

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: P332655

Luminaire Tested: **S124DIP-S1020D1035U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332655  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D1035U835-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1035 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8341.3 lumens  
Efficiency: N/A  
Efficacy: 137.9 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

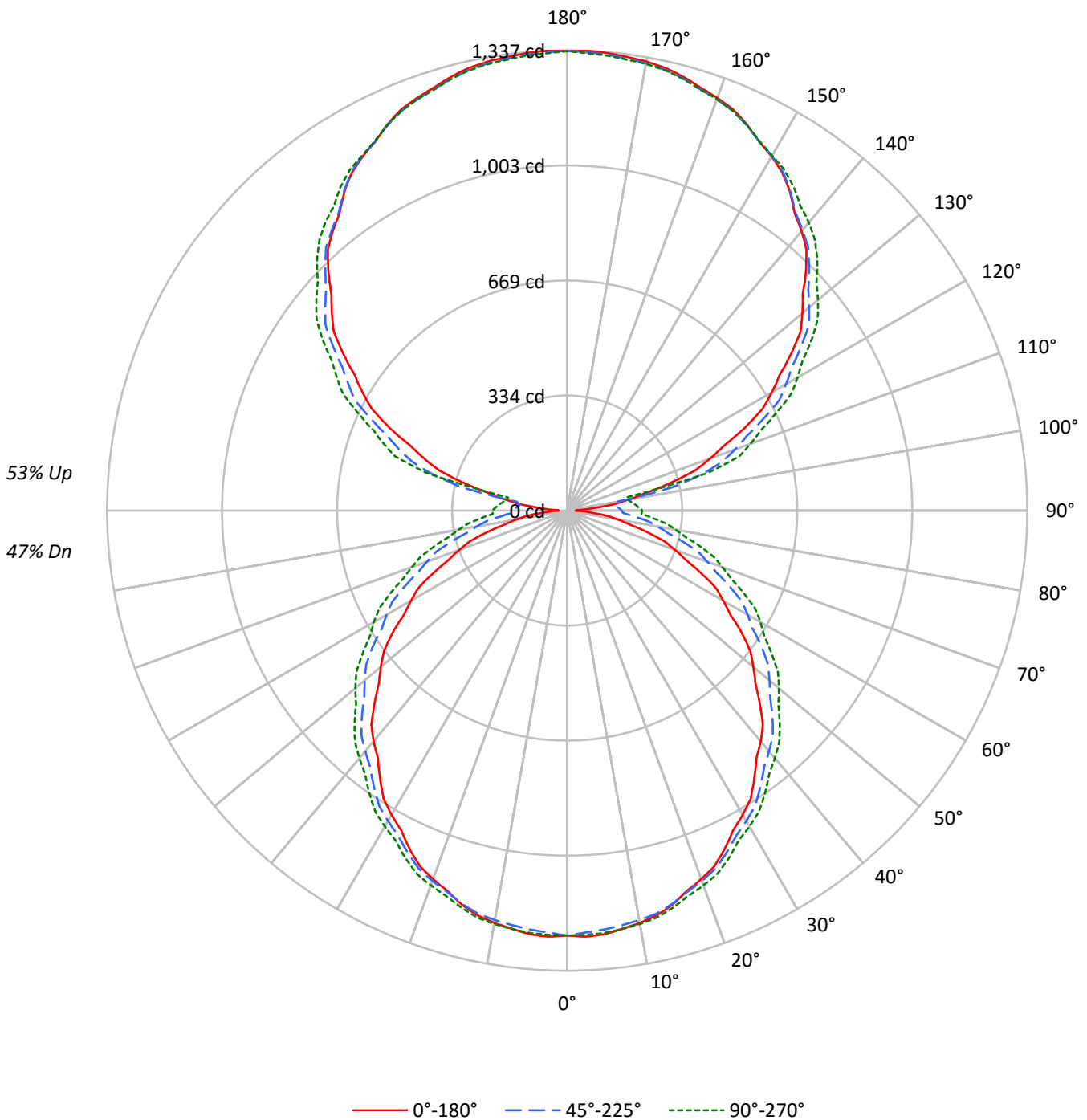
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	81	81	81	67	67	67	53	53	53	47
1	96	91	87	83	88	84	80	77	70	67	65	57	55	54	45	44	43	37
2	87	79	73	67	80	73	67	62	61	57	53	50	47	44	39	37	35	31
3	79	69	62	56	72	64	57	52	53	48	44	44	40	37	35	32	30	25
4	72	61	53	47	66	56	49	43	47	42	37	39	34	31	31	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	28	24	22	18
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	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	13
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	14	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	15	12	10

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

	0°	45°	90°
0°	9968	9968	9968
5°	9998	9741	9769
10°	9937	9582	9575
15°	9848	9397	9346
20°	9714	9194	9123
25°	9563	8966	8879
30°	9399	8739	8627
35°	9213	8507	8407
40°	9065	8285	8178
45°	8844	8081	7981
50°	8658	7846	7773
55°	8466	7625	7529
60°	8166	7342	7306
65°	7837	7040	7032
70°	7439	6694	6714
75°	6882	6312	6425
80°	6266	5946	6141
85°	5484	5623	5977



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.9	1.4
10°-20°	335.0	4.0
20°-30°	506.5	6.1
30°-40°	612.9	7.3
40°-50°	647.9	7.8
50°-60°	609.8	7.3
60°-70°	505.9	6.1
70°-80°	355.4	4.3
80°-90°	204.8	2.5
90°-100°	164.9	2.0
100°-110°	379.4	4.5
110°-120°	616.1	7.4
120°-130°	740.2	8.9
130°-140°	770.7	9.2
140°-150°	710.1	8.5
150°-160°	570.3	6.8
160°-170°	367.8	4.4
170°-180°	126.8	1.5
0°-30°	958.4	11.5
0°-40°	1571.3	18.8
0°-60°	2829.0	33.9
0°-90°	3895.0	46.7
90°-120°	1160.3	13.9
90°-150°	3381.4	40.5
90°-180°	4446.0	53.3
0°-180°	8341.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1235	1235	1235	1235	1235	
5°	1236	1232	1222	1233	1232	117
15°	1185	1186	1182	1194	1193	334
25°	1084	1092	1096	1111	1113	499
35°	948	965	979	997	1002	594
45°	791	817	843	866	874	611
55°	619	649	690	716	726	552
65°	429	473	520	553	566	425
75°	238	289	347	384	398	253
85°	73	132	194	234	249	78
90°	25	91	159	203	218	17
95°	73	87	142	184	199	85
105°	313	348	403	442	421	328
115°	569	586	628	659	670	561
125°	794	798	829	858	868	709
135°	981	981	994	1017	1028	756
145°	1129	1131	1131	1140	1148	706
155°	1237	1238	1235	1238	1236	570
165°	1305	1300	1300	1307	1299	369
175°	1335	1329	1330	1338	1327	127
180°	1335	1335	1335	1335	1335	



TEST NUMBER: P332655

CATALOG NUMBER: S124DIP-S1020D1035U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1239.1	1238.4	1237.6	1236.9	1236.1	1234.8	1232.8	1230.9	1228.9	1226.9	1228.6
5°	1236.0	1235.1	1234.2	1233.3	1232.4	1230.8	1228.7	1226.5	1224.4	1222.2	1224.7
7.5°	1225.5	1225.0	1224.4	1223.9	1223.3	1222.2	1220.4	1218.6	1216.8	1215.0	1217.8
10°	1216.7	1216.4	1216.1	1215.8	1215.5	1214.5	1213.0	1211.5	1209.9	1208.4	1211.2
12.5°	1204.5	1204.5	1204.4	1204.3	1204.3	1203.7	1202.7	1201.6	1200.6	1199.5	1202.1
15°	1184.9	1185.2	1185.5	1185.8	1186.1	1185.8	1184.9	1184.0	1183.0	1182.1	1184.9
17.5°	1158.1	1159.0	1159.9	1160.8	1161.8	1162.1	1161.9	1161.8	1161.6	1161.4	1164.2
20°	1139.3	1140.2	1141.1	1142.0	1143.0	1143.6	1143.9	1144.2	1144.5	1144.8	1147.9
22.5°	1118.2	1119.4	1120.6	1121.8	1122.9	1123.8	1124.3	1124.9	1125.4	1126.0	1129.1
25°	1084.0	1085.8	1087.6	1089.5	1091.3	1092.7	1093.6	1094.6	1095.5	1096.4	1099.8
27.5°	1045.8	1048.5	1051.2	1053.9	1056.6	1058.7	1060.1	1061.5	1062.9	1064.3	1067.5
30°	1020.4	1022.8	1025.3	1027.7	1030.2	1032.5	1034.6	1036.8	1038.9	1041.1	1044.5
32.5°	992.7	995.7	998.6	1001.6	1004.5	1007.2	1009.6	1012.0	1014.4	1016.8	1020.6
35°	948.5	952.2	955.8	959.5	963.2	966.6	969.7	972.7	975.8	978.9	983.2
37.5°	903.9	908.2	912.4	916.7	920.9	924.9	928.7	932.5	936.4	940.2	944.5
40°	875.2	879.2	883.2	887.2	891.2	895.3	899.6	903.9	908.2	912.5	917.1
42.5°	842.0	846.5	851.0	855.5	859.9	864.7	869.7	874.8	879.8	884.9	890.0
45°	790.8	796.7	802.5	808.4	814.2	820.0	825.9	831.7	837.5	843.4	848.6
47.5°	741.9	747.9	753.9	760.0	766.0	772.4	779.1	785.9	792.7	799.4	804.8
50°	706.5	713.3	720.0	726.8	733.5	740.3	747.1	753.8	760.6	767.3	773.5
52.5°	671.1	677.9	684.6	691.4	698.2	705.4	713.1	720.9	728.6	736.4	742.5
55°	619.4	625.9	632.3	638.8	645.2	653.0	662.3	671.5	680.7	689.9	696.1
57.5°	561.6	569.6	577.6	585.6	593.6	602.1	611.3	620.5	629.6	638.8	646.1
60°	524.0	532.0	540.0	548.0	556.0	565.0	575.2	585.3	595.4	605.6	612.6
62.5°	487.5	496.2	505.0	513.7	522.4	531.8	542.0	552.1	562.3	572.4	579.5
65°	428.6	438.4	448.3	458.1	467.9	478.1	488.5	499.0	509.4	519.9	527.5
67.5°	371.9	382.4	392.8	403.3	413.7	424.5	435.7	446.9	458.1	469.3	477.1
70°	333.2	343.7	354.1	364.5	375.0	386.1	397.7	409.4	421.1	432.8	441.1
72.5°	295.6	306.3	317.0	327.7	338.4	349.9	362.3	374.7	387.2	399.6	407.6
75°	237.8	249.2	260.5	271.9	283.3	295.4	308.3	321.2	334.1	347.0	355.6
77.5°	183.9	195.9	208.0	220.0	232.1	244.8	258.4	271.9	285.4	298.9	307.6
80°	150.7	163.0	175.3	187.6	199.9	212.8	226.3	239.8	253.3	266.8	276.1
82.5°	117.5	130.3	143.1	155.9	168.6	181.8	195.3	208.8	222.4	235.9	245.3
85°	73.3	86.2	99.1	112.0	124.9	138.3	152.1	165.9	179.7	193.6	202.8
87.5°	41.5	54.5	67.6	80.6	93.6	107.0	120.8	134.7	148.5	162.3	171.5
90°	25.1	39.8	54.6	69.3	84.0	98.9	113.9	128.9	143.9	158.8	169.1
92.5°	33.6	44.8	56.0	67.2	78.4	91.5	106.4	121.4	136.4	151.4	161.4
95°	72.9	75.5	78.1	80.7	83.3	91.0	103.8	116.6	129.4	142.2	151.9
97.5°	132.9	146.3	159.8	173.2	186.6	187.2	174.9	162.6	150.4	138.1	146.3
100°	178.9	190.9	202.9	214.9	226.9	223.5	204.9	186.3	167.6	149.0	153.5
102.5°	231.6	241.6	251.5	261.4	271.4	280.2	287.9	295.7	303.4	311.2	278.5
105°	312.9	320.4	327.9	335.4	342.8	352.8	365.3	377.8	390.2	402.7	412.4
107.5°	390.7	396.4	402.1	407.8	413.5	422.5	434.8	447.0	459.3	471.6	480.1
110°	442.3	447.3	452.2	457.2	462.2	470.7	482.8	494.9	507.0	519.0	526.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	492.3	497.3	502.3	507.3	512.3	520.3	531.2	542.1	552.9	563.8	570.6
115°	569.3	572.8	576.2	579.6	583.0	589.6	599.2	608.8	618.4	628.0	635.2
117.5°	639.9	642.5	645.0	647.6	650.1	656.2	665.8	675.5	685.1	694.8	701.1
120°	686.7	688.5	690.4	692.2	694.0	699.2	707.9	716.6	725.3	734.0	740.6
122.5°	731.5	732.2	732.9	733.6	734.3	739.0	747.8	756.5	765.2	774.0	780.4
125°	794.2	794.7	795.3	795.9	796.5	800.4	807.6	814.9	822.1	829.3	835.8
127.5°	854.6	854.5	854.4	854.3	854.2	857.7	864.6	871.5	878.4	885.3	890.7
130°	892.6	892.5	892.4	892.4	892.3	895.0	900.6	906.2	911.8	917.3	923.1
132.5°	928.5	928.6	928.7	928.8	928.9	931.3	936.1	940.9	945.7	950.5	956.0
135°	981.1	980.8	980.6	980.4	980.2	981.6	984.6	987.7	990.7	993.7	999.1
137.5°	1028.8	1028.6	1028.3	1028.1	1027.9	1028.8	1030.8	1032.9	1034.9	1036.9	1041.9
140°	1059.9	1060.1	1060.2	1060.3	1060.5	1060.9	1061.7	1062.4	1063.2	1063.9	1068.6
142.5°	1086.8	1087.5	1088.3	1089.0	1089.7	1090.1	1090.2	1090.3	1090.4	1090.5	1094.5
145°	1129.4	1129.8	1130.1	1130.5	1130.9	1131.0	1131.0	1131.0	1131.0	1131.0	1133.1
147.5°	1163.6	1164.5	1165.4	1166.4	1167.3	1167.7	1167.4	1167.2	1167.0	1166.8	1167.2
150°	1188.3	1188.9	1189.5	1190.1	1190.6	1190.8	1190.6	1190.4	1190.2	1189.9	1189.9
152.5°	1208.0	1208.6	1209.3	1209.9	1210.6	1210.7	1210.3	1209.9	1209.5	1209.1	1209.5
155°	1236.9	1237.1	1237.3	1237.5	1237.7	1237.5	1236.9	1236.2	1235.5	1234.9	1235.7
157.5°	1261.4	1261.3	1261.1	1261.0	1260.9	1260.4	1259.7	1258.9	1258.2	1257.4	1258.6
160°	1275.8	1275.1	1274.5	1273.8	1273.1	1272.7	1272.5	1272.2	1272.0	1271.8	1273.1
162.5°	1288.6	1287.7	1286.9	1286.0	1285.2	1284.7	1284.4	1284.2	1284.0	1283.8	1285.1
165°	1304.7	1303.6	1302.5	1301.4	1300.3	1299.7	1299.7	1299.7	1299.7	1299.7	1301.5
167.5°	1317.5	1316.4	1315.2	1314.1	1312.9	1312.3	1312.1	1312.0	1311.9	1311.7	1313.7
170°	1324.7	1323.4	1322.0	1320.7	1319.4	1318.8	1319.0	1319.3	1319.5	1319.7	1321.5
172.5°	1329.5	1328.2	1326.8	1325.5	1324.2	1323.6	1323.8	1324.1	1324.3	1324.5	1326.3
175°	1334.7	1333.4	1332.0	1330.7	1329.4	1328.8	1329.0	1329.3	1329.5	1329.7	1331.7
177.5°	1337.1	1335.8	1334.6	1333.4	1332.1	1331.7	1332.0	1332.4	1332.7	1333.1	1334.5
180°	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1230.4	1232.1	1233.8	1234.5	1234.3	1234.0	1233.8	1233.6
5°	1227.1	1229.6	1232.1	1233.1	1232.8	1232.5	1232.2	1231.9
7.5°	1220.6	1223.3	1226.1	1227.3	1227.0	1226.7	1226.4	1226.1
10°	1213.9	1216.7	1219.5	1220.7	1220.4	1220.1	1219.8	1219.5
12.5°	1204.6	1207.1	1209.6	1210.9	1210.8	1210.7	1210.7	1210.6
15°	1187.7	1190.4	1193.2	1194.4	1194.1	1193.8	1193.5	1193.2
17.5°	1167.0	1169.9	1172.7	1174.0	1173.7	1173.5	1173.2	1173.0
20°	1150.9	1154.0	1157.1	1158.6	1158.6	1158.6	1158.6	1158.6
22.5°	1132.1	1135.2	1138.3	1140.1	1140.6	1141.0	1141.5	1142.0
25°	1103.2	1106.5	1109.9	1111.8	1112.1	1112.4	1112.7	1113.0
27.5°	1070.6	1073.7	1076.9	1078.6	1079.0	1079.4	1079.7	1080.1
30°	1047.9	1051.2	1054.6	1056.6	1057.2	1057.8	1058.5	1059.1
32.5°	1024.5	1028.4	1032.3	1034.5	1035.1	1035.7	1036.3	1037.0
35°	987.5	991.8	996.1	998.7	999.6	1000.5	1001.5	1002.4
37.5°	948.9	953.3	957.6	960.3	961.3	962.3	963.2	964.2
40°	921.7	926.3	931.0	933.9	935.1	936.3	937.6	938.8
42.5°	895.1	900.2	905.3	908.3	909.3	910.3	911.3	912.2
45°	853.8	859.1	864.3	867.7	869.2	870.7	872.3	873.8
47.5°	810.2	815.6	821.1	824.7	826.5	828.4	830.2	832.1
50°	779.6	785.8	791.9	795.9	797.8	799.6	801.4	803.3
52.5°	748.7	754.8	761.0	764.9	766.8	768.6	770.5	772.3
55°	702.2	708.4	714.5	718.5	720.3	722.2	724.0	725.9
57.5°	653.4	660.7	668.0	672.5	674.2	676.0	677.7	679.4
60°	619.7	626.8	633.8	638.6	641.1	643.5	646.0	648.4
62.5°	586.5	593.6	600.7	605.4	607.9	610.3	612.8	615.3
65°	535.2	542.9	550.6	555.7	558.1	560.6	563.0	565.5
67.5°	484.9	492.7	500.5	505.6	508.0	510.4	512.8	515.2
70°	449.3	457.6	465.9	471.2	473.3	475.5	477.6	479.8
72.5°	415.7	423.7	431.8	437.0	439.4	441.8	444.2	446.6
75°	364.2	372.8	381.4	387.1	389.9	392.7	395.4	398.2
77.5°	316.4	325.1	333.8	339.7	342.6	345.6	348.5	351.5
80°	285.3	294.5	303.7	309.5	312.0	314.5	316.9	319.4
82.5°	254.8	264.3	273.7	279.8	282.5	285.2	287.9	290.6
85°	212.0	221.2	230.4	236.6	239.7	242.7	245.8	248.9
87.5°	180.6	189.8	199.0	205.0	207.8	210.6	213.4	216.1
90°	179.3	189.6	199.8	206.4	209.3	212.2	215.1	218.0
92.5°	171.4	181.4	191.4	197.7	200.2	202.8	205.3	207.8
95°	161.5	171.1	180.8	187.1	190.0	193.0	196.0	199.0
97.5°	154.4	162.6	170.8	176.3	179.2	182.1	184.9	187.8
100°	158.1	162.6	167.1	170.5	172.9	175.3	177.7	180.0
102.5°	245.9	213.3	180.6	165.5	168.0	170.4	172.9	175.3
105°	422.1	431.7	441.4	443.5	438.0	432.4	426.9	421.4
107.5°	488.6	497.2	505.7	511.5	514.5	517.6	520.7	523.7
110°	534.1	541.6	549.1	554.4	557.5	560.7	563.8	566.9





TEST NUMBER: P332655

CATALOG NUMBER: S124DIP-S1020D1035U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	577.3	584.0	590.8	595.8	599.1	602.4	605.7	609.0
115°	642.4	649.6	656.8	661.5	663.6	665.8	667.9	670.1
117.5°	707.4	713.7	720.0	724.3	726.7	729.1	731.4	733.8
120°	747.1	753.7	760.3	764.6	766.6	768.7	770.7	772.7
122.5°	786.8	793.2	799.6	803.7	805.5	807.2	809.0	810.8
125°	842.3	848.9	855.4	859.6	861.7	863.8	865.8	867.9
127.5°	896.1	901.5	906.9	910.6	912.5	914.4	916.3	918.2
130°	928.8	934.6	940.3	944.1	946.0	947.8	949.7	951.5
132.5°	961.5	967.0	972.5	976.1	977.7	979.4	981.1	982.7
135°	1004.5	1009.8	1015.2	1019.0	1021.3	1023.6	1025.9	1028.2
137.5°	1046.8	1051.8	1056.8	1060.0	1061.4	1062.8	1064.2	1065.6
140°	1073.2	1077.9	1082.6	1085.8	1087.5	1089.3	1091.0	1092.8
142.5°	1098.4	1102.4	1106.4	1109.1	1110.4	1111.8	1113.1	1114.4
145°	1135.2	1137.2	1139.3	1141.2	1142.8	1144.5	1146.2	1147.9
147.5°	1167.6	1168.0	1168.5	1169.3	1170.5	1171.7	1172.9	1174.1
150°	1189.9	1189.9	1189.9	1190.0	1190.3	1190.5	1190.7	1190.9
152.5°	1209.8	1210.2	1210.5	1210.6	1210.5	1210.4	1210.2	1210.1
155°	1236.6	1237.5	1238.4	1238.5	1237.9	1237.2	1236.5	1235.9
157.5°	1259.7	1260.9	1262.0	1262.0	1260.9	1259.7	1258.6	1257.4
160°	1274.5	1275.8	1277.1	1277.1	1275.8	1274.5	1273.1	1271.8
162.5°	1286.4	1287.8	1289.1	1289.0	1287.5	1286.0	1284.5	1283.0
165°	1303.3	1305.1	1306.8	1306.7	1304.7	1302.7	1300.7	1298.7
167.5°	1315.6	1317.6	1319.5	1319.4	1317.2	1315.0	1312.7	1310.5
170°	1323.3	1325.0	1326.8	1326.6	1324.4	1322.2	1319.9	1317.7
172.5°	1328.1	1329.8	1331.6	1331.3	1328.9	1326.5	1324.1	1321.7
175°	1333.7	1335.7	1337.7	1337.3	1334.7	1332.0	1329.4	1326.7
177.5°	1335.9	1337.3	1338.8	1338.4	1336.3	1334.2	1332.0	1329.9
180°	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7	1334.7

(END OF REPORT)