

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: FAIL-SAFE

Report Number: P709075

Luminaire Tested: **4APN-X-30L840-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709075  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-X-30L840-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

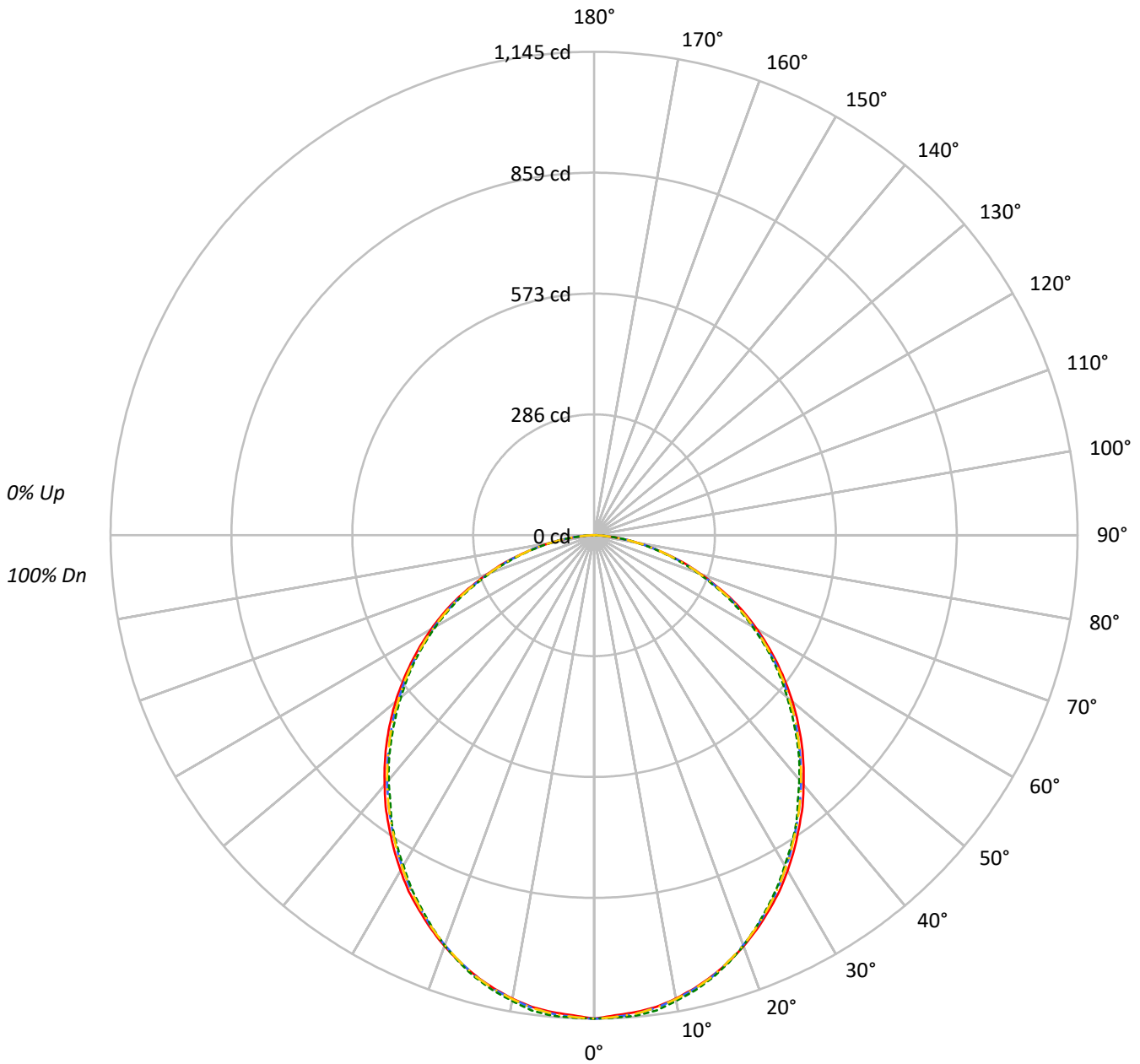
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2978.7 lumens  
Efficiency: N/A  
Efficacy: 91.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.18 / 1.3  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 32.5  
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



— 0°-180°    - - 45°-225°    - - - 90°-270°    - · - 135°-315°



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	59	52	47	57	51	46	44
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

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

	0°	90°	180°	270°
0°	10563	10563	10563	10563
5°	10500	10577	10500	10577
10°	10438	10490	10438	10490
15°	10322	10362	10322	10362
20°	10171	10157	10171	10157
25°	9976	9891	9976	9891
30°	9769	9621	9769	9621
35°	9526	9400	9526	9400
40°	9294	9109	9294	9109
45°	9066	8846	9066	8846
50°	8809	8568	8809	8568
55°	8522	8319	8522	8319
60°	8228	7997	8228	7997
65°	7874	7630	7874	7630
70°	7278	7051	7278	7051
75°	6577	6377	6577	6377
80°	5643	5494	5643	5494
85°	4287	4287	4287	4287



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.1	3.6
10°-20°	305.2	10.2
20°-30°	449.8	15.1
30°-40°	525.1	17.6
40°-50°	529.4	17.8
50°-60°	467.8	15.7
60°-70°	349.9	11.7
70°-80°	193.9	6.5
80°-90°	49.7	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	863.0	29.0
0°-40°	1388.0	46.6
0°-60°	2385.2	80.1
0°-90°	2978.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2978.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1145	1145	1145	1145	1145	
5°	1134	1142	1134	1142	1134	108
15°	1081	1085	1081	1085	1081	305
25°	980	972	980	972	980	452
35°	846	835	846	835	846	530
45°	695	678	695	678	695	536
55°	530	517	530	517	530	474
65°	361	350	361	350	361	355
75°	184	179	184	179	184	196
85°	40	40	40	40	40	49
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9
2.5°	1137.9	1143.5	1149.1	1147.7	1143.5	1140.7	1142.1	1142.1	1143.5	1143.5	1143.5
5°	1133.7	1139.3	1143.5	1142.1	1137.9	1136.5	1136.5	1136.5	1139.3	1142.1	1139.3
7.5°	1126.7	1130.9	1135.1	1133.7	1129.5	1128.1	1128.1	1129.5	1132.3	1135.1	1132.3
10°	1114.2	1119.7	1123.9	1121.1	1117.0	1114.2	1114.2	1114.2	1117.0	1119.7	1117.0
12.5°	1098.8	1103.0	1107.2	1105.8	1101.6	1098.8	1098.8	1098.8	1101.6	1104.4	1101.6
15°	1080.6	1084.8	1089.0	1087.6	1083.4	1080.6	1080.6	1080.6	1083.4	1084.8	1083.4
17.5°	1059.6	1063.8	1068.0	1065.2	1059.6	1056.8	1056.8	1056.8	1059.6	1061.0	1059.6
20°	1035.9	1040.1	1042.9	1040.1	1034.5	1031.7	1030.3	1030.3	1033.1	1034.5	1033.1
22.5°	1009.3	1012.1	1014.9	1012.1	1006.5	1003.7	1002.3	1000.9	1002.3	1003.7	1002.3
25°	980.0	982.7	985.5	982.7	977.2	973.0	971.6	970.2	971.6	971.6	971.6
27.5°	950.6	952.0	954.8	950.6	945.0	940.8	939.4	938.0	939.4	939.4	939.4
30°	917.0	918.4	921.2	917.0	910.1	905.9	904.5	903.1	903.1	903.1	903.1
32.5°	882.1	884.9	887.7	882.1	875.1	870.9	869.5	868.1	869.5	869.5	869.5
35°	845.8	847.1	849.9	845.8	838.8	834.6	831.8	830.4	833.2	834.6	833.2
37.5°	810.8	812.2	813.6	809.4	802.4	798.2	795.4	794.0	792.6	792.6	792.6
40°	771.7	773.1	775.9	771.7	764.7	760.5	757.7	756.3	756.3	756.3	756.3
42.5°	733.9	735.3	736.7	732.5	725.5	721.3	718.5	717.1	718.5	718.5	718.5
45°	694.8	694.8	696.2	692.0	686.4	682.2	679.4	678.0	678.0	678.0	678.0
47.5°	654.2	655.6	657.0	652.8	647.2	643.1	640.3	637.5	637.5	637.5	637.5
50°	613.7	613.7	615.1	610.9	605.3	601.1	599.7	598.3	596.9	596.9	596.9
52.5°	571.8	573.2	574.6	570.4	566.2	562.0	559.2	557.8	557.8	557.8	557.8
55°	529.8	529.8	531.2	528.4	524.2	520.0	517.2	515.8	517.2	517.2	517.2
57.5°	487.9	489.3	490.7	486.5	482.3	478.1	476.7	475.3	475.3	475.3	475.3
60°	445.9	445.9	447.3	444.5	440.3	436.2	434.8	433.4	433.4	433.4	433.4
62.5°	404.0	404.0	405.4	402.6	398.4	394.2	392.8	391.4	391.4	391.4	391.4
65°	360.7	360.7	360.7	357.9	355.1	353.7	352.3	350.9	349.5	349.5	349.5
67.5°	313.1	313.1	314.5	311.7	308.9	307.5	306.1	304.7	303.4	303.4	303.4
70°	269.8	269.8	271.2	269.8	267.0	265.6	264.2	262.8	261.4	261.4	261.4
72.5°	227.9	227.9	227.9	226.5	225.1	223.7	222.3	220.9	219.5	219.5	219.5
75°	184.5	184.5	185.9	184.5	183.1	181.7	180.3	180.3	178.9	178.9	178.9
77.5°	144.0	145.4	146.8	145.4	144.0	142.6	141.2	141.2	139.8	139.8	139.8
80°	106.2	107.6	109.0	107.6	106.2	104.8	103.4	103.4	103.4	103.4	103.4
82.5°	71.3	72.7	74.1	72.7	71.3	71.3	69.9	69.9	69.9	69.9	69.9
85°	40.5	41.9	43.3	43.3	41.9	41.9	40.5	40.5	40.5	40.5	40.5
87.5°	15.4	16.8	18.2	18.2	16.8	16.8	16.8	16.8	16.8	16.8	16.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9
2.5°	1142.1	1142.1	1140.7	1143.5	1147.7	1149.1	1143.5	1137.9	1143.5	1149.1	1147.7
5°	1136.5	1136.5	1136.5	1137.9	1142.1	1143.5	1139.3	1133.7	1139.3	1143.5	1142.1
7.5°	1129.5	1128.1	1128.1	1129.5	1133.7	1135.1	1130.9	1126.7	1130.9	1135.1	1133.7
10°	1114.2	1114.2	1114.2	1117.0	1121.1	1123.9	1119.7	1114.2	1119.7	1123.9	1121.1
12.5°	1098.8	1098.8	1098.8	1101.6	1105.8	1107.2	1103.0	1098.8	1103.0	1107.2	1105.8
15°	1080.6	1080.6	1080.6	1083.4	1087.6	1089.0	1084.8	1080.6	1084.8	1089.0	1087.6
17.5°	1056.8	1056.8	1056.8	1059.6	1065.2	1068.0	1063.8	1059.6	1063.8	1068.0	1065.2
20°	1030.3	1030.3	1031.7	1034.5	1040.1	1042.9	1040.1	1035.9	1040.1	1042.9	1040.1
22.5°	1000.9	1002.3	1003.7	1006.5	1012.1	1014.9	1012.1	1009.3	1012.1	1014.9	1012.1
25°	970.2	971.6	973.0	977.2	982.7	985.5	982.7	980.0	982.7	985.5	982.7
27.5°	938.0	939.4	940.8	945.0	950.6	954.8	952.0	950.6	952.0	954.8	950.6
30°	903.1	904.5	905.9	910.1	917.0	921.2	918.4	917.0	918.4	921.2	917.0
32.5°	868.1	869.5	870.9	875.1	882.1	887.7	884.9	882.1	884.9	887.7	882.1
35°	830.4	831.8	834.6	838.8	845.8	849.9	847.1	845.8	847.1	849.9	845.8
37.5°	794.0	795.4	798.2	802.4	809.4	813.6	812.2	810.8	812.2	813.6	809.4
40°	756.3	757.7	760.5	764.7	771.7	775.9	773.1	771.7	773.1	775.9	771.7
42.5°	717.1	718.5	721.3	725.5	732.5	736.7	735.3	733.9	735.3	736.7	732.5
45°	678.0	679.4	682.2	686.4	692.0	696.2	694.8	694.8	694.8	696.2	692.0
47.5°	637.5	640.3	643.1	647.2	652.8	657.0	655.6	654.2	655.6	657.0	652.8
50°	598.3	599.7	601.1	605.3	610.9	615.1	613.7	613.7	613.7	615.1	610.9
52.5°	557.8	559.2	562.0	566.2	570.4	574.6	573.2	571.8	573.2	574.6	570.4
55°	515.8	517.2	520.0	524.2	528.4	531.2	529.8	529.8	529.8	531.2	528.4
57.5°	475.3	476.7	478.1	482.3	486.5	490.7	489.3	487.9	489.3	490.7	486.5
60°	433.4	434.8	436.2	440.3	444.5	447.3	445.9	445.9	445.9	447.3	444.5
62.5°	391.4	392.8	394.2	398.4	402.6	405.4	404.0	404.0	404.0	405.4	402.6
65°	350.9	352.3	353.7	355.1	357.9	360.7	360.7	360.7	360.7	360.7	357.9
67.5°	304.7	306.1	307.5	308.9	311.7	314.5	313.1	313.1	313.1	314.5	311.7
70°	262.8	264.2	265.6	267.0	269.8	271.2	269.8	269.8	269.8	271.2	269.8
72.5°	220.9	222.3	223.7	225.1	226.5	227.9	227.9	227.9	227.9	227.9	226.5
75°	180.3	180.3	181.7	183.1	184.5	185.9	184.5	184.5	184.5	185.9	184.5
77.5°	141.2	141.2	142.6	144.0	145.4	146.8	145.4	144.0	145.4	146.8	145.4
80°	103.4	103.4	104.8	106.2	107.6	109.0	107.6	106.2	107.6	109.0	107.6
82.5°	69.9	69.9	71.3	71.3	72.7	74.1	72.7	71.3	72.7	74.1	72.7
85°	40.5	40.5	41.9	41.9	43.3	43.3	41.9	40.5	41.9	43.3	43.3
87.5°	16.8	16.8	16.8	16.8	18.2	18.2	16.8	15.4	16.8	18.2	18.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9	1144.9
2.5°	1143.5	1140.7	1142.1	1142.1	1143.5	1143.5	1143.5	1142.1	1142.1	1140.7	1143.5
5°	1137.9	1136.5	1136.5	1136.5	1139.3	1142.1	1139.3	1136.5	1136.5	1136.5	1137.9
7.5°	1129.5	1128.1	1128.1	1129.5	1132.3	1135.1	1132.3	1129.5	1128.1	1128.1	1129.5
10°	1117.0	1114.2	1114.2	1114.2	1117.0	1119.7	1117.0	1114.2	1114.2	1114.2	1117.0
12.5°	1101.6	1098.8	1098.8	1098.8	1101.6	1104.4	1101.6	1098.8	1098.8	1098.8	1101.6
15°	1083.4	1080.6	1080.6	1080.6	1083.4	1084.8	1083.4	1080.6	1080.6	1080.6	1083.4
17.5°	1059.6	1056.8	1056.8	1056.8	1059.6	1061.0	1059.6	1056.8	1056.8	1056.8	1059.6
20°	1034.5	1031.7	1030.3	1030.3	1033.1	1034.5	1033.1	1030.3	1030.3	1031.7	1034.5
22.5°	1006.5	1003.7	1002.3	1000.9	1002.3	1003.7	1002.3	1000.9	1002.3	1003.7	1006.5
25°	977.2	973.0	971.6	970.2	971.6	971.6	971.6	970.2	971.6	973.0	977.2
27.5°	945.0	940.8	939.4	938.0	939.4	939.4	939.4	938.0	939.4	940.8	945.0
30°	910.1	905.9	904.5	903.1	903.1	903.1	903.1	903.1	904.5	905.9	910.1
32.5°	875.1	870.9	869.5	868.1	869.5	869.5	869.5	868.1	869.5	870.9	875.1
35°	838.8	834.6	831.8	830.4	833.2	834.6	833.2	830.4	831.8	834.6	838.8
37.5°	802.4	798.2	795.4	794.0	792.6	792.6	792.6	794.0	795.4	798.2	802.4
40°	764.7	760.5	757.7	756.3	756.3	756.3	756.3	756.3	757.7	760.5	764.7
42.5°	725.5	721.3	718.5	717.1	718.5	718.5	718.5	717.1	718.5	721.3	725.5
45°	686.4	682.2	679.4	678.0	678.0	678.0	678.0	678.0	679.4	682.2	686.4
47.5°	647.2	643.1	640.3	637.5	637.5	637.5	637.5	637.5	640.3	643.1	647.2
50°	605.3	601.1	599.7	598.3	596.9	596.9	596.9	598.3	599.7	601.1	605.3
52.5°	566.2	562.0	559.2	557.8	557.8	557.8	557.8	557.8	559.2	562.0	566.2
55°	524.2	520.0	517.2	515.8	517.2	517.2	517.2	515.8	517.2	520.0	524.2
57.5°	482.3	478.1	476.7	475.3	475.3	475.3	475.3	475.3	476.7	478.1	482.3
60°	440.3	436.2	434.8	433.4	433.4	433.4	433.4	433.4	434.8	436.2	440.3
62.5°	398.4	394.2	392.8	391.4	391.4	391.4	391.4	391.4	392.8	394.2	398.4
65°	355.1	353.7	352.3	350.9	349.5	349.5	349.5	350.9	352.3	353.7	355.1
67.5°	308.9	307.5	306.1	304.7	303.4	303.4	303.4	304.7	306.1	307.5	308.9
70°	267.0	265.6	264.2	262.8	261.4	261.4	261.4	262.8	264.2	265.6	267.0
72.5°	225.1	223.7	222.3	220.9	219.5	219.5	219.5	220.9	222.3	223.7	225.1
75°	183.1	181.7	180.3	180.3	178.9	178.9	178.9	180.3	180.3	181.7	183.1
77.5°	144.0	142.6	141.2	141.2	139.8	139.8	139.8	141.2	141.2	142.6	144.0
80°	106.2	104.8	103.4	103.4	103.4	103.4	103.4	103.4	103.4	104.8	106.2
82.5°	71.3	71.3	69.9	69.9	69.9	69.9	69.9	69.9	69.9	71.3	71.3
85°	41.9	41.9	40.5	40.5	40.5	40.5	40.5	40.5	40.5	41.9	41.9
87.5°	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1144.9	1144.9	1144.9	1144.9
2.5°	1147.7	1149.1	1143.5	1137.9
5°	1142.1	1143.5	1139.3	1133.7
7.5°	1133.7	1135.1	1130.9	1126.7
10°	1121.1	1123.9	1119.7	1114.2
12.5°	1105.8	1107.2	1103.0	1098.8
15°	1087.6	1089.0	1084.8	1080.6
17.5°	1065.2	1068.0	1063.8	1059.6
20°	1040.1	1042.9	1040.1	1035.9
22.5°	1012.1	1014.9	1012.1	1009.3
25°	982.7	985.5	982.7	980.0
27.5°	950.6	954.8	952.0	950.6
30°	917.0	921.2	918.4	917.0
32.5°	882.1	887.7	884.9	882.1
35°	845.8	849.9	847.1	845.8
37.5°	809.4	813.6	812.2	810.8
40°	771.7	775.9	773.1	771.7
42.5°	732.5	736.7	735.3	733.9
45°	692.0	696.2	694.8	694.8
47.5°	652.8	657.0	655.6	654.2
50°	610.9	615.1	613.7	613.7
52.5°	570.4	574.6	573.2	571.8
55°	528.4	531.2	529.8	529.8
57.5°	486.5	490.7	489.3	487.9
60°	444.5	447.3	445.9	445.9
62.5°	402.6	405.4	404.0	404.0
65°	357.9	360.7	360.7	360.7
67.5°	311.7	314.5	313.1	313.1
70°	269.8	271.2	269.8	269.8
72.5°	226.5	227.9	227.9	227.9
75°	184.5	185.9	184.5	184.5
77.5°	145.4	146.8	145.4	144.0
80°	107.6	109.0	107.6	106.2
82.5°	72.7	74.1	72.7	71.3
85°	43.3	43.3	41.9	40.5
87.5°	18.2	18.2	16.8	15.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)