

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-24L840-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-24L840-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

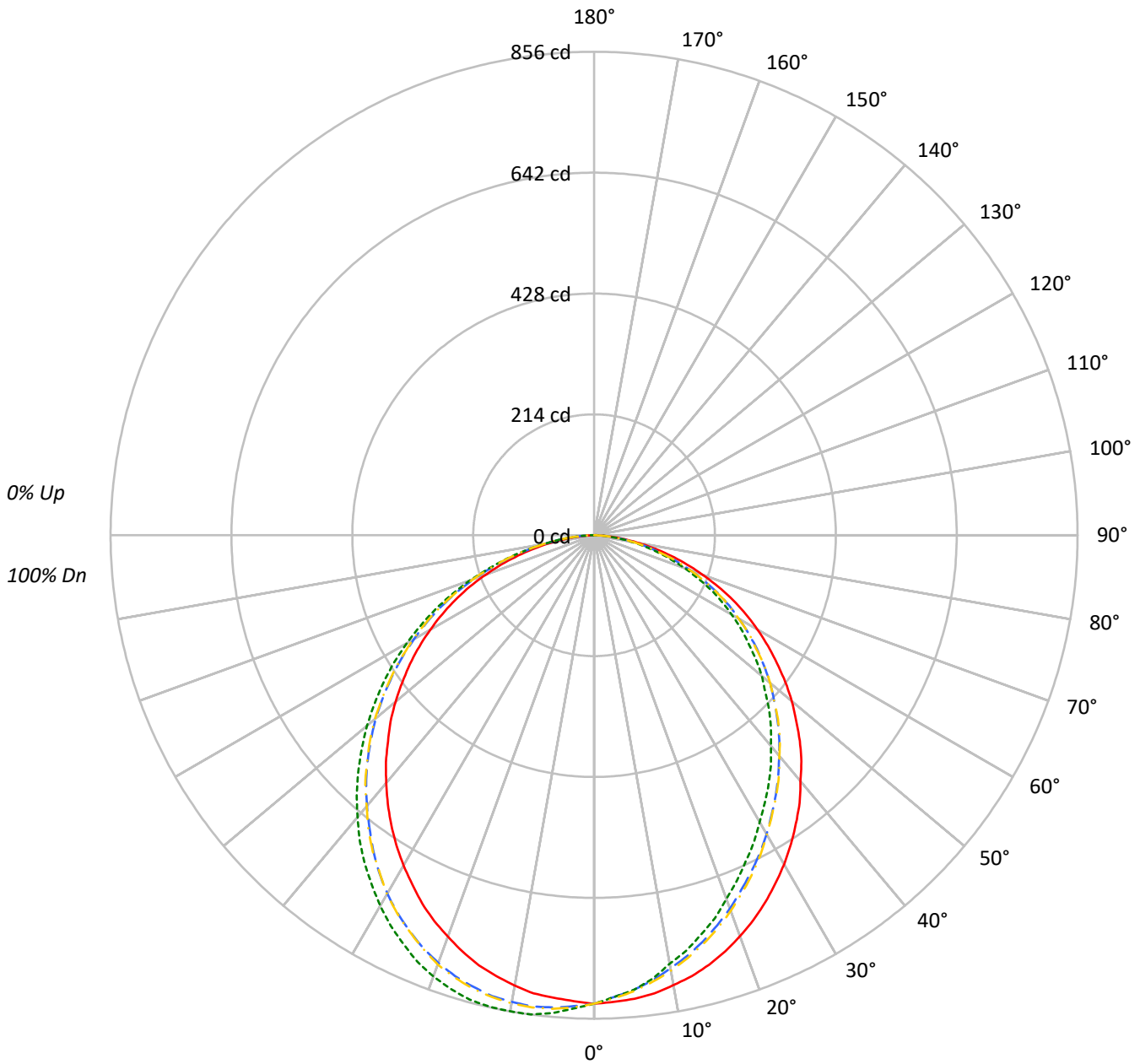
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2224.6 lumens
Efficiency: N/A
Efficacy: 79.7 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): 27.9
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°	7653	7653	7653	7653
5°	7631	7482	7613	7865
10°	7578	7217	7587	8018
15°	7520	6991	7529	8129
20°	7417	6726	7426	8163
25°	7298	6477	7327	8129
30°	7168	6248	7187	8067
35°	7018	6066	7050	7980
40°	6848	5865	6894	7843
45°	6721	5718	6733	7701
50°	6558	5562	6587	7528
55°	6355	5358	6399	7320
60°	6163	5194	6182	7064
65°	5921	4977	5921	6759
70°	5519	4607	5492	6302
75°	5019	4181	4951	5654
80°	4336	3592	4187	4835
85°	3377	2689	3186	3970



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.4	3.5
10°-20°	222.4	10.0
20°-30°	330.7	14.9
30°-40°	389.8	17.5
40°-50°	396.9	17.8
50°-60°	353.5	15.9
60°-70°	266.4	12.0
70°-80°	148.1	6.7
80°-90°	38.5	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°	631.5	28.4
0°-40°	1021.3	45.9
0°-60°	1771.7	79.6
0°-90°	2224.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2224.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	830	830	830	830	830	
5°	824	808	822	849	824	78
15°	787	732	788	851	787	222
25°	717	636	720	798	717	330
35°	623	539	626	708	623	390
45°	515	438	516	590	515	397
55°	395	333	398	455	395	354
65°	271	228	271	310	271	268
75°	141	117	139	159	141	150
85°	32	25	30	38	32	38
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°	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5
2.5°	826.7	826.7	827.6	823.9	819.2	817.3	816.3	815.4	817.3	818.2	817.3
5°	823.9	822.0	820.1	815.4	809.8	806.0	804.2	803.2	805.1	807.9	805.1
7.5°	818.2	814.5	810.7	804.2	797.6	792.0	789.1	787.3	789.1	792.0	790.1
10°	808.9	804.2	798.5	791.0	781.7	775.0	772.3	769.4	770.3	770.3	770.3
12.5°	799.5	792.9	786.3	777.0	766.6	759.1	754.4	750.7	752.5	753.5	753.5
15°	787.3	778.8	769.4	759.1	748.8	740.4	734.7	731.0	731.9	731.9	732.8
17.5°	772.3	762.9	753.5	741.3	729.1	719.7	713.2	708.5	710.3	711.2	712.2
20°	755.4	745.1	734.7	721.6	708.5	698.1	691.6	685.9	685.0	685.0	685.9
22.5°	737.5	726.3	714.1	700.0	685.9	674.6	668.1	662.5	661.5	661.5	662.5
25°	716.9	704.7	692.5	678.4	663.4	652.1	643.7	638.0	637.1	636.2	638.0
27.5°	695.3	683.1	670.9	656.8	640.9	629.6	621.2	615.5	613.7	612.8	614.6
30°	672.8	658.7	645.6	630.6	616.4	605.2	596.8	590.2	588.3	586.5	588.3
32.5°	648.4	634.3	620.2	605.2	591.2	579.8	571.5	564.9	563.0	562.1	563.9
35°	623.1	609.0	595.8	580.9	566.8	555.5	547.0	541.4	539.6	538.6	539.6
37.5°	597.7	583.6	570.5	555.5	541.4	530.1	521.7	516.0	515.1	514.2	515.1
40°	568.6	556.4	543.3	529.2	515.1	503.9	497.3	490.8	488.8	487.0	489.8
42.5°	543.3	531.1	518.0	504.8	490.8	479.5	472.0	466.3	464.5	463.6	464.5
45°	515.1	502.0	488.8	476.7	463.6	453.3	445.7	440.1	439.1	438.2	439.1
47.5°	485.2	473.8	462.6	450.4	437.3	427.0	420.3	414.7	412.9	411.0	412.9
50°	456.9	445.7	434.4	423.2	411.0	401.6	395.1	389.5	388.4	387.5	388.4
52.5°	427.0	415.6	405.4	394.1	383.7	374.4	367.8	363.2	362.2	361.2	362.2
55°	395.1	385.7	376.3	366.9	356.5	348.1	342.5	336.9	335.0	333.1	335.0
57.5°	365.0	356.5	347.2	337.8	328.4	320.9	315.3	310.6	309.6	308.7	309.6
60°	334.0	326.6	318.1	309.6	300.3	292.7	288.0	284.3	282.4	281.5	282.4
62.5°	303.1	295.6	289.0	280.6	272.1	266.5	261.8	258.1	256.1	255.2	256.1
65°	271.2	264.6	258.1	250.5	244.0	238.3	233.6	229.9	228.9	228.0	228.0
67.5°	238.3	232.7	227.1	220.5	213.0	207.4	202.7	199.9	199.0	198.0	199.0
70°	204.6	199.9	194.3	188.6	183.0	178.3	175.5	172.7	171.7	170.8	170.8
72.5°	172.7	168.9	164.2	159.5	154.8	150.1	147.3	145.4	144.5	143.6	143.6
75°	140.8	137.0	134.2	130.5	125.8	122.9	120.1	118.2	117.3	117.3	117.3
77.5°	110.7	107.9	105.1	101.3	98.6	95.7	93.9	92.9	91.9	91.9	91.9
80°	81.6	79.8	77.9	76.0	73.2	70.3	69.4	68.5	67.6	67.6	67.6
82.5°	55.3	54.4	52.6	50.7	48.8	47.9	46.9	46.0	46.0	46.0	46.0
85°	31.9	31.0	30.1	29.0	28.1	28.1	27.2	26.3	25.4	25.4	25.4
87.5°	13.1	13.1	13.1	12.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
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°	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5
2.5°	815.4	817.3	819.2	822.0	824.8	827.6	826.7	825.7	829.5	834.1	835.1
5°	803.2	805.1	807.9	812.6	817.3	821.0	822.0	822.0	829.5	836.1	837.9
7.5°	788.2	791.0	794.8	799.5	806.0	811.6	814.5	818.2	825.7	834.1	837.9
10°	769.4	774.1	779.7	786.3	792.9	799.5	805.1	809.8	819.2	828.5	834.1
12.5°	752.5	757.2	762.9	770.3	778.8	787.3	792.9	799.5	810.7	822.0	828.5
15°	733.8	738.4	745.1	752.5	761.9	771.3	779.7	788.2	799.5	811.6	819.2
17.5°	713.2	717.9	724.4	733.8	744.1	754.4	763.8	773.2	786.3	799.5	807.9
20°	687.8	694.4	702.8	712.2	724.4	736.6	746.0	756.3	770.3	784.4	793.8
22.5°	663.4	669.9	679.3	690.6	703.8	716.9	728.1	739.4	754.4	768.5	778.8
25°	640.0	647.4	656.8	668.1	680.3	693.4	706.5	719.7	734.7	749.8	760.0
27.5°	616.4	623.1	632.4	643.7	657.8	670.9	684.0	697.2	713.2	729.1	740.4
30°	590.2	597.7	606.1	617.5	632.4	647.4	660.6	674.6	690.6	706.5	717.9
32.5°	565.8	572.4	580.9	592.1	607.1	622.1	636.2	651.2	666.2	682.2	693.4
35°	541.4	547.9	556.4	567.7	582.7	597.7	611.7	625.9	640.9	655.9	667.2
37.5°	517.1	523.6	532.0	543.3	557.3	572.4	585.6	599.6	614.6	629.6	640.0
40°	491.7	498.2	504.8	516.0	530.1	545.2	558.3	572.4	587.4	602.4	612.8
42.5°	466.3	472.9	481.4	492.6	505.7	518.9	532.0	545.2	559.3	573.3	583.6
45°	441.0	446.6	455.1	465.4	478.5	490.8	503.9	516.0	530.1	543.3	553.7
47.5°	414.7	420.3	427.0	437.3	450.4	463.6	476.7	488.8	501.1	514.2	523.6
50°	389.5	395.1	402.5	411.9	424.1	436.3	447.5	458.9	471.0	483.2	491.7
52.5°	363.2	368.8	375.3	384.8	395.1	406.3	416.7	427.9	439.1	450.4	458.9
55°	336.9	340.6	346.2	354.7	365.9	377.2	387.5	397.8	408.2	417.6	426.0
57.5°	310.6	315.3	321.9	329.3	338.7	348.1	357.5	366.9	376.3	385.7	393.1
60°	284.3	288.0	292.7	299.4	308.7	317.2	326.6	335.0	343.4	351.8	358.5
62.5°	257.1	260.8	265.5	272.1	279.6	287.1	295.6	303.1	310.6	318.1	324.6
65°	228.9	232.7	237.4	243.0	249.6	256.1	263.7	271.2	276.8	282.4	289.0
67.5°	199.9	203.6	208.3	213.0	218.6	225.2	231.8	238.3	244.0	249.6	254.3
70°	171.7	174.5	179.2	183.0	187.6	192.3	198.0	203.6	207.4	212.1	217.7
72.5°	144.5	147.3	151.1	154.8	157.7	161.3	167.1	171.7	176.4	182.0	184.9
75°	118.2	120.1	122.9	125.8	128.5	131.4	135.2	138.9	142.6	145.4	149.2
77.5°	91.9	93.9	96.6	98.6	100.4	102.2	105.1	107.9	110.7	112.6	116.4
80°	67.6	69.4	71.3	73.2	75.1	77.0	77.9	78.8	82.6	85.4	87.2
82.5°	46.0	46.9	47.9	49.7	50.7	51.6	52.6	52.6	54.4	56.3	59.1
85°	26.3	27.2	28.1	28.1	28.1	28.1	29.0	30.1	31.0	32.8	34.8
87.5°	10.3	10.3	11.2	11.2	11.2	11.2	11.2	11.2	12.2	14.1	15.0
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°	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5	829.5
2.5°	834.1	835.1	837.0	837.9	838.8	838.8	839.8	840.8	838.8	837.0	836.1
5°	838.8	839.8	842.6	845.5	847.3	849.2	848.2	847.3	845.5	842.6	840.8
7.5°	839.8	842.6	845.5	849.2	852.0	855.8	853.9	852.0	848.2	844.5	841.7
10°	837.0	840.8	845.5	850.1	852.9	855.8	853.9	852.0	848.2	843.5	839.8
12.5°	833.2	837.9	843.5	848.2	851.1	854.8	852.0	849.2	844.5	839.8	835.1
15°	824.8	830.4	837.0	842.6	847.3	851.1	848.2	846.4	840.8	834.1	827.6
17.5°	814.5	822.0	828.5	835.1	838.8	842.6	840.8	838.8	832.3	824.8	817.3
20°	802.2	809.8	816.3	822.9	827.6	831.4	828.5	825.7	819.2	812.6	805.1
22.5°	787.3	794.8	802.2	808.9	813.6	817.3	813.6	808.9	802.2	795.7	788.2
25°	768.5	777.0	785.4	792.0	794.8	798.5	794.8	791.0	784.4	777.9	769.4
27.5°	749.8	758.2	766.6	773.2	776.0	779.7	776.0	772.3	765.7	759.1	750.7
30°	728.1	736.6	745.1	751.6	754.4	757.2	753.5	749.8	744.1	737.5	729.1
32.5°	703.8	712.2	718.8	725.3	729.1	732.8	729.1	726.3	719.7	711.2	702.8
35°	677.5	685.9	694.4	700.9	704.7	708.5	703.8	699.1	693.4	686.9	679.3
37.5°	648.4	657.8	667.2	674.6	677.5	681.3	677.5	672.8	667.2	660.6	652.1
40°	621.2	629.6	638.0	645.6	648.4	651.2	647.4	643.7	637.1	630.6	622.1
42.5°	593.0	601.5	609.0	615.5	618.4	622.1	618.4	613.7	609.0	603.4	595.8
45°	563.0	571.5	578.0	584.5	587.4	590.2	586.5	581.8	577.1	572.4	564.9
47.5°	532.0	539.6	546.1	552.6	554.6	557.3	553.7	550.8	546.1	541.4	534.9
50°	500.1	507.7	514.2	519.8	521.7	524.5	520.7	517.1	513.3	509.5	503.9
52.5°	467.3	473.8	480.5	486.1	487.9	489.8	486.1	482.3	478.5	474.8	469.2
55°	433.5	440.1	446.6	451.3	453.3	455.1	451.3	448.6	444.8	441.9	436.3
57.5°	399.7	406.3	411.9	416.7	418.5	420.3	416.7	412.9	410.0	407.2	402.5
60°	365.0	371.6	376.3	380.0	381.9	382.8	379.1	376.3	374.4	372.5	367.8
62.5°	331.3	335.9	340.6	343.4	345.3	346.2	343.4	341.5	339.7	337.8	334.0
65°	295.6	301.2	305.0	307.8	308.7	309.6	306.8	305.0	303.1	301.2	298.4
67.5°	259.9	264.6	267.4	270.2	271.2	271.2	271.2	270.2	268.4	265.5	262.8
70°	224.2	228.0	230.9	232.7	233.6	233.6	231.8	229.9	229.9	228.9	227.1
72.5°	187.6	190.5	192.3	194.3	194.3	194.3	194.3	195.2	194.3	192.3	189.6
75°	153.0	155.7	157.7	158.6	158.6	158.6	158.6	159.5	158.6	157.7	155.7
77.5°	120.1	122.0	122.9	123.8	123.8	123.8	124.8	125.8	124.8	123.8	122.9
80°	89.2	90.1	91.0	91.9	91.0	91.0	91.9	93.9	92.9	91.9	91.0
82.5°	61.0	62.0	62.9	62.9	63.8	64.7	64.7	64.7	64.7	63.8	62.9
85°	36.6	37.5	37.5	37.5	37.5	37.5	38.4	39.4	39.4	38.4	38.4
87.5°	16.9	17.8	16.9	16.0	15.0	15.0	16.9	18.8	18.8	17.8	17.8
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°	829.5	829.5	829.5	829.5
2.5°	837.0	836.1	831.4	826.7
5°	839.8	837.0	830.4	823.9
7.5°	839.8	836.1	826.7	818.2
10°	835.1	829.5	819.2	808.9
12.5°	829.5	822.9	810.7	799.5
15°	821.0	813.6	800.4	787.3
17.5°	808.9	799.5	786.3	772.3
20°	796.6	786.3	770.3	755.4
22.5°	779.7	770.3	753.5	737.5
25°	761.0	750.7	733.8	716.9
27.5°	741.3	729.1	712.2	695.3
30°	718.8	706.5	689.7	672.8
32.5°	694.4	683.1	666.2	648.4
35°	669.9	657.8	640.9	623.1
37.5°	642.7	631.5	614.6	597.7
40°	613.7	602.4	585.6	568.6
42.5°	586.5	576.2	559.3	543.3
45°	556.4	546.1	530.1	515.1
47.5°	525.4	515.1	500.1	485.2
50°	495.5	485.2	471.0	456.9
52.5°	461.6	453.3	440.1	427.0
55°	428.8	420.3	407.2	395.1
57.5°	396.0	388.4	376.3	365.0
60°	361.2	353.8	344.4	334.0
62.5°	328.4	321.9	312.5	303.1
65°	293.7	288.0	279.6	271.2
67.5°	258.1	253.4	245.8	238.3
70°	222.4	216.8	211.1	204.6
72.5°	186.7	183.9	178.3	172.7
75°	153.0	150.1	145.4	140.8
77.5°	121.1	118.2	114.5	110.7
80°	89.2	87.2	84.5	81.6
82.5°	62.0	60.0	58.2	55.3
85°	37.5	35.7	33.7	31.9
87.5°	16.9	16.0	14.1	13.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)