

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: P331709-927

Luminaire Tested: **SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331709-927
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-C865D330U927-4F0-1E-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

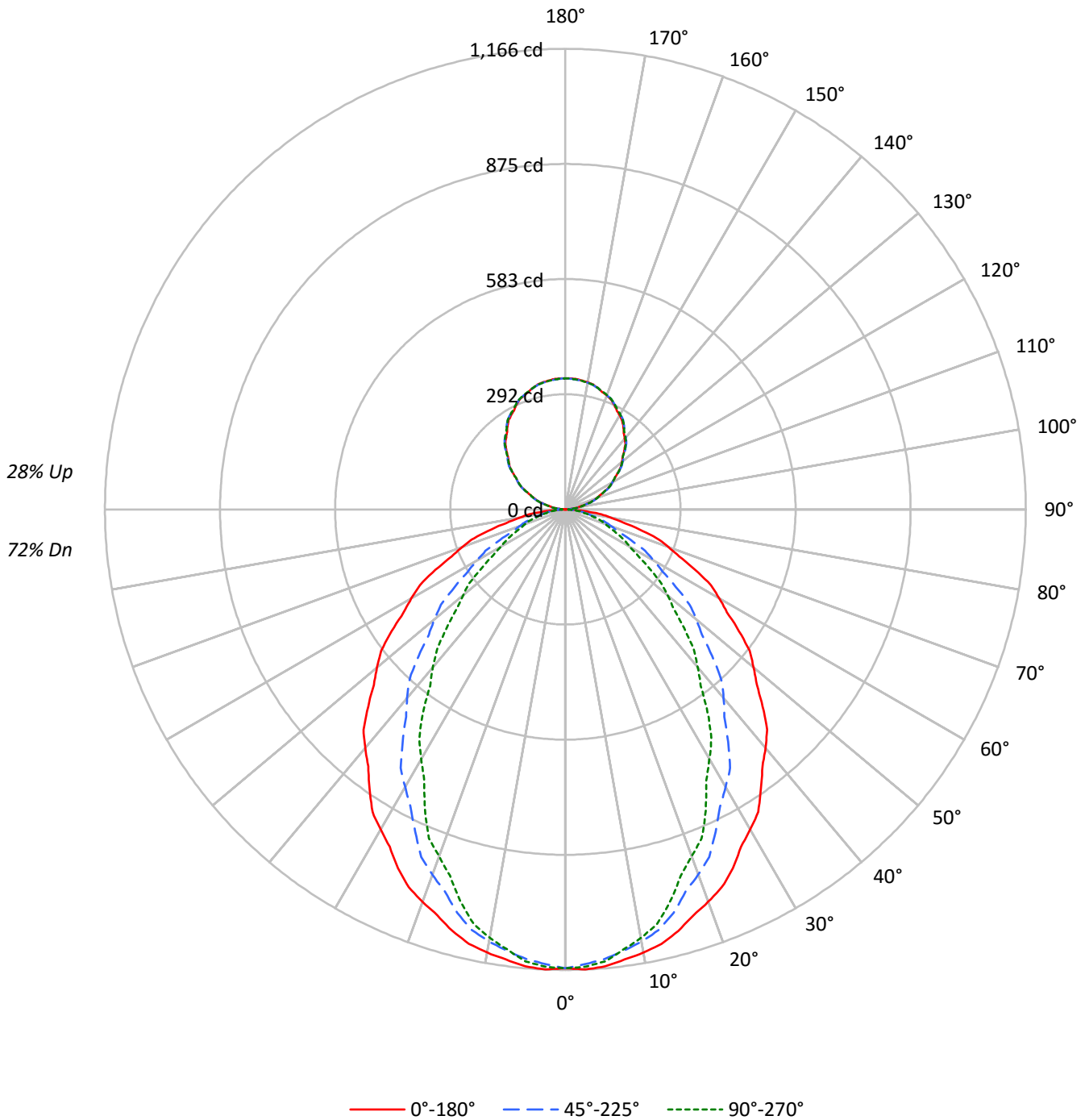
Lumens per Lamp: N/A
Luminaire Lumens: 3317.7 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



TEST NUMBER: P331709-927
CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

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°	18755	18755	18755
5°	18827	18519	18621
10°	18682	18216	18061
15°	18467	17677	17167
20°	18170	16905	16057
25°	17865	16030	14982
30°	17443	15129	13601
35°	17030	14152	12390
40°	16617	13139	10989
45°	16130	12001	9720
50°	15631	10854	8475
55°	15122	9619	7279
60°	14528	8315	6042
65°	13857	6988	5501
70°	13053	5755	5061
75°	12071	5246	4722
80°	10646	4695	4305
85°	8373	3705	3705



TEST NUMBER: P331709-927

CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.7	3.3
10°-20°	298.5	9.0
20°-30°	419.2	12.6
30°-40°	457.1	13.8
40°-50°	420.3	12.7
50°-60°	330.1	9.9
60°-70°	215.2	6.5
70°-80°	111.0	3.3
80°-90°	30.1	0.9
90°-100°	21.0	0.6
100°-110°	65.3	2.0
110°-120°	111.6	3.4
120°-130°	146.7	4.4
130°-140°	164.7	5.0
140°-150°	161.5	4.9
150°-160°	135.4	4.1
160°-170°	89.8	2.7
170°-180°	31.4	0.9
0°-30°	826.5	24.9
0°-40°	1283.6	38.7
0°-60°	2034.0	61.3
0°-90°	2390.4	72.0
90°-120°	197.9	6.0
90°-150°	670.7	20.2
90°-180°	927.0	27.9
0°-180°	3317.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1162	1162	1162	1162	1162	
5°	1162	1156	1143	1151	1149	110
15°	1105	1092	1058	1038	1027	311
25°	1003	967	900	858	841	461
35°	864	808	718	654	629	541
45°	706	634	526	454	426	545
55°	537	453	342	281	259	480
65°	363	277	183	149	144	359
75°	194	122	84	77	76	205
85°	45	24	20	20	20	53
90°	0	4	10	9	10	3
95°	15	17	18	18	17	17
105°	60	61	62	62	62	64
115°	112	114	113	113	112	111
125°	163	165	164	164	163	146
135°	211	214	214	214	213	163
145°	256	258	259	260	259	160
155°	292	293	294	295	295	135
165°	318	318	318	320	318	90
175°	331	330	330	331	330	31
180°	332	332	332	332	332	



TEST NUMBER: P331709-927

CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6
2.5°	1165.8	1164.8	1163.9	1162.9	1162.1	1160.5	1158.5	1156.4	1154.4	1152.3	1154.2
5°	1161.6	1160.4	1159.2	1158.0	1156.9	1154.8	1151.8	1148.7	1145.7	1142.6	1144.7
7.5°	1149.5	1148.1	1146.7	1145.3	1143.8	1141.3	1137.7	1134.2	1130.6	1127.0	1127.7
10°	1139.5	1137.8	1136.2	1134.6	1132.9	1129.8	1125.1	1120.5	1115.8	1111.1	1110.4
12.5°	1126.9	1124.8	1122.8	1120.9	1118.8	1114.8	1108.8	1102.9	1096.9	1090.9	1089.6
15°	1104.8	1102.2	1099.6	1097.1	1094.5	1089.3	1081.3	1073.4	1065.4	1057.5	1053.0
17.5°	1077.7	1073.7	1069.8	1065.9	1062.0	1054.9	1044.7	1034.5	1024.4	1014.2	1008.9
20°	1057.5	1052.8	1048.1	1043.5	1038.8	1030.6	1018.9	1007.3	995.6	983.9	978.0
22.5°	1035.6	1030.4	1025.2	1019.9	1014.7	1005.5	992.3	979.1	966.0	952.8	945.2
25°	1002.8	995.4	987.9	980.4	973.0	961.5	946.0	930.7	915.2	899.8	890.3
27.5°	963.3	955.1	947.1	938.9	930.8	918.1	900.6	883.3	865.9	848.5	837.3
30°	935.6	926.7	917.8	908.9	900.1	886.3	867.6	848.9	830.2	811.5	799.6
32.5°	908.6	898.3	887.9	877.5	867.1	852.5	833.4	814.3	795.3	776.2	762.6
35°	864.0	852.2	840.3	828.3	816.4	800.2	779.6	759.1	738.6	718.0	703.2
37.5°	819.5	806.4	793.4	780.2	767.1	749.6	727.8	705.8	684.0	662.0	645.8
40°	788.4	774.4	760.3	746.3	732.3	714.0	691.3	668.7	646.0	623.4	606.7
42.5°	756.5	741.6	726.9	712.2	697.4	678.3	654.9	631.4	608.1	584.6	567.5
45°	706.4	690.7	675.1	659.4	643.8	623.7	599.2	574.6	550.1	525.6	509.0
47.5°	657.6	641.0	624.5	607.8	591.3	570.3	545.0	519.7	494.3	469.1	452.6
50°	622.3	605.7	589.1	572.5	556.0	534.8	509.1	483.4	457.7	432.1	415.9
52.5°	587.8	570.5	553.2	535.8	518.5	497.3	472.1	446.9	421.8	396.7	381.1
55°	537.2	519.0	500.7	482.5	464.3	442.5	417.3	392.1	366.9	341.7	327.6
57.5°	485.2	466.5	447.8	429.1	410.5	389.0	364.7	340.5	316.2	292.0	279.2
60°	449.9	431.2	412.6	393.9	375.2	353.8	329.7	305.6	281.6	257.5	245.7
62.5°	415.4	396.7	378.0	359.3	340.6	319.9	296.9	274.0	251.0	228.1	216.7
65°	362.7	343.7	324.8	305.9	287.0	267.0	246.0	225.0	203.9	182.9	175.0
67.5°	311.8	293.0	274.3	255.4	236.6	217.8	198.9	180.0	161.1	142.1	138.5
70°	276.5	258.3	240.0	221.8	203.6	186.4	170.3	154.2	138.1	121.9	119.6
72.5°	242.8	225.4	207.9	190.4	172.9	157.7	144.8	131.8	118.9	106.0	104.0
75°	193.5	177.1	160.7	144.3	128.0	115.9	107.9	100.0	92.1	84.1	82.5
77.5°	144.9	130.5	116.1	101.8	87.5	78.4	74.5	70.7	66.9	63.1	62.1
80°	114.5	102.7	90.8	78.8	66.9	59.8	57.4	55.1	52.8	50.5	49.5
82.5°	86.8	77.6	68.2	58.9	49.7	44.2	42.6	41.0	39.5	37.9	37.3
85°	45.2	40.3	35.4	30.5	25.6	22.8	22.1	21.4	20.7	20.0	20.0
87.5°	13.5	12.2	10.9	9.5	8.2	7.6	7.8	8.2	8.4	8.7	8.5
90°	0.3	1.0	1.7	2.5	3.2	4.4	5.7	7.1	8.4	9.8	9.7
92.5°	5.0	5.5	6.1	6.7	7.2	7.6	7.9	8.2	8.6	8.9	9.0
95°	14.6	15.2	15.8	16.4	17.0	17.4	17.5	17.7	17.8	17.9	17.9
97.5°	26.6	27.2	27.6	28.2	28.8	29.2	29.4	29.6	29.9	30.1	30.1
100°	35.6	36.0	36.5	37.1	37.5	37.9	38.0	38.3	38.4	38.7	38.7
102.5°	44.9	45.3	45.7	46.1	46.5	46.9	47.1	47.3	47.5	47.8	47.8
105°	60.2	60.4	60.5	60.8	60.9	61.1	61.2	61.3	61.5	61.6	61.7
107.5°	75.5	75.8	76.0	76.4	76.6	76.8	76.8	76.8	76.8	76.8	76.8
110°	85.4	85.7	86.1	86.5	86.8	87.1	87.1	87.1	87.1	87.1	87.1



TEST NUMBER: P331709-927

CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	96.1	96.5	96.9	97.2	97.6	97.8	97.7	97.7	97.6	97.6	97.4
115°	111.9	112.3	112.7	113.0	113.4	113.6	113.4	113.3	113.2	113.0	113.0
117.5°	127.7	128.3	128.7	129.2	129.8	129.8	129.4	129.1	128.7	128.4	128.3
120°	138.2	138.8	139.3	139.7	140.2	140.2	139.7	139.3	138.8	138.2	138.2
122.5°	147.9	148.5	149.1	149.6	150.3	150.4	150.0	149.7	149.3	149.0	148.9
125°	162.9	163.4	164.0	164.5	165.1	165.3	165.1	164.9	164.8	164.5	164.4
127.5°	177.5	178.2	179.0	179.6	180.3	180.5	180.4	180.1	179.9	179.7	179.4
130°	186.7	187.5	188.3	189.1	189.9	190.3	190.1	190.0	189.9	189.7	189.6
132.5°	197.0	197.6	198.3	198.9	199.6	199.9	199.9	200.0	200.0	200.0	199.8
135°	210.7	211.4	212.1	212.8	213.5	213.9	214.0	214.1	214.3	214.4	214.3
137.5°	225.2	225.8	226.3	227.0	227.5	227.8	228.0	228.1	228.3	228.5	228.5
140°	234.0	234.6	235.1	235.7	236.2	236.6	236.9	237.3	237.6	237.9	237.9
142.5°	243.0	243.5	244.1	244.6	245.2	245.6	245.7	246.0	246.2	246.4	246.4
145°	255.8	256.3	256.7	257.1	257.5	257.9	258.3	258.7	259.0	259.4	259.5
147.5°	267.3	267.8	268.3	268.9	269.3	269.7	270.0	270.3	270.5	270.8	270.9
150°	275.1	275.5	275.8	276.2	276.6	276.9	277.2	277.4	277.7	277.9	278.1
152.5°	282.1	282.4	282.8	283.2	283.5	283.9	284.2	284.5	284.8	285.1	285.3
155°	292.5	292.6	292.9	293.0	293.2	293.4	293.6	293.7	294.0	294.1	294.5
157.5°	301.3	301.5	301.6	301.7	301.9	302.0	302.1	302.2	302.3	302.5	302.9
160°	306.7	306.9	307.0	307.1	307.2	307.4	307.4	307.4	307.5	307.6	307.9
162.5°	311.6	311.7	311.7	311.7	311.8	311.8	311.9	312.0	312.0	312.0	312.5
165°	318.2	318.1	318.1	318.1	318.0	317.9	317.9	317.9	317.9	317.9	318.4
167.5°	323.7	323.5	323.4	323.1	323.0	322.9	322.8	322.8	322.8	322.8	323.2
170°	326.6	326.5	326.2	326.1	325.9	325.7	325.7	325.6	325.6	325.5	325.9
172.5°	328.6	328.4	328.3	328.0	327.9	327.7	327.7	327.6	327.6	327.5	328.0
175°	331.1	330.9	330.7	330.5	330.3	330.2	330.1	329.9	329.8	329.7	330.1
177.5°	332.1	331.9	331.8	331.7	331.5	331.4	331.3	331.2	331.1	331.0	331.3
180°	331.7	331.7	331.7	331.7	331.7	331.7	331.7	331.7	331.7	331.7	331.7



TEST NUMBER: P331709-927

CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6
2.5°	1156.0	1157.9	1159.8	1160.5	1160.2	1159.8	1159.4	1159.0
5°	1146.8	1148.9	1151.0	1151.8	1151.0	1150.3	1149.6	1148.9
7.5°	1128.3	1128.9	1129.5	1129.2	1128.0	1126.8	1125.5	1124.3
10°	1109.7	1109.0	1108.3	1107.2	1105.8	1104.5	1103.0	1101.6
12.5°	1088.4	1087.1	1085.8	1084.1	1081.7	1079.4	1077.1	1074.8
15°	1048.6	1044.2	1039.7	1036.3	1034.0	1031.7	1029.4	1027.0
17.5°	1003.6	998.3	993.1	988.4	984.4	980.4	976.4	972.3
20°	972.2	966.4	960.5	955.1	949.9	944.8	939.6	934.5
22.5°	937.8	930.3	922.7	917.0	913.2	909.3	905.5	901.7
25°	880.7	871.1	861.5	854.9	851.4	848.0	844.5	841.0
27.5°	826.2	815.0	803.8	795.5	790.0	784.3	778.8	773.2
30°	787.7	775.8	763.8	754.7	748.5	742.1	735.9	729.5
32.5°	749.0	735.4	721.8	712.0	706.2	700.2	694.3	688.3
35°	688.5	673.8	659.1	649.2	644.0	638.9	633.7	628.6
37.5°	629.6	613.4	597.2	586.1	580.3	574.3	568.5	562.6
40°	590.2	573.6	557.0	545.7	539.6	533.5	527.4	521.4
42.5°	550.4	533.2	516.1	504.5	498.7	492.8	486.9	481.0
45°	492.4	475.9	459.2	448.1	442.5	437.0	431.3	425.7
47.5°	436.0	419.5	403.1	392.3	387.2	382.1	377.0	371.9
50°	399.8	383.7	367.6	357.0	352.1	347.2	342.3	337.4
52.5°	365.6	350.1	334.5	324.5	319.9	315.4	310.9	306.3
55°	313.6	299.6	285.6	276.3	271.9	267.4	263.0	258.6
57.5°	266.3	253.5	240.7	232.3	228.6	224.8	221.1	217.4
60°	233.7	221.8	209.8	202.1	198.3	194.6	190.8	187.1
62.5°	205.4	194.1	182.7	175.9	173.6	171.4	169.1	166.9
65°	167.0	159.1	151.1	146.8	146.1	145.4	144.7	144.0
67.5°	134.8	131.2	127.5	125.3	124.6	123.8	123.1	122.4
70°	117.2	114.9	112.6	111.0	110.0	109.1	108.1	107.2
72.5°	102.0	100.1	98.1	96.9	96.3	95.7	95.1	94.6
75°	80.8	79.2	77.6	76.6	76.4	76.1	75.9	75.7
77.5°	61.2	60.3	59.3	58.7	58.3	57.9	57.6	57.2
80°	48.6	47.7	46.7	46.3	46.3	46.3	46.3	46.3
82.5°	36.8	36.1	35.6	35.3	35.3	35.3	35.3	35.3
85°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
87.5°	8.2	8.1	7.8	7.8	7.8	7.8	7.8	7.8
90°	9.6	9.4	9.3	9.3	9.3	9.4	9.4	9.5
92.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
95°	17.9	17.9	17.9	17.8	17.7	17.6	17.5	17.3
97.5°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.0
100°	38.7	38.7	38.7	38.6	38.5	38.5	38.4	38.3
102.5°	47.9	47.9	48.0	48.0	47.9	47.8	47.8	47.8
105°	61.8	61.9	62.1	62.1	62.1	62.1	62.1	62.1
107.5°	76.8	76.9	76.9	76.8	76.5	76.3	76.0	75.7
110°	87.1	87.1	87.1	87.0	86.7	86.6	86.4	86.2



TEST NUMBER: P331709-927

CATALOG NUMBER: SA2XXRDIP-C865D330U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	97.3	97.1	97.0	96.8	96.7	96.6	96.4	96.3
115°	113.0	112.9	112.8	112.7	112.5	112.3	112.2	111.9
117.5°	128.1	127.9	127.8	127.6	127.5	127.3	127.1	126.9
120°	138.2	138.2	138.2	138.2	138.0	137.8	137.6	137.4
122.5°	148.7	148.5	148.4	148.3	148.1	148.0	147.8	147.7
125°	164.2	164.0	163.8	163.7	163.7	163.6	163.5	163.4
127.5°	179.3	179.0	178.8	178.6	178.4	178.2	178.0	177.8
130°	189.5	189.4	189.3	189.1	188.9	188.5	188.3	188.1
132.5°	199.5	199.2	199.0	198.8	198.5	198.4	198.1	198.0
135°	214.3	214.2	214.1	214.0	213.8	213.7	213.5	213.3
137.5°	228.4	228.3	228.3	228.1	227.9	227.7	227.4	227.1
140°	237.9	237.9	237.9	237.7	237.5	237.3	237.0	236.8
142.5°	246.5	246.5	246.6	246.5	246.3	246.0	245.7	245.5
145°	259.6	259.6	259.7	259.6	259.4	259.1	258.9	258.6
147.5°	271.0	271.2	271.3	271.2	271.0	270.8	270.5	270.3
150°	278.3	278.5	278.7	278.7	278.5	278.3	278.1	277.9
152.5°	285.6	285.8	286.1	286.1	285.8	285.6	285.3	285.1
155°	294.8	295.1	295.4	295.5	295.2	295.1	294.9	294.7
157.5°	303.2	303.7	304.1	304.2	303.9	303.6	303.3	303.0
160°	308.3	308.7	309.1	309.1	308.9	308.6	308.4	308.2
162.5°	312.9	313.3	313.8	313.8	313.5	313.2	312.9	312.6
165°	318.8	319.2	319.6	319.7	319.4	319.1	318.8	318.5
167.5°	323.7	324.1	324.6	324.6	324.3	323.9	323.6	323.3
170°	326.4	326.8	327.3	327.3	326.9	326.5	326.1	325.7
172.5°	328.4	328.8	329.2	329.3	328.9	328.5	328.2	327.8
175°	330.6	331.0	331.4	331.4	331.1	330.7	330.3	329.9
177.5°	331.6	331.8	332.2	332.2	331.8	331.6	331.3	331.0
180°	331.7	331.7	331.7	331.7	331.7	331.7	331.7	331.7

(END OF REPORT)