

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: P197158

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-8030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197158
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-SL4-8030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 1200mA 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: 20834 lumens
Efficiency: N/A
Efficacy: 80.8 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

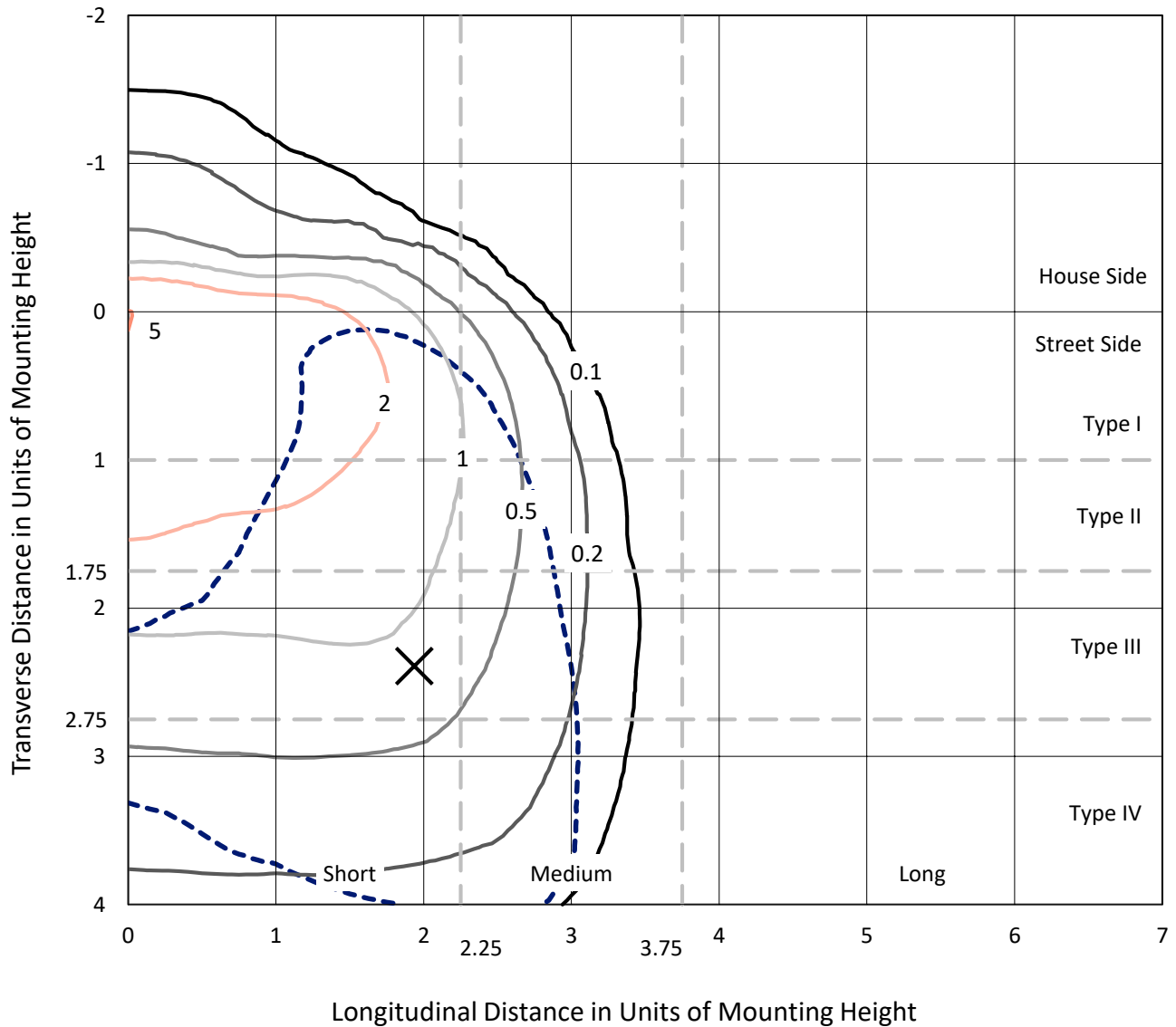
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

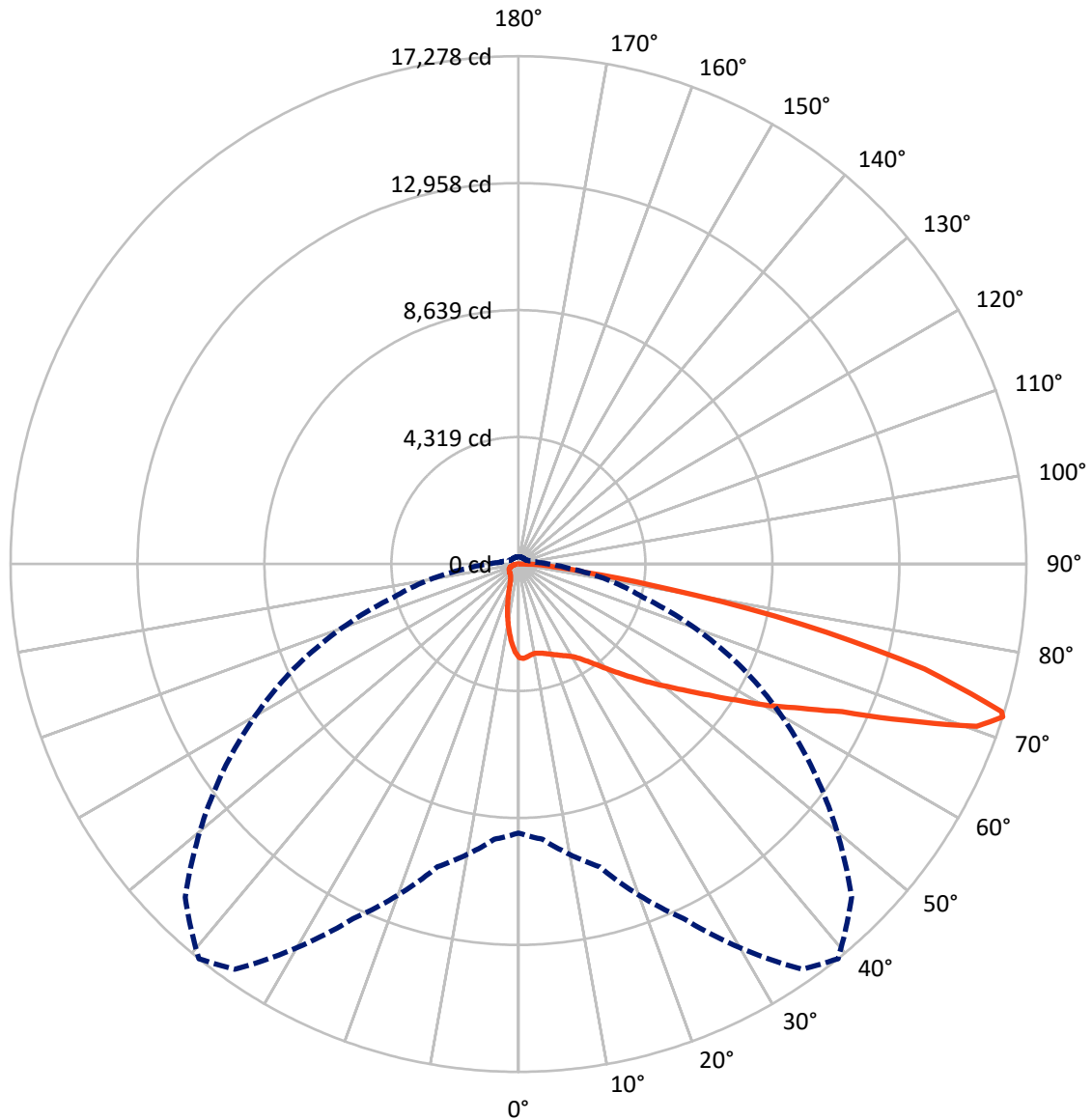
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.1 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	2388.9	0.0	2388.9
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	18445.1	0.0	18445.1
	% Fixture	88.5	0.0	88.5
Total	Lumens	20834.0	0.0	20834.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.4	1.3
10°-20°	687.1	3.3
20°-30°	1070.7	5.1
30°-40°	1648.6	7.9
40°-50°	2687.5	12.9
50°-60°	4176.1	20.0
60°-70°	5589.5	26.8
70°-80°	4019.7	19.3
80°-90°	681.4	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°	20834.0	100.0
0°-180°	20834.0	100.0

Coefficient of Utilization



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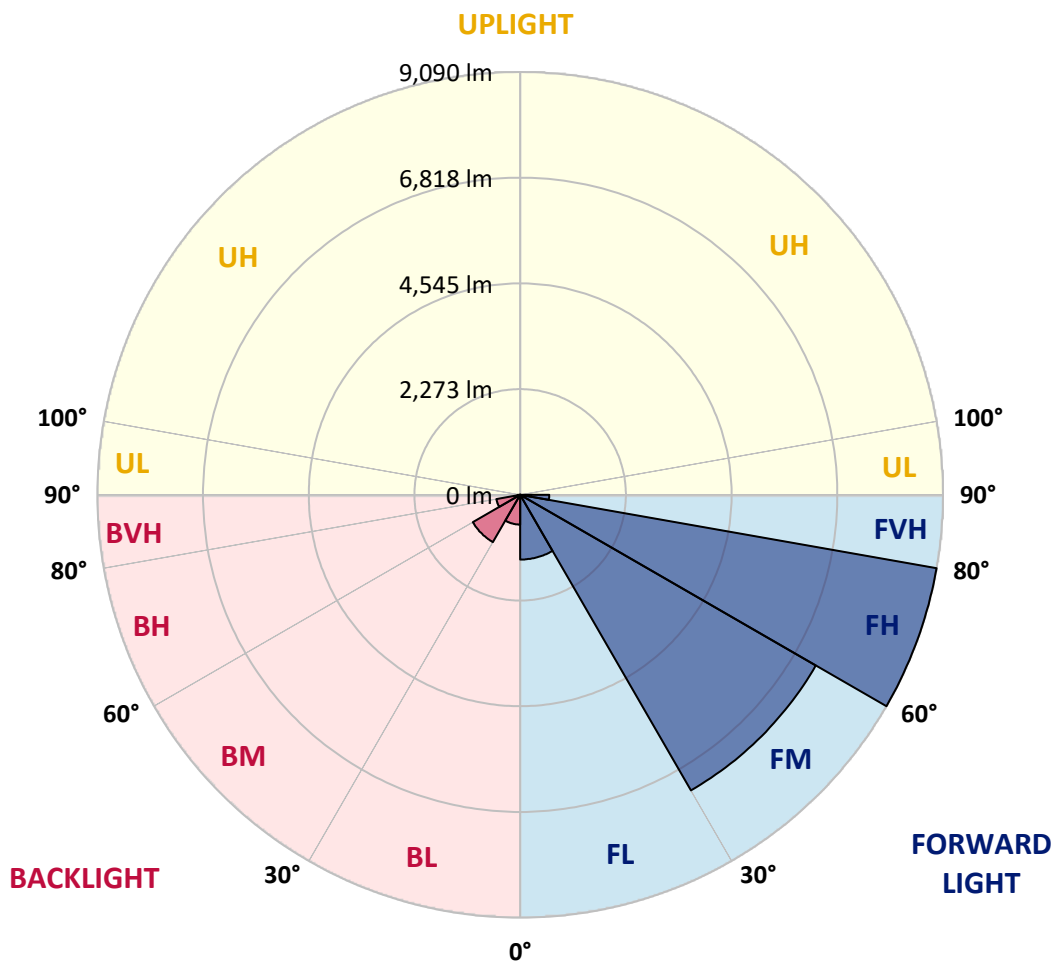
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1391.7	6.7			
FM	(30°-60°)	7338.1	35.2			
FH	(60°-80°)	9090.2	43.6			G4/12000
FVH	(80°-90°)	625.1	3.0			G4/750
BL	(0°-30°)	639.5	3.1	B2/1000		
BM	(30°-60°)	1174.0	5.6	B2/2500		
BH	(60°-80°)	519.0	2.5	B2/1000		G2/1000
BVH	(80°-90°)	56.3	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°	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7
2.5°	3250.3	3251.7	3247.5	3234.9	3223.7	3218.1	3208.3	3191.5	3169.1	3153.8	3141.2
5°	3219.5	3223.7	3220.9	3199.9	3180.3	3169.1	3153.8	3130.0	3100.6	3088.0	3058.7
7.5°	3195.7	3198.5	3190.1	3166.3	3128.6	3114.6	3086.6	3055.9	3029.3	3011.1	2976.1
10°	3178.9	3181.7	3174.7	3151.0	3109.0	3092.2	3058.7	3025.1	2990.1	2967.7	2928.6
12.5°	3155.2	3160.7	3160.7	3149.6	3121.6	3110.4	3076.8	3040.5	3008.3	2984.5	2935.6
15°	3151.0	3158.0	3170.5	3169.1	3160.7	3152.4	3125.8	3089.4	3061.4	3033.5	2973.3
17.5°	3185.9	3201.3	3226.5	3234.9	3229.3	3211.1	3180.3	3146.8	3116.0	3089.4	3015.3
20°	3274.0	3282.4	3320.2	3337.0	3309.0	3282.4	3241.9	3198.5	3170.5	3149.6	3054.5
22.5°	3406.9	3418.1	3448.9	3450.2	3391.5	3359.3	3307.6	3254.5	3227.9	3219.5	3107.6
25°	3619.5	3616.7	3625.1	3590.1	3483.8	3446.1	3383.1	3321.6	3303.4	3320.2	3185.9
27.5°	3874.0	3867.0	3840.4	3749.5	3588.7	3539.8	3464.2	3409.7	3409.7	3448.9	3292.2
30°	4167.7	4160.7	4074.0	3921.6	3713.2	3657.2	3577.5	3520.2	3549.5	3625.1	3436.3
32.5°	4478.2	4453.0	4331.3	4127.2	3890.8	3829.3	3752.3	3693.6	3749.5	3878.2	3643.3
35°	4770.5	4756.5	4606.9	4364.9	4120.2	4068.4	4015.3	3942.5	4032.1	4232.0	3935.6
37.5°	5072.6	5061.4	4878.2	4620.8	4399.9	4364.9	4320.2	4269.8	4413.9	4676.8	4331.3
40°	5409.6	5387.3	5156.5	4899.2	4725.7	4709.0	4685.2	4671.2	4903.4	5295.0	4832.0
42.5°	5791.4	5748.1	5450.2	5205.4	5081.0	5095.0	5082.4	5138.3	5493.5	6008.2	5427.8
45°	6227.8	6141.1	5742.5	5531.3	5474.0	5529.9	5556.5	5699.1	6191.4	6832.0	6093.5
47.5°	6636.2	6524.3	6062.8	5885.1	5917.3	6013.8	6089.3	6341.1	6956.4	7645.9	6773.2
50°	7012.4	6886.5	6405.4	6251.6	6408.2	6545.3	6701.9	7057.1	7770.4	8483.7	7397.0
52.5°	7290.7	7199.8	6748.1	6651.6	6971.8	7153.6	7404.0	7852.9	8592.8	9282.2	7953.6
55°	7506.1	7457.1	7082.3	7110.3	7609.6	7869.7	8173.2	8689.3	9462.7	9998.3	8401.2
57.5°	7755.0	7718.7	7464.1	7664.1	8401.2	8728.4	9086.4	9659.9	10290.6	10629.1	8752.2
60°	8017.9	8017.9	7889.3	8331.2	9391.3	9766.2	10122.8	10568.9	11115.8	11196.9	8894.8
62.5°	8216.5	8268.3	8314.4	9041.7	10331.2	10796.9	11188.5	11616.4	11970.3	11476.6	8559.2
65°	8504.6	8615.1	8875.3	9862.7	11494.8	12104.5	12633.2	12992.6	12662.6	11254.2	7464.1
67.5°	8999.7	9163.4	9717.2	11085.0	13276.5	14189.8	14703.1	14082.1	12526.9	9854.3	5717.3
70°	9445.9	9676.6	10623.5	12636.0	15592.6	16540.8	16304.4	13829.0	10910.2	7223.6	3517.4
72°	9149.4	9401.1	10665.4	13311.5	16830.3	17277.8	16031.7	12255.6	8430.5	4408.3	1734.2
72.5°	8955.0	9216.5	10529.8	13294.7	16863.8	17184.1	15652.7	11630.4	7652.9	3857.2	1402.8
75°	7480.9	7704.7	9054.3	11782.9	14861.1	14273.7	12215.0	7527.1	3517.4	1246.1	721.7
77.5°	4885.2	5055.8	6243.2	8163.4	10409.5	9844.5	7434.7	3524.4	1318.8	756.6	542.6
80°	2454.5	2576.1	3341.2	4292.2	5618.0	5169.1	3432.1	1704.8	882.5	546.8	426.6
82.5°	1707.6	1819.5	2300.6	2191.5	2348.2	2272.7	1613.9	1422.3	660.1	345.4	223.8
85°	1432.1	1548.2	1903.4	1562.2	1278.3	1165.0	1156.6	1344.0	436.4	170.6	188.8
87.5°	1248.9	1425.1	1570.6	1141.2	876.9	773.4	851.7	1232.1	138.5	93.7	57.3
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7	3181.7
2.5°	3120.2	3116.0	3095.0	3062.8	3039.1	3023.7	2994.3	2992.9	2995.7	2970.5	2980.3
5°	3032.1	3015.3	2960.8	2886.6	2826.5	2769.2	2706.2	2685.2	2667.1	2629.3	2633.5
7.5°	2939.8	2910.4	2815.3	2693.6	2577.5	2471.3	2366.4	2314.6	2275.5	2226.5	2226.5
10°	2885.2	2839.1	2693.6	2516.0	2331.4	2176.2	2019.5	1925.8	1857.3	1794.4	1790.2
12.5°	2882.4	2812.5	2609.7	2365.0	2111.8	1893.7	1679.7	1535.6	1433.5	1359.4	1352.4
15°	2904.8	2806.9	2539.8	2223.7	1904.8	1620.9	1356.6	1173.4	1043.3	960.8	952.4
17.5°	2924.4	2799.9	2464.3	2075.5	1703.4	1358.0	1064.3	874.1	751.0	683.9	676.9
20°	2942.6	2784.5	2367.8	1918.8	1481.1	1111.9	832.1	678.3	597.2	559.4	555.2
22.5°	2969.1	2770.5	2267.1	1742.6	1262.9	904.9	686.7	576.2	532.9	514.7	511.9
25°	3012.5	2771.9	2169.2	1562.2	1062.9	753.8	594.4	525.9	502.1	489.5	489.5
27.5°	3075.4	2788.7	2072.7	1379.0	893.7	650.3	539.8	499.3	483.9	474.1	471.3
30°	3167.7	2819.5	1970.6	1205.6	759.4	579.0	507.7	482.5	469.9	461.5	460.1
32.5°	3302.0	2874.0	1862.9	1047.5	657.3	528.7	483.9	468.5	458.7	451.7	450.3
35°	3502.0	2970.5	1758.0	913.3	584.6	492.3	464.3	451.7	446.1	443.3	441.9
37.5°	3795.7	3125.8	1658.7	808.4	537.0	468.5	444.7	437.7	435.0	435.0	435.0
40°	4164.9	3330.0	1569.2	734.2	510.5	450.3	430.8	425.2	425.2	426.6	426.6
42.5°	4613.9	3585.9	1492.3	683.9	495.1	437.7	421.0	418.2	416.8	416.8	418.2
45°	5135.5	3888.0	1444.7	644.7	483.9	430.8	414.0	412.6	407.0	404.2	404.2
47.5°	5660.0	4211.1	1441.9	622.4	469.9	422.4	407.0	407.0	395.8	390.2	391.6
50°	6149.5	4500.6	1472.7	616.8	461.5	409.8	400.0	401.4	386.0	379.0	377.6
52.5°	6543.9	4721.5	1510.4	623.8	461.5	398.6	387.4	394.4	377.6	369.2	367.8
55°	6848.8	4875.4	1524.4	639.1	467.1	388.8	376.2	387.4	374.8	363.6	363.6
57.5°	7066.9	4924.3	1464.3	646.1	475.5	387.4	365.0	386.0	379.0	365.0	365.0
60°	6987.2	4640.4	1240.5	619.6	474.1	384.6	356.6	388.8	393.0	377.6	377.6
62.5°	6364.9	3882.4	995.8	559.4	450.3	374.8	346.8	386.0	402.8	397.2	394.4
65°	5181.7	2847.5	772.0	488.1	409.8	353.8	325.9	360.8	380.4	386.0	387.4
67.5°	3651.6	1802.7	600.0	415.4	359.4	323.1	302.1	318.9	325.9	328.7	334.3
70°	1997.1	976.2	476.9	349.6	307.7	292.3	276.9	278.3	275.5	272.7	275.5
72°	1002.8	637.7	402.8	303.5	272.7	262.9	255.9	251.7	251.7	247.5	248.9
72.5°	862.9	593.0	388.8	292.3	264.3	255.9	250.3	246.1	244.7	242.0	243.3
75°	574.8	469.9	324.5	244.7	225.2	219.6	222.4	218.2	219.6	216.8	218.2
77.5°	464.3	404.2	275.5	207.0	193.0	184.6	190.2	191.6	194.4	191.6	190.2
80°	388.8	344.0	230.8	170.6	160.8	153.8	156.6	166.4	167.8	159.4	158.0
82.5°	251.7	276.9	181.8	132.9	123.1	120.3	127.3	137.1	139.9	128.7	125.9
85°	211.2	222.4	131.5	90.9	81.1	78.3	92.3	102.1	109.1	97.9	95.1
87.5°	58.7	109.1	64.3	43.4	36.4	36.4	44.8	53.1	62.9	64.3	64.3
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)