

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: P331708

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

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331708
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
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-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

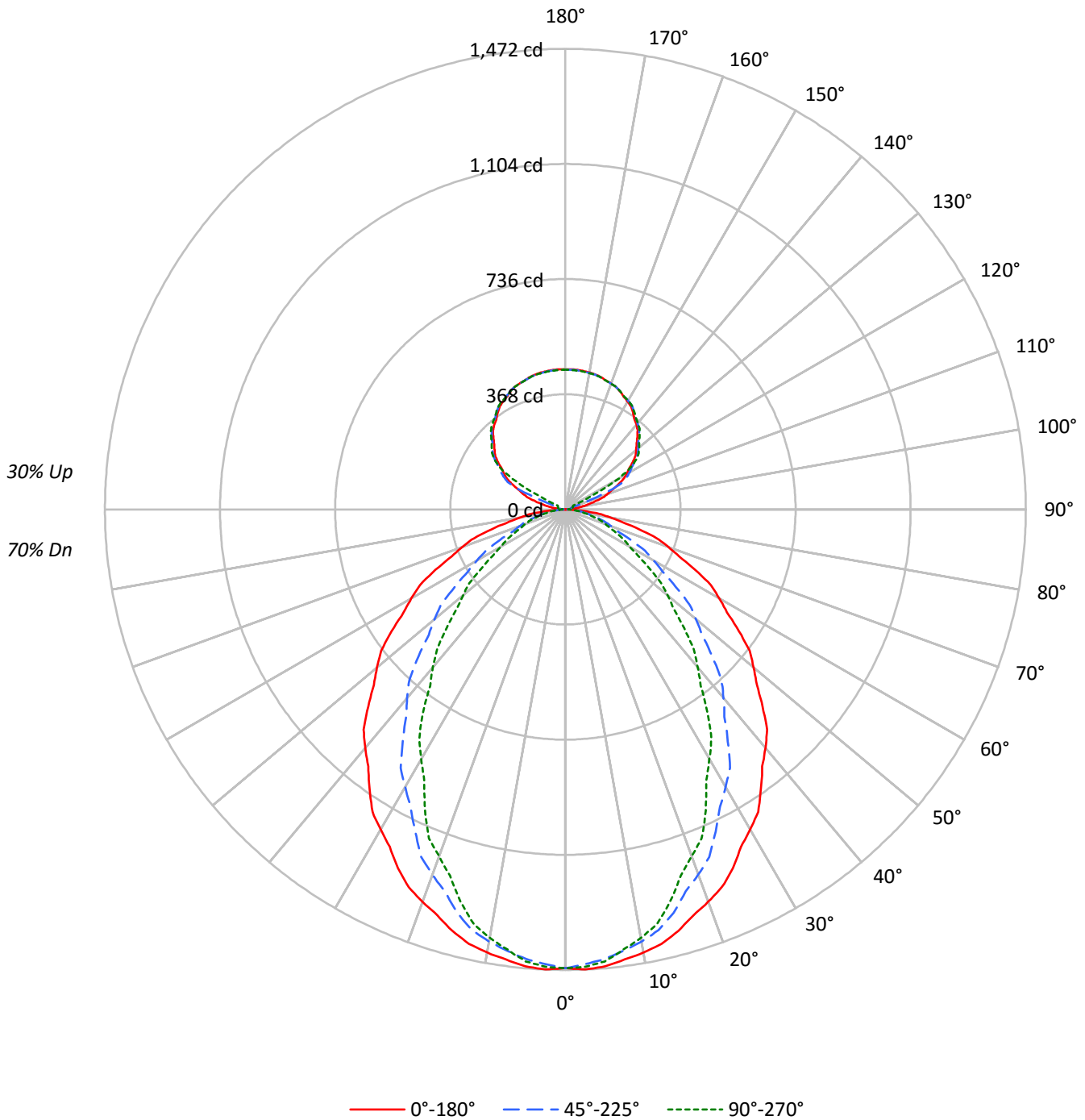
Lumens per Lamp: N/A
Luminaire Lumens: 4326.3 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



TEST NUMBER: P331708
CATALOG NUMBER: SA2XXRDIP-C865D330U835-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P331708

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

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	106	106	106	106	94	94	94	84	84	84	74	74	74	74	74	74	70	
1	103	99	95	92	97	93	90	87	84	81	79	75	73	71	67	65	64	64	64	64	60	
2	94	87	81	76	89	83	77	73	74	70	67	67	63	61	60	57	55	55	55	55	51	
3	86	77	70	64	82	73	67	62	66	61	57	60	55	52	53	50	48	48	48	48	44	
4	79	69	61	55	75	65	58	53	59	54	49	54	49	45	48	45	42	42	42	42	39	
5	73	62	54	48	69	59	52	46	53	47	43	48	44	40	44	40	37	37	37	37	34	
6	68	56	48	42	64	53	46	41	49	42	38	44	39	35	40	36	33	33	33	33	30	
7	63	51	43	37	60	49	41	36	44	38	34	40	35	32	37	33	29	29	29	29	27	
8	59	46	39	33	56	44	37	32	41	35	30	37	32	28	34	30	27	27	27	27	24	
9	55	43	35	30	52	41	34	29	37	32	27	34	29	26	31	27	24	24	24	24	22	
10	51	39	32	27	49	38	31	26	35	29	25	32	27	24	29	25	22	22	22	22	20	

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



TEST NUMBER: P331708

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.2	3.2
10°-20°	376.8	8.7
20°-30°	529.2	12.2
30°-40°	577.1	13.3
40°-50°	530.6	12.3
50°-60°	416.7	9.6
60°-70°	271.7	6.3
70°-80°	140.1	3.2
80°-90°	37.4	0.9
90°-100°	14.9	0.3
100°-110°	54.7	1.3
110°-120°	146.1	3.4
120°-130°	241.2	5.6
130°-140°	256.5	5.9
140°-150°	238.4	5.5
150°-160°	191.7	4.4
160°-170°	123.5	2.9
170°-180°	42.5	1.0
0°-30°	1043.3	24.1
0°-40°	1620.3	37.5
0°-60°	2567.6	59.3
0°-90°	3016.9	69.7
90°-120°	215.7	5.0
90°-150°	951.8	22.0
90°-180°	1309.0	30.3
0°-180°	4326.3	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	4	6	8	9	3
95°	21	11	13	14	14	26
105°	98	103	20	23	25	105
115°	186	192	200	57	26	183
125°	263	267	273	275	276	234
135°	325	330	333	336	336	251
145°	377	377	382	385	383	236
155°	416	413	416	418	416	191
165°	438	436	437	439	437	124
175°	448	446	446	448	445	43
180°	447	447	447	447	447	



TEST NUMBER: P331708

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

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°	17.0	15.3	13.6	11.9	10.1	9.3	9.4	9.6	9.7	9.8	9.6
90°	0.3	1.1	1.9	2.7	3.5	4.2	4.7	5.3	5.9	6.5	6.8
92.5°	6.5	6.5	6.4	6.3	6.2	6.4	6.6	6.9	7.2	7.5	7.7
95°	21.0	18.6	16.3	13.9	11.5	10.6	11.1	11.6	12.1	12.6	13.0
97.5°	41.7	35.0	28.3	21.7	15.0	12.2	13.4	14.5	15.7	16.9	17.2
100°	57.2	47.4	37.5	27.7	17.9	13.5	14.8	16.0	17.2	18.4	19.0
102.5°	74.3	72.2	70.1	68.1	66.0	59.8	49.6	39.4	29.2	18.9	19.7
105°	98.3	100.4	102.6	104.8	106.9	98.2	78.6	59.0	39.3	19.7	20.5
107.5°	125.6	127.4	129.1	130.9	132.6	121.7	98.2	74.7	51.1	27.6	26.8
110°	143.2	144.7	146.3	147.8	149.3	139.6	118.9	98.1	77.3	56.6	49.4



TEST NUMBER: P331708

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.8	161.1	162.5	163.8	165.1	163.2	158.1	153.0	147.8	142.7	116.5
115°	185.9	187.1	188.4	189.6	190.8	192.3	194.1	195.9	197.7	199.5	166.2
117.5°	209.3	210.6	212.0	213.4	214.7	216.0	217.3	218.5	219.7	221.0	212.9
120°	226.3	227.4	228.5	229.6	230.6	231.8	233.1	234.4	235.7	237.0	237.9
122.5°	240.8	242.0	243.1	244.2	245.4	246.6	248.0	249.4	250.9	252.3	252.8
125°	262.9	263.8	264.7	265.7	266.6	267.8	269.1	270.5	271.8	273.2	273.7
127.5°	282.8	283.9	284.9	286.0	287.0	288.0	289.0	290.1	291.1	292.1	292.8
130°	295.5	296.7	297.8	299.0	300.1	301.1	301.9	302.7	303.5	304.3	305.0
132.5°	308.5	309.4	310.4	311.4	312.4	313.2	314.0	314.8	315.6	316.4	317.1
135°	325.3	326.4	327.6	328.7	329.9	330.8	331.4	332.1	332.7	333.4	334.1
137.5°	342.3	343.1	343.9	344.7	345.5	346.3	347.0	347.7	348.5	349.2	349.9
140°	353.4	354.0	354.5	355.1	355.7	356.4	357.2	358.0	358.8	359.5	360.2
142.5°	362.7	363.2	363.7	364.3	364.8	365.5	366.4	367.3	368.2	369.1	369.7
145°	377.3	377.3	377.2	377.1	377.0	377.6	378.8	380.1	381.3	382.5	383.0
147.5°	390.1	389.8	389.5	389.2	389.0	389.4	390.6	391.9	393.1	394.3	394.6
150°	398.3	397.8	397.3	396.8	396.3	396.7	397.8	399.0	400.1	401.3	401.7
152.5°	405.3	404.8	404.2	403.6	403.1	403.3	404.4	405.5	406.6	407.7	408.1
155°	415.5	414.8	414.2	413.5	412.9	413.0	413.9	414.7	415.6	416.4	416.9
157.5°	423.4	422.9	422.3	421.8	421.2	421.3	421.9	422.5	423.1	423.7	424.2
160°	428.1	427.7	427.2	426.8	426.4	426.4	426.8	427.2	427.7	428.1	428.5
162.5°	432.2	431.8	431.4	430.9	430.5	430.5	430.8	431.2	431.6	432.0	432.5
165°	437.8	437.4	436.9	436.5	436.1	436.0	436.2	436.4	436.6	436.8	437.3
167.5°	441.9	441.5	441.1	440.6	440.2	440.1	440.3	440.5	440.7	440.9	441.4
170°	444.3	443.8	443.4	443.0	442.5	442.4	442.5	442.7	442.8	443.0	443.5
172.5°	445.8	445.4	444.9	444.5	444.1	443.9	444.1	444.2	444.4	444.5	445.0
175°	447.8	447.3	446.8	446.3	445.8	445.6	445.8	445.9	446.1	446.2	446.7
177.5°	448.1	447.7	447.3	446.9	446.5	446.4	446.4	446.5	446.5	446.6	447.0
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8



TEST NUMBER: P331708

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

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°	9.5	9.3	9.1	9.1	9.1	9.1	9.1	9.2
90°	7.2	7.5	7.9	8.2	8.3	8.4	8.6	8.7
92.5°	7.9	8.1	8.2	8.4	8.5	8.6	8.6	8.7
95°	13.3	13.7	14.0	14.2	14.1	14.0	14.0	13.9
97.5°	17.5	17.7	18.0	18.2	18.3	18.4	18.5	18.6
100°	19.6	20.2	20.7	21.1	21.2	21.4	21.5	21.7
102.5°	20.4	21.2	21.9	22.4	22.6	22.8	23.0	23.2
105°	21.3	22.1	22.9	23.4	23.7	24.0	24.3	24.6
107.5°	26.0	25.2	24.4	24.1	24.4	24.7	25.0	25.3
110°	42.2	35.0	27.8	24.4	24.7	25.0	25.3	25.5



TEST NUMBER: P331708

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	90.3	64.1	37.9	24.9	25.1	25.3	25.6	25.8
115°	133.0	99.7	66.4	47.2	42.0	36.9	31.7	26.5
117.5°	204.9	196.8	188.8	176.3	159.3	142.3	125.3	108.3
120°	238.7	239.6	240.4	236.0	226.3	216.6	206.9	197.2
122.5°	253.3	253.8	254.3	253.6	251.8	249.9	248.0	246.1
125°	274.2	274.7	275.2	275.6	275.8	276.0	276.2	276.4
127.5°	293.6	294.3	295.0	295.4	295.5	295.5	295.5	295.6
130°	305.8	306.6	307.4	307.8	307.7	307.6	307.6	307.5
132.5°	317.8	318.4	319.1	319.4	319.3	319.3	319.2	319.1
135°	334.8	335.5	336.2	336.5	336.4	336.2	336.1	335.9
137.5°	350.6	351.3	352.0	352.2	352.0	351.8	351.5	351.3
140°	360.8	361.5	362.1	362.3	361.9	361.6	361.2	360.8
142.5°	370.3	370.9	371.5	371.6	371.2	370.9	370.5	370.1
145°	383.5	384.0	384.5	384.6	384.2	383.9	383.5	383.1
147.5°	395.0	395.4	395.8	395.8	395.5	395.2	394.9	394.6
150°	402.1	402.5	403.0	403.0	402.7	402.3	401.9	401.6
152.5°	408.6	409.0	409.4	409.4	408.9	408.5	408.0	407.5
155°	417.3	417.7	418.2	418.1	417.5	417.0	416.4	415.8
157.5°	424.7	425.2	425.6	425.6	425.0	424.5	423.9	423.4
160°	429.0	429.4	429.8	429.8	429.3	428.8	428.3	427.8
162.5°	432.9	433.4	433.9	433.9	433.2	432.6	432.0	431.4
165°	437.8	438.3	438.8	438.8	438.3	437.8	437.3	436.8
167.5°	441.9	442.4	442.9	442.8	442.2	441.5	440.9	440.2
170°	444.0	444.5	445.0	444.9	444.3	443.6	443.0	442.3
172.5°	445.5	446.0	446.5	446.5	445.8	445.2	444.5	443.9
175°	447.2	447.7	448.2	448.1	447.4	446.7	445.9	445.2
177.5°	447.4	447.8	448.2	448.1	447.6	447.1	446.6	446.1
180°	446.8	446.8	446.8	446.8	446.8	446.8	446.8	446.8

(END OF REPORT)