

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: P331988-840

Luminaire Tested: **S123DIP-S775D1025U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331988-840  
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: S123DIP-S775D1025U840-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7341.2 lumens  
Efficiency: N/A  
Efficacy: 141.2 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

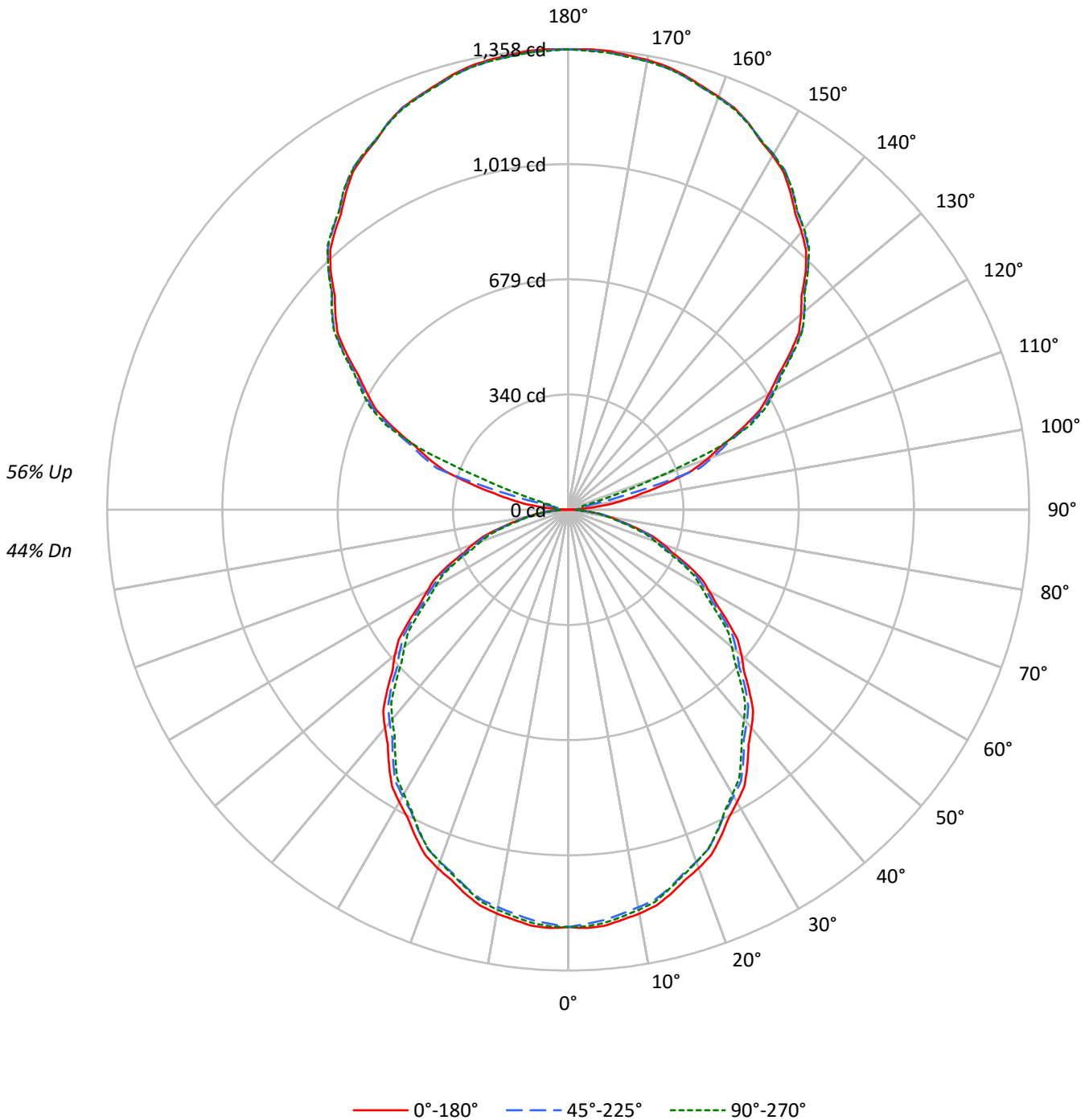
Input Watts (W): 52  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	96	92	88	85	88	84	81	78	70	67	65	57	55	53	44	43	42	37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31
3	80	71	63	57	73	65	58	53	54	49	45	44	40	38	35	32	30	26
4	73	62	55	49	67	57	50	45	48	43	39	39	35	32	31	28	26	22
5	67	55	47	41	61	51	44	39	43	37	33	35	31	28	28	25	23	19
6	62	50	42	36	56	46	39	34	38	33	29	32	28	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	25	22	23	20	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13237	13237	13237
5°	13299	13116	13207
10°	13210	13002	13083
15°	13056	12856	12880
20°	12875	12645	12657
25°	12634	12396	12371
30°	12367	12117	12026
35°	12089	11825	11671
40°	11797	11500	11323
45°	11478	11204	10930
50°	11156	10836	10535
55°	10736	10457	10141
60°	10312	10015	9698
65°	9938	9536	9235
70°	9385	8985	8585
75°	8576	8268	7918
80°	7736	7407	7345
85°	6780	6533	6274



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.8	1.6
10°-20°	327.1	4.5
20°-30°	483.2	6.6
30°-40°	564.4	7.7
40°-50°	567.4	7.7
50°-60°	498.4	6.8
60°-70°	371.3	5.1
70°-80°	211.6	2.9
80°-90°	64.5	0.9
90°-100°	49.3	0.7
100°-110°	235.1	3.2
110°-120°	564.7	7.7
120°-130°	719.1	9.8
130°-140°	768.3	10.5
140°-150°	718.5	9.8
150°-160°	579.5	7.9
160°-170°	374.0	5.1
170°-180°	128.9	1.8
0°-30°	926.1	12.6
0°-40°	1490.5	20.3
0°-60°	2556.3	34.8
0°-90°	3203.8	43.6
90°-120°	849.1	11.6
90°-150°	3055.0	41.6
90°-180°	4137.0	56.4
0°-180°	7341.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1230	1230	1230	1230	1230	
5°	1231	1225	1214	1224	1222	117
15°	1172	1167	1154	1161	1156	330
25°	1064	1057	1044	1044	1042	490
35°	920	913	900	894	888	575
45°	754	749	736	724	718	582
55°	572	570	557	546	540	512
65°	390	385	374	366	363	385
75°	206	202	199	194	190	221
85°	55	53	53	51	51	60
90°	1	11	24	28	30	6
95°	62	23	31	38	38	76
105°	300	306	221	52	44	318
115°	564	570	579	588	593	556
125°	794	802	806	808	810	709
135°	989	995	999	1002	999	761
145°	1141	1148	1150	1152	1152	714
155°	1257	1255	1256	1260	1255	579
165°	1326	1323	1322	1329	1322	374
175°	1357	1352	1353	1359	1352	129
180°	1357	1357	1357	1357	1357	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8
2.5°	1234.0	1233.2	1232.5	1231.7	1231.0	1229.6	1227.5	1225.5	1223.4	1221.3	1223.1
5°	1230.8	1229.6	1228.5	1227.3	1226.1	1224.3	1221.6	1219.1	1216.5	1213.9	1216.3
7.5°	1218.8	1217.6	1216.4	1215.3	1214.1	1212.1	1209.4	1206.8	1204.1	1201.4	1203.6
10°	1208.6	1207.4	1206.3	1205.1	1204.0	1201.8	1198.7	1195.7	1192.7	1189.6	1191.7
12.5°	1195.1	1194.1	1193.2	1192.1	1191.1	1189.2	1186.4	1183.5	1180.6	1177.7	1179.3
15°	1171.6	1170.6	1169.7	1168.8	1167.8	1165.9	1162.8	1159.7	1156.7	1153.7	1155.5
17.5°	1144.3	1143.1	1141.9	1140.6	1139.4	1137.3	1134.3	1131.1	1128.1	1125.1	1126.4
20°	1124.0	1122.6	1121.3	1119.8	1118.4	1116.1	1113.1	1110.0	1107.0	1103.9	1104.9
22.5°	1101.2	1099.7	1098.3	1096.9	1095.5	1093.3	1090.3	1087.2	1084.2	1081.1	1081.9
25°	1063.8	1062.4	1061.0	1059.6	1058.1	1055.9	1052.8	1049.8	1046.7	1043.7	1043.9
27.5°	1023.8	1022.4	1021.1	1019.7	1018.3	1016.0	1012.7	1009.5	1006.1	1002.8	1003.0
30°	995.0	993.8	992.7	991.5	990.3	988.1	984.8	981.5	978.3	974.9	974.9
32.5°	966.2	964.7	963.1	961.6	960.1	958.1	955.4	952.9	950.4	947.9	946.5
35°	920.0	918.6	917.2	915.7	914.3	912.1	909.0	905.9	902.9	899.9	898.5
37.5°	872.5	870.8	869.0	867.2	865.5	863.0	859.9	856.8	853.6	850.6	848.9
40°	839.6	838.2	836.8	835.4	833.9	831.6	828.3	825.1	821.7	818.4	816.6
42.5°	806.6	805.0	803.3	801.8	800.2	797.8	794.5	791.1	787.9	784.6	782.7
45°	754.0	753.0	752.0	751.1	750.1	748.2	745.1	742.0	739.0	736.0	733.2
47.5°	701.7	700.3	698.9	697.6	696.2	694.1	691.3	688.4	685.5	682.7	679.8
50°	666.2	665.0	663.8	662.7	661.5	659.3	656.3	653.3	650.2	647.1	644.6
52.5°	628.9	628.1	627.3	626.5	625.7	623.7	620.5	617.2	614.0	610.8	608.5
55°	572.1	571.8	571.6	571.4	571.1	569.5	566.4	563.4	560.3	557.2	554.7
57.5°	518.0	517.2	516.3	515.5	514.7	513.1	510.7	508.2	505.7	503.3	501.0
60°	479.0	478.8	478.6	478.3	478.1	476.6	473.7	470.9	468.1	465.2	463.1
62.5°	444.3	443.7	443.1	442.5	441.9	440.2	437.4	434.5	431.7	428.9	426.8
65°	390.2	389.0	387.8	386.7	385.5	383.7	381.3	379.0	376.7	374.4	372.4
67.5°	332.9	331.8	330.8	329.7	328.7	327.3	325.6	323.8	321.9	320.2	318.5
70°	298.2	296.8	295.4	294.0	292.6	291.1	289.7	288.3	286.9	285.5	283.9
72.5°	261.9	260.7	259.7	258.7	257.7	256.4	254.8	253.2	251.6	249.9	248.5
75°	206.2	205.2	204.3	203.4	202.5	201.6	200.9	200.2	199.4	198.8	197.6
77.5°	156.9	156.4	155.9	155.4	154.8	154.2	153.3	152.5	151.7	150.8	150.0
80°	124.8	124.1	123.4	122.7	122.0	121.4	120.9	120.5	120.0	119.5	119.3
82.5°	93.5	93.3	93.2	93.0	92.9	92.8	92.7	92.6	92.5	92.4	92.0
85°	54.9	54.5	54.0	53.6	53.1	52.9	52.9	52.9	52.9	52.9	52.4
87.5°	22.2	22.1	21.9	21.8	21.7	21.9	22.2	22.6	23.0	23.4	23.4
90°	1.0	3.2	5.5	7.8	10.0	12.5	15.5	18.4	21.3	24.2	25.0
92.5°	18.8	18.1	17.5	16.9	16.3	17.1	19.2	21.4	23.6	25.9	27.3
95°	61.5	52.3	43.1	33.9	24.7	21.4	23.8	26.4	28.8	31.2	32.8
97.5°	123.6	119.5	115.3	111.2	107.0	96.9	80.9	64.7	48.6	32.4	34.2
100°	170.4	174.8	179.4	183.8	188.2	173.0	138.0	103.1	68.2	33.2	35.0
102.5°	223.6	226.8	230.0	233.3	236.5	219.0	180.9	142.7	104.5	66.3	60.8
105°	300.3	302.9	305.3	307.8	310.2	301.3	281.2	261.1	241.0	220.8	181.1
107.5°	381.4	383.4	385.4	387.4	389.3	391.9	395.1	398.3	401.4	404.7	375.6
110°	435.5	437.3	439.0	440.8	442.6	444.7	447.2	449.7	452.1	454.6	447.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	487.1	488.7	490.3	491.9	493.5	495.5	498.1	500.5	502.9	505.4	505.5
115°	563.5	564.8	566.1	567.5	568.9	570.6	572.5	574.5	576.5	578.6	580.9
117.5°	637.4	639.1	640.8	642.5	644.1	645.4	646.4	647.5	648.5	649.5	651.4
120°	683.4	685.4	687.4	689.4	691.5	692.9	693.5	694.2	694.9	695.5	697.3
122.5°	730.2	731.8	733.5	735.2	736.8	738.1	738.9	739.8	740.6	741.4	742.8
125°	794.3	796.1	797.9	799.7	801.4	802.8	803.8	804.6	805.5	806.4	806.9
127.5°	856.4	858.2	860.0	861.7	863.5	864.9	866.1	867.2	868.2	869.3	870.0
130°	895.1	896.9	898.7	900.5	902.3	903.6	904.5	905.4	906.3	907.2	908.1
132.5°	932.2	934.0	935.7	937.6	939.4	940.6	941.3	942.0	942.8	943.5	944.4
135°	988.9	990.2	991.5	992.9	994.2	995.3	996.2	997.1	998.0	999.0	999.6
137.5°	1037.2	1038.9	1040.7	1042.4	1044.0	1045.1	1045.6	1046.1	1046.6	1047.1	1048.1
140°	1069.4	1070.9	1072.2	1073.5	1074.9	1075.9	1076.5	1077.2	1077.9	1078.5	1079.4
142.5°	1099.3	1100.7	1102.0	1103.4	1104.7	1105.7	1106.4	1107.0	1107.7	1108.4	1109.1
145°	1141.0	1142.7	1144.2	1145.8	1147.3	1148.3	1148.8	1149.2	1149.6	1150.1	1150.5
147.5°	1180.3	1181.4	1182.5	1183.5	1184.5	1185.2	1185.7	1186.1	1186.6	1187.0	1187.5
150°	1204.6	1205.3	1205.9	1206.6	1207.2	1207.8	1208.2	1208.7	1209.1	1209.6	1210.0
152.5°	1226.3	1226.7	1227.0	1227.3	1227.6	1227.9	1228.1	1228.4	1228.7	1228.9	1229.7
155°	1257.0	1256.5	1256.1	1255.7	1255.2	1255.1	1255.3	1255.5	1255.8	1256.0	1257.1
157.5°	1280.7	1280.7	1280.7	1280.6	1280.6	1280.4	1280.2	1280.0	1279.8	1279.5	1280.9
160°	1295.3	1295.1	1294.8	1294.6	1294.3	1294.1	1293.9	1293.7	1293.4	1293.2	1294.6
162.5°	1309.0	1308.4	1307.8	1307.3	1306.7	1306.3	1306.1	1305.8	1305.6	1305.4	1306.9
165°	1325.5	1324.8	1324.1	1323.5	1322.8	1322.4	1322.1	1321.9	1321.7	1321.5	1323.2
167.5°	1338.4	1337.6	1336.7	1335.7	1334.8	1334.3	1334.3	1334.3	1334.3	1334.3	1336.2
170°	1345.6	1344.7	1343.9	1343.0	1342.1	1341.6	1341.6	1341.6	1341.6	1341.6	1343.4
172.5°	1350.5	1349.5	1348.4	1347.3	1346.3	1345.7	1345.9	1346.2	1346.3	1346.5	1348.3
175°	1356.8	1355.6	1354.5	1353.4	1352.3	1351.8	1352.0	1352.3	1352.5	1352.7	1354.3
177.5°	1358.4	1357.5	1356.6	1355.6	1354.8	1354.4	1354.6	1354.8	1354.9	1355.1	1356.6
180°	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8
2.5°	1225.1	1227.0	1228.8	1229.7	1229.5	1229.3	1229.1	1228.9
5°	1218.6	1220.9	1223.4	1224.3	1223.8	1223.4	1222.8	1222.3
7.5°	1205.7	1207.8	1209.9	1210.8	1210.5	1210.2	1209.9	1209.7
10°	1193.9	1195.9	1198.0	1198.9	1198.4	1197.9	1197.5	1197.0
12.5°	1180.8	1182.3	1184.0	1184.6	1184.3	1184.0	1183.8	1183.5
15°	1157.4	1159.2	1161.1	1161.3	1159.9	1158.5	1157.2	1155.8
17.5°	1127.7	1129.0	1130.3	1130.7	1130.2	1129.7	1129.2	1128.7
20°	1105.8	1106.7	1107.7	1107.8	1107.1	1106.4	1105.7	1105.0
22.5°	1082.6	1083.4	1084.1	1084.0	1083.2	1082.3	1081.4	1080.5
25°	1044.1	1044.4	1044.6	1044.4	1043.7	1043.0	1042.3	1041.6
27.5°	1003.2	1003.4	1003.6	1003.2	1002.4	1001.5	1000.6	999.7
30°	974.9	974.9	974.9	974.1	972.5	970.8	969.2	967.6
32.5°	945.2	943.9	942.6	941.5	940.6	939.7	938.8	938.0
35°	897.1	895.6	894.2	892.9	891.7	890.6	889.4	888.2
37.5°	847.2	845.5	843.8	842.6	841.8	841.1	840.3	839.6
40°	814.7	812.8	810.9	809.5	808.6	807.6	806.7	805.8
42.5°	780.8	778.9	777.1	775.7	774.8	773.8	772.8	771.9
45°	730.3	727.5	724.7	722.7	721.5	720.3	719.1	718.0
47.5°	677.1	674.4	671.6	669.6	668.6	667.6	666.6	665.5
50°	642.0	639.3	636.8	634.8	633.4	632.0	630.6	629.1
52.5°	606.3	604.1	601.9	600.2	598.7	597.3	595.9	594.5
55°	552.1	549.5	546.9	545.0	543.8	542.7	541.5	540.4
57.5°	498.7	496.4	494.1	492.3	490.9	489.6	488.2	486.9
60°	461.0	458.9	456.8	455.1	453.9	452.8	451.6	450.5
62.5°	424.6	422.5	420.4	419.0	418.2	417.4	416.6	415.8
65°	370.5	368.7	366.8	365.5	364.8	364.1	363.3	362.6
67.5°	316.9	315.3	313.6	312.3	311.3	310.3	309.3	308.3
70°	282.3	280.5	278.9	277.5	276.3	275.2	274.0	272.8
72.5°	247.0	245.6	244.2	243.1	242.5	241.9	241.3	240.7
75°	196.4	195.3	194.1	193.2	192.5	191.8	191.1	190.4
77.5°	149.2	148.3	147.5	147.2	147.2	147.2	147.2	147.2
80°	119.1	118.8	118.6	118.5	118.5	118.5	118.5	118.5
82.5°	91.6	91.2	90.7	90.4	90.3	90.1	89.9	89.7
85°	51.9	51.5	51.0	50.8	50.8	50.8	50.8	50.8
87.5°	23.4	23.4	23.4	23.4	23.5	23.6	23.7	23.8
90°	26.0	26.9	27.8	28.5	28.9	29.4	29.8	30.2
92.5°	28.7	30.1	31.5	32.4	32.6	32.9	33.2	33.4
95°	34.3	36.0	37.6	38.3	38.3	38.3	38.3	38.3
97.5°	36.1	37.9	39.6	40.6	40.9	41.1	41.3	41.5
100°	36.9	38.7	40.4	41.4	41.7	41.9	42.1	42.3
102.5°	55.2	49.7	44.1	41.5	41.9	42.3	42.7	43.1
105°	141.5	101.8	62.2	42.5	43.0	43.4	43.9	44.3
107.5°	346.5	317.4	288.3	258.8	228.9	199.0	169.2	139.3
110°	439.8	432.4	425.1	405.4	373.2	341.2	309.2	277.2





TEST NUMBER: P331988-840

CATALOG NUMBER: S123DIP-S775D1025U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	505.6	505.8	505.9	502.6	495.8	489.1	482.3	475.5
115°	583.1	585.3	587.5	589.2	590.0	590.9	591.8	592.7
117.5°	653.2	654.9	656.7	657.7	657.9	658.0	658.2	658.4
120°	699.1	700.8	702.7	703.6	703.6	703.6	703.6	703.6
122.5°	744.0	745.3	746.5	747.2	747.4	747.6	747.7	747.9
125°	807.3	807.7	808.2	808.6	809.1	809.5	810.0	810.4
127.5°	870.7	871.4	872.1	872.3	871.8	871.4	870.9	870.5
130°	909.0	909.9	910.8	911.0	910.6	910.1	909.7	909.2
132.5°	945.2	946.1	947.1	947.2	946.5	945.9	945.3	944.7
135°	1000.3	1001.0	1001.6	1001.6	1001.0	1000.3	999.6	999.0
137.5°	1049.2	1050.4	1051.4	1051.7	1051.3	1050.9	1050.4	1050.0
140°	1080.4	1081.3	1082.2	1082.4	1081.9	1081.5	1081.1	1080.6
142.5°	1109.8	1110.5	1111.3	1111.3	1110.6	1110.0	1109.4	1108.8
145°	1151.0	1151.4	1152.0	1152.2	1152.2	1152.2	1152.2	1152.2
147.5°	1187.9	1188.3	1188.8	1188.5	1187.5	1186.5	1185.4	1184.4
150°	1210.5	1210.9	1211.4	1211.2	1210.6	1209.9	1209.2	1208.6
152.5°	1230.5	1231.3	1232.1	1232.0	1231.0	1230.0	1229.0	1227.9
155°	1258.2	1259.3	1260.4	1260.3	1259.0	1257.7	1256.3	1255.0
157.5°	1282.2	1283.5	1285.0	1284.8	1282.9	1281.2	1279.5	1277.8
160°	1296.0	1297.3	1298.6	1298.5	1297.0	1295.4	1293.8	1292.2
162.5°	1308.4	1309.9	1311.4	1311.5	1310.1	1308.7	1307.4	1306.0
165°	1325.0	1326.9	1328.7	1328.8	1327.2	1325.6	1324.0	1322.5
167.5°	1338.0	1339.8	1341.5	1341.5	1339.8	1338.0	1336.2	1334.3
170°	1345.2	1347.1	1348.8	1348.8	1347.1	1345.2	1343.4	1341.6
172.5°	1350.1	1351.8	1353.6	1353.5	1351.6	1349.6	1347.7	1345.6
175°	1355.8	1357.5	1359.0	1358.9	1357.1	1355.3	1353.5	1351.7
177.5°	1358.0	1359.5	1360.9	1360.7	1358.9	1357.2	1355.3	1353.5
180°	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8	1356.8

(END OF REPORT)