

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: P332638

Luminaire Tested: **S124DIP-S1020D590U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332638
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D590U835-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6257.1 lumens
Efficiency: N/A
Efficacy: 128.2 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: Semi-Direct

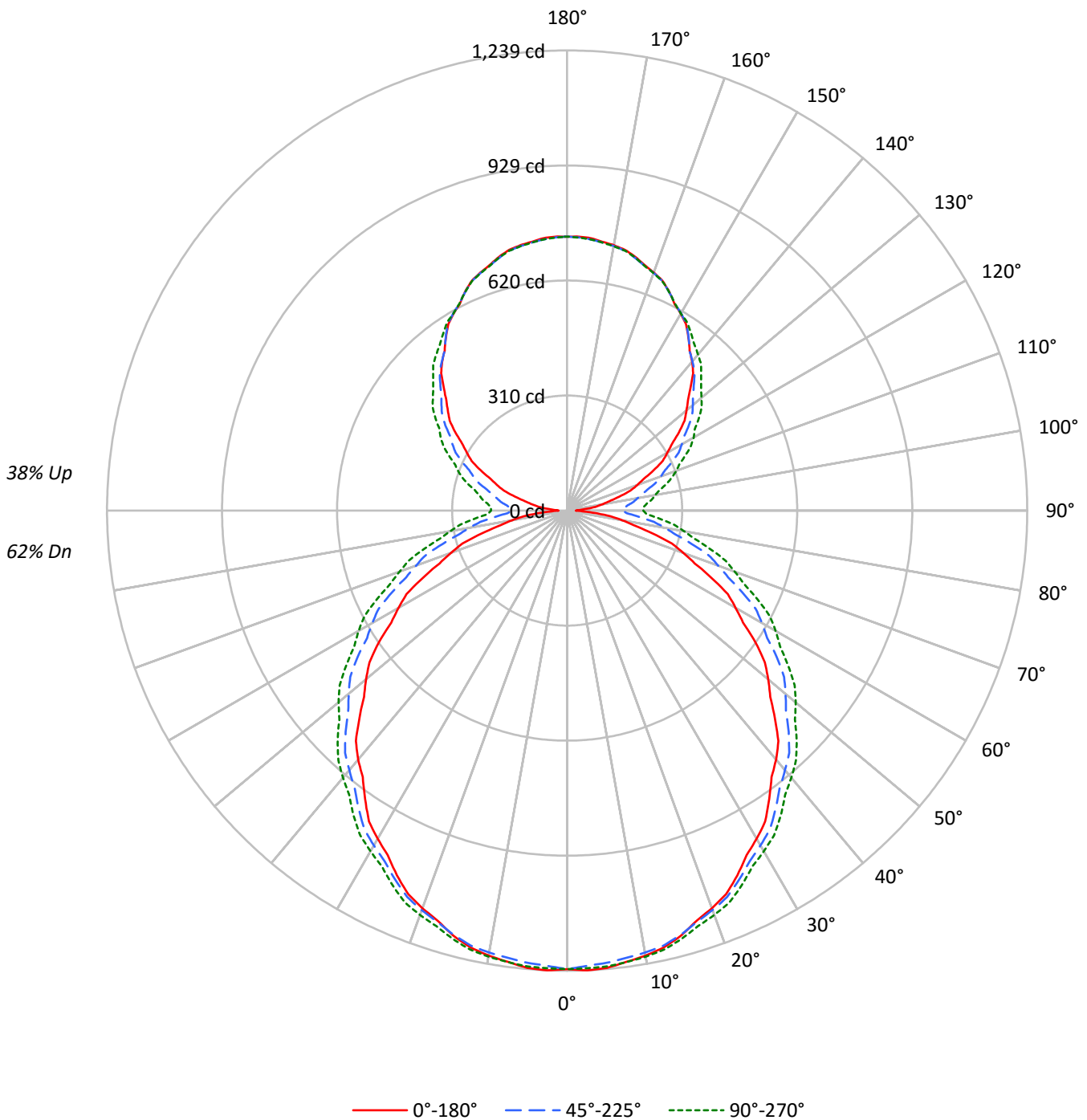
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	94	90	86	93	88	84	81	77	74	72	67	65	63	58	56	54	50
2	90	82	75	69	84	77	70	65	67	62	58	58	54	51	50	47	45	41
3	82	71	63	57	76	67	60	54	59	53	48	51	47	43	44	40	38	34
4	75	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	29
5	68	56	47	41	64	53	45	39	46	40	35	40	35	31	35	31	28	25
6	63	50	41	35	59	47	39	34	42	35	30	36	31	27	32	27	24	21
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	29	25	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	33	26	21	29	23	19	26	21	17	23	18	16	14

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: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.9	1.9
10°-20°	335.0	5.4
20°-30°	506.5	8.1
30°-40°	612.9	9.8
40°-50°	647.9	10.4
50°-60°	609.8	9.7
60°-70°	505.9	8.1
70°-80°	355.4	5.7
80°-90°	203.1	3.2
90°-100°	167.9	2.7
100°-110°	232.4	3.7
110°-120°	303.8	4.9
120°-130°	355.9	5.7
130°-140°	376.6	6.0
140°-150°	358.8	5.7
150°-160°	299.3	4.8
160°-170°	199.1	3.2
170°-180°	69.7	1.1
0°-30°	958.4	15.3
0°-40°	1571.3	25.1
0°-60°	2829.0	45.2
0°-90°	3893.4	62.2
90°-120°	704.1	11.3
90°-150°	1795.5	28.7
90°-180°	2364.0	37.8
0°-180°	6257.1	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°	24	86	149	191	205	17
95°	52	104	164	201	215	52
105°	145	175	227	262	276	155
115°	257	271	312	341	352	254
125°	368	368	400	424	433	328
135°	470	474	483	503	510	364
145°	569	570	570	578	582	356
155°	650	650	650	652	650	299
165°	708	706	705	708	706	199
175°	736	734	733	736	733	70
180°	738	738	738	738	738	



TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

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°	41.3	54.1	66.9	79.7	92.5	105.8	119.4	133.1	146.7	160.4	169.5
90°	23.8	37.5	51.2	64.9	78.6	92.5	106.7	121.0	135.2	149.4	159.1
92.5°	33.2	45.9	58.5	71.2	83.9	97.1	111.1	125.0	138.9	152.8	161.9
95°	52.2	63.5	74.8	86.0	97.3	109.7	123.2	136.7	150.1	163.6	172.3
97.5°	76.1	85.7	95.4	105.0	114.6	126.2	139.7	153.2	166.8	180.3	188.8
100°	95.1	103.6	112.0	120.5	129.0	139.8	153.0	166.1	179.2	192.3	200.9
102.5°	116.0	123.3	130.5	137.7	144.9	154.9	167.6	180.4	193.2	206.0	214.4
105°	145.3	151.6	157.9	164.1	170.4	179.5	191.4	203.2	215.1	227.0	235.1
107.5°	178.7	183.9	189.1	194.3	199.5	207.5	218.3	229.1	240.0	250.8	258.7
110°	200.4	205.0	209.5	214.1	218.6	226.2	236.9	247.5	258.1	268.7	275.5



TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	223.0	226.9	230.8	234.6	238.5	245.4	255.5	265.5	275.5	285.6	292.3
115°	257.0	259.7	262.5	265.3	268.0	274.2	283.8	293.4	302.9	312.5	319.1
117.5°	290.2	292.0	293.7	295.5	297.3	302.6	311.6	320.6	329.6	338.6	344.5
120°	311.5	312.9	314.3	315.8	317.2	322.2	330.7	339.2	347.8	356.3	361.8
122.5°	334.8	335.1	335.5	335.9	336.3	340.6	348.9	357.1	365.3	373.6	379.3
125°	367.7	367.4	367.1	366.8	366.5	370.1	377.7	385.2	392.8	400.3	405.9
127.5°	398.6	398.6	398.7	398.8	398.9	401.7	407.4	413.1	418.8	424.5	429.8
130°	419.4	419.4	419.5	419.6	419.7	422.1	427.1	432.0	436.9	441.8	447.1
132.5°	441.7	441.7	441.7	441.6	441.6	443.5	447.3	451.2	455.0	458.8	463.9
135°	469.9	470.6	471.4	472.2	472.9	474.4	476.5	478.7	480.8	483.0	487.6
137.5°	502.0	502.1	502.1	502.2	502.2	502.9	504.1	505.4	506.6	507.9	512.0
140°	523.5	523.4	523.4	523.3	523.3	523.4	523.7	524.0	524.3	524.6	528.5
142.5°	542.0	542.2	542.4	542.6	542.8	542.7	542.4	542.2	541.9	541.6	545.1
145°	568.9	569.1	569.3	569.5	569.7	569.8	570.0	570.1	570.2	570.3	572.1
147.5°	595.8	596.1	596.4	596.7	597.0	597.1	597.0	596.9	596.8	596.7	596.8
150°	612.2	612.4	612.6	612.8	613.0	613.1	613.1	613.1	613.1	613.1	613.1
152.5°	626.6	626.9	627.1	627.4	627.6	627.8	627.9	628.0	628.1	628.2	628.5
155°	650.2	650.2	650.2	650.2	650.2	650.1	650.0	649.9	649.8	649.6	650.1
157.5°	670.3	670.0	669.8	669.6	669.4	669.2	669.2	669.2	669.2	669.1	669.5
160°	682.1	682.0	681.9	681.8	681.6	681.5	681.4	681.3	681.1	681.0	681.4
162.5°	693.1	692.8	692.4	692.1	691.8	691.5	691.4	691.3	691.2	691.0	691.7
165°	707.8	707.4	707.0	706.7	706.3	706.0	705.7	705.5	705.2	705.0	705.7
167.5°	719.1	718.6	718.0	717.5	717.0	716.7	716.7	716.8	716.8	716.8	717.6
170°	725.5	724.9	724.2	723.6	722.9	722.7	722.8	722.9	723.1	723.2	724.0
172.5°	730.0	729.5	729.0	728.5	727.9	727.7	727.7	727.7	727.7	727.8	728.6
175°	736.3	735.7	735.1	734.4	733.8	733.4	733.3	733.2	733.0	732.9	733.8
177.5°	738.4	737.9	737.4	736.9	736.3	736.1	736.1	736.1	736.1	736.1	736.8
180°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5



TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

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°	178.5	187.6	196.7	202.6	205.3	208.1	210.8	213.6
90°	168.8	178.4	188.1	194.3	197.0	199.7	202.4	205.1
92.5°	171.1	180.2	189.3	195.2	197.8	200.4	203.0	205.6
95°	181.0	189.7	198.3	204.1	206.8	209.6	212.4	215.1
97.5°	197.3	205.8	214.3	219.9	222.5	225.2	227.8	230.4
100°	209.4	218.0	226.5	231.9	234.0	236.2	238.3	240.5
102.5°	222.8	231.2	239.6	245.0	247.5	250.0	252.5	255.0
105°	243.1	251.2	259.2	264.7	267.5	270.4	273.2	276.0
107.5°	266.6	274.5	282.5	287.5	289.7	291.9	294.1	296.3
110°	282.4	289.2	296.0	300.8	303.7	306.5	309.3	312.2



TEST NUMBER: P332638

CATALOG NUMBER: S124DIP-S1020D590U835-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	299.1	305.9	312.6	317.3	319.8	322.4	324.9	327.4
115°	325.8	332.4	339.0	343.4	345.4	347.4	349.4	351.5
117.5°	350.5	356.4	362.4	366.5	368.7	370.9	373.1	375.3
120°	367.3	372.8	378.3	382.4	385.2	387.9	390.6	393.3
122.5°	385.0	390.7	396.4	400.2	401.9	403.7	405.4	407.2
125°	411.5	417.1	422.7	426.2	427.8	429.4	431.0	432.6
127.5°	435.1	440.4	445.6	449.2	451.1	453.0	454.9	456.8
130°	452.4	457.6	462.9	466.2	467.6	468.9	470.2	471.6
132.5°	468.9	473.9	479.0	482.3	483.9	485.6	487.2	488.9
135°	492.3	497.0	501.6	504.7	506.2	507.6	509.1	510.5
137.5°	516.2	520.3	524.5	527.4	529.0	530.6	532.2	533.8
140°	532.4	536.2	540.1	542.7	544.2	545.6	547.0	548.4
142.5°	548.5	552.0	555.5	557.9	559.1	560.4	561.7	562.9
145°	573.8	575.5	577.2	578.5	579.3	580.2	581.0	581.9
147.5°	597.0	597.1	597.3	597.8	598.6	599.5	600.3	601.2
150°	613.1	613.1	613.1	613.1	612.9	612.8	612.7	612.6
152.5°	628.8	629.1	629.4	629.4	629.1	628.7	628.4	628.1
155°	650.6	651.1	651.7	651.7	651.1	650.6	650.1	649.6
157.5°	669.9	670.3	670.7	670.6	670.2	669.8	669.3	668.9
160°	681.8	682.1	682.5	682.4	681.8	681.1	680.5	679.9
162.5°	692.4	693.1	693.8	693.8	693.2	692.5	691.9	691.3
165°	706.5	707.2	708.0	708.1	707.6	707.1	706.6	706.1
167.5°	718.3	719.1	719.9	719.8	719.1	718.3	717.5	716.7
170°	724.7	725.5	726.2	726.2	725.3	724.4	723.5	722.6
172.5°	729.5	730.4	731.2	731.2	730.3	729.4	728.5	727.7
175°	734.7	735.6	736.4	736.4	735.6	734.7	733.8	732.9
177.5°	737.5	738.2	738.9	738.9	738.1	737.3	736.4	735.6
180°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5

(END OF REPORT)