

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: P709118

Luminaire Tested: **4APN-24L835-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709118
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24L835-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

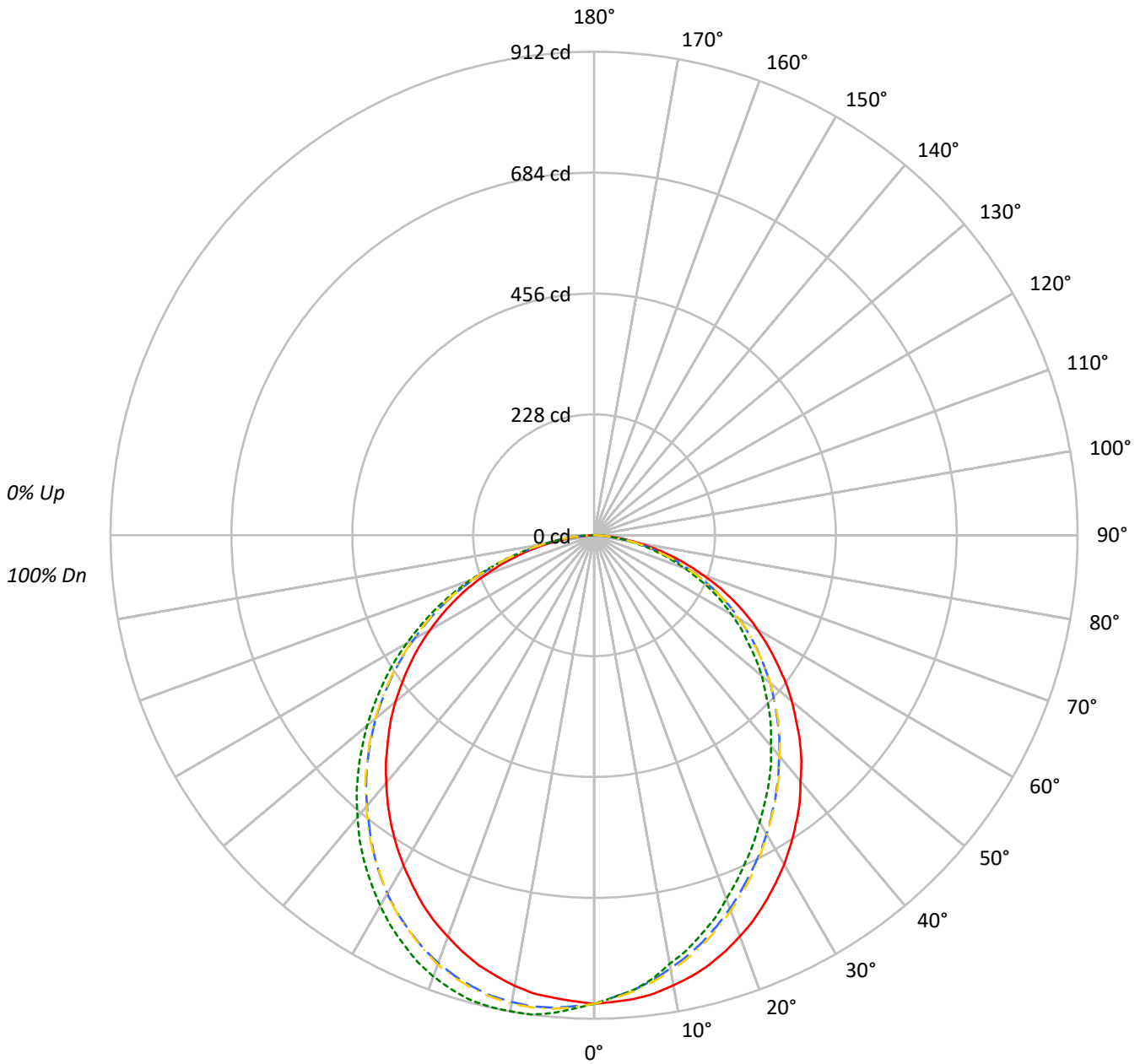
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2370.6 lumens
Efficiency: N/A
Efficacy: 85.0 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 (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	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°	8155	8155	8155	8155
5°	8131	7973	8112	8381
10°	8075	7691	8084	8543
15°	8013	7449	8022	8662
20°	7903	7166	7913	8698
25°	7776	6901	7807	8662
30°	7637	6657	7659	8596
35°	7478	6464	7511	8503
40°	7297	6251	7346	8357
45°	7162	6093	7175	8206
50°	6990	5928	7019	8022
55°	6772	5710	6820	7801
60°	6569	5536	6588	7529
65°	6309	5305	6309	7204
70°	5881	4910	5854	6717
75°	5347	4456	5276	6024
80°	4622	3825	4463	5154
85°	3599	2858	3387	4234



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.5	3.5
10°-20°	237.0	10.0
20°-30°	352.4	14.9
30°-40°	415.3	17.5
40°-50°	422.9	17.8
50°-60°	376.8	15.9
60°-70°	283.9	12.0
70°-80°	157.9	6.7
80°-90°	41.0	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°	672.9	28.4
0°-40°	1088.2	45.9
0°-60°	1887.9	79.6
0°-90°	2370.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2370.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	884	884	884	884	884	
5°	878	861	876	905	878	83
15°	839	780	840	907	839	236
25°	764	678	767	851	764	352
35°	664	574	667	755	664	415
45°	549	467	550	629	549	423
55°	421	355	424	485	421	377
65°	289	243	289	330	289	285
75°	150	125	148	169	150	159
85°	34	27	32	40	34	41
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°	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9
2.5°	880.9	880.9	881.9	877.9	872.9	870.9	869.9	868.9	870.9	871.9	870.9
5°	877.9	875.9	873.9	868.9	862.9	858.9	856.9	855.9	857.9	860.9	857.9
7.5°	871.9	867.9	863.9	856.9	849.9	843.9	840.9	838.9	840.9	843.9	841.9
10°	861.9	856.9	850.9	842.9	832.9	825.9	822.9	819.9	820.9	820.9	820.9
12.5°	851.9	844.9	837.9	827.9	816.9	808.9	803.9	799.9	801.9	802.9	802.9
15°	838.9	829.9	819.9	808.9	797.9	788.9	782.9	778.9	779.9	779.9	780.9
17.5°	822.9	812.9	802.9	789.9	776.9	766.9	759.9	754.9	756.9	757.9	758.9
20°	804.9	793.9	782.9	768.9	754.9	743.9	736.9	730.9	729.9	729.9	730.9
22.5°	785.9	773.9	760.9	745.9	730.9	718.9	711.9	705.9	704.9	704.9	705.9
25°	763.9	750.9	737.9	722.9	706.9	694.9	685.9	679.9	678.9	677.9	679.9
27.5°	740.9	727.9	714.9	699.9	682.9	670.9	661.9	655.9	653.9	652.9	654.9
30°	716.9	701.9	687.9	671.9	656.9	644.9	635.9	628.9	626.9	624.9	626.9
32.5°	690.9	675.9	660.9	644.9	629.9	617.9	608.9	601.9	599.9	598.9	600.9
35°	663.9	648.9	634.9	618.9	603.9	591.9	582.9	576.9	574.9	573.9	574.9
37.5°	636.9	621.9	607.9	591.9	576.9	564.9	555.9	549.9	548.9	547.9	548.9
40°	605.9	592.9	578.9	563.9	548.9	536.9	529.9	522.9	521.0	519.0	521.9
42.5°	578.9	565.9	551.9	537.9	522.9	511.0	503.0	497.0	495.0	494.0	495.0
45°	548.9	534.9	521.0	508.0	494.0	483.0	475.0	469.0	468.0	467.0	468.0
47.5°	517.0	505.0	493.0	480.0	466.0	455.0	448.0	442.0	440.0	438.0	440.0
50°	487.0	475.0	463.0	451.0	438.0	428.0	421.0	415.0	414.0	413.0	414.0
52.5°	455.0	443.0	432.0	420.0	409.0	399.0	392.0	387.0	386.0	385.0	386.0
55°	421.0	411.0	401.0	391.0	380.0	371.0	365.0	359.0	357.0	355.0	357.0
57.5°	389.0	380.0	370.0	360.0	350.0	342.0	336.0	331.0	330.0	329.0	330.0
60°	356.0	348.0	339.0	330.0	320.0	312.0	307.0	303.0	301.0	300.0	301.0
62.5°	323.0	315.0	308.0	299.0	290.0	284.0	279.0	275.0	273.0	272.0	273.0
65°	289.0	282.0	275.0	267.0	260.0	254.0	249.0	245.0	244.0	243.0	243.0
67.5°	254.0	248.0	242.0	235.0	227.0	221.0	216.0	213.0	212.0	211.0	212.0
70°	218.0	213.0	207.0	201.0	195.0	190.0	187.0	184.0	183.0	182.0	182.0
72.5°	184.0	180.0	175.0	170.0	165.0	160.0	157.0	155.0	154.0	153.0	153.0
75°	150.0	146.0	143.0	139.0	134.0	131.0	128.0	126.0	125.0	125.0	125.0
77.5°	118.0	115.0	112.0	108.0	105.0	102.0	100.0	99.0	98.0	98.0	98.0
80°	87.0	85.0	83.0	81.0	78.0	75.0	74.0	73.0	72.0	72.0	72.0
82.5°	59.0	58.0	56.0	54.0	52.0	51.0	50.0	49.0	49.0	49.0	49.0
85°	34.0	33.0	32.0	31.0	30.0	30.0	29.0	28.0	27.0	27.0	27.0
87.5°	14.0	14.0	14.0	13.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9
2.5°	868.9	870.9	872.9	875.9	878.9	881.9	880.9	879.9	883.9	888.9	889.9
5°	855.9	857.9	860.9	865.9	870.9	874.9	875.9	875.9	883.9	890.9	892.9
7.5°	839.9	842.9	846.9	851.9	858.9	864.9	867.9	871.9	879.9	888.9	892.9
10°	819.9	824.9	830.9	837.9	844.9	851.9	857.9	862.9	872.9	882.9	888.9
12.5°	801.9	806.9	812.9	820.9	829.9	838.9	844.9	851.9	863.9	875.9	882.9
15°	781.9	786.9	793.9	801.9	811.9	821.9	830.9	839.9	851.9	864.9	872.9
17.5°	759.9	764.9	771.9	781.9	792.9	803.9	813.9	823.9	837.9	851.9	860.9
20°	732.9	739.9	748.9	758.9	771.9	784.9	794.9	805.9	820.9	835.9	845.9
22.5°	706.9	713.9	723.9	735.9	749.9	763.9	775.9	787.9	803.9	818.9	829.9
25°	681.9	689.9	699.9	711.9	724.9	738.9	752.9	766.9	782.9	798.9	809.9
27.5°	656.9	663.9	673.9	685.9	700.9	714.9	728.9	742.9	759.9	776.9	788.9
30°	628.9	636.9	645.9	657.9	673.9	689.9	703.9	718.9	735.9	752.9	764.9
32.5°	602.9	609.9	618.9	630.9	646.9	662.9	677.9	693.9	709.9	726.9	738.9
35°	576.9	583.9	592.9	604.9	620.9	636.9	651.9	666.9	682.9	698.9	710.9
37.5°	550.9	557.9	566.9	578.9	593.9	609.9	623.9	638.9	654.9	670.9	681.9
40°	523.9	530.9	537.9	549.9	564.9	580.9	594.9	609.9	625.9	641.9	652.9
42.5°	497.0	504.0	513.0	524.9	538.9	552.9	566.9	580.9	595.9	610.9	621.9
45°	470.0	476.0	485.0	496.0	510.0	522.9	536.9	549.9	564.9	578.9	589.9
47.5°	442.0	448.0	455.0	466.0	480.0	494.0	508.0	521.0	533.9	547.9	557.9
50°	415.0	421.0	429.0	439.0	452.0	465.0	477.0	489.0	502.0	515.0	523.9
52.5°	387.0	393.0	400.0	410.0	421.0	433.0	444.0	456.0	468.0	480.0	489.0
55°	359.0	363.0	369.0	378.0	390.0	402.0	413.0	424.0	435.0	445.0	454.0
57.5°	331.0	336.0	343.0	351.0	361.0	371.0	381.0	391.0	401.0	411.0	419.0
60°	303.0	307.0	312.0	319.0	329.0	338.0	348.0	357.0	366.0	375.0	382.0
62.5°	274.0	278.0	283.0	290.0	298.0	306.0	315.0	323.0	331.0	339.0	346.0
65°	244.0	248.0	253.0	259.0	266.0	273.0	281.0	289.0	295.0	301.0	308.0
67.5°	213.0	217.0	222.0	227.0	233.0	240.0	247.0	254.0	260.0	266.0	271.0
70°	183.0	186.0	191.0	195.0	200.0	205.0	211.0	217.0	221.0	226.0	232.0
72.5°	154.0	157.0	161.0	165.0	168.0	172.0	178.0	183.0	188.0	194.0	197.0
75°	126.0	128.0	131.0	134.0	137.0	140.0	144.0	148.0	152.0	155.0	159.0
77.5°	98.0	100.0	103.0	105.0	107.0	109.0	112.0	115.0	118.0	120.0	124.0
80°	72.0	74.0	76.0	78.0	80.0	82.0	83.0	84.0	88.0	91.0	93.0
82.5°	49.0	50.0	51.0	53.0	54.0	55.0	56.0	56.0	58.0	60.0	63.0
85°	28.0	29.0	30.0	30.0	30.0	30.0	31.0	32.0	33.0	35.0	37.0
87.5°	11.0	11.0	12.0	12.0	12.0	12.0	12.0	12.0	13.0	15.0	16.0
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°	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9	883.9
2.5°	888.9	889.9	891.9	892.9	893.9	893.9	894.9	895.9	893.9	891.9	890.9
5°	893.9	894.9	897.9	900.9	902.9	904.9	903.9	902.9	900.9	897.9	895.9
7.5°	894.9	897.9	900.9	904.9	907.9	911.9	909.9	907.9	903.9	899.9	896.9
10°	891.9	895.9	900.9	905.9	908.9	911.9	909.9	907.9	903.9	898.9	894.9
12.5°	887.9	892.9	898.9	903.9	906.9	910.9	907.9	904.9	899.9	894.9	889.9
15°	878.9	884.9	891.9	897.9	902.9	906.9	903.9	901.9	895.9	888.9	881.9
17.5°	867.9	875.9	882.9	889.9	893.9	897.9	895.9	893.9	886.9	878.9	870.9
20°	854.9	862.9	869.9	876.9	881.9	885.9	882.9	879.9	872.9	865.9	857.9
22.5°	838.9	846.9	854.9	861.9	866.9	870.9	866.9	861.9	854.9	847.9	839.9
25°	818.9	827.9	836.9	843.9	846.9	850.9	846.9	842.9	835.9	828.9	819.9
27.5°	798.9	807.9	816.9	823.9	826.9	830.9	826.9	822.9	815.9	808.9	799.9
30°	775.9	784.9	793.9	800.9	803.9	806.9	802.9	798.9	792.9	785.9	776.9
32.5°	749.9	758.9	765.9	772.9	776.9	780.9	776.9	773.9	766.9	757.9	748.9
35°	721.9	730.9	739.9	746.9	750.9	754.9	749.9	744.9	738.9	731.9	723.9
37.5°	690.9	700.9	710.9	718.9	721.9	725.9	721.9	716.9	710.9	703.9	694.9
40°	661.9	670.9	679.9	687.9	690.9	693.9	689.9	685.9	678.9	671.9	662.9
42.5°	631.9	640.9	648.9	655.9	658.9	662.9	658.9	653.9	648.9	642.9	634.9
45°	599.9	608.9	615.9	622.9	625.9	628.9	624.9	619.9	614.9	609.9	601.9
47.5°	566.9	574.9	581.9	588.9	590.9	593.9	589.9	586.9	581.9	576.9	569.9
50°	532.9	540.9	547.9	553.9	555.9	558.9	554.9	550.9	546.9	542.9	536.9
52.5°	498.0	505.0	512.0	518.0	520.0	521.9	518.0	514.0	510.0	506.0	500.0
55°	462.0	469.0	476.0	481.0	483.0	485.0	481.0	478.0	474.0	471.0	465.0
57.5°	426.0	433.0	439.0	444.0	446.0	448.0	444.0	440.0	437.0	434.0	429.0
60°	389.0	396.0	401.0	405.0	407.0	408.0	404.0	401.0	399.0	397.0	392.0
62.5°	353.0	358.0	363.0	366.0	368.0	369.0	366.0	364.0	362.0	360.0	356.0
65°	315.0	321.0	325.0	328.0	329.0	330.0	327.0	325.0	323.0	321.0	318.0
67.5°	277.0	282.0	285.0	288.0	289.0	289.0	289.0	288.0	286.0	283.0	280.0
70°	239.0	243.0	246.0	248.0	249.0	249.0	247.0	245.0	245.0	244.0	242.0
72.5°	200.0	203.0	205.0	207.0	207.0	207.0	207.0	208.0	207.0	205.0	202.0
75°	163.0	166.0	168.0	169.0	169.0	169.0	169.0	170.0	169.0	168.0	166.0
77.5°	128.0	130.0	131.0	132.0	132.0	132.0	133.0	134.0	133.0	132.0	131.0
80°	95.0	96.0	97.0	98.0	97.0	97.0	98.0	100.0	99.0	98.0	97.0
82.5°	65.0	66.0	67.0	67.0	68.0	69.0	69.0	69.0	69.0	68.0	67.0
85°	39.0	40.0	40.0	40.0	40.0	40.0	41.0	42.0	42.0	41.0	41.0
87.5°	18.0	19.0	18.0	17.0	16.0	16.0	18.0	20.0	20.0	19.0	19.0
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: P709118
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	883.9	883.9	883.9	883.9
2.5°	891.9	890.9	885.9	880.9
5°	894.9	891.9	884.9	877.9
7.5°	894.9	890.9	880.9	871.9
10°	889.9	883.9	872.9	861.9
12.5°	883.9	876.9	863.9	851.9
15°	874.9	866.9	852.9	838.9
17.5°	861.9	851.9	837.9	822.9
20°	848.9	837.9	820.9	804.9
22.5°	830.9	820.9	802.9	785.9
25°	810.9	799.9	781.9	763.9
27.5°	789.9	776.9	758.9	740.9
30°	765.9	752.9	734.9	716.9
32.5°	739.9	727.9	709.9	690.9
35°	713.9	700.9	682.9	663.9
37.5°	684.9	672.9	654.9	636.9
40°	653.9	641.9	623.9	605.9
42.5°	624.9	613.9	595.9	578.9
45°	592.9	581.9	564.9	548.9
47.5°	559.9	548.9	532.9	517.0
50°	527.9	517.0	502.0	487.0
52.5°	492.0	483.0	469.0	455.0
55°	457.0	448.0	434.0	421.0
57.5°	422.0	414.0	401.0	389.0
60°	385.0	377.0	367.0	356.0
62.5°	350.0	343.0	333.0	323.0
65°	313.0	307.0	298.0	289.0
67.5°	275.0	270.0	262.0	254.0
70°	237.0	231.0	225.0	218.0
72.5°	199.0	196.0	190.0	184.0
75°	163.0	160.0	155.0	150.0
77.5°	129.0	126.0	122.0	118.0
80°	95.0	93.0	90.0	87.0
82.5°	66.0	64.0	62.0	59.0
85°	40.0	38.0	36.0	34.0
87.5°	18.0	17.0	15.0	14.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)