

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: P332655-830

Luminaire Tested: **S124DIP-S1020D1035U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332655-830  
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-S1020D1035U830-4F0-1E-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: 7862.0 lumens  
Efficiency: N/A  
Efficacy: 130.0 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

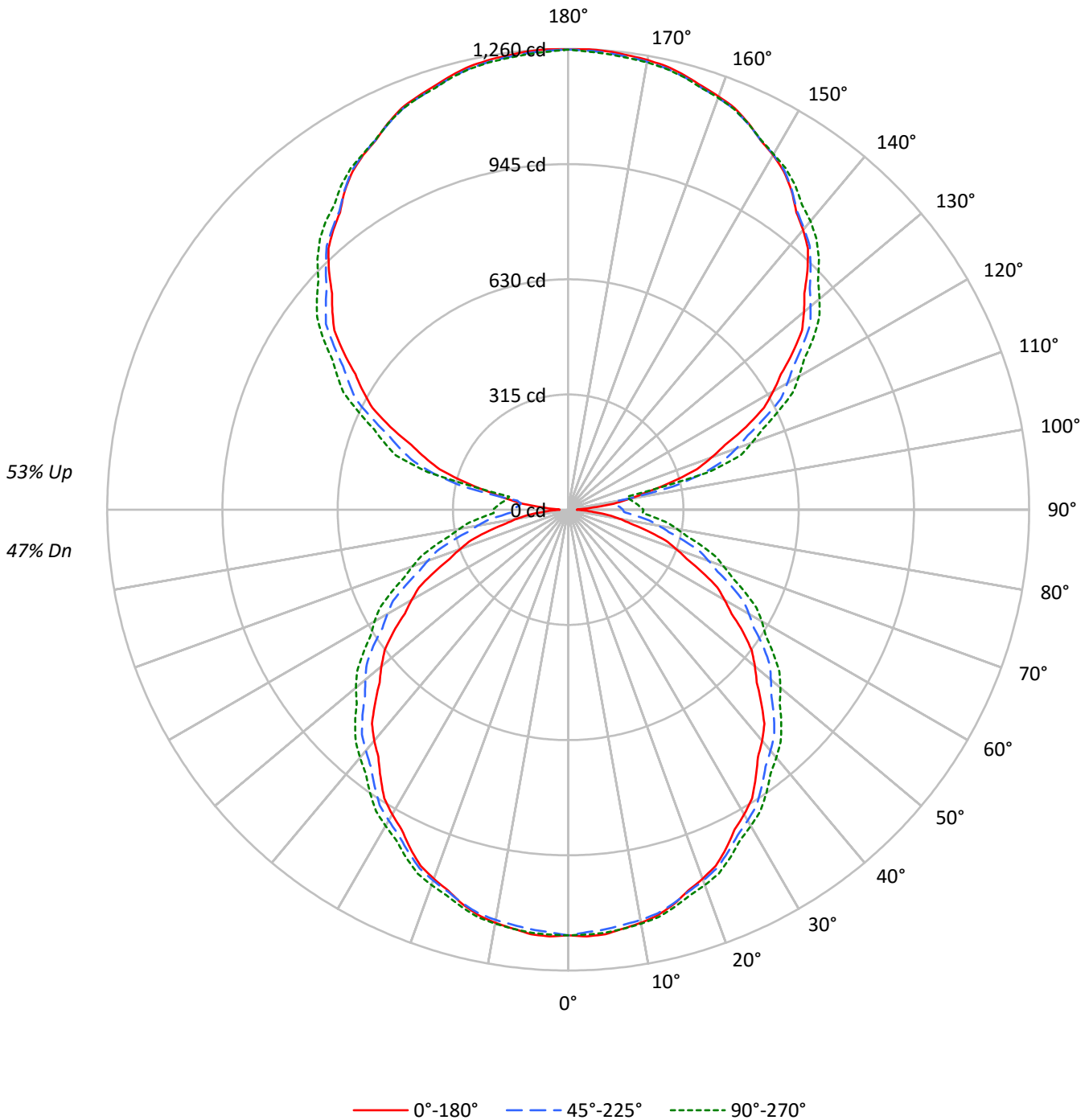
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.2	1.4
10°-20°	315.7	4.0
20°-30°	477.4	6.1
30°-40°	577.6	7.3
40°-50°	610.7	7.8
50°-60°	574.7	7.3
60°-70°	476.8	6.1
70°-80°	334.9	4.3
80°-90°	193.0	2.5
90°-100°	155.5	2.0
100°-110°	357.6	4.5
110°-120°	580.7	7.4
120°-130°	697.7	8.9
130°-140°	726.4	9.2
140°-150°	669.3	8.5
150°-160°	537.5	6.8
160°-170°	346.7	4.4
170°-180°	119.5	1.5
0°-30°	903.4	11.5
0°-40°	1481.0	18.8
0°-60°	2666.4	33.9
0°-90°	3671.2	46.7
90°-120°	1093.7	13.9
90°-150°	3187.1	40.5
90°-180°	4191.0	53.3
0°-180°	7862.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	24	86	150	191	206	16
95°	69	82	134	173	188	80
105°	295	328	380	417	397	310
115°	537	553	592	621	632	528
125°	749	753	782	808	818	668
135°	925	925	937	959	969	713
145°	1064	1066	1066	1075	1082	665
155°	1166	1166	1164	1167	1165	537
165°	1230	1225	1225	1232	1224	347
175°	1258	1253	1253	1261	1250	120
180°	1258	1258	1258	1258	1258	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.1	51.4	63.7	76.0	88.2	100.9	113.9	127.0	140.0	153.0	161.6
90°	23.7	37.5	51.5	65.3	79.2	93.2	107.4	121.5	135.6	149.7	159.4
92.5°	31.7	42.2	52.8	63.3	73.9	86.2	100.3	114.4	128.6	142.7	152.1
95°	68.7	71.2	73.6	76.1	78.5	85.8	97.8	109.9	122.0	134.0	143.2
97.5°	125.3	137.9	150.6	163.2	175.9	176.4	164.9	153.3	141.8	130.2	137.9
100°	168.6	179.9	191.2	202.6	213.9	210.7	193.1	175.6	158.0	140.4	144.7
102.5°	218.3	227.7	237.0	246.4	255.8	264.1	271.4	278.7	286.0	293.3	262.5
105°	294.9	302.0	309.1	316.1	323.1	332.5	344.3	356.1	367.8	379.6	388.7
107.5°	368.3	373.6	379.0	384.4	389.7	398.2	409.8	421.3	432.9	444.5	452.5
110°	416.9	421.6	426.2	430.9	435.6	443.7	455.1	466.5	477.9	489.2	496.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	464.0	468.7	473.4	478.2	482.9	490.4	500.7	511.0	521.1	531.4	537.8
115°	536.6	539.9	543.1	546.3	549.5	555.7	564.8	573.8	582.9	591.9	598.7
117.5°	603.1	605.6	607.9	610.4	612.7	618.5	627.5	636.7	645.7	654.9	660.8
120°	647.2	648.9	650.7	652.4	654.1	659.0	667.2	675.4	683.6	691.8	698.0
122.5°	689.5	690.1	690.8	691.4	692.1	696.5	704.8	713.0	721.2	729.5	735.6
125°	748.6	749.0	749.6	750.2	750.7	754.4	761.2	768.1	774.9	781.7	787.8
127.5°	805.5	805.4	805.3	805.2	805.1	808.4	814.9	821.4	827.9	834.4	839.5
130°	841.3	841.2	841.1	841.1	841.0	843.6	848.9	854.1	859.4	864.6	870.1
132.5°	875.2	875.2	875.3	875.4	875.5	877.8	882.3	886.8	891.4	895.9	901.1
135°	924.7	924.4	924.3	924.1	923.9	925.2	928.0	930.9	933.8	936.6	941.7
137.5°	969.7	969.5	969.2	969.0	968.8	969.7	971.6	973.6	975.4	977.3	982.0
140°	999.0	999.2	999.3	999.4	999.6	999.9	1000.7	1001.4	1002.1	1002.8	1007.2
142.5°	1024.4	1025.0	1025.8	1026.4	1027.1	1027.5	1027.6	1027.7	1027.7	1027.8	1031.6
145°	1064.5	1064.9	1065.2	1065.5	1065.9	1066.0	1066.0	1066.0	1066.0	1066.0	1068.0
147.5°	1096.7	1097.6	1098.4	1099.4	1100.2	1100.6	1100.3	1100.1	1099.9	1099.8	1100.1
150°	1120.0	1120.6	1121.2	1121.7	1122.2	1122.4	1122.2	1122.0	1121.8	1121.5	1121.5
152.5°	1138.6	1139.2	1139.8	1140.4	1141.0	1141.1	1140.8	1140.4	1140.0	1139.6	1140.0
155°	1165.8	1166.0	1166.2	1166.4	1166.6	1166.4	1165.8	1165.2	1164.5	1163.9	1164.7
157.5°	1188.9	1188.8	1188.6	1188.5	1188.5	1188.0	1187.3	1186.6	1185.9	1185.2	1186.3
160°	1202.5	1201.8	1201.3	1200.6	1200.0	1199.6	1199.4	1199.1	1198.9	1198.7	1200.0
162.5°	1214.6	1213.7	1213.0	1212.1	1211.4	1210.9	1210.6	1210.4	1210.2	1210.0	1211.3
165°	1229.7	1228.7	1227.7	1226.6	1225.6	1225.0	1225.0	1225.0	1225.0	1225.0	1226.7
167.5°	1241.8	1240.8	1239.6	1238.6	1237.5	1236.9	1236.7	1236.6	1236.5	1236.3	1238.2
170°	1248.6	1247.4	1246.0	1244.8	1243.6	1243.0	1243.2	1243.5	1243.7	1243.9	1245.6
172.5°	1253.1	1251.9	1250.6	1249.3	1248.1	1247.5	1247.7	1248.0	1248.2	1248.4	1250.1
175°	1258.0	1256.8	1255.5	1254.2	1253.0	1252.5	1252.6	1252.9	1253.1	1253.3	1255.2
177.5°	1260.3	1259.0	1257.9	1256.8	1255.6	1255.2	1255.5	1255.8	1256.1	1256.5	1257.8
180°	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	170.2	178.9	187.6	193.2	195.9	198.5	201.1	203.7
90°	169.0	178.7	188.3	194.5	197.3	200.0	202.7	205.5
92.5°	161.6	171.0	180.4	186.3	188.7	191.1	193.5	195.9
95°	152.2	161.3	170.4	176.3	179.1	181.9	184.7	187.6
97.5°	145.5	153.3	161.0	166.2	168.9	171.6	174.3	177.0
100°	149.0	153.3	157.5	160.7	163.0	165.2	167.5	169.7
102.5°	231.8	201.0	170.2	156.0	158.3	160.6	163.0	165.2
105°	397.8	406.9	416.0	418.0	412.8	407.6	402.4	397.2
107.5°	460.5	468.6	476.6	482.1	484.9	487.9	490.8	493.6
110°	503.4	510.5	517.6	522.5	525.5	528.5	531.4	534.3





TEST NUMBER: P332655-830

CATALOG NUMBER: S124DIP-S1020D1035U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	544.1	550.4	556.9	561.6	564.7	567.8	570.9	574.0
115°	605.5	612.3	619.1	623.5	625.5	627.5	629.5	631.6
117.5°	666.8	672.7	678.6	682.7	684.9	687.2	689.4	691.6
120°	704.2	710.4	716.6	720.7	722.6	724.5	726.4	728.3
122.5°	741.6	747.6	753.7	757.5	759.2	760.8	762.5	764.2
125°	793.9	800.1	806.3	810.2	812.2	814.2	816.1	818.0
127.5°	844.6	849.7	854.8	858.3	860.1	861.9	863.7	865.4
130°	875.4	880.9	886.3	889.9	891.6	893.3	895.1	896.8
132.5°	906.3	911.4	916.6	920.0	921.5	923.1	924.7	926.2
135°	946.8	951.8	956.9	960.5	962.6	964.8	967.0	969.1
137.5°	986.7	991.4	996.1	999.1	1000.4	1001.7	1003.1	1004.4
140°	1011.5	1016.0	1020.4	1023.4	1025.0	1026.7	1028.3	1030.0
142.5°	1035.3	1039.1	1042.8	1045.4	1046.6	1047.9	1049.1	1050.4
145°	1070.0	1071.9	1073.8	1075.6	1077.1	1078.7	1080.3	1081.9
147.5°	1100.5	1100.9	1101.4	1102.1	1103.2	1104.4	1105.5	1106.6
150°	1121.5	1121.5	1121.5	1121.6	1121.9	1122.1	1122.3	1122.5
152.5°	1140.3	1140.7	1140.9	1141.0	1140.9	1140.9	1140.7	1140.6
155°	1165.5	1166.4	1167.2	1167.3	1166.8	1166.1	1165.5	1164.9
157.5°	1187.3	1188.5	1189.5	1189.5	1188.5	1187.3	1186.3	1185.2
160°	1201.3	1202.5	1203.7	1203.7	1202.5	1201.3	1200.0	1198.7
162.5°	1212.5	1213.8	1215.0	1214.9	1213.5	1212.1	1210.7	1209.3
165°	1228.4	1230.1	1231.7	1231.6	1229.7	1227.9	1226.0	1224.1
167.5°	1240.0	1241.9	1243.7	1243.6	1241.5	1239.4	1237.3	1235.2
170°	1247.3	1248.9	1250.6	1250.4	1248.3	1246.2	1244.1	1242.0
172.5°	1251.8	1253.4	1255.1	1254.8	1252.5	1250.3	1248.0	1245.8
175°	1257.1	1259.0	1260.8	1260.5	1258.0	1255.5	1253.0	1250.5
177.5°	1259.1	1260.5	1261.9	1261.5	1259.5	1257.5	1255.5	1253.5
180°	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0	1258.0

(END OF REPORT)