

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: P709060

Luminaire Tested: **4APN-X-42L830-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709060
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-X-42L830-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

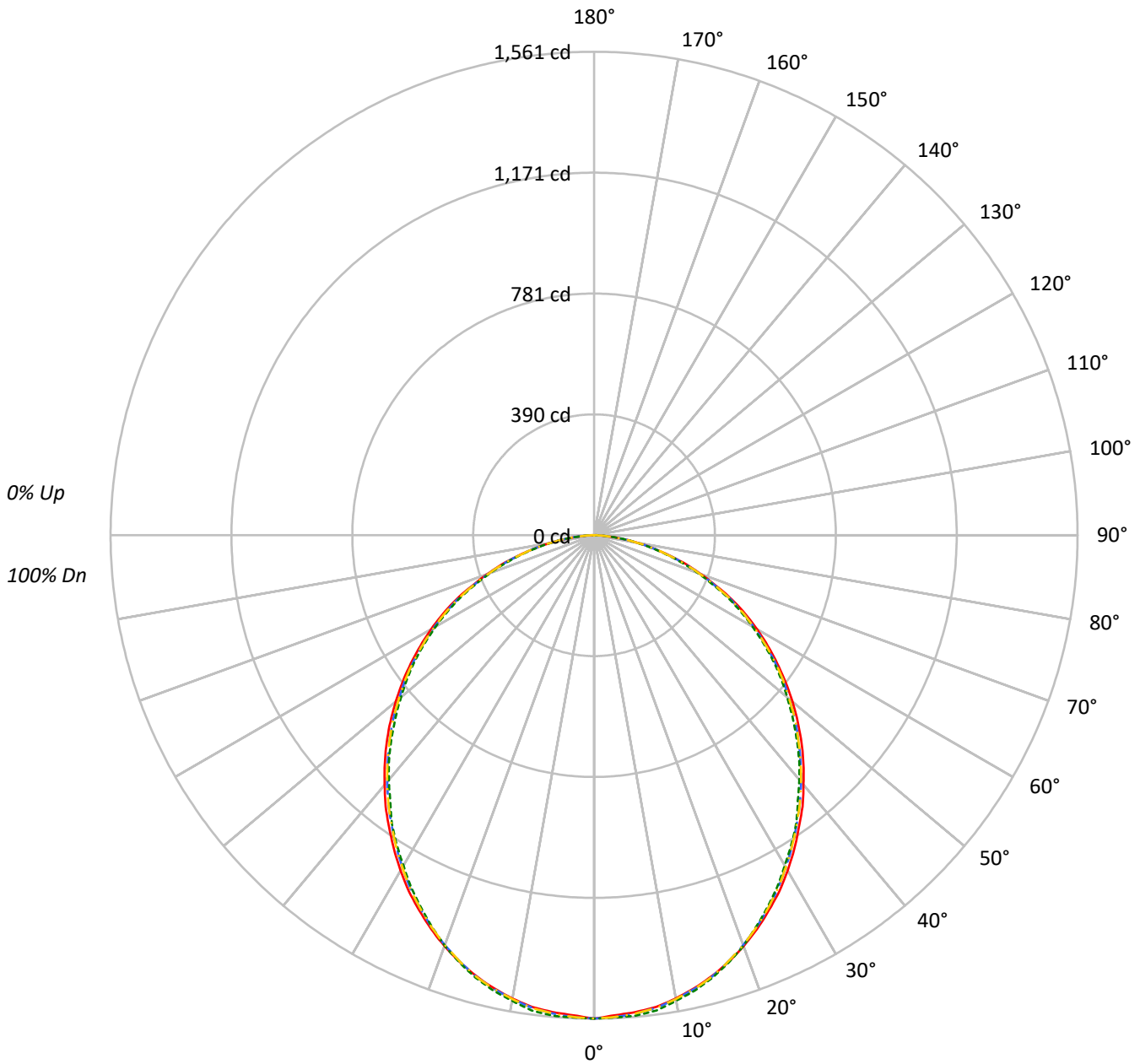
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4060.4 lumens
Efficiency: N/A
Efficacy: 87.9 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): 46.2
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°	14398	14398	14398	14398
5°	14313	14418	14313	14418
10°	14228	14299	14228	14299
15°	14070	14124	14070	14124
20°	13863	13845	13863	13845
25°	13598	13482	13598	13482
30°	13317	13114	13317	13114
35°	12985	12813	12985	12813
40°	12669	12416	12669	12416
45°	12358	12059	12358	12059
50°	12007	11679	12007	11679
55°	11617	11342	11617	11342
60°	11217	10900	11217	10900
65°	10732	10400	10732	10400
70°	9922	9611	9922	9611
75°	8965	8694	8965	8694
80°	7693	7492	7693	7492
85°	5854	5854	5854	5854



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.3	3.6
10°-20°	416.0	10.2
20°-30°	613.1	15.1
30°-40°	715.7	17.6
40°-50°	721.6	17.8
50°-60°	637.7	15.7
60°-70°	476.9	11.7
70°-80°	264.4	6.5
80°-90°	67.8	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°	1176.3	29.0
0°-40°	1892.0	46.6
0°-60°	3251.3	80.1
0°-90°	4060.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4060.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1561	1561	1561	1561	1561	
5°	1545	1557	1545	1557	1545	147
15°	1473	1479	1473	1479	1473	415
25°	1336	1324	1336	1324	1336	616
35°	1153	1138	1153	1138	1153	722
45°	947	924	947	924	947	730
55°	722	705	722	705	722	646
65°	492	476	492	476	492	484
75°	252	244	252	244	252	267
85°	55	55	55	55	55	67
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°	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6
2.5°	1551.1	1558.7	1566.4	1564.5	1558.7	1554.9	1556.8	1556.8	1558.7	1558.7	1558.7
5°	1545.4	1553.0	1558.7	1556.8	1551.1	1549.2	1549.2	1549.2	1553.0	1556.8	1553.0
7.5°	1535.9	1541.6	1547.3	1545.4	1539.7	1537.8	1537.8	1539.7	1543.5	1547.3	1543.5
10°	1518.7	1526.3	1532.1	1528.2	1522.5	1518.7	1518.7	1518.7	1522.5	1526.3	1522.5
12.5°	1497.8	1503.5	1509.2	1507.3	1501.6	1497.8	1497.8	1497.8	1501.6	1505.4	1501.6
15°	1473.0	1478.7	1484.4	1482.5	1476.8	1473.0	1473.0	1473.0	1476.8	1478.7	1476.8
17.5°	1444.4	1450.1	1455.8	1452.0	1444.4	1440.6	1440.6	1440.6	1444.4	1446.3	1444.4
20°	1412.0	1417.7	1421.5	1417.7	1410.1	1406.3	1404.4	1404.4	1408.2	1410.1	1408.2
22.5°	1375.8	1379.6	1383.4	1379.6	1372.0	1368.2	1366.3	1364.4	1366.3	1368.2	1366.3
25°	1335.8	1339.6	1343.4	1339.6	1332.0	1326.3	1324.4	1322.4	1324.4	1324.4	1324.4
27.5°	1295.8	1297.7	1301.5	1295.8	1288.1	1282.4	1280.5	1278.6	1280.5	1280.5	1280.5
30°	1250.0	1251.9	1255.8	1250.0	1240.5	1234.8	1232.9	1231.0	1231.0	1231.0	1231.0
32.5°	1202.4	1206.2	1210.0	1202.4	1192.9	1187.2	1185.3	1183.3	1185.3	1185.3	1185.3
35°	1152.9	1154.8	1158.6	1152.9	1143.3	1137.6	1133.8	1131.9	1135.7	1137.6	1135.7
37.5°	1105.2	1107.1	1109.0	1103.3	1093.8	1088.1	1084.3	1082.4	1080.4	1080.4	1080.4
40°	1051.9	1053.8	1057.6	1051.9	1042.3	1036.6	1032.8	1030.9	1030.9	1030.9	1030.9
42.5°	1000.4	1002.3	1004.2	998.5	989.0	983.3	979.5	977.5	979.5	979.5	979.5
45°	947.1	947.1	949.0	943.2	935.6	929.9	926.1	924.2	924.2	924.2	924.2
47.5°	891.8	893.7	895.6	889.9	882.3	876.6	872.7	868.9	868.9	868.9	868.9
50°	836.5	836.5	838.4	832.7	825.1	819.4	817.5	815.6	813.7	813.7	813.7
52.5°	779.4	781.3	783.2	777.5	771.7	766.0	762.2	760.3	760.3	760.3	760.3
55°	722.2	722.2	724.1	720.3	714.6	708.9	705.1	703.1	705.1	705.1	705.1
57.5°	665.0	666.9	668.8	663.1	657.4	651.7	649.8	647.9	647.9	647.9	647.9
60°	607.9	607.9	609.8	606.0	600.2	594.5	592.6	590.7	590.7	590.7	590.7
62.5°	550.7	550.7	552.6	548.8	543.1	537.4	535.5	533.6	533.6	533.6	533.6
65°	491.6	491.6	491.6	487.8	484.0	482.1	480.2	478.3	476.4	476.4	476.4
67.5°	426.8	426.8	428.7	424.9	421.1	419.2	417.3	415.4	413.5	413.5	413.5
70°	367.8	367.8	369.7	367.8	364.0	362.1	360.1	358.2	356.3	356.3	356.3
72.5°	310.6	310.6	310.6	308.7	306.8	304.9	303.0	301.1	299.2	299.2	299.2
75°	251.5	251.5	253.4	251.5	249.6	247.7	245.8	245.8	243.9	243.9	243.9
77.5°	196.3	198.2	200.1	198.2	196.3	194.4	192.5	192.5	190.6	190.6	190.6
80°	144.8	146.7	148.6	146.7	144.8	142.9	141.0	141.0	141.0	141.0	141.0
82.5°	97.2	99.1	101.0	99.1	97.2	97.2	95.3	95.3	95.3	95.3	95.3
85°	55.3	57.2	59.1	59.1	57.2	57.2	55.3	55.3	55.3	55.3	55.3
87.5°	21.0	22.9	24.8	24.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6
2.5°	1556.8	1556.8	1554.9	1558.7	1564.5	1566.4	1558.7	1551.1	1558.7	1566.4	1564.5
5°	1549.2	1549.2	1549.2	1551.1	1556.8	1558.7	1553.0	1545.4	1553.0	1558.7	1556.8
7.5°	1539.7	1537.8	1537.8	1539.7	1545.4	1547.3	1541.6	1535.9	1541.6	1547.3	1545.4
10°	1518.7	1518.7	1518.7	1522.5	1528.2	1532.1	1526.3	1518.7	1526.3	1532.1	1528.2
12.5°	1497.8	1497.8	1497.8	1501.6	1507.3	1509.2	1503.5	1497.8	1503.5	1509.2	1507.3
15°	1473.0	1473.0	1473.0	1476.8	1482.5	1484.4	1478.7	1473.0	1478.7	1484.4	1482.5
17.5°	1440.6	1440.6	1440.6	1444.4	1452.0	1455.8	1450.1	1444.4	1450.1	1455.8	1452.0
20°	1404.4	1404.4	1406.3	1410.1	1417.7	1421.5	1417.7	1412.0	1417.7	1421.5	1417.7
22.5°	1364.4	1366.3	1368.2	1372.0	1379.6	1383.4	1379.6	1375.8	1379.6	1383.4	1379.6
25°	1322.4	1324.4	1326.3	1332.0	1339.6	1343.4	1339.6	1335.8	1339.6	1343.4	1339.6
27.5°	1278.6	1280.5	1282.4	1288.1	1295.8	1301.5	1297.7	1295.8	1297.7	1301.5	1295.8
30°	1231.0	1232.9	1234.8	1240.5	1250.0	1255.8	1251.9	1250.0	1251.9	1255.8	1250.0
32.5°	1183.3	1185.3	1187.2	1192.9	1202.4	1210.0	1206.2	1202.4	1206.2	1210.0	1202.4
35°	1131.9	1133.8	1137.6	1143.3	1152.9	1158.6	1154.8	1152.9	1154.8	1158.6	1152.9
37.5°	1082.4	1084.3	1088.1	1093.8	1103.3	1109.0	1107.1	1105.2	1107.1	1109.0	1103.3
40°	1030.9	1032.8	1036.6	1042.3	1051.9	1057.6	1053.8	1051.9	1053.8	1057.6	1051.9
42.5°	977.5	979.5	983.3	989.0	998.5	1004.2	1002.3	1000.4	1002.3	1004.2	998.5
45°	924.2	926.1	929.9	935.6	943.2	949.0	947.1	947.1	947.1	949.0	943.2
47.5°	868.9	872.7	876.6	882.3	889.9	895.6	893.7	891.8	893.7	895.6	889.9
50°	815.6	817.5	819.4	825.1	832.7	838.4	836.5	836.5	836.5	838.4	832.7
52.5°	760.3	762.2	766.0	771.7	777.5	783.2	781.3	779.4	781.3	783.2	777.5
55°	703.1	705.1	708.9	714.6	720.3	724.1	722.2	722.2	722.2	724.1	720.3
57.5°	647.9	649.8	651.7	657.4	663.1	668.8	666.9	665.0	666.9	668.8	663.1
60°	590.7	592.6	594.5	600.2	606.0	609.8	607.9	607.9	607.9	609.8	606.0
62.5°	533.6	535.5	537.4	543.1	548.8	552.6	550.7	550.7	550.7	552.6	548.8
65°	478.3	480.2	482.1	484.0	487.8	491.6	491.6	491.6	491.6	491.6	487.8
67.5°	415.4	417.3	419.2	421.1	424.9	428.7	426.8	426.8	426.8	428.7	424.9
70°	358.2	360.1	362.1	364.0	367.8	369.7	367.8	367.8	367.8	369.7	367.8
72.5°	301.1	303.0	304.9	306.8	308.7	310.6	310.6	310.6	310.6	310.6	308.7
75°	245.8	245.8	247.7	249.6	251.5	253.4	251.5	251.5	251.5	253.4	251.5
77.5°	192.5	192.5	194.4	196.3	198.2	200.1	198.2	196.3	198.2	200.1	198.2
80°	141.0	141.0	142.9	144.8	146.7	148.6	146.7	144.8	146.7	148.6	146.7
82.5°	95.3	95.3	97.2	97.2	99.1	101.0	99.1	97.2	99.1	101.0	99.1
85°	55.3	55.3	57.2	57.2	59.1	59.1	57.2	55.3	57.2	59.1	59.1
87.5°	22.9	22.9	22.9	22.9	24.8	24.8	22.9	21.0	22.9	24.8	24.8
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6	1560.6
2.5°	1558.7	1554.9	1556.8	1556.8	1558.7	1558.7	1558.7	1556.8	1556.8	1554.9	1558.7
5°	1551.1	1549.2	1549.2	1549.2	1553.0	1556.8	1553.0	1549.2	1549.2	1549.2	1551.1
7.5°	1539.7	1537.8	1537.8	1539.7	1543.5	1547.3	1543.5	1539.7	1537.8	1537.8	1539.7
10°	1522.5	1518.7	1518.7	1518.7	1522.5	1526.3	1522.5	1518.7	1518.7	1518.7	1522.5
12.5°	1501.6	1497.8	1497.8	1497.8	1501.6	1505.4	1501.6	1497.8	1497.8	1497.8	1501.6
15°	1476.8	1473.0	1473.0	1473.0	1476.8	1478.7	1476.8	1473.0	1473.0	1473.0	1476.8
17.5°	1444.4	1440.6	1440.6	1440.6	1444.4	1446.3	1444.4	1440.6	1440.6	1440.6	1444.4
20°	1410.1	1406.3	1404.4	1404.4	1408.2	1410.1	1408.2	1404.4	1404.4	1406.3	1410.1
22.5°	1372.0	1368.2	1366.3	1364.4	1366.3	1368.2	1366.3	1364.4	1366.3	1368.2	1372.0
25°	1332.0	1326.3	1324.4	1322.4	1324.4	1324.4	1324.4	1322.4	1324.4	1326.3	1332.0
27.5°	1288.1	1282.4	1280.5	1278.6	1280.5	1280.5	1280.5	1278.6	1280.5	1282.4	1288.1
30°	1240.5	1234.8	1232.9	1231.0	1231.0	1231.0	1231.0	1231.0	1232.9	1234.8	1240.5
32.5°	1192.9	1187.2	1185.3	1183.3	1185.3	1185.3	1185.3	1183.3	1185.3	1187.2	1192.9
35°	1143.3	1137.6	1133.8	1131.9	1135.7	1137.6	1135.7	1131.9	1133.8	1137.6	1143.3
37.5°	1093.8	1088.1	1084.3	1082.4	1080.4	1080.4	1080.4	1082.4	1084.3	1088.1	1093.8
40°	1042.3	1036.6	1032.8	1030.9	1030.9	1030.9	1030.9	1030.9	1032.8	1036.6	1042.3
42.5°	989.0	983.3	979.5	977.5	979.5	979.5	979.5	977.5	979.5	983.3	989.0
45°	935.6	929.9	926.1	924.2	924.2	924.2	924.2	924.2	926.1	929.9	935.6
47.5°	882.3	876.6	872.7	868.9	868.9	868.9	868.9	868.9	872.7	876.6	882.3
50°	825.1	819.4	817.5	815.6	813.7	813.7	813.7	815.6	817.5	819.4	825.1
52.5°	771.7	766.0	762.2	760.3	760.3	760.3	760.3	760.3	762.2	766.0	771.7
55°	714.6	708.9	705.1	703.1	705.1	705.1	705.1	703.1	705.1	708.9	714.6
57.5°	657.4	651.7	649.8	647.9	647.9	647.9	647.9	647.9	649.8	651.7	657.4
60°	600.2	594.5	592.6	590.7	590.7	590.7	590.7	590.7	592.6	594.5	600.2
62.5°	543.1	537.4	535.5	533.6	533.6	533.6	533.6	533.6	535.5	537.4	543.1
65°	484.0	482.1	480.2	478.3	476.4	476.4	476.4	478.3	480.2	482.1	484.0
67.5°	421.1	419.2	417.3	415.4	413.5	413.5	413.5	415.4	417.3	419.2	421.1
70°	364.0	362.1	360.1	358.2	356.3	356.3	356.3	358.2	360.1	362.1	364.0
72.5°	306.8	304.9	303.0	301.1	299.2	299.2	299.2	301.1	303.0	304.9	306.8
75°	249.6	247.7	245.8	245.8	243.9	243.9	243.9	245.8	245.8	247.7	249.6
77.5°	196.3	194.4	192.5	192.5	190.6	190.6	190.6	192.5	192.5	194.4	196.3
80°	144.8	142.9	141.0	141.0	141.0	141.0	141.0	141.0	141.0	142.9	144.8
82.5°	97.2	97.2	95.3	95.3	95.3	95.3	95.3	95.3	95.3	97.2	97.2
85°	57.2	57.2	55.3	55.3	55.3	55.3	55.3	55.3	55.3	57.2	57.2
87.5°	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9
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):

	330°	340°	350°	360°
0°	1560.6	1560.6	1560.6	1560.6
2.5°	1564.5	1566.4	1558.7	1551.1
5°	1556.8	1558.7	1553.0	1545.4
7.5°	1545.4	1547.3	1541.6	1535.9
10°	1528.2	1532.1	1526.3	1518.7
12.5°	1507.3	1509.2	1503.5	1497.8
15°	1482.5	1484.4	1478.7	1473.0
17.5°	1452.0	1455.8	1450.1	1444.4
20°	1417.7	1421.5	1417.7	1412.0
22.5°	1379.6	1383.4	1379.6	1375.8
25°	1339.6	1343.4	1339.6	1335.8
27.5°	1295.8	1301.5	1297.7	1295.8
30°	1250.0	1255.8	1251.9	1250.0
32.5°	1202.4	1210.0	1206.2	1202.4
35°	1152.9	1158.6	1154.8	1152.9
37.5°	1103.3	1109.0	1107.1	1105.2
40°	1051.9	1057.6	1053.8	1051.9
42.5°	998.5	1004.2	1002.3	1000.4
45°	943.2	949.0	947.1	947.1
47.5°	889.9	895.6	893.7	891.8
50°	832.7	838.4	836.5	836.5
52.5°	777.5	783.2	781.3	779.4
55°	720.3	724.1	722.2	722.2
57.5°	663.1	668.8	666.9	665.0
60°	606.0	609.8	607.9	607.9
62.5°	548.8	552.6	550.7	550.7
65°	487.8	491.6	491.6	491.6
67.5°	424.9	428.7	426.8	426.8
70°	367.8	369.7	367.8	367.8
72.5°	308.7	310.6	310.6	310.6
75°	251.5	253.4	251.5	251.5
77.5°	198.2	200.1	198.2	196.3
80°	146.7	148.6	146.7	144.8
82.5°	99.1	101.0	99.1	97.2
85°	59.1	59.1	57.2	55.3
87.5°	24.8	24.8	22.9	21.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)