

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: P709066

Luminaire Tested: **4APN-X-42L835-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709066
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-X-42L835-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

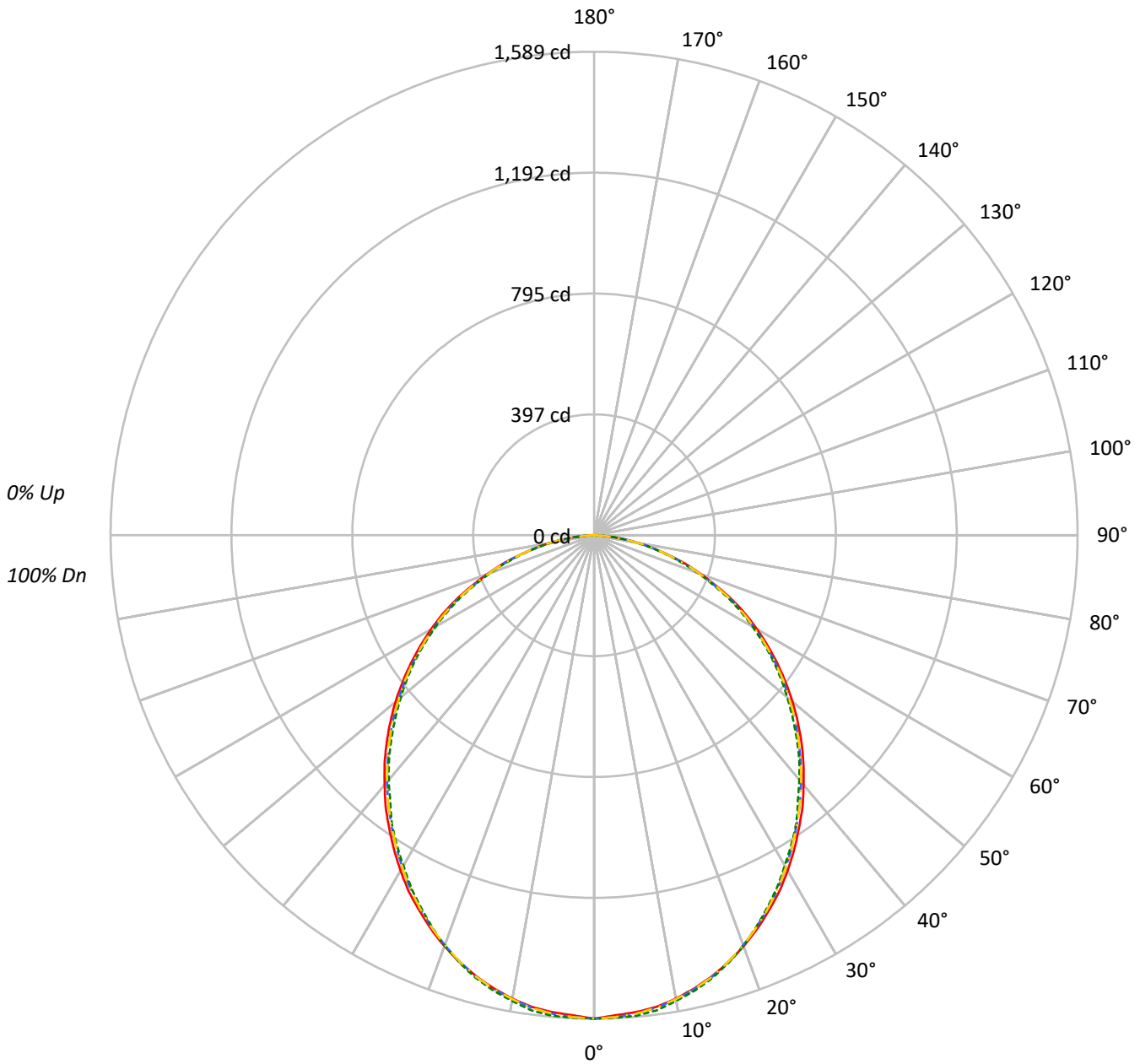
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4134.0 lumens
Efficiency: N/A
Efficacy: 89.5 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): 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				
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°	14660	14660	14660	14660
5°	14572	14680	14572	14680
10°	14487	14559	14487	14559
15°	14325	14380	14325	14380
20°	14115	14096	14115	14096
25°	13845	13727	13845	13727
30°	13559	13352	13559	13352
35°	13221	13045	13221	13045
40°	12898	12641	12898	12641
45°	12581	12278	12581	12278
50°	12225	11890	12225	11890
55°	11828	11546	11828	11546
60°	11420	11097	11420	11097
65°	10926	10588	10926	10588
70°	10100	9787	10100	9787
75°	9129	8851	9129	8851
80°	7832	7630	7832	7630
85°	5960	5960	5960	5960



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.0	3.6
10°-20°	423.5	10.2
20°-30°	624.2	15.1
30°-40°	728.7	17.6
40°-50°	734.7	17.8
50°-60°	649.3	15.7
60°-70°	485.5	11.7
70°-80°	269.1	6.5
80°-90°	69.0	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°	1197.7	29.0
0°-40°	1926.3	46.6
0°-60°	3310.3	80.1
0°-90°	4134.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4134.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1589	1589	1589	1589	1589	
5°	1573	1585	1573	1585	1573	149
15°	1500	1506	1500	1506	1500	423
25°	1360	1348	1360	1348	1360	627
35°	1174	1158	1174	1158	1174	735
45°	964	941	964	941	964	743
55°	735	718	735	718	735	658
65°	500	485	500	485	500	493
75°	256	248	256	248	256	272
85°	56	56	56	56	56	68
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°	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9
2.5°	1579.2	1587.0	1594.8	1592.8	1587.0	1583.1	1585.1	1585.1	1587.0	1587.0	1587.0
5°	1573.4	1581.2	1587.0	1585.1	1579.2	1577.3	1577.3	1577.3	1581.2	1585.1	1581.2
7.5°	1563.7	1569.5	1575.4	1573.4	1567.6	1565.7	1565.7	1567.6	1571.5	1575.4	1571.5
10°	1546.3	1554.0	1559.8	1556.0	1550.1	1546.3	1546.3	1546.3	1550.1	1554.0	1550.1
12.5°	1524.9	1530.7	1536.6	1534.6	1528.8	1524.9	1524.9	1524.9	1528.8	1532.7	1528.8
15°	1499.7	1505.5	1511.3	1509.4	1503.6	1499.7	1499.7	1499.7	1503.6	1505.5	1503.6
17.5°	1470.6	1476.4	1482.2	1478.4	1470.6	1466.7	1466.7	1466.7	1470.6	1472.5	1470.6
20°	1437.6	1443.4	1447.3	1443.4	1435.7	1431.8	1429.9	1429.9	1433.7	1435.7	1433.7
22.5°	1400.8	1404.6	1408.5	1404.6	1396.9	1393.0	1391.1	1389.1	1391.1	1393.0	1391.1
25°	1360.0	1363.9	1367.8	1363.9	1356.1	1350.3	1348.4	1346.4	1348.4	1348.4	1348.4
27.5°	1319.3	1321.2	1325.1	1319.3	1311.5	1305.7	1303.7	1301.8	1303.7	1303.7	1303.7
30°	1272.7	1274.6	1278.5	1272.7	1263.0	1257.2	1255.2	1253.3	1253.3	1253.3	1253.3
32.5°	1224.2	1228.1	1232.0	1224.2	1214.5	1208.7	1206.7	1204.8	1206.7	1206.7	1206.7
35°	1173.8	1175.7	1179.6	1173.8	1164.1	1158.2	1154.4	1152.4	1156.3	1158.2	1156.3
37.5°	1125.3	1127.2	1129.1	1123.3	1113.6	1107.8	1103.9	1102.0	1100.0	1100.0	1100.0
40°	1070.9	1072.9	1076.8	1070.9	1061.2	1055.4	1051.5	1049.6	1049.6	1049.6	1049.6
42.5°	1018.6	1020.5	1022.4	1016.6	1006.9	1001.1	997.2	995.3	997.2	997.2	997.2
45°	964.2	964.2	966.2	960.4	952.6	946.8	942.9	941.0	941.0	941.0	941.0
47.5°	908.0	909.9	911.8	906.0	898.3	892.4	888.6	884.7	884.7	884.7	884.7
50°	851.7	851.7	853.6	847.8	840.1	834.2	832.3	830.4	828.4	828.4	828.4
52.5°	793.5	795.4	797.4	791.6	785.7	779.9	776.0	774.1	774.1	774.1	774.1
55°	735.3	735.3	737.2	733.4	727.5	721.7	717.8	715.9	717.8	717.8	717.8
57.5°	677.1	679.0	681.0	675.2	669.3	663.5	661.6	659.6	659.6	659.6	659.6
60°	618.9	618.9	620.8	617.0	611.1	605.3	603.4	601.4	601.4	601.4	601.4
62.5°	560.7	560.7	562.6	558.7	552.9	547.1	545.2	543.2	543.2	543.2	543.2
65°	500.5	500.5	500.5	496.7	492.8	490.8	488.9	487.0	485.0	485.0	485.0
67.5°	434.6	434.6	436.5	432.6	428.8	426.8	424.9	422.9	421.0	421.0	421.0
70°	374.4	374.4	376.4	374.4	370.6	368.6	366.7	364.7	362.8	362.8	362.8
72.5°	316.2	316.2	316.2	314.3	312.4	310.4	308.5	306.5	304.6	304.6	304.6
75°	256.1	256.1	258.0	256.1	254.2	252.2	250.3	250.3	248.3	248.3	248.3
77.5°	199.8	201.8	203.7	201.8	199.8	197.9	196.0	196.0	194.0	194.0	194.0
80°	147.4	149.4	151.3	149.4	147.4	145.5	143.6	143.6	143.6	143.6	143.6
82.5°	98.9	100.9	102.8	100.9	98.9	98.9	97.0	97.0	97.0	97.0	97.0
85°	56.3	58.2	60.1	60.1	58.2	58.2	56.3	56.3	56.3	56.3	56.3
87.5°	21.3	23.3	25.2	25.2	23.3	23.3	23.3	23.3	23.3	23.3	23.3
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°	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9
2.5°	1585.1	1585.1	1583.1	1587.0	1592.8	1594.8	1587.0	1579.2	1587.0	1594.8	1592.8
5°	1577.3	1577.3	1577.3	1579.2	1585.1	1587.0	1581.2	1573.4	1581.2	1587.0	1585.1
7.5°	1567.6	1565.7	1565.7	1567.6	1573.4	1575.4	1569.5	1563.7	1569.5	1575.4	1573.4
10°	1546.3	1546.3	1546.3	1550.1	1556.0	1559.8	1554.0	1546.3	1554.0	1559.8	1556.0
12.5°	1524.9	1524.9	1524.9	1528.8	1534.6	1536.6	1530.7	1524.9	1530.7	1536.6	1534.6
15°	1499.7	1499.7	1499.7	1503.6	1509.4	1511.3	1505.5	1499.7	1505.5	1511.3	1509.4
17.5°	1466.7	1466.7	1466.7	1470.6	1478.4	1482.2	1476.4	1470.6	1476.4	1482.2	1478.4
20°	1429.9	1429.9	1431.8	1435.7	1443.4	1447.3	1443.4	1437.6	1443.4	1447.3	1443.4
22.5°	1389.1	1391.1	1393.0	1396.9	1404.6	1408.5	1404.6	1400.8	1404.6	1408.5	1404.6
25°	1346.4	1348.4	1350.3	1356.1	1363.9	1367.8	1363.9	1360.0	1363.9	1367.8	1363.9
27.5°	1301.8	1303.7	1305.7	1311.5	1319.3	1325.1	1321.2	1319.3	1321.2	1325.1	1319.3
30°	1253.3	1255.2	1257.2	1263.0	1272.7	1278.5	1274.6	1272.7	1274.6	1278.5	1272.7
32.5°	1204.8	1206.7	1208.7	1214.5	1224.2	1232.0	1228.1	1224.2	1228.1	1232.0	1224.2
35°	1152.4	1154.4	1158.2	1164.1	1173.8	1179.6	1175.7	1173.8	1175.7	1179.6	1173.8
37.5°	1102.0	1103.9	1107.8	1113.6	1123.3	1129.1	1127.2	1125.3	1127.2	1129.1	1123.3
40°	1049.6	1051.5	1055.4	1061.2	1070.9	1076.8	1072.9	1070.9	1072.9	1076.8	1070.9
42.5°	995.3	997.2	1001.1	1006.9	1016.6	1022.4	1020.5	1018.6	1020.5	1022.4	1016.6
45°	941.0	942.9	946.8	952.6	960.4	966.2	964.2	964.2	964.2	966.2	960.4
47.5°	884.7	888.6	892.4	898.3	906.0	911.8	909.9	908.0	909.9	911.8	906.0
50°	830.4	832.3	834.2	840.1	847.8	853.6	851.7	851.7	851.7	853.6	847.8
52.5°	774.1	776.0	779.9	785.7	791.6	797.4	795.4	793.5	795.4	797.4	791.6
55°	715.9	717.8	721.7	727.5	733.4	737.2	735.3	735.3	735.3	737.2	733.4
57.5°	659.6	661.6	663.5	669.3	675.2	681.0	679.0	677.1	679.0	681.0	675.2
60°	601.4	603.4	605.3	611.1	617.0	620.8	618.9	618.9	618.9	620.8	617.0
62.5°	543.2	545.2	547.1	552.9	558.7	562.6	560.7	560.7	560.7	562.6	558.7
65°	487.0	488.9	490.8	492.8	496.7	500.5	500.5	500.5	500.5	500.5	496.7
67.5°	422.9	424.9	426.8	428.8	432.6	436.5	434.6	434.6	434.6	436.5	432.6
70°	364.7	366.7	368.6	370.6	374.4	376.4	374.4	374.4	374.4	376.4	374.4
72.5°	306.5	308.5	310.4	312.4	314.3	316.2	316.2	316.2	316.2	316.2	314.3
75°	250.3	250.3	252.2	254.2	256.1	258.0	256.1	256.1	256.1	258.0	256.1
77.5°	196.0	196.0	197.9	199.8	201.8	203.7	201.8	199.8	201.8	203.7	201.8
80°	143.6	143.6	145.5	147.4	149.4	151.3	149.4	147.4	149.4	151.3	149.4
82.5°	97.0	97.0	98.9	98.9	100.9	102.8	100.9	98.9	100.9	102.8	100.9
85°	56.3	56.3	58.2	58.2	60.1	60.1	58.2	56.3	58.2	60.1	60.1
87.5°	23.3	23.3	23.3	23.3	25.2	25.2	23.3	21.3	23.3	25.2	25.2
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°	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9	1588.9
2.5°	1587.0	1583.1	1585.1	1585.1	1587.0	1587.0	1587.0	1585.1	1585.1	1583.1	1587.0
5°	1579.2	1577.3	1577.3	1577.3	1581.2	1585.1	1581.2	1577.3	1577.3	1577.3	1579.2
7.5°	1567.6	1565.7	1565.7	1567.6	1571.5	1575.4	1571.5	1567.6	1565.7	1565.7	1567.6
10°	1550.1	1546.3	1546.3	1546.3	1550.1	1554.0	1550.1	1546.3	1546.3	1546.3	1550.1
12.5°	1528.8	1524.9	1524.9	1524.9	1528.8	1532.7	1528.8	1524.9	1524.9	1524.9	1528.8
15°	1503.6	1499.7	1499.7	1499.7	1503.6	1505.5	1503.6	1499.7	1499.7	1499.7	1503.6
17.5°	1470.6	1466.7	1466.7	1466.7	1470.6	1472.5	1470.6	1466.7	1466.7	1466.7	1470.6
20°	1435.7	1431.8	1429.9	1429.9	1433.7	1435.7	1433.7	1429.9	1429.9	1431.8	1435.7
22.5°	1396.9	1393.0	1391.1	1389.1	1391.1	1393.0	1391.1	1389.1	1391.1	1393.0	1396.9
25°	1356.1	1350.3	1348.4	1346.4	1348.4	1348.4	1348.4	1346.4	1348.4	1350.3	1356.1
27.5°	1311.5	1305.7	1303.7	1301.8	1303.7	1303.7	1303.7	1301.8	1303.7	1305.7	1311.5
30°	1263.0	1257.2	1255.2	1253.3	1253.3	1253.3	1253.3	1253.3	1255.2	1257.2	1263.0
32.5°	1214.5	1208.7	1206.7	1204.8	1206.7	1206.7	1206.7	1204.8	1206.7	1208.7	1214.5
35°	1164.1	1158.2	1154.4	1152.4	1156.3	1158.2	1156.3	1152.4	1154.4	1158.2	1164.1
37.5°	1113.6	1107.8	1103.9	1102.0	1100.0	1100.0	1100.0	1102.0	1103.9	1107.8	1113.6
40°	1061.2	1055.4	1051.5	1049.6	1049.6	1049.6	1049.6	1049.6	1051.5	1055.4	1061.2
42.5°	1006.9	1001.1	997.2	995.3	997.2	997.2	997.2	995.3	997.2	1001.1	1006.9
45°	952.6	946.8	942.9	941.0	941.0	941.0	941.0	941.0	942.9	946.8	952.6
47.5°	898.3	892.4	888.6	884.7	884.7	884.7	884.7	884.7	888.6	892.4	898.3
50°	840.1	834.2	832.3	830.4	828.4	828.4	828.4	830.4	832.3	834.2	840.1
52.5°	785.7	779.9	776.0	774.1	774.1	774.1	774.1	774.1	776.0	779.9	785.7
55°	727.5	721.7	717.8	715.9	717.8	717.8	717.8	715.9	717.8	721.7	727.5
57.5°	669.3	663.5	661.6	659.6	659.6	659.6	659.6	659.6	661.6	663.5	669.3
60°	611.1	605.3	603.4	601.4	601.4	601.4	601.4	601.4	603.4	605.3	611.1
62.5°	552.9	547.1	545.2	543.2	543.2	543.2	543.2	543.2	545.2	547.1	552.9
65°	492.8	490.8	488.9	487.0	485.0	485.0	485.0	487.0	488.9	490.8	492.8
67.5°	428.8	426.8	424.9	422.9	421.0	421.0	421.0	422.9	424.9	426.8	428.8
70°	370.6	368.6	366.7	364.7	362.8	362.8	362.8	364.7	366.7	368.6	370.6
72.5°	312.4	310.4	308.5	306.5	304.6	304.6	304.6	306.5	308.5	310.4	312.4
75°	254.2	252.2	250.3	250.3	248.3	248.3	248.3	250.3	250.3	252.2	254.2
77.5°	199.8	197.9	196.0	196.0	194.0	194.0	194.0	196.0	196.0	197.9	199.8
80°	147.4	145.5	143.6	143.6	143.6	143.6	143.6	143.6	143.6	145.5	147.4
82.5°	98.9	98.9	97.0	97.0	97.0	97.0	97.0	97.0	97.0	98.9	98.9
85°	58.2	58.2	56.3	56.3	56.3	56.3	56.3	56.3	56.3	58.2	58.2
87.5°	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
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°	1588.9	1588.9	1588.9	1588.9
2.5°	1592.8	1594.8	1587.0	1579.2
5°	1585.1	1587.0	1581.2	1573.4
7.5°	1573.4	1575.4	1569.5	1563.7
10°	1556.0	1559.8	1554.0	1546.3
12.5°	1534.6	1536.6	1530.7	1524.9
15°	1509.4	1511.3	1505.5	1499.7
17.5°	1478.4	1482.2	1476.4	1470.6
20°	1443.4	1447.3	1443.4	1437.6
22.5°	1404.6	1408.5	1404.6	1400.8
25°	1363.9	1367.8	1363.9	1360.0
27.5°	1319.3	1325.1	1321.2	1319.3
30°	1272.7	1278.5	1274.6	1272.7
32.5°	1224.2	1232.0	1228.1	1224.2
35°	1173.8	1179.6	1175.7	1173.8
37.5°	1123.3	1129.1	1127.2	1125.3
40°	1070.9	1076.8	1072.9	1070.9
42.5°	1016.6	1022.4	1020.5	1018.6
45°	960.4	966.2	964.2	964.2
47.5°	906.0	911.8	909.9	908.0
50°	847.8	853.6	851.7	851.7
52.5°	791.6	797.4	795.4	793.5
55°	733.4	737.2	735.3	735.3
57.5°	675.2	681.0	679.0	677.1
60°	617.0	620.8	618.9	618.9
62.5°	558.7	562.6	560.7	560.7
65°	496.7	500.5	500.5	500.5
67.5°	432.6	436.5	434.6	434.6
70°	374.4	376.4	374.4	374.4
72.5°	314.3	316.2	316.2	316.2
75°	256.1	258.0	256.1	256.1
77.5°	201.8	203.7	201.8	199.8
80°	149.4	151.3	149.4	147.4
82.5°	100.9	102.8	100.9	98.9
85°	60.1	60.1	58.2	56.3
87.5°	25.2	25.2	23.3	21.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)