

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: P332666

Luminaire Tested: **S124DIP-S1020D1205U835-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332666  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D1205U835-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8513.7 lumens  
Efficiency: N/A  
Efficacy: 130.2 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

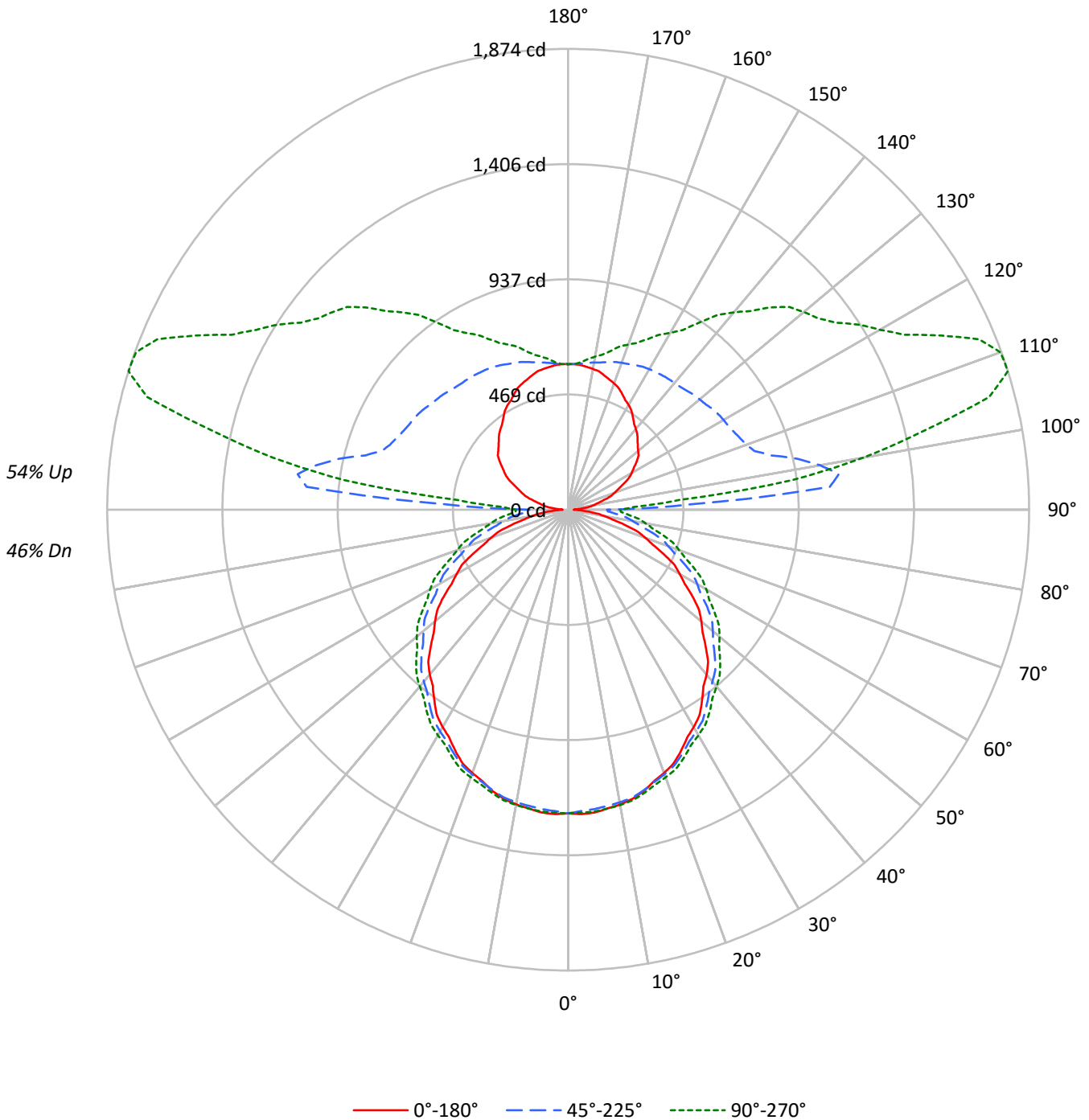
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46				
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	43	42	37				
2	87	79	73	67	79	73	67	62	60	56	53	49	46	44	39	37	35	30				
3	79	69	62	55	72	64	57	51	53	48	44	43	39	36	34	31	29	25				
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	27	25	21				
5	66	54	46	40	60	50	42	37	42	36	32	34	30	27	27	24	21	18				
6	61	48	40	34	55	45	37	32	37	32	27	31	26	23	24	21	19	16				
7	56	44	35	30	51	40	33	28	34	28	24	28	24	20	22	19	17	14				
8	52	39	32	26	47	36	29	25	31	25	21	25	21	18	20	17	15	12				
9	48	36	28	23	44	33	26	22	28	23	19	23	19	16	19	16	13	11				
10	45	33	26	21	41	31	24	19	26	21	17	22	17	14	17	14	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



TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.9	1.4
10°-20°	335.0	3.9
20°-30°	506.5	5.9
30°-40°	612.9	7.2
40°-50°	647.9	7.6
50°-60°	609.8	7.2
60°-70°	505.9	5.9
70°-80°	355.4	4.2
80°-90°	204.2	2.4
90°-100°	546.5	6.4
100°-110°	977.4	11.5
110°-120°	855.6	10.1
120°-130°	703.3	8.3
130°-140°	573.0	6.7
140°-150°	429.6	5.0
150°-160°	300.0	3.5
160°-170°	176.4	2.1
170°-180°	57.4	0.7
0°-30°	958.4	11.3
0°-40°	1571.3	18.5
0°-60°	2829.0	33.2
0°-90°	3894.4	45.7
90°-120°	2379.5	27.9
90°-150°	4085.5	48.0
90°-180°	4619.0	54.3
0°-180°	8513.7	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°	23	87	158	199	212	17
95°	56	185	1067	625	454	57
105°	148	238	854	1766	1772	159
115°	248	323	745	1400	1675	246
125°	339	402	715	1175	1326	302
135°	399	475	683	1020	1163	309
145°	458	523	667	840	928	288
155°	519	561	648	734	766	240
165°	566	583	622	658	668	160
175°	590	592	596	604	602	56
180°	592	592	592	592	592	



TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**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°	41.2	54.2	67.4	80.2	92.9	105.9	120.8	134.2	148.2	162.1	170.8
90°	23.3	37.9	53.7	67.1	80.6	93.3	113.5	126.7	142.3	157.8	165.5
92.5°	34.3	51.4	73.3	98.6	126.6	162.9	235.2	338.5	439.6	498.8	445.9
95°	56.3	69.9	91.7	116.9	155.0	215.1	328.8	532.0	822.3	1067.3	1102.3
97.5°	85.1	93.8	112.5	135.2	167.9	219.4	309.7	479.5	768.1	1109.2	1343.1
100°	103.5	111.5	127.6	149.6	179.6	226.8	307.3	450.6	699.7	1039.3	1345.1
102.5°	122.1	131.0	145.2	165.2	193.4	238.1	311.8	439.1	652.5	954.8	1269.6
105°	148.4	158.0	170.0	190.1	217.1	259.6	326.7	434.5	608.6	853.5	1134.3
107.5°	180.2	187.6	198.4	218.3	243.3	284.5	346.4	445.0	594.7	793.4	1023.9
110°	200.5	207.1	217.2	235.4	260.7	299.6	361.4	453.5	592.1	771.4	967.8



TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.8	225.9	236.5	253.3	278.0	316.5	376.0	462.9	592.7	757.5	933.2
115°	247.7	253.9	264.8	279.2	304.0	341.7	398.0	477.6	595.5	744.8	897.9
117.5°	278.1	283.0	291.8	306.3	328.6	366.6	419.9	493.2	599.2	735.3	877.2
120°	297.4	300.7	309.7	323.4	344.1	381.5	434.6	503.9	602.3	729.8	864.9
122.5°	316.0	318.5	326.8	338.9	360.7	396.6	449.1	514.3	605.7	723.3	851.9
125°	339.0	343.4	350.0	362.5	384.3	420.5	470.0	531.1	612.0	715.0	832.4
127.5°	360.4	363.8	371.8	386.2	408.9	444.4	490.8	545.7	615.5	704.1	807.3
130°	371.3	375.7	384.7	401.8	423.6	459.6	504.0	554.2	618.4	697.7	791.5
132.5°	383.4	386.8	398.6	414.8	438.4	472.1	515.5	563.8	621.5	692.3	777.6
135°	399.0	403.7	415.3	435.0	459.4	490.7	531.2	575.2	625.0	682.9	755.2
137.5°	416.0	420.1	432.6	451.1	476.1	505.3	542.1	582.2	625.5	676.3	736.4
140°	428.1	431.2	443.7	463.2	487.3	515.1	550.3	587.8	627.6	672.1	726.0
142.5°	440.0	443.4	455.2	473.9	497.4	524.2	557.9	592.1	629.6	669.9	717.8
145°	458.0	461.2	472.5	488.5	510.3	535.7	565.9	597.3	631.0	667.0	706.0
147.5°	478.7	479.6	489.5	505.9	524.0	546.8	575.2	602.6	632.1	662.8	695.8
150°	491.7	492.6	501.6	515.2	532.3	554.3	579.8	605.4	632.1	660.0	689.1
152.5°	502.7	502.9	512.1	525.1	540.6	560.8	583.6	607.3	630.3	655.4	681.6
155°	519.4	520.6	527.5	539.2	552.0	569.4	589.1	608.9	627.5	648.4	670.5
157.5°	535.9	535.9	542.4	551.5	562.6	576.4	593.1	608.9	624.5	641.2	659.1
160°	546.1	546.1	550.8	558.9	568.2	581.0	594.9	608.9	621.7	635.6	650.7
162.5°	555.4	554.5	558.2	565.4	573.8	583.8	596.8	608.9	618.9	630.0	643.3
165°	565.9	565.9	568.2	574.0	579.8	586.8	597.3	606.6	613.5	621.7	631.0
167.5°	576.4	575.2	576.4	580.8	584.0	589.4	597.0	603.8	608.0	613.3	619.8
170°	581.0	579.8	581.0	584.5	586.8	590.3	596.1	601.9	604.2	607.7	612.4
172.5°	585.6	584.5	584.7	587.3	588.7	591.2	595.2	600.1	600.5	602.1	605.9
175°	590.3	589.1	589.1	590.3	591.5	591.5	593.8	597.3	596.1	596.1	598.4
177.5°	592.4	591.5	590.5	591.5	591.5	591.5	592.4	594.2	592.4	592.4	593.3
180°	591.5	591.5	591.5	591.5	591.5	591.5	591.5	591.5	591.5	591.5	591.5



TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**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°	179.9	189.0	198.2	204.0	206.9	209.9	212.3	215.0
90°	175.6	185.7	195.8	201.4	205.1	208.7	210.0	212.4
92.5°	375.8	328.0	301.5	283.9	272.6	268.8	267.3	269.8
95°	997.9	826.1	678.7	571.5	517.3	484.1	465.9	453.6
97.5°	1400.0	1341.1	1235.5	1119.5	1038.7	971.4	939.2	917.7
100°	1523.0	1554.6	1505.9	1425.2	1326.2	1257.5	1224.8	1217.6
102.5°	1510.5	1633.8	1658.4	1627.8	1568.2	1519.2	1484.9	1479.8
105°	1408.1	1616.8	1739.5	1792.2	1797.0	1790.1	1776.3	1771.8
107.5°	1267.1	1488.7	1658.2	1766.8	1826.4	1855.1	1868.9	1874.2
110°	1181.7	1389.8	1565.4	1698.0	1782.9	1834.2	1857.6	1870.5





TEST NUMBER: P332666

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1117.1	1301.8	1467.8	1600.2	1696.3	1757.8	1789.6	1809.0
115°	1049.9	1199.6	1342.3	1458.3	1552.3	1624.2	1663.5	1674.9
117.5°	1012.1	1136.8	1250.1	1349.1	1429.8	1490.9	1531.0	1540.6
120°	993.0	1107.3	1206.4	1293.2	1361.9	1415.4	1448.1	1463.4
122.5°	976.4	1086.9	1177.6	1254.0	1312.3	1358.2	1385.9	1400.9
125°	949.8	1055.5	1141.6	1209.3	1257.6	1293.2	1317.1	1325.9
127.5°	917.6	1018.7	1104.1	1168.6	1217.4	1249.5	1270.2	1279.2
130°	893.5	990.8	1075.4	1140.7	1190.1	1221.0	1241.5	1250.3
132.5°	869.1	960.6	1043.0	1108.2	1156.7	1191.3	1210.8	1219.7
135°	833.4	913.8	989.6	1051.1	1099.4	1133.8	1154.2	1163.0
137.5°	801.7	870.1	934.3	989.9	1034.9	1068.5	1085.3	1095.3
140°	783.5	842.1	898.4	949.9	992.2	1019.3	1037.1	1047.9
142.5°	767.3	818.9	867.2	911.9	949.2	974.2	989.9	997.7
145°	745.0	786.4	823.1	857.2	887.4	908.4	921.3	928.3
147.5°	726.7	758.4	786.5	812.7	835.0	853.0	862.8	865.9
150°	717.0	743.7	766.9	787.8	806.4	821.5	828.5	829.7
152.5°	706.7	729.7	751.1	768.3	784.1	796.4	800.6	801.8
155°	691.4	710.0	727.4	741.4	753.0	762.3	765.8	765.8
157.5°	674.9	690.5	705.1	716.3	725.1	732.1	734.2	734.2
160°	664.7	677.4	690.2	699.5	706.5	713.5	714.6	714.6
162.5°	654.4	665.4	675.4	683.7	688.8	695.8	697.0	696.0
165°	640.3	647.2	655.4	661.2	665.8	670.5	669.3	668.2
167.5°	626.6	631.9	638.4	641.9	644.2	647.2	647.0	646.1
170°	618.2	621.7	626.3	629.8	632.1	633.3	632.1	632.1
172.5°	610.7	613.3	616.1	618.6	620.0	621.2	620.0	618.2
175°	600.8	601.9	604.2	604.2	604.2	606.6	604.2	601.9
177.5°	594.2	595.2	595.2	596.1	595.2	596.1	594.2	592.4
180°	591.5	591.5	591.5	591.5	591.5	591.5	591.5	591.5

(END OF REPORT)