

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: P196010

Luminaire Tested: **NAV-AF-02-D-UNV-AFL-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196010
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-AFL-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8411.7 lumens
Efficiency: N/A
Efficacy: 127.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B1 - U0 - G1

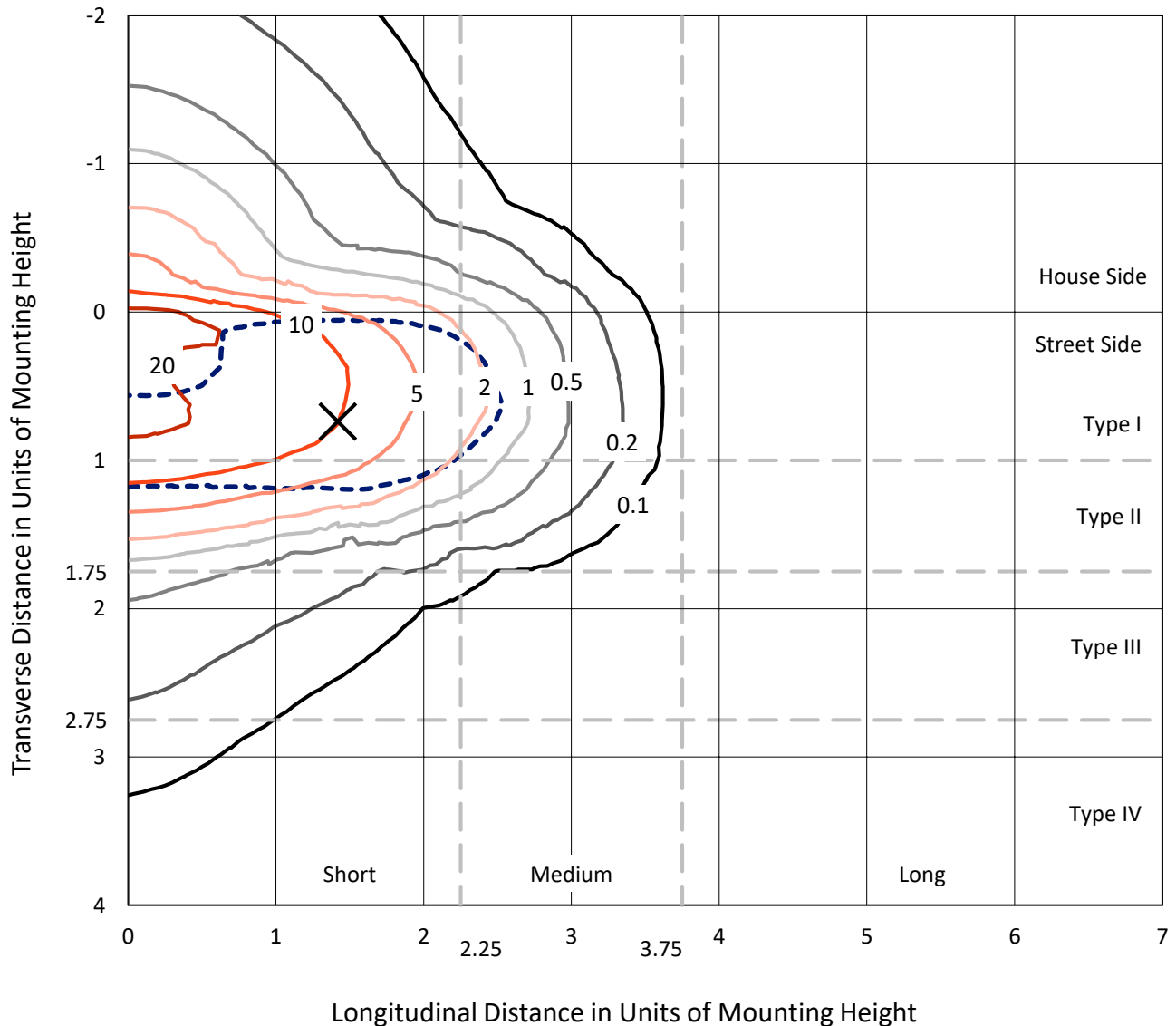
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

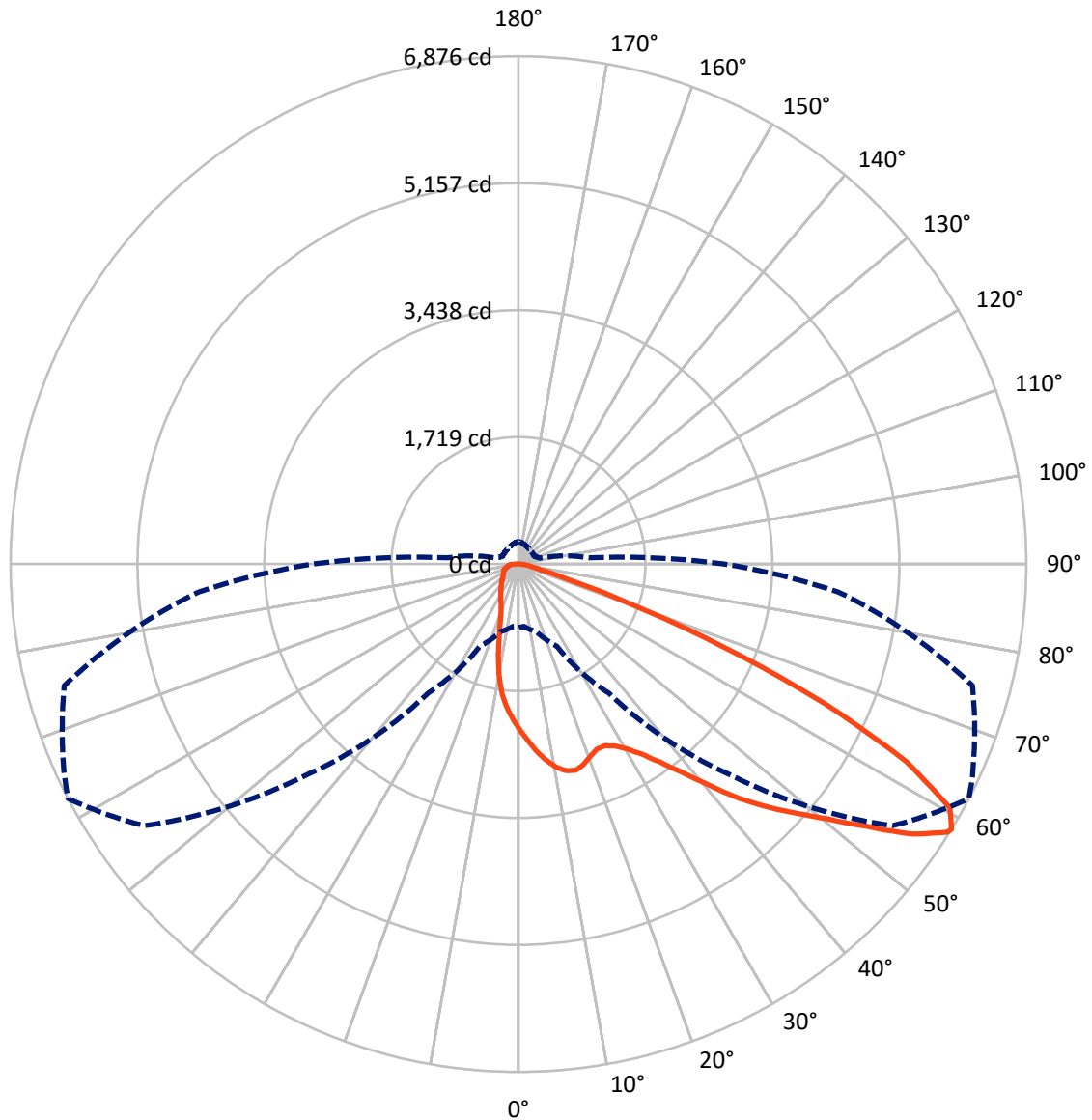
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 26.3 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1291.5	0.0	1291.5
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	7120.2	0.0	7120.2
	% Fixture	84.6	0.0	84.6
Total	Lumens	8411.7	0.0	8411.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.7	2.4
10°-20°	506.6	6.0
20°-30°	821.1	9.8
30°-40°	1310.9	15.6
40°-50°	1906.7	22.7
50°-60°	1995.2	23.7
60°-70°	1216.4	14.5
70°-80°	340.2	4.0
80°-90°	114.0	1.4
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°	8411.7	100.0
0°-180°	8411.7	100.0



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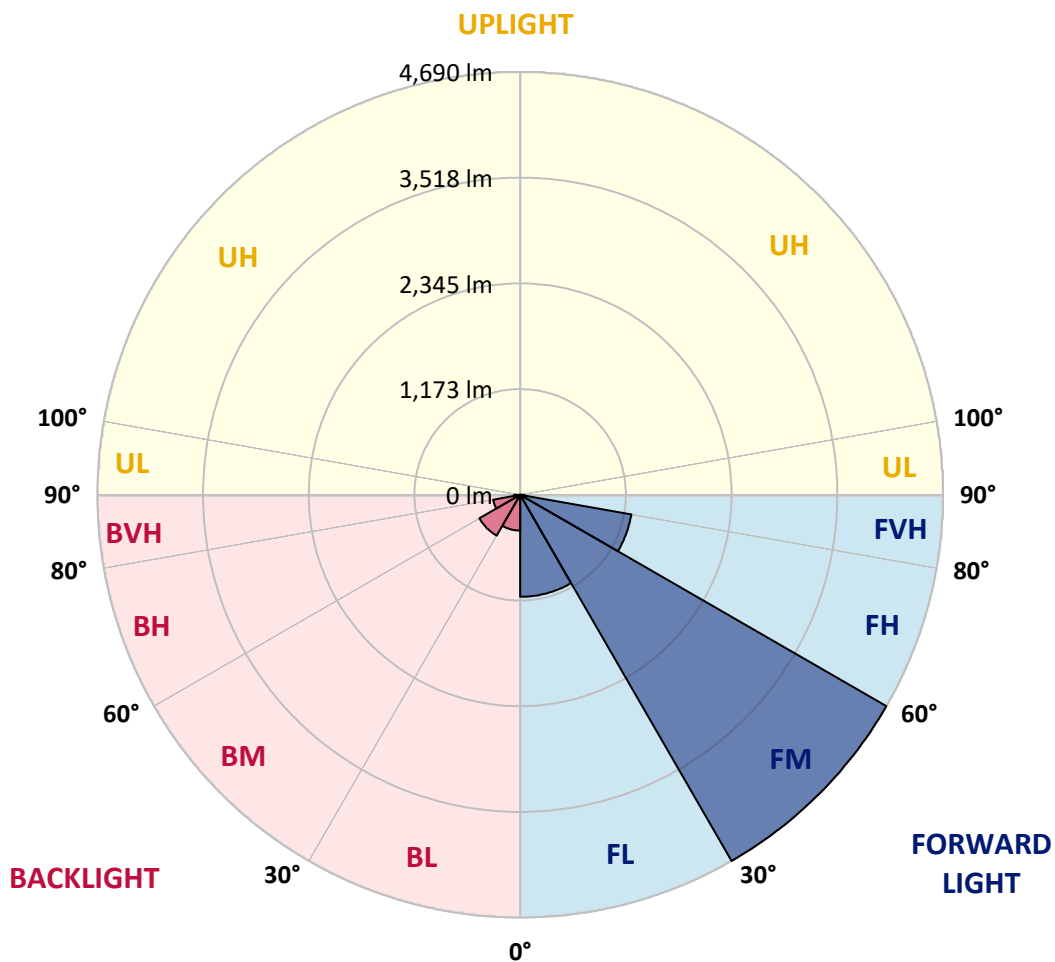
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1131.4	13.5			
FM	(30°-60°)	4690.5	55.8			
FH	(60°-80°)	1252.5	14.9			G1/1800
FVH	(80°-90°)	45.9	0.5			G1/100
BL	(0°-30°)	397.0	4.7	B1/500		
BM	(30°-60°)	522.3	6.2	B1/1000		
BH	(60°-80°)	304.1	3.6	B1/500		G1/500
BVH	(80°-90°)	68.1	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9
2.5°	2549.2	2547.7	2526.1	2511.9	2495.1	2456.2	2417.2	2388.4	2373.7	2317.4	2262.7
5°	2760.0	2753.7	2741.6	2726.4	2704.3	2655.4	2593.9	2540.8	2519.7	2419.9	2319.4
7.5°	2648.6	2658.5	2695.9	2737.9	2782.1	2785.3	2741.6	2678.5	2655.4	2521.9	2374.7
10°	2340.0	2335.8	2382.6	2464.6	2610.2	2754.3	2826.3	2795.2	2771.1	2618.7	2429.9
12.5°	2246.4	2245.4	2253.3	2274.2	2365.8	2563.4	2804.7	2872.0	2863.5	2721.2	2488.7
15°	2274.8	2275.9	2275.3	2277.9	2303.2	2397.3	2684.3	2897.8	2924.1	2822.6	2548.7
17.5°	2365.8	2362.1	2350.5	2337.9	2341.5	2375.2	2554.5	2853.6	2932.5	2913.1	2599.1
20°	2506.1	2506.1	2475.1	2439.8	2416.7	2424.1	2500.3	2777.9	2893.5	2989.8	2637.0
22.5°	2682.2	2684.8	2639.1	2575.0	2522.4	2502.4	2531.3	2721.7	2846.3	3060.8	2670.6
25°	2900.9	2900.4	2833.7	2741.6	2658.5	2610.8	2610.2	2724.3	2831.5	3143.8	2705.9
27.5°	3171.7	3147.0	3069.2	2938.2	2821.0	2748.0	2714.8	2790.5	2862.5	3245.8	2753.2
30°	3477.1	3451.8	3349.9	3181.7	3022.9	2916.1	2861.5	2905.1	2957.1	3375.6	2824.7
32.5°	3779.4	3785.2	3665.3	3475.6	3271.6	3121.2	3040.2	3067.0	3103.3	3534.4	2921.4
35°	4222.0	4221.5	4064.9	3827.8	3585.4	3377.3	3274.7	3288.9	3322.0	3758.3	3057.1
37.5°	4552.2	4546.9	4446.1	4236.2	3963.4	3713.7	3565.4	3567.5	3595.9	4039.6	3235.8
40°	4585.9	4584.8	4584.3	4554.3	4367.7	4132.1	3946.5	3908.2	3919.7	4338.2	3425.6
42.5°	4328.8	4367.2	4477.6	4646.9	4698.9	4575.4	4399.7	4314.1	4288.8	4681.0	3626.5
45°	3962.4	3981.8	4175.3	4555.9	4865.6	4991.7	4859.7	4678.9	4635.8	5014.3	3789.9
47.5°	3792.0	3783.6	3895.6	4310.4	4849.2	5322.9	5332.3	5035.9	4962.8	5301.9	3929.3
50°	3426.7	3415.6	3557.0	3949.2	4671.5	5487.4	5817.6	5424.9	5289.8	5575.3	4055.4
52.5°	2698.5	2688.0	2877.8	3383.0	4274.1	5425.9	6226.6	5902.2	5672.0	5838.6	4173.1
55°	1755.9	1756.9	1937.8	2458.8	3458.7	5067.4	6418.5	6453.7	6195.6	6102.0	4268.4
57.5°	966.8	957.9	1086.7	1406.9	2379.4	4253.1	6258.7	6851.2	6716.6	6328.1	4337.2
58°	859.6	849.0	948.4	1224.4	2133.4	4023.4	6178.2	6876.4	6783.4	6365.4	4347.1
60°	612.4	594.5	579.3	690.3	1229.2	2900.9	5642.0	6712.9	6802.8	6440.1	4337.7
62.5°	516.3	495.7	441.1	436.9	578.8	1418.9	4461.8	5895.5	6147.2	6268.1	4185.3
65°	479.5	459.0	386.9	361.2	392.7	612.4	2759.0	4552.2	4888.7	5670.4	3801.5
67.5°	453.2	429.0	351.7	318.0	324.4	366.4	1170.8	2977.2	3367.2	4421.8	3049.7
70°	429.5	402.7	323.9	284.9	279.7	278.7	457.4	1554.6	1930.4	2893.5	2042.9
72.5°	402.7	376.4	299.1	257.6	246.0	226.1	275.0	642.4	880.6	1418.4	936.3
75°	363.8	342.3	271.8	235.0	215.0	183.5	203.0	308.1	379.6	543.1	434.8
77.5°	320.2	302.8	244.0	216.0	189.2	149.9	155.1	208.7	234.5	306.0	251.9
80°	226.6	232.9	212.9	190.3	166.6	120.9	119.4	153.0	168.3	205.5	169.3
82.5°	156.1	160.9	173.5	150.4	134.6	94.1	87.8	106.2	114.1	124.1	82.0
85°	111.5	108.3	120.4	107.8	98.8	59.9	56.3	67.3	72.0	75.7	39.4
87.5°	67.8	67.3	69.4	55.8	51.6	30.5	27.8	32.0	34.2	33.1	18.9
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°	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9	2245.9
2.5°	2242.2	2216.4	2160.2	2115.0	2066.1	2028.7	1991.4	1970.4	1947.3	1934.1	1932.6
5°	2266.9	2214.4	2094.5	1983.0	1868.4	1765.4	1664.4	1589.8	1528.8	1494.1	1492.0
7.5°	2294.3	2211.7	2026.7	1833.7	1629.8	1426.8	1247.5	1120.8	1039.3	1001.5	998.9
10°	2315.2	2200.7	1944.1	1643.9	1320.6	1052.5	889.6	814.9	790.1	783.9	782.8
12.5°	2340.5	2192.8	1840.0	1400.5	1009.3	801.2	751.8	747.1	752.3	755.4	756.0
15°	2364.1	2177.6	1699.6	1130.9	790.1	716.1	717.1	727.1	737.5	742.4	742.9
17.5°	2375.2	2140.2	1515.1	891.1	691.3	677.6	689.8	702.9	712.4	716.1	716.1
20°	2375.2	2080.3	1301.2	721.8	639.8	642.4	657.1	667.2	669.2	666.0	664.5
22.5°	2365.2	2006.1	1092.9	629.8	597.7	607.7	619.3	612.4	587.8	568.9	565.2
25°	2356.3	1918.3	892.6	573.6	561.0	574.1	569.4	522.5	484.7	465.2	462.1
27.5°	2341.5	1812.2	725.5	527.3	525.2	535.7	489.0	443.8	424.8	414.3	412.1
30°	2337.9	1697.0	607.2	486.3	490.0	475.3	421.7	406.9	402.7	396.9	394.2
32.5°	2349.9	1581.9	533.1	452.7	456.3	408.0	387.5	389.5	389.0	381.7	379.0
35°	2383.1	1469.9	485.8	422.2	411.6	365.4	368.0	374.3	374.3	365.4	362.2
37.5°	2441.0	1365.8	455.8	396.4	360.1	343.3	350.2	358.5	358.5	352.2	349.6
40°	2502.4	1264.4	433.2	375.9	327.5	328.1	334.9	341.2	343.8	344.8	342.8
42.5°	2558.2	1159.2	409.0	353.8	312.8	316.5	319.7	324.4	335.4	342.8	341.8
45°	2590.7	1053.5	382.7	326.4	302.8	304.4	303.3	311.8	324.9	335.9	335.9
47.5°	2620.7	966.8	361.2	299.1	292.9	292.9	289.7	298.1	310.2	323.4	324.4
50°	2649.1	910.5	346.0	278.1	280.2	278.7	277.6	285.5	301.8	317.5	320.2
52.5°	2678.0	891.6	332.3	262.9	267.1	264.9	266.0	277.0	295.4	311.8	314.4
55°	2718.5	903.7	318.0	252.4	254.4	253.9	258.1	270.8	287.0	303.3	304.4
57.5°	2768.4	947.9	306.0	244.5	242.3	245.5	252.4	264.4	280.2	299.6	301.3
58°	2778.4	958.4	303.8	242.3	239.7	244.5	251.3	262.9	279.2	299.6	301.3
60°	2793.7	995.7	298.6	238.1	230.8	239.2	247.7	259.2	277.0	302.3	305.5
62.5°	2720.0	1003.1	297.1	233.4	221.4	231.8	241.8	255.0	275.0	311.2	318.0
65°	2465.1	927.4	286.0	225.6	213.5	226.1	236.6	251.9	281.2	338.1	341.2
67.5°	1978.8	770.2	259.2	213.5	204.5	219.2	232.4	251.9	283.9	342.3	344.3
70°	1360.5	578.8	225.6	200.3	194.0	210.8	230.8	257.6	275.0	323.9	317.5
72.5°	710.7	402.7	197.6	185.1	181.4	203.5	246.0	251.9	264.4	302.3	295.9
75°	358.0	273.9	174.0	167.7	167.2	200.8	275.5	242.3	253.4	284.4	298.1
77.5°	211.3	214.5	155.1	151.4	154.1	196.1	276.0	232.9	240.8	261.8	276.5
80°	144.5	177.2	140.3	139.3	141.4	180.3	254.4	221.4	226.1	247.7	263.4
82.5°	81.5	97.8	123.1	129.8	128.8	147.7	219.7	201.3	207.1	292.9	309.6
85°	39.4	58.9	103.0	121.4	109.9	98.3	178.7	178.7	180.3	209.8	212.4
87.5°	14.7	26.3	69.4	96.2	76.7	58.9	121.4	126.7	140.9	145.1	148.2
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)