

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: P196384

Luminaire Tested: **NAV-AF-04-D-UNV-T4W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196384
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
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-T4W
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24662.3 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

Input Watts (W): 225
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

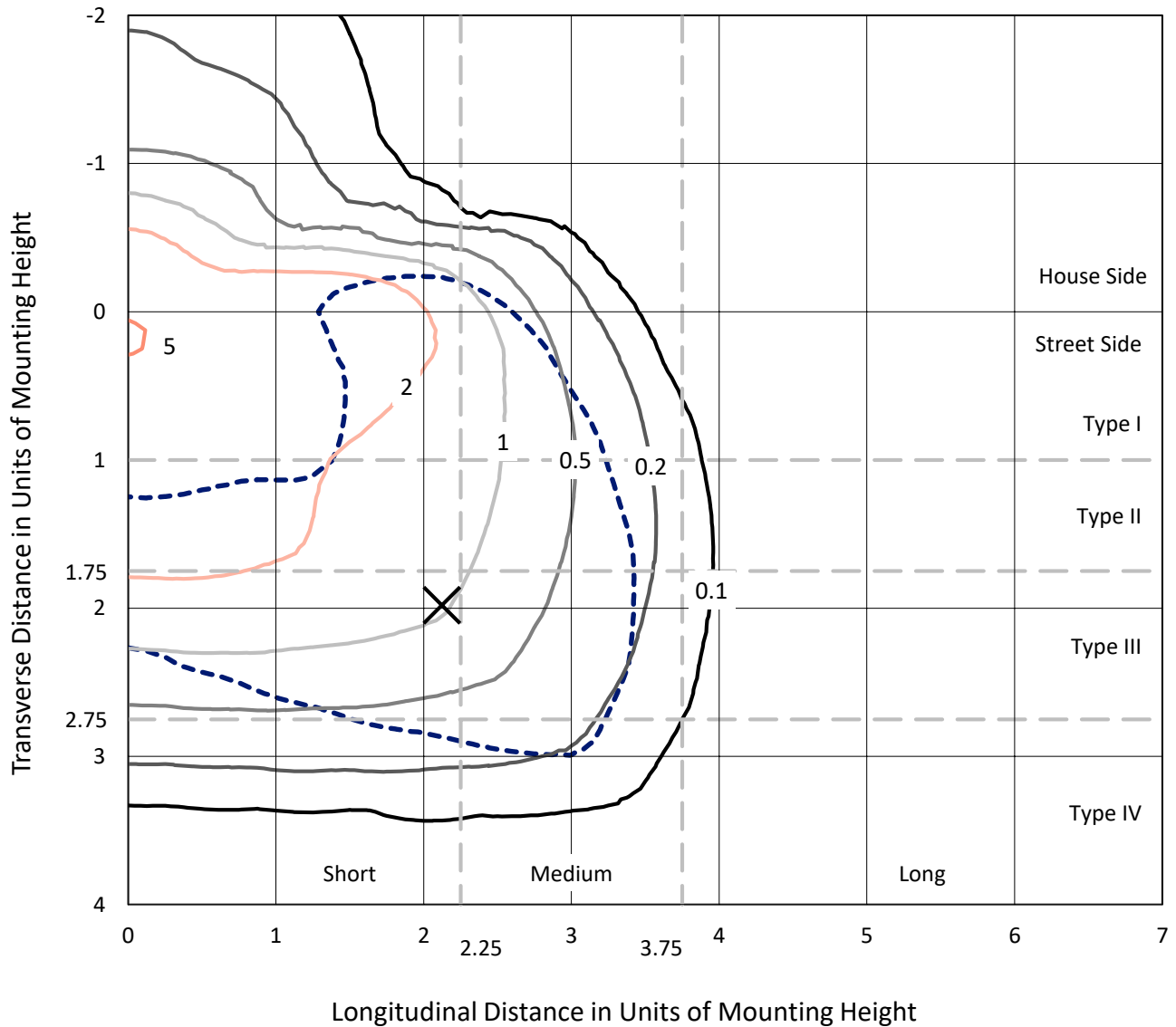


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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

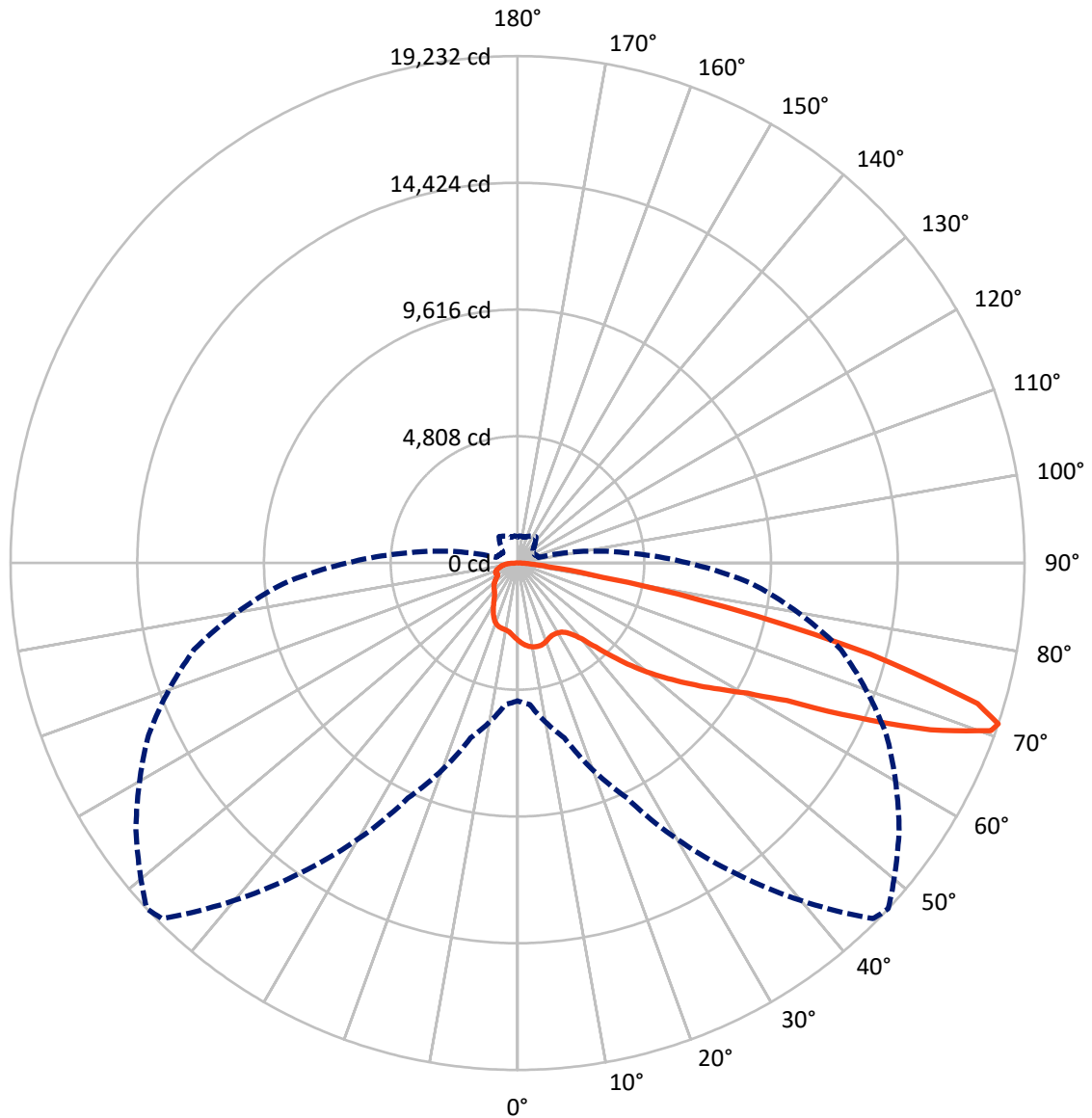


Based on 25 foot mounting height. Maximum calculated value = 5.4 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5285.5	0.0	5285.5
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	19376.8	0.0	19376.8
	% Fixture	78.6	0.0	78.6
Total	Lumens	24662.3	0.0	24662.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	280.0	1.1
10°-20°	819.2	3.3
20°-30°	1217.3	4.9
30°-40°	1747.9	7.1
40°-50°	3099.1	12.6
50°-60°	5303.0	21.5
60°-70°	7528.4	30.5
70°-80°	4123.2	16.7
80°-90°	544.3	2.2
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°	24662.3	100.0
0°-180°	24662.3	100.0



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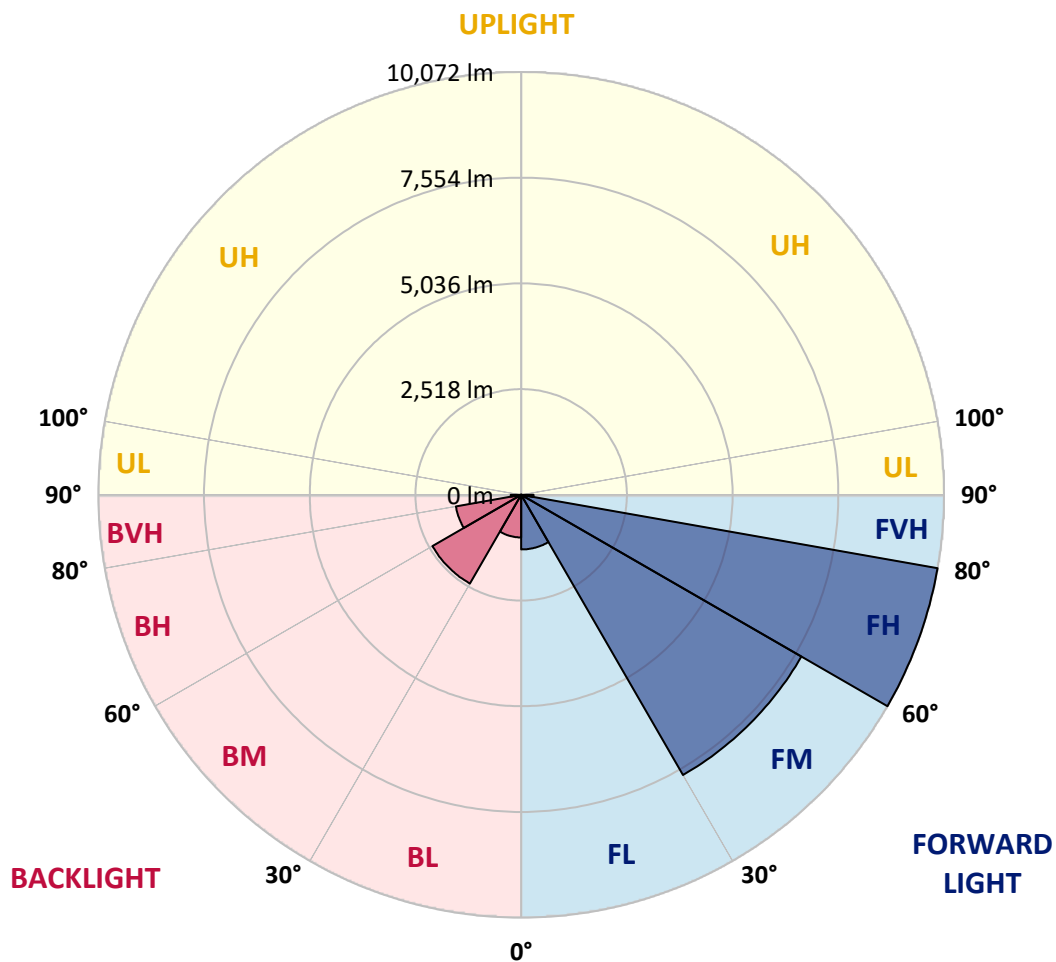
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1301.6	5.3			
FM	(30°-60°)	7707.7	31.3			
FH	(60°-80°)	10072.3	40.8			G4/12000
FVH	(80°-90°)	295.2	1.2			G3/500
BL	(0°-30°)	1015.0	4.1	B3/2500		
BM	(30°-60°)	2442.2	9.9	B2/2500		
BH	(60°-80°)	1579.2	6.4	B3/2500		G3/2500
BVH	(80°-90°)	249.1	1.0			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8
2.5°	3111.8	3105.4	3108.5	3097.4	3070.2	3041.4	3041.4	3011.1	2979.1	2947.1	2912.0
5°	3305.2	3295.5	3287.6	3252.4	3199.7	3140.6	3130.9	3070.2	3004.7	2939.1	2875.2
7.5°	3466.6	3457.0	3433.0	3369.1	3292.4	3204.5	3193.2	3113.4	3027.0	2936.0	2846.5
10°	3581.7	3575.2	3528.9	3447.3	3357.9	3254.0	3234.9	3153.3	3051.1	2937.6	2824.1
12.5°	3645.6	3636.0	3580.0	3484.2	3378.7	3273.2	3254.0	3175.6	3059.0	2934.3	2801.7
15°	3620.0	3615.2	3562.4	3464.9	3359.5	3268.4	3252.4	3172.5	3054.2	2923.2	2780.9
17.5°	3511.3	3522.5	3481.0	3385.0	3298.7	3234.9	3217.3	3142.1	3030.3	2896.0	2749.0
20°	3361.1	3373.9	3353.1	3255.6	3206.0	3164.5	3154.9	3094.2	2990.3	2856.1	2710.6
22.5°	3201.2	3212.5	3214.0	3123.0	3107.0	3090.9	3083.0	3039.8	2955.1	2832.0	2685.0
25°	3090.9	3103.7	3107.0	3027.0	3036.6	3041.4	3039.8	3009.5	2948.8	2832.0	2688.2
27.5°	3062.2	3068.6	3065.4	2991.9	3009.5	3036.6	3038.3	3031.8	2974.3	2864.1	2733.0
30°	3161.3	3164.5	3124.5	3014.2	3031.8	3067.0	3068.6	3065.4	3028.7	2947.1	2833.7
32.5°	3589.6	3586.5	3449.0	3164.5	3103.7	3116.5	3121.3	3150.1	3153.3	3084.6	2979.1
35°	4241.8	4240.1	4080.3	3594.4	3308.3	3241.2	3247.7	3292.4	3332.4	3285.9	3225.3
37.5°	4959.4	4964.1	4866.6	4208.1	3749.4	3469.7	3463.4	3497.0	3568.9	3584.8	3592.8
40°	5755.2	5779.3	5774.5	4913.0	4368.0	3859.7	3795.8	3757.5	3896.5	3984.4	4097.8
42.5°	6664.6	6658.3	6661.5	5686.5	5074.4	4473.5	4355.2	4176.2	4337.6	4489.4	4738.8
45°	7446.2	7471.7	7491.0	6509.6	5865.5	5175.1	5055.2	4729.2	4874.7	5101.6	5482.0
47.5°	8232.5	8187.8	8222.9	7425.4	6746.2	5975.8	5820.8	5381.2	5517.1	5836.8	6415.3
50°	9148.4	9127.5	8967.7	8620.9	7810.5	6787.7	6584.7	6062.1	6260.3	6687.0	7567.7
52.5°	9969.8	9857.9	9733.3	9560.6	8857.4	7609.2	7351.8	6770.1	7134.6	7663.5	8998.1
55°	10270.2	10195.1	10345.4	10569.1	9965.0	8446.7	8159.0	7596.4	8120.6	8780.7	10681.0
57.5°	10589.9	10615.5	10954.3	11406.6	11013.4	9340.1	9028.5	8574.6	9202.7	10030.5	12562.1
60°	10749.8	10852.0	11528.0	12376.8	12010.8	10319.8	10020.9	9698.1	10402.9	11411.4	14438.4
62.5°	10776.9	10914.4	11871.7	12717.1	13383.7	11820.5	11475.4	11125.3	11902.0	12937.8	15796.9
65°	10278.3	10489.2	11841.4	13135.9	14635.1	14328.2	14109.3	13498.7	13909.5	14281.8	16028.7
67.5°	8812.7	9042.8	10669.8	12963.2	15638.8	16930.1	16888.6	15987.2	15459.8	14801.3	14310.6
70°	6468.0	6653.5	8216.5	11082.1	15200.8	18972.7	19046.2	17599.8	15892.9	13698.4	10641.0
71°	5231.1	5390.8	6864.4	9838.7	14347.4	19078.1	19231.6	17671.7	15442.2	12702.8	8908.6
72.5°	3255.6	3345.2	4558.2	7425.4	12354.4	17991.4	18250.3	16751.1	14022.9	10737.0	6297.1
75°	1229.1	1264.2	1690.9	3274.8	7374.2	13516.2	13829.6	12659.6	9851.5	6129.2	2635.5
77.5°	660.1	677.6	839.0	1361.6	2955.1	7748.2	8151.0	7220.8	4726.0	2144.8	1077.2
80°	442.7	453.9	580.1	807.1	1358.5	2950.4	3285.9	2899.2	1769.3	1224.3	767.1
82.5°	286.1	292.5	394.8	530.6	877.4	1037.3	1184.3	1237.1	1104.4	877.4	463.5
85°	188.6	193.3	260.5	338.8	543.4	511.5	524.3	685.7	752.8	578.6	236.5
87.5°	108.6	111.9	156.6	174.2	244.5	191.8	207.8	326.0	447.5	377.2	135.8
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°	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8	2932.8
2.5°	2896.0	2883.2	2854.4	2836.8	2828.9	2825.7	2822.5	2828.9	2828.9	2825.7	2819.3
5°	2843.3	2819.3	2771.4	2737.8	2720.2	2715.4	2721.8	2729.7	2734.6	2734.6	2729.7
7.5°	2804.9	2769.7	2705.8	2659.5	2632.3	2624.3	2641.9	2670.6	2689.8	2699.5	2701.0
10°	2772.9	2725.0	2654.7	2606.7	2584.4	2581.1	2603.5	2640.2	2680.2	2697.8	2701.0
12.5°	2744.2	2689.8	2613.1	2568.3	2552.4	2560.3	2590.7	2624.3	2670.6	2696.2	2697.8
15°	2717.0	2661.1	2579.6	2533.2	2530.0	2542.7	2571.6	2598.7	2633.9	2665.8	2665.8
17.5°	2685.0	2624.3	2539.6	2496.4	2496.4	2507.7	2526.8	2541.2	2563.6	2593.9	2592.4
20°	2646.7	2584.4	2498.0	2453.3	2443.7	2437.3	2437.3	2440.6	2459.7	2486.9	2491.6
22.5°	2617.9	2554.0	2462.9	2408.5	2365.4	2323.8	2306.2	2299.9	2317.4	2343.0	2349.4
25°	2617.9	2554.0	2451.7	2360.6	2255.1	2175.2	2141.6	2132.0	2149.6	2173.6	2183.2
27.5°	2661.1	2597.2	2477.3	2317.4	2124.1	1996.2	1956.3	1948.2	1964.3	1983.4	1993.0
30°	2761.8	2699.5	2550.8	2267.9	1978.6	1810.8	1766.0	1758.0	1766.0	1774.0	1785.3
32.5°	2929.5	2876.8	2670.6	2223.2	1831.6	1643.0	1588.6	1575.9	1579.0	1580.7	1590.3
35°	3202.9	3178.9	2830.5	2170.4	1692.6	1505.6	1449.6	1424.0	1422.4	1430.4	1441.6
37.5°	3621.6	3636.0	3036.6	2093.7	1577.5	1408.1	1352.1	1326.6	1313.8	1329.7	1342.5
40°	4212.9	4246.5	3274.8	1989.8	1483.2	1350.5	1291.4	1267.4	1249.8	1245.0	1251.4
42.5°	4981.7	4972.2	3517.7	1857.2	1380.9	1312.1	1249.8	1224.3	1195.5	1158.7	1150.7
45°	5892.7	5755.2	3720.7	1694.1	1264.2	1275.4	1211.5	1176.3	1131.6	1077.2	1070.8
47.5°	6968.3	6589.5	3845.4	1519.9	1155.5	1227.4	1168.3	1114.0	1048.4	1013.2	1008.5
50°	8264.5	7566.1	3933.2	1342.5	1058.0	1166.7	1107.5	1035.6	971.7	962.2	960.6
52.5°	9798.7	8718.4	4042.0	1182.7	981.3	1088.4	1046.9	973.3	922.2	927.0	927.0
55°	11430.6	9910.7	4045.2	1056.4	914.2	997.3	1002.1	943.0	903.0	919.0	923.8
57.5°	12918.5	10952.7	3727.1	966.9	850.3	925.4	987.7	954.1	923.8	979.7	984.5
60°	14216.4	11755.0	3043.1	893.4	797.5	898.3	1019.7	1022.8	1016.5	1168.3	1179.5
62.5°	14691.0	11763.0	2160.8	831.0	768.7	914.2	1086.8	1091.6	1091.6	1232.2	1253.0
65°	14026.1	10783.3	1438.4	794.3	749.6	949.4	1141.1	1120.3	1070.8	1168.3	1145.9
67.5°	11683.1	8393.9	1051.6	770.4	722.4	950.9	1189.1	1136.4	1051.6	1134.8	1096.4
70°	8029.6	5341.3	880.7	748.0	690.4	909.4	1214.7	1131.6	1022.8	1058.0	1006.9
71°	6463.3	4262.5	835.9	740.0	677.6	885.5	1217.8	1125.1	1008.5	1030.8	984.5
72.5°	4257.7	2625.9	781.5	722.4	658.5	843.8	1209.8	1110.8	989.3	990.9	960.6
75°	1679.8	1088.4	703.2	682.4	604.2	776.7	1174.7	1080.4	952.6	920.6	907.8
77.5°	848.6	711.3	618.5	626.6	540.2	708.0	1125.1	1030.8	901.4	858.3	848.6
80°	620.1	540.2	529.0	543.4	468.3	640.9	1062.8	963.7	835.9	880.7	861.4
82.5°	377.2	329.2	414.0	449.1	391.6	572.1	989.3	885.5	752.8	693.7	671.3
85°	179.0	193.3	298.9	330.8	289.3	457.1	904.6	799.1	656.8	567.3	576.9
87.5°	87.9	107.1	171.0	198.1	190.2	335.6	682.4	620.1	517.8	426.8	417.2
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)