

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: P709072

Luminaire Tested: **4APN-X-42L840-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709072
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-X-42L840-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

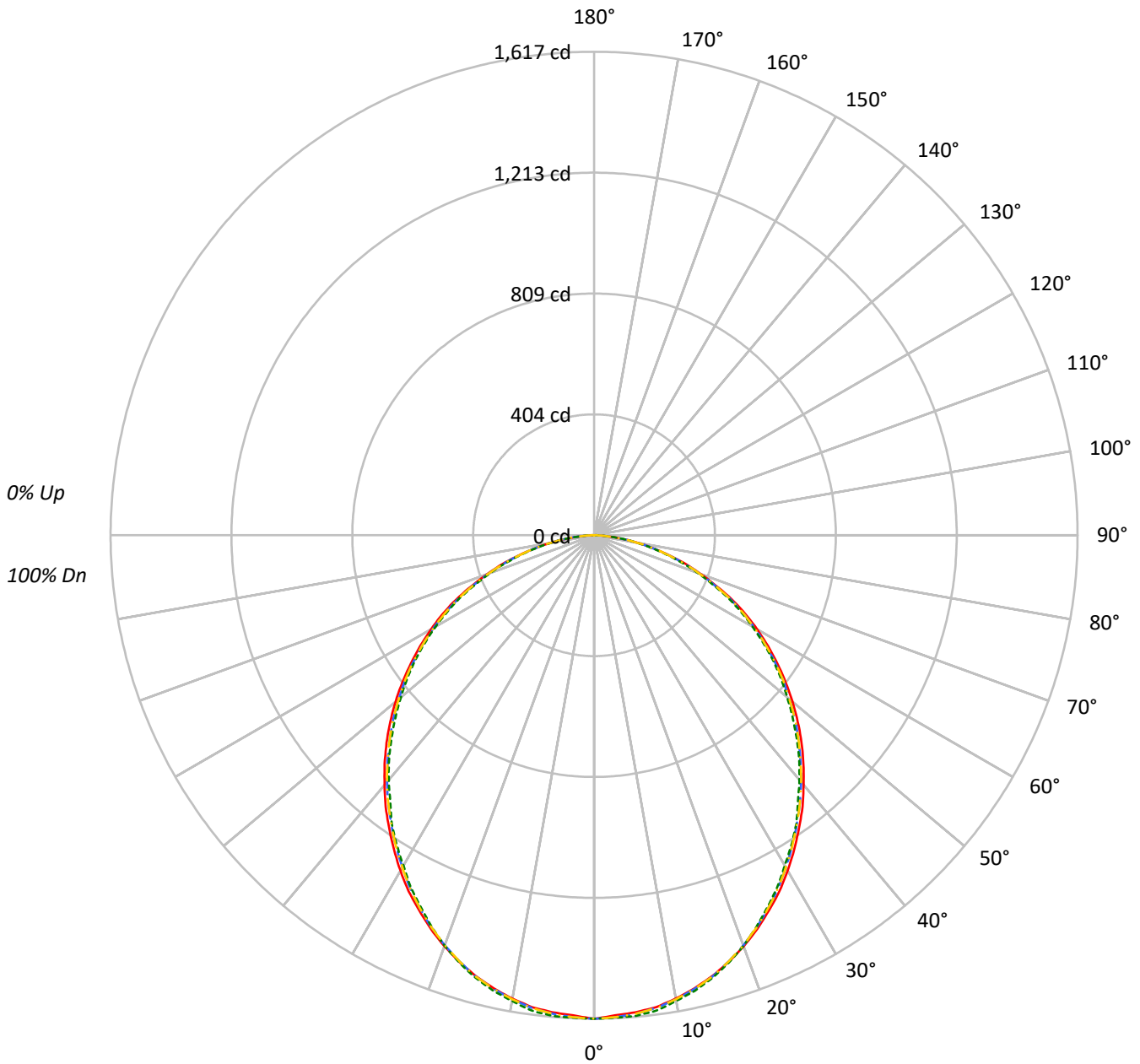
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4207.6 lumens
Efficiency: N/A
Efficacy: 91.1 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°	14921	14921	14921	14921
5°	14831	14941	14831	14941
10°	14744	14818	14744	14818
15°	14580	14636	14580	14636
20°	14366	14347	14366	14347
25°	14091	13971	14091	13971
30°	13801	13590	13801	13590
35°	13456	13278	13456	13278
40°	13128	12867	13128	12867
45°	12805	12496	12805	12496
50°	12443	12103	12443	12103
55°	12038	11752	12038	11752
60°	11623	11295	11623	11295
65°	11123	10778	11123	10778
70°	10280	9962	10280	9962
75°	9293	9012	9293	9012
80°	7975	7763	7975	7763
85°	6066	6066	6066	6066



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.6	3.6
10°-20°	431.0	10.2
20°-30°	635.3	15.1
30°-40°	741.7	17.6
40°-50°	747.7	17.8
50°-60°	660.8	15.7
60°-70°	494.2	11.7
70°-80°	273.9	6.5
80°-90°	70.2	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°	1219.0	29.0
0°-40°	1960.7	46.6
0°-60°	3369.2	80.1
0°-90°	4207.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4207.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1617	1617	1617	1617	1617	
5°	1601	1613	1601	1613	1601	152
15°	1526	1532	1526	1532	1526	430
25°	1384	1372	1384	1372	1384	638
35°	1195	1179	1195	1179	1195	748
45°	981	958	981	958	981	757
55°	748	731	748	731	748	669
65°	510	494	510	494	510	502
75°	261	253	261	253	261	277
85°	57	57	57	57	57	69
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°	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2
2.5°	1607.4	1615.3	1623.2	1621.2	1615.3	1611.3	1613.3	1613.3	1615.3	1615.3	1615.3
5°	1601.4	1609.3	1615.3	1613.3	1607.4	1605.4	1605.4	1605.4	1609.3	1613.3	1609.3
7.5°	1591.6	1597.5	1603.4	1601.4	1595.5	1593.6	1593.6	1595.5	1599.5	1603.4	1599.5
10°	1573.8	1581.7	1587.6	1583.7	1577.8	1573.8	1573.8	1573.8	1577.8	1581.7	1577.8
12.5°	1552.1	1558.0	1563.9	1562.0	1556.0	1552.1	1552.1	1552.1	1556.0	1560.0	1556.0
15°	1526.4	1532.3	1538.3	1536.3	1530.4	1526.4	1526.4	1526.4	1530.4	1532.3	1530.4
17.5°	1496.8	1502.7	1508.6	1504.7	1496.8	1492.8	1492.8	1492.8	1496.8	1498.8	1496.8
20°	1463.2	1469.1	1473.1	1469.1	1461.2	1457.3	1455.3	1455.3	1459.3	1461.2	1459.3
22.5°	1425.7	1429.7	1433.6	1429.7	1421.8	1417.8	1415.8	1413.9	1415.8	1417.8	1415.8
25°	1384.2	1388.2	1392.1	1388.2	1380.3	1374.4	1372.4	1370.4	1372.4	1372.4	1372.4
27.5°	1342.8	1344.7	1348.7	1342.8	1334.9	1328.9	1327.0	1325.0	1327.0	1327.0	1327.0
30°	1295.4	1297.4	1301.3	1295.4	1285.5	1279.6	1277.6	1275.6	1275.6	1275.6	1275.6
32.5°	1246.0	1250.0	1253.9	1246.0	1236.1	1230.2	1228.2	1226.3	1228.2	1228.2	1228.2
35°	1194.7	1196.6	1200.6	1194.7	1184.8	1178.9	1174.9	1172.9	1176.9	1178.9	1176.9
37.5°	1145.3	1147.3	1149.3	1143.3	1133.5	1127.5	1123.6	1121.6	1119.6	1119.6	1119.6
40°	1090.0	1092.0	1095.9	1090.0	1080.1	1074.2	1070.3	1068.3	1068.3	1068.3	1068.3
42.5°	1036.7	1038.7	1040.6	1034.7	1024.8	1018.9	1015.0	1013.0	1015.0	1015.0	1015.0
45°	981.4	981.4	983.4	977.5	969.6	963.6	959.7	957.7	957.7	957.7	957.7
47.5°	924.1	926.1	928.1	922.2	914.3	908.3	904.4	900.4	900.4	900.4	900.4
50°	866.9	866.9	868.9	862.9	855.0	849.1	847.1	845.2	843.2	843.2	843.2
52.5°	807.6	809.6	811.6	805.7	799.7	793.8	789.9	787.9	787.9	787.9	787.9
55°	748.4	748.4	750.4	746.4	740.5	734.6	730.6	728.6	730.6	730.6	730.6
57.5°	689.2	691.1	693.1	687.2	681.3	675.3	673.4	671.4	671.4	671.4	671.4
60°	629.9	629.9	631.9	627.9	622.0	616.1	614.1	612.1	612.1	612.1	612.1
62.5°	570.7	570.7	572.7	568.7	562.8	556.9	554.9	552.9	552.9	552.9	552.9
65°	509.5	509.5	509.5	505.5	501.6	499.6	497.6	495.6	493.7	493.7	493.7
67.5°	442.3	442.3	444.3	440.3	436.4	434.4	432.5	430.5	428.5	428.5	428.5
70°	381.1	381.1	383.1	381.1	377.2	375.2	373.2	371.2	369.3	369.3	369.3
72.5°	321.9	321.9	321.9	319.9	317.9	315.9	314.0	312.0	310.0	310.0	310.0
75°	260.7	260.7	262.6	260.7	258.7	256.7	254.7	254.7	252.8	252.8	252.8
77.5°	203.4	205.4	207.3	205.4	203.4	201.4	199.4	199.4	197.5	197.5	197.5
80°	150.1	152.0	154.0	152.0	150.1	148.1	146.1	146.1	146.1	146.1	146.1
82.5°	100.7	102.7	104.7	102.7	100.7	100.7	98.7	98.7	98.7	98.7	98.7
85°	57.3	59.2	61.2	61.2	59.2	59.2	57.3	57.3	57.3	57.3	57.3
87.5°	21.7	23.7	25.7	25.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
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°	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2
2.5°	1613.3	1613.3	1611.3	1615.3	1621.2	1623.2	1615.3	1607.4	1615.3	1623.2	1621.2
5°	1605.4	1605.4	1605.4	1607.4	1613.3	1615.3	1609.3	1601.4	1609.3	1615.3	1613.3
7.5°	1595.5	1593.6	1593.6	1595.5	1601.4	1603.4	1597.5	1591.6	1597.5	1603.4	1601.4
10°	1573.8	1573.8	1573.8	1577.8	1583.7	1587.6	1581.7	1573.8	1581.7	1587.6	1583.7
12.5°	1552.1	1552.1	1552.1	1556.0	1562.0	1563.9	1558.0	1552.1	1558.0	1563.9	1562.0
15°	1526.4	1526.4	1526.4	1530.4	1536.3	1538.3	1532.3	1526.4	1532.3	1538.3	1536.3
17.5°	1492.8	1492.8	1492.8	1496.8	1504.7	1508.6	1502.7	1496.8	1502.7	1508.6	1504.7
20°	1455.3	1455.3	1457.3	1461.2	1469.1	1473.1	1469.1	1463.2	1469.1	1473.1	1469.1
22.5°	1413.9	1415.8	1417.8	1421.8	1429.7	1433.6	1429.7	1425.7	1429.7	1433.6	1429.7
25°	1370.4	1372.4	1374.4	1380.3	1388.2	1392.1	1388.2	1384.2	1388.2	1392.1	1388.2
27.5°	1325.0	1327.0	1328.9	1334.9	1342.8	1348.7	1344.7	1342.8	1344.7	1348.7	1342.8
30°	1275.6	1277.6	1279.6	1285.5	1295.4	1301.3	1297.4	1295.4	1297.4	1301.3	1295.4
32.5°	1226.3	1228.2	1230.2	1236.1	1246.0	1253.9	1250.0	1246.0	1250.0	1253.9	1246.0
35°	1172.9	1174.9	1178.9	1184.8	1194.7	1200.6	1196.6	1194.7	1196.6	1200.6	1194.7
37.5°	1121.6	1123.6	1127.5	1133.5	1143.3	1149.3	1147.3	1145.3	1147.3	1149.3	1143.3
40°	1068.3	1070.3	1074.2	1080.1	1090.0	1095.9	1092.0	1090.0	1092.0	1095.9	1090.0
42.5°	1013.0	1015.0	1018.9	1024.8	1034.7	1040.6	1038.7	1036.7	1038.7	1040.6	1034.7
45°	957.7	959.7	963.6	969.6	977.5	983.4	981.4	981.4	981.4	983.4	977.5
47.5°	900.4	904.4	908.3	914.3	922.2	928.1	926.1	924.1	926.1	928.1	922.2
50°	845.2	847.1	849.1	855.0	862.9	868.9	866.9	866.9	866.9	868.9	862.9
52.5°	787.9	789.9	793.8	799.7	805.7	811.6	809.6	807.6	809.6	811.6	805.7
55°	728.6	730.6	734.6	740.5	746.4	750.4	748.4	748.4	748.4	750.4	746.4
57.5°	671.4	673.4	675.3	681.3	687.2	693.1	691.1	689.2	691.1	693.1	687.2
60°	612.1	614.1	616.1	622.0	627.9	631.9	629.9	629.9	629.9	631.9	627.9
62.5°	552.9	554.9	556.9	562.8	568.7	572.7	570.7	570.7	570.7	572.7	568.7
65°	495.6	497.6	499.6	501.6	505.5	509.5	509.5	509.5	509.5	509.5	505.5
67.5°	430.5	432.5	434.4	436.4	440.3	444.3	442.3	442.3	442.3	444.3	440.3
70°	371.2	373.2	375.2	377.2	381.1	383.1	381.1	381.1	381.1	383.1	381.1
72.5°	312.0	314.0	315.9	317.9	319.9	321.9	321.9	321.9	321.9	321.9	319.9
75°	254.7	254.7	256.7	258.7	260.7	262.6	260.7	260.7	260.7	262.6	260.7
77.5°	199.4	199.4	201.4	203.4	205.4	207.3	205.4	203.4	205.4	207.3	205.4
80°	146.1	146.1	148.1	150.1	152.0	154.0	152.0	150.1	152.0	154.0	152.0
82.5°	98.7	98.7	100.7	100.7	102.7	104.7	102.7	100.7	102.7	104.7	102.7
85°	57.3	57.3	59.2	59.2	61.2	61.2	59.2	57.3	59.2	61.2	61.2
87.5°	23.7	23.7	23.7	23.7	25.7	25.7	23.7	21.7	23.7	25.7	25.7
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°	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2	1617.2
2.5°	1615.3	1611.3	1613.3	1613.3	1615.3	1615.3	1615.3	1613.3	1613.3	1611.3	1615.3
5°	1607.4	1605.4	1605.4	1605.4	1609.3	1613.3	1609.3	1605.4	1605.4	1605.4	1607.4
7.5°	1595.5	1593.6	1593.6	1595.5	1599.5	1603.4	1599.5	1595.5	1593.6	1593.6	1595.5
10°	1577.8	1573.8	1573.8	1573.8	1577.8	1581.7	1577.8	1573.8	1573.8	1573.8	1577.8
12.5°	1556.0	1552.1	1552.1	1552.1	1556.0	1560.0	1556.0	1552.1	1552.1	1552.1	1556.0
15°	1530.4	1526.4	1526.4	1526.4	1530.4	1532.3	1530.4	1526.4	1526.4	1526.4	1530.4
17.5°	1496.8	1492.8	1492.8	1492.8	1496.8	1498.8	1496.8	1492.8	1492.8	1492.8	1496.8
20°	1461.2	1457.3	1455.3	1455.3	1459.3	1461.2	1459.3	1455.3	1455.3	1457.3	1461.2
22.5°	1421.8	1417.8	1415.8	1413.9	1415.8	1417.8	1415.8	1413.9	1415.8	1417.8	1421.8
25°	1380.3	1374.4	1372.4	1370.4	1372.4	1372.4	1372.4	1370.4	1372.4	1374.4	1380.3
27.5°	1334.9	1328.9	1327.0	1325.0	1327.0	1327.0	1327.0	1325.0	1327.0	1328.9	1334.9
30°	1285.5	1279.6	1277.6	1275.6	1275.6	1275.6	1275.6	1275.6	1277.6	1279.6	1285.5
32.5°	1236.1	1230.2	1228.2	1226.3	1228.2	1228.2	1228.2	1226.3	1228.2	1230.2	1236.1
35°	1184.8	1178.9	1174.9	1172.9	1176.9	1178.9	1176.9	1172.9	1174.9	1178.9	1184.8
37.5°	1133.5	1127.5	1123.6	1121.6	1119.6	1119.6	1119.6	1121.6	1123.6	1127.5	1133.5
40°	1080.1	1074.2	1070.3	1068.3	1068.3	1068.3	1068.3	1068.3	1070.3	1074.2	1080.1
42.5°	1024.8	1018.9	1015.0	1013.0	1015.0	1015.0	1015.0	1013.0	1015.0	1018.9	1024.8
45°	969.6	963.6	959.7	957.7	957.7	957.7	957.7	957.7	959.7	963.6	969.6
47.5°	914.3	908.3	904.4	900.4	900.4	900.4	900.4	900.4	904.4	908.3	914.3
50°	855.0	849.1	847.1	845.2	843.2	843.2	843.2	845.2	847.1	849.1	855.0
52.5°	799.7	793.8	789.9	787.9	787.9	787.9	787.9	787.9	789.9	793.8	799.7
55°	740.5	734.6	730.6	728.6	730.6	730.6	730.6	728.6	730.6	734.6	740.5
57.5°	681.3	675.3	673.4	671.4	671.4	671.4	671.4	671.4	673.4	675.3	681.3
60°	622.0	616.1	614.1	612.1	612.1	612.1	612.1	612.1	614.1	616.1	622.0
62.5°	562.8	556.9	554.9	552.9	552.9	552.9	552.9	552.9	554.9	556.9	562.8
65°	501.6	499.6	497.6	495.6	493.7	493.7	493.7	495.6	497.6	499.6	501.6
67.5°	436.4	434.4	432.5	430.5	428.5	428.5	428.5	430.5	432.5	434.4	436.4
70°	377.2	375.2	373.2	371.2	369.3	369.3	369.3	371.2	373.2	375.2	377.2
72.5°	317.9	315.9	314.0	312.0	310.0	310.0	310.0	312.0	314.0	315.9	317.9
75°	258.7	256.7	254.7	254.7	252.8	252.8	252.8	254.7	254.7	256.7	258.7
77.5°	203.4	201.4	199.4	199.4	197.5	197.5	197.5	199.4	199.4	201.4	203.4
80°	150.1	148.1	146.1	146.1	146.1	146.1	146.1	146.1	146.1	148.1	150.1
82.5°	100.7	100.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	100.7	100.7
85°	59.2	59.2	57.3	57.3	57.3	57.3	57.3	57.3	57.3	59.2	59.2
87.5°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
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°	1617.2	1617.2	1617.2	1617.2
2.5°	1621.2	1623.2	1615.3	1607.4
5°	1613.3	1615.3	1609.3	1601.4
7.5°	1601.4	1603.4	1597.5	1591.6
10°	1583.7	1587.6	1581.7	1573.8
12.5°	1562.0	1563.9	1558.0	1552.1
15°	1536.3	1538.3	1532.3	1526.4
17.5°	1504.7	1508.6	1502.7	1496.8
20°	1469.1	1473.1	1469.1	1463.2
22.5°	1429.7	1433.6	1429.7	1425.7
25°	1388.2	1392.1	1388.2	1384.2
27.5°	1342.8	1348.7	1344.7	1342.8
30°	1295.4	1301.3	1297.4	1295.4
32.5°	1246.0	1253.9	1250.0	1246.0
35°	1194.7	1200.6	1196.6	1194.7
37.5°	1143.3	1149.3	1147.3	1145.3
40°	1090.0	1095.9	1092.0	1090.0
42.5°	1034.7	1040.6	1038.7	1036.7
45°	977.5	983.4	981.4	981.4
47.5°	922.2	928.1	926.1	924.1
50°	862.9	868.9	866.9	866.9
52.5°	805.7	811.6	809.6	807.6
55°	746.4	750.4	748.4	748.4
57.5°	687.2	693.1	691.1	689.2
60°	627.9	631.9	629.9	629.9
62.5°	568.7	572.7	570.7	570.7
65°	505.5	509.5	509.5	509.5
67.5°	440.3	444.3	442.3	442.3
70°	381.1	383.1	381.1	381.1
72.5°	319.9	321.9	321.9	321.9
75°	260.7	262.6	260.7	260.7
77.5°	205.4	207.3	205.4	203.4
80°	152.0	154.0	152.0	150.1
82.5°	102.7	104.7	102.7	100.7
85°	61.2	61.2	59.2	57.3
87.5°	25.7	25.7	23.7	21.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)