9	388.7	394.7	403.9	416.5	429.0	441.5	454.0	462.8



TEST NUMBER: P332231-935

CATALOG NUMBER: S123DIW-S1165D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	415.7	420.4	425.2	430.0	434.7	442.9	454.5	466.2	477.9	489.5	498.3
115°	481.4	485.7	490.1	494.4	498.8	506.1	516.4	526.8	537.1	547.4	554.9
117.5°	548.5	551.3	554.0	556.7	559.4	565.6	575.1	584.6	594.1	603.6	610.7
120°	589.4	592.5	595.5	598.4	601.4	607.3	616.0	624.7	633.3	642.0	648.7
122.5°	633.2	635.1	637.0	638.9	640.8	646.1	654.9	663.7	672.4	681.2	687.3
125°	698.6	699.4	700.2	700.9	701.6	706.1	714.4	722.6	730.8	739.0	744.3
127.5°	760.3	761.6	762.8	764.1	765.4	769.4	776.1	782.7	789.5	796.1	800.6
130°	801.4	803.1	804.8	806.4	808.1	811.6	816.8	822.2	827.4	832.7	837.4
132.5°	841.4	843.3	845.2	847.1	849.1	852.2	856.4	860.7	865.0	869.3	873.6
135°	903.9	905.1	906.3	907.4	908.6	910.8	913.8	916.9	920.0	923.0	927.4
137.5°	961.7	962.7	963.7	964.7	965.7	967.4	969.9	972.4	975.0	977.5	981.2
140°	1000.8	1002.0	1003.2	1004.5	1005.7	1006.9	1008.1	1009.3	1010.4	1011.6	1015.8
142.5°	1037.4	1038.5	1039.4	1040.4	1041.5	1042.2	1042.8	1043.5	1044.1	1044.7	1048.5
145°	1094.6	1094.8	1095.0	1095.2	1095.4	1095.9	1096.6	1097.3	1098.1	1098.8	1101.0
147.5°	1143.2	1144.2	1145.0	1146.0	1146.9	1147.6	1148.3	1149.0	1149.7	1150.4	1151.2
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



TEST NUMBER: P332231-935

CATALOG NUMBER: S123DIW-S1165D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1239.8	1241.7	1243.6	1244.5	1244.2	1244.0	1243.7	1243.5
5°	1237.8	1240.2	1242.6	1243.6	1243.4	1243.0	1242.8	1242.4
7.5°	1230.3	1233.3	1236.3	1237.7	1237.3	1236.9	1236.6	1236.2
10°	1222.7	1225.7	1228.7	1229.9	1229.3	1228.7	1228.1	1227.5
12.5°	1212.5	1215.3	1218.1	1219.1	1218.5	1217.9	1217.3	1216.7
15°	1192.9	1195.9	1198.9	1200.3	1200.1	1199.7	1199.5	1199.1
17.5°	1167.4	1170.2	1172.9	1174.0	1173.6	1173.2	1172.8	1172.3
20°	1149.0	1151.8	1154.4	1156.0	1156.2	1156.6	1156.8	1157.2
22.5°	1128.9	1132.3	1135.7	1137.3	1137.1	1137.0	1136.8	1136.6
25°	1094.6	1098.5	1102.4	1104.4	1104.4	1104.4	1104.4	1104.4
27.5°	1058.9	1062.2	1065.6	1067.4	1067.6	1067.9	1068.2	1068.4
30°	1034.5	1038.1	1041.6	1043.4	1043.4	1043.4	1043.4	1043.4
32.5°	1007.9	1011.8	1015.5	1017.9	1018.6	1019.3	1020.0	1020.7
35°	968.6	973.1	977.6	980.5	981.7	982.9	984.1	985.2
37.5°	927.8	933.0	938.1	941.1	942.1	943.1	944.0	944.9
40°	900.8	905.9	911.0	914.1	915.3	916.5	917.7	918.9
42.5°	872.5	878.1	883.7	887.3	889.0	890.7	892.3	894.1
45°	830.3	835.9	841.7	845.8	848.2	850.6	853.0	855.3
47.5°	787.6	794.0	800.5	804.6	806.4	808.3	810.2	812.0
50°	758.2	765.2	772.1	776.5	778.7	780.8	782.9	785.0
52.5°	728.4	735.6	742.7	747.6	750.2	752.8	755.4	757.9
55°	683.5	691.6	699.7	705.0	707.4	709.8	712.2	714.6
57.5°	637.6	645.8	653.9	659.4	662.3	665.1	668.0	670.7
60°	605.5	614.0	622.4	628.3	631.6	634.9	638.2	641.5
62.5°	575.2	583.7	592.1	597.9	600.9	604.0	607.1	610.1
65°	526.9	536.0	545.0	551.0	554.0	557.0	560.0	563.0
67.5°	478.8	488.7	498.5	504.7	507.3	509.8	512.3	514.9
70°	446.9	456.6	466.1	472.5	475.5	478.5	481.5	484.5
72.5°	414.9	424.8	434.6	441.1	444.1	447.1	450.1	453.1
75°	366.4	376.3	386.2	393.0	396.6	400.2	403.8	407.3
77.5°	320.8	331.3	341.8	348.4	351.2	354.0	356.7	359.5
80°	291.1	301.4	311.6	318.2	321.2	324.3	327.3	330.2
82.5°	264.1	274.3	284.5	291.1	294.1	297.1	300.1	303.2
85°	226.2	236.4	246.6	253.2	256.2	259.2	262.3	265.3
87.5°	198.6	209.1	219.5	226.3	229.4	232.5	235.6	238.7
90°	202.2	213.4	224.6	232.0	235.5	239.0	242.5	246.0
92.5°	208.7	219.5	230.2	236.9	239.4	241.9	244.3	246.8
95°	237.3	247.5	257.9	264.6	267.6	270.5	273.5	276.6
97.5°	273.8	283.9	293.9	300.5	303.4	306.3	309.2	312.1
100°	300.8	310.3	319.8	326.2	329.8	333.3	336.7	340.3
102.5°	333.2	342.4	351.6	357.7	360.6	363.5	366.4	369.3
105°	381.9	390.3	398.7	404.6	407.8	411.0	414.1	417.3
107.5°	435.1	444.0	452.9	458.5	460.8	463.1	465.5	467.9
110°	471.7	480.4	489.2	494.6	496.5	498.4	500.3	502.2



TEST NUMBER: P332231-935

CATALOG NUMBER: S123DIW-S1165D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	507.0	515.8	524.6	530.2	532.8	535.4	537.9	540.4
115°	562.4	569.8	577.3	582.1	584.3	586.4	588.6	590.7
117.5°	617.9	625.0	632.1	636.5	638.1	639.7	641.4	643.1
120°	655.3	662.0	668.7	672.8	674.4	676.1	677.6	679.2
122.5°	693.3	699.3	705.3	709.1	710.5	711.9	713.3	714.7
125°	749.7	755.0	760.3	763.5	764.7	765.8	766.9	768.0
127.5°	805.2	809.8	814.3	817.1	818.0	818.9	819.8	820.7
130°	842.1	846.9	851.5	853.9	854.0	854.1	854.2	854.2
132.5°	877.8	882.1	886.4	888.9	889.6	890.3	891.0	891.7
135°	931.9	936.3	940.6	943.4	944.4	945.4	946.4	947.4
137.5°	984.9	988.6	992.3	994.5	995.0	995.6	996.1	996.7
140°	1020.1	1024.3	1028.6	1030.6	1030.4	1030.2	1029.9	1029.7
142.5°	1052.3	1056.1	1059.9	1061.9	1062.0	1062.2	1062.3	1062.5
145°	1103.1	1105.3	1107.5	1108.6	1108.9	1109.1	1109.3	1109.5
147.5°	1151.8	1152.6	1153.3	1153.5	1153.1	1152.6	1152.3	1151.8
150°	1182.6	1182.6	1182.6	1182.2	1181.3	1180.3	1179.5	1178.6
152.5°	1211.9	1212.4	1212.7	1212.4	1211.2	1210.0	1208.8	1207.7
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)