

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: P

Luminaire Tested: **4APN-20L835-X-UNV-NP**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20L835-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

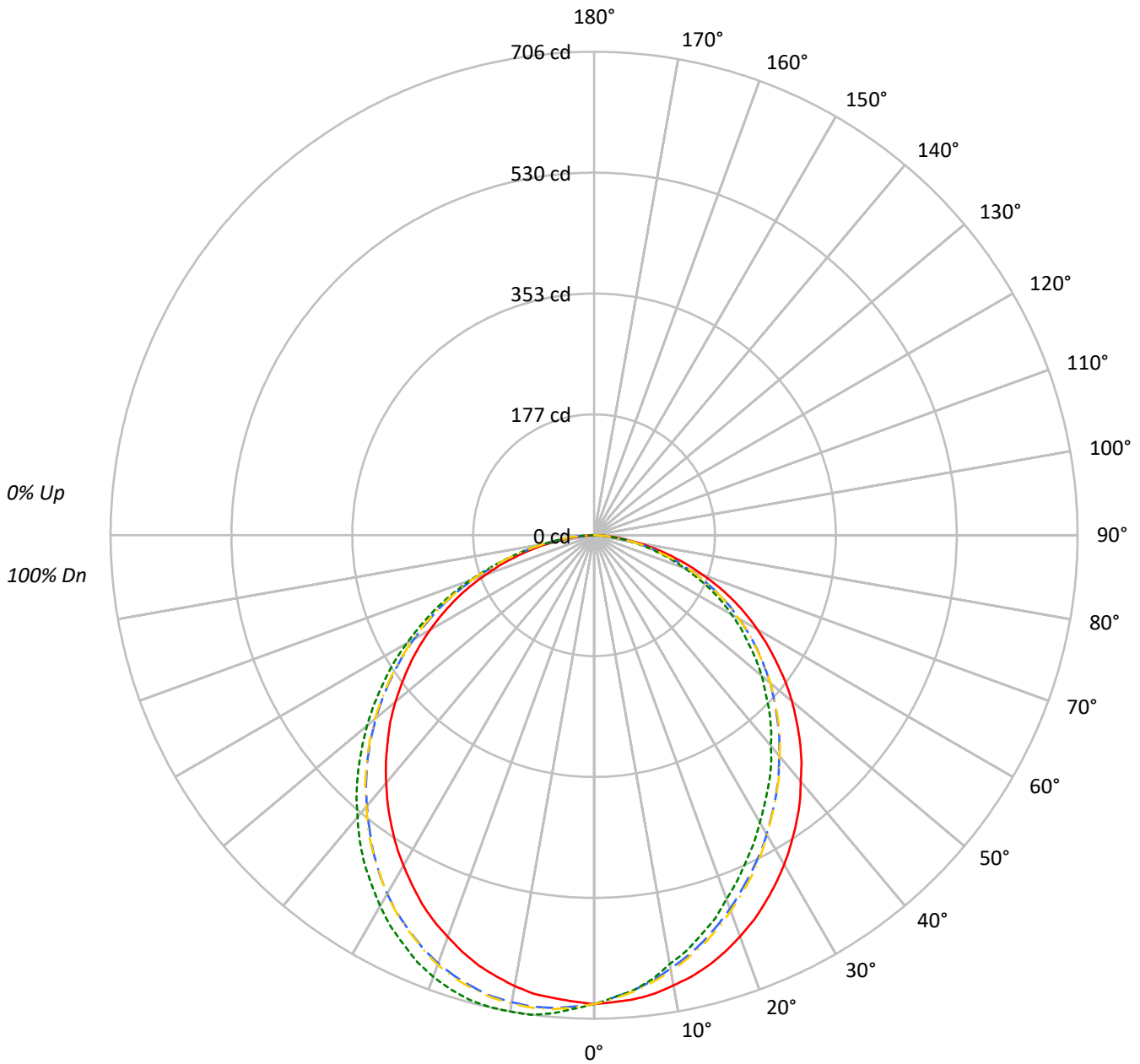
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1836.1 lumens
Efficiency: N/A
Efficacy: 77.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.33
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.8
Input Voltage (V): 120
Input Current (A_{in}): 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	94	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	61	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	41	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	36	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	32	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	29	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6316	6316	6316	6316
5°	6298	6176	6283	6491
10°	6253	5957	6262	6617
15°	6206	5770	6214	6709
20°	6122	5551	6129	6737
25°	6022	5346	6047	6709
30°	5915	5157	5932	6657
35°	5791	5006	5817	6586
40°	5652	4840	5690	6472
45°	5547	4719	5558	6356
50°	5414	4590	5436	6214
55°	5244	4422	5281	6042
60°	5087	4286	5102	5831
65°	4886	4109	4886	5580
70°	4553	3804	4535	5201
75°	4142	3451	4085	4666
80°	3581	2965	3459	3990
85°	2795	2212	2625	3282



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.7	3.5
10°-20°	183.6	10.0
20°-30°	272.9	14.9
30°-40°	321.7	17.5
40°-50°	327.5	17.8
50°-60°	291.8	15.9
60°-70°	219.8	12.0
70°-80°	122.2	6.7
80°-90°	31.8	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°	521.2	28.4
0°-40°	842.9	45.9
0°-60°	1462.2	79.6
0°-90°	1836.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1836.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	685	685	685	685	685	
5°	680	667	678	701	680	65
15°	650	604	651	702	650	183
25°	592	525	594	659	592	273
35°	514	444	516	585	514	322
45°	425	362	426	487	425	328
55°	326	275	328	376	326	292
65°	224	188	224	256	224	221
75°	116	97	115	131	116	123
85°	26	21	25	31	26	32
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°	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6
2.5°	682.3	682.3	683.0	680.0	676.1	674.5	673.8	673.0	674.5	675.3	674.5
5°	680.0	678.4	676.8	673.0	668.4	665.2	663.7	662.9	664.5	666.8	664.5
7.5°	675.3	672.2	669.1	663.7	658.3	653.6	651.3	649.7	651.3	653.6	652.0
10°	667.5	663.7	659.0	652.9	645.1	639.7	637.4	635.1	635.8	635.8	635.8
12.5°	659.8	654.4	649.0	641.3	632.7	626.5	622.6	619.6	621.1	621.9	621.9
15°	649.7	642.8	635.1	626.5	618.0	611.0	606.4	603.3	604.1	604.1	604.8
17.5°	637.4	629.6	621.9	611.8	601.7	594.0	588.6	584.7	586.2	587.0	587.8
20°	623.5	614.9	606.4	595.5	584.7	576.2	570.7	566.1	565.4	565.4	566.1
22.5°	608.7	599.4	589.3	577.7	566.1	556.8	551.4	546.7	546.0	546.0	546.7
25°	591.6	581.6	571.5	559.9	547.5	538.3	531.3	526.6	525.8	525.1	526.6
27.5°	573.9	563.8	553.8	542.1	529.0	519.6	512.6	508.0	506.5	505.7	507.3
30°	555.2	543.6	532.8	520.4	508.8	499.5	492.5	487.1	485.6	484.1	485.6
32.5°	535.1	523.5	511.9	499.5	487.9	478.6	471.6	466.3	464.7	463.9	465.4
35°	514.2	502.6	491.8	479.3	467.7	458.5	451.5	446.9	445.3	444.5	445.3
37.5°	493.3	481.7	470.9	458.5	446.9	437.6	430.6	426.0	425.1	424.4	425.1
40°	469.3	459.2	448.4	436.8	425.1	415.9	410.5	405.0	403.5	401.9	404.3
42.5°	448.4	438.3	427.5	416.7	405.0	395.7	389.5	384.9	383.4	382.5	383.4
45°	425.1	414.3	403.5	393.4	382.5	374.1	367.9	363.2	362.4	361.7	362.4
47.5°	400.4	391.1	381.8	371.8	360.9	352.4	346.9	342.3	340.8	339.2	340.8
50°	377.2	367.9	358.6	349.3	339.2	331.5	326.0	321.4	320.6	319.8	320.6
52.5°	352.4	343.1	334.6	325.3	316.7	309.0	303.6	299.7	298.9	298.2	298.9
55°	326.0	318.3	310.5	302.8	294.3	287.3	282.7	278.0	276.5	274.9	276.5
57.5°	301.2	294.3	286.6	278.8	271.1	264.9	260.2	256.3	255.6	254.7	255.6
60°	275.7	269.5	262.5	255.6	247.8	241.7	237.8	234.6	233.1	232.3	233.1
62.5°	250.1	244.0	238.5	231.5	224.6	219.9	216.0	213.0	211.4	210.7	211.4
65°	223.8	218.4	213.0	206.8	201.4	196.7	192.8	189.7	188.9	188.2	188.2
67.5°	196.7	192.1	187.4	182.0	175.8	171.1	167.3	164.9	164.2	163.4	164.2
70°	168.8	164.9	160.3	155.6	151.0	147.2	144.8	142.5	141.7	141.0	141.0
72.5°	142.5	139.4	135.5	131.7	127.8	123.9	121.6	120.0	119.3	118.5	118.5
75°	116.2	113.0	110.7	107.7	103.8	101.4	99.1	97.5	96.8	96.8	96.8
77.5°	91.4	89.1	86.8	83.6	81.3	79.0	77.4	76.7	75.9	75.9	75.9
80°	67.4	65.8	64.3	62.7	60.4	58.1	57.3	56.5	55.8	55.8	55.8
82.5°	45.7	44.9	43.3	41.9	40.3	39.5	38.7	38.0	38.0	38.0	38.0
85°	26.4	25.5	24.8	24.0	23.2	23.2	22.5	21.7	20.9	20.9	20.9
87.5°	10.9	10.9	10.9	10.0	9.3	9.3	9.3	9.3	9.3	9.3	9.3
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°	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6
2.5°	673.0	674.5	676.1	678.4	680.7	683.0	682.3	681.5	684.6	688.5	689.3
5°	662.9	664.5	666.8	670.7	674.5	677.7	678.4	678.4	684.6	690.0	691.6
7.5°	650.6	652.9	655.9	659.8	665.2	669.9	672.2	675.3	681.5	688.5	691.6
10°	635.1	638.9	643.6	649.0	654.4	659.8	664.5	668.4	676.1	683.8	688.5
12.5°	621.1	624.9	629.6	635.8	642.8	649.7	654.4	659.8	669.1	678.4	683.8
15°	605.6	609.4	614.9	621.1	628.8	636.5	643.6	650.6	659.8	669.9	676.1
17.5°	588.6	592.5	597.8	605.6	614.1	622.6	630.4	638.1	649.0	659.8	666.8
20°	567.7	573.1	580.0	587.8	597.8	608.0	615.7	624.2	635.8	647.4	655.2
22.5°	547.5	552.9	560.7	570.0	580.9	591.6	601.0	610.3	622.6	634.2	642.8
25°	528.1	534.4	542.1	551.4	561.5	572.3	583.2	594.0	606.4	618.8	627.3
27.5°	508.8	514.2	521.9	531.3	542.9	553.8	564.5	575.4	588.6	601.7	611.0
30°	487.1	493.3	500.3	509.6	521.9	534.4	545.2	556.8	570.0	583.2	592.5
32.5°	467.0	472.4	479.3	488.7	501.0	513.5	525.1	537.4	549.9	563.0	572.3
35°	446.9	452.2	459.2	468.6	480.9	493.3	504.9	516.5	529.0	541.3	550.6
37.5°	426.7	432.1	439.1	448.4	460.0	472.4	483.2	494.8	507.3	519.6	528.1
40°	405.8	411.2	416.7	426.0	437.6	449.9	460.8	472.4	484.8	497.1	505.7
42.5°	384.9	390.3	397.3	406.6	417.4	428.3	439.1	449.9	461.6	473.2	481.7
45°	364.0	368.6	375.6	384.1	395.0	405.0	415.9	426.0	437.6	448.4	456.9
47.5°	342.3	346.9	352.4	360.9	371.8	382.5	393.4	403.5	413.5	424.4	432.1
50°	321.4	326.0	332.2	339.9	350.1	360.1	369.4	378.7	388.8	398.9	405.8
52.5°	299.7	304.4	309.8	317.5	326.0	335.3	343.8	353.1	362.4	371.8	378.7
55°	278.0	281.1	285.7	292.7	302.0	311.4	319.8	328.3	336.9	344.6	351.6
57.5°	256.3	260.2	265.6	271.8	279.6	287.3	295.0	302.8	310.5	318.3	324.5
60°	234.6	237.8	241.7	247.0	254.7	261.8	269.5	276.5	283.4	290.4	295.9
62.5°	212.2	215.3	219.2	224.6	230.8	237.0	244.0	250.1	256.3	262.5	267.9
65°	188.9	192.1	195.9	200.5	206.0	211.4	217.6	223.8	228.5	233.1	238.5
67.5°	164.9	168.1	172.0	175.8	180.4	185.9	191.3	196.7	201.4	206.0	209.8
70°	141.7	144.0	147.9	151.0	154.9	158.8	163.4	168.1	171.1	175.0	179.7
72.5°	119.3	121.6	124.7	127.8	130.1	133.2	137.8	141.7	145.6	150.3	152.6
75°	97.5	99.1	101.4	103.8	106.1	108.4	111.6	114.6	117.7	120.0	123.2
77.5°	75.9	77.4	79.8	81.3	82.9	84.5	86.8	89.1	91.4	92.9	96.1
80°	55.8	57.3	58.8	60.4	62.0	63.5	64.3	65.1	68.1	70.4	72.0
82.5°	38.0	38.7	39.5	41.0	41.9	42.6	43.3	43.3	44.9	46.5	48.8
85°	21.7	22.5	23.2	23.2	23.2	23.2	24.0	24.8	25.5	27.1	28.7
87.5°	8.5	8.5	9.3	9.3	9.3	9.3	9.3	9.3	10.0	11.6	12.4
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°	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6	684.6
2.5°	688.5	689.3	690.8	691.6	692.3	692.3	693.2	693.9	692.3	690.8	690.0
5°	692.3	693.2	695.5	697.8	699.3	700.9	700.1	699.3	697.8	695.5	693.9
7.5°	693.2	695.5	697.8	700.9	703.2	706.3	704.8	703.2	700.1	697.0	694.6
10°	690.8	693.9	697.8	701.6	703.9	706.3	704.8	703.2	700.1	696.2	693.2
12.5°	687.7	691.6	696.2	700.1	702.4	705.5	703.2	700.9	697.0	693.2	689.3
15°	680.7	685.4	690.8	695.5	699.3	702.4	700.1	698.5	693.9	688.5	683.0
17.5°	672.2	678.4	683.8	689.3	692.3	695.5	693.9	692.3	686.9	680.7	674.5
20°	662.2	668.4	673.8	679.1	683.0	686.2	683.8	681.5	676.1	670.7	664.5
22.5°	649.7	655.9	662.2	667.5	671.4	674.5	671.4	667.5	662.2	656.7	650.6
25°	634.2	641.3	648.2	653.6	655.9	659.0	655.9	652.9	647.4	642.0	635.1
27.5°	618.8	625.8	632.7	638.1	640.4	643.6	640.4	637.4	631.9	626.5	619.6
30°	601.0	608.0	614.9	620.3	622.6	624.9	621.9	618.8	614.1	608.7	601.7
32.5°	580.9	587.8	593.2	598.7	601.7	604.8	601.7	599.4	594.0	587.0	580.0
35°	559.1	566.1	573.1	578.5	581.6	584.7	580.9	577.0	572.3	566.8	560.7
37.5°	535.1	542.9	550.6	556.8	559.1	562.2	559.1	555.2	550.6	545.2	538.3
40°	512.6	519.6	526.6	532.8	535.1	537.4	534.4	531.3	525.8	520.4	513.5
42.5°	489.5	496.4	502.6	508.0	510.3	513.5	510.3	506.5	502.6	498.0	491.8
45°	464.7	471.6	477.0	482.5	484.8	487.1	484.1	480.2	476.3	472.4	466.3
47.5°	439.1	445.3	450.8	456.1	457.7	460.0	456.9	454.6	450.8	446.9	441.5
50°	412.8	419.0	424.4	429.0	430.6	432.9	429.8	426.7	423.7	420.5	415.9
52.5°	385.7	391.1	396.6	401.2	402.7	404.3	401.2	398.0	395.0	391.9	387.2
55°	357.8	363.2	368.6	372.5	374.1	375.6	372.5	370.2	367.0	364.7	360.1
57.5°	329.9	335.3	339.9	343.8	345.4	346.9	343.8	340.8	338.5	336.1	332.2
60°	301.2	306.7	310.5	313.7	315.2	316.0	312.8	310.5	309.0	307.5	303.6
62.5°	273.4	277.2	281.1	283.4	285.0	285.7	283.4	281.9	280.4	278.8	275.7
65°	244.0	248.6	251.7	254.0	254.7	255.6	253.3	251.7	250.1	248.6	246.3
67.5°	214.5	218.4	220.7	223.0	223.8	223.8	223.8	223.0	221.5	219.2	216.9
70°	185.0	188.2	190.5	192.1	192.8	192.8	191.3	189.7	189.7	188.9	187.4
72.5°	154.9	157.2	158.8	160.3	160.3	160.3	160.3	161.1	160.3	158.8	156.5
75°	126.2	128.5	130.1	130.9	130.9	130.9	130.9	131.7	130.9	130.1	128.5
77.5°	99.1	100.7	101.4	102.2	102.2	102.2	103.0	103.8	103.0	102.2	101.4
80°	73.6	74.3	75.1	75.9	75.1	75.1	75.9	77.4	76.7	75.9	75.1
82.5°	50.3	51.1	51.9	51.9	52.6	53.5	53.5	53.5	53.5	52.6	51.9
85°	30.2	31.0	31.0	31.0	31.0	31.0	31.7	32.5	32.5	31.7	31.7
87.5°	13.9	14.8	13.9	13.2	12.4	12.4	13.9	15.5	15.5	14.8	14.8
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: P
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	684.6	684.6	684.6	684.6
2.5°	690.8	690.0	686.2	682.3
5°	693.2	690.8	685.4	680.0
7.5°	693.2	690.0	682.3	675.3
10°	689.3	684.6	676.1	667.5
12.5°	684.6	679.1	669.1	659.8
15°	677.7	671.4	660.6	649.7
17.5°	667.5	659.8	649.0	637.4
20°	657.5	649.0	635.8	623.5
22.5°	643.6	635.8	621.9	608.7
25°	628.1	619.6	605.6	591.6
27.5°	611.8	601.7	587.8	573.9
30°	593.2	583.2	569.2	555.2
32.5°	573.1	563.8	549.9	535.1
35°	552.9	542.9	529.0	514.2
37.5°	530.5	521.2	507.3	493.3
40°	506.5	497.1	483.2	469.3
42.5°	484.1	475.5	461.6	448.4
45°	459.2	450.8	437.6	425.1
47.5°	433.7	425.1	412.8	400.4
50°	408.9	400.4	388.8	377.2
52.5°	381.1	374.1	363.2	352.4
55°	354.0	346.9	336.1	326.0
57.5°	326.8	320.6	310.5	301.2
60°	298.2	292.0	284.3	275.7
62.5°	271.1	265.6	257.9	250.1
65°	242.4	237.8	230.8	223.8
67.5°	213.0	209.1	202.9	196.7
70°	183.6	178.9	174.3	168.8
72.5°	154.2	151.8	147.2	142.5
75°	126.2	123.9	120.0	116.2
77.5°	99.9	97.5	94.5	91.4
80°	73.6	72.0	69.7	67.4
82.5°	51.1	49.6	48.0	45.7
85°	31.0	29.4	27.8	26.4
87.5°	13.9	13.2	11.6	10.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)