

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: P196047

Luminaire Tested: **NAV-AF-03-D-UNV-RW**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196047  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24161)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-03-D-UNV-RW  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 18934.8 lumens  
Efficiency: N/A  
Efficacy: 114.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Medium - Full Cutoff  
BUG Rating: B4 - U0 - G4

Input Watts (W): 166  
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

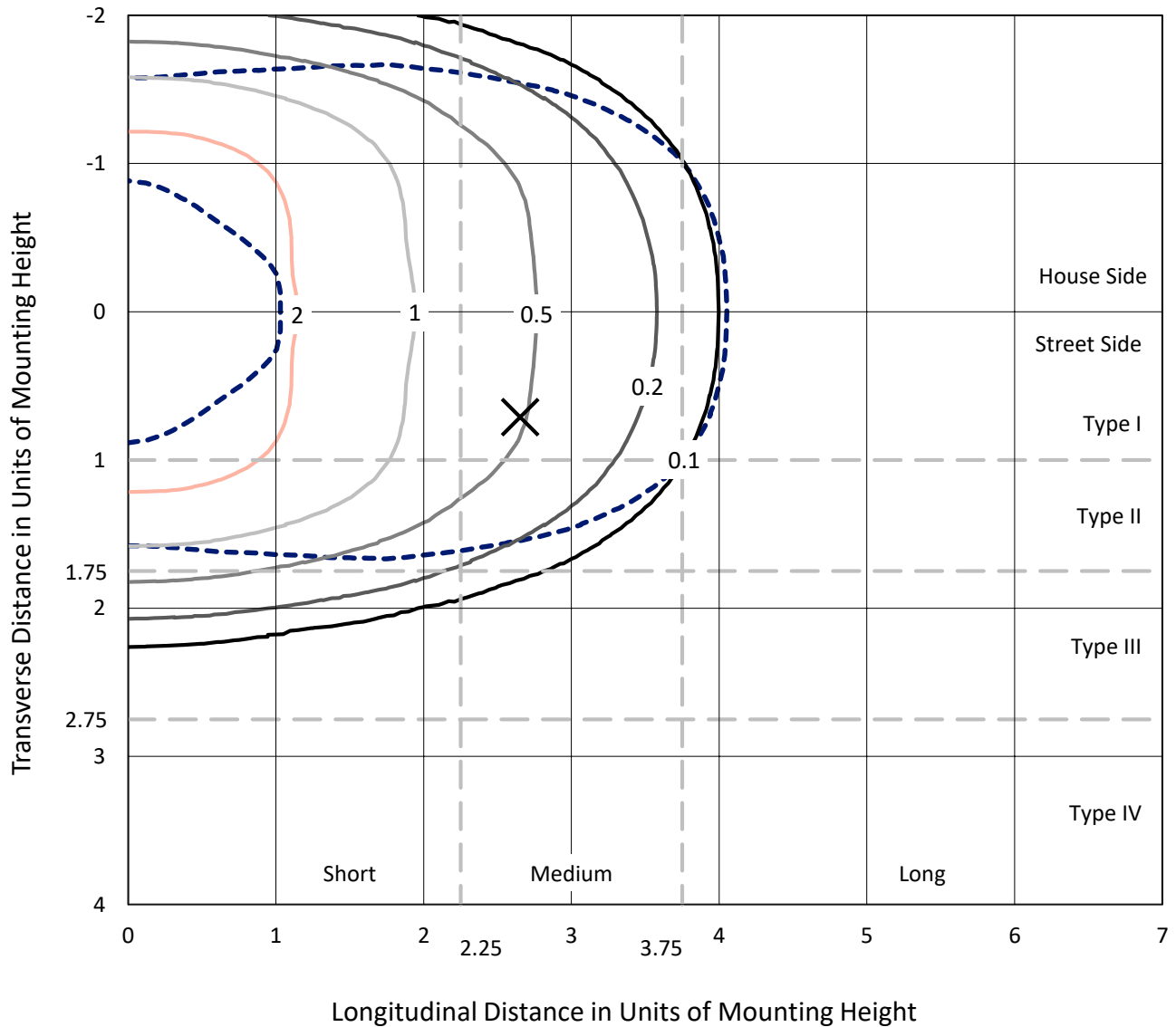


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

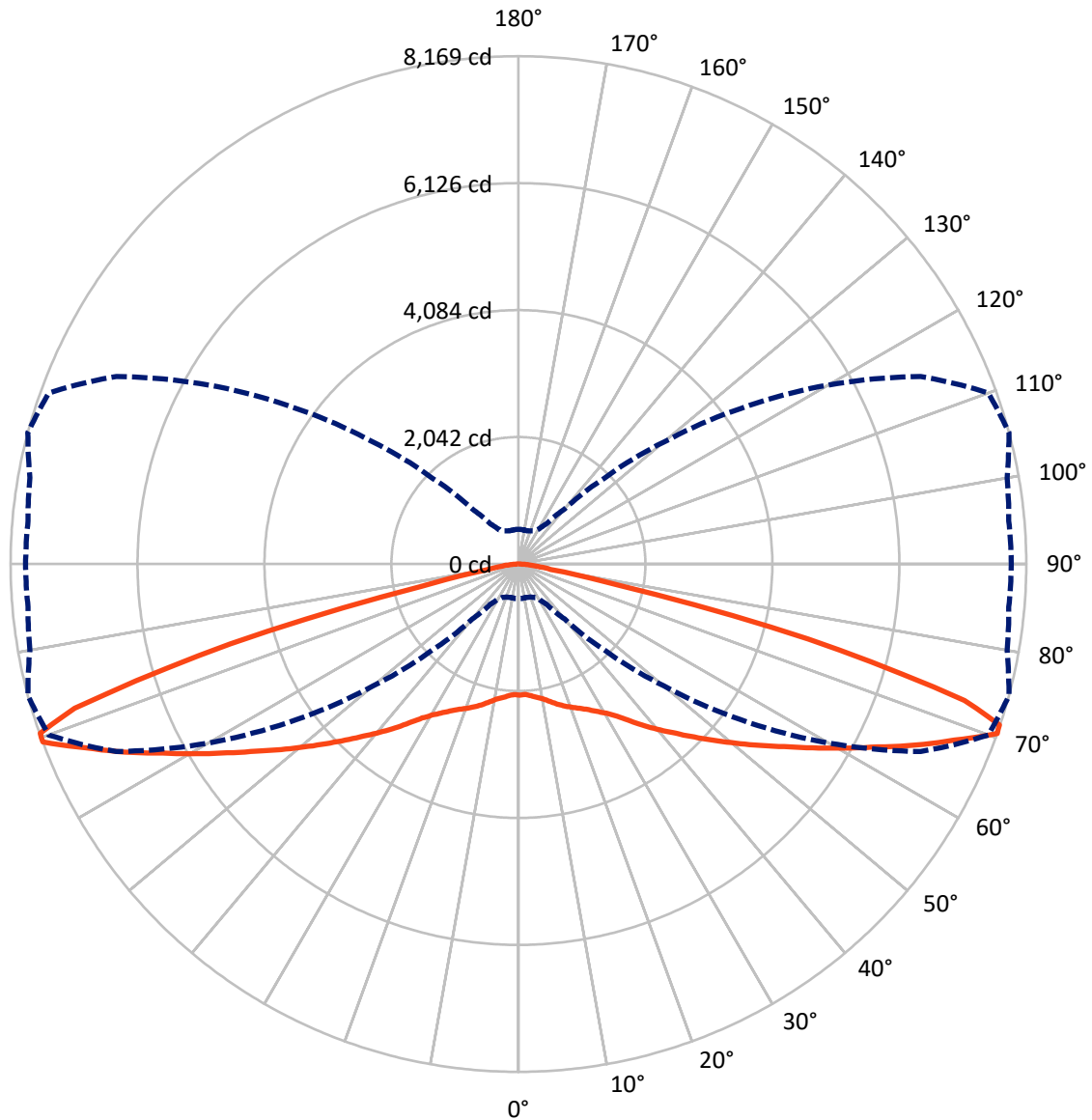


Based on 25 foot mounting height. Maximum calculated value = 3.4 fc  
 Type II - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	9467.4	0.0	9467.4
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	9467.4	0.0	9467.4
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	18934.8	0.0	18934.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.3	1.1
10°-20°	627.2	3.3
20°-30°	1178.1	6.2
30°-40°	2075.2	11.0
40°-50°	3439.3	18.2
50°-60°	4784.6	25.3
60°-70°	4516.7	23.9
70°-80°	1929.1	10.2
80°-90°	182.3	1.0
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°	18934.8	100.0
0°-180°	18934.8	100.0



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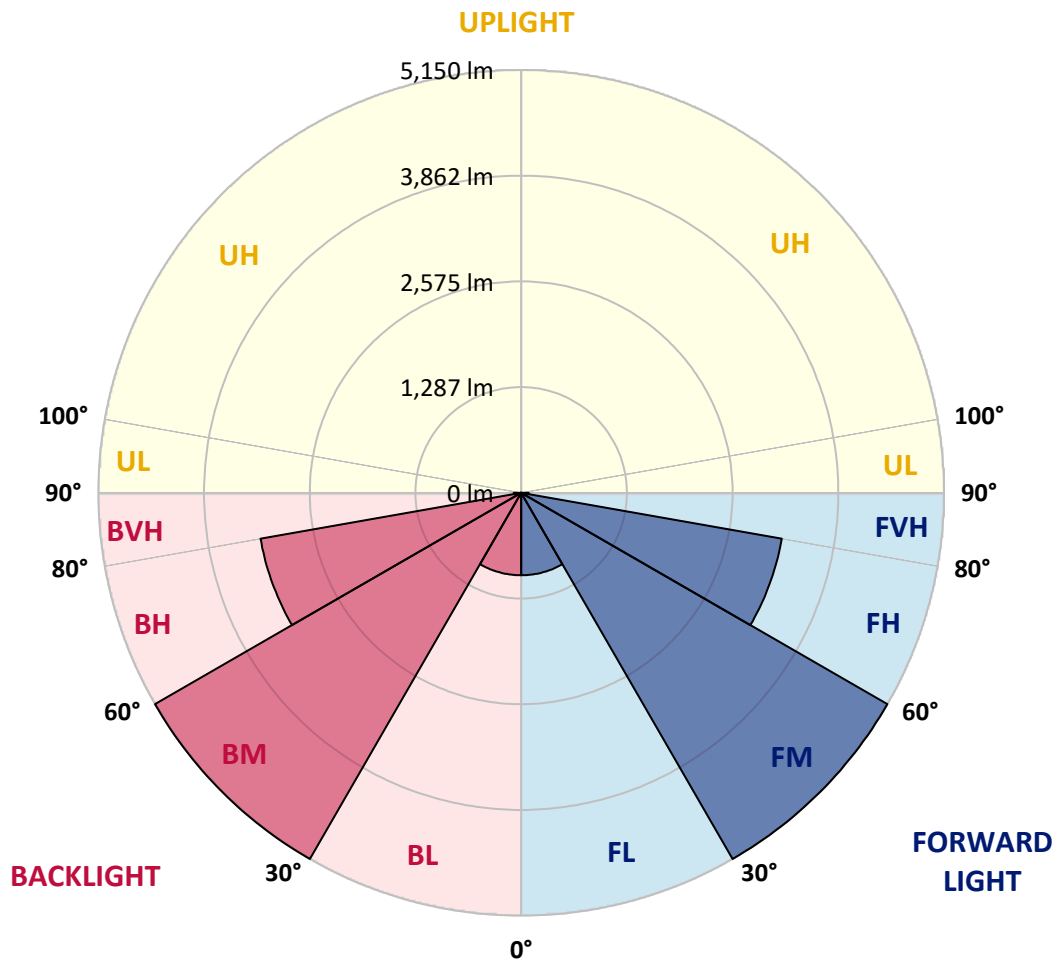
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1003.8	5.3			
FM	(30°-60°)	5149.5	27.2			
FH	(60°-80°)	3222.9	17.0			G2/5000
FVH	(80°-90°)	91.1	0.5			G1/100
BL	(0°-30°)	1003.8	5.3	B3/2500		
BM	(30°-60°)	5149.5	27.2	B4/8500		
BH	(60°-80°)	3222.9	17.0	B4/5000		G4/5000
BVH	(80°-90°)	91.1	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B4-U0-G4**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6
2.5°	2121.6	2120.5	2121.6	2118.0	2119.2	2118.0	2118.0	2113.3	2113.3	2111.0	2107.4
5°	2097.9	2100.2	2100.2	2100.2	2103.8	2103.8	2108.6	2109.7	2113.3	2116.9	2119.2
7.5°	2058.8	2059.9	2063.5	2065.8	2073.0	2082.4	2091.9	2102.7	2112.1	2124.0	2137.0
10°	2025.5	2027.9	2033.8	2039.8	2052.9	2064.7	2081.3	2097.9	2114.5	2134.7	2154.8
12.5°	2007.7	2011.3	2020.7	2030.3	2050.4	2065.8	2088.4	2114.5	2137.0	2156.1	2178.6
15°	2010.1	2011.3	2024.3	2037.4	2065.8	2087.2	2119.2	2150.1	2177.4	2198.7	2224.8
17.5°	2044.5	2046.9	2059.9	2078.9	2106.2	2133.5	2167.9	2200.0	2236.7	2261.6	2292.5
20°	2112.1	2115.7	2129.9	2150.1	2179.8	2208.2	2243.8	2277.1	2315.0	2344.7	2375.6
22.5°	2200.0	2205.9	2221.3	2246.2	2275.9	2310.3	2347.1	2381.5	2417.1	2446.8	2472.9
25°	2317.4	2324.6	2341.1	2366.1	2395.8	2432.5	2470.5	2506.1	2542.9	2565.5	2586.7
27.5°	2475.2	2487.1	2504.9	2525.1	2551.1	2590.3	2625.9	2655.6	2691.2	2716.1	2730.4
30°	2687.6	2704.3	2718.5	2739.9	2758.8	2800.3	2828.9	2852.6	2879.9	2894.1	2897.6
32.5°	2947.5	2962.9	2977.2	2992.5	3018.7	3056.7	3084.0	3097.0	3111.2	3108.8	3095.9
35°	3240.6	3252.5	3260.8	3288.1	3330.7	3355.7	3375.8	3380.6	3383.0	3358.0	3333.2
37.5°	3549.1	3563.3	3570.5	3613.2	3653.6	3682.0	3691.5	3702.2	3695.1	3653.6	3608.5
40°	3882.5	3898.0	3919.3	3956.1	4003.5	4030.8	4042.7	4041.6	4035.6	3987.0	3913.4
42.5°	4210.1	4229.0	4246.8	4310.9	4350.1	4396.3	4402.3	4401.0	4388.0	4332.3	4246.8
45°	4487.7	4510.3	4547.0	4618.2	4681.1	4736.9	4759.4	4767.8	4754.7	4695.3	4598.1
47.5°	4716.7	4732.2	4778.4	4865.1	4945.8	5027.6	5072.7	5104.7	5103.5	5060.8	4957.6
50°	4873.3	4891.1	4948.1	5045.4	5146.3	5242.4	5331.4	5403.7	5438.1	5407.3	5311.2
52.5°	4918.4	4941.0	5015.7	5132.0	5249.5	5378.9	5511.8	5639.8	5717.0	5736.0	5661.2
55°	4728.6	4753.4	4862.7	5024.0	5217.5	5408.4	5610.2	5793.0	5951.9	6025.5	5995.8
57.5°	4175.6	4193.4	4332.3	4541.1	4817.6	5153.4	5492.7	5827.3	6100.3	6291.4	6324.5
60°	3302.3	3324.8	3476.7	3697.5	4011.9	4436.6	4911.3	5459.5	5994.7	6432.5	6649.7
62.5°	2228.4	2243.8	2389.8	2591.5	2935.7	3345.0	3874.2	4568.4	5331.4	6113.4	6725.6
65°	1169.9	1169.9	1268.5	1409.6	1683.8	2050.4	2592.7	3304.6	4212.4	5189.0	6213.0
67.5°	678.7	677.5	700.1	732.1	818.8	967.1	1266.1	1789.3	2648.5	3785.2	4950.5
70°	560.1	556.5	552.9	552.9	566.0	588.5	645.5	789.1	1154.6	1952.0	3045.9
71°	535.1	532.8	523.2	519.8	525.7	537.6	562.4	628.9	819.9	1331.4	2274.7
72.5°	505.4	499.5	485.3	479.4	480.6	485.3	492.4	518.5	576.6	757.1	1296.9
75°	460.4	446.1	428.3	420.0	416.4	415.3	415.3	422.4	435.5	456.8	531.6
77.5°	408.2	388.0	369.1	360.7	354.8	351.3	348.8	344.1	341.8	351.3	378.5
80°	345.3	324.0	308.5	303.8	300.2	293.1	283.6	274.2	268.2	272.9	289.5
82.5°	267.0	245.6	248.0	249.2	243.3	231.4	221.9	211.2	200.5	198.1	206.4
85°	212.4	201.7	194.6	210.0	197.0	182.7	169.7	151.9	126.9	104.4	114.0
87.5°	91.3	92.6	132.9	200.5	175.6	141.2	117.4	94.9	60.6	45.1	46.2
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):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6	2108.6
2.5°	2106.2	2106.2	2102.7	2100.2	2100.2	2100.2	2097.9	2099.1
5°	2120.5	2122.8	2125.2	2124.0	2127.5	2131.1	2129.9	2128.8
7.5°	2144.2	2151.3	2158.4	2162.0	2166.7	2171.4	2172.6	2169.1
10°	2167.9	2182.2	2192.8	2202.3	2208.2	2212.9	2216.5	2215.4
12.5°	2197.6	2217.8	2236.7	2255.7	2268.8	2275.9	2283.0	2280.7
15°	2246.2	2268.8	2292.5	2317.4	2337.5	2348.3	2358.9	2356.6
17.5°	2312.7	2332.8	2351.9	2376.7	2401.7	2413.6	2425.4	2424.2
20°	2395.8	2411.2	2421.8	2436.1	2459.8	2472.9	2483.5	2479.9
22.5°	2490.7	2495.4	2496.6	2501.3	2520.3	2535.8	2550.0	2553.6
25°	2593.9	2590.3	2583.3	2579.7	2592.7	2609.3	2627.1	2631.8
27.5°	2722.1	2710.2	2692.4	2678.2	2681.7	2703.0	2723.2	2728.0
30°	2883.4	2856.2	2818.1	2790.9	2786.1	2808.7	2830.0	2837.2
32.5°	3067.3	3030.6	2978.3	2936.8	2919.0	2939.1	2958.2	2968.8
35°	3285.7	3245.3	3182.4	3129.0	3100.6	3113.7	3146.8	3158.7
37.5°	3544.3	3488.6	3418.6	3351.0	3303.5	3305.9	3341.5	3355.7
40°	3830.3	3749.6	3660.6	3576.4	3507.6	3502.8	3534.9	3545.5
42.5°	4128.1	4024.9	3920.5	3810.2	3724.7	3709.3	3750.9	3752.0
45°	4448.5	4315.6	4186.3	4058.1	3969.2	3941.8	3982.2	3987.0
47.5°	4790.3	4624.1	4471.1	4332.3	4236.1	4193.4	4232.6	4239.7
50°	5146.3	4974.2	4796.2	4641.9	4529.2	4477.0	4523.3	4528.1
52.5°	5498.7	5336.1	5159.4	4982.5	4846.0	4786.7	4841.3	4857.9
55°	5853.4	5696.8	5530.7	5353.9	5181.9	5129.7	5189.0	5206.8
57.5°	6222.5	6071.8	5921.1	5743.2	5575.8	5496.3	5560.4	5585.3
60°	6629.5	6496.6	6354.2	6175.0	6010.1	5917.6	5972.1	6000.6
62.5°	7029.4	7002.1	6872.8	6686.4	6477.6	6385.1	6431.3	6451.5
65°	7062.6	7505.2	7499.3	7314.2	7022.3	6866.9	6879.9	6889.4
67.5°	6164.4	7180.1	7829.2	7887.3	7562.2	7318.9	7290.5	7296.4
70°	4364.3	5758.5	7136.2	8040.4	8168.5	7979.8	7918.2	7927.7
71°	3496.9	4941.0	6457.5	7673.7	8159.1	8104.4	8070.1	8094.9
72.5°	2232.0	3640.5	5116.6	6571.3	7502.8	7769.8	7809.0	7824.4
75°	810.5	1566.3	2650.9	3798.3	4814.0	5512.9	5897.4	5928.2
77.5°	435.5	561.3	867.4	1295.8	1628.0	1806.0	1827.4	1835.7
80°	320.4	371.4	424.8	485.3	523.2	530.4	517.3	490.1
82.5°	226.7	256.4	277.6	299.0	314.5	301.4	250.4	191.1
85°	131.8	144.7	156.6	167.4	169.7	160.2	105.6	86.6
87.5°	52.2	57.0	55.8	62.9	60.6	55.8	41.5	35.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)