

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: P331410-830

Luminaire Tested: **SA2XXDIP-C865D925U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331410-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C865D925U830-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 925 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6717.5 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

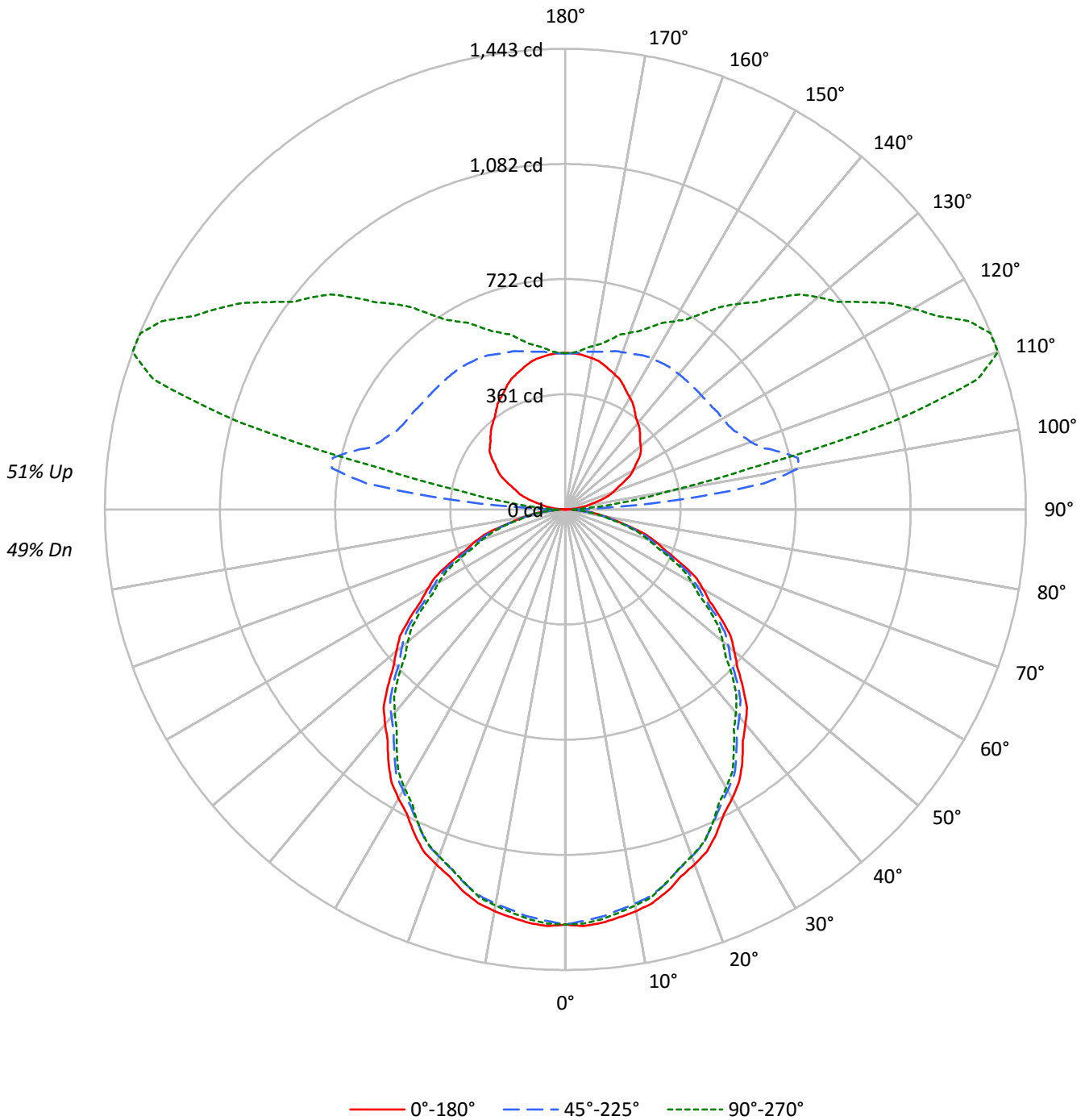
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	49
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47	42
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	34	29
4	74	63	55	49	68	59	52	46	50	45	40	42	38	35	34	31	29	25
5	68	56	48	42	63	52	45	40	45	39	35	38	33	30	31	28	25	22
6	63	51	43	37	58	47	40	35	40	35	30	34	30	26	28	25	22	19
7	58	46	38	32	53	43	35	30	36	31	27	31	26	23	26	22	20	17
8	54	42	34	28	50	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	18	16	14
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	15	13

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

	0°	45°	90°
0°	21001	21001	21001
5°	21081	20778	20900
10°	20956	20566	20669
15°	20697	20301	20277
20°	20330	19900	19878
25°	19963	19408	19408
30°	19494	18957	18793
35°	19056	18413	18143
40°	18506	17873	17530
45°	17961	17335	16908
50°	17372	16777	16179
55°	16757	16124	15527
60°	16075	15345	14783
65°	15339	14571	13903
70°	14408	13638	12987
75°	13107	12558	12246
80°	11632	11278	10702
85°	9503	9040	8096



TEST NUMBER: P331410-830

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.3	1.8
10°-20°	344.2	5.1
20°-30°	505.9	7.5
30°-40°	587.6	8.7
40°-50°	587.0	8.7
50°-60°	511.9	7.6
60°-70°	378.5	5.6
70°-80°	214.4	3.2
80°-90°	62.0	0.9
90°-100°	195.6	2.9
100°-110°	663.7	9.9
110°-120°	705.1	10.5
120°-130°	580.4	8.6
130°-140°	466.1	6.9
140°-150°	352.2	5.2
150°-160°	247.5	3.7
160°-170°	145.7	2.2
170°-180°	47.4	0.7
0°-30°	972.3	14.5
0°-40°	1559.9	23.2
0°-60°	2658.7	39.6
0°-90°	3313.6	49.3
90°-120°	1564.4	23.3
90°-150°	2963.2	44.1
90°-180°	3404.0	50.7
0°-180°	6717.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1301	1301	1301	1301	1301	
5°	1301	1295	1282	1291	1290	123
15°	1238	1230	1214	1219	1213	348
25°	1121	1110	1089	1092	1089	515
35°	967	954	934	927	920	603
45°	787	777	759	746	740	607
55°	595	587	573	558	552	532
65°	402	394	381	370	364	397
75°	210	207	201	194	196	224
85°	51	50	49	45	44	59
90°	1	13	32	31	31	4
95°	33	81	369	139	107	35
105°	115	173	697	1246	1060	122
115°	202	255	583	1204	1395	200
125°	282	334	561	975	1132	251
135°	331	395	554	819	938	256
145°	378	435	551	684	749	237
155°	430	464	535	605	629	198
165°	468	483	513	544	552	132
175°	488	489	493	499	498	46
180°	489	489	489	489	489	



TEST NUMBER: P331410-830

CATALOG NUMBER: SA2XXDIP-C865D925U830-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1306.7	1305.6	1304.5	1303.4	1302.3	1300.5	1298.1	1295.6	1293.2	1290.7	1293.0
5°	1300.7	1299.6	1298.5	1297.4	1296.3	1294.2	1291.2	1288.1	1285.1	1282.0	1284.2
7.5°	1289.2	1287.5	1285.8	1284.0	1282.3	1279.9	1276.8	1273.7	1270.5	1267.4	1269.7
10°	1278.2	1276.3	1274.3	1272.3	1270.5	1267.8	1264.4	1261.1	1257.8	1254.4	1256.7
12.5°	1263.2	1261.5	1259.8	1258.0	1256.3	1253.8	1250.5	1247.1	1243.8	1240.5	1242.0
15°	1238.2	1236.5	1234.8	1233.2	1231.5	1228.9	1225.3	1221.6	1218.0	1214.5	1215.5
17.5°	1206.2	1204.5	1202.9	1201.2	1199.5	1196.8	1193.2	1189.5	1185.8	1182.1	1183.5
20°	1183.2	1181.5	1179.9	1178.2	1176.5	1173.7	1169.8	1165.9	1162.1	1158.2	1159.0
22.5°	1160.2	1157.8	1155.5	1153.1	1150.8	1147.8	1144.2	1140.5	1136.8	1133.1	1133.3
25°	1120.6	1118.4	1116.2	1114.0	1111.7	1108.2	1103.5	1098.8	1094.1	1089.4	1090.0
27.5°	1075.6	1073.7	1071.6	1069.6	1067.6	1064.7	1061.0	1057.2	1053.6	1049.8	1049.0
30°	1045.6	1043.4	1041.1	1039.0	1036.7	1033.5	1029.4	1025.2	1021.0	1016.8	1016.0
32.5°	1013.6	1011.8	1010.0	1008.2	1006.4	1003.3	999.0	994.6	990.2	985.8	984.3
35°	966.8	964.0	961.2	958.5	955.6	952.1	947.6	943.2	938.7	934.2	932.6
37.5°	914.0	911.5	909.1	906.6	904.3	900.8	896.4	891.9	887.4	883.0	880.9
40°	878.0	875.8	873.5	871.3	869.1	865.7	861.3	856.9	852.4	848.0	845.5
42.5°	843.0	840.7	838.5	836.3	834.1	830.8	826.3	821.9	817.4	812.9	810.2
45°	786.6	784.8	782.8	780.9	778.9	775.8	771.7	767.5	763.4	759.2	756.1
47.5°	730.7	728.9	727.0	725.2	723.3	720.2	715.9	711.5	707.2	702.9	699.6
50°	691.6	690.2	688.9	687.5	686.1	683.4	679.6	675.6	671.8	667.9	664.0
52.5°	653.7	651.8	650.0	648.1	646.3	643.6	639.9	636.2	632.5	628.9	625.7
55°	595.3	593.7	592.0	590.3	588.6	586.2	582.9	579.5	576.2	572.8	569.5
57.5°	536.8	535.5	534.1	532.8	531.5	529.0	525.3	521.6	517.9	514.3	511.0
60°	497.8	496.6	495.6	494.5	493.3	490.9	486.9	483.1	479.2	475.2	472.2
62.5°	459.8	458.0	456.2	454.4	452.6	450.3	447.2	444.2	441.2	438.3	435.5
65°	401.5	399.8	398.1	396.4	394.8	392.6	389.8	387.0	384.3	381.4	379.0
67.5°	342.2	340.8	339.5	338.2	336.9	335.0	332.4	329.9	327.4	324.9	323.0
70°	305.2	304.1	302.9	301.8	300.8	298.9	296.4	293.9	291.4	288.9	287.0
72.5°	267.1	266.1	264.9	263.8	262.7	261.4	259.8	258.2	256.5	254.9	253.0
75°	210.1	209.5	209.0	208.5	207.9	206.9	205.6	204.2	202.7	201.3	199.7
77.5°	159.1	158.2	157.2	156.3	155.3	154.6	154.0	153.4	152.9	152.3	151.5
80°	125.1	124.8	124.5	124.2	123.9	123.6	123.0	122.4	121.9	121.3	120.5
82.5°	93.0	93.0	92.9	92.8	92.8	92.7	92.3	92.0	91.6	91.3	90.2
85°	51.3	51.0	50.7	50.4	50.1	49.9	49.6	49.3	49.0	48.8	48.0
87.5°	18.2	18.3	18.7	18.6	18.5	18.6	19.1	20.0	20.6	20.4	19.5
90°	0.9	3.8	7.5	9.4	11.3	14.1	18.9	25.4	31.0	32.0	31.0
92.5°	11.5	16.6	23.4	27.4	33.8	42.7	64.0	93.9	120.6	122.2	103.3
95°	32.9	36.7	46.1	54.6	69.7	92.2	135.4	217.3	326.4	368.7	322.6
97.5°	53.6	58.7	68.7	81.4	98.8	124.3	178.7	292.8	474.1	629.5	660.3
100°	72.4	75.2	83.7	98.8	117.6	143.9	193.8	308.6	511.7	743.1	878.6
102.5°	89.7	91.8	100.3	115.4	134.9	161.3	207.4	309.3	497.5	746.9	959.9
105°	114.8	118.6	125.1	139.2	159.9	186.2	230.5	314.1	469.4	697.0	947.3
107.5°	141.9	144.9	151.3	164.3	184.7	211.3	254.2	327.2	455.4	643.7	864.7
110°	159.9	163.7	169.3	181.5	201.3	228.6	269.9	337.7	452.5	618.0	812.8



TEST NUMBER: P331410-830

CATALOG NUMBER: SA2XXDIP-C865D925U830-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	176.4	180.2	186.6	198.1	217.1	245.2	285.0	349.0	453.2	601.4	776.7
115°	202.3	207.0	212.6	223.9	242.7	268.1	308.6	365.9	457.1	583.2	731.9
117.5°	228.9	232.7	238.4	248.4	266.4	292.8	330.2	384.0	463.9	574.4	703.6
120°	245.5	249.3	255.0	263.3	282.2	308.6	345.3	396.1	468.4	569.1	688.6
122.5°	261.4	264.3	269.9	279.2	298.0	325.1	359.5	406.5	473.7	566.1	675.8
125°	282.2	285.0	290.7	302.0	320.7	347.1	381.0	423.3	481.6	560.6	657.5
127.5°	298.8	302.6	310.4	322.8	340.9	368.0	401.0	438.9	489.7	557.4	640.6
130°	308.6	312.3	321.7	334.9	353.7	380.0	412.9	448.7	495.8	555.9	629.3
132.5°	317.5	322.1	332.2	346.2	365.7	392.1	423.5	458.5	501.7	555.2	620.3
135°	331.1	334.9	346.2	360.2	381.9	408.2	438.4	471.3	508.9	554.0	607.7
137.5°	343.9	348.5	359.7	374.8	396.2	420.7	450.4	481.1	515.3	553.8	598.8
140°	353.7	357.5	368.7	383.8	404.5	429.0	457.1	486.4	518.3	553.1	593.6
142.5°	363.4	366.5	377.0	392.1	412.0	435.0	462.4	490.9	520.6	553.1	588.3
145°	378.1	381.9	391.3	405.5	424.2	445.0	470.3	496.7	523.0	551.2	581.4
147.5°	394.0	396.8	405.8	418.8	434.4	452.9	476.7	499.9	523.8	547.9	574.2
150°	404.5	407.3	414.8	427.1	441.2	458.1	479.8	501.3	523.0	545.6	568.2
152.5°	415.0	416.3	423.9	434.6	448.0	463.4	482.8	502.1	521.5	541.9	562.9
155°	429.9	430.8	436.5	446.9	457.1	471.3	487.3	503.2	519.2	535.3	553.1
157.5°	442.3	443.3	447.8	456.8	465.1	476.9	490.5	503.2	514.9	528.5	543.9
160°	450.6	451.6	455.2	462.8	470.3	480.7	492.0	503.2	512.6	524.0	537.2
162.5°	458.8	458.3	462.0	468.1	474.9	483.0	492.8	502.5	510.4	520.2	531.1
165°	468.4	467.5	469.4	475.0	479.8	485.4	493.9	500.5	506.1	512.6	521.1
167.5°	476.4	475.2	476.9	480.5	483.9	487.5	493.7	499.2	501.7	506.1	511.3
170°	481.6	479.8	480.7	483.5	485.4	488.2	492.9	497.7	499.5	502.3	506.1
172.5°	484.7	483.5	483.0	485.8	486.9	489.0	492.2	495.4	496.5	497.9	500.9
175°	488.2	487.3	486.4	488.2	488.2	489.2	491.1	492.9	492.0	492.9	493.9
177.5°	489.9	488.4	487.7	489.2	489.2	489.2	489.9	491.4	489.9	489.2	489.9
180°	489.2	489.2	489.2	489.2	489.2	489.2	489.2	489.2	489.2	489.2	489.2



TEST NUMBER: P331410-830

CATALOG NUMBER: SA2XXDIP-C865D925U830-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1295.1	1297.4	1299.6	1300.5	1300.0	1299.6	1299.2	1298.7
5°	1286.4	1288.6	1290.9	1291.7	1291.2	1290.6	1290.1	1289.5
7.5°	1271.9	1274.1	1276.4	1277.1	1276.6	1275.9	1275.4	1274.7
10°	1258.9	1261.1	1263.4	1264.0	1263.2	1262.3	1261.5	1260.7
12.5°	1243.6	1245.1	1246.7	1247.2	1246.5	1245.9	1245.3	1244.7
15°	1216.6	1217.8	1218.9	1218.7	1217.4	1216.0	1214.6	1213.1
17.5°	1184.7	1186.0	1187.3	1187.2	1185.9	1184.6	1183.3	1181.9
20°	1159.8	1160.6	1161.5	1161.3	1160.3	1159.1	1158.0	1156.9
22.5°	1133.5	1133.6	1133.8	1133.6	1132.8	1132.2	1131.5	1130.9
25°	1090.5	1091.0	1091.6	1091.6	1091.0	1090.5	1090.0	1089.4
27.5°	1048.2	1047.4	1046.5	1045.5	1044.1	1042.7	1041.4	1040.1
30°	1015.1	1014.4	1013.5	1012.5	1011.4	1010.3	1009.2	1008.0
32.5°	982.8	981.3	979.8	978.5	977.4	976.3	975.2	974.0
35°	930.9	929.3	927.7	926.0	924.7	923.3	921.9	920.5
37.5°	878.9	876.8	874.8	873.1	871.8	870.4	869.1	867.7
40°	843.0	840.5	838.0	836.1	835.1	834.0	832.8	831.7
42.5°	807.5	804.7	802.1	799.9	798.3	796.8	795.2	793.7
45°	753.1	750.0	747.0	744.9	743.8	742.6	741.5	740.5
47.5°	696.4	693.2	690.0	687.6	686.0	684.4	682.8	681.2
50°	660.1	656.2	652.3	649.7	648.3	646.9	645.5	644.1
52.5°	622.4	619.2	616.0	613.4	611.6	609.7	607.9	606.1
55°	566.2	562.8	559.5	557.1	555.7	554.3	553.0	551.6
57.5°	507.7	504.4	501.1	499.0	497.9	496.9	495.9	494.7
60°	469.2	466.1	463.1	461.1	460.2	459.4	458.5	457.8
62.5°	432.5	429.7	426.9	425.0	423.9	422.8	421.8	420.8
65°	376.5	374.0	371.5	369.5	368.2	366.7	365.3	363.9
67.5°	321.0	319.1	317.2	315.7	314.5	313.4	312.3	311.1
70°	285.0	283.0	281.2	279.6	278.5	277.4	276.3	275.1
72.5°	251.0	249.0	247.1	245.7	244.8	243.9	243.0	242.1
75°	198.0	196.3	194.7	194.2	194.7	195.3	195.8	196.3
77.5°	150.7	149.9	149.0	148.2	147.4	146.7	145.9	145.1
80°	119.6	118.9	118.0	117.3	116.7	116.2	115.6	115.1
82.5°	89.2	88.1	87.1	86.5	86.3	86.2	86.1	86.1
85°	47.1	46.3	45.4	44.9	44.6	44.3	44.0	43.7
87.5°	18.7	17.6	17.3	17.1	16.9	16.7	16.4	16.2
90°	30.1	28.2	30.1	31.0	31.0	31.0	31.0	31.0
92.5°	82.0	70.4	62.5	56.6	55.9	52.9	53.6	52.1
95°	246.5	189.1	149.6	128.8	116.7	109.1	106.3	107.3
97.5°	575.1	470.5	368.7	300.9	255.9	232.7	219.0	211.1
100°	858.8	742.2	613.3	499.5	421.4	381.0	353.7	336.8
102.5°	1044.7	1018.4	924.2	803.5	718.7	649.6	615.6	592.7
105°	1142.9	1249.2	1261.5	1230.4	1172.1	1113.8	1073.3	1060.2
107.5°	1072.2	1232.3	1330.1	1375.6	1383.0	1379.8	1371.7	1354.2
110°	1011.3	1179.6	1300.0	1377.1	1417.6	1435.5	1444.0	1443.0





TEST NUMBER: P331410-830

CATALOG NUMBER: SA2XXDIP-C865D925U830-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	955.5	1117.2	1245.9	1334.3	1390.5	1420.4	1436.4	1441.5
115°	887.0	1031.9	1155.2	1252.1	1318.8	1362.1	1386.6	1395.1
117.5°	835.5	962.7	1074.4	1165.4	1233.4	1279.1	1305.0	1312.0
120°	809.9	926.6	1026.2	1111.9	1177.7	1221.9	1249.2	1258.7
122.5°	789.6	896.5	990.9	1068.3	1127.3	1170.7	1195.0	1203.0
125°	760.1	857.0	939.7	1010.3	1064.9	1100.6	1124.1	1131.6
127.5°	730.9	818.6	896.6	961.8	1009.4	1042.8	1063.2	1069.2
130°	712.1	793.0	867.3	929.4	975.5	1007.5	1026.2	1033.8
132.5°	694.0	768.9	837.2	895.5	940.8	972.9	990.1	996.9
135°	668.8	730.9	793.0	845.6	886.1	917.2	934.1	937.8
137.5°	648.7	700.6	749.9	795.8	832.7	859.4	874.3	880.0
140°	635.9	681.1	724.3	765.7	795.8	820.3	834.4	840.0
142.5°	625.4	663.7	701.0	735.7	764.2	786.5	799.0	800.1
145°	610.5	641.6	670.7	698.0	720.6	736.6	745.9	748.8
147.5°	599.0	623.5	646.2	666.2	684.9	697.6	704.0	705.7
150°	590.8	611.4	631.2	648.1	662.2	673.5	679.2	680.1
152.5°	582.5	601.6	618.4	633.1	644.1	653.9	658.1	658.3
155°	571.0	586.1	600.1	610.5	620.9	627.5	631.2	629.3
157.5°	557.6	570.2	582.1	590.2	597.5	602.9	604.6	604.6
160°	549.3	559.7	570.0	576.6	583.2	588.0	588.9	588.9
162.5°	541.1	549.9	558.7	563.8	570.4	573.6	574.6	573.8
165°	528.7	535.3	541.9	545.6	549.3	553.1	553.1	552.1
167.5°	516.8	521.9	526.4	529.8	531.5	533.6	533.4	532.3
170°	510.8	513.6	517.4	519.2	520.2	523.0	522.1	520.2
172.5°	504.0	506.1	509.1	510.2	511.1	512.5	511.5	510.4
175°	496.7	497.7	498.6	499.5	499.5	500.5	499.5	497.7
177.5°	491.4	491.4	492.2	492.2	492.2	492.2	491.4	489.9
180°	489.2	489.2	489.2	489.2	489.2	489.2	489.2	489.2

(END OF REPORT)