

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: P332813

Luminaire Tested: **S124DIW-S1020D770U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332813
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: S124DIW-S1020D770U835-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7281.6 lumens
Efficiency: N/A
Efficacy: 135.9 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

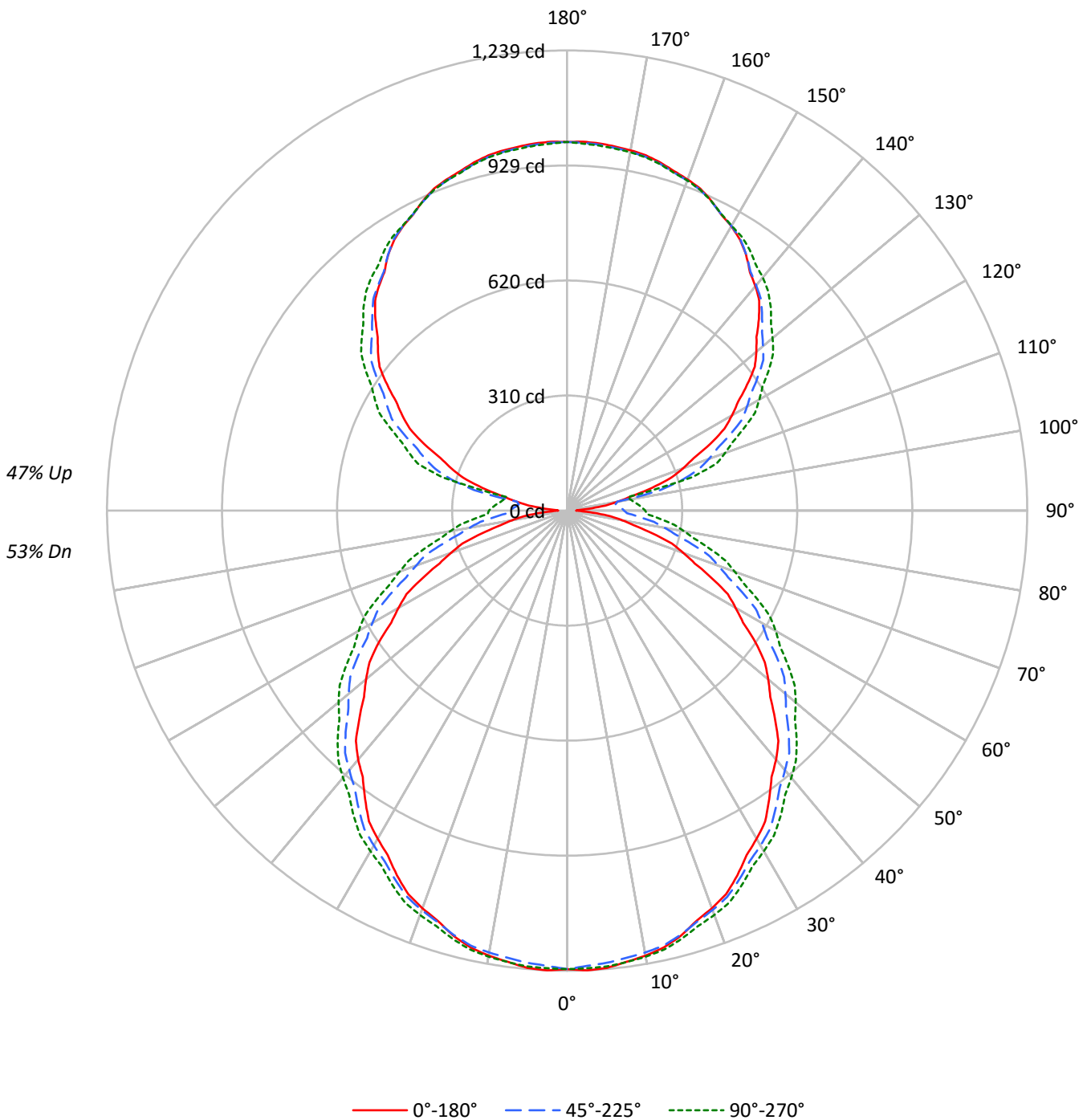
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	97	93	88	84	90	86	82	79	73	70	68	61	59	58	51	49	48	43
2	88	80	74	68	81	74	69	64	63	59	55	53	50	47	44	42	39	35
3	80	70	62	56	74	65	58	53	56	50	46	47	43	39	39	36	33	29
4	73	62	54	47	67	57	50	44	49	43	39	41	37	33	34	31	28	25
5	67	55	46	40	62	51	44	38	44	38	33	37	32	29	31	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	29	25	28	24	21	18
7	57	44	36	30	53	41	34	29	36	30	25	30	26	22	25	22	19	16
8	53	40	32	27	49	38	30	25	32	27	22	28	23	20	23	20	17	14
9	49	37	29	24	45	34	27	22	30	24	20	25	21	18	21	18	15	13
10	46	34	26	21	43	31	25	20	27	22	18	23	19	16	20	16	14	12

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	1.6
10°-20°	335.0	4.6
20°-30°	506.5	7.0
30°-40°	612.9	8.4
40°-50°	647.9	8.9
50°-60°	609.8	8.4
60°-70°	505.9	6.9
70°-80°	355.4	4.9
80°-90°	203.8	2.8
90°-100°	153.2	2.1
100°-110°	304.7	4.2
110°-120°	473.3	6.5
120°-130°	559.0	7.7
130°-140°	576.8	7.9
140°-150°	528.8	7.3
150°-160°	424.1	5.8
160°-170°	273.5	3.8
170°-180°	94.3	1.3
0°-30°	958.4	13.2
0°-40°	1571.3	21.6
0°-60°	2829.0	38.9
0°-90°	3894.0	53.5
90°-120°	931.2	12.8
90°-150°	2595.7	35.6
90°-180°	3388.0	46.5
0°-180°	7281.6	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	88	153	196	210	16
95°	59	81	137	177	192	67
105°	236	269	323	361	348	248
115°	426	442	484	514	525	419
125°	592	595	627	654	664	529
135°	730	730	742	765	776	563
145°	840	841	841	850	857	525
155°	920	920	918	921	919	424
165°	970	967	966	972	966	274
175°	992	988	989	995	986	94
180°	992	992	992	992	992	



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CATALOG NUMBER: S124DIW-S1020D770U835-4F0-1E-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°	41.4	54.3	67.2	80.1	93.0	106.3	120.0	133.7	147.4	161.2	170.3
90°	24.3	38.5	52.6	66.7	80.8	95.1	109.6	124.1	138.7	153.2	163.1
92.5°	30.4	41.5	52.7	63.8	75.0	87.9	102.4	116.9	131.4	146.0	155.6
95°	58.8	63.3	67.9	72.4	76.9	85.6	98.3	111.1	123.9	136.6	145.9
97.5°	103.0	115.2	127.5	139.7	151.9	155.0	149.1	143.2	137.2	131.3	139.5
100°	136.9	147.9	158.9	169.8	180.8	180.9	170.1	159.3	148.5	137.7	143.2
102.5°	176.1	185.3	194.5	203.7	212.9	221.8	230.6	239.4	248.1	256.9	234.7
105°	235.9	243.0	250.1	257.3	264.4	274.1	286.3	298.5	310.7	322.8	332.0
107.5°	293.6	299.2	304.7	310.2	315.8	324.5	336.4	348.2	360.1	372.0	380.3
110°	331.7	336.5	341.3	346.1	350.9	359.2	370.9	382.7	394.4	406.2	413.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	368.6	373.3	378.0	382.7	387.4	395.1	405.9	416.6	427.3	438.0	444.8
115°	425.5	428.7	432.0	435.2	438.5	445.0	454.6	464.3	474.0	483.6	490.7
117.5°	477.9	480.2	482.5	484.8	487.2	493.1	502.6	512.1	521.6	531.2	537.5
120°	512.4	514.0	515.6	517.2	518.7	523.9	532.6	541.4	550.1	558.9	565.4
122.5°	545.7	546.2	546.8	547.4	548.0	552.6	561.2	569.9	578.5	587.2	593.5
125°	591.9	592.3	592.6	593.0	593.3	597.2	604.6	611.9	619.3	626.6	632.9
127.5°	636.8	636.6	636.5	636.4	636.2	639.5	646.1	652.8	659.5	666.1	671.5
130°	664.8	664.6	664.5	664.4	664.2	666.8	672.3	677.7	683.1	688.5	694.2
132.5°	691.5	691.5	691.5	691.5	691.5	693.7	698.3	702.9	707.4	712.0	717.4
135°	730.2	730.0	729.9	729.7	729.5	730.9	733.7	736.5	739.3	742.1	747.4
137.5°	765.7	765.4	765.2	765.0	764.7	765.5	767.3	769.0	770.8	772.6	777.4
140°	788.8	788.9	788.9	788.9	788.9	789.3	789.9	790.5	791.2	791.8	796.3
142.5°	808.5	809.1	809.6	810.1	810.7	810.9	810.9	811.0	811.0	811.0	814.8
145°	840.2	840.4	840.5	840.7	840.9	841.0	841.0	841.0	841.0	841.0	843.0
147.5°	865.6	866.2	866.8	867.4	868.0	868.2	868.1	867.9	867.7	867.6	868.0
150°	884.0	884.3	884.7	885.0	885.4	885.5	885.3	885.1	885.0	884.8	884.8
152.5°	898.3	898.8	899.2	899.7	900.2	900.2	899.9	899.7	899.4	899.1	899.3
155°	919.7	919.9	920.0	920.2	920.4	920.2	919.7	919.2	918.7	918.2	918.9
157.5°	938.0	937.9	937.8	937.7	937.6	937.2	936.7	936.1	935.5	935.0	935.8
160°	948.6	948.1	947.7	947.2	946.7	946.3	946.2	946.0	945.8	945.7	946.7
162.5°	958.1	957.5	956.9	956.3	955.6	955.2	955.1	954.9	954.7	954.6	955.6
165°	970.2	969.3	968.5	967.7	966.9	966.5	966.5	966.5	966.5	966.5	967.8
167.5°	979.7	978.8	978.0	977.1	976.2	975.8	975.7	975.6	975.5	975.4	976.8
170°	985.0	984.0	983.0	982.0	981.1	980.6	980.8	981.0	981.1	981.3	982.6
172.5°	988.6	987.6	986.6	985.6	984.6	984.2	984.4	984.5	984.7	984.9	986.2
175°	992.4	991.4	990.5	989.5	988.5	988.1	988.2	988.4	988.6	988.7	990.2
177.5°	994.2	993.3	992.4	991.4	990.5	990.2	990.5	990.7	991.0	991.2	992.3
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4



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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°	179.4	188.5	197.6	203.5	206.3	209.1	211.8	214.6
90°	173.0	182.9	192.8	199.2	201.9	204.7	207.5	210.3
92.5°	165.3	174.9	184.6	190.7	193.2	195.7	198.3	200.8
95°	155.2	164.5	173.8	179.9	182.8	185.7	188.7	191.6
97.5°	147.6	155.8	163.9	169.4	172.2	175.0	177.8	180.6
100°	148.7	154.2	159.7	163.6	165.9	168.2	170.6	172.9
102.5°	212.5	190.3	168.1	158.2	160.6	163.1	165.5	167.9
105°	341.2	350.3	359.5	362.4	358.9	355.4	351.9	348.4
107.5°	388.6	396.8	405.1	410.7	413.5	416.4	419.2	422.0
110°	420.9	428.3	435.7	440.9	443.9	446.8	449.8	452.7



TEST NUMBER: P332813

CATALOG NUMBER: S124DIW-S1020D770U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	451.5	458.3	465.1	470.0	473.1	476.1	479.2	482.3
115°	497.8	504.9	512.0	516.6	518.8	520.9	523.1	525.2
117.5°	543.8	550.1	556.5	560.8	563.2	565.6	568.0	570.4
120°	571.8	578.3	584.8	589.1	591.2	593.3	595.5	597.6
122.5°	599.9	606.2	612.6	616.7	618.6	620.4	622.3	624.2
125°	639.3	645.6	651.9	656.1	658.1	660.1	662.1	664.1
127.5°	677.0	682.4	687.8	691.5	693.5	695.4	697.4	699.4
130°	699.9	705.6	711.3	715.0	716.9	718.7	720.6	722.4
132.5°	722.9	728.3	733.8	737.4	739.1	740.8	742.5	744.2
135°	752.6	757.8	763.1	766.8	769.0	771.2	773.3	775.5
137.5°	782.3	787.1	792.0	795.1	796.5	798.0	799.4	800.9
140°	800.8	805.3	809.8	812.9	814.6	816.3	818.0	819.7
142.5°	818.7	822.6	826.4	829.0	830.4	831.7	833.0	834.3
145°	845.0	847.0	849.0	850.8	852.4	853.9	855.5	857.1
147.5°	868.3	868.7	869.1	869.9	871.0	872.2	873.3	874.5
150°	884.8	884.8	884.8	884.9	885.1	885.2	885.4	885.5
152.5°	899.6	899.8	900.1	900.2	900.1	900.0	899.9	899.8
155°	919.5	920.2	920.8	920.9	920.4	919.9	919.4	919.0
157.5°	936.7	937.6	938.4	938.4	937.6	936.7	935.8	935.0
160°	947.7	948.6	949.6	949.6	948.6	947.7	946.7	945.7
162.5°	956.6	957.5	958.5	958.5	957.4	956.2	955.1	954.0
165°	969.1	970.4	971.7	971.7	970.2	968.7	967.2	965.7
167.5°	978.3	979.7	981.2	981.1	979.4	977.8	976.1	974.5
170°	983.9	985.3	986.6	986.4	984.8	983.1	981.5	979.8
172.5°	987.5	988.8	990.1	989.9	988.1	986.4	984.6	982.8
175°	991.7	993.2	994.7	994.4	992.4	990.5	988.5	986.5
177.5°	993.4	994.4	995.5	995.2	993.6	992.0	990.5	988.9
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4

(END OF REPORT)