

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: P195904

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195904
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5000K, 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: 24109 lumens
Efficiency: N/A
Efficacy: 107.2 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

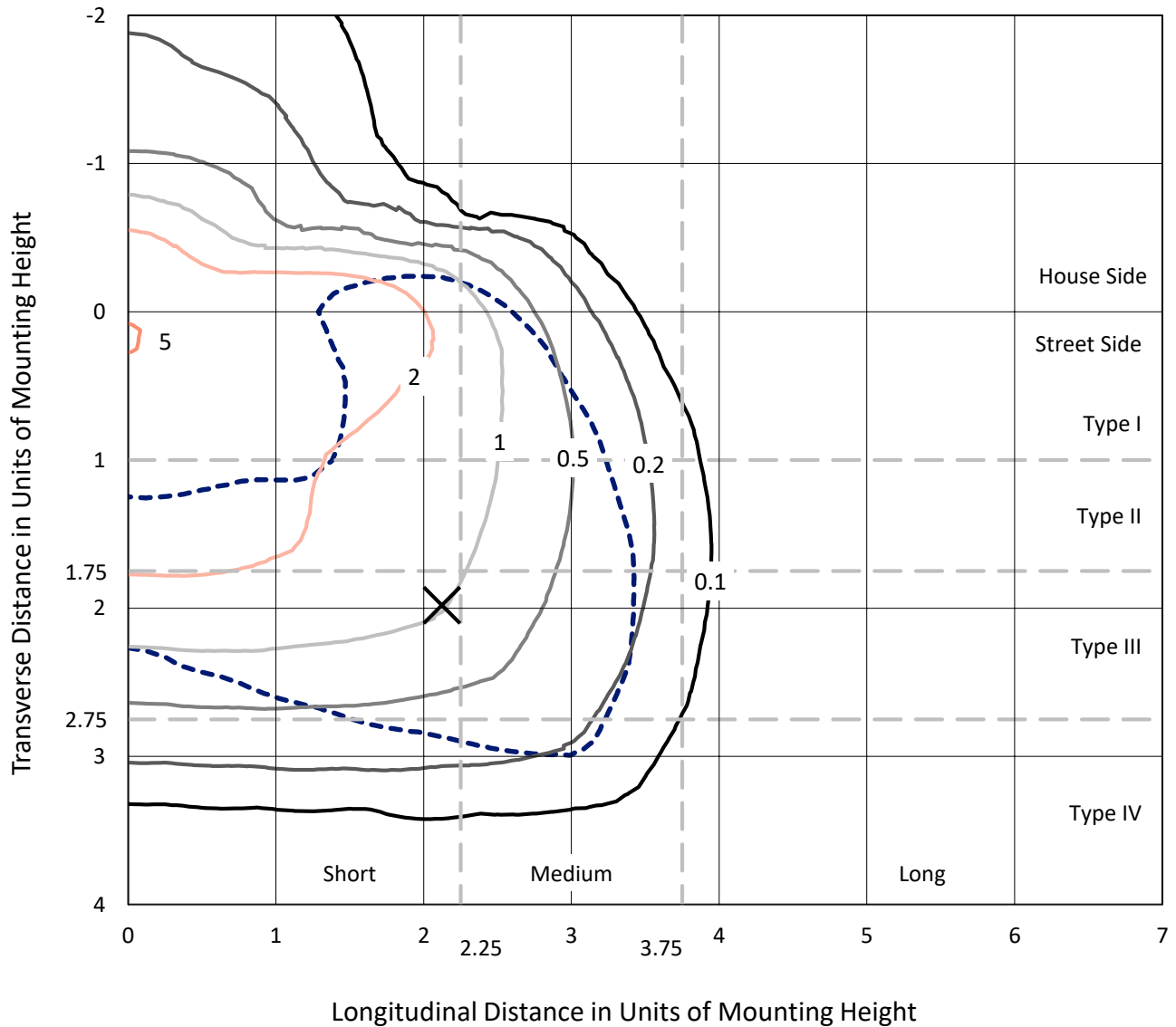
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

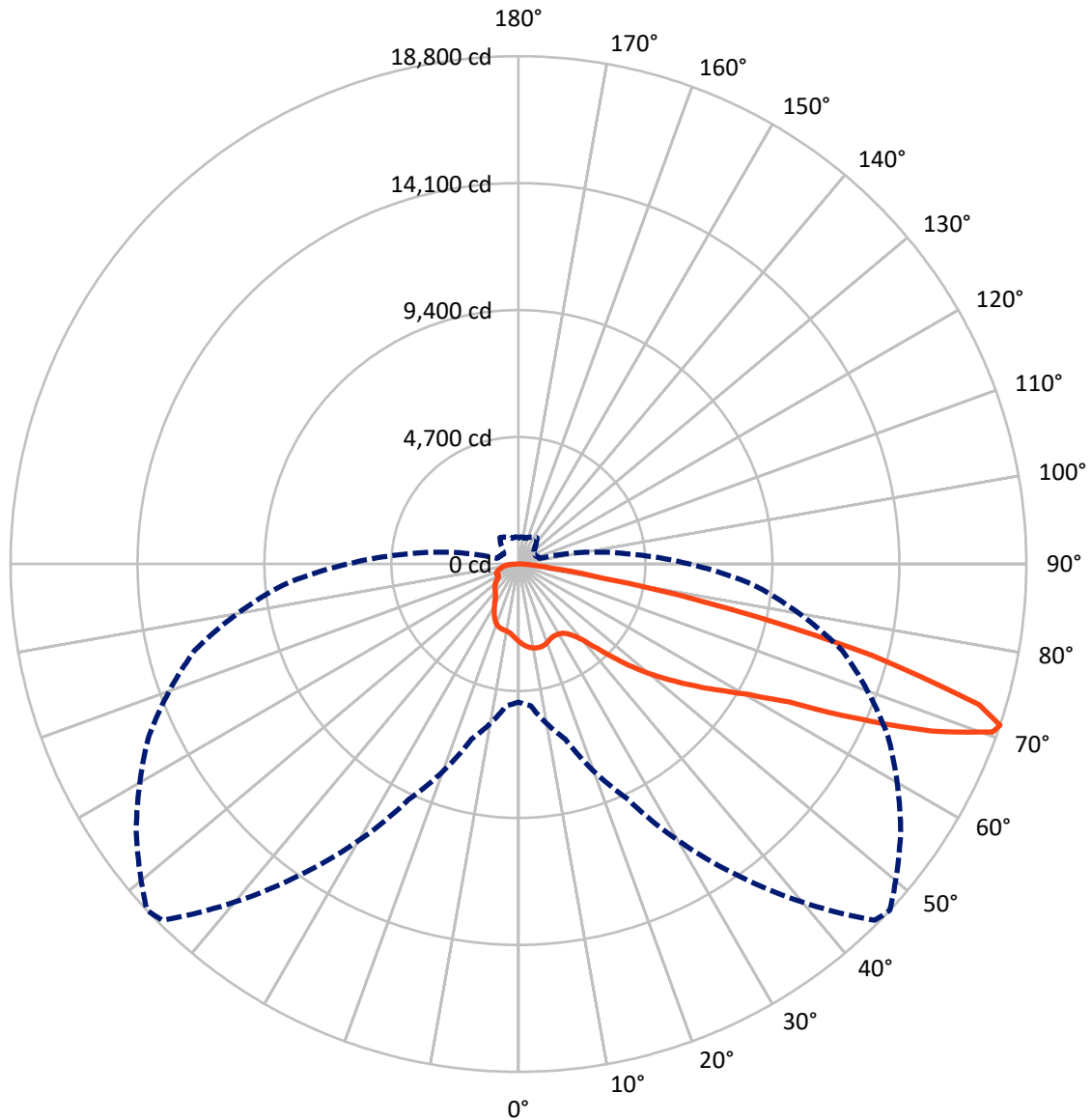
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 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	5166.9	0.0	5166.9
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	18942.1	0.0	18942.1
	% Fixture	78.6	0.0	78.6
Total	Lumens	24109.0	0.0	24109.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.7	1.1
10°-20°	800.8	3.3
20°-30°	1190.0	4.9
30°-40°	1708.7	7.1
40°-50°	3029.5	12.6
50°-60°	5184.0	21.5
60°-70°	7359.5	30.5
70°-80°	4030.7	16.7
80°-90°	532.1	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°	24109.0	100.0
0°-180°	24109.0	100.0



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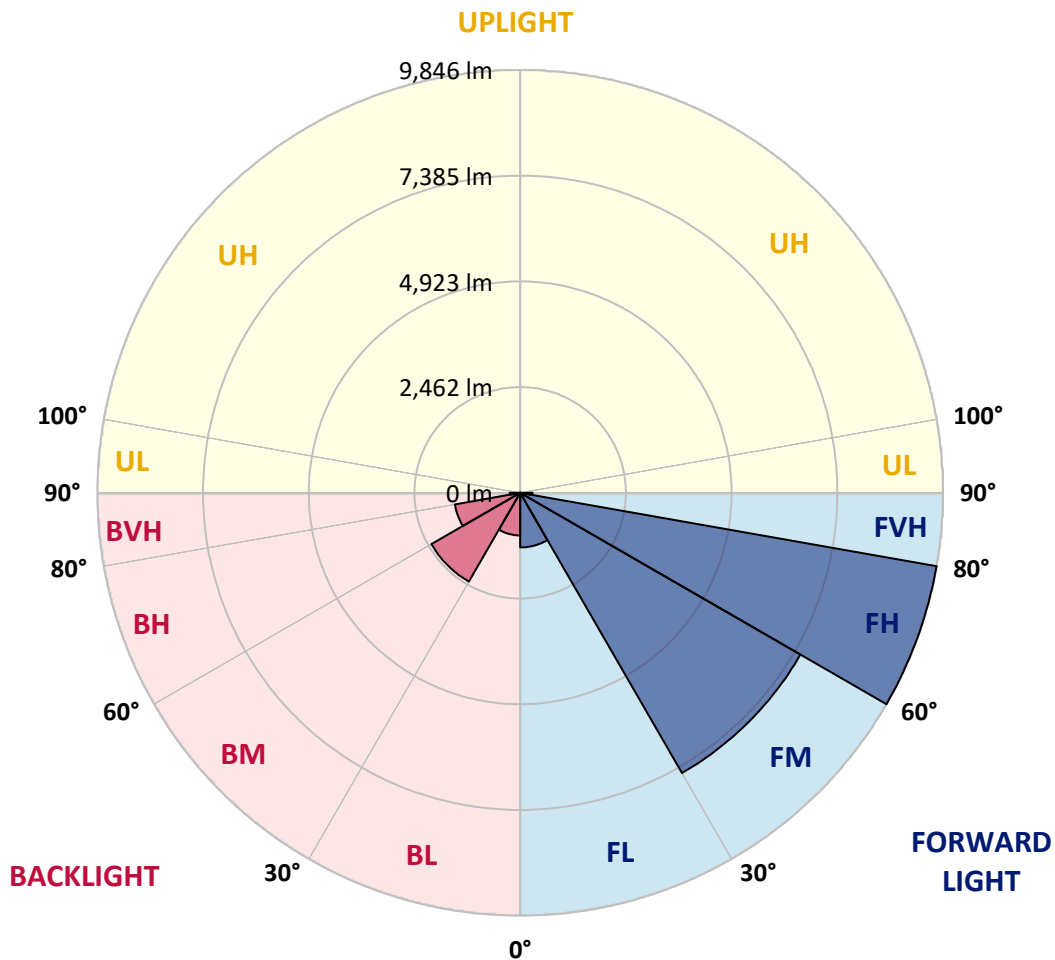
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1272.4	5.3			
FM	(30°-60°)	7534.8	31.3			
FH	(60°-80°)	9846.4	40.8			G4/12000
FVH	(80°-90°)	288.6	1.2			G3/500
BL	(0°-30°)	992.2	4.1	B2/1000		
BM	(30°-60°)	2387.4	9.9	B2/2500		
BH	(60°-80°)	1543.8	6.4	B3/2500		G3/2500
BVH	(80°-90°)	243.5	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°	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0
2.5°	3042.0	3035.7	3038.8	3027.9	3001.3	2973.2	2973.2	2943.5	2912.3	2881.0	2846.7
5°	3231.0	3221.6	3213.8	3179.4	3127.9	3070.1	3060.7	3001.3	2937.3	2873.2	2810.7
7.5°	3388.8	3379.4	3356.0	3293.5	3218.5	3132.6	3121.6	3043.5	2959.1	2870.1	2782.6
10°	3501.3	3495.0	3449.7	3370.0	3282.6	3181.0	3162.3	3082.6	2982.6	2871.7	2760.7
12.5°	3563.8	3554.4	3499.7	3406.0	3302.9	3199.8	3181.0	3104.4	2990.4	2868.5	2738.8
15°	3538.8	3534.1	3482.5	3387.2	3284.1	3195.1	3179.4	3101.3	2985.7	2857.6	2718.5
17.5°	3432.5	3443.5	3402.9	3309.1	3224.7	3162.3	3145.1	3071.6	2962.3	2831.0	2687.3
20°	3285.7	3298.2	3277.9	3182.6	3134.1	3093.5	3084.1	3024.8	2923.2	2792.0	2649.8
22.5°	3129.4	3140.4	3141.9	3052.9	3037.3	3021.6	3013.8	2971.6	2888.8	2768.5	2624.8
25°	3021.6	3034.1	3037.3	2959.1	2968.5	2973.2	2971.6	2942.0	2882.6	2768.5	2627.9
27.5°	2993.5	2999.8	2996.6	2924.8	2942.0	2968.5	2970.1	2963.8	2907.6	2799.8	2671.7
30°	3090.4	3093.5	3054.4	2946.6	2963.8	2998.2	2999.8	2996.6	2960.7	2881.0	2770.1
32.5°	3509.1	3506.0	3371.6	3093.5	3034.1	3046.6	3051.3	3079.4	3082.6	3015.4	2912.3
35°	4146.6	4145.0	3988.8	3513.8	3234.1	3168.5	3174.8	3218.5	3257.6	3212.2	3152.9
37.5°	4848.1	4852.7	4757.4	4113.7	3665.3	3391.9	3385.7	3418.5	3488.8	3504.4	3512.2
40°	5626.1	5649.6	5644.9	4802.8	4270.0	3773.1	3710.6	3673.2	3809.1	3895.0	4005.9
42.5°	6515.1	6508.9	6512.0	5558.9	4960.6	4373.1	4257.5	4082.5	4240.3	4388.7	4632.5
45°	7279.1	7304.1	7322.9	6363.6	5733.9	5059.0	4941.8	4623.1	4765.3	4987.1	5359.0
47.5°	8047.8	8004.1	8038.4	7258.8	6594.8	5841.7	5690.2	5260.5	5393.3	5705.8	6271.4
50°	8943.1	8922.7	8766.5	8427.5	7635.3	6635.4	6437.0	5926.1	6119.8	6537.0	7397.9
52.5°	9746.1	9636.7	9514.9	9346.1	8658.7	7438.5	7186.9	6618.2	6974.5	7491.6	8796.2
55°	10039.8	9966.4	10113.3	10332.0	9741.4	8257.2	7975.9	7426.0	7938.4	8583.7	10441.4
57.5°	10352.3	10377.3	10708.5	11150.7	10766.3	9130.5	8825.9	8382.2	8996.2	9805.5	12280.3
60°	10508.6	10608.5	11269.4	12099.1	11741.3	10088.3	9796.1	9480.5	10169.5	11155.4	14114.5
62.5°	10535.1	10669.5	11605.3	12431.8	13083.4	11555.3	11217.9	10875.7	11635.0	12647.5	15442.5
65°	10047.7	10253.9	11575.7	12841.2	14306.7	14006.7	13792.7	13195.8	13597.4	13961.4	15669.1
67.5°	8615.0	8839.9	10430.4	12672.4	15287.9	16550.3	16509.7	15628.5	15112.9	14469.2	13989.5
70°	6322.9	6504.2	8032.2	10833.5	14859.8	18547.0	18618.9	17204.9	15536.3	13391.1	10402.3
71°	5113.7	5269.9	6710.4	9618.0	14025.5	18650.1	18800.1	17275.2	15095.7	12417.8	8708.7
72.5°	3182.6	3270.1	4455.9	7258.8	12077.2	17587.7	17840.8	16375.3	13708.3	10496.1	6155.8
75°	1201.5	1235.8	1653.0	3201.3	7208.8	13213.0	13519.3	12375.6	9630.5	5991.7	2576.4
77.5°	645.3	662.4	820.2	1331.1	2888.8	7574.4	7968.1	7058.8	4620.0	2096.7	1053.0
80°	432.8	443.7	567.1	789.0	1328.0	2884.2	3212.2	2834.2	1729.6	1196.8	749.9
82.5°	279.7	285.9	385.9	518.7	857.7	1014.0	1157.7	1209.3	1079.6	857.7	453.1
85°	184.4	189.0	254.7	331.2	531.2	500.0	512.5	670.3	735.9	565.6	231.2
87.5°	106.2	109.4	153.1	170.3	239.0	187.5	203.1	318.7	437.5	368.7	132.8
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°	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0	2867.0
2.5°	2831.0	2818.5	2790.4	2773.2	2765.4	2762.3	2759.2	2765.4	2765.4	2762.3	2756.0
5°	2779.5	2756.0	2709.2	2676.4	2659.2	2654.5	2660.7	2668.5	2673.2	2673.2	2668.5
7.5°	2742.0	2707.6	2645.1	2599.8	2573.2	2565.4	2582.6	2610.7	2629.5	2638.9	2640.4
10°	2710.7	2663.9	2595.1	2548.2	2526.4	2523.2	2545.1	2581.0	2620.1	2637.3	2640.4
12.5°	2682.6	2629.5	2554.5	2510.7	2495.1	2502.9	2532.6	2565.4	2610.7	2635.7	2637.3
15°	2656.0	2601.4	2521.7	2476.4	2473.2	2485.7	2513.9	2540.4	2574.8	2606.0	2606.0
17.5°	2624.8	2565.4	2482.6	2440.4	2440.4	2451.4	2470.1	2484.2	2506.1	2535.7	2534.2
20°	2587.3	2526.4	2442.0	2398.3	2388.9	2382.6	2382.6	2385.8	2404.5	2431.1	2435.7
22.5°	2559.2	2496.7	2407.6	2354.5	2312.3	2271.7	2254.5	2248.3	2265.4	2290.4	2296.7
25°	2559.2	2496.7	2396.7	2307.6	2204.5	2126.4	2093.6	2084.2	2101.4	2124.8	2134.2
27.5°	2601.4	2538.9	2421.7	2265.4	2076.4	1951.4	1912.4	1904.5	1920.2	1938.9	1948.3
30°	2699.8	2638.9	2493.6	2217.0	1934.2	1770.2	1726.4	1718.6	1726.4	1734.2	1745.2
32.5°	2863.8	2812.3	2610.7	2173.3	1790.5	1606.1	1553.0	1540.5	1543.6	1545.2	1554.6
35°	3131.0	3107.6	2767.0	2121.7	1654.6	1471.8	1417.1	1392.1	1390.5	1398.3	1409.3
37.5°	3540.3	3554.4	2968.5	2046.7	1542.1	1376.5	1321.8	1296.8	1284.3	1299.9	1312.4
40°	4118.4	4151.2	3201.3	1945.2	1449.9	1320.2	1262.4	1239.0	1221.8	1217.1	1223.3
42.5°	4869.9	4860.6	3438.8	1815.5	1349.9	1282.7	1221.8	1196.8	1168.7	1132.7	1124.9
45°	5760.5	5626.1	3637.2	1656.1	1235.8	1246.8	1184.3	1149.9	1106.2	1053.0	1046.8
47.5°	6812.0	6441.7	3759.1	1485.8	1129.6	1199.9	1142.1	1089.0	1024.9	990.5	985.9
50°	8079.1	7396.3	3845.0	1312.4	1034.3	1140.5	1082.7	1012.4	949.9	940.6	939.0
52.5°	9578.9	8522.8	3951.3	1156.2	959.3	1064.0	1023.4	951.5	901.5	906.2	906.2
55°	11174.1	9688.3	3954.4	1032.7	893.7	974.9	979.6	921.8	882.7	898.4	903.1
57.5°	12628.7	10707.0	3643.5	945.2	831.2	904.6	965.5	932.7	903.1	957.7	962.4
60°	13897.4	11491.3	2974.8	873.4	779.6	878.1	996.8	999.9	993.7	1142.1	1153.0
62.5°	14361.4	11499.1	2112.3	812.4	751.5	893.7	1062.4	1067.1	1067.1	1204.6	1224.9
65°	13711.4	10541.4	1406.1	776.5	732.8	928.1	1115.5	1095.2	1046.8	1142.1	1120.2
67.5°	11421.0	8205.6	1028.0	753.1	706.2	929.6	1162.4	1110.9	1028.0	1109.3	1071.8
70°	7849.4	5221.5	860.9	731.2	674.9	889.0	1187.4	1106.2	999.9	1034.3	984.3
71°	6318.3	4166.9	817.1	723.4	662.4	865.6	1190.5	1099.9	985.9	1007.7	962.4
72.5°	4162.2	2567.0	764.0	706.2	643.7	824.9	1182.7	1085.9	967.1	968.7	939.0
75°	1642.1	1064.0	687.4	667.1	590.6	759.3	1148.3	1056.2	931.2	899.9	887.4
77.5°	829.6	695.3	604.6	612.5	528.1	692.1	1099.9	1007.7	881.2	839.0	829.6
80°	606.2	528.1	517.1	531.2	457.8	626.5	1039.0	942.1	817.1	860.9	842.1
82.5°	368.7	321.8	404.7	439.0	382.8	559.3	967.1	865.6	735.9	678.1	656.2
85°	175.0	189.0	292.2	323.4	282.8	446.8	884.3	781.2	642.1	554.6	564.0
87.5°	85.9	104.7	167.2	193.7	185.9	328.1	667.1	606.2	506.2	417.2	407.8
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)