

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: P331382

Luminaire Tested: **SA2XXDIP-C865D330U835-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331382
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: SA2XXDIP-C865D330U835-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

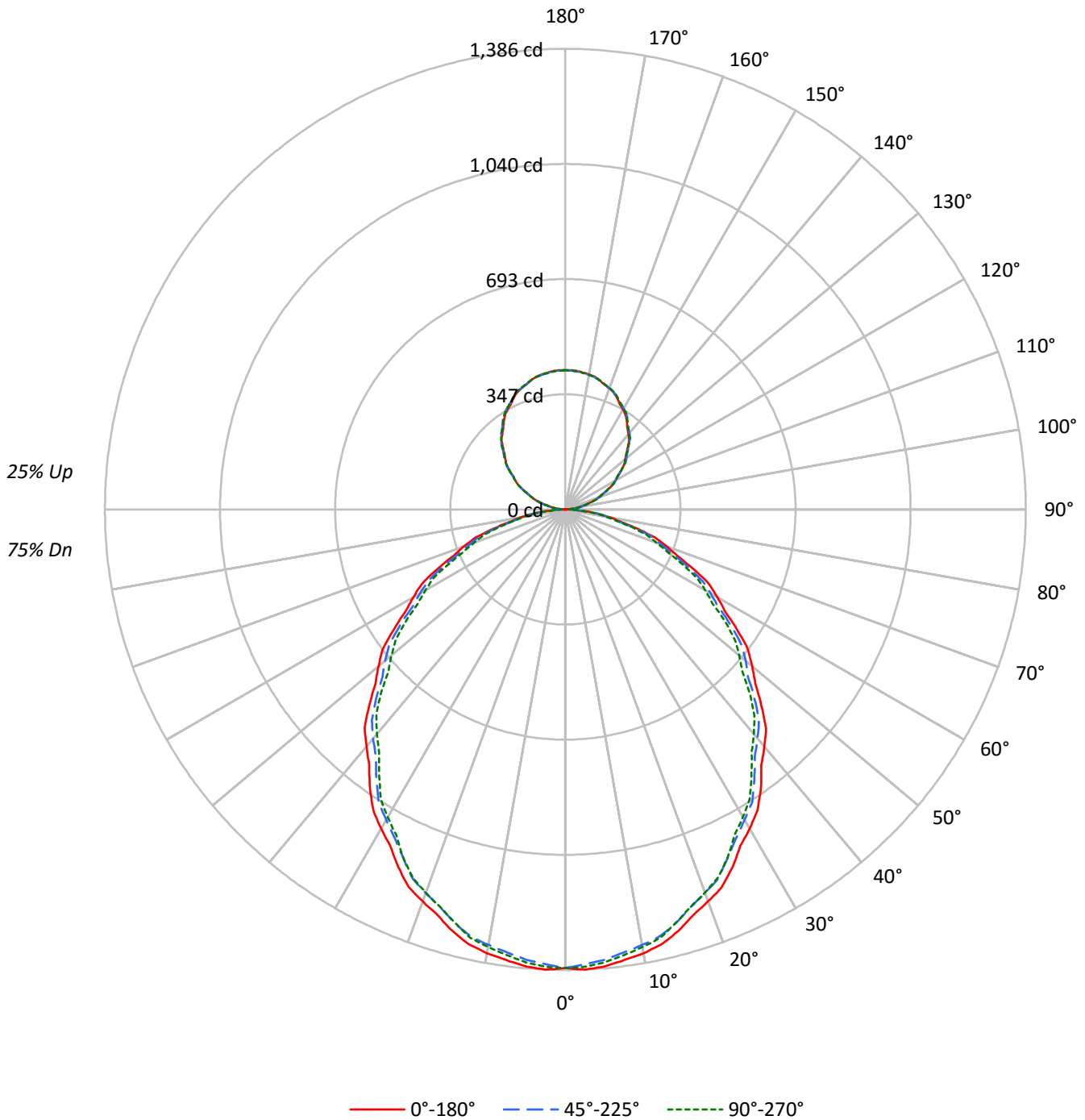
Lumens per Lamp: N/A
Luminaire Lumens: 4683.3 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	113	113	113	113	108	108	108	108	97	97	97	88	88	88	79	79	79	75
1	103	99	95	91	98	94	91	87	85	83	80	77	75	73	70	68	67	63
2	94	86	80	75	89	82	77	72	75	70	66	68	64	61	62	59	56	53
3	86	76	68	62	81	73	66	60	66	61	56	60	56	52	55	51	48	45
4	79	67	59	53	75	64	57	51	59	53	48	54	49	45	49	45	41	38
5	72	60	52	45	69	58	50	44	53	46	41	48	43	39	44	40	36	33
6	67	54	46	40	63	52	44	39	48	41	36	44	38	34	40	35	32	29
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	37	32	28	26
8	58	45	37	31	55	43	36	30	40	33	29	37	31	27	34	29	25	23
9	54	41	33	28	51	39	32	27	36	30	26	34	28	24	31	26	23	21
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22281	22281	22281
5°	22366	22044	22174
10°	22233	21820	21930
15°	21959	21538	21514
20°	21569	21113	21089
25°	21180	20591	20591
30°	20681	20113	19939
35°	20217	19537	19249
40°	19633	18963	18598
45°	19057	18393	17938
50°	18432	17799	17166
55°	17779	17106	16473
60°	17053	16281	15684
65°	16275	15461	14751
70°	15286	14469	13780
75°	13905	13325	12994
80°	12338	11967	11353
85°	10078	9596	8596



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.8	2.8
10°-20°	365.1	7.8
20°-30°	536.7	11.5
30°-40°	623.4	13.3
40°-50°	622.7	13.3
50°-60°	543.1	11.6
60°-70°	401.6	8.6
70°-80°	227.4	4.9
80°-90°	62.8	1.3
90°-100°	26.5	0.6
100°-110°	82.4	1.8
110°-120°	140.8	3.0
120°-130°	185.2	4.0
130°-140°	207.9	4.4
140°-150°	203.8	4.4
150°-160°	171.0	3.7
160°-170°	113.4	2.4
170°-180°	39.6	0.8
0°-30°	1031.6	22.0
0°-40°	1655.0	35.3
0°-60°	2820.8	60.2
0°-90°	3512.6	75.0
90°-120°	249.8	5.3
90°-150°	846.7	18.1
90°-180°	1171.0	25.0
0°-180°	4683.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1380	1380	1380	1380	1380	
5°	1380	1374	1360	1370	1368	131
15°	1314	1305	1288	1293	1287	370
25°	1189	1178	1156	1158	1156	547
35°	1026	1012	991	983	977	640
45°	835	825	806	791	786	644
55°	632	623	608	592	585	565
65°	426	418	405	393	386	421
75°	223	220	214	206	208	238
85°	54	53	52	48	46	62
90°	0	5	12	12	12	4
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°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1386.4	1385.2	1384.0	1382.9	1381.7	1379.8	1377.2	1374.6	1372.0	1369.4	1371.8
5°	1380.0	1378.8	1377.7	1376.5	1375.3	1373.1	1369.9	1366.6	1363.4	1360.1	1362.5
7.5°	1367.8	1366.0	1364.2	1362.3	1360.5	1357.9	1354.6	1351.3	1348.0	1344.7	1347.1
10°	1356.1	1354.1	1352.0	1349.9	1347.9	1345.1	1341.5	1338.0	1334.5	1330.9	1333.3
12.5°	1340.2	1338.4	1336.6	1334.7	1332.9	1330.2	1326.7	1323.1	1319.6	1316.1	1317.7
15°	1313.7	1311.9	1310.1	1308.4	1306.6	1303.8	1300.0	1296.1	1292.3	1288.5	1289.6
17.5°	1279.7	1277.9	1276.2	1274.4	1272.6	1269.8	1265.9	1262.0	1258.1	1254.2	1255.6
20°	1255.3	1253.5	1251.8	1250.0	1248.2	1245.3	1241.1	1237.0	1232.9	1228.8	1229.6
22.5°	1230.9	1228.4	1225.9	1223.4	1221.0	1217.8	1213.9	1210.0	1206.1	1202.2	1202.4
25°	1188.9	1186.6	1184.2	1181.9	1179.5	1175.8	1170.8	1165.8	1160.8	1155.8	1156.4
27.5°	1141.2	1139.1	1136.9	1134.8	1132.7	1129.6	1125.7	1121.7	1117.8	1113.8	1113.0
30°	1109.3	1107.0	1104.6	1102.3	1099.9	1096.5	1092.1	1087.7	1083.2	1078.8	1077.9
32.5°	1075.4	1073.5	1071.6	1069.7	1067.8	1064.5	1059.9	1055.2	1050.6	1045.9	1044.3
35°	1025.7	1022.8	1019.8	1016.9	1013.9	1010.1	1005.4	1000.7	995.9	991.2	989.5
37.5°	969.7	967.1	964.5	961.9	959.4	955.7	951.0	946.3	941.5	936.8	934.6
40°	931.5	929.2	926.8	924.4	922.1	918.5	913.8	909.1	904.4	899.7	897.0
42.5°	894.4	892.0	889.6	887.3	884.9	881.4	876.7	872.0	867.2	862.5	859.6
45°	834.6	832.6	830.5	828.5	826.4	823.1	818.7	814.3	809.9	805.5	802.2
47.5°	775.2	773.3	771.3	769.4	767.4	764.1	759.5	754.9	750.3	745.7	742.3
50°	733.8	732.3	730.9	729.4	727.9	725.1	721.0	716.8	712.7	708.6	704.5
52.5°	693.5	691.5	689.6	687.6	685.7	682.8	678.9	675.0	671.1	667.2	663.8
55°	631.6	629.9	628.1	626.3	624.5	621.9	618.4	614.8	611.3	607.7	604.2
57.5°	569.5	568.1	566.7	565.3	563.9	561.2	557.3	553.4	549.5	545.6	542.2
60°	528.1	526.9	525.8	524.6	523.4	520.8	516.6	512.5	508.4	504.2	501.0
62.5°	487.8	485.9	484.0	482.1	480.2	477.7	474.5	471.3	468.1	465.0	462.0
65°	426.0	424.2	422.4	420.6	418.9	416.5	413.6	410.6	407.7	404.7	402.1
67.5°	363.1	361.6	360.2	358.8	357.4	355.4	352.7	350.0	347.4	344.7	342.7
70°	323.8	322.6	321.4	320.2	319.1	317.1	314.5	311.8	309.2	306.5	304.5
72.5°	283.4	282.3	281.1	279.9	278.7	277.3	275.6	273.9	272.1	270.4	268.4
75°	222.9	222.3	221.7	221.2	220.6	219.5	218.1	216.6	215.1	213.6	211.9
77.5°	168.8	167.8	166.8	165.8	164.8	164.0	163.4	162.8	162.2	161.6	160.7
80°	132.7	132.4	132.1	131.8	131.5	131.1	130.5	129.9	129.3	128.7	127.8
82.5°	98.7	98.7	98.6	98.5	98.5	98.3	97.9	97.6	97.2	96.9	95.7
85°	54.4	54.1	53.8	53.5	53.2	52.9	52.6	52.3	52.0	51.8	50.9
87.5°	19.2	18.9	18.6	18.3	18.0	17.8	17.7	17.6	17.5	17.3	16.6
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°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1374.1	1376.5	1378.8	1379.8	1379.3	1378.8	1378.4	1377.9
5°	1364.8	1367.2	1369.6	1370.4	1369.9	1369.3	1368.7	1368.1
7.5°	1349.4	1351.8	1354.2	1355.0	1354.4	1353.7	1353.1	1352.4
10°	1335.6	1338.0	1340.4	1341.1	1340.2	1339.3	1338.4	1337.6
12.5°	1319.4	1321.0	1322.7	1323.2	1322.5	1321.9	1321.2	1320.6
15°	1290.8	1292.0	1293.2	1293.0	1291.6	1290.1	1288.6	1287.1
17.5°	1256.9	1258.3	1259.7	1259.6	1258.2	1256.8	1255.4	1254.0
20°	1230.5	1231.4	1232.3	1232.1	1231.0	1229.8	1228.6	1227.4
22.5°	1202.6	1202.7	1202.9	1202.7	1201.9	1201.2	1200.5	1199.8
25°	1157.0	1157.5	1158.1	1158.1	1157.5	1157.0	1156.4	1155.8
27.5°	1112.1	1111.2	1110.3	1109.2	1107.7	1106.3	1104.9	1103.5
30°	1077.0	1076.2	1075.3	1074.2	1073.1	1071.9	1070.7	1069.5
32.5°	1042.7	1041.1	1039.5	1038.1	1037.0	1035.8	1034.6	1033.4
35°	987.7	985.9	984.2	982.5	981.1	979.6	978.1	976.6
37.5°	932.5	930.3	928.1	926.3	924.9	923.5	922.1	920.6
40°	894.4	891.7	889.1	887.1	886.0	884.8	883.6	882.4
42.5°	856.7	853.8	851.0	848.7	847.0	845.4	843.7	842.1
45°	799.0	795.7	792.5	790.3	789.1	787.9	786.7	785.6
47.5°	738.9	735.5	732.1	729.5	727.8	726.1	724.4	722.7
50°	700.3	696.2	692.1	689.3	687.8	686.3	684.9	683.4
52.5°	660.3	656.9	653.5	650.8	648.9	646.9	645.0	643.0
55°	600.7	597.1	593.6	591.1	589.6	588.1	586.7	585.2
57.5°	538.7	535.2	531.7	529.4	528.3	527.2	526.1	524.9
60°	497.8	494.5	491.3	489.2	488.3	487.4	486.5	485.7
62.5°	458.9	455.9	452.9	450.9	449.7	448.6	447.5	446.4
65°	399.4	396.8	394.1	392.0	390.6	389.1	387.6	386.1
67.5°	340.6	338.5	336.5	334.9	333.7	332.5	331.3	330.1
70°	302.4	300.3	298.3	296.6	295.5	294.3	293.1	291.9
72.5°	266.3	264.2	262.2	260.7	259.7	258.8	257.8	256.9
75°	210.1	208.3	206.6	206.0	206.6	207.2	207.7	208.3
77.5°	159.9	159.0	158.1	157.2	156.4	155.6	154.8	153.9
80°	126.9	126.1	125.2	124.4	123.8	123.3	122.7	122.1
82.5°	94.6	93.5	92.4	91.8	91.6	91.5	91.4	91.3
85°	50.0	49.1	48.2	47.6	47.3	47.0	46.7	46.4
87.5°	15.9	15.1	14.4	13.9	13.7	13.5	13.2	13.0
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: P331382

CATALOG NUMBER: SA2XXDIP-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)