

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: P709063

Luminaire Tested: **4APN-X-30L830-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709063
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-X-30L830-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

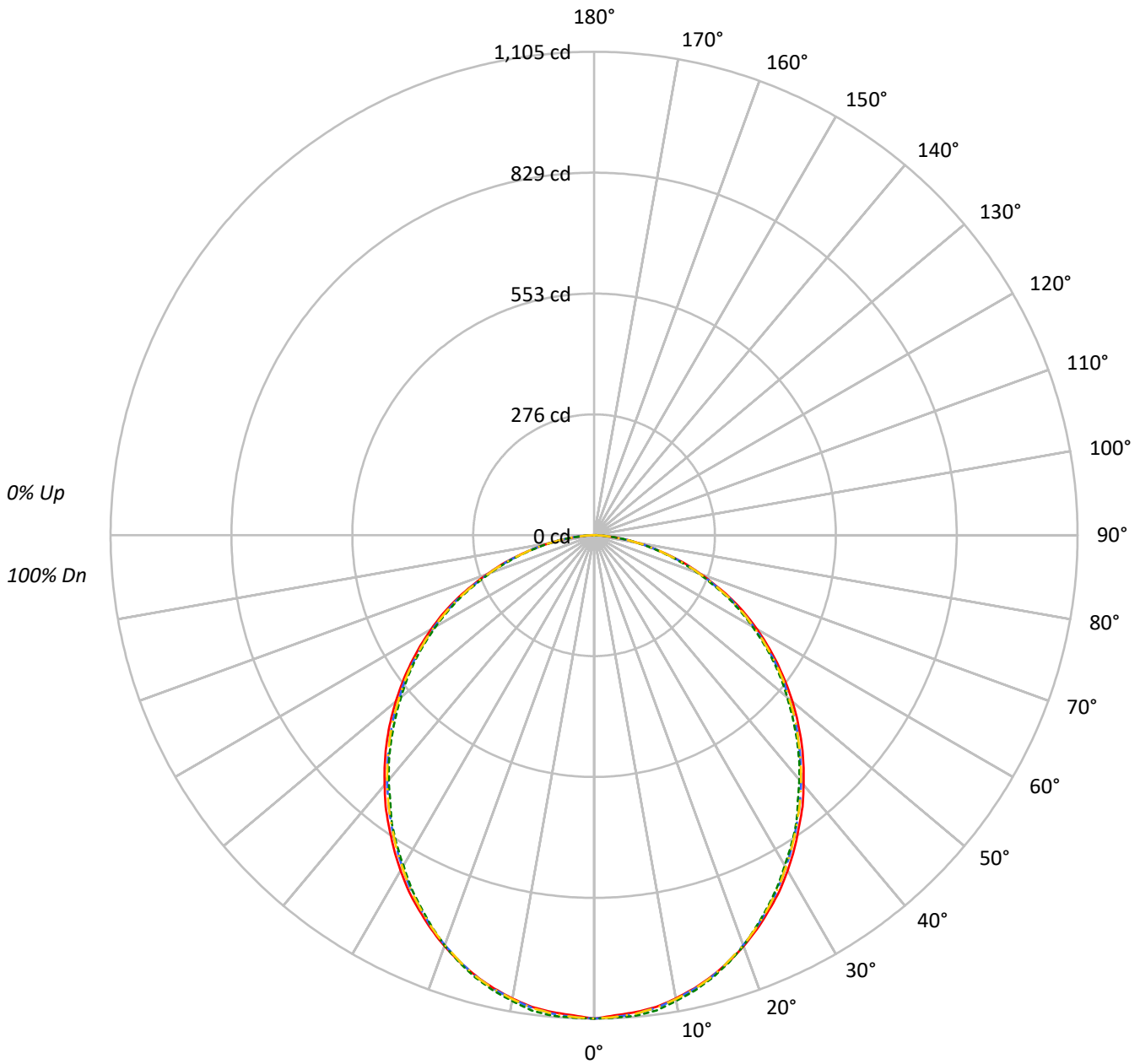
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2874.5 lumens
Efficiency: N/A
Efficacy: 88.4 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	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°	10193	10193	10193	10193
5°	10132	10207	10132	10207
10°	10073	10124	10073	10124
15°	9960	9999	9960	9999
20°	9814	9802	9814	9802
25°	9627	9545	9627	9545
30°	9427	9285	9427	9285
35°	9192	9071	9192	9071
40°	8969	8790	8969	8790
45°	8749	8537	8749	8537
50°	8500	8268	8500	8268
55°	8224	8028	8224	8028
60°	7940	7717	7940	7717
65°	7597	7364	7597	7364
70°	7024	6806	7024	6806
75°	6349	6156	6349	6156
80°	5446	5303	5446	5303
85°	4139	4139	4139	4139



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	3.6
10°-20°	294.5	10.2
20°-30°	434.0	15.1
30°-40°	506.7	17.6
40°-50°	510.8	17.8
50°-60°	451.5	15.7
60°-70°	337.6	11.7
70°-80°	187.1	6.5
80°-90°	48.0	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°	832.8	29.0
0°-40°	1339.4	46.6
0°-60°	2301.7	80.1
0°-90°	2874.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2874.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1105	1105	1105	1105	1105	
5°	1094	1102	1094	1102	1094	104
15°	1043	1047	1043	1047	1043	294
25°	946	938	946	938	946	436
35°	816	805	816	805	816	511
45°	670	654	670	654	670	517
55°	511	499	511	499	511	457
65°	348	337	348	337	348	343
75°	178	173	178	173	178	189
85°	39	39	39	39	39	47
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°	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8
2.5°	1098.1	1103.5	1108.9	1107.5	1103.5	1100.8	1102.1	1102.1	1103.5	1103.5	1103.5
5°	1094.0	1099.4	1103.5	1102.1	1098.1	1096.7	1096.7	1096.7	1099.4	1102.1	1099.4
7.5°	1087.3	1091.3	1095.4	1094.0	1090.0	1088.6	1088.6	1090.0	1092.7	1095.4	1092.7
10°	1075.2	1080.6	1084.6	1081.9	1077.9	1075.2	1075.2	1075.2	1077.9	1080.6	1077.9
12.5°	1060.3	1064.4	1068.4	1067.1	1063.0	1060.3	1060.3	1060.3	1063.0	1065.7	1063.0
15°	1042.8	1046.8	1050.9	1049.5	1045.5	1042.8	1042.8	1042.8	1045.5	1046.8	1045.5
17.5°	1022.5	1026.6	1030.6	1027.9	1022.5	1019.8	1019.8	1019.8	1022.5	1023.9	1022.5
20°	999.6	1003.7	1006.4	1003.7	998.3	995.6	994.2	994.2	996.9	998.3	996.9
22.5°	974.0	976.7	979.4	976.7	971.3	968.6	967.2	965.9	967.2	968.6	967.2
25°	945.7	948.4	951.1	948.4	943.0	938.9	937.6	936.2	937.6	937.6	937.6
27.5°	917.3	918.7	921.4	917.3	911.9	907.9	906.5	905.2	906.5	906.5	906.5
30°	884.9	886.3	889.0	884.9	878.2	874.2	872.8	871.5	871.5	871.5	871.5
32.5°	851.2	853.9	856.6	851.2	844.5	840.4	839.1	837.7	839.1	839.1	839.1
35°	816.1	817.5	820.2	816.1	809.4	805.4	802.7	801.3	804.0	805.4	804.0
37.5°	782.4	783.8	785.1	781.1	774.3	770.3	767.6	766.2	764.9	764.9	764.9
40°	744.7	746.0	748.7	744.7	737.9	733.9	731.2	729.8	729.8	729.8	729.8
42.5°	708.2	709.6	710.9	706.9	700.1	696.1	693.4	692.0	693.4	693.4	693.4
45°	670.5	670.5	671.8	667.8	662.4	658.3	655.6	654.3	654.3	654.3	654.3
47.5°	631.3	632.7	634.0	630.0	624.6	620.5	617.8	615.1	615.1	615.1	615.1
50°	592.2	592.2	593.6	589.5	584.1	580.1	578.7	577.4	576.0	576.0	576.0
52.5°	551.7	553.1	554.4	550.4	546.3	542.3	539.6	538.3	538.3	538.3	538.3
55°	511.3	511.3	512.6	509.9	505.9	501.8	499.1	497.8	499.1	499.1	499.1
57.5°	470.8	472.2	473.5	469.5	465.4	461.4	460.0	458.7	458.7	458.7	458.7
60°	430.3	430.3	431.7	429.0	424.9	420.9	419.5	418.2	418.2	418.2	418.2
62.5°	389.9	389.9	391.2	388.5	384.5	380.4	379.1	377.7	377.7	377.7	377.7
65°	348.0	348.0	348.0	345.3	342.6	341.3	339.9	338.6	337.3	337.3	337.3
67.5°	302.2	302.2	303.5	300.8	298.1	296.8	295.4	294.1	292.7	292.7	292.7
70°	260.4	260.4	261.7	260.4	257.7	256.3	255.0	253.6	252.3	252.3	252.3
72.5°	219.9	219.9	219.9	218.5	217.2	215.8	214.5	213.1	211.8	211.8	211.8
75°	178.1	178.1	179.4	178.1	176.7	175.4	174.0	174.0	172.7	172.7	172.7
77.5°	138.9	140.3	141.6	140.3	138.9	137.6	136.2	136.2	134.9	134.9	134.9
80°	102.5	103.9	105.2	103.9	102.5	101.2	99.8	99.8	99.8	99.8	99.8
82.5°	68.8	70.1	71.5	70.1	68.8	68.8	67.5	67.5	67.5	67.5	67.5
85°	39.1	40.5	41.8	41.8	40.5	40.5	39.1	39.1	39.1	39.1	39.1
87.5°	14.8	16.2	17.5	17.5	16.2	16.2	16.2	16.2	16.2	16.2	16.2
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8
2.5°	1102.1	1102.1	1100.8	1103.5	1107.5	1108.9	1103.5	1098.1	1103.5	1108.9	1107.5
5°	1096.7	1096.7	1096.7	1098.1	1102.1	1103.5	1099.4	1094.0	1099.4	1103.5	1102.1
7.5°	1090.0	1088.6	1088.6	1090.0	1094.0	1095.4	1091.3	1087.3	1091.3	1095.4	1094.0
10°	1075.2	1075.2	1075.2	1077.9	1081.9	1084.6	1080.6	1075.2	1080.6	1084.6	1081.9
12.5°	1060.3	1060.3	1060.3	1063.0	1067.1	1068.4	1064.4	1060.3	1064.4	1068.4	1067.1
15°	1042.8	1042.8	1042.8	1045.5	1049.5	1050.9	1046.8	1042.8	1046.8	1050.9	1049.5
17.5°	1019.8	1019.8	1019.8	1022.5	1027.9	1030.6	1026.6	1022.5	1026.6	1030.6	1027.9
20°	994.2	994.2	995.6	998.3	1003.7	1006.4	1003.7	999.6	1003.7	1006.4	1003.7
22.5°	965.9	967.2	968.6	971.3	976.7	979.4	976.7	974.0	976.7	979.4	976.7
25°	936.2	937.6	938.9	943.0	948.4	951.1	948.4	945.7	948.4	951.1	948.4
27.5°	905.2	906.5	907.9	911.9	917.3	921.4	918.7	917.3	918.7	921.4	917.3
30°	871.5	872.8	874.2	878.2	884.9	889.0	886.3	884.9	886.3	889.0	884.9
32.5°	837.7	839.1	840.4	844.5	851.2	856.6	853.9	851.2	853.9	856.6	851.2
35°	801.3	802.7	805.4	809.4	816.1	820.2	817.5	816.1	817.5	820.2	816.1
37.5°	766.2	767.6	770.3	774.3	781.1	785.1	783.8	782.4	783.8	785.1	781.1
40°	729.8	731.2	733.9	737.9	744.7	748.7	746.0	744.7	746.0	748.7	744.7
42.5°	692.0	693.4	696.1	700.1	706.9	710.9	709.6	708.2	709.6	710.9	706.9
45°	654.3	655.6	658.3	662.4	667.8	671.8	670.5	670.5	670.5	671.8	667.8
47.5°	615.1	617.8	620.5	624.6	630.0	634.0	632.7	631.3	632.7	634.0	630.0
50°	577.4	578.7	580.1	584.1	589.5	593.6	592.2	592.2	592.2	593.6	589.5
52.5°	538.3	539.6	542.3	546.3	550.4	554.4	553.1	551.7	553.1	554.4	550.4
55°	497.8	499.1	501.8	505.9	509.9	512.6	511.3	511.3	511.3	512.6	509.9
57.5°	458.7	460.0	461.4	465.4	469.5	473.5	472.2	470.8	472.2	473.5	469.5
60°	418.2	419.5	420.9	424.9	429.0	431.7	430.3	430.3	430.3	431.7	429.0
62.5°	377.7	379.1	380.4	384.5	388.5	391.2	389.9	389.9	389.9	391.2	388.5
65°	338.6	339.9	341.3	342.6	345.3	348.0	348.0	348.0	348.0	348.0	345.3
67.5°	294.1	295.4	296.8	298.1	300.8	303.5	302.2	302.2	302.2	303.5	300.8
70°	253.6	255.0	256.3	257.7	260.4	261.7	260.4	260.4	260.4	261.7	260.4
72.5°	213.1	214.5	215.8	217.2	218.5	219.9	219.9	219.9	219.9	219.9	218.5
75°	174.0	174.0	175.4	176.7	178.1	179.4	178.1	178.1	178.1	179.4	178.1
77.5°	136.2	136.2	137.6	138.9	140.3	141.6	140.3	138.9	140.3	141.6	140.3
80°	99.8	99.8	101.2	102.5	103.9	105.2	103.9	102.5	103.9	105.2	103.9
82.5°	67.5	67.5	68.8	68.8	70.1	71.5	70.1	68.8	70.1	71.5	70.1
85°	39.1	39.1	40.5	40.5	41.8	41.8	40.5	39.1	40.5	41.8	41.8
87.5°	16.2	16.2	16.2	16.2	17.5	17.5	16.2	14.8	16.2	17.5	17.5
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°	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8	1104.8
2.5°	1103.5	1100.8	1102.1	1102.1	1103.5	1103.5	1103.5	1102.1	1102.1	1100.8	1103.5
5°	1098.1	1096.7	1096.7	1096.7	1099.4	1102.1	1099.4	1096.7	1096.7	1096.7	1098.1
7.5°	1090.0	1088.6	1088.6	1090.0	1092.7	1095.4	1092.7	1090.0	1088.6	1088.6	1090.0
10°	1077.9	1075.2	1075.2	1075.2	1077.9	1080.6	1077.9	1075.2	1075.2	1075.2	1077.9
12.5°	1063.0	1060.3	1060.3	1060.3	1063.0	1065.7	1063.0	1060.3	1060.3	1060.3	1063.0
15°	1045.5	1042.8	1042.8	1042.8	1045.5	1046.8	1045.5	1042.8	1042.8	1042.8	1045.5
17.5°	1022.5	1019.8	1019.8	1019.8	1022.5	1023.9	1022.5	1019.8	1019.8	1019.8	1022.5
20°	998.3	995.6	994.2	994.2	996.9	998.3	996.9	994.2	994.2	995.6	998.3
22.5°	971.3	968.6	967.2	965.9	967.2	968.6	967.2	965.9	967.2	968.6	971.3
25°	943.0	938.9	937.6	936.2	937.6	937.6	937.6	936.2	937.6	938.9	943.0
27.5°	911.9	907.9	906.5	905.2	906.5	906.5	906.5	905.2	906.5	907.9	911.9
30°	878.2	874.2	872.8	871.5	871.5	871.5	871.5	871.5	872.8	874.2	878.2
32.5°	844.5	840.4	839.1	837.7	839.1	839.1	839.1	837.7	839.1	840.4	844.5
35°	809.4	805.4	802.7	801.3	804.0	805.4	804.0	801.3	802.7	805.4	809.4
37.5°	774.3	770.3	767.6	766.2	764.9	764.9	764.9	766.2	767.6	770.3	774.3
40°	737.9	733.9	731.2	729.8	729.8	729.8	729.8	729.8	731.2	733.9	737.9
42.5°	700.1	696.1	693.4	692.0	693.4	693.4	693.4	692.0	693.4	696.1	700.1
45°	662.4	658.3	655.6	654.3	654.3	654.3	654.3	654.3	655.6	658.3	662.4
47.5°	624.6	620.5	617.8	615.1	615.1	615.1	615.1	615.1	617.8	620.5	624.6
50°	584.1	580.1	578.7	577.4	576.0	576.0	576.0	577.4	578.7	580.1	584.1
52.5°	546.3	542.3	539.6	538.3	538.3	538.3	538.3	538.3	539.6	542.3	546.3
55°	505.9	501.8	499.1	497.8	499.1	499.1	499.1	497.8	499.1	501.8	505.9
57.5°	465.4	461.4	460.0	458.7	458.7	458.7	458.7	458.7	460.0	461.4	465.4
60°	424.9	420.9	419.5	418.2	418.2	418.2	418.2	418.2	419.5	420.9	424.9
62.5°	384.5	380.4	379.1	377.7	377.7	377.7	377.7	377.7	379.1	380.4	384.5
65°	342.6	341.3	339.9	338.6	337.3	337.3	337.3	338.6	339.9	341.3	342.6
67.5°	298.1	296.8	295.4	294.1	292.7	292.7	292.7	294.1	295.4	296.8	298.1
70°	257.7	256.3	255.0	253.6	252.3	252.3	252.3	253.6	255.0	256.3	257.7
72.5°	217.2	215.8	214.5	213.1	211.8	211.8	211.8	213.1	214.5	215.8	217.2
75°	176.7	175.4	174.0	174.0	172.7	172.7	172.7	174.0	174.0	175.4	176.7
77.5°	138.9	137.6	136.2	136.2	134.9	134.9	134.9	136.2	136.2	137.6	138.9
80°	102.5	101.2	99.8	99.8	99.8	99.8	99.8	99.8	99.8	101.2	102.5
82.5°	68.8	68.8	67.5	67.5	67.5	67.5	67.5	67.5	67.5	68.8	68.8
85°	40.5	40.5	39.1	39.1	39.1	39.1	39.1	39.1	39.1	40.5	40.5
87.5°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P709063
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1104.8	1104.8	1104.8	1104.8
2.5°	<i>1107.5</i>	<i>1108.9</i>	<i>1103.5</i>	<i>1098.1</i>
5°	1102.1	1103.5	1099.4	1094.0
7.5°	1094.0	1095.4	1091.3	1087.3
10°	1081.9	1084.6	1080.6	1075.2
12.5°	1067.1	1068.4	1064.4	1060.3
15°	1049.5	1050.9	1046.8	1042.8
17.5°	1027.9	1030.6	1026.6	1022.5
20°	1003.7	1006.4	1003.7	999.6
22.5°	976.7	979.4	976.7	974.0
25°	948.4	951.1	948.4	945.7
27.5°	917.3	921.4	918.7	917.3
30°	884.9	889.0	886.3	884.9
32.5°	851.2	856.6	853.9	851.2
35°	816.1	820.2	817.5	816.1
37.5°	781.1	785.1	783.8	782.4
40°	744.7	748.7	746.0	744.7
42.5°	706.9	710.9	709.6	708.2
45°	667.8	671.8	670.5	670.5
47.5°	630.0	634.0	632.7	631.3
50°	589.5	593.6	592.2	592.2
52.5°	550.4	554.4	553.1	551.7
55°	509.9	512.6	511.3	511.3
57.5°	469.5	473.5	472.2	470.8
60°	429.0	431.7	430.3	430.3
62.5°	388.5	391.2	389.9	389.9
65°	345.3	348.0	348.0	348.0
67.5°	300.8	303.5	302.2	302.2
70°	260.4	261.7	260.4	260.4
72.5°	218.5	219.9	219.9	219.9
75°	178.1	179.4	178.1	178.1
77.5°	140.3	141.6	140.3	138.9
80°	103.9	105.2	103.9	102.5
82.5°	70.1	71.5	70.1	68.8
85°	41.8	41.8	40.5	39.1
87.5°	17.5	17.5	16.2	14.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)