

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: P331709-830

Luminaire Tested: **SA2XXRDIP-C865D330U830-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331709-830  
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-C865D330U830-4F0-1E-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**

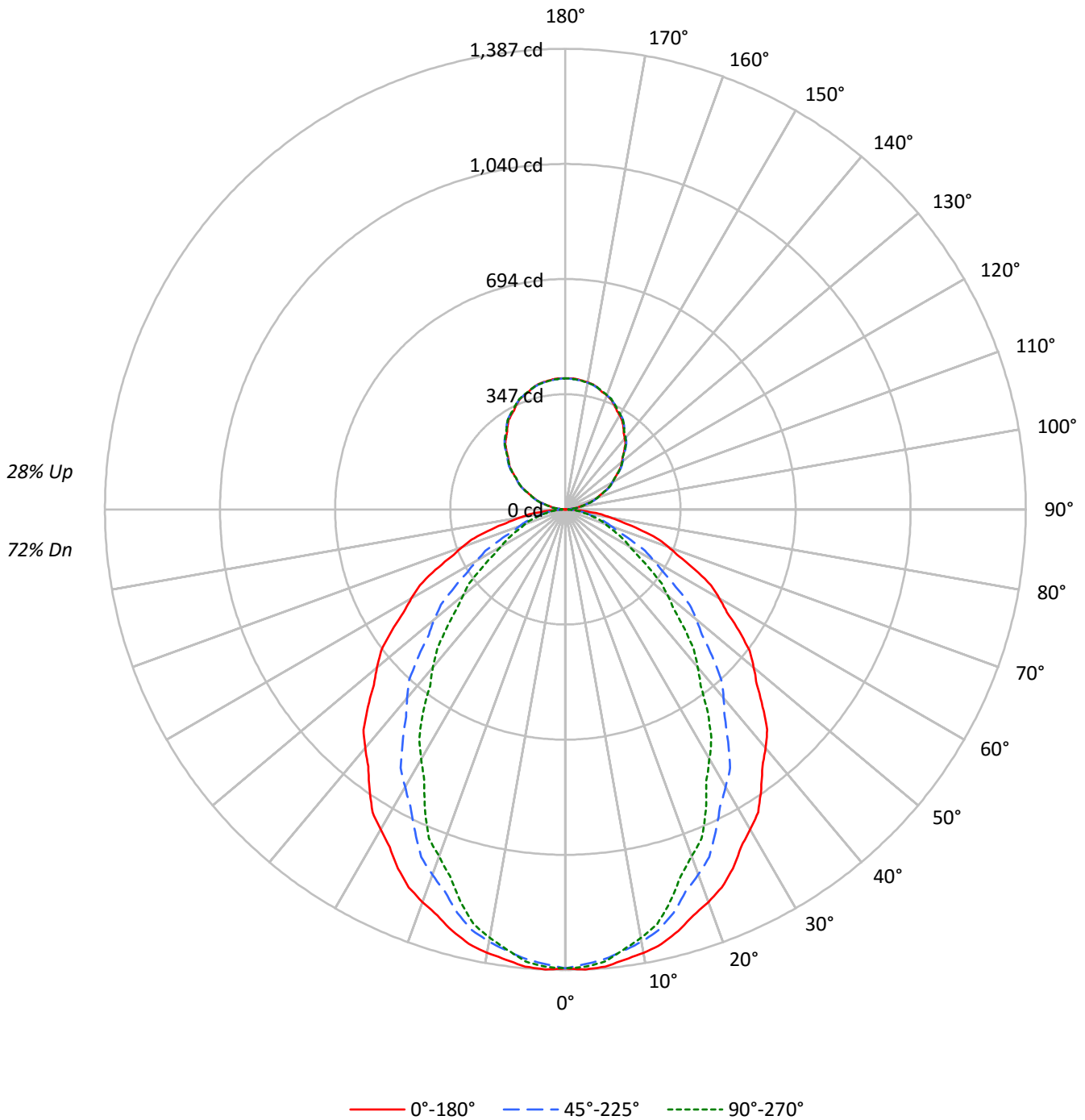
Lumens per Lamp: N/A  
Luminaire Lumens: 3947.4 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

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°	22315	22315	22315
5°	22400	22034	22156
10°	22228	21674	21489
15°	21972	21031	20425
20°	21618	20113	19105
25°	21257	19073	17826
30°	20752	18000	16183
35°	20262	16837	14741
40°	19770	15633	13076
45°	19192	14280	11565
50°	18600	12913	10083
55°	17990	11443	8659
60°	17286	9894	7188
65°	16485	8313	6548
70°	15526	6850	6019
75°	14361	6245	5614
80°	12673	5579	5114
85°	9967	4409	4409



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.4	3.3
10°-20°	355.2	9.0
20°-30°	498.8	12.6
30°-40°	543.9	13.8
40°-50°	500.1	12.7
50°-60°	392.8	9.9
60°-70°	256.1	6.5
70°-80°	132.0	3.3
80°-90°	35.8	0.9
90°-100°	25.0	0.6
100°-110°	77.7	2.0
110°-120°	132.8	3.4
120°-130°	174.6	4.4
130°-140°	195.9	5.0
140°-150°	192.1	4.9
150°-160°	161.1	4.1
160°-170°	106.9	2.7
170°-180°	37.4	0.9
0°-30°	983.3	24.9
0°-40°	1527.2	38.7
0°-60°	2420.1	61.3
0°-90°	2844.1	72.0
90°-120°	235.4	6.0
90°-150°	798.0	20.2
90°-180°	1103.0	27.9
0°-180°	3947.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1382	1382	1382	1382	1382	
5°	1382	1375	1360	1370	1367	131
15°	1314	1299	1258	1235	1222	370
25°	1193	1151	1071	1021	1001	548
35°	1028	962	854	778	748	643
45°	840	754	625	540	506	649
55°	639	539	406	334	308	571
65°	432	330	218	177	171	428
75°	230	145	100	92	90	244
85°	54	29	24	24	24	63
90°	0	5	12	11	11	3
95°	17	20	21	21	21	20
105°	72	73	73	74	74	76
115°	133	135	134	134	133	132
125°	194	197	196	195	194	173
135°	251	254	255	255	254	194
145°	304	307	309	309	308	190
155°	348	349	350	352	351	160
165°	379	378	378	380	379	107
175°	394	393	392	394	393	37
180°	395	395	395	395	395	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1
2.5°	1387.0	1385.9	1384.8	1383.7	1382.6	1380.8	1378.4	1375.9	1373.5	1371.0	1373.3
5°	1382.1	1380.6	1379.2	1377.8	1376.5	1373.9	1370.4	1366.8	1363.1	1359.5	1362.0
7.5°	1367.7	1366.0	1364.3	1362.6	1360.8	1357.9	1353.7	1349.4	1345.2	1341.0	1341.7
10°	1355.8	1353.8	1351.9	1349.9	1347.9	1344.3	1338.7	1333.1	1327.6	1322.0	1321.2
12.5°	1340.8	1338.3	1336.0	1333.6	1331.2	1326.4	1319.3	1312.2	1305.0	1298.0	1296.5
15°	1314.5	1311.5	1308.3	1305.3	1302.2	1296.0	1286.6	1277.1	1267.6	1258.2	1252.9
17.5°	1282.2	1277.5	1272.9	1268.2	1263.6	1255.2	1243.0	1230.9	1218.8	1206.6	1200.4
20°	1258.2	1252.6	1247.1	1241.5	1236.0	1226.2	1212.3	1198.4	1184.6	1170.6	1163.7
22.5°	1232.2	1226.0	1219.7	1213.5	1207.3	1196.4	1180.6	1165.0	1149.3	1133.6	1124.6
25°	1193.2	1184.3	1175.4	1166.5	1157.6	1144.0	1125.6	1107.3	1088.9	1070.6	1059.2
27.5°	1146.1	1136.4	1126.8	1117.1	1107.5	1092.3	1071.6	1050.9	1030.2	1009.6	996.3
30°	1113.1	1102.6	1092.0	1081.5	1070.9	1054.5	1032.3	1010.0	987.8	965.5	951.4
32.5°	1081.1	1068.7	1056.4	1044.1	1031.7	1014.3	991.6	968.8	946.2	923.5	907.4
35°	1028.0	1013.9	999.8	985.5	971.4	952.1	927.6	903.1	878.7	854.2	836.7
37.5°	975.1	959.5	944.0	928.3	912.8	891.9	865.9	839.8	813.8	787.7	768.4
40°	938.0	921.3	904.7	888.0	871.3	849.5	822.6	795.6	768.6	741.7	721.9
42.5°	900.0	882.4	864.9	847.3	829.7	807.0	779.2	751.3	723.5	695.6	675.2
45°	840.5	821.8	803.2	784.6	766.0	742.1	712.9	683.7	654.5	625.4	605.6
47.5°	782.4	762.7	743.0	723.2	703.5	678.5	648.5	618.3	588.1	558.1	538.5
50°	740.5	720.7	701.0	681.2	661.5	636.3	605.8	575.1	544.6	514.1	494.8
52.5°	699.4	678.7	658.2	637.5	616.9	591.6	561.8	531.8	501.9	472.0	453.5
55°	639.1	617.5	595.8	574.1	552.4	526.5	496.5	466.5	436.5	406.5	389.8
57.5°	577.3	555.1	532.8	510.6	488.4	462.9	433.9	405.1	376.3	347.4	332.2
60°	535.3	513.0	490.9	468.6	446.4	420.9	392.3	363.6	335.1	306.4	292.3
62.5°	494.3	472.0	449.8	427.5	405.3	380.6	353.3	326.0	298.7	271.4	257.9
65°	431.5	409.0	386.4	363.9	341.5	317.6	292.7	267.7	242.6	217.6	208.2
67.5°	371.0	348.6	326.3	303.9	281.5	259.1	236.7	214.1	191.6	169.1	164.8
70°	328.9	307.3	285.6	263.9	242.2	221.8	202.6	183.4	164.3	145.1	142.3
72.5°	288.9	268.2	247.3	226.6	205.8	187.7	172.3	156.8	141.5	126.1	123.8
75°	230.2	210.7	191.2	171.7	152.3	137.9	128.4	118.9	109.5	100.1	98.1
77.5°	172.4	155.2	138.2	121.1	104.1	93.3	88.7	84.2	79.6	75.0	73.9
80°	136.3	122.2	108.0	93.8	79.6	71.2	68.3	65.6	62.8	60.0	58.9
82.5°	103.3	92.3	81.2	70.1	59.1	52.6	50.7	48.8	46.9	45.1	44.4
85°	53.8	48.0	42.1	36.3	30.4	27.1	26.3	25.4	24.6	23.8	23.8
87.5°	16.1	14.5	12.9	11.3	9.7	9.0	9.3	9.7	10.0	10.4	10.1
90°	0.4	1.2	2.1	3.0	3.9	5.2	6.8	8.4	10.0	11.7	11.5
92.5°	5.9	6.6	7.3	7.9	8.6	9.0	9.4	9.8	10.2	10.6	10.7
95°	17.3	18.1	18.8	19.5	20.3	20.7	20.8	21.0	21.2	21.3	21.3
97.5°	31.7	32.3	32.9	33.6	34.2	34.7	35.0	35.3	35.5	35.8	35.8
100°	42.3	42.9	43.5	44.1	44.7	45.1	45.2	45.5	45.7	46.0	46.0
102.5°	53.4	53.9	54.4	54.9	55.3	55.8	56.0	56.3	56.6	56.8	56.9
105°	71.6	71.8	72.0	72.3	72.5	72.7	72.9	73.0	73.1	73.2	73.4
107.5°	89.8	90.2	90.5	90.9	91.1	91.3	91.3	91.3	91.3	91.3	91.3
110°	101.6	102.0	102.5	102.9	103.3	103.6	103.6	103.6	103.6	103.6	103.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	114.3	114.8	115.3	115.6	116.1	116.3	116.2	116.2	116.1	116.1	115.9
115°	133.2	133.7	134.1	134.5	135.0	135.2	135.0	134.8	134.7	134.5	134.5
117.5°	151.9	152.6	153.2	153.7	154.4	154.5	154.0	153.6	153.2	152.8	152.6
120°	164.5	165.1	165.7	166.3	166.8	166.8	166.3	165.7	165.1	164.5	164.5
122.5°	176.0	176.6	177.4	178.0	178.8	179.0	178.5	178.1	177.7	177.3	177.1
125°	193.8	194.4	195.1	195.8	196.4	196.7	196.4	196.2	196.0	195.8	195.6
127.5°	211.2	212.1	212.9	213.7	214.5	214.8	214.6	214.3	214.1	213.8	213.5
130°	222.2	223.1	224.0	225.0	225.9	226.4	226.2	226.1	225.9	225.7	225.6
132.5°	234.4	235.2	235.9	236.7	237.5	237.9	237.9	238.0	238.0	238.0	237.7
135°	250.7	251.6	252.4	253.2	254.0	254.5	254.7	254.8	255.0	255.1	255.0
137.5°	268.0	268.6	269.3	270.0	270.7	271.1	271.3	271.5	271.6	271.8	271.8
140°	278.4	279.1	279.7	280.4	281.1	281.5	281.9	282.3	282.7	283.0	283.0
142.5°	289.1	289.7	290.4	291.1	291.7	292.2	292.4	292.7	292.9	293.1	293.2
145°	304.3	304.9	305.4	305.9	306.4	306.9	307.4	307.8	308.2	308.7	308.8
147.5°	318.0	318.7	319.2	319.9	320.5	320.9	321.2	321.6	321.9	322.2	322.3
150°	327.3	327.8	328.2	328.7	329.1	329.5	329.8	330.1	330.4	330.6	330.9
152.5°	335.6	336.0	336.5	337.0	337.3	337.8	338.1	338.5	338.8	339.2	339.5
155°	348.0	348.2	348.5	348.6	348.8	349.1	349.3	349.5	349.8	350.0	350.3
157.5°	358.5	358.7	358.8	359.0	359.2	359.3	359.5	359.6	359.7	359.9	360.3
160°	365.0	365.1	365.2	365.4	365.5	365.7	365.7	365.8	365.9	366.0	366.4
162.5°	370.8	370.9	370.9	370.9	371.0	371.0	371.1	371.2	371.3	371.3	371.8
165°	378.6	378.5	378.4	378.4	378.3	378.2	378.2	378.2	378.2	378.2	378.8
167.5°	385.1	384.9	384.7	384.5	384.3	384.2	384.1	384.1	384.1	384.1	384.6
170°	388.6	388.4	388.1	388.0	387.8	387.6	387.5	387.4	387.4	387.3	387.8
172.5°	391.0	390.8	390.6	390.3	390.1	389.9	389.9	389.8	389.7	389.6	390.2
175°	394.0	393.7	393.5	393.2	393.0	392.9	392.8	392.6	392.4	392.3	392.8
177.5°	395.1	394.9	394.7	394.6	394.5	394.3	394.2	394.1	393.9	393.8	394.2
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1	1382.1
2.5°	1375.5	1377.7	1379.9	1380.8	1380.4	1379.9	1379.5	1379.0
5°	1364.5	1367.0	1369.5	1370.4	1369.5	1368.7	1367.8	1367.0
7.5°	1342.5	1343.1	1343.9	1343.5	1342.1	1340.7	1339.2	1337.8
10°	1320.3	1319.5	1318.6	1317.4	1315.7	1314.1	1312.4	1310.7
12.5°	1295.0	1293.5	1291.9	1289.9	1287.0	1284.3	1281.5	1278.7
15°	1247.6	1242.4	1237.1	1233.0	1230.3	1227.5	1224.7	1221.9
17.5°	1194.1	1187.8	1181.6	1176.0	1171.2	1166.5	1161.7	1156.9
20°	1156.8	1149.8	1142.8	1136.3	1130.2	1124.1	1117.9	1111.9
22.5°	1115.8	1106.8	1097.9	1091.1	1086.6	1081.9	1077.4	1072.9
25°	1047.8	1036.4	1025.0	1017.2	1013.0	1008.9	1004.8	1000.6
27.5°	983.0	969.7	956.4	946.5	939.9	933.2	926.6	920.0
30°	937.2	923.0	908.8	898.0	890.5	883.0	875.5	868.0
32.5°	891.2	875.0	858.8	847.2	840.2	833.1	826.0	819.0
35°	819.2	801.7	784.2	772.4	766.3	760.2	754.0	747.9
37.5°	749.1	729.8	710.6	697.4	690.4	683.3	676.4	669.4
40°	702.2	682.5	662.7	649.2	642.1	634.8	627.5	620.4
42.5°	654.9	634.4	614.1	600.3	593.3	586.4	579.3	572.3
45°	585.9	566.2	546.4	533.2	526.5	519.9	513.2	506.5
47.5°	518.8	499.2	479.6	466.7	460.7	454.6	448.6	442.5
50°	475.7	456.5	437.3	424.8	419.0	413.1	407.3	401.4
52.5°	435.0	416.5	397.9	386.1	380.6	375.2	369.9	364.5
55°	373.2	356.5	339.8	328.8	323.5	318.2	312.9	307.6
57.5°	316.9	301.6	286.3	276.4	272.0	267.5	263.1	258.6
60°	278.1	263.9	249.7	240.4	235.9	231.5	227.1	222.6
62.5°	244.4	230.9	217.4	209.2	206.6	204.0	201.2	198.6
65°	198.7	189.3	179.8	174.7	173.8	173.1	172.2	171.4
67.5°	160.4	156.1	151.7	149.1	148.3	147.3	146.5	145.6
70°	139.5	136.8	133.9	132.1	130.9	129.8	128.7	127.5
72.5°	121.4	119.0	116.7	115.3	114.5	113.9	113.2	112.5
75°	96.1	94.3	92.3	91.1	90.9	90.6	90.3	90.0
77.5°	72.9	71.7	70.6	69.8	69.4	68.9	68.5	68.1
80°	57.8	56.7	55.6	55.0	55.0	55.0	55.0	55.0
82.5°	43.7	43.0	42.3	42.0	42.0	42.0	42.0	42.0
85°	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
87.5°	9.8	9.6	9.3	9.2	9.2	9.2	9.2	9.2
90°	11.4	11.2	11.0	11.0	11.1	11.2	11.2	11.3
92.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
95°	21.3	21.3	21.3	21.2	21.1	20.9	20.8	20.6
97.5°	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.7
100°	46.0	46.0	46.0	45.9	45.8	45.8	45.7	45.6
102.5°	57.0	57.0	57.1	57.1	57.0	56.9	56.9	56.8
105°	73.5	73.7	73.9	73.9	73.9	73.9	73.9	73.9
107.5°	91.4	91.5	91.5	91.4	91.0	90.8	90.4	90.0
110°	103.6	103.6	103.6	103.5	103.2	103.0	102.8	102.5





TEST NUMBER: P331709-830

CATALOG NUMBER: SA2XXRDIP-C865D330U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	115.7	115.6	115.4	115.2	115.1	114.9	114.7	114.5
115°	134.4	134.3	134.2	134.1	133.8	133.7	133.5	133.2
117.5°	152.4	152.2	152.0	151.8	151.7	151.5	151.2	151.0
120°	164.5	164.5	164.5	164.4	164.2	163.9	163.7	163.5
122.5°	176.9	176.7	176.5	176.4	176.3	176.1	175.9	175.8
125°	195.4	195.1	194.9	194.7	194.7	194.6	194.5	194.4
127.5°	213.3	213.0	212.7	212.4	212.3	212.0	211.8	211.5
130°	225.5	225.4	225.2	225.0	224.7	224.3	224.0	223.8
132.5°	237.3	237.0	236.8	236.5	236.2	236.0	235.7	235.5
135°	255.0	254.9	254.8	254.7	254.4	254.2	254.0	253.7
137.5°	271.7	271.6	271.6	271.5	271.2	270.9	270.6	270.2
140°	283.0	283.0	283.0	282.9	282.6	282.3	282.0	281.7
142.5°	293.3	293.3	293.4	293.3	293.0	292.7	292.4	292.1
145°	308.9	308.9	309.0	308.9	308.6	308.3	308.0	307.6
147.5°	322.4	322.6	322.8	322.7	322.4	322.2	321.9	321.6
150°	331.1	331.3	331.6	331.6	331.3	331.1	330.9	330.6
152.5°	339.8	340.1	340.4	340.4	340.1	339.8	339.5	339.2
155°	350.7	351.1	351.5	351.6	351.3	351.1	350.9	350.6
157.5°	360.8	361.4	361.8	361.9	361.6	361.2	360.9	360.5
160°	366.8	367.3	367.8	367.8	367.5	367.2	366.9	366.6
162.5°	372.3	372.8	373.3	373.3	373.1	372.7	372.3	371.9
165°	379.3	379.8	380.3	380.4	380.0	379.7	379.3	379.0
167.5°	385.1	385.6	386.2	386.3	385.9	385.4	385.0	384.7
170°	388.3	388.8	389.4	389.4	389.0	388.5	388.0	387.6
172.5°	390.7	391.2	391.7	391.8	391.3	390.9	390.5	390.0
175°	393.3	393.8	394.4	394.4	394.0	393.5	393.0	392.6
177.5°	394.5	394.8	395.2	395.2	394.8	394.5	394.2	393.8
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6

(END OF REPORT)