

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: LUMARK

Report Number: P196186

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196186
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SL4-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19235.6 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

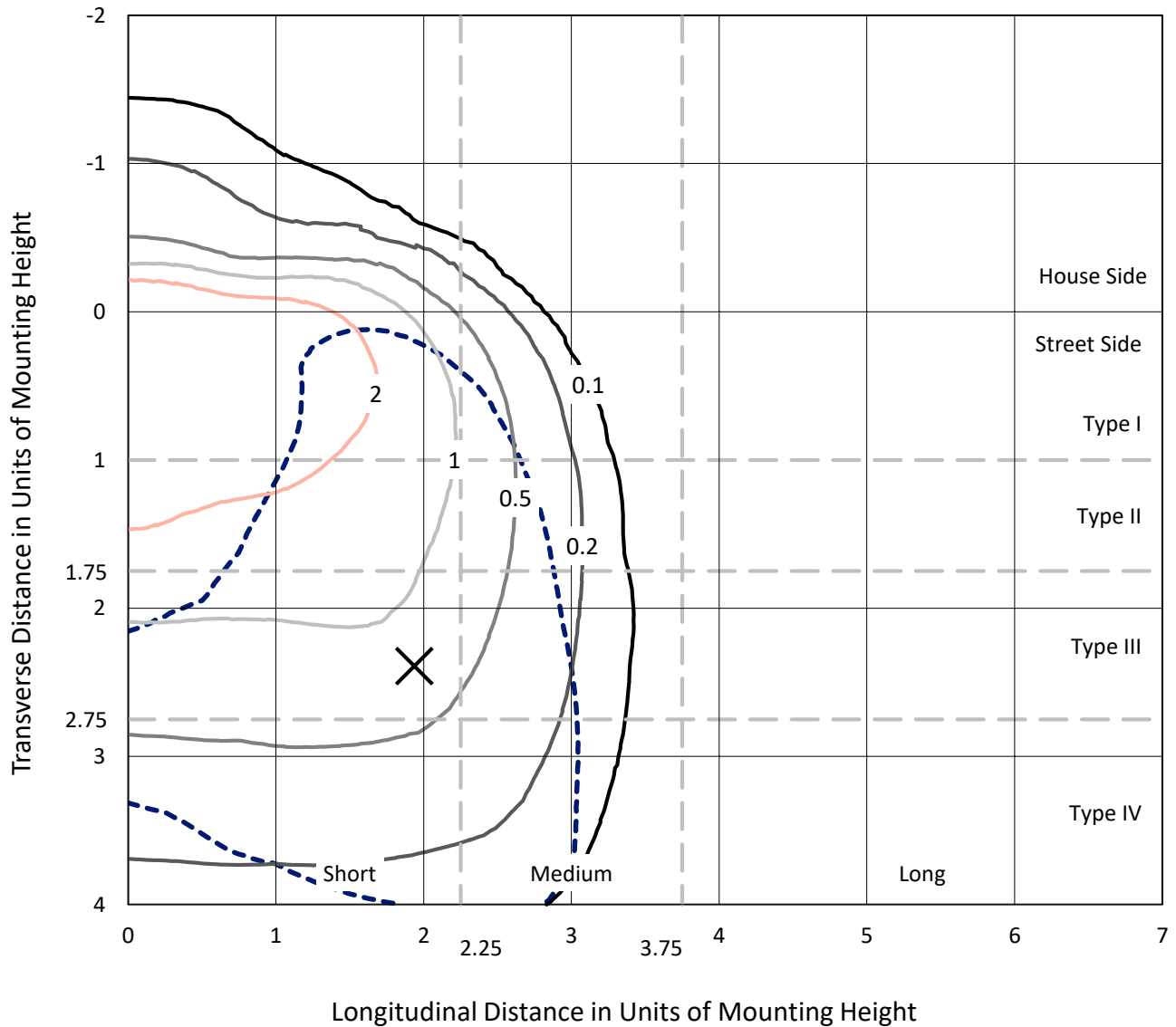
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

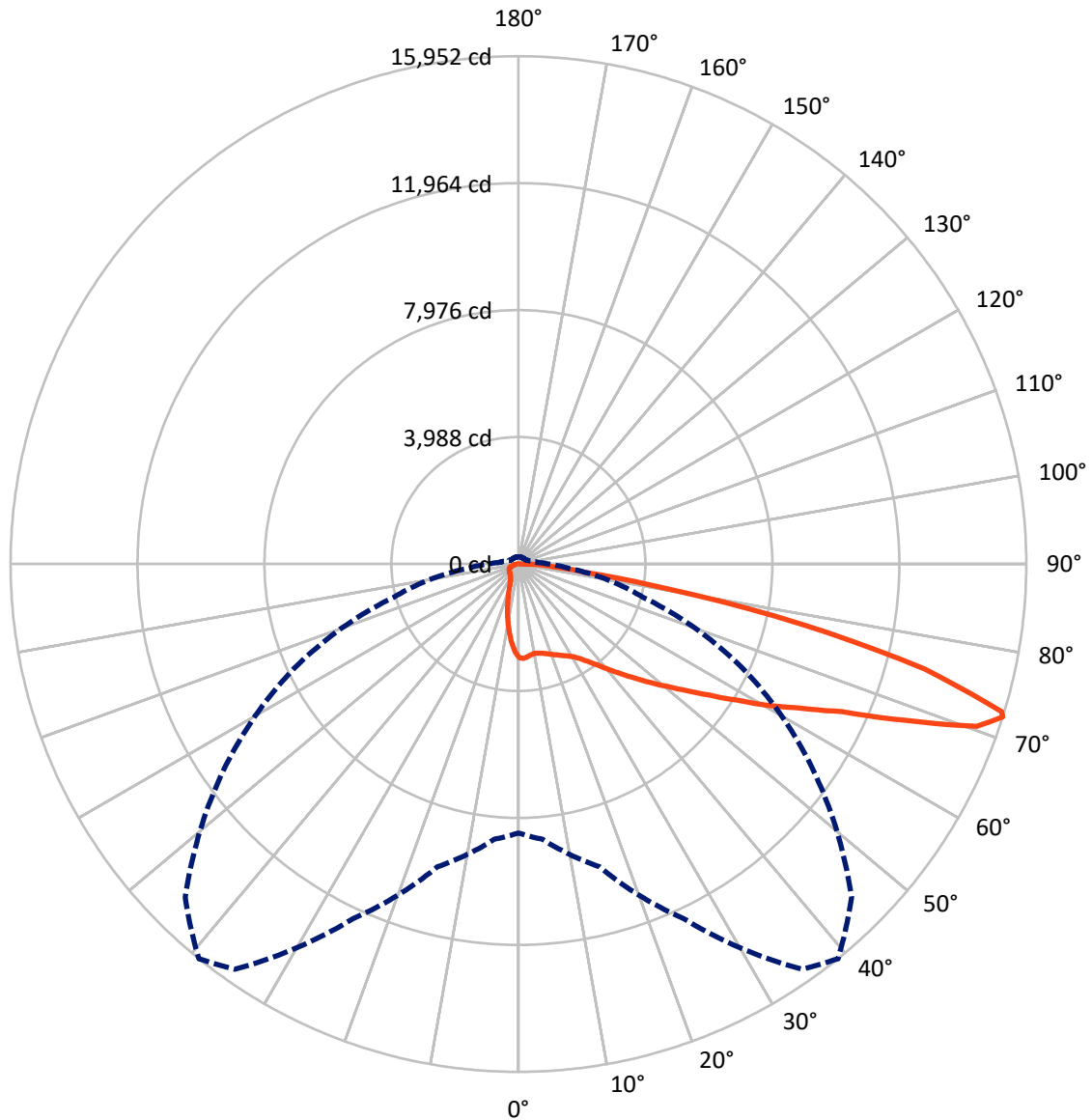
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2205.6	0.0	2205.6
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	17030.0	0.0	17030.0
	% Fixture	88.5	0.0	88.5
Total	Lumens	19235.6	0.0	19235.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.4	1.3
10°-20°	634.3	3.3
20°-30°	988.6	5.1
30°-40°	1522.1	7.9
40°-50°	2481.3	12.9
50°-60°	3855.7	20.0
60°-70°	5160.7	26.8
70°-80°	3711.3	19.3
80°-90°	629.1	3.3
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°-90°	19235.6	100.0
0°-180°	19235.6	100.0



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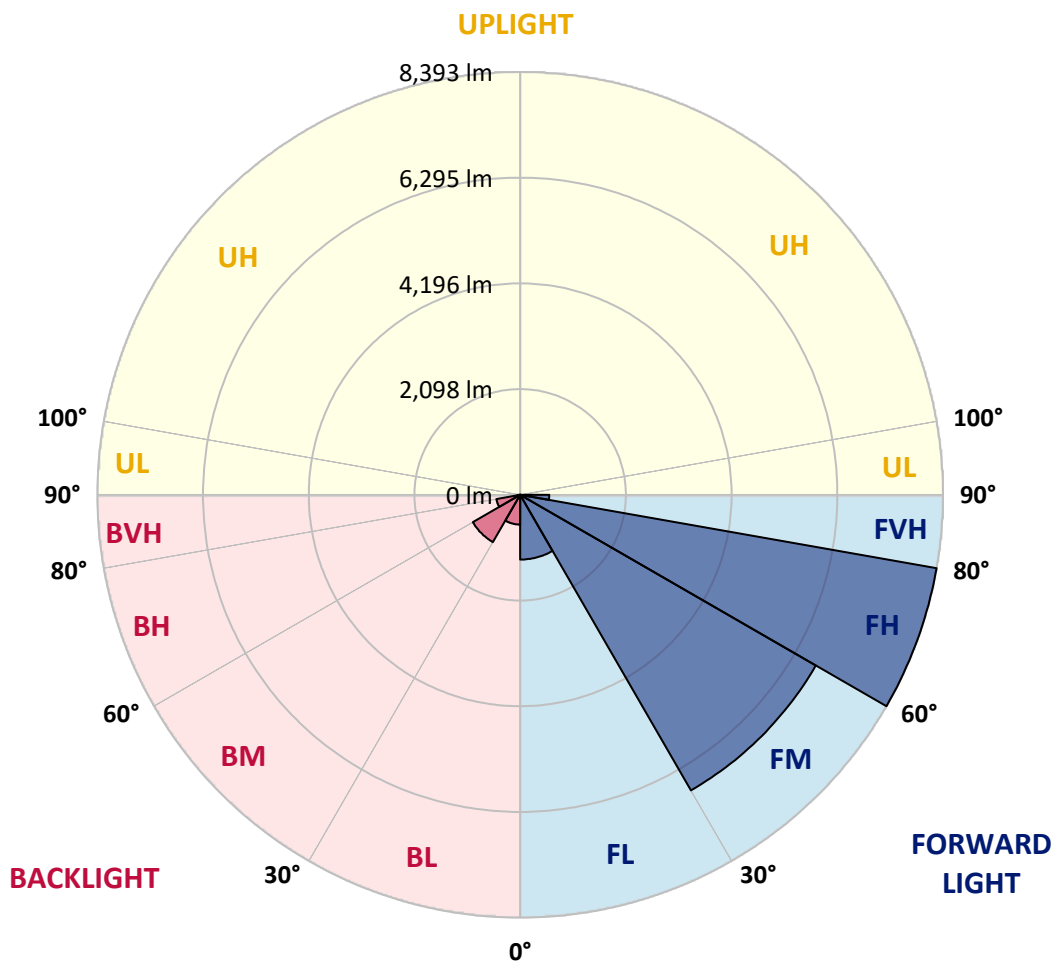
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1284.9	6.7			
FM	(30°-60°)	6775.1	35.2			
FH	(60°-80°)	8392.8	43.6			G4/12000
FVH	(80°-90°)	577.1	3.0			G4/750
BL	(0°-30°)	590.4	3.1	B2/1000		
BM	(30°-60°)	1084.0	5.6	B2/2500		
BH	(60°-80°)	479.2	2.5	B1/500		G1/500
BVH	(80°-90°)	52.0	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6
2.5°	3000.9	3002.2	2998.3	2986.7	2976.4	2971.2	2962.2	2946.6	2925.9	2911.8	2900.2
5°	2972.5	2976.4	2973.8	2954.4	2936.3	2925.9	2911.8	2889.8	2862.7	2851.1	2824.0
7.5°	2950.5	2953.2	2945.4	2923.4	2888.5	2875.6	2849.8	2821.4	2796.8	2780.1	2747.9
10°	2935.1	2937.6	2931.2	2909.2	2870.5	2855.0	2824.0	2793.0	2760.7	2740.1	2703.9
12.5°	2913.1	2918.3	2918.3	2907.9	2882.1	2871.7	2840.7	2807.2	2777.5	2755.5	2710.3
15°	2909.2	2915.6	2927.3	2925.9	2918.3	2910.5	2885.9	2852.4	2826.6	2800.7	2745.2
17.5°	2941.5	2955.7	2978.9	2986.7	2981.5	2964.7	2936.3	2905.4	2876.9	2852.4	2784.0
20°	3022.8	3030.6	3065.5	3080.9	3055.1	3030.6	2993.2	2953.2	2927.3	2907.9	2820.1
22.5°	3145.5	3155.8	3184.2	3185.6	3131.4	3101.6	3053.8	3004.7	2980.3	2972.5	2869.2
25°	3341.8	3339.2	3347.0	3314.7	3216.6	3181.7	3123.6	3066.7	3049.9	3065.5	2941.5
27.5°	3576.7	3570.3	3545.8	3461.9	3313.3	3268.2	3198.5	3148.1	3148.1	3184.2	3039.6
30°	3847.9	3841.5	3761.4	3620.7	3428.3	3376.7	3303.0	3250.1	3277.2	3347.0	3172.6
32.5°	4134.7	4111.3	3999.0	3810.5	3592.3	3535.4	3464.4	3410.2	3461.9	3580.6	3363.8
35°	4404.5	4391.5	4253.4	4030.0	3804.0	3756.3	3707.2	3640.1	3722.7	3907.4	3633.6
37.5°	4683.4	4673.0	4504.0	4266.3	4062.3	4030.0	3988.7	3942.2	4075.2	4318.0	3999.0
40°	4994.6	4973.9	4760.9	4523.3	4363.2	4347.6	4325.8	4312.8	4527.2	4888.7	4461.3
42.5°	5347.1	5307.1	5032.0	4806.0	4691.2	4704.0	4692.5	4744.1	5072.1	5547.3	5011.3
45°	5750.0	5669.9	5302.0	5107.0	5054.0	5105.6	5130.2	5261.9	5716.5	6307.8	5626.0
47.5°	6127.1	6023.7	5597.6	5433.6	5463.3	5552.4	5622.1	5854.6	6422.7	7059.3	6253.6
50°	6474.4	6358.2	5914.0	5771.9	5916.5	6043.1	6187.7	6515.7	7174.3	7832.7	6829.4
52.5°	6731.3	6647.4	6230.3	6141.2	6436.9	6604.8	6836.0	7250.5	7933.5	8570.1	7343.4
55°	6930.2	6885.0	6538.9	6564.8	7025.7	7265.9	7546.1	8022.6	8736.7	9231.2	7756.6
57.5°	7160.0	7126.5	6891.4	7076.1	7756.6	8058.7	8389.3	8918.7	9501.1	9813.6	8080.7
60°	7402.8	7402.8	7284.0	7692.1	8670.8	9016.9	9346.2	9758.0	10263.0	10337.8	8212.5
62.5°	7586.2	7634.0	7676.5	8348.0	9538.5	9968.6	10330.1	10725.2	11051.9	10596.0	7902.5
65°	7852.2	7954.2	8194.3	9106.0	10612.9	11175.8	11664.0	11995.8	11691.1	10390.7	6891.4
67.5°	8309.2	8460.3	8971.7	10234.5	12257.9	13101.1	13575.0	13001.7	11565.8	9098.2	5278.6
70°	8721.2	8934.2	9808.5	11666.5	14396.3	15271.7	15053.5	12768.0	10073.1	6669.3	3247.6
72°	8447.4	8679.8	9847.1	12290.2	15539.0	15952.2	14801.7	11315.3	7783.7	4070.0	1601.1
72.5°	8267.9	8509.4	9721.9	12274.7	15570.0	15865.8	14451.7	10738.1	7065.7	3561.3	1295.2
75°	6907.0	7113.6	8359.7	10878.9	13720.9	13178.6	11277.8	6949.5	3247.6	1150.5	666.2
77.5°	4510.4	4667.9	5764.2	7537.1	9610.8	9089.2	6864.3	3254.0	1217.6	698.6	501.0
80°	2266.1	2378.5	3084.8	3962.9	5187.0	4772.5	3168.8	1574.0	814.8	504.9	393.8
82.5°	1576.7	1679.9	2124.2	2023.4	2168.0	2098.3	1490.1	1313.2	609.5	319.0	206.6
85°	1322.3	1429.5	1757.4	1442.4	1180.2	1075.6	1067.9	1240.9	402.8	157.5	174.3
87.5°	1153.1	1315.8	1450.1	1053.6	809.7	714.0	786.3	1137.6	127.9	86.5	53.0
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6	2937.6
2.5°	2880.8	2876.9	2857.5	2827.8	2806.0	2791.7	2764.6	2763.3	2765.9	2742.6	2751.6
5°	2799.4	2784.0	2733.6	2665.2	2609.6	2556.7	2498.6	2479.2	2462.4	2427.6	2431.5
7.5°	2714.2	2687.1	2599.3	2487.0	2379.8	2281.7	2184.8	2137.0	2100.8	2055.7	2055.7
10°	2663.9	2621.2	2487.0	2323.0	2152.5	2009.2	1864.5	1778.1	1714.8	1656.7	1652.8
12.5°	2661.3	2596.8	2409.5	2183.5	1949.8	1748.3	1550.8	1417.8	1323.5	1255.1	1248.6
15°	2682.0	2591.5	2344.9	2053.1	1758.7	1496.6	1252.5	1083.4	963.3	887.1	879.3
17.5°	2700.0	2585.1	2275.2	1916.2	1572.8	1253.8	982.6	807.0	693.4	631.5	624.9
20°	2716.9	2570.9	2186.1	1771.6	1367.5	1026.5	768.3	626.3	551.4	516.5	512.6
22.5°	2741.3	2558.0	2093.2	1608.9	1166.0	835.4	634.0	532.0	491.9	475.2	472.6
25°	2781.4	2559.3	2002.7	1442.4	981.3	696.0	548.8	485.5	463.6	451.9	451.9
27.5°	2839.5	2574.8	1913.6	1273.2	825.1	600.5	498.4	460.9	446.8	437.7	435.2
30°	2924.7	2603.2	1819.4	1113.1	701.1	534.6	468.7	445.5	433.8	426.2	424.8
32.5°	3048.7	2653.5	1720.0	967.2	606.9	488.0	446.8	432.6	423.5	417.1	415.8
35°	3233.3	2742.6	1623.1	843.2	539.7	454.5	428.7	417.1	411.9	409.3	408.1
37.5°	3504.5	2885.9	1531.5	746.3	495.8	432.6	410.6	404.2	401.6	401.6	401.6
40°	3845.4	3074.5	1448.8	677.9	471.3	415.8	397.7	392.5	392.5	393.8	393.8
42.5°	4259.9	3310.8	1377.8	631.5	457.2	404.2	388.6	386.1	384.8	384.8	386.1
45°	4741.5	3589.7	1333.8	595.3	446.8	397.7	382.2	380.9	375.7	373.2	373.2
47.5°	5225.7	3888.0	1331.3	574.6	433.8	389.9	375.7	375.7	365.4	360.3	361.5
50°	5677.7	4155.2	1359.7	569.5	426.2	378.4	369.3	370.6	356.4	350.0	348.6
52.5°	6041.9	4359.3	1394.6	575.9	426.2	368.1	357.7	364.2	348.6	340.8	339.6
55°	6323.3	4501.3	1407.5	590.1	431.3	359.0	347.4	357.7	346.1	335.7	335.7
57.5°	6524.7	4546.5	1351.9	596.6	439.1	357.7	337.1	356.4	350.0	337.1	337.1
60°	6451.1	4284.4	1145.4	572.0	437.7	355.1	329.3	359.0	362.8	348.6	348.6
62.5°	5876.5	3584.5	919.4	516.5	415.8	346.1	320.2	356.4	371.8	366.7	364.2
65°	4784.1	2629.0	712.8	450.6	378.4	326.7	300.8	333.2	351.2	356.4	357.7
67.5°	3371.4	1664.4	553.9	383.5	331.8	298.3	279.0	294.4	300.8	303.4	308.6
70°	1843.9	901.3	440.3	322.8	284.1	269.9	255.6	257.0	254.4	251.7	254.4
72°	925.9	588.8	371.8	280.2	251.7	242.7	236.3	232.4	232.4	228.5	229.9
72.5°	796.7	547.5	359.0	269.9	244.1	236.3	231.1	227.3	226.0	223.4	224.6
75°	530.7	433.8	299.6	226.0	207.9	202.7	205.3	201.4	202.7	200.2	201.4
77.5°	428.7	373.2	254.4	191.1	178.2	170.4	175.6	176.9	179.5	176.9	175.6
80°	359.0	317.6	213.1	157.5	148.5	142.1	144.6	153.6	155.0	147.2	145.9
82.5°	232.4	255.6	167.9	122.7	113.6	111.1	117.5	126.5	129.1	118.8	116.2
85°	195.0	205.3	121.4	83.9	74.9	72.3	85.2	94.2	100.8	90.4	87.8
87.5°	54.2	100.8	59.4	40.0	33.6	33.6	41.3	49.1	58.1	59.4	59.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)