

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: P709062

Luminaire Tested: **4APN-X-34L830-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709062
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-X-34L830-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

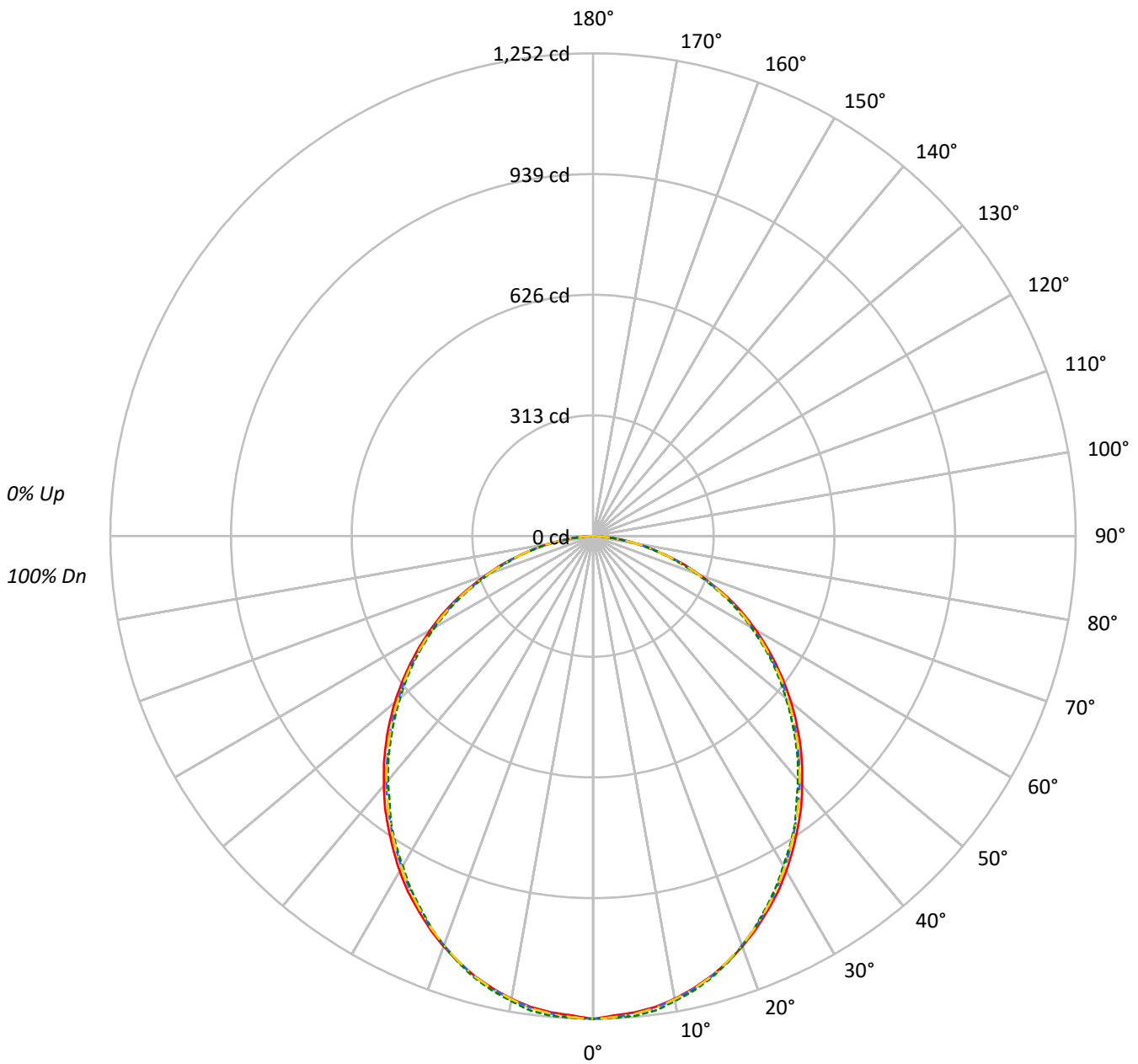
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3257.5 lumens
Efficiency: N/A
Efficacy: 88.5 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): 36.8
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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	73	73	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	62	62	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	53	53	53	51
5	76	64	55	48	74	63	54	48	60	53	47	59	52	47	57	51	46	46	46	46	44
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	41	41	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	36	36	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	33	33	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	30	30	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	11552	11552	11552	11552
5°	11482	11568	11482	11568
10°	11415	11473	11415	11473
15°	11288	11331	11288	11331
20°	11122	11107	11122	11107
25°	10910	10816	10910	10816
30°	10684	10521	10684	10521
35°	10417	10280	10417	10280
40°	10164	9962	10164	9962
45°	9914	9675	9914	9675
50°	9633	9370	9633	9370
55°	9320	9100	9320	9100
60°	8999	8745	8999	8745
65°	8610	8344	8610	8344
70°	7961	7712	7961	7712
75°	7194	6976	7194	6976
80°	6174	6009	6174	6009
85°	4690	4690	4690	4690



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.2	3.6
10°-20°	333.7	10.2
20°-30°	491.9	15.1
30°-40°	574.2	17.6
40°-50°	578.9	17.8
50°-60°	511.6	15.7
60°-70°	382.6	11.7
70°-80°	212.1	6.5
80°-90°	54.4	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°	943.8	29.0
0°-40°	1517.9	46.6
0°-60°	2608.5	80.1
0°-90°	3257.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3257.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1252	1252	1252	1252	1252	
5°	1240	1249	1240	1249	1240	118
15°	1182	1186	1182	1186	1182	333
25°	1072	1062	1072	1062	1072	494
35°	925	913	925	913	925	579
45°	760	742	760	742	760	586
55°	579	566	579	566	579	518
65°	394	382	394	382	394	388
75°	202	196	202	196	202	215
85°	44	44	44	44	44	54
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°	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1244.4	1250.5	1256.7	1255.1	1250.5	1247.5	1249.0	1249.0	1250.5	1250.5	1250.5
5°	1239.8	1246.0	1250.5	1249.0	1244.4	1242.9	1242.9	1242.9	1246.0	1249.0	1246.0
7.5°	1232.2	1236.8	1241.4	1239.8	1235.3	1233.7	1233.7	1235.3	1238.3	1241.4	1238.3
10°	1218.4	1224.6	1229.1	1226.1	1221.5	1218.4	1218.4	1218.4	1221.5	1224.6	1221.5
12.5°	1201.6	1206.2	1210.8	1209.3	1204.7	1201.6	1201.6	1201.6	1204.7	1207.7	1204.7
15°	1181.8	1186.3	1190.9	1189.4	1184.8	1181.8	1181.8	1181.8	1184.8	1186.3	1184.8
17.5°	1158.8	1163.4	1168.0	1164.9	1158.8	1155.8	1155.8	1155.8	1158.8	1160.3	1158.8
20°	1132.8	1137.4	1140.5	1137.4	1131.3	1128.2	1126.7	1126.7	1129.8	1131.3	1129.8
22.5°	1103.8	1106.8	1109.9	1106.8	1100.7	1097.7	1096.1	1096.1	1096.1	1097.7	1096.1
25°	1071.7	1074.7	1077.8	1074.7	1068.6	1064.0	1062.5	1061.0	1062.5	1062.5	1062.5
27.5°	1039.6	1041.1	1044.2	1039.6	1033.5	1028.9	1027.3	1025.8	1027.3	1027.3	1027.3
30°	1002.9	1004.4	1007.5	1002.9	995.2	990.7	989.1	987.6	987.6	987.6	987.6
32.5°	964.7	967.7	970.8	964.7	957.0	952.4	950.9	949.4	950.9	950.9	950.9
35°	924.9	926.4	929.5	924.9	917.3	912.7	909.6	908.1	911.2	912.7	911.2
37.5°	886.7	888.2	889.8	885.2	877.5	872.9	869.9	868.3	866.8	866.8	866.8
40°	843.9	845.4	848.5	843.9	836.2	831.7	828.6	827.1	827.1	827.1	827.1
42.5°	802.6	804.1	805.7	801.1	793.4	788.9	785.8	784.3	785.8	785.8	785.8
45°	759.8	759.8	761.3	756.7	750.6	746.0	743.0	741.5	741.5	741.5	741.5
47.5°	715.5	717.0	718.5	713.9	707.8	703.2	700.2	697.1	697.1	697.1	697.1
50°	671.1	671.1	672.7	668.1	662.0	657.4	655.8	654.3	652.8	652.8	652.8
52.5°	625.3	626.8	628.3	623.7	619.2	614.6	611.5	610.0	610.0	610.0	610.0
55°	579.4	579.4	580.9	577.9	573.3	568.7	565.7	564.1	565.7	565.7	565.7
57.5°	533.5	535.1	536.6	532.0	527.4	522.8	521.3	519.8	519.8	519.8	519.8
60°	487.7	487.7	489.2	486.2	481.6	477.0	475.5	473.9	473.9	473.9	473.9
62.5°	441.8	441.8	443.3	440.3	435.7	431.1	429.6	428.1	428.1	428.1	428.1
65°	394.4	394.4	394.4	391.4	388.3	386.8	385.3	383.7	382.2	382.2	382.2
67.5°	342.4	342.4	344.0	340.9	337.9	336.3	334.8	333.3	331.7	331.7	331.7
70°	295.1	295.1	296.6	295.1	292.0	290.5	288.9	287.4	285.9	285.9	285.9
72.5°	249.2	249.2	249.2	247.7	246.1	244.6	243.1	241.5	240.0	240.0	240.0
75°	201.8	201.8	203.3	201.8	200.3	198.7	197.2	197.2	195.7	195.7	195.7
77.5°	157.5	159.0	160.5	159.0	157.5	155.9	154.4	154.4	152.9	152.9	152.9
80°	116.2	117.7	119.2	117.7	116.2	114.7	113.1	113.1	113.1	113.1	113.1
82.5°	78.0	79.5	81.0	79.5	78.0	78.0	76.4	76.4	76.4	76.4	76.4
85°	44.3	45.9	47.4	47.4	45.9	45.9	44.3	44.3	44.3	44.3	44.3
87.5°	16.8	18.3	19.9	19.9	18.3	18.3	18.3	18.3	18.3	18.3	18.3
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°	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1249.0	1249.0	1247.5	1250.5	1255.1	1256.7	1250.5	1244.4	1250.5	1256.7	1255.1
5°	1242.9	1242.9	1242.9	1244.4	1249.0	1250.5	1246.0	1239.8	1246.0	1250.5	1249.0
7.5°	1235.3	1233.7	1233.7	1235.3	1239.8	1241.4	1236.8	1232.2	1236.8	1241.4	1239.8
10°	1218.4	1218.4	1218.4	1221.5	1226.1	1229.1	1224.6	1218.4	1224.6	1229.1	1226.1
12.5°	1201.6	1201.6	1201.6	1204.7	1209.3	1210.8	1206.2	1201.6	1206.2	1210.8	1209.3
15°	1181.8	1181.8	1181.8	1184.8	1189.4	1190.9	1186.3	1181.8	1186.3	1190.9	1189.4
17.5°	1155.8	1155.8	1155.8	1158.8	1164.9	1168.0	1163.4	1158.8	1163.4	1168.0	1164.9
20°	1126.7	1126.7	1128.2	1131.3	1137.4	1140.5	1137.4	1132.8	1137.4	1140.5	1137.4
22.5°	1094.6	1096.1	1097.7	1100.7	1106.8	1109.9	1106.8	1103.8	1106.8	1109.9	1106.8
25°	1061.0	1062.5	1064.0	1068.6	1074.7	1077.8	1074.7	1071.7	1074.7	1077.8	1074.7
27.5°	1025.8	1027.3	1028.9	1033.5	1039.6	1044.2	1041.1	1039.6	1041.1	1044.2	1039.6
30°	987.6	989.1	990.7	995.2	1002.9	1007.5	1004.4	1002.9	1004.4	1007.5	1002.9
32.5°	949.4	950.9	952.4	957.0	964.7	970.8	967.7	964.7	967.7	970.8	964.7
35°	908.1	909.6	912.7	917.3	924.9	929.5	926.4	924.9	926.4	929.5	924.9
37.5°	868.3	869.9	872.9	877.5	885.2	889.8	888.2	886.7	888.2	889.8	885.2
40°	827.1	828.6	831.7	836.2	843.9	848.5	845.4	843.9	845.4	848.5	843.9
42.5°	784.3	785.8	788.9	793.4	801.1	805.7	804.1	802.6	804.1	805.7	801.1
45°	741.5	743.0	746.0	750.6	756.7	761.3	759.8	759.8	759.8	761.3	756.7
47.5°	697.1	700.2	703.2	707.8	713.9	718.5	717.0	715.5	717.0	718.5	713.9
50°	654.3	655.8	657.4	662.0	668.1	672.7	671.1	671.1	671.1	672.7	668.1
52.5°	610.0	611.5	614.6	619.2	623.7	628.3	626.8	625.3	626.8	628.3	623.7
55°	564.1	565.7	568.7	573.3	577.9	580.9	579.4	579.4	579.4	580.9	577.9
57.5°	519.8	521.3	522.8	527.4	532.0	536.6	535.1	533.5	535.1	536.6	532.0
60°	473.9	475.5	477.0	481.6	486.2	489.2	487.7	487.7	487.7	489.2	486.2
62.5°	428.1	429.6	431.1	435.7	440.3	443.3	441.8	441.8	441.8	443.3	440.3
65°	383.7	385.3	386.8	388.3	391.4	394.4	394.4	394.4	394.4	394.4	391.4
67.5°	333.3	334.8	336.3	337.9	340.9	344.0	342.4	342.4	342.4	344.0	340.9
70°	287.4	288.9	290.5	292.0	295.1	296.6	295.1	295.1	295.1	296.6	295.1
72.5°	241.5	243.1	244.6	246.1	247.7	249.2	249.2	249.2	249.2	249.2	247.7
75°	197.2	197.2	198.7	200.3	201.8	203.3	201.8	201.8	201.8	203.3	201.8
77.5°	154.4	154.4	155.9	157.5	159.0	160.5	159.0	157.5	159.0	160.5	159.0
80°	113.1	113.1	114.7	116.2	117.7	119.2	117.7	116.2	117.7	119.2	117.7
82.5°	76.4	76.4	78.0	78.0	79.5	81.0	79.5	78.0	79.5	81.0	79.5
85°	44.3	44.3	45.9	45.9	47.4	47.4	45.9	44.3	45.9	47.4	47.4
87.5°	18.3	18.3	18.3	18.3	19.9	19.9	18.3	16.8	18.3	19.9	19.9
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°	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1250.5	1247.5	1249.0	1249.0	1250.5	1250.5	1250.5	1249.0	1249.0	1247.5	1250.5
5°	1244.4	1242.9	1242.9	1242.9	1246.0	1249.0	1246.0	1242.9	1242.9	1242.9	1244.4
7.5°	1235.3	1233.7	1233.7	1235.3	1238.3	1241.4	1238.3	1235.3	1233.7	1233.7	1235.3
10°	1221.5	1218.4	1218.4	1218.4	1221.5	1224.6	1221.5	1218.4	1218.4	1218.4	1221.5
12.5°	1204.7	1201.6	1201.6	1201.6	1204.7	1207.7	1204.7	1201.6	1201.6	1201.6	1204.7
15°	1184.8	1181.8	1181.8	1181.8	1184.8	1186.3	1184.8	1181.8	1181.8	1181.8	1184.8
17.5°	1158.8	1155.8	1155.8	1155.8	1158.8	1160.3	1158.8	1155.8	1155.8	1155.8	1158.8
20°	1131.3	1128.2	1126.7	1126.7	1129.8	1131.3	1129.8	1126.7	1126.7	1128.2	1131.3
22.5°	1100.7	1097.7	1096.1	1094.6	1096.1	1097.7	1096.1	1094.6	1096.1	1097.7	1100.7
25°	1068.6	1064.0	1062.5	1061.0	1062.5	1062.5	1062.5	1061.0	1062.5	1064.0	1068.6
27.5°	1033.5	1028.9	1027.3	1025.8	1027.3	1027.3	1027.3	1025.8	1027.3	1028.9	1033.5
30°	995.2	990.7	989.1	987.6	987.6	987.6	987.6	987.6	989.1	990.7	995.2
32.5°	957.0	952.4	950.9	949.4	950.9	950.9	950.9	949.4	950.9	952.4	957.0
35°	917.3	912.7	909.6	908.1	911.2	912.7	911.2	908.1	909.6	912.7	917.3
37.5°	877.5	872.9	869.9	868.3	866.8	866.8	866.8	868.3	869.9	872.9	877.5
40°	836.2	831.7	828.6	827.1	827.1	827.1	827.1	827.1	828.6	831.7	836.2
42.5°	793.4	788.9	785.8	784.3	785.8	785.8	785.8	784.3	785.8	788.9	793.4
45°	750.6	746.0	743.0	741.5	741.5	741.5	741.5	741.5	743.0	746.0	750.6
47.5°	707.8	703.2	700.2	697.1	697.1	697.1	697.1	697.1	700.2	703.2	707.8
50°	662.0	657.4	655.8	654.3	652.8	652.8	652.8	654.3	655.8	657.4	662.0
52.5°	619.2	614.6	611.5	610.0	610.0	610.0	610.0	610.0	611.5	614.6	619.2
55°	573.3	568.7	565.7	564.1	565.7	565.7	565.7	564.1	565.7	568.7	573.3
57.5°	527.4	522.8	521.3	519.8	519.8	519.8	519.8	519.8	521.3	522.8	527.4
60°	481.6	477.0	475.5	473.9	473.9	473.9	473.9	473.9	475.5	477.0	481.6
62.5°	435.7	431.1	429.6	428.1	428.1	428.1	428.1	428.1	429.6	431.1	435.7
65°	388.3	386.8	385.3	383.7	382.2	382.2	382.2	383.7	385.3	386.8	388.3
67.5°	337.9	336.3	334.8	333.3	331.7	331.7	331.7	333.3	334.8	336.3	337.9
70°	292.0	290.5	288.9	287.4	285.9	285.9	285.9	287.4	288.9	290.5	292.0
72.5°	246.1	244.6	243.1	241.5	240.0	240.0	240.0	241.5	243.1	244.6	246.1
75°	200.3	198.7	197.2	197.2	195.7	195.7	195.7	197.2	197.2	198.7	200.3
77.5°	157.5	155.9	154.4	154.4	152.9	152.9	152.9	154.4	154.4	155.9	157.5
80°	116.2	114.7	113.1	113.1	113.1	113.1	113.1	113.1	113.1	114.7	116.2
82.5°	78.0	78.0	76.4	76.4	76.4	76.4	76.4	76.4	76.4	78.0	78.0
85°	45.9	45.9	44.3	44.3	44.3	44.3	44.3	44.3	44.3	45.9	45.9
87.5°	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
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°	1252.1	1252.1	1252.1	1252.1
2.5°	1255.1	1256.7	1250.5	1244.4
5°	1249.0	1250.5	1246.0	1239.8
7.5°	1239.8	1241.4	1236.8	1232.2
10°	1226.1	1229.1	1224.6	1218.4
12.5°	1209.3	1210.8	1206.2	1201.6
15°	1189.4	1190.9	1186.3	1181.8
17.5°	1164.9	1168.0	1163.4	1158.8
20°	1137.4	1140.5	1137.4	1132.8
22.5°	1106.8	1109.9	1106.8	1103.8
25°	1074.7	1077.8	1074.7	1071.7
27.5°	1039.6	1044.2	1041.1	1039.6
30°	1002.9	1007.5	1004.4	1002.9
32.5°	964.7	970.8	967.7	964.7
35°	924.9	929.5	926.4	924.9
37.5°	885.2	889.8	888.2	886.7
40°	843.9	848.5	845.4	843.9
42.5°	801.1	805.7	804.1	802.6
45°	756.7	761.3	759.8	759.8
47.5°	713.9	718.5	717.0	715.5
50°	668.1	672.7	671.1	671.1
52.5°	623.7	628.3	626.8	625.3
55°	577.9	580.9	579.4	579.4
57.5°	532.0	536.6	535.1	533.5
60°	486.2	489.2	487.7	487.7
62.5°	440.3	443.3	441.8	441.8
65°	391.4	394.4	394.4	394.4
67.5°	340.9	344.0	342.4	342.4
70°	295.1	296.6	295.1	295.1
72.5°	247.7	249.2	249.2	249.2
75°	201.8	203.3	201.8	201.8
77.5°	159.0	160.5	159.0	157.5
80°	117.7	119.2	117.7	116.2
82.5°	79.5	81.0	79.5	78.0
85°	47.4	47.4	45.9	44.3
87.5°	19.9	19.9	18.3	16.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)