

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: P709148

Luminaire Tested: **4APN-24L940-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709148
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24L940-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

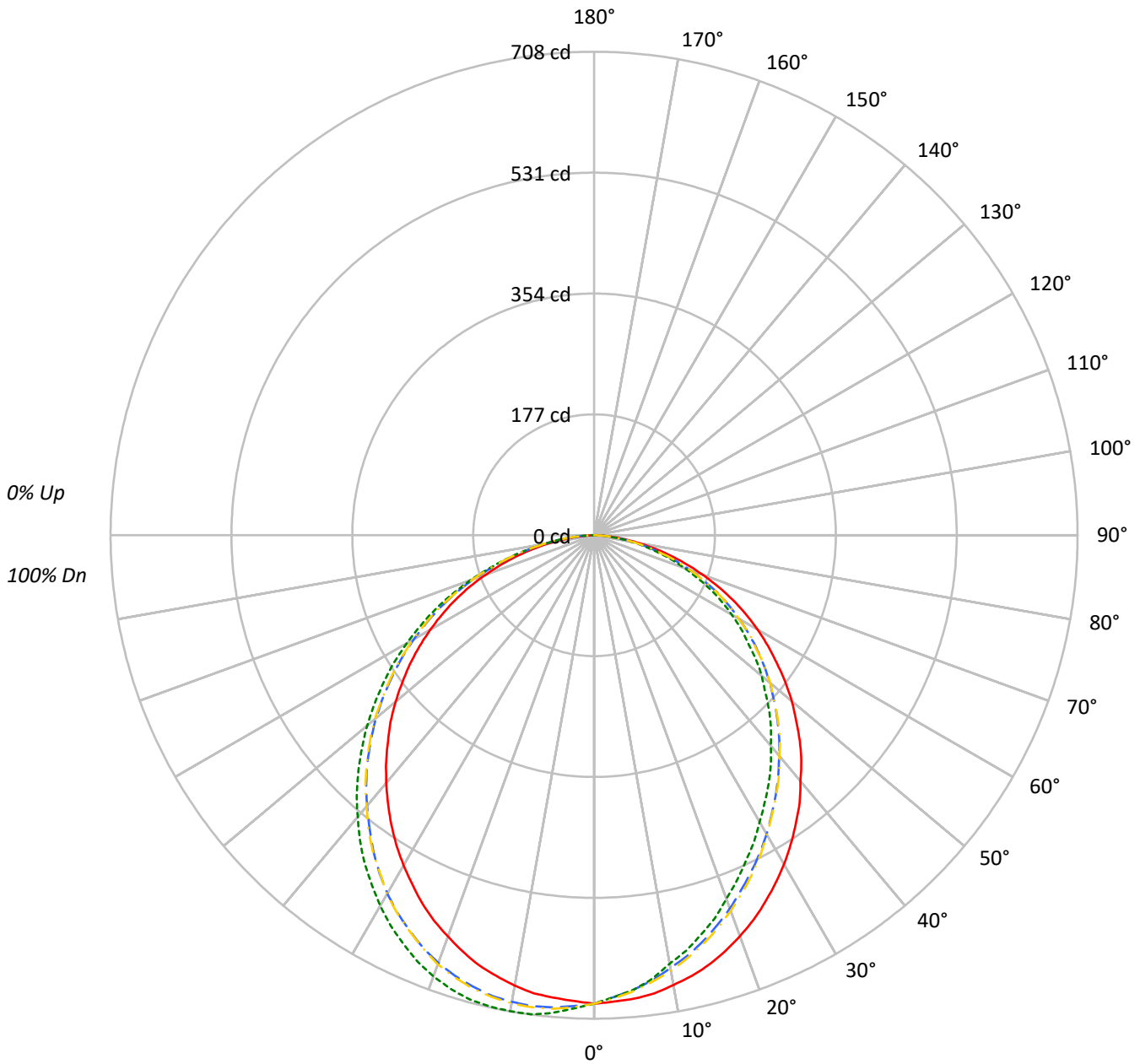
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1839.5 lumens
Efficiency: N/A
Efficacy: 65.9 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				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°	6328	6328	6328	6328
5°	6309	6188	6295	6503
10°	6266	5968	6273	6629
15°	6218	5781	6226	6722
20°	6133	5561	6140	6750
25°	6035	5356	6058	6722
30°	5927	5166	5944	6671
35°	5803	5017	5829	6598
40°	5663	4850	5700	6486
45°	5558	4727	5568	6367
50°	5424	4599	5446	6225
55°	5255	4430	5292	6053
60°	5097	4296	5111	5842
65°	4895	4115	4895	5589
70°	4562	3809	4543	5212
75°	4149	3458	4092	4673
80°	3586	2970	3464	4001
85°	2795	2212	2625	3282



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.8	3.5
10°-20°	183.9	10.0
20°-30°	273.4	14.9
30°-40°	322.3	17.5
40°-50°	328.2	17.8
50°-60°	292.3	15.9
60°-70°	220.2	12.0
70°-80°	122.5	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°	522.2	28.4
0°-40°	844.5	45.9
0°-60°	1465.0	79.6
0°-90°	1839.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1839.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	686	686	686	686	686	
5°	681	668	680	702	681	65
15°	651	605	652	704	651	183
25°	593	526	595	660	593	273
35°	515	445	518	586	515	322
45°	426	362	427	488	426	328
55°	327	275	329	376	327	293
65°	224	188	224	256	224	221
75°	116	97	115	131	116	124
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°	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9
2.5°	683.6	683.6	684.3	681.2	677.4	675.8	675.0	674.3	675.8	676.6	675.8
5°	681.2	679.7	678.1	674.3	669.6	666.5	665.0	664.2	665.7	668.1	665.7
7.5°	676.6	673.5	670.4	665.0	659.5	654.9	652.5	651.0	652.5	654.9	653.3
10°	668.8	665.0	660.3	654.1	646.3	640.9	638.6	636.2	637.0	637.0	637.0
12.5°	661.1	655.6	650.2	642.4	633.9	627.7	623.8	620.7	622.3	623.1	623.1
15°	651.0	644.0	636.2	627.7	619.2	612.2	607.5	604.4	605.2	605.2	606.0
17.5°	638.6	630.8	623.1	613.0	602.9	595.1	589.7	585.8	587.4	588.1	588.9
20°	624.6	616.1	607.5	596.7	585.8	577.3	571.8	567.2	566.4	566.4	567.2
22.5°	609.9	600.6	590.5	578.8	567.2	557.9	552.4	547.8	547.0	547.0	547.8
25°	592.8	582.7	572.6	561.0	548.6	539.3	532.3	527.6	526.8	526.1	527.6
27.5°	574.9	564.9	554.8	543.1	529.9	520.6	513.6	509.0	507.4	506.7	508.2
30°	556.3	544.7	533.8	521.4	509.8	500.5	493.5	488.0	486.5	484.9	486.5
32.5°	536.2	524.5	512.9	500.5	488.8	479.5	472.5	467.1	465.5	464.8	466.3
35°	515.2	503.6	492.7	480.3	468.6	459.3	452.4	447.7	446.1	445.4	446.1
37.5°	494.3	482.6	471.8	459.3	447.7	438.4	431.4	426.7	426.0	425.2	426.0
40°	470.2	460.1	449.2	437.6	426.0	416.7	411.2	405.8	404.2	402.7	405.0
42.5°	449.2	439.2	428.3	417.4	405.8	396.5	390.3	385.6	384.1	383.3	384.1
45°	426.0	415.1	404.2	394.2	383.3	374.8	368.6	363.9	363.1	362.3	363.1
47.5°	401.1	391.8	382.5	372.4	361.6	353.0	347.6	343.0	341.4	339.8	341.4
50°	377.9	368.6	359.2	349.9	339.8	332.1	326.7	322.0	321.2	320.4	321.2
52.5°	353.0	343.7	335.2	325.9	317.3	309.6	304.2	300.3	299.5	298.7	299.5
55°	326.7	318.9	311.1	303.4	294.8	287.9	283.2	278.5	277.0	275.4	277.0
57.5°	301.8	294.8	287.1	279.3	271.6	265.4	260.7	256.8	256.0	255.3	256.0
60°	276.2	270.0	263.0	256.0	248.3	242.1	238.2	235.1	233.5	232.8	233.5
62.5°	250.6	244.4	239.0	232.0	225.0	220.4	216.5	213.4	211.8	211.0	211.8
65°	224.2	218.8	213.4	207.2	201.7	197.1	193.2	190.1	189.3	188.5	188.5
67.5°	197.1	192.4	187.8	182.3	176.1	171.5	167.6	165.3	164.5	163.7	164.5
70°	169.1	165.3	160.6	156.0	151.3	147.4	145.1	142.8	142.0	141.2	141.2
72.5°	142.8	139.7	135.8	131.9	128.0	124.1	121.8	120.3	119.5	118.7	118.7
75°	116.4	113.3	111.0	107.9	104.0	101.6	99.3	97.8	97.0	97.0	97.0
77.5°	91.6	89.2	86.9	83.8	81.5	79.1	77.6	76.8	76.0	76.0	76.0
80°	67.5	66.0	64.4	62.8	60.5	58.2	57.4	56.6	55.9	55.9	55.9
82.5°	45.8	45.0	43.5	41.9	40.3	39.6	38.8	38.0	38.0	38.0	38.0
85°	26.4	25.6	24.8	24.1	23.3	23.3	22.5	21.7	20.9	20.9	20.9
87.5°	10.9	10.9	10.9	10.1	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°	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9
2.5°	674.3	675.8	677.4	679.7	682.0	684.3	683.6	682.8	685.9	689.8	690.6
5°	664.2	665.7	668.1	671.9	675.8	678.9	679.7	679.7	685.9	691.3	692.9
7.5°	651.8	654.1	657.2	661.1	666.5	671.2	673.5	676.6	682.8	689.8	692.9
10°	636.2	640.1	644.8	650.2	655.6	661.1	665.7	669.6	677.4	685.1	689.8
12.5°	622.3	626.2	630.8	637.0	644.0	651.0	655.6	661.1	670.4	679.7	685.1
15°	606.8	610.6	616.1	622.3	630.0	637.8	644.8	651.8	661.1	671.2	677.4
17.5°	589.7	593.6	599.0	606.8	615.3	623.8	631.6	639.3	650.2	661.1	668.1
20°	568.7	574.2	581.2	588.9	599.0	609.1	616.8	625.4	637.0	648.7	656.4
22.5°	548.6	554.0	561.8	571.1	581.9	592.8	602.1	611.4	623.8	635.5	644.0
25°	529.2	535.4	543.1	552.4	562.5	573.4	584.3	595.1	607.5	619.9	628.5
27.5°	509.8	515.2	523.0	532.3	543.9	554.8	565.6	576.5	589.7	602.9	612.2
30°	488.0	494.3	501.2	510.5	523.0	535.4	546.2	557.9	571.1	584.3	593.6
32.5°	467.9	473.3	480.3	489.6	502.0	514.4	526.1	538.5	550.9	564.1	573.4
35°	447.7	453.1	460.1	469.4	481.8	494.3	505.9	517.5	529.9	542.4	551.7
37.5°	427.5	433.0	439.9	449.2	460.9	473.3	484.2	495.8	508.2	520.6	529.2
40°	406.6	412.0	417.4	426.7	438.4	450.8	461.7	473.3	485.7	498.1	506.7
42.5°	385.6	391.1	398.0	407.4	418.2	429.1	439.9	450.8	462.4	474.1	482.6
45°	364.7	369.3	376.3	384.8	395.7	405.8	416.7	426.7	438.4	449.2	457.8
47.5°	343.0	347.6	353.0	361.6	372.4	383.3	394.2	404.2	414.3	425.2	433.0
50°	322.0	326.7	332.9	340.6	350.7	360.8	370.1	379.4	389.5	399.6	406.6
52.5°	300.3	304.9	310.4	318.1	326.7	336.0	344.5	353.8	363.1	372.4	379.4
55°	278.5	281.7	286.3	293.3	302.6	311.9	320.4	329.0	337.5	345.3	352.3
57.5°	256.8	260.7	266.1	272.3	280.1	287.9	295.6	303.4	311.1	318.9	325.1
60°	235.1	238.2	242.1	247.5	255.3	262.3	270.0	277.0	284.0	291.0	296.4
62.5°	212.6	215.7	219.6	225.0	231.2	237.4	244.4	250.6	256.8	263.0	268.5
65°	189.3	192.4	196.3	201.0	206.4	211.8	218.0	224.2	228.9	233.5	239.0
67.5°	165.3	168.4	172.3	176.1	180.8	186.2	191.6	197.1	201.7	206.4	210.3
70°	142.0	144.3	148.2	151.3	155.2	159.1	163.7	168.4	171.5	175.4	180.0
72.5°	119.5	121.8	124.9	128.0	130.4	133.5	138.1	142.0	145.9	150.5	152.9
75°	97.8	99.3	101.6	104.0	106.3	108.6	111.7	114.8	117.9	120.3	123.4
77.5°	76.0	77.6	79.9	81.5	83.0	84.6	86.9	89.2	91.6	93.1	96.2
80°	55.9	57.4	59.0	60.5	62.1	63.6	64.4	65.2	68.3	70.6	72.2
82.5°	38.0	38.8	39.6	41.1	41.9	42.7	43.5	43.5	45.0	46.6	48.9
85°	21.7	22.5	23.3	23.3	23.3	23.3	24.1	24.8	25.6	27.2	28.7
87.5°	8.5	8.5	9.3	9.3	9.3	9.3	9.3	9.3	10.1	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°	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9	685.9
2.5°	689.8	690.6	692.1	692.9	693.7	693.7	694.4	695.2	693.7	692.1	691.3
5°	693.7	694.4	696.8	699.1	700.6	702.2	701.4	700.6	699.1	696.8	695.2
7.5°	694.4	696.8	699.1	702.2	704.5	707.6	706.1	704.5	701.4	698.3	696.0
10°	692.1	695.2	699.1	703.0	705.3	707.6	706.1	704.5	701.4	697.5	694.4
12.5°	689.0	692.9	697.5	701.4	703.7	706.8	704.5	702.2	698.3	694.4	690.6
15°	682.0	686.7	692.1	696.8	700.6	703.7	701.4	699.9	695.2	689.8	684.3
17.5°	673.5	679.7	685.1	690.6	693.7	696.8	695.2	693.7	688.2	682.0	675.8
20°	663.4	669.6	675.0	680.5	684.3	687.5	685.1	682.8	677.4	671.9	665.7
22.5°	651.0	657.2	663.4	668.8	672.7	675.8	672.7	668.8	663.4	658.0	651.8
25°	635.5	642.4	649.4	654.9	657.2	660.3	657.2	654.1	648.7	643.2	636.2
27.5°	619.9	626.9	633.9	639.3	641.7	644.8	641.7	638.6	633.1	627.7	620.7
30°	602.1	609.1	616.1	621.5	623.8	626.2	623.1	619.9	615.3	609.9	602.9
32.5°	581.9	588.9	594.3	599.8	602.9	606.0	602.9	600.6	595.1	588.1	581.2
35°	560.2	567.2	574.2	579.6	582.7	585.8	581.9	578.0	573.4	568.0	561.8
37.5°	536.2	543.9	551.7	557.9	560.2	563.3	560.2	556.3	551.7	546.2	539.3
40°	513.6	520.6	527.6	533.8	536.2	538.5	535.4	532.3	526.8	521.4	514.4
42.5°	490.4	497.4	503.6	509.0	511.3	514.4	511.3	507.4	503.6	498.9	492.7
45°	465.5	472.5	478.0	483.4	485.7	488.0	484.9	481.1	477.2	473.3	467.1
47.5°	439.9	446.1	451.6	457.0	458.6	460.9	457.8	455.5	451.6	447.7	442.3
50°	413.6	419.8	425.2	429.9	431.4	433.7	430.6	427.5	424.4	421.3	416.7
52.5°	386.4	391.8	397.3	401.9	403.5	405.0	401.9	398.8	395.7	392.6	388.0
55°	358.5	363.9	369.3	373.2	374.8	376.3	373.2	370.9	367.8	365.5	360.8
57.5°	330.5	336.0	340.6	344.5	346.1	347.6	344.5	341.4	339.1	336.7	332.9
60°	301.8	307.3	311.1	314.2	315.8	316.6	313.5	311.1	309.6	308.0	304.2
62.5°	273.9	277.8	281.7	284.0	285.5	286.3	284.0	282.4	280.9	279.3	276.2
65°	244.4	249.1	252.2	254.5	255.3	256.0	253.7	252.2	250.6	249.1	246.7
67.5°	214.9	218.8	221.1	223.5	224.2	224.2	224.2	223.5	221.9	219.6	217.3
70°	185.4	188.5	190.9	192.4	193.2	193.2	191.6	190.1	190.1	189.3	187.8
72.5°	155.2	157.5	159.1	160.6	160.6	160.6	160.6	161.4	160.6	159.1	156.7
75°	126.5	128.8	130.4	131.1	131.1	131.1	131.1	131.9	131.1	130.4	128.8
77.5°	99.3	100.9	101.6	102.4	102.4	102.4	103.2	104.0	103.2	102.4	101.6
80°	73.7	74.5	75.3	76.0	75.3	75.3	76.0	77.6	76.8	76.0	75.3
82.5°	50.4	51.2	52.0	52.0	52.8	53.5	53.5	53.5	53.5	52.8	52.0
85°	30.3	31.0	31.0	31.0	31.0	31.0	31.8	32.6	32.6	31.8	31.8
87.5°	14.0	14.7	14.0	13.2	12.4	12.4	14.0	15.5	15.5	14.7	14.7
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°	685.9	685.9	685.9	685.9
2.5°	692.1	691.3	687.5	683.6
5°	694.4	692.1	686.7	681.2
7.5°	694.4	691.3	683.6	676.6
10°	690.6	685.9	677.4	668.8
12.5°	685.9	680.5	670.4	661.1
15°	678.9	672.7	661.8	651.0
17.5°	668.8	661.1	650.2	638.6
20°	658.7	650.2	637.0	624.6
22.5°	644.8	637.0	623.1	609.9
25°	629.3	620.7	606.8	592.8
27.5°	613.0	602.9	588.9	574.9
30°	594.3	584.3	570.3	556.3
32.5°	574.2	564.9	550.9	536.2
35°	554.0	543.9	529.9	515.2
37.5°	531.5	522.2	508.2	494.3
40°	507.4	498.1	484.2	470.2
42.5°	484.9	476.4	462.4	449.2
45°	460.1	451.6	438.4	426.0
47.5°	434.5	426.0	413.6	401.1
50°	409.7	401.1	389.5	377.9
52.5°	381.7	374.8	363.9	353.0
55°	354.6	347.6	336.7	326.7
57.5°	327.4	321.2	311.1	301.8
60°	298.7	292.5	284.8	276.2
62.5°	271.6	266.1	258.4	250.6
65°	242.9	238.2	231.2	224.2
67.5°	213.4	209.5	203.3	197.1
70°	183.9	179.2	174.6	169.1
72.5°	154.4	152.1	147.4	142.8
75°	126.5	124.1	120.3	116.4
77.5°	100.1	97.8	94.7	91.6
80°	73.7	72.2	69.8	67.5
82.5°	51.2	49.7	48.1	45.8
85°	31.0	29.5	27.9	26.4
87.5°	14.0	13.2	11.6	10.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)