

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

Luminaire Tested: **SA2XXRDIP-C865D330U835-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331709  
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-C865D330U835-4F0-1E-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**

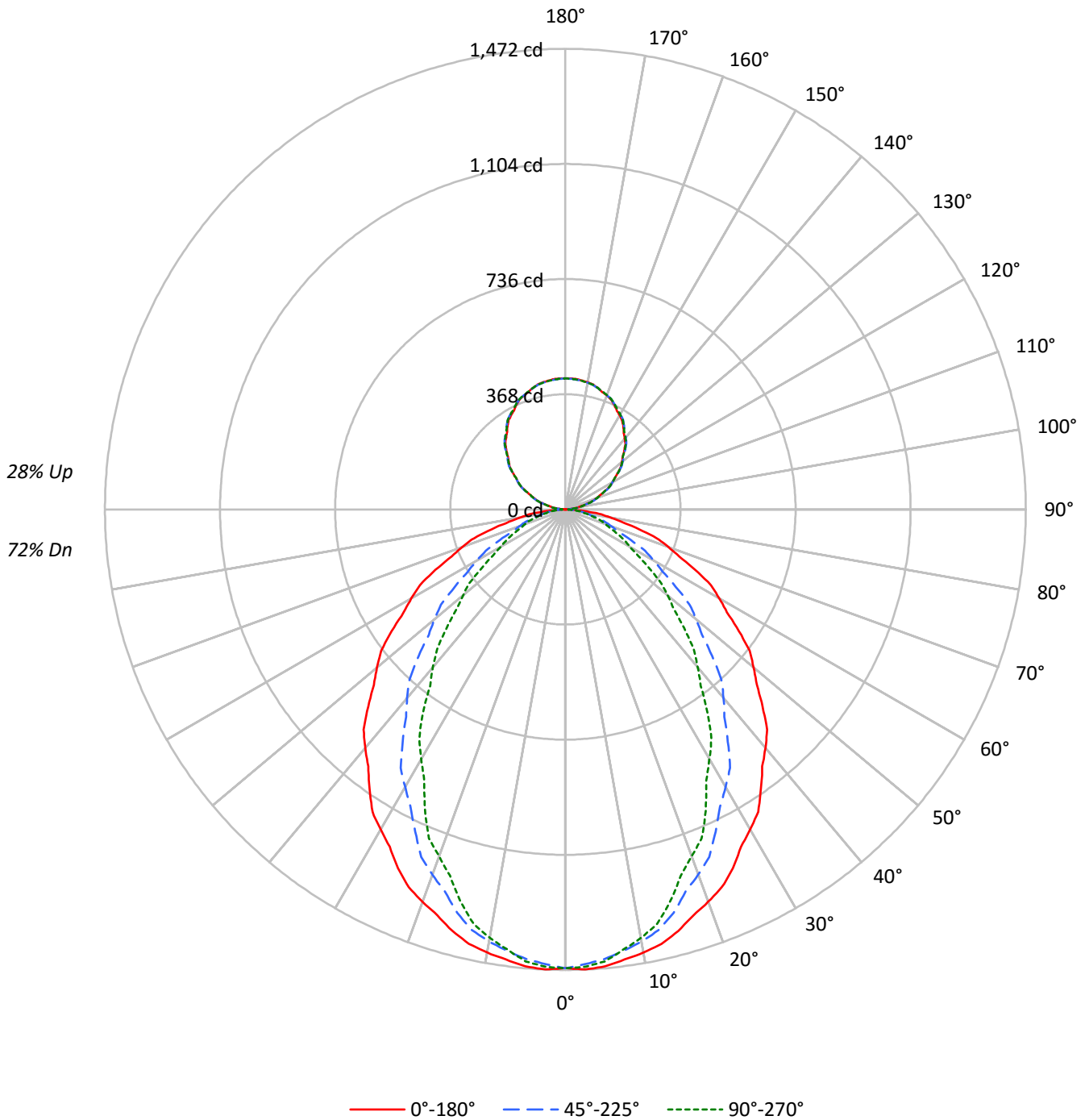
Lumens per Lamp: N/A  
Luminaire Lumens: 4188.1 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

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	50	30	10	0	
RCR																						
0	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	76	76	76	72	
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66	66	66	66	62	
2	95	87	81	76	90	83	78	73	75	71	67	68	65	62	61	59	57	57	57	57	53	
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49	49	49	49	46	
4	80	69	61	55	76	66	59	53	60	54	50	55	50	46	50	46	43	43	43	43	40	
5	74	62	54	48	70	59	52	47	54	48	44	49	45	41	45	41	38	38	38	38	35	
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34	34	34	34	31	
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	33	30	30	30	30	28	
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27	27	27	27	25	
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25	25	25	25	23	
10	52	40	32	27	49	38	31	27	35	29	25	33	28	24	30	26	23	23	23	23	21	

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

	0°	45°	90°
0°	23675	23675	23675
5°	23765	23378	23506
10°	23582	22996	22799
15°	23311	22313	21670
20°	22936	21340	20270
25°	22552	20236	18912
30°	22018	19099	17169
35°	21498	17864	15640
40°	20976	16585	13873
45°	20361	15150	12271
50°	19733	13700	10698
55°	19088	12141	9188
60°	18338	10498	7627
65°	17490	8821	6946
70°	16475	7265	6387
75°	15234	6625	5958
80°	13445	5923	5430
85°	10578	4668	4668



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.2	3.3
10°-20°	376.8	9.0
20°-30°	529.2	12.6
30°-40°	577.1	13.8
40°-50°	530.6	12.7
50°-60°	416.7	9.9
60°-70°	271.7	6.5
70°-80°	140.1	3.3
80°-90°	38.0	0.9
90°-100°	26.5	0.6
100°-110°	82.4	2.0
110°-120°	140.8	3.4
120°-130°	185.2	4.4
130°-140°	207.9	5.0
140°-150°	203.8	4.9
150°-160°	171.0	4.1
160°-170°	113.4	2.7
170°-180°	39.6	0.9
0°-30°	1043.3	24.9
0°-40°	1620.3	38.7
0°-60°	2567.6	61.3
0°-90°	3017.4	72.0
90°-120°	249.8	6.0
90°-150°	846.7	20.2
90°-180°	1171.0	28.0
0°-180°	4188.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1466	1459	1442	1453	1450	139
15°	1395	1378	1335	1310	1296	393
25°	1266	1221	1136	1083	1062	582
35°	1091	1020	906	826	794	682
45°	892	800	664	573	537	688
55°	678	572	431	355	326	606
65°	458	350	231	188	182	454
75°	244	154	106	97	96	258
85°	57	31	25	25	25	67
90°	0	5	12	12	12	3
95°	18	22	23	23	22	21
105°	76	77	78	78	78	80
115°	141	143	143	142	141	140
125°	206	209	208	207	206	184
135°	266	270	271	270	269	205
145°	323	325	328	328	326	202
155°	369	370	371	373	372	170
165°	402	401	401	404	402	113
175°	418	417	416	418	416	40
180°	419	419	419	419	419	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1471.6	1470.4	1469.2	1468.0	1466.9	1465.0	1462.4	1459.8	1457.2	1454.6	1457.0
5°	1466.3	1464.8	1463.3	1461.8	1460.4	1457.7	1453.9	1450.1	1446.2	1442.4	1445.0
7.5°	1451.1	1449.3	1447.5	1445.7	1443.8	1440.7	1436.2	1431.7	1427.2	1422.7	1423.5
10°	1438.4	1436.3	1434.3	1432.2	1430.1	1426.2	1420.3	1414.4	1408.5	1402.6	1401.7
12.5°	1422.5	1419.9	1417.4	1414.9	1412.3	1407.3	1399.7	1392.2	1384.6	1377.1	1375.5
15°	1394.6	1391.4	1388.1	1384.9	1381.6	1375.0	1365.0	1355.0	1344.9	1334.9	1329.3
17.5°	1360.4	1355.4	1350.5	1345.5	1340.6	1331.7	1318.8	1305.9	1293.1	1280.2	1273.6
20°	1334.9	1329.0	1323.1	1317.2	1311.3	1301.0	1286.2	1271.5	1256.8	1242.0	1234.6
22.5°	1307.3	1300.7	1294.1	1287.5	1280.9	1269.3	1252.6	1236.0	1219.4	1202.7	1193.2
25°	1265.9	1256.5	1247.0	1237.6	1228.2	1213.7	1194.2	1174.8	1155.3	1135.9	1123.8
27.5°	1216.0	1205.7	1195.5	1185.2	1175.0	1158.9	1136.9	1115.0	1093.0	1071.1	1057.0
30°	1181.0	1169.8	1158.6	1147.4	1136.2	1118.8	1095.2	1071.6	1048.0	1024.4	1009.4
32.5°	1147.0	1133.9	1120.8	1107.7	1094.6	1076.1	1052.0	1027.9	1003.9	979.8	962.7
35°	1090.7	1075.7	1060.7	1045.6	1030.6	1010.1	984.1	958.2	932.3	906.3	887.7
37.5°	1034.5	1018.0	1001.5	984.9	968.4	946.3	918.7	891.0	863.4	835.7	815.2
40°	995.2	977.5	959.8	942.1	924.4	901.3	872.7	844.1	815.5	786.9	765.9
42.5°	954.9	936.2	917.6	899.0	880.3	856.2	826.7	797.1	767.6	738.0	716.4
45°	891.7	871.9	852.2	832.4	812.7	787.3	756.4	725.4	694.4	663.5	642.5
47.5°	830.1	809.2	788.3	767.3	746.4	719.9	688.0	656.0	624.0	592.1	571.3
50°	785.6	764.6	743.7	722.7	701.8	675.1	642.7	610.2	577.8	545.4	525.0
52.5°	742.0	720.1	698.3	676.4	654.5	627.7	596.0	564.2	532.5	500.8	481.1
55°	678.1	655.1	632.1	609.1	586.1	558.6	526.8	494.9	463.1	431.3	413.6
57.5°	612.5	588.9	565.3	541.7	518.2	491.1	460.4	429.8	399.2	368.6	352.4
60°	567.9	544.3	520.8	497.2	473.6	446.6	416.2	385.8	355.5	325.1	310.1
62.5°	524.4	500.8	477.2	453.6	430.0	403.8	374.8	345.9	316.9	287.9	273.6
65°	457.8	433.9	410.0	386.1	362.3	337.0	310.5	284.0	257.4	230.9	220.9
67.5°	393.6	369.9	346.2	322.4	298.7	274.9	251.1	227.2	203.3	179.4	174.8
70°	349.0	326.0	303.0	280.0	257.0	235.3	215.0	194.6	174.3	153.9	151.0
72.5°	306.5	284.5	262.4	240.4	218.3	199.1	182.8	166.4	150.1	133.8	131.3
75°	244.2	223.5	202.9	182.2	161.6	146.3	136.2	126.2	116.2	106.2	104.1
77.5°	182.9	164.7	146.6	128.5	110.4	99.0	94.1	89.3	84.5	79.6	78.4
80°	144.6	129.6	114.6	99.5	84.5	75.5	72.5	69.6	66.6	63.7	62.5
82.5°	109.6	97.9	86.1	74.4	62.7	55.8	53.8	51.8	49.8	47.8	47.1
85°	57.1	50.9	44.7	38.5	32.3	28.8	27.9	27.0	26.1	25.2	25.2
87.5°	17.1	15.4	13.7	12.0	10.3	9.6	9.9	10.3	10.6	11.0	10.7
90°	0.4	1.3	2.2	3.2	4.1	5.5	7.2	8.9	10.6	12.4	12.2
92.5°	6.3	7.0	7.7	8.4	9.1	9.6	10.0	10.4	10.8	11.2	11.3
95°	18.4	19.2	19.9	20.7	21.5	22.0	22.1	22.3	22.5	22.6	22.6
97.5°	33.6	34.3	34.9	35.6	36.3	36.8	37.1	37.4	37.7	38.0	38.0
100°	44.9	45.5	46.1	46.8	47.4	47.8	48.0	48.3	48.5	48.8	48.8
102.5°	56.7	57.2	57.7	58.2	58.7	59.2	59.4	59.7	60.0	60.3	60.4
105°	76.0	76.2	76.4	76.7	76.9	77.1	77.3	77.4	77.6	77.7	77.9
107.5°	95.3	95.7	96.0	96.4	96.7	96.9	96.9	96.9	96.9	96.9	96.9
110°	107.8	108.2	108.7	109.2	109.6	109.9	109.9	109.9	109.9	109.9	109.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	121.3	121.8	122.3	122.7	123.2	123.4	123.3	123.3	123.2	123.2	123.0
115°	141.3	141.8	142.3	142.7	143.2	143.4	143.2	143.0	142.9	142.7	142.7
117.5°	161.2	161.9	162.5	163.1	163.8	163.9	163.4	163.0	162.5	162.1	161.9
120°	174.5	175.2	175.8	176.4	177.0	177.0	176.4	175.8	175.2	174.5	174.5
122.5°	186.7	187.4	188.2	188.9	189.7	189.9	189.4	189.0	188.5	188.1	187.9
125°	205.6	206.3	207.0	207.7	208.4	208.7	208.4	208.2	208.0	207.7	207.5
127.5°	224.1	225.0	225.9	226.7	227.6	227.9	227.7	227.4	227.1	226.8	226.5
130°	235.7	236.7	237.7	238.7	239.7	240.2	240.0	239.9	239.7	239.5	239.4
132.5°	248.7	249.5	250.3	251.1	252.0	252.4	252.4	252.5	252.5	252.5	252.2
135°	266.0	266.9	267.8	268.6	269.5	270.0	270.2	270.3	270.5	270.6	270.5
137.5°	284.3	285.0	285.7	286.5	287.2	287.6	287.8	288.0	288.2	288.4	288.4
140°	295.4	296.1	296.8	297.5	298.2	298.7	299.1	299.5	299.9	300.3	300.3
142.5°	306.7	307.4	308.1	308.8	309.5	310.0	310.2	310.5	310.8	311.0	311.1
145°	322.9	323.5	324.0	324.6	325.1	325.6	326.1	326.6	327.0	327.5	327.6
147.5°	337.4	338.1	338.7	339.4	340.0	340.5	340.8	341.2	341.5	341.8	342.0
150°	347.3	347.8	348.2	348.7	349.2	349.6	349.9	350.2	350.5	350.8	351.1
152.5°	356.1	356.5	357.0	357.5	357.9	358.4	358.7	359.1	359.5	359.9	360.2
155°	369.2	369.4	369.7	369.9	370.1	370.4	370.6	370.8	371.1	371.3	371.7
157.5°	380.4	380.6	380.7	380.9	381.1	381.2	381.4	381.5	381.6	381.8	382.3
160°	387.2	387.4	387.5	387.7	387.8	388.0	388.0	388.1	388.2	388.3	388.7
162.5°	393.4	393.5	393.5	393.5	393.6	393.6	393.7	393.8	393.9	393.9	394.5
165°	401.7	401.6	401.5	401.5	401.4	401.3	401.3	401.3	401.3	401.3	401.9
167.5°	408.6	408.4	408.2	407.9	407.7	407.6	407.5	407.5	407.5	407.5	408.0
170°	412.3	412.1	411.8	411.6	411.4	411.2	411.1	411.0	411.0	410.9	411.4
172.5°	414.8	414.6	414.4	414.1	413.9	413.7	413.7	413.6	413.5	413.4	414.0
175°	418.0	417.7	417.5	417.2	417.0	416.8	416.7	416.5	416.3	416.2	416.7
177.5°	419.2	419.0	418.8	418.7	418.5	418.3	418.2	418.1	417.9	417.8	418.2
180°	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1459.3	1461.7	1464.0	1465.0	1464.5	1464.0	1463.6	1463.1
5°	1447.7	1450.3	1453.0	1453.9	1453.0	1452.1	1451.2	1450.3
7.5°	1424.3	1425.0	1425.8	1425.4	1423.9	1422.4	1420.8	1419.3
10°	1400.8	1399.9	1399.0	1397.7	1395.9	1394.2	1392.4	1390.6
12.5°	1373.9	1372.3	1370.7	1368.5	1365.5	1362.6	1359.6	1356.7
15°	1323.7	1318.1	1312.5	1308.2	1305.3	1302.3	1299.4	1296.4
17.5°	1266.9	1260.2	1253.6	1247.7	1242.6	1237.6	1232.5	1227.4
20°	1227.3	1219.9	1212.5	1205.6	1199.1	1192.6	1186.1	1179.7
22.5°	1183.8	1174.3	1164.8	1157.6	1152.8	1147.9	1143.1	1138.3
25°	1111.7	1099.6	1087.5	1079.2	1074.8	1070.4	1066.0	1061.6
27.5°	1042.9	1028.8	1014.7	1004.2	997.2	990.1	983.1	976.1
30°	994.3	979.3	964.2	952.7	944.8	936.8	928.9	920.9
32.5°	945.5	928.3	911.2	898.8	891.4	883.9	876.4	868.9
35°	869.1	850.6	832.0	819.5	813.0	806.5	800.0	793.5
37.5°	794.8	774.3	753.9	739.9	732.5	725.0	717.6	710.2
40°	745.0	724.1	703.1	688.8	681.2	673.5	665.8	658.2
42.5°	694.8	673.1	651.5	636.9	629.5	622.1	614.6	607.2
45°	621.6	600.7	579.7	565.7	558.6	551.6	544.5	537.4
47.5°	550.4	529.6	508.8	495.2	488.8	482.3	475.9	469.5
50°	504.7	484.3	464.0	450.7	444.5	438.3	432.1	425.9
52.5°	461.5	441.9	422.2	409.6	403.8	398.1	392.4	386.7
55°	395.9	378.2	360.5	348.8	343.2	337.6	332.0	326.4
57.5°	336.2	320.0	303.8	293.3	288.6	283.8	279.1	274.4
60°	295.0	280.0	264.9	255.1	250.3	245.6	240.9	236.2
62.5°	259.3	245.0	230.6	222.0	219.2	216.4	213.5	210.7
65°	210.8	200.8	190.8	185.3	184.4	183.6	182.7	181.8
67.5°	170.2	165.6	161.0	158.2	157.3	156.3	155.4	154.5
70°	148.0	145.1	142.1	140.1	138.9	137.7	136.5	135.3
72.5°	128.8	126.3	123.8	122.3	121.5	120.8	120.1	119.4
75°	102.0	100.0	97.9	96.7	96.4	96.1	95.8	95.5
77.5°	77.3	76.1	74.9	74.1	73.6	73.1	72.7	72.2
80°	61.3	60.2	59.0	58.4	58.4	58.4	58.4	58.4
82.5°	46.4	45.6	44.9	44.6	44.6	44.6	44.6	44.6
85°	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
87.5°	10.4	10.2	9.9	9.8	9.8	9.8	9.8	9.8
90°	12.1	11.9	11.7	11.7	11.8	11.9	11.9	12.0
92.5°	11.3	11.3	11.4	11.4	11.4	11.4	11.4	11.4
95°	22.6	22.6	22.6	22.5	22.4	22.2	22.1	21.9
97.5°	38.0	38.0	38.0	38.0	38.0	38.0	38.0	37.9
100°	48.8	48.8	48.8	48.7	48.6	48.6	48.5	48.4
102.5°	60.5	60.5	60.6	60.6	60.5	60.4	60.4	60.3
105°	78.0	78.2	78.4	78.4	78.4	78.4	78.4	78.4
107.5°	97.0	97.1	97.1	97.0	96.6	96.3	95.9	95.5
110°	109.9	109.9	109.9	109.8	109.5	109.3	109.1	108.8





TEST NUMBER: P331709

CATALOG NUMBER: SA2XXRDIP-C865D330U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	122.8	122.6	122.4	122.2	122.1	121.9	121.7	121.5
115°	142.6	142.5	142.4	142.3	142.0	141.8	141.6	141.3
117.5°	161.7	161.5	161.3	161.1	160.9	160.7	160.4	160.2
120°	174.5	174.5	174.5	174.4	174.2	173.9	173.7	173.5
122.5°	187.7	187.5	187.3	187.2	187.0	186.8	186.6	186.5
125°	207.3	207.0	206.8	206.6	206.6	206.5	206.4	206.3
127.5°	226.3	226.0	225.7	225.4	225.2	224.9	224.7	224.4
130°	239.2	239.1	238.9	238.7	238.4	238.0	237.7	237.4
132.5°	251.8	251.5	251.2	250.9	250.6	250.4	250.1	249.9
135°	270.5	270.4	270.3	270.2	269.9	269.7	269.5	269.2
137.5°	288.3	288.2	288.2	288.0	287.7	287.4	287.1	286.7
140°	300.3	300.3	300.3	300.1	299.8	299.5	299.2	298.9
142.5°	311.2	311.2	311.3	311.2	310.9	310.5	310.2	309.9
145°	327.7	327.7	327.8	327.7	327.4	327.1	326.8	326.4
147.5°	342.1	342.3	342.5	342.4	342.1	341.8	341.5	341.2
150°	351.3	351.5	351.8	351.8	351.5	351.3	351.1	350.8
152.5°	360.5	360.8	361.1	361.1	360.8	360.5	360.2	359.9
155°	372.1	372.5	372.9	373.0	372.7	372.5	372.3	372.0
157.5°	382.8	383.4	383.9	384.0	383.6	383.2	382.9	382.5
160°	389.2	389.7	390.2	390.2	389.9	389.6	389.3	389.0
162.5°	395.0	395.5	396.1	396.1	395.8	395.4	395.0	394.6
165°	402.4	403.0	403.5	403.6	403.2	402.8	402.4	402.1
167.5°	408.6	409.1	409.7	409.8	409.4	408.9	408.5	408.1
170°	412.0	412.5	413.1	413.1	412.7	412.2	411.7	411.2
172.5°	414.5	415.1	415.6	415.7	415.2	414.7	414.3	413.8
175°	417.3	417.8	418.4	418.4	418.0	417.5	417.0	416.5
177.5°	418.6	418.9	419.3	419.3	418.9	418.6	418.2	417.8
180°	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7

(END OF REPORT)