

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: P709136

Luminaire Tested: **4APN-24L930-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709136
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24L930-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

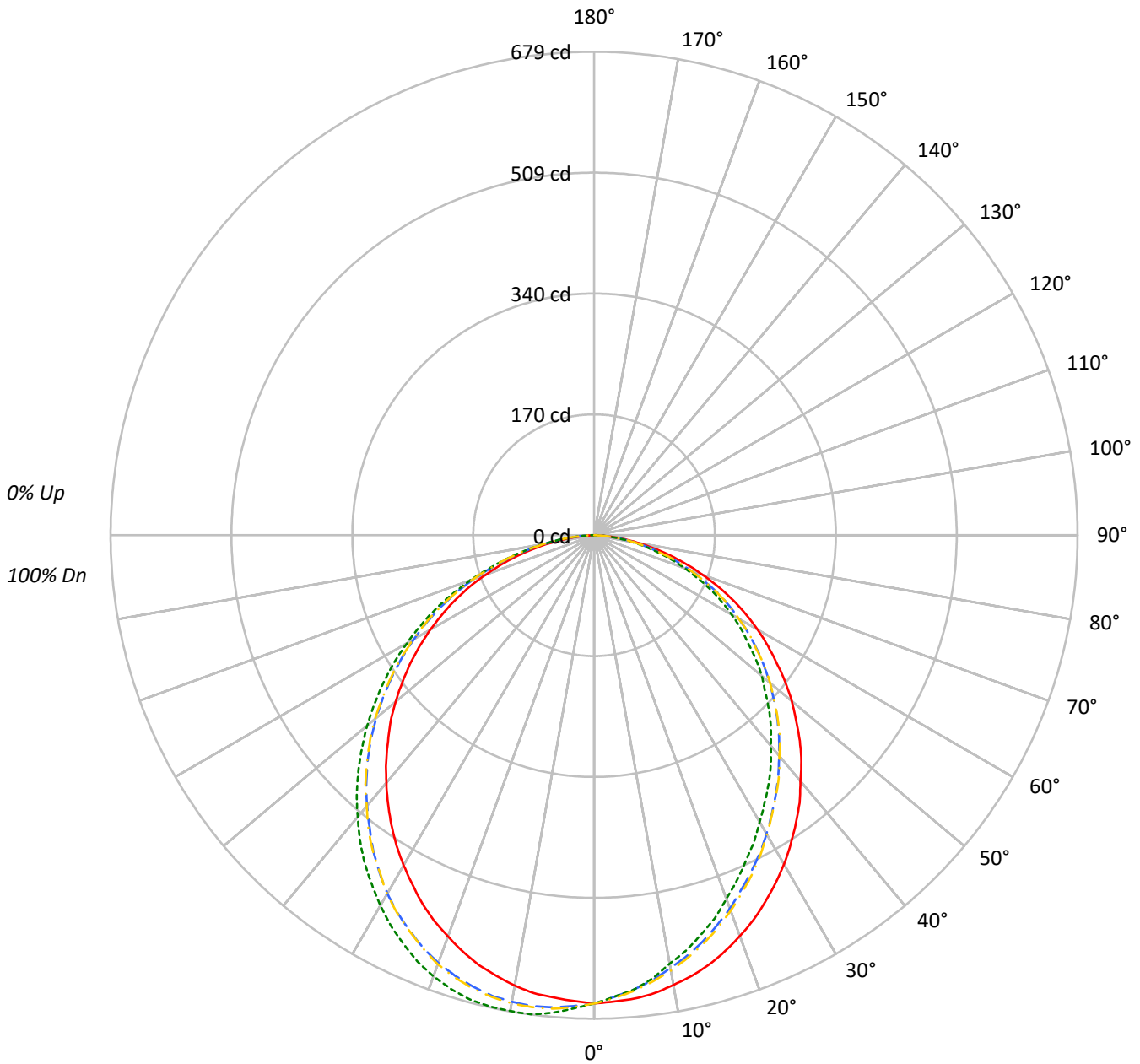
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1764.0 lumens
Efficiency: N/A
Efficacy: 63.2 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°	6068	6068	6068	6068
5°	6051	5933	6037	6237
10°	6009	5723	6016	6357
15°	5963	5544	5970	6446
20°	5881	5333	5888	6472
25°	5787	5136	5810	6446
30°	5684	4954	5700	6396
35°	5564	4810	5590	6328
40°	5431	4651	5467	6219
45°	5330	4534	5339	6106
50°	5202	4411	5222	5970
55°	5038	4248	5075	5805
60°	4888	4119	4901	5602
65°	4694	3947	4694	5360
70°	4375	3652	4357	4999
75°	3978	3315	3925	4481
80°	3438	2848	3321	3836
85°	2678	2128	2519	3155



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.2	3.5
10°-20°	176.4	10.0
20°-30°	262.2	14.9
30°-40°	309.1	17.5
40°-50°	314.7	17.8
50°-60°	280.3	15.9
60°-70°	211.2	12.0
70°-80°	117.4	6.7
80°-90°	30.5	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°	500.8	28.4
0°-40°	809.8	45.9
0°-60°	1404.8	79.6
0°-90°	1764.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1764.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	658	658	658	658	658	
5°	653	641	652	673	653	62
15°	624	580	625	675	624	176
25°	568	504	571	633	568	262
35°	494	427	496	562	494	309
45°	408	348	409	468	408	315
55°	313	264	316	361	313	281
65°	215	181	215	246	215	212
75°	112	93	110	126	112	119
85°	25	20	24	30	25	30
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°	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7
2.5°	655.5	655.5	656.3	653.3	649.6	648.1	647.3	646.6	648.1	648.8	648.1
5°	653.3	651.8	650.3	646.6	642.1	639.1	637.7	636.9	638.4	640.6	638.4
7.5°	648.8	645.8	642.9	637.7	632.4	628.0	625.7	624.3	625.7	628.0	626.5
10°	641.4	637.7	633.2	627.2	619.8	614.6	612.4	610.1	610.9	610.9	610.9
12.5°	633.9	628.7	623.5	616.1	607.9	601.9	598.2	595.2	596.7	597.5	597.5
15°	624.3	617.6	610.1	601.9	593.8	587.1	582.6	579.6	580.4	580.4	581.1
17.5°	612.4	604.9	597.5	587.8	578.1	570.7	565.5	561.8	563.2	564.0	564.7
20°	599.0	590.8	582.6	572.2	561.8	553.6	548.4	543.9	543.2	543.2	543.9
22.5°	584.8	575.9	566.2	555.1	543.9	535.0	529.8	525.3	524.6	524.6	525.3
25°	568.5	558.8	549.1	537.9	526.0	517.1	510.4	506.0	505.2	504.5	506.0
27.5°	551.3	541.7	532.0	520.8	508.2	499.3	492.6	488.1	486.6	485.9	487.4
30°	533.5	522.3	511.9	500.0	488.8	479.9	473.2	468.0	466.5	465.0	466.5
32.5°	514.1	503.0	491.8	479.9	468.8	459.8	453.1	447.9	446.4	445.7	447.2
35°	494.0	482.9	472.5	460.6	449.4	440.5	433.8	429.3	427.8	427.1	427.8
37.5°	474.0	462.8	452.4	440.5	429.3	420.4	413.7	409.2	408.5	407.7	408.5
40°	450.9	441.2	430.8	419.6	408.5	399.6	394.3	389.1	387.7	386.2	388.4
42.5°	430.8	421.1	410.7	400.3	389.1	380.2	374.3	369.8	368.3	367.6	368.3
45°	408.5	398.1	387.7	378.0	367.6	359.4	353.4	349.0	348.2	347.5	348.2
47.5°	384.7	375.7	366.8	357.1	346.7	338.5	333.3	328.9	327.4	325.9	327.4
50°	362.4	353.4	344.5	335.6	325.9	318.5	313.2	308.8	308.0	307.3	308.0
52.5°	338.5	329.6	321.4	312.5	304.3	296.9	291.7	287.9	287.2	286.5	287.2
55°	313.2	305.8	298.4	290.9	282.7	276.0	271.6	267.1	265.6	264.1	265.6
57.5°	289.4	282.7	275.3	267.9	260.4	254.5	250.0	246.3	245.5	244.8	245.5
60°	264.9	258.9	252.2	245.5	238.1	232.1	228.4	225.4	224.0	223.2	224.0
62.5°	240.3	234.4	229.2	222.5	215.8	211.3	207.6	204.6	203.1	202.4	203.1
65°	215.0	209.8	204.6	198.7	193.5	189.0	185.3	182.3	181.5	180.8	180.8
67.5°	189.0	184.5	180.1	174.9	168.9	164.4	160.7	158.5	157.7	157.0	157.7
70°	162.2	158.5	154.0	149.6	145.1	141.4	139.1	136.9	136.2	135.4	135.4
72.5°	136.9	133.9	130.2	126.5	122.8	119.0	116.8	115.3	114.6	113.8	113.8
75°	111.6	108.6	106.4	103.4	99.7	97.5	95.2	93.8	93.0	93.0	93.0
77.5°	87.8	85.6	83.3	80.4	78.1	75.9	74.4	73.7	72.9	72.9	72.9
80°	64.7	63.2	61.8	60.3	58.0	55.8	55.1	54.3	53.6	53.6	53.6
82.5°	43.9	43.2	41.7	40.2	38.7	37.9	37.2	36.5	36.5	36.5	36.5
85°	25.3	24.6	23.8	23.1	22.3	22.3	21.6	20.8	20.1	20.1	20.1
87.5°	10.4	10.4	10.4	9.7	8.9	8.9	8.9	8.9	8.9	8.9	8.9
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7
2.5°	646.6	648.1	649.6	651.8	654.0	656.3	655.5	654.8	657.7	661.5	662.2
5°	636.9	638.4	640.6	644.3	648.1	651.0	651.8	651.8	657.7	662.9	664.4
7.5°	625.0	627.2	630.2	633.9	639.1	643.6	645.8	648.8	654.8	661.5	664.4
10°	610.1	613.8	618.3	623.5	628.7	633.9	638.4	642.1	649.6	657.0	661.5
12.5°	596.7	600.4	604.9	610.9	617.6	624.3	628.7	633.9	642.9	651.8	657.0
15°	581.8	585.6	590.8	596.7	604.2	611.6	618.3	625.0	633.9	643.6	649.6
17.5°	565.5	569.2	574.4	581.8	590.0	598.2	605.7	613.1	623.5	633.9	640.6
20°	545.4	550.6	557.3	564.7	574.4	584.1	591.5	599.7	610.9	622.0	629.5
22.5°	526.0	531.3	538.7	547.6	558.0	568.5	577.4	586.3	598.2	609.4	617.6
25°	507.4	513.4	520.8	529.8	539.4	549.9	560.3	570.7	582.6	594.5	602.7
27.5°	488.8	494.0	501.5	510.4	521.6	532.0	542.4	552.8	565.5	578.1	587.1
30°	468.0	474.0	480.7	489.6	501.5	513.4	523.8	535.0	547.6	560.3	569.2
32.5°	448.7	453.9	460.6	469.5	481.4	493.3	504.5	516.4	528.3	540.9	549.9
35°	429.3	434.5	441.2	450.2	462.1	474.0	485.1	496.3	508.2	520.1	529.0
37.5°	410.0	415.2	421.9	430.8	442.0	453.9	464.3	475.4	487.4	499.3	507.4
40°	389.9	395.1	400.3	409.2	420.4	432.3	442.7	453.9	465.8	477.7	485.9
42.5°	369.8	375.0	381.7	390.6	401.0	411.5	421.9	432.3	443.5	454.6	462.8
45°	349.7	354.2	360.9	369.0	379.5	389.1	399.6	409.2	420.4	430.8	439.0
47.5°	328.9	333.3	338.5	346.7	357.1	367.6	378.0	387.7	397.3	407.7	415.2
50°	308.8	313.2	319.2	326.6	336.3	346.0	354.9	363.8	373.5	383.2	389.9
52.5°	287.9	292.4	297.6	305.1	313.2	322.2	330.4	339.3	348.2	357.1	363.8
55°	267.1	270.1	274.6	281.3	290.2	299.1	307.3	315.5	323.7	331.1	337.8
57.5°	246.3	250.0	255.2	261.2	268.6	276.0	283.5	290.9	298.4	305.8	311.8
60°	225.4	228.4	232.1	237.4	244.8	251.5	258.9	265.6	272.3	279.0	284.2
62.5°	203.9	206.8	210.6	215.8	221.7	227.7	234.4	240.3	246.3	252.2	257.4
65°	181.5	184.5	188.2	192.7	197.9	203.1	209.1	215.0	219.5	224.0	229.2
67.5°	158.5	161.5	165.2	168.9	173.4	178.6	183.8	189.0	193.5	197.9	201.6
70°	136.2	138.4	142.1	145.1	148.8	152.5	157.0	161.5	164.4	168.2	172.6
72.5°	114.6	116.8	119.8	122.8	125.0	128.0	132.4	136.2	139.9	144.3	146.6
75°	93.8	95.2	97.5	99.7	101.9	104.2	107.1	110.1	113.1	115.3	118.3
77.5°	72.9	74.4	76.6	78.1	79.6	81.1	83.3	85.6	87.8	89.3	92.3
80°	53.6	55.1	56.5	58.0	59.5	61.0	61.8	62.5	65.5	67.7	69.2
82.5°	36.5	37.2	37.9	39.4	40.2	40.9	41.7	41.7	43.2	44.6	46.9
85°	20.8	21.6	22.3	22.3	22.3	22.3	23.1	23.8	24.6	26.0	27.5
87.5°	8.2	8.2	8.9	8.9	8.9	8.9	8.9	8.9	9.7	11.2	11.9
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°	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7	657.7
2.5°	661.5	662.2	663.7	664.4	665.2	665.2	665.9	666.7	665.2	663.7	662.9
5°	665.2	665.9	668.2	670.4	671.9	673.4	672.6	671.9	670.4	668.2	666.7
7.5°	665.9	668.2	670.4	673.4	675.6	678.6	677.1	675.6	672.6	669.6	667.4
10°	663.7	666.7	670.4	674.1	676.3	678.6	677.1	675.6	672.6	668.9	665.9
12.5°	660.7	664.4	668.9	672.6	674.9	677.8	675.6	673.4	669.6	665.9	662.2
15°	654.0	658.5	663.7	668.2	671.9	674.9	672.6	671.1	666.7	661.5	656.3
17.5°	645.8	651.8	657.0	662.2	665.2	668.2	666.7	665.2	660.0	654.0	648.1
20°	636.2	642.1	647.3	652.5	656.3	659.2	657.0	654.8	649.6	644.3	638.4
22.5°	624.3	630.2	636.2	641.4	645.1	648.1	645.1	641.4	636.2	631.0	625.0
25°	609.4	616.1	622.8	628.0	630.2	633.2	630.2	627.2	622.0	616.8	610.1
27.5°	594.5	601.2	607.9	613.1	615.3	618.3	615.3	612.4	607.1	601.9	595.2
30°	577.4	584.1	590.8	596.0	598.2	600.4	597.5	594.5	590.0	584.8	578.1
32.5°	558.0	564.7	569.9	575.2	578.1	581.1	578.1	575.9	570.7	564.0	557.3
35°	537.2	543.9	550.6	555.8	558.8	561.8	558.0	554.3	549.9	544.6	538.7
37.5°	514.1	521.6	529.0	535.0	537.2	540.2	537.2	533.5	529.0	523.8	517.1
40°	492.6	499.3	506.0	511.9	514.1	516.4	513.4	510.4	505.2	500.0	493.3
42.5°	470.2	476.9	482.9	488.1	490.3	493.3	490.3	486.6	482.9	478.4	472.5
45°	446.4	453.1	458.3	463.5	465.8	468.0	465.0	461.3	457.6	453.9	447.9
47.5°	421.9	427.8	433.0	438.2	439.7	442.0	439.0	436.8	433.0	429.3	424.1
50°	396.6	402.5	407.7	412.2	413.7	415.9	412.9	410.0	407.0	404.0	399.6
52.5°	370.5	375.7	381.0	385.4	386.9	388.4	385.4	382.4	379.5	376.5	372.0
55°	343.8	349.0	354.2	357.9	359.4	360.9	357.9	355.7	352.7	350.4	346.0
57.5°	317.0	322.2	326.6	330.4	331.8	333.3	330.4	327.4	325.2	322.9	319.2
60°	289.4	294.6	298.4	301.3	302.8	303.6	300.6	298.4	296.9	295.4	291.7
62.5°	262.6	266.4	270.1	272.3	273.8	274.6	272.3	270.8	269.3	267.9	264.9
65°	234.4	238.8	241.8	244.0	244.8	245.5	243.3	241.8	240.3	238.8	236.6
67.5°	206.1	209.8	212.1	214.3	215.0	215.0	215.0	214.3	212.8	210.6	208.3
70°	177.8	180.8	183.0	184.5	185.3	185.3	183.8	182.3	182.3	181.5	180.1
72.5°	148.8	151.0	152.5	154.0	154.0	154.0	154.0	154.8	154.0	152.5	150.3
75°	121.3	123.5	125.0	125.7	125.7	125.7	125.7	126.5	125.7	125.0	123.5
77.5°	95.2	96.7	97.5	98.2	98.2	98.2	99.0	99.7	99.0	98.2	97.5
80°	70.7	71.4	72.2	72.9	72.2	72.2	72.9	74.4	73.7	72.9	72.2
82.5°	48.4	49.1	49.9	49.9	50.6	51.3	51.3	51.3	51.3	50.6	49.9
85°	29.0	29.8	29.8	29.8	29.8	29.8	30.5	31.3	31.3	30.5	30.5
87.5°	13.4	14.1	13.4	12.6	11.9	11.9	13.4	14.9	14.9	14.1	14.1
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°	657.7	657.7	657.7	657.7
2.5°	663.7	662.9	659.2	655.5
5°	665.9	663.7	658.5	653.3
7.5°	665.9	662.9	655.5	648.8
10°	662.2	657.7	649.6	641.4
12.5°	657.7	652.5	642.9	633.9
15°	651.0	645.1	634.7	624.3
17.5°	641.4	633.9	623.5	612.4
20°	631.7	623.5	610.9	599.0
22.5°	618.3	610.9	597.5	584.8
25°	603.4	595.2	581.8	568.5
27.5°	587.8	578.1	564.7	551.3
30°	569.9	560.3	546.9	533.5
32.5°	550.6	541.7	528.3	514.1
35°	531.3	521.6	508.2	494.0
37.5°	509.7	500.7	487.4	474.0
40°	486.6	477.7	464.3	450.9
42.5°	465.0	456.8	443.5	430.8
45°	441.2	433.0	420.4	408.5
47.5°	416.7	408.5	396.6	384.7
50°	392.9	384.7	373.5	362.4
52.5°	366.1	359.4	349.0	338.5
55°	340.0	333.3	322.9	313.2
57.5°	314.0	308.0	298.4	289.4
60°	286.5	280.5	273.1	264.9
62.5°	260.4	255.2	247.8	240.3
65°	232.9	228.4	221.7	215.0
67.5°	204.6	200.9	194.9	189.0
70°	176.3	171.9	167.4	162.2
72.5°	148.1	145.8	141.4	136.9
75°	121.3	119.0	115.3	111.6
77.5°	96.0	93.8	90.8	87.8
80°	70.7	69.2	67.0	64.7
82.5°	49.1	47.6	46.1	43.9
85°	29.8	28.3	26.8	25.3
87.5°	13.4	12.6	11.2	10.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)