

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: P331709-940

Luminaire Tested: **SA2XXRDIP-C865D330U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331709-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXRDIP-C865D330U940-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

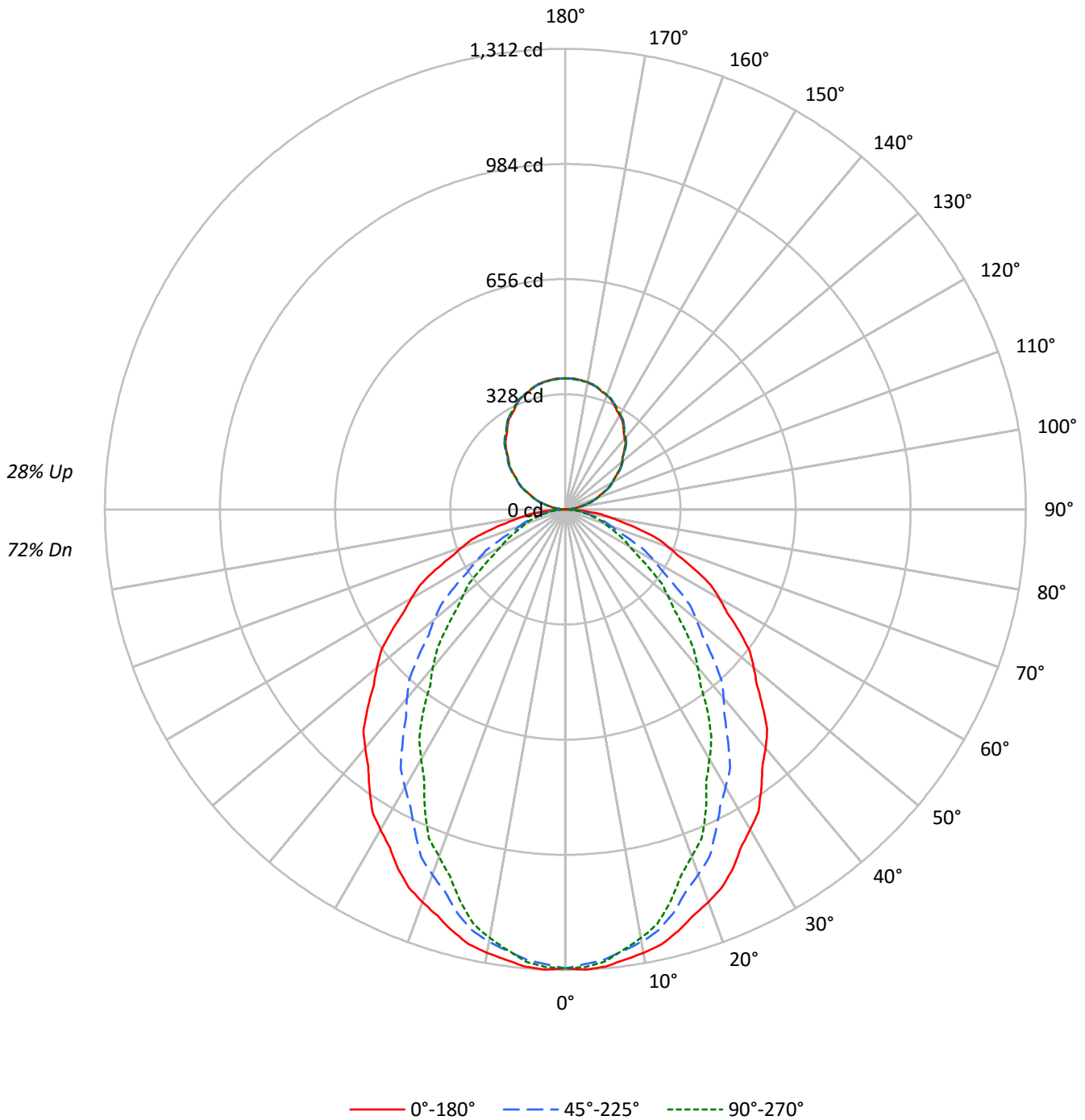
Lumens per Lamp: N/A  
Luminaire Lumens: 3734.6 lumens  
Efficiency: N/A  
Efficacy: 85.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66	62
2	95	87	81	76	90	83	78	73	75	71	67	68	65	62	61	59	57	53
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49	46
4	80	69	61	55	76	66	59	53	60	54	50	55	50	46	50	46	43	40
5	74	62	54	48	70	59	52	47	54	48	44	49	45	41	45	41	38	35
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34	31
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	33	30	28
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27	25
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25	23
10	52	40	32	27	49	38	31	27	35	29	25	33	28	24	30	26	23	21

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

	0°	45°	90°
0°	21111	21111	21111
5°	21191	20846	20960
10°	21028	20505	20330
15°	20787	19896	19323
20°	20452	19029	18076
25°	20110	18045	16864
30°	19634	17031	15310
35°	19170	15930	13947
40°	18704	14790	12370
45°	18155	13511	10942
50°	17595	12215	9540
55°	17022	10826	8194
60°	16353	9361	6801
65°	15595	7866	6193
70°	14691	6477	5693
75°	13587	5908	5315
80°	11985	5281	4844
85°	9429	4168	4168



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.4	3.3
10°-20°	336.0	9.0
20°-30°	471.9	12.6
30°-40°	514.6	13.8
40°-50°	473.1	12.7
50°-60°	371.6	9.9
60°-70°	242.3	6.5
70°-80°	124.9	3.3
80°-90°	33.9	0.9
90°-100°	23.7	0.6
100°-110°	73.5	2.0
110°-120°	125.6	3.4
120°-130°	165.1	4.4
130°-140°	185.4	5.0
140°-150°	181.8	4.9
150°-160°	152.4	4.1
160°-170°	101.1	2.7
170°-180°	35.3	0.9
0°-30°	930.3	24.9
0°-40°	1444.9	38.7
0°-60°	2289.6	61.3
0°-90°	2690.7	72.0
90°-120°	222.7	6.0
90°-150°	755.0	20.2
90°-180°	1044.0	28.0
0°-180°	3734.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1308	1308	1308	1308	1308	
5°	1308	1301	1286	1296	1293	124
15°	1244	1229	1190	1168	1156	350
25°	1129	1089	1013	966	947	519
35°	973	910	808	736	708	608
45°	795	713	592	511	479	614
55°	605	510	385	316	291	540
65°	408	312	206	168	162	405
75°	218	137	95	87	85	230
85°	51	27	22	22	22	60
90°	0	4	11	10	11	3
95°	16	19	20	20	20	19
105°	68	69	69	70	70	72
115°	126	128	127	127	126	125
125°	183	186	185	184	184	164
135°	237	241	241	241	240	183
145°	288	290	292	292	291	180
155°	329	330	331	333	332	151
165°	358	358	358	360	359	101
175°	373	372	371	373	371	35
180°	373	373	373	373	373	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1312.2	1311.2	1310.1	1309.0	1308.1	1306.4	1304.0	1301.7	1299.4	1297.1	1299.2
5°	1307.5	1306.2	1304.8	1303.5	1302.3	1299.8	1296.5	1293.1	1289.6	1286.2	1288.5
7.5°	1294.0	1292.4	1290.8	1289.1	1287.5	1284.7	1280.7	1276.7	1272.6	1268.6	1269.4
10°	1282.6	1280.8	1279.0	1277.1	1275.2	1271.8	1266.5	1261.2	1256.0	1250.7	1249.9
12.5°	1268.5	1266.1	1263.9	1261.7	1259.4	1254.9	1248.1	1241.4	1234.7	1228.0	1226.5
15°	1243.6	1240.7	1237.8	1234.9	1232.0	1226.1	1217.2	1208.3	1199.3	1190.3	1185.4
17.5°	1213.1	1208.6	1204.3	1199.8	1195.4	1187.5	1176.0	1164.5	1153.1	1141.6	1135.7
20°	1190.3	1185.1	1179.8	1174.6	1169.3	1160.1	1146.9	1133.8	1120.7	1107.5	1100.9
22.5°	1165.7	1159.8	1154.0	1148.1	1142.2	1131.8	1117.0	1102.2	1087.4	1072.5	1064.0
25°	1128.8	1120.4	1112.0	1103.6	1095.2	1082.3	1064.9	1047.6	1030.2	1012.9	1002.1
27.5°	1084.3	1075.1	1066.0	1056.9	1047.8	1033.4	1013.8	994.3	974.6	955.1	942.5
30°	1053.1	1043.1	1033.1	1023.1	1013.2	997.6	976.6	955.6	934.5	913.5	900.1
32.5°	1022.8	1011.1	999.4	987.7	976.1	959.6	938.1	916.6	895.2	873.7	858.4
35°	972.6	959.2	945.8	932.4	919.0	900.7	877.5	854.4	831.3	808.2	791.6
37.5°	922.5	907.8	893.0	878.2	863.5	843.8	819.2	794.5	769.9	745.2	726.9
40°	887.4	871.6	855.9	840.1	824.3	803.7	778.2	752.7	727.2	701.7	683.0
42.5°	851.5	834.8	818.2	801.6	785.0	763.5	737.2	710.8	684.5	658.1	638.8
45°	795.1	777.5	759.9	742.3	724.7	702.0	674.5	646.8	619.2	591.7	572.9
47.5°	740.2	721.6	702.9	684.2	665.6	641.9	613.5	585.0	556.4	528.0	509.4
50°	700.5	681.8	663.2	644.4	625.8	602.0	573.1	544.1	515.2	486.3	468.1
52.5°	661.6	642.1	622.7	603.2	583.6	559.7	531.5	503.1	474.8	446.6	429.0
55°	604.7	584.2	563.7	543.1	522.6	498.1	469.8	441.3	413.0	384.6	368.8
57.5°	546.2	525.1	504.1	483.0	462.1	437.9	410.5	383.3	356.0	328.7	314.2
60°	506.4	485.4	464.4	443.4	422.3	398.2	371.1	344.0	317.0	289.9	276.5
62.5°	467.6	446.6	425.5	404.5	383.4	360.1	334.2	308.4	282.6	256.7	244.0
65°	408.2	386.9	365.6	344.3	323.1	300.5	276.9	253.2	229.5	205.9	197.0
67.5°	351.0	329.8	308.7	287.5	266.4	245.1	223.9	202.6	181.3	160.0	155.9
70°	311.2	290.7	270.2	249.7	229.2	209.8	191.7	173.5	155.4	137.2	134.6
72.5°	273.3	253.7	234.0	214.4	194.7	177.5	163.0	148.4	133.8	119.3	117.1
75°	217.8	199.3	180.9	162.5	144.1	130.5	121.5	112.5	103.6	94.7	92.8
77.5°	163.1	146.9	130.7	114.6	98.4	88.3	83.9	79.6	75.3	71.0	69.9
80°	128.9	115.6	102.2	88.7	75.3	67.3	64.6	62.1	59.4	56.8	55.7
82.5°	97.7	87.3	76.8	66.3	55.9	49.8	48.0	46.2	44.4	42.6	42.0
85°	50.9	45.4	39.9	34.3	28.8	25.7	24.9	24.1	23.3	22.5	22.5
87.5°	15.2	13.7	12.2	10.7	9.2	8.6	8.8	9.2	9.5	9.8	9.5
90°	0.4	1.2	2.0	2.9	3.7	4.9	6.4	7.9	9.5	11.1	10.9
92.5°	5.6	6.2	6.9	7.5	8.1	8.6	8.9	9.3	9.6	10.0	10.1
95°	16.4	17.1	17.7	18.5	19.2	19.6	19.7	19.9	20.1	20.2	20.2
97.5°	30.0	30.6	31.1	31.7	32.4	32.8	33.1	33.3	33.6	33.9	33.9
100°	40.0	40.6	41.1	41.7	42.3	42.6	42.8	43.1	43.2	43.5	43.5
102.5°	50.6	51.0	51.5	51.9	52.3	52.8	53.0	53.2	53.5	53.8	53.9
105°	67.8	67.9	68.1	68.4	68.6	68.8	68.9	69.0	69.2	69.3	69.5
107.5°	85.0	85.3	85.6	86.0	86.2	86.4	86.4	86.4	86.4	86.4	86.4
110°	96.1	96.5	96.9	97.4	97.7	98.0	98.0	98.0	98.0	98.0	98.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	108.2	108.6	109.1	109.4	109.9	110.0	109.9	109.9	109.9	109.9	109.7
115°	126.0	126.4	126.9	127.2	127.7	127.9	127.7	127.5	127.4	127.2	127.2
117.5°	143.7	144.4	144.9	145.4	146.1	146.2	145.7	145.3	144.9	144.5	144.4
120°	155.6	156.2	156.8	157.3	157.8	157.8	157.3	156.8	156.2	155.6	155.6
122.5°	166.5	167.1	167.8	168.4	169.2	169.3	168.9	168.5	168.1	167.7	167.6
125°	183.3	184.0	184.6	185.2	185.8	186.1	185.8	185.7	185.5	185.2	185.0
127.5°	199.8	200.6	201.4	202.2	203.0	203.2	203.0	202.8	202.5	202.2	202.0
130°	210.2	211.1	212.0	212.9	213.7	214.2	214.0	213.9	213.7	213.6	213.5
132.5°	221.8	222.5	223.2	223.9	224.7	225.1	225.1	225.2	225.2	225.2	224.9
135°	237.2	238.0	238.8	239.5	240.3	240.8	240.9	241.0	241.2	241.3	241.2
137.5°	253.5	254.1	254.8	255.5	256.1	256.5	256.6	256.8	257.0	257.2	257.2
140°	263.4	264.0	264.7	265.3	265.9	266.4	266.7	267.1	267.4	267.8	267.8
142.5°	273.5	274.1	274.7	275.4	276.0	276.4	276.6	276.9	277.1	277.3	277.4
145°	287.9	288.5	288.9	289.4	289.9	290.3	290.8	291.2	291.6	292.0	292.1
147.5°	300.9	301.5	302.0	302.6	303.2	303.6	303.9	304.3	304.5	304.8	305.0
150°	309.7	310.1	310.5	310.9	311.4	311.7	312.0	312.3	312.5	312.8	313.1
152.5°	317.5	317.9	318.3	318.8	319.1	319.6	319.9	320.2	320.6	320.9	321.2
155°	329.2	329.4	329.7	329.8	330.0	330.3	330.5	330.6	330.9	331.1	331.4
157.5°	339.2	339.4	339.5	339.7	339.8	339.9	340.1	340.2	340.3	340.5	340.9
160°	345.3	345.4	345.5	345.7	345.8	346.0	346.0	346.1	346.2	346.3	346.6
162.5°	350.8	350.9	350.9	350.9	351.0	351.0	351.1	351.2	351.2	351.2	351.8
165°	358.2	358.1	358.0	358.0	357.9	357.8	357.8	357.8	357.8	357.8	358.4
167.5°	364.4	364.2	364.0	363.7	363.6	363.5	363.4	363.4	363.4	363.4	363.8
170°	367.7	367.5	367.2	367.0	366.8	366.7	366.6	366.5	366.5	366.4	366.8
172.5°	369.9	369.7	369.5	369.3	369.1	368.9	368.9	368.8	368.7	368.6	369.2
175°	372.7	372.5	372.3	372.0	371.8	371.7	371.6	371.4	371.2	371.1	371.6
177.5°	373.8	373.6	373.4	373.4	373.2	373.0	372.9	372.8	372.6	372.6	372.9
180°	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1301.3	1303.4	1305.5	1306.4	1305.9	1305.5	1305.1	1304.7
5°	1290.9	1293.2	1295.7	1296.5	1295.7	1294.9	1294.1	1293.2
7.5°	1270.1	1270.7	1271.4	1271.0	1269.7	1268.4	1266.9	1265.6
10°	1249.1	1248.3	1247.5	1246.3	1244.7	1243.2	1241.6	1240.0
12.5°	1225.1	1223.7	1222.3	1220.3	1217.6	1215.0	1212.4	1209.8
15°	1180.4	1175.4	1170.4	1166.5	1164.0	1161.3	1158.7	1156.0
17.5°	1129.7	1123.7	1117.8	1112.6	1108.0	1103.6	1099.0	1094.5
20°	1094.4	1087.8	1081.2	1075.0	1069.3	1063.5	1057.7	1052.0
22.5°	1055.6	1047.1	1038.7	1032.2	1028.0	1023.6	1019.3	1015.0
25°	991.3	980.5	969.7	962.3	958.4	954.5	950.6	946.6
27.5°	930.0	917.4	904.8	895.5	889.2	882.9	876.6	870.4
30°	886.6	873.3	859.8	849.5	842.5	835.4	828.3	821.2
32.5°	843.1	827.8	812.5	801.5	794.9	788.2	781.5	774.8
35°	775.0	758.5	741.9	730.8	725.0	719.2	713.4	707.6
37.5°	708.7	690.5	672.3	659.8	653.2	646.5	639.9	633.3
40°	664.3	645.7	627.0	614.2	607.4	600.6	593.7	586.9
42.5°	619.6	600.2	580.9	567.9	561.3	554.7	548.0	541.4
45°	554.3	535.7	516.9	504.4	498.1	491.9	485.5	479.2
47.5°	490.8	472.3	453.7	441.6	435.9	430.1	424.4	418.7
50°	450.0	431.9	413.8	401.9	396.4	390.8	385.3	379.8
52.5°	411.5	394.0	376.5	365.2	360.1	355.0	349.9	344.8
55°	353.0	337.2	321.5	311.0	306.0	301.0	296.0	291.1
57.5°	299.8	285.3	270.9	261.5	257.3	253.1	248.9	244.7
60°	263.1	249.7	236.2	227.5	223.2	219.0	214.8	210.6
62.5°	231.2	218.5	205.6	198.0	195.5	193.0	190.4	187.9
65°	188.0	179.1	170.1	165.2	164.4	163.7	162.9	162.1
67.5°	151.8	147.7	143.6	141.1	140.3	139.4	138.6	137.8
70°	132.0	129.4	126.7	124.9	123.9	122.8	121.7	120.6
72.5°	114.9	112.6	110.4	109.1	108.3	107.7	107.1	106.5
75°	91.0	89.2	87.3	86.2	86.0	85.7	85.4	85.2
77.5°	68.9	67.9	66.8	66.1	65.6	65.2	64.8	64.4
80°	54.7	53.7	52.6	52.1	52.1	52.1	52.1	52.1
82.5°	41.4	40.7	40.0	39.8	39.8	39.8	39.8	39.8
85°	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
87.5°	9.3	9.1	8.8	8.7	8.7	8.7	8.7	8.7
90°	10.8	10.6	10.4	10.4	10.5	10.6	10.6	10.7
92.5°	10.1	10.1	10.2	10.2	10.2	10.2	10.2	10.2
95°	20.2	20.2	20.2	20.1	20.0	19.8	19.7	19.5
97.5°	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.8
100°	43.5	43.5	43.5	43.4	43.3	43.3	43.2	43.2
102.5°	53.9	53.9	54.0	54.0	53.9	53.9	53.9	53.8
105°	69.6	69.7	69.9	69.9	69.9	69.9	69.9	69.9
107.5°	86.5	86.6	86.6	86.5	86.1	85.9	85.5	85.2
110°	98.0	98.0	98.0	97.9	97.6	97.5	97.3	97.0





TEST NUMBER: P331709-940

CATALOG NUMBER: SA2XXRDIP-C865D330U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	109.5	109.3	109.1	109.0	108.9	108.7	108.5	108.3
115°	127.2	127.1	127.0	126.9	126.6	126.4	126.3	126.0
117.5°	144.2	144.0	143.8	143.7	143.5	143.3	143.0	142.9
120°	155.6	155.6	155.6	155.5	155.3	155.1	154.9	154.7
122.5°	167.4	167.2	167.0	166.9	166.7	166.6	166.4	166.3
125°	184.9	184.6	184.4	184.2	184.2	184.1	184.0	184.0
127.5°	201.8	201.5	201.3	201.0	200.8	200.5	200.4	200.1
130°	213.3	213.2	213.0	212.9	212.6	212.2	212.0	211.7
132.5°	224.5	224.3	224.0	223.7	223.5	223.3	223.0	222.8
135°	241.2	241.1	241.0	240.9	240.7	240.5	240.3	240.0
137.5°	257.1	257.0	257.0	256.8	256.5	256.3	256.0	255.7
140°	267.8	267.8	267.8	267.6	267.3	267.1	266.8	266.5
142.5°	277.5	277.5	277.6	277.5	277.2	276.9	276.6	276.3
145°	292.2	292.2	292.3	292.2	291.9	291.7	291.4	291.1
147.5°	305.1	305.2	305.4	305.3	305.1	304.8	304.5	304.3
150°	313.3	313.4	313.7	313.7	313.4	313.3	313.1	312.8
152.5°	321.5	321.7	322.0	322.0	321.7	321.5	321.2	320.9
155°	331.8	332.2	332.5	332.6	332.3	332.2	332.0	331.7
157.5°	341.3	341.9	342.3	342.4	342.1	341.7	341.4	341.1
160°	347.1	347.5	347.9	347.9	347.7	347.4	347.1	346.9
162.5°	352.2	352.7	353.2	353.2	352.9	352.6	352.2	351.9
165°	358.8	359.4	359.8	359.9	359.5	359.2	358.8	358.6
167.5°	364.4	364.8	365.3	365.4	365.1	364.6	364.3	363.9
170°	367.4	367.8	368.4	368.4	368.0	367.6	367.1	366.7
172.5°	369.6	370.1	370.6	370.7	370.2	369.8	369.4	369.0
175°	372.1	372.6	373.1	373.1	372.7	372.3	371.8	371.4
177.5°	373.3	373.5	373.9	373.9	373.5	373.3	372.9	372.6
180°	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4

(END OF REPORT)