

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: P196354

Luminaire Tested: **NAV-AF-04-D-UNV-T4FT-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196354
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
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-T4FT-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20323 lumens
Efficiency: N/A
Efficacy: 118.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

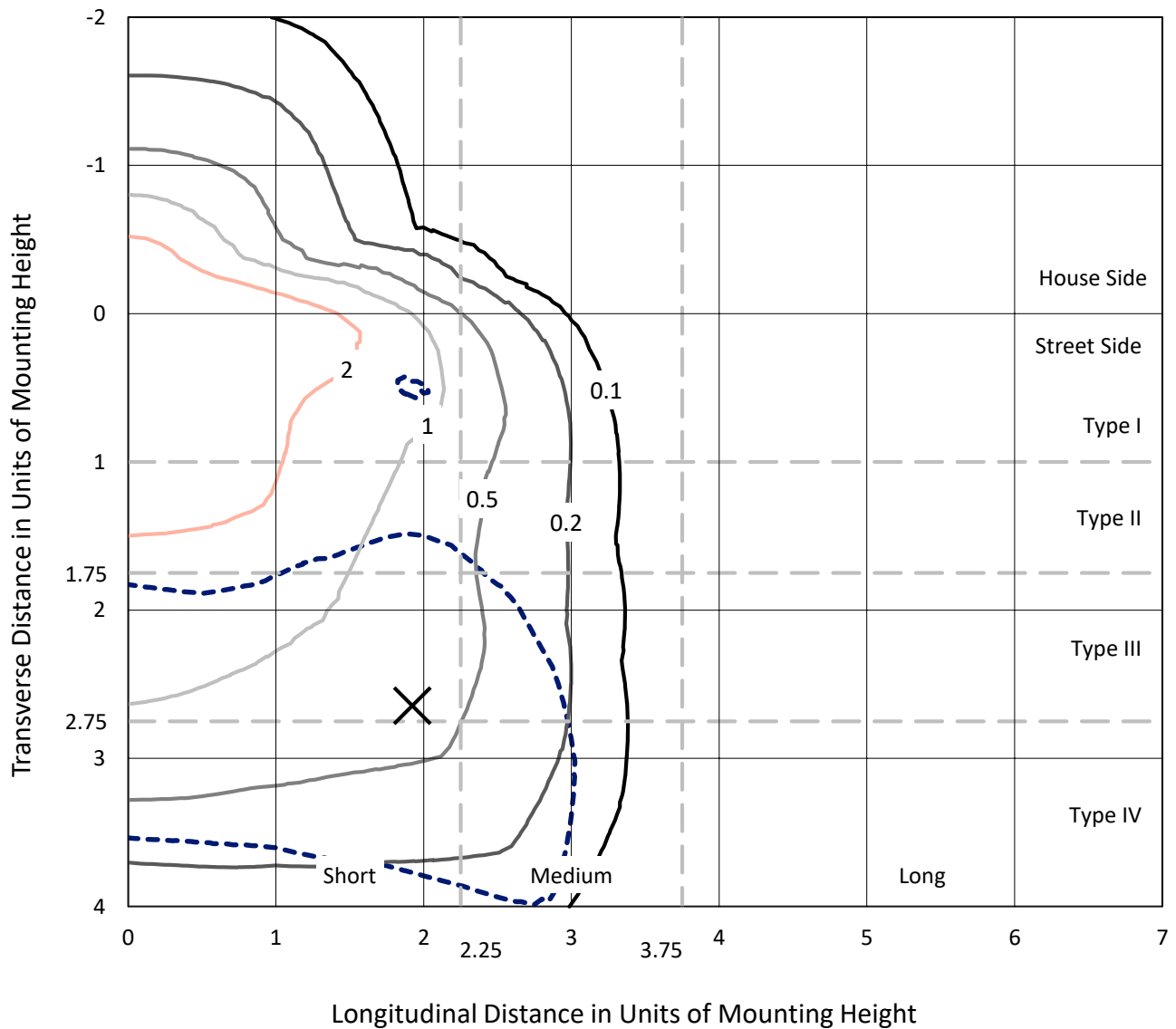
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

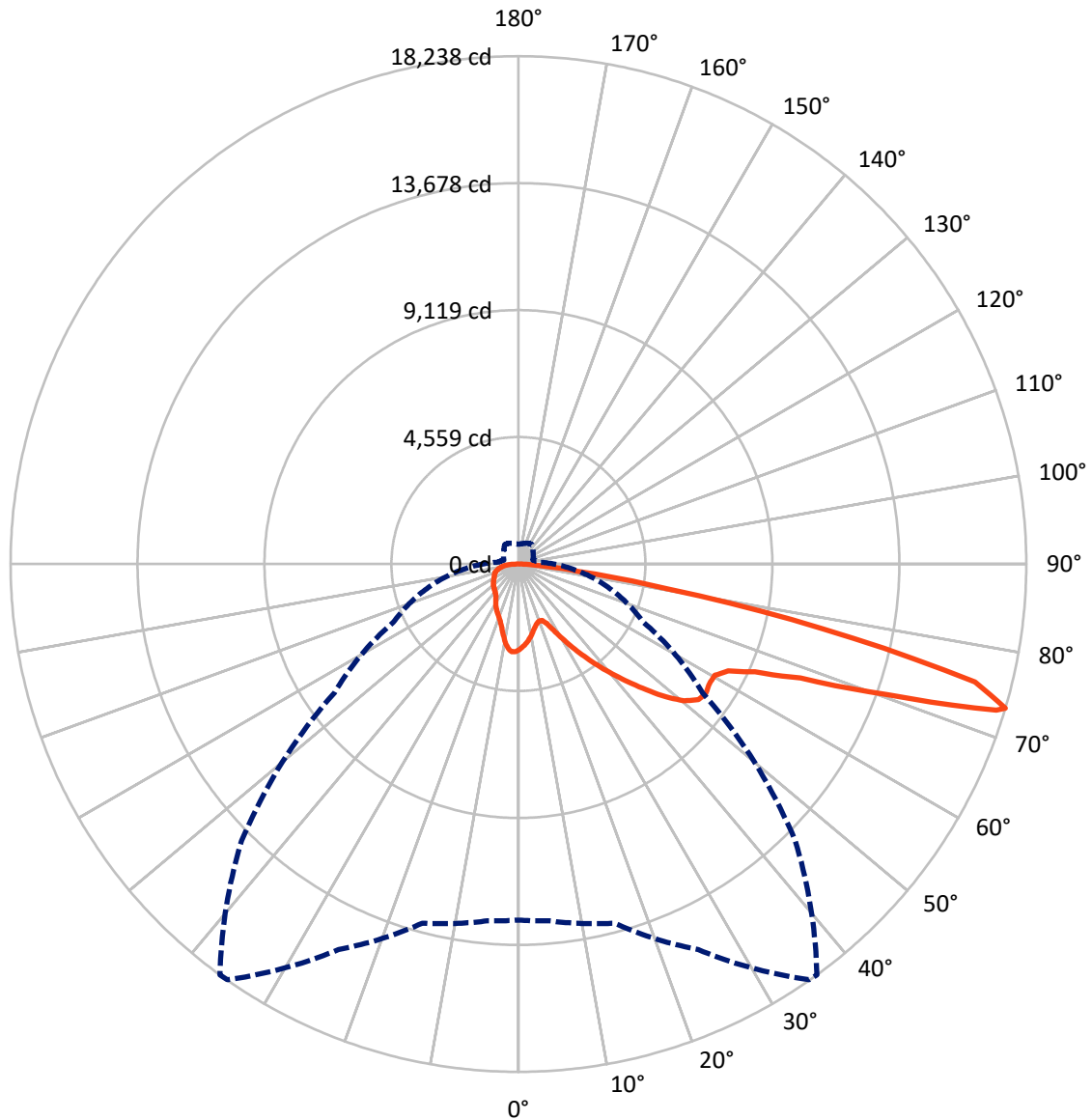
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3918.9	0.0	3918.9
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	16404.1	0.0	16404.1
	% Fixture	80.7	0.0	80.7
Total	Lumens	20323.0	0.0	20323.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.6	1.4
10°-20°	702.2	3.5
20°-30°	1125.9	5.5
30°-40°	1862.3	9.2
40°-50°	2881.6	14.2
50°-60°	3857.6	19.0
60°-70°	5039.3	24.8
70°-80°	4116.2	20.3
80°-90°	458.2	2.3
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°	20323.0	100.0
0°-180°	20323.0	100.0



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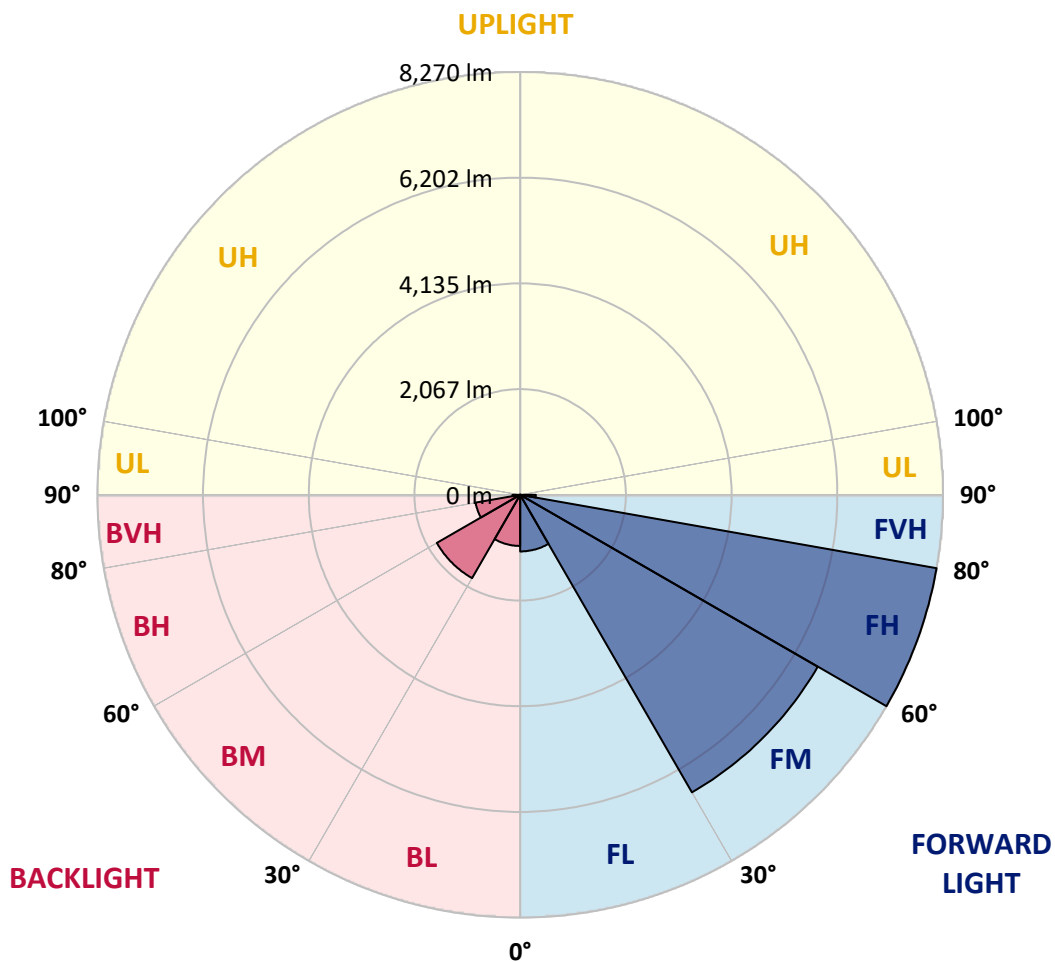
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1107.4	5.4			
FM (30°-60°)	6719.5	33.1			
FH (60°-80°)	8270.0	40.7			G4/12000
FVH (80°-90°)	307.3	1.5			G3/500
BL (0°-30°)	1000.3	4.9	B3/2500		
BM (30°-60°)	1882.1	9.3	B2/2500		
BH (60°-80°)	885.6	4.4	B2/1000		G2/1000
BVH (80°-90°)	150.9	0.7			G2/225
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°	36°	45°	55°	65°	75°	85°
0°	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4
2.5°	2960.8	2968.6	2969.8	2978.9	2978.9	2977.6	2981.5	2996.9	3004.7	3022.8	3038.3
5°	2815.0	2824.0	2827.8	2843.3	2862.7	2864.0	2878.2	2907.9	2936.3	2976.4	3009.9
7.5°	2651.0	2661.3	2671.6	2703.9	2732.3	2734.9	2762.0	2809.7	2847.2	2896.3	2956.9
10°	2492.1	2494.7	2505.0	2546.3	2583.8	2587.7	2626.4	2680.6	2731.0	2799.4	2867.8
12.5°	2361.7	2369.5	2366.9	2397.9	2430.1	2432.7	2484.3	2552.8	2626.4	2703.9	2785.2
15°	2316.5	2315.2	2288.1	2286.8	2301.0	2303.6	2353.9	2434.0	2516.7	2612.2	2716.8
17.5°	2347.5	2337.1	2266.1	2222.3	2213.2	2215.8	2253.3	2341.0	2428.8	2538.6	2663.9
20°	2517.9	2477.9	2311.4	2205.5	2175.7	2175.7	2197.7	2268.7	2365.6	2493.4	2651.0
22.5°	2922.1	2860.1	2505.0	2316.5	2211.9	2201.6	2184.8	2239.0	2346.2	2499.9	2703.9
25°	3430.9	3401.1	2860.1	2612.2	2396.6	2363.0	2251.9	2271.3	2386.2	2569.6	2848.5
27.5°	3902.1	3850.5	3326.2	3042.2	2737.4	2685.8	2450.8	2372.0	2481.8	2698.7	3057.7
30°	4177.2	4142.3	3805.3	3534.2	3171.4	3105.5	2768.4	2570.9	2652.2	2911.7	3354.7
32.5°	4476.7	4456.1	4285.7	4039.0	3641.3	3565.2	3179.0	2895.0	2913.1	3194.6	3712.4
35°	4767.3	4794.4	4697.6	4516.8	4147.5	4076.5	3730.4	3318.6	3234.6	3512.2	4094.6
37.5°	5115.9	5122.4	5061.7	4944.2	4679.5	4621.4	4336.0	3770.5	3584.5	3850.5	4463.9
40°	5811.9	5709.9	5472.3	5379.4	5221.9	5185.6	4860.2	4184.9	3909.9	4197.9	4812.5
42.5°	6564.7	6405.9	6034.0	5881.7	5818.3	5784.8	5296.7	4461.3	4214.7	4545.2	5154.6
45°	7171.6	7042.5	6678.3	6489.8	6497.6	6443.4	5677.6	4707.9	4545.2	4893.8	5536.9
47.5°	7769.4	7553.8	7145.8	7118.6	7209.0	7128.9	6041.8	4954.6	4889.9	5273.4	5919.1
50°	7808.2	7611.9	7446.7	7663.5	7818.5	7719.1	6372.3	5277.3	5247.6	5733.1	6412.4
52.5°	7336.9	7308.5	7560.2	7925.7	8182.7	8093.6	6642.2	5609.1	5613.0	6307.7	7012.7
55°	7165.2	7128.9	7431.1	7880.5	8227.8	8174.9	6843.6	5983.6	6018.5	7005.1	7657.1
57.5°	7454.3	7364.0	7423.3	7795.3	8121.9	8090.9	7052.8	6399.5	6462.7	7808.2	8252.3
60°	8351.8	8167.1	7852.1	7921.8	8125.8	8107.7	7352.4	6863.0	6968.9	8645.0	8629.4
62.5°	9696.0	9486.8	8845.0	8535.2	8490.0	8455.1	7847.0	7432.5	7485.3	9249.2	8409.9
65°	11170.6	10945.9	10182.8	9675.4	9409.3	9334.4	8645.0	8119.4	7787.5	9247.9	7555.1
67.5°	12826.0	12588.4	11827.9	11343.6	11055.6	10927.9	9940.0	8674.6	7689.4	8465.4	6045.6
70°	14521.4	14295.4	13946.8	14115.9	14242.4	14047.5	11980.2	8859.3	6984.4	6637.0	4059.7
72.5°	13621.4	13603.3	13868.0	15471.7	17910.9	17949.6	14017.8	8337.6	5396.2	3944.8	2164.2
73°	12786.0	12862.2	13352.8	15271.6	18224.7	18237.6	14057.8	8067.7	4954.6	3398.5	1900.7
75°	6624.1	7140.6	8961.3	12383.1	16875.3	16936.0	12392.1	6107.6	2953.1	1887.9	1280.9
77.5°	1774.2	1751.0	2887.3	6032.8	11250.6	11170.6	7830.2	2956.9	1415.3	1184.1	898.7
80°	608.1	615.9	982.6	2206.7	5251.5	5438.7	3398.5	1289.9	931.0	825.1	636.6
82.5°	309.9	320.2	513.9	938.8	2196.4	2149.9	1093.7	759.2	623.7	501.0	356.4
85°	165.3	170.4	282.7	486.8	805.8	814.8	384.8	405.5	396.4	284.1	175.6
87.5°	81.3	83.9	135.5	214.3	298.3	288.0	134.3	175.6	195.0	160.1	96.9
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°	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4	3078.4
2.5°	3057.7	3057.7	3074.5	3102.9	3123.6	3142.9	3155.8	3176.5	3188.1	3186.8	3185.5
5°	3037.0	3049.9	3083.5	3118.4	3141.6	3157.1	3157.1	3166.1	3166.1	3162.2	3157.1
7.5°	2989.3	3011.2	3060.3	3091.3	3097.7	3080.9	3047.4	3021.5	2989.3	2972.5	2966.0
10°	2913.1	2941.5	3003.5	3017.6	2984.0	2924.7	2843.3	2773.6	2711.6	2683.2	2674.2
12.5°	2838.2	2875.6	2933.7	2911.7	2831.7	2715.5	2590.2	2494.7	2425.0	2397.9	2388.8
15°	2776.2	2821.4	2866.6	2798.2	2658.6	2497.2	2359.1	2270.0	2217.0	2196.4	2191.3
17.5°	2734.9	2787.8	2803.3	2675.4	2481.8	2301.0	2178.4	2120.3	2096.9	2087.9	2085.4
20°	2737.4	2796.8	2759.4	2556.7	2311.4	2129.3	2047.9	2031.2	2031.2	2031.2	2029.8
22.5°	2808.5	2860.1	2741.3	2445.7	2147.4	1984.6	1949.7	1964.0	1974.3	1974.3	1973.1
25°	2955.7	2984.0	2754.2	2338.5	1993.7	1859.4	1860.6	1887.9	1896.9	1896.9	1894.3
27.5°	3180.4	3157.1	2777.5	2219.7	1842.6	1745.8	1763.9	1788.4	1794.9	1791.0	1789.7
30°	3461.9	3368.9	2796.8	2080.2	1700.6	1639.9	1655.3	1669.6	1664.4	1655.3	1654.1
32.5°	3776.9	3584.5	2785.2	1924.0	1575.3	1530.1	1539.1	1546.9	1539.1	1517.2	1517.2
35°	4089.3	3779.5	2722.0	1753.5	1475.9	1424.3	1422.9	1447.5	1446.2	1420.4	1421.7
37.5°	4363.1	3933.1	2599.3	1597.2	1390.7	1346.8	1351.9	1367.5	1375.2	1340.3	1336.5
40°	4602.1	4039.0	2426.2	1464.3	1322.3	1324.8	1310.6	1286.1	1277.1	1261.5	1258.9
42.5°	4826.7	4112.7	2242.9	1353.3	1287.4	1317.0	1269.3	1211.2	1186.6	1200.8	1209.9
45°	5047.4	4195.2	2066.0	1261.5	1243.5	1293.8	1228.0	1163.4	1135.0	1141.5	1150.5
47.5°	5317.4	4310.2	1853.0	1163.4	1176.3	1251.2	1202.2	1132.4	1089.9	1064.0	1056.2
50°	5672.5	4476.7	1576.6	1057.5	1105.3	1204.7	1180.2	1087.2	1040.8	989.1	976.2
52.5°	6116.6	4634.3	1297.7	972.3	1047.2	1164.7	1144.1	1048.5	991.6	929.7	919.3
55°	6559.6	4656.3	1057.5	898.7	981.3	1110.5	1100.2	1017.5	937.4	887.1	876.8
57.5°	6869.4	4448.4	896.1	836.8	918.1	1043.3	1060.1	980.1	892.2	853.6	847.1
60°	6874.6	3951.2	798.0	795.4	870.3	985.2	1018.8	936.2	863.9	838.0	832.9
62.5°	6328.4	3184.2	734.7	764.5	835.4	937.4	987.8	911.7	857.4	847.1	841.9
65°	5304.4	2352.7	684.4	736.0	803.1	897.4	962.0	903.9	854.8	850.9	847.1
67.5°	3916.4	1612.8	641.8	699.9	767.0	856.1	937.4	892.2	839.3	854.8	849.7
70°	2463.7	1076.9	601.7	658.6	719.2	808.3	905.2	871.6	819.9	810.9	794.1
72.5°	1390.7	778.7	553.9	605.6	657.2	745.0	861.2	836.8	776.0	739.9	723.1
73°	1256.4	737.3	542.4	592.7	643.0	732.1	850.9	826.4	763.1	723.1	707.6
75°	919.3	603.0	489.4	539.7	583.7	672.7	801.9	774.8	706.3	658.6	648.2
77.5°	666.2	464.8	420.9	466.2	504.9	590.1	728.2	697.2	630.1	604.3	593.9
80°	480.4	352.5	348.6	392.5	426.2	512.6	649.5	617.2	552.7	628.8	612.0
82.5°	286.6	226.0	255.6	304.7	339.6	429.9	564.3	526.8	464.8	470.0	400.3
85°	136.9	127.9	158.9	200.2	224.6	294.4	470.0	440.3	371.8	304.7	298.3
87.5°	60.7	58.1	76.2	89.1	120.1	176.9	321.5	285.4	269.9	161.4	126.5
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)