

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: P709155

Luminaire Tested: **4APN-20L950-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709155
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20L950-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

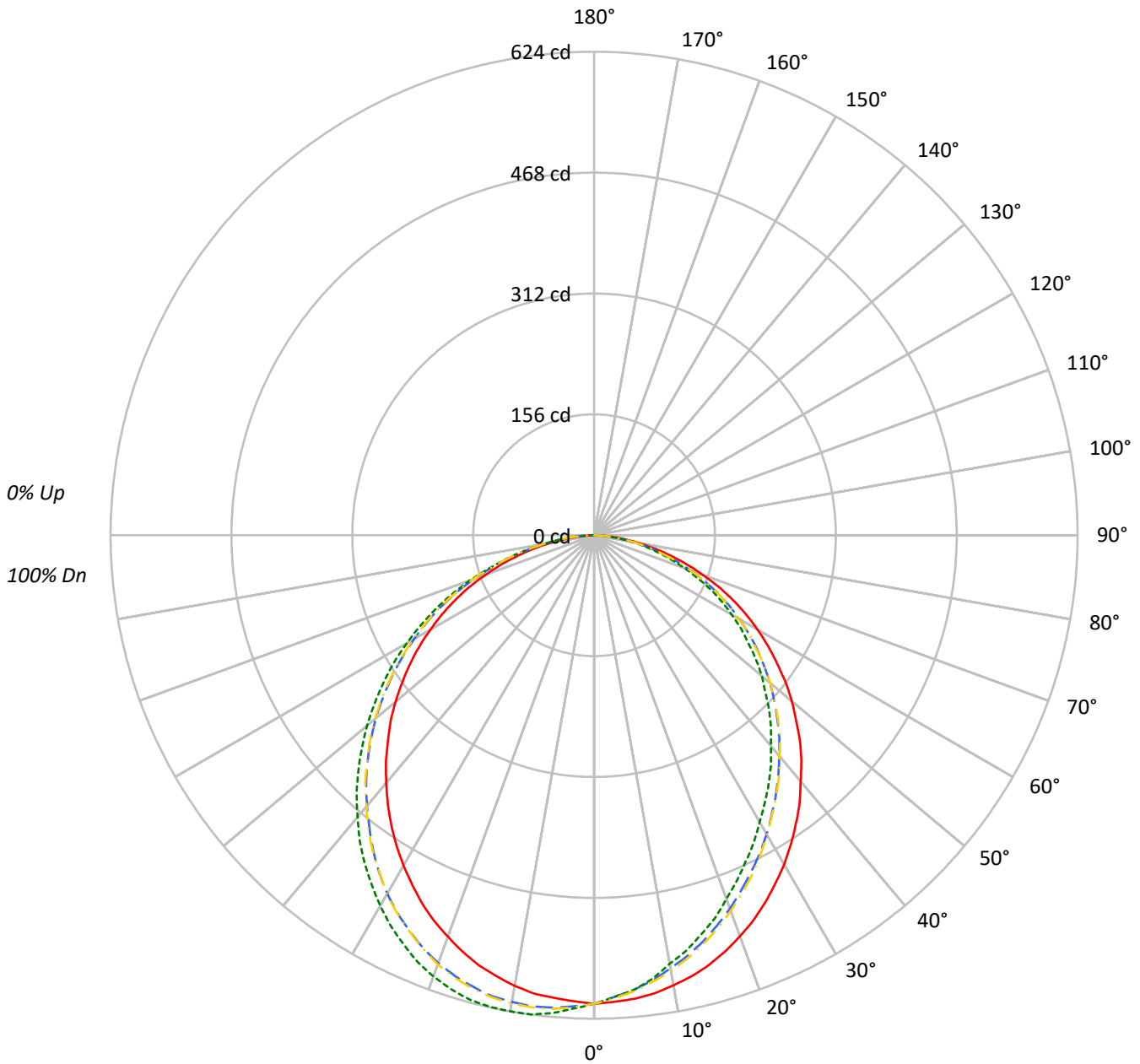
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1621.9 lumens
Efficiency: N/A
Efficacy: 68.1 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 (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	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°	5579	5579	5579	5579
5°	5562	5455	5550	5734
10°	5525	5261	5531	5845
15°	5483	5097	5488	5927
20°	5407	4903	5414	5951
25°	5321	4721	5341	5927
30°	5226	4555	5240	5882
35°	5116	4423	5139	5817
40°	4993	4276	5026	5718
45°	4901	4169	4910	5614
50°	4783	4055	4801	5489
55°	4633	3907	4666	5337
60°	4493	3786	4506	5150
65°	4316	3628	4316	4929
70°	4022	3358	4006	4594
75°	3657	3048	3608	4121
80°	3161	2619	3055	3528
85°	2467	1958	2318	2901



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.1	3.5
10°-20°	162.2	10.0
20°-30°	241.1	14.9
30°-40°	284.2	17.5
40°-50°	289.3	17.8
50°-60°	257.8	15.9
60°-70°	194.2	12.0
70°-80°	108.0	6.7
80°-90°	28.1	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°	460.4	28.4
0°-40°	744.6	45.9
0°-60°	1291.7	79.6
0°-90°	1621.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1621.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	605	605	605	605	605	
5°	601	589	599	619	601	57
15°	574	534	575	620	574	162
25°	523	464	525	582	523	241
35°	454	393	456	516	454	284
45°	376	320	376	430	376	289
55°	288	243	290	332	288	258
65°	198	166	198	226	198	195
75°	103	86	101	116	103	109
85°	23	18	22	27	23	28
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°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7
2.5°	602.7	602.7	603.4	600.6	597.2	595.9	595.2	594.5	595.9	596.5	595.9
5°	600.6	599.3	597.9	594.5	590.4	587.6	586.3	585.6	587.0	589.0	587.0
7.5°	596.5	593.8	591.1	586.3	581.5	577.4	575.3	574.0	575.3	577.4	576.0
10°	589.7	586.3	582.2	576.7	569.9	565.1	563.0	561.0	561.6	561.6	561.6
12.5°	582.9	578.1	573.3	566.4	558.9	553.4	550.0	547.3	548.6	549.3	549.3
15°	574.0	567.8	561.0	553.4	545.9	539.8	535.7	532.9	533.6	533.6	534.3
17.5°	563.0	556.2	549.3	540.4	531.5	524.7	519.9	516.5	517.9	518.5	519.2
20°	550.7	543.2	535.7	526.1	516.5	509.0	504.2	500.1	499.4	499.4	500.1
22.5°	537.7	529.5	520.6	510.3	500.1	491.9	487.1	483.0	482.3	482.3	483.0
25°	522.7	513.8	504.9	494.6	483.7	475.5	469.3	465.2	464.5	463.8	465.2
27.5°	506.9	498.0	489.1	478.9	467.2	459.0	452.9	448.8	447.4	446.7	448.1
30°	490.5	480.2	470.7	459.7	449.5	441.2	435.1	430.3	428.9	427.6	428.9
32.5°	472.7	462.5	452.2	441.2	431.0	422.8	416.6	411.8	410.5	409.8	411.1
35°	454.2	444.0	434.4	423.5	413.2	405.0	398.8	394.7	393.4	392.7	393.4
37.5°	435.8	425.5	415.9	405.0	394.7	386.5	380.4	376.3	375.6	374.9	375.6
40°	414.6	405.7	396.1	385.8	375.6	367.4	362.6	357.8	356.4	355.0	357.1
42.5°	396.1	387.2	377.6	368.0	357.8	349.6	344.1	340.0	338.6	337.9	338.6
45°	375.6	366.0	356.4	347.5	337.9	330.4	324.9	320.8	320.2	319.5	320.2
47.5°	353.7	345.5	337.3	328.4	318.8	311.3	306.5	302.4	301.0	299.6	301.0
50°	333.2	324.9	316.7	308.5	299.6	292.8	288.0	283.9	283.2	282.5	283.2
52.5°	311.3	303.1	295.5	287.3	279.8	273.0	268.2	264.7	264.1	263.4	264.1
55°	288.0	281.2	274.3	267.5	260.0	253.8	249.7	245.6	244.2	242.9	244.2
57.5°	266.1	260.0	253.1	246.3	239.4	234.0	229.9	226.4	225.8	225.1	225.8
60°	243.5	238.1	231.9	225.8	218.9	213.4	210.0	207.3	205.9	205.2	205.9
62.5°	221.0	215.5	210.7	204.5	198.4	194.3	190.9	188.1	186.8	186.1	186.8
65°	197.7	192.9	188.1	182.7	177.9	173.8	170.3	167.6	166.9	166.2	166.2
67.5°	173.8	169.7	165.6	160.8	155.3	151.2	147.8	145.7	145.0	144.3	145.0
70°	149.1	145.7	141.6	137.5	133.4	130.0	127.9	125.9	125.2	124.5	124.5
72.5°	125.9	123.1	119.7	116.3	112.9	109.5	107.4	106.0	105.4	104.7	104.7
75°	102.6	99.9	97.8	95.1	91.7	89.6	87.6	86.2	85.5	85.5	85.5
77.5°	80.7	78.7	76.6	73.9	71.8	69.8	68.4	67.7	67.0	67.0	67.0
80°	59.5	58.1	56.8	55.4	53.4	51.3	50.6	49.9	49.3	49.3	49.3
82.5°	40.4	39.7	38.3	36.9	35.6	34.9	34.2	33.5	33.5	33.5	33.5
85°	23.3	22.6	21.9	21.2	20.5	20.5	19.8	19.2	18.5	18.5	18.5
87.5°	9.6	9.6	9.6	8.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2
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°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7
2.5°	594.5	595.9	597.2	599.3	601.3	603.4	602.7	602.0	604.7	608.2	608.9
5°	585.6	587.0	589.0	592.4	595.9	598.6	599.3	599.3	604.7	609.5	610.9
7.5°	574.6	576.7	579.4	582.9	587.6	591.7	593.8	596.5	602.0	608.2	610.9
10°	561.0	564.4	568.5	573.3	578.1	582.9	587.0	590.4	597.2	604.1	608.2
12.5°	548.6	552.1	556.2	561.6	567.8	574.0	578.1	582.9	591.1	599.3	604.1
15°	535.0	538.4	543.2	548.6	555.5	562.3	568.5	574.6	582.9	591.7	597.2
17.5°	519.9	523.3	528.1	535.0	542.5	550.0	556.9	563.7	573.3	582.9	589.0
20°	501.4	506.2	512.4	519.2	528.1	537.0	543.9	551.4	561.6	571.9	578.8
22.5°	483.7	488.4	495.3	503.5	513.1	522.7	530.9	539.1	550.0	560.3	567.8
25°	466.6	472.0	478.9	487.1	496.0	505.6	515.1	524.7	535.7	546.6	554.1
27.5°	449.5	454.2	461.1	469.3	479.6	489.1	498.7	508.3	519.9	531.5	539.8
30°	430.3	435.8	441.9	450.1	461.1	472.0	481.6	491.9	503.5	515.1	523.3
32.5°	412.5	417.3	423.5	431.7	442.6	453.6	463.8	474.8	485.7	497.3	505.6
35°	394.7	399.5	405.7	413.9	424.8	435.8	446.0	456.3	467.2	478.2	486.4
37.5°	376.9	381.7	387.9	396.1	406.4	417.3	426.9	437.1	448.1	459.0	466.6
40°	358.5	363.3	368.0	376.3	386.5	397.5	407.0	417.3	428.2	439.2	446.7
42.5°	340.0	344.8	350.9	359.2	368.7	378.3	387.9	397.5	407.7	418.0	425.5
45°	321.5	325.6	331.8	339.3	348.9	357.8	367.4	376.3	386.5	396.1	403.6
47.5°	302.4	306.5	311.3	318.8	328.4	337.9	347.5	356.4	365.3	374.9	381.7
50°	283.9	288.0	293.5	300.3	309.2	318.1	326.3	334.5	343.4	352.3	358.5
52.5°	264.7	268.9	273.6	280.5	288.0	296.2	303.7	312.0	320.2	328.4	334.5
55°	245.6	248.3	252.4	258.6	266.8	275.0	282.5	290.1	297.6	304.4	310.6
57.5°	226.4	229.9	234.6	240.1	247.0	253.8	260.6	267.5	274.3	281.2	286.6
60°	207.3	210.0	213.4	218.2	225.1	231.2	238.1	244.2	250.4	256.5	261.3
62.5°	187.4	190.2	193.6	198.4	203.9	209.3	215.5	221.0	226.4	231.9	236.7
65°	166.9	169.7	173.1	177.2	182.0	186.8	192.2	197.7	201.8	205.9	210.7
67.5°	145.7	148.5	151.9	155.3	159.4	164.2	169.0	173.8	177.9	182.0	185.4
70°	125.2	127.2	130.7	133.4	136.8	140.2	144.3	148.5	151.2	154.6	158.7
72.5°	105.4	107.4	110.1	112.9	114.9	117.7	121.8	125.2	128.6	132.7	134.8
75°	86.2	87.6	89.6	91.7	93.7	95.8	98.5	101.2	104.0	106.0	108.8
77.5°	67.0	68.4	70.5	71.8	73.2	74.6	76.6	78.7	80.7	82.1	84.8
80°	49.3	50.6	52.0	53.4	54.7	56.1	56.8	57.5	60.2	62.3	63.6
82.5°	33.5	34.2	34.9	36.3	36.9	37.6	38.3	38.3	39.7	41.0	43.1
85°	19.2	19.8	20.5	20.5	20.5	20.5	21.2	21.9	22.6	23.9	25.3
87.5°	7.5	7.5	8.2	8.2	8.2	8.2	8.2	8.2	8.9	10.3	10.9
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°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7
2.5°	608.2	608.9	610.2	610.9	611.6	611.6	612.3	613.0	611.6	610.2	609.5
5°	611.6	612.3	614.3	616.4	617.7	619.1	618.4	617.7	616.4	614.3	613.0
7.5°	612.3	614.3	616.4	619.1	621.2	623.9	622.5	621.2	618.4	615.7	613.6
10°	610.2	613.0	616.4	619.8	621.8	623.9	622.5	621.2	618.4	615.0	612.3
12.5°	607.5	610.9	615.0	618.4	620.5	623.2	621.2	619.1	615.7	612.3	608.9
15°	601.3	605.4	610.2	614.3	617.7	620.5	618.4	617.1	613.0	608.2	603.4
17.5°	593.8	599.3	604.1	608.9	611.6	614.3	613.0	611.6	606.8	601.3	595.9
20°	584.9	590.4	595.2	600.0	603.4	606.1	604.1	602.0	597.2	592.4	587.0
22.5°	574.0	579.4	584.9	589.7	593.1	595.9	593.1	589.7	584.9	580.1	574.6
25°	560.3	566.4	572.6	577.4	579.4	582.2	579.4	576.7	571.9	567.1	561.0
27.5°	546.6	552.8	558.9	563.7	565.8	568.5	565.8	563.0	558.2	553.4	547.3
30°	530.9	537.0	543.2	548.0	550.0	552.1	549.3	546.6	542.5	537.7	531.5
32.5°	513.1	519.2	524.0	528.8	531.5	534.3	531.5	529.5	524.7	518.5	512.4
35°	493.9	500.1	506.2	511.0	513.8	516.5	513.1	509.7	505.6	500.8	495.3
37.5°	472.7	479.6	486.4	491.9	493.9	496.7	493.9	490.5	486.4	481.6	475.5
40°	452.9	459.0	465.2	470.7	472.7	474.8	472.0	469.3	464.5	459.7	453.6
42.5°	432.4	438.5	444.0	448.8	450.8	453.6	450.8	447.4	444.0	439.9	434.4
45°	410.5	416.6	421.4	426.2	428.2	430.3	427.6	424.1	420.7	417.3	411.8
47.5°	387.9	393.4	398.1	402.9	404.3	406.4	403.6	401.6	398.1	394.7	389.9
50°	364.6	370.1	374.9	379.0	380.4	382.4	379.7	376.9	374.2	371.5	367.4
52.5°	340.7	345.5	350.3	354.4	355.7	357.1	354.4	351.6	348.9	346.2	342.1
55°	316.1	320.8	325.6	329.1	330.4	331.8	329.1	327.0	324.3	322.2	318.1
57.5°	291.4	296.2	300.3	303.7	305.1	306.5	303.7	301.0	299.0	296.9	293.5
60°	266.1	270.9	274.3	277.1	278.4	279.1	276.4	274.3	273.0	271.6	268.2
62.5°	241.5	244.9	248.3	250.4	251.7	252.4	250.4	249.0	247.6	246.3	243.5
65°	215.5	219.6	222.3	224.4	225.1	225.8	223.7	222.3	221.0	219.6	217.5
67.5°	189.5	192.9	195.0	197.0	197.7	197.7	197.7	197.0	195.7	193.6	191.5
70°	163.5	166.2	168.3	169.7	170.3	170.3	169.0	167.6	167.6	166.9	165.6
72.5°	136.8	138.9	140.2	141.6	141.6	141.6	141.6	142.3	141.6	140.2	138.2
75°	111.5	113.6	114.9	115.6	115.6	115.6	115.6	116.3	115.6	114.9	113.6
77.5°	87.6	88.9	89.6	90.3	90.3	90.3	91.0	91.7	91.0	90.3	89.6
80°	65.0	65.7	66.4	67.0	66.4	66.4	67.0	68.4	67.7	67.0	66.4
82.5°	44.5	45.2	45.8	45.8	46.5	47.2	47.2	47.2	47.2	46.5	45.8
85°	26.7	27.4	27.4	27.4	27.4	27.4	28.0	28.7	28.7	28.0	28.0
87.5°	12.3	13.0	12.3	11.6	10.9	10.9	12.3	13.7	13.7	13.0	13.0
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):

	330°	340°	350°	360°
0°	604.7	604.7	604.7	604.7
2.5°	610.2	609.5	606.1	602.7
5°	612.3	610.2	605.4	600.6
7.5°	612.3	609.5	602.7	596.5
10°	608.9	604.7	597.2	589.7
12.5°	604.7	600.0	591.1	582.9
15°	598.6	593.1	583.5	574.0
17.5°	589.7	582.9	573.3	563.0
20°	580.8	573.3	561.6	550.7
22.5°	568.5	561.6	549.3	537.7
25°	554.8	547.3	535.0	522.7
27.5°	540.4	531.5	519.2	506.9
30°	524.0	515.1	502.8	490.5
32.5°	506.2	498.0	485.7	472.7
35°	488.4	479.6	467.2	454.2
37.5°	468.6	460.4	448.1	435.8
40°	447.4	439.2	426.9	414.6
42.5°	427.6	420.0	407.7	396.1
45°	405.7	398.1	386.5	375.6
47.5°	383.1	375.6	364.6	353.7
50°	361.2	353.7	343.4	333.2
52.5°	336.6	330.4	320.8	311.3
55°	312.6	306.5	296.9	288.0
57.5°	288.7	283.2	274.3	266.1
60°	263.4	257.9	251.1	243.5
62.5°	239.4	234.6	227.8	221.0
65°	214.1	210.0	203.9	197.7
67.5°	188.1	184.7	179.2	173.8
70°	162.1	158.0	153.9	149.1
72.5°	136.1	134.1	130.0	125.9
75°	111.5	109.5	106.0	102.6
77.5°	88.2	86.2	83.5	80.7
80°	65.0	63.6	61.6	59.5
82.5°	45.2	43.8	42.4	40.4
85°	27.4	26.0	24.6	23.3
87.5°	12.3	11.6	10.3	9.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)