

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: P709143

Luminaire Tested: **4APN-20L935-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709143
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20L935-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

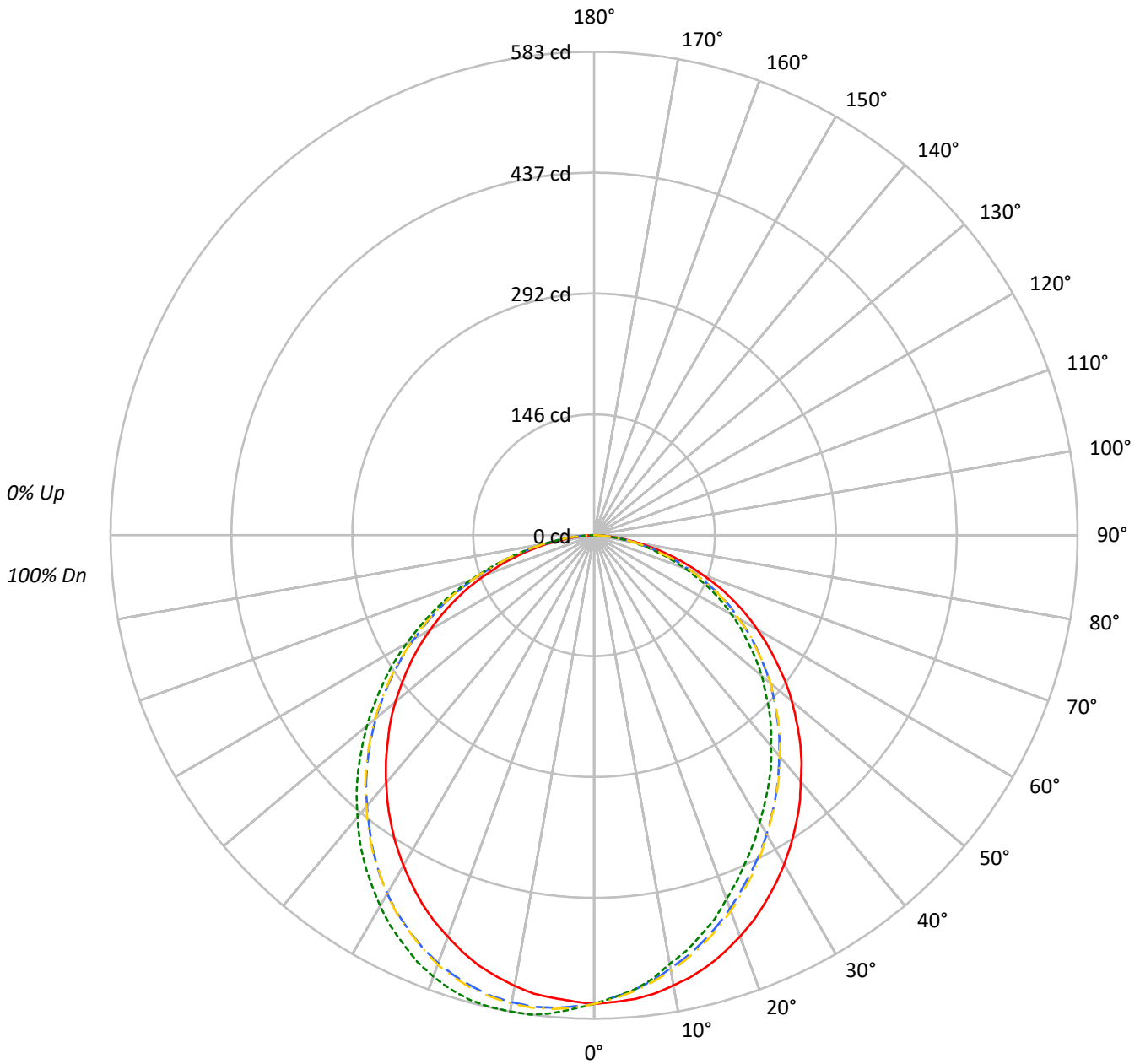
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1515.9 lumens
Efficiency: N/A
Efficacy: 63.7 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): 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

TEST NUMBER: P709143
CATALOG NUMBER: 4APN-20L935-X-UNV

Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - · - · 90°-270° - · - · 135°-315°



TEST NUMBER: P709143
 CATALOG NUMBER: 4APN-20L935-X-UNV

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°	5215	5215	5215	5215
5°	5199	5098	5187	5359
10°	5164	4918	5170	5463
15°	5124	4763	5130	5539
20°	5053	4583	5059	5562
25°	4973	4413	4992	5539
30°	4884	4257	4897	5497
35°	4782	4134	4804	5437
40°	4667	3996	4697	5344
45°	4580	3896	4589	5248
50°	4470	3791	4488	5130
55°	4330	3651	4361	4988
60°	4200	3539	4213	4814
65°	4034	3393	4034	4606
70°	3760	3140	3742	4295
75°	3419	2848	3372	3853
80°	2954	2444	2853	3294
85°	2297	1831	2170	2710



TEST NUMBER: P709143
 CATALOG NUMBER: 4APN-20L935-X-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.4	3.5
10°-20°	151.6	10.0
20°-30°	225.3	14.9
30°-40°	265.6	17.5
40°-50°	270.4	17.8
50°-60°	240.9	15.9
60°-70°	181.5	12.0
70°-80°	100.9	6.7
80°-90°	26.2	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°	430.3	28.4
0°-40°	695.9	45.9
0°-60°	1207.2	79.6
0°-90°	1515.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1515.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	565	565	565	565	565	
5°	561	550	560	579	561	53
15°	536	499	537	580	536	151
25°	488	434	490	544	488	225
35°	425	367	426	483	425	266
45°	351	299	352	402	351	270
55°	269	227	271	310	269	241
65°	185	155	185	211	185	182
75°	96	80	95	108	96	102
85°	22	17	20	26	22	26
90°	0	0	0	0	0	



TEST NUMBER: P709143

CATALOG NUMBER: 4APN-20L935-X-UNV

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2
2.5°	563.3	563.3	563.9	561.4	558.2	556.9	556.3	555.6	556.9	557.5	556.9
5°	561.4	560.1	558.8	555.6	551.8	549.2	548.0	547.3	548.6	550.5	548.6
7.5°	557.5	555.0	552.4	548.0	543.5	539.6	537.7	536.4	537.7	539.6	538.4
10°	551.2	548.0	544.1	539.0	532.6	528.1	526.2	524.3	524.9	524.9	524.9
12.5°	544.8	540.3	535.8	529.4	522.4	517.3	514.1	511.5	512.8	513.4	513.4
15°	536.4	530.7	524.3	517.3	510.2	504.5	500.6	498.1	498.7	498.7	499.4
17.5°	526.2	519.8	513.4	505.1	496.8	490.4	485.9	482.7	484.0	484.7	485.3
20°	514.7	507.7	500.6	491.7	482.7	475.7	471.2	467.4	466.8	466.8	467.4
22.5°	502.6	494.9	486.6	477.0	467.4	459.7	455.2	451.4	450.8	450.8	451.4
25°	488.5	480.2	471.9	462.3	452.0	444.4	438.6	434.8	434.1	433.5	434.8
27.5°	473.8	465.5	457.2	447.6	436.7	429.0	423.3	419.4	418.2	417.5	418.8
30°	458.4	448.9	439.9	429.7	420.1	412.4	406.7	402.2	400.9	399.6	400.9
32.5°	441.8	432.2	422.6	412.4	402.8	395.1	389.4	384.9	383.6	383.0	384.3
35°	424.6	415.0	406.0	395.8	386.2	378.5	372.8	368.9	367.6	367.0	367.6
37.5°	407.3	397.7	388.7	378.5	368.9	361.3	355.5	351.7	351.0	350.4	351.0
40°	387.5	379.2	370.2	360.6	351.0	343.4	338.9	334.4	333.1	331.8	333.8
42.5°	370.2	361.9	352.9	344.0	334.4	326.7	321.6	317.8	316.5	315.9	316.5
45°	351.0	342.1	333.1	324.8	315.9	308.8	303.7	299.9	299.2	298.6	299.2
47.5°	330.6	322.9	315.2	306.9	298.0	290.9	286.4	282.6	281.3	280.1	281.3
50°	311.4	303.7	296.0	288.4	280.1	273.7	269.2	265.3	264.7	264.1	264.7
52.5°	290.9	283.2	276.2	268.5	261.5	255.1	250.6	247.4	246.8	246.2	246.8
55°	269.2	262.8	256.4	250.0	243.0	237.2	233.4	229.5	228.3	227.0	228.3
57.5°	248.7	243.0	236.6	230.2	223.8	218.7	214.8	211.6	211.0	210.4	211.0
60°	227.6	222.5	216.8	211.0	204.6	199.5	196.3	193.7	192.5	191.8	192.5
62.5°	206.5	201.4	196.9	191.2	185.4	181.6	178.4	175.8	174.6	173.9	174.6
65°	184.8	180.3	175.8	170.7	166.2	162.4	159.2	156.7	156.0	155.4	155.4
67.5°	162.4	158.6	154.7	150.3	145.1	141.3	138.1	136.2	135.6	134.9	135.6
70°	139.4	136.2	132.4	128.5	124.7	121.5	119.6	117.6	117.0	116.4	116.4
72.5°	117.6	115.1	111.9	108.7	105.5	102.3	100.4	99.1	98.5	97.8	97.8
75°	95.9	93.4	91.4	88.9	85.7	83.8	81.8	80.6	79.9	79.9	79.9
77.5°	75.4	73.5	71.6	69.1	67.1	65.2	63.9	63.3	62.7	62.7	62.7
80°	55.6	54.3	53.1	51.8	49.9	48.0	47.3	46.7	46.0	46.0	46.0
82.5°	37.7	37.1	35.8	34.5	33.2	32.6	32.0	31.3	31.3	31.3	31.3
85°	21.7	21.1	20.5	19.8	19.2	19.2	18.5	17.9	17.3	17.3	17.3
87.5°	9.0	9.0	9.0	8.3	7.7	7.7	7.7	7.7	7.7	7.7	7.7
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: P709143
 CATALOG NUMBER: 4APN-20L935-X-UNV

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2
2.5°	555.6	556.9	558.2	560.1	562.0	563.9	563.3	562.7	565.2	568.4	569.1
5°	547.3	548.6	550.5	553.7	556.9	559.5	560.1	560.1	565.2	569.7	571.0
7.5°	537.1	539.0	541.6	544.8	549.2	553.1	555.0	557.5	562.7	568.4	571.0
10°	524.3	527.5	531.3	535.8	540.3	544.8	548.6	551.8	558.2	564.6	568.4
12.5°	512.8	516.0	519.8	524.9	530.7	536.4	540.3	544.8	552.4	560.1	564.6
15°	500.0	503.2	507.7	512.8	519.2	525.6	531.3	537.1	544.8	553.1	558.2
17.5°	485.9	489.1	493.6	500.0	507.0	514.1	520.5	526.9	535.8	544.8	550.5
20°	468.7	473.1	478.9	485.3	493.6	501.9	508.3	515.3	524.9	534.5	540.9
22.5°	452.0	456.5	462.9	470.6	479.5	488.5	496.2	503.8	514.1	523.7	530.7
25°	436.1	441.2	447.6	455.2	463.6	472.5	481.5	490.4	500.6	510.9	517.9
27.5°	420.1	424.6	430.9	438.6	448.2	457.2	466.1	475.1	485.9	496.8	504.5
30°	402.2	407.3	413.0	420.7	430.9	441.2	450.1	459.7	470.6	481.5	489.1
32.5°	385.6	390.0	395.8	403.5	413.7	423.9	433.5	443.7	454.0	464.8	472.5
35°	368.9	373.4	379.2	386.8	397.1	407.3	416.9	426.5	436.7	446.9	454.6
37.5°	352.3	356.8	362.5	370.2	379.8	390.0	399.0	408.6	418.8	429.0	436.1
40°	335.0	339.5	344.0	351.7	361.3	371.5	380.4	390.0	400.3	410.5	417.5
42.5°	317.8	322.3	328.0	335.7	344.6	353.6	362.5	371.5	381.1	390.7	397.7
45°	300.5	304.3	310.1	317.1	326.1	334.4	343.4	351.7	361.3	370.2	377.2
47.5°	282.6	286.4	290.9	298.0	306.9	315.9	324.8	333.1	341.4	350.4	356.8
50°	265.3	269.2	274.3	280.7	289.0	297.3	305.0	312.7	321.0	329.3	335.0
52.5°	247.4	251.3	255.8	262.1	269.2	276.9	283.9	291.6	299.2	306.9	312.7
55°	229.5	232.1	235.9	241.7	249.4	257.0	264.1	271.1	278.1	284.5	290.3
57.5°	211.6	214.8	219.3	224.4	230.8	237.2	243.6	250.0	256.4	262.8	267.9
60°	193.7	196.3	199.5	204.0	210.4	216.1	222.5	228.3	234.0	239.8	244.2
62.5°	175.2	177.8	180.9	185.4	190.5	195.7	201.4	206.5	211.6	216.8	221.2
65°	156.0	158.6	161.8	165.6	170.1	174.6	179.7	184.8	188.6	192.5	196.9
67.5°	136.2	138.7	141.9	145.1	149.0	153.5	157.9	162.4	166.2	170.1	173.3
70°	117.0	118.9	122.1	124.7	127.9	131.1	134.9	138.7	141.3	144.5	148.3
72.5°	98.5	100.4	102.9	105.5	107.4	110.0	113.8	117.0	120.2	124.0	126.0
75°	80.6	81.8	83.8	85.7	87.6	89.5	92.1	94.6	97.2	99.1	101.7
77.5°	62.7	63.9	65.9	67.1	68.4	69.7	71.6	73.5	75.4	76.7	79.3
80°	46.0	47.3	48.6	49.9	51.2	52.4	53.1	53.7	56.3	58.2	59.5
82.5°	31.3	32.0	32.6	33.9	34.5	35.2	35.8	35.8	37.1	38.4	40.3
85°	17.9	18.5	19.2	19.2	19.2	19.2	19.8	20.5	21.1	22.4	23.7
87.5°	7.0	7.0	7.7	7.7	7.7	7.7	7.7	7.7	8.3	9.6	10.2
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: P709143
 CATALOG NUMBER: 4APN-20L935-X-UNV

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2	565.2
2.5°	568.4	569.1	570.3	571.0	571.6	571.6	572.3	572.9	571.6	570.3	569.7
5°	571.6	572.3	574.2	576.1	577.4	578.6	578.0	577.4	576.1	574.2	572.9
7.5°	572.3	574.2	576.1	578.6	580.6	583.1	581.8	580.6	578.0	575.5	573.5
10°	570.3	572.9	576.1	579.3	581.2	583.1	581.8	580.6	578.0	574.8	572.3
12.5°	567.8	571.0	574.8	578.0	579.9	582.5	580.6	578.6	575.5	572.3	569.1
15°	562.0	565.9	570.3	574.2	577.4	579.9	578.0	576.7	572.9	568.4	563.9
17.5°	555.0	560.1	564.6	569.1	571.6	574.2	572.9	571.6	567.1	562.0	556.9
20°	546.7	551.8	556.3	560.7	563.9	566.5	564.6	562.7	558.2	553.7	548.6
22.5°	536.4	541.6	546.7	551.2	554.4	556.9	554.4	551.2	546.7	542.2	537.1
25°	523.7	529.4	535.2	539.6	541.6	544.1	541.6	539.0	534.5	530.1	524.3
27.5°	510.9	516.6	522.4	526.9	528.8	531.3	528.8	526.2	521.7	517.3	511.5
30°	496.2	501.9	507.7	512.2	514.1	516.0	513.4	510.9	507.0	502.6	496.8
32.5°	479.5	485.3	489.8	494.2	496.8	499.4	496.8	494.9	490.4	484.7	478.9
35°	461.6	467.4	473.1	477.6	480.2	482.7	479.5	476.3	472.5	468.0	462.9
37.5°	441.8	448.2	454.6	459.7	461.6	464.2	461.6	458.4	454.6	450.1	444.4
40°	423.3	429.0	434.8	439.9	441.8	443.7	441.2	438.6	434.1	429.7	423.9
42.5°	404.1	409.8	415.0	419.4	421.4	423.9	421.4	418.2	415.0	411.1	406.0
45°	383.6	389.4	393.9	398.3	400.3	402.2	399.6	396.4	393.2	390.0	384.9
47.5°	362.5	367.6	372.1	376.6	377.9	379.8	377.2	375.3	372.1	368.9	364.5
50°	340.8	345.9	350.4	354.2	355.5	357.4	354.9	352.3	349.7	347.2	343.4
52.5°	318.4	322.9	327.4	331.2	332.5	333.8	331.2	328.6	326.1	323.5	319.7
55°	295.4	299.9	304.3	307.5	308.8	310.1	307.5	305.6	303.1	301.2	297.3
57.5°	272.4	276.9	280.7	283.9	285.2	286.4	283.9	281.3	279.4	277.5	274.3
60°	248.7	253.2	256.4	259.0	260.2	260.9	258.3	256.4	255.1	253.8	250.6
62.5°	225.7	228.9	232.1	234.0	235.3	235.9	234.0	232.7	231.5	230.2	227.6
65°	201.4	205.2	207.8	209.7	210.4	211.0	209.1	207.8	206.5	205.2	203.3
67.5°	177.1	180.3	182.2	184.1	184.8	184.8	184.8	184.1	182.9	180.9	179.0
70°	152.8	155.4	157.3	158.6	159.2	159.2	157.9	156.7	156.7	156.0	154.7
72.5°	127.9	129.8	131.1	132.4	132.4	132.4	132.4	133.0	132.4	131.1	129.2
75°	104.2	106.1	107.4	108.1	108.1	108.1	108.1	108.7	108.1	107.4	106.1
77.5°	81.8	83.1	83.8	84.4	84.4	84.4	85.0	85.7	85.0	84.4	83.8
80°	60.7	61.4	62.0	62.7	62.0	62.0	62.7	63.9	63.3	62.7	62.0
82.5°	41.6	42.2	42.8	42.8	43.5	44.1	44.1	44.1	44.1	43.5	42.8
85°	24.9	25.6	25.6	25.6	25.6	25.6	26.2	26.9	26.9	26.2	26.2
87.5°	11.5	12.1	11.5	10.9	10.2	10.2	11.5	12.8	12.8	12.1	12.1
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: P709143
 CATALOG NUMBER: 4APN-20L935-X-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	565.2	565.2	565.2	565.2
2.5°	570.3	569.7	566.5	563.3
5°	572.3	570.3	565.9	561.4
7.5°	572.3	569.7	563.3	557.5
10°	569.1	565.2	558.2	551.2
12.5°	565.2	560.7	552.4	544.8
15°	559.5	554.4	545.4	536.4
17.5°	551.2	544.8	535.8	526.2
20°	542.8	535.8	524.9	514.7
22.5°	531.3	524.9	513.4	502.6
25°	518.5	511.5	500.0	488.5
27.5°	505.1	496.8	485.3	473.8
30°	489.8	481.5	470.0	458.4
32.5°	473.1	465.5	454.0	441.8
35°	456.5	448.2	436.7	424.6
37.5°	438.0	430.3	418.8	407.3
40°	418.2	410.5	399.0	387.5
42.5°	399.6	392.6	381.1	370.2
45°	379.2	372.1	361.3	351.0
47.5°	358.1	351.0	340.8	330.6
50°	337.6	330.6	321.0	311.4
52.5°	314.6	308.8	299.9	290.9
55°	292.2	286.4	277.5	269.2
57.5°	269.8	264.7	256.4	248.7
60°	246.2	241.0	234.7	227.6
62.5°	223.8	219.3	212.9	206.5
65°	200.1	196.3	190.5	184.8
67.5°	175.8	172.6	167.5	162.4
70°	151.5	147.7	143.9	139.4
72.5°	127.2	125.3	121.5	117.6
75°	104.2	102.3	99.1	95.9
77.5°	82.5	80.6	78.0	75.4
80°	60.7	59.5	57.5	55.6
82.5°	42.2	40.9	39.6	37.7
85°	25.6	24.3	23.0	21.7
87.5°	11.5	10.9	9.6	9.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)