

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: P332224-935

Luminaire Tested: **S123DIW-S1165D1030U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332224-935  
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-S1165D1030U935-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7728.1 lumens  
Efficiency: N/A  
Efficacy: 114.7 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

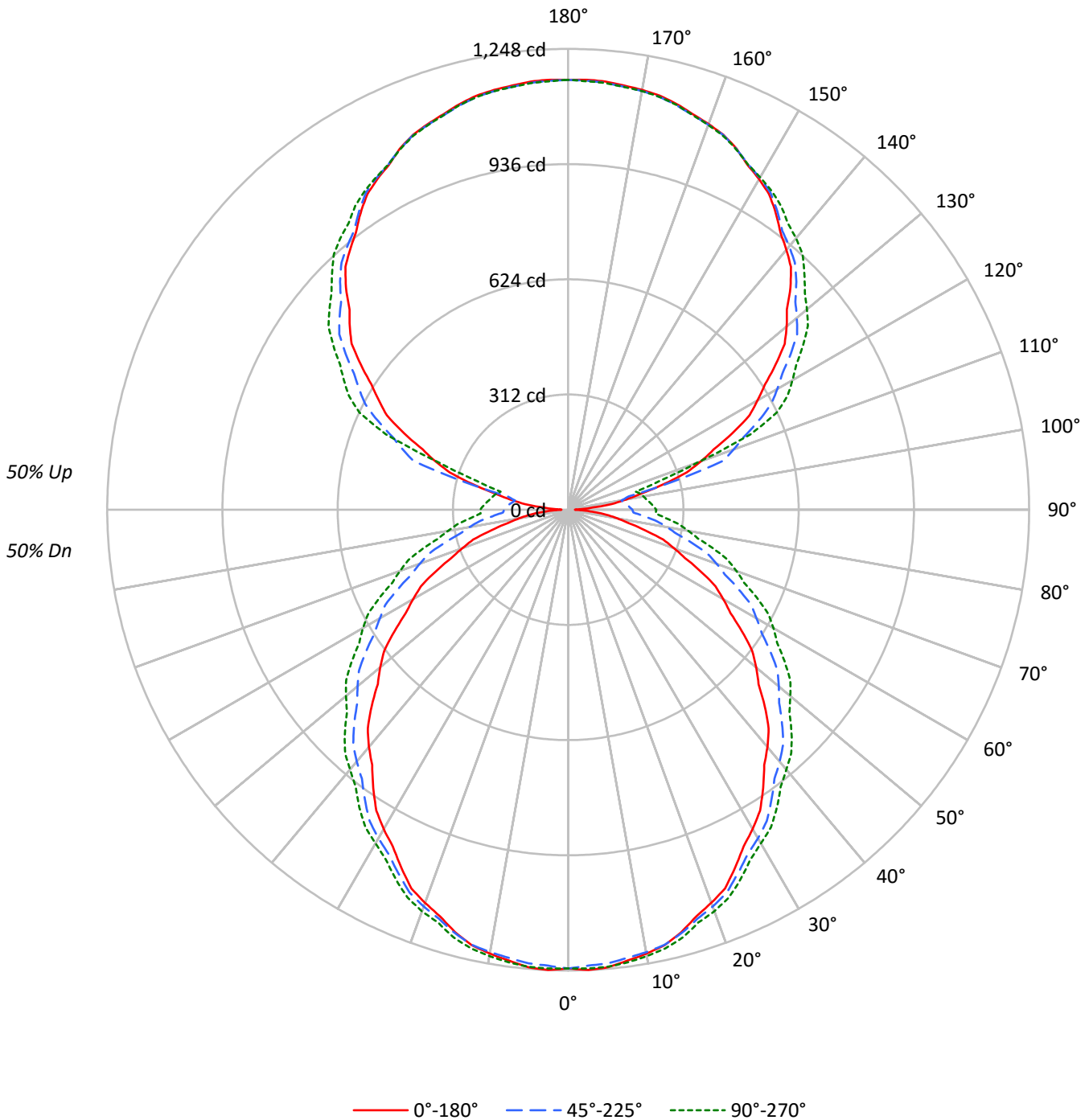
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332224-935

CATALOG NUMBER: S123DIW-S1165D1030U935-4F0-1E-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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17
7	57	44	36	30	52	41	34	28	35	29	25	29	25	21	24	20	18	15
8	52	40	32	27	48	37	30	25	32	26	22	27	22	19	22	18	16	13
9	49	36	29	24	45	34	27	22	29	23	20	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	18	23	18	15	19	15	13	11

**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	4.3
20°-30°	502.2	6.5
30°-40°	599.7	7.8
40°-50°	627.4	8.1
50°-60°	588.8	7.6
60°-70°	491.8	6.4
70°-80°	351.8	4.6
80°-90°	213.1	2.8
90°-100°	174.0	2.3
100°-110°	298.4	3.9
110°-120°	549.1	7.1
120°-130°	653.8	8.5
130°-140°	675.7	8.7
140°-150°	619.9	8.0
150°-160°	497.2	6.4
160°-170°	320.9	4.2
170°-180°	110.6	1.4
0°-30°	955.7	12.4
0°-40°	1555.4	20.1
0°-60°	2771.6	35.9
0°-90°	3828.3	49.5
90°-120°	1021.5	13.2
90°-150°	2971.0	38.4
90°-180°	3900.0	50.5
0°-180°	7728.1	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°	18	94	174	221	238	14
95°	68	88	161	207	222	77
105°	268	307	291	183	190	284
115°	490	514	568	608	624	484
125°	686	694	735	764	776	612
135°	851	856	873	899	904	655
145°	980	985	987	999	1005	613
155°	1078	1077	1078	1081	1077	497
165°	1137	1135	1134	1140	1135	321
175°	1164	1160	1160	1166	1160	111
180°	1164	1164	1164	1164	1164	



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CATALOG NUMBER: S123DIW-S1165D1030U935-4F0-1E-UDD-D

**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	51.6	66.9	82.2	97.6	113.2	129.1	144.9	160.7	176.6	186.9
90°	18.4	35.1	51.7	68.4	85.1	102.4	120.2	138.0	155.8	173.7	184.7
92.5°	32.6	45.4	58.1	70.9	83.6	98.5	115.5	132.4	149.5	166.4	177.6
95°	67.7	71.5	75.3	79.2	83.0	93.4	110.2	127.1	144.0	160.8	171.4
97.5°	119.2	126.3	133.4	140.4	147.5	151.1	151.4	151.6	151.9	152.1	162.6
100°	158.3	171.8	185.3	198.7	212.2	210.9	194.8	178.6	162.5	146.3	156.5
102.5°	202.9	214.3	225.8	237.2	248.7	244.8	225.6	206.5	187.3	168.2	171.9
105°	268.5	277.8	287.2	296.5	305.8	308.3	304.0	299.6	295.2	290.9	265.3
107.5°	336.5	344.2	352.1	359.9	367.7	379.2	394.2	409.1	424.1	439.2	422.2
110°	381.7	388.7	395.6	402.6	409.5	420.1	434.2	448.3	462.5	476.6	478.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	426.0	431.8	437.6	443.5	449.4	459.1	472.8	486.4	500.1	513.8	521.4
115°	490.2	495.0	499.7	504.5	509.2	517.9	530.5	543.0	555.6	568.1	577.3
117.5°	553.4	557.1	560.7	564.3	568.0	575.3	586.3	597.4	608.5	619.5	628.2
120°	591.8	595.0	598.2	601.4	604.7	611.6	622.1	632.6	643.1	653.6	662.0
122.5°	631.9	634.0	636.3	638.5	640.7	646.9	657.0	667.2	677.4	687.6	695.3
125°	685.5	687.1	688.6	690.1	691.6	697.2	706.7	716.2	725.7	735.1	741.8
127.5°	738.8	740.0	741.2	742.5	743.7	748.4	756.6	764.7	772.8	781.0	787.6
130°	772.0	773.3	774.5	775.7	777.0	780.9	787.7	794.5	801.3	808.0	814.6
132.5°	802.7	804.2	805.7	807.2	808.7	812.1	817.5	822.9	828.4	833.8	840.1
135°	851.1	852.0	852.7	853.6	854.5	857.0	861.0	865.1	869.2	873.2	879.3
137.5°	892.3	893.5	894.8	896.0	897.2	899.0	901.2	903.5	905.8	908.1	913.8
140°	918.9	920.1	921.2	922.4	923.5	924.8	926.3	927.8	929.3	930.7	936.0
142.5°	944.5	945.4	946.3	947.3	948.1	949.0	949.8	950.5	951.2	952.0	956.7
145°	980.3	981.4	982.4	983.4	984.5	985.2	985.6	985.9	986.4	986.7	989.5
147.5°	1012.7	1013.6	1014.4	1015.3	1016.2	1016.8	1017.2	1017.6	1018.0	1018.4	1019.5
150°	1033.5	1034.0	1034.6	1035.2	1035.7	1036.2	1036.6	1037.0	1037.3	1037.8	1038.1
152.5°	1052.1	1052.4	1052.7	1052.9	1053.2	1053.4	1053.7	1053.9	1054.1	1054.4	1055.1
155°	1078.4	1078.0	1077.6	1077.3	1076.9	1076.8	1076.9	1077.1	1077.4	1077.5	1078.5
157.5°	1098.8	1098.8	1098.7	1098.7	1098.6	1098.5	1098.4	1098.1	1097.9	1097.8	1098.9
160°	1111.3	1111.0	1110.9	1110.7	1110.5	1110.3	1110.1	1109.9	1109.7	1109.6	1110.7
162.5°	1123.0	1122.5	1122.1	1121.5	1121.0	1120.7	1120.5	1120.3	1120.1	1119.9	1121.2
165°	1137.2	1136.6	1136.1	1135.5	1134.9	1134.5	1134.3	1134.1	1133.9	1133.8	1135.3
167.5°	1148.2	1147.5	1146.8	1146.0	1145.2	1144.8	1144.8	1144.8	1144.8	1144.8	1146.3
170°	1154.5	1153.7	1153.0	1152.2	1151.4	1151.1	1151.1	1151.1	1151.1	1151.1	1152.5
172.5°	1158.6	1157.7	1156.8	1155.9	1154.9	1154.6	1154.7	1154.9	1155.0	1155.2	1156.8
175°	1164.0	1163.0	1162.1	1161.1	1160.2	1159.8	1159.9	1160.2	1160.4	1160.5	1161.9
177.5°	1165.4	1164.6	1163.9	1163.1	1162.4	1162.0	1162.2	1162.4	1162.4	1162.6	1163.9
180°	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0



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**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°	197.3	207.7	218.1	224.8	227.9	231.0	234.1	237.2
90°	195.7	206.6	217.7	224.9	228.3	231.6	235.1	238.4
92.5°	188.8	200.1	211.3	218.3	221.4	224.4	227.4	230.4
95°	182.1	192.8	203.5	210.3	213.4	216.3	219.3	222.3
97.5°	173.1	183.6	194.1	201.0	204.1	207.3	210.5	213.7
100°	166.8	177.0	187.4	194.1	197.3	200.4	203.6	206.8
102.5°	175.6	179.3	183.0	186.6	189.9	193.3	196.7	199.9
105°	239.7	214.1	188.6	177.3	180.4	183.5	186.6	189.6
107.5°	405.4	388.5	371.6	351.7	328.7	305.7	282.8	259.8
110°	479.6	481.0	482.6	470.8	445.7	420.6	395.5	370.5





TEST NUMBER: P332224-935

CATALOG NUMBER: S123DIW-S1165D1030U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	529.1	536.8	544.5	546.7	543.6	540.4	537.3	534.2
115°	586.4	595.6	604.7	610.9	614.0	617.2	620.4	623.5
117.5°	636.9	645.6	654.3	659.9	662.4	665.0	667.4	669.9
120°	670.5	678.9	687.3	692.7	694.7	696.9	699.0	701.1
122.5°	703.1	710.8	718.6	723.6	725.8	728.1	730.4	732.6
125°	748.6	755.3	762.0	766.5	769.0	771.5	774.0	776.5
127.5°	794.1	800.7	807.3	811.4	813.0	814.7	816.4	818.0
130°	821.0	827.5	834.1	838.0	839.4	840.9	842.2	843.7
132.5°	846.3	852.6	858.8	862.6	864.2	865.6	867.2	868.7
135°	885.2	891.2	897.2	900.7	901.6	902.5	903.4	904.4
137.5°	919.5	925.1	930.8	934.2	935.3	936.4	937.5	938.7
140°	941.3	946.6	951.8	955.0	956.1	957.3	958.4	959.5
142.5°	961.3	966.0	970.6	973.4	974.4	975.3	976.3	977.2
145°	992.3	995.1	997.9	999.9	1001.1	1002.3	1003.5	1004.7
147.5°	1020.6	1021.7	1022.8	1023.5	1023.6	1023.8	1024.1	1024.2
150°	1038.5	1038.9	1039.3	1039.5	1039.5	1039.6	1039.6	1039.6
152.5°	1055.8	1056.4	1057.1	1057.0	1056.4	1055.6	1054.8	1054.0
155°	1079.4	1080.4	1081.4	1081.2	1080.1	1079.0	1077.8	1076.7
157.5°	1100.1	1101.2	1102.3	1102.2	1100.7	1099.2	1097.7	1096.2
160°	1111.8	1113.0	1114.1	1114.0	1112.7	1111.4	1110.0	1108.6
162.5°	1122.5	1123.9	1125.2	1125.2	1124.0	1122.8	1121.6	1120.4
165°	1136.8	1138.3	1139.9	1140.0	1138.7	1137.3	1135.9	1134.6
167.5°	1147.9	1149.4	1151.0	1151.0	1149.4	1147.9	1146.3	1144.8
170°	1154.1	1155.6	1157.2	1157.2	1155.6	1154.1	1152.5	1151.1
172.5°	1158.3	1159.8	1161.3	1161.2	1159.6	1157.9	1156.2	1154.5
175°	1163.2	1164.6	1166.0	1165.9	1164.3	1162.8	1161.2	1159.7
177.5°	1165.1	1166.3	1167.5	1167.4	1165.9	1164.3	1162.8	1161.2
180°	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0	1164.0

(END OF REPORT)