

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: INVUE

Report Number: P368696

Luminaire Tested: **MSA-SA4D-830-U-SL3**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368696  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4D-830-U-SL3  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20512 lumens  
Efficiency: N/A  
Efficacy: 79.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G4

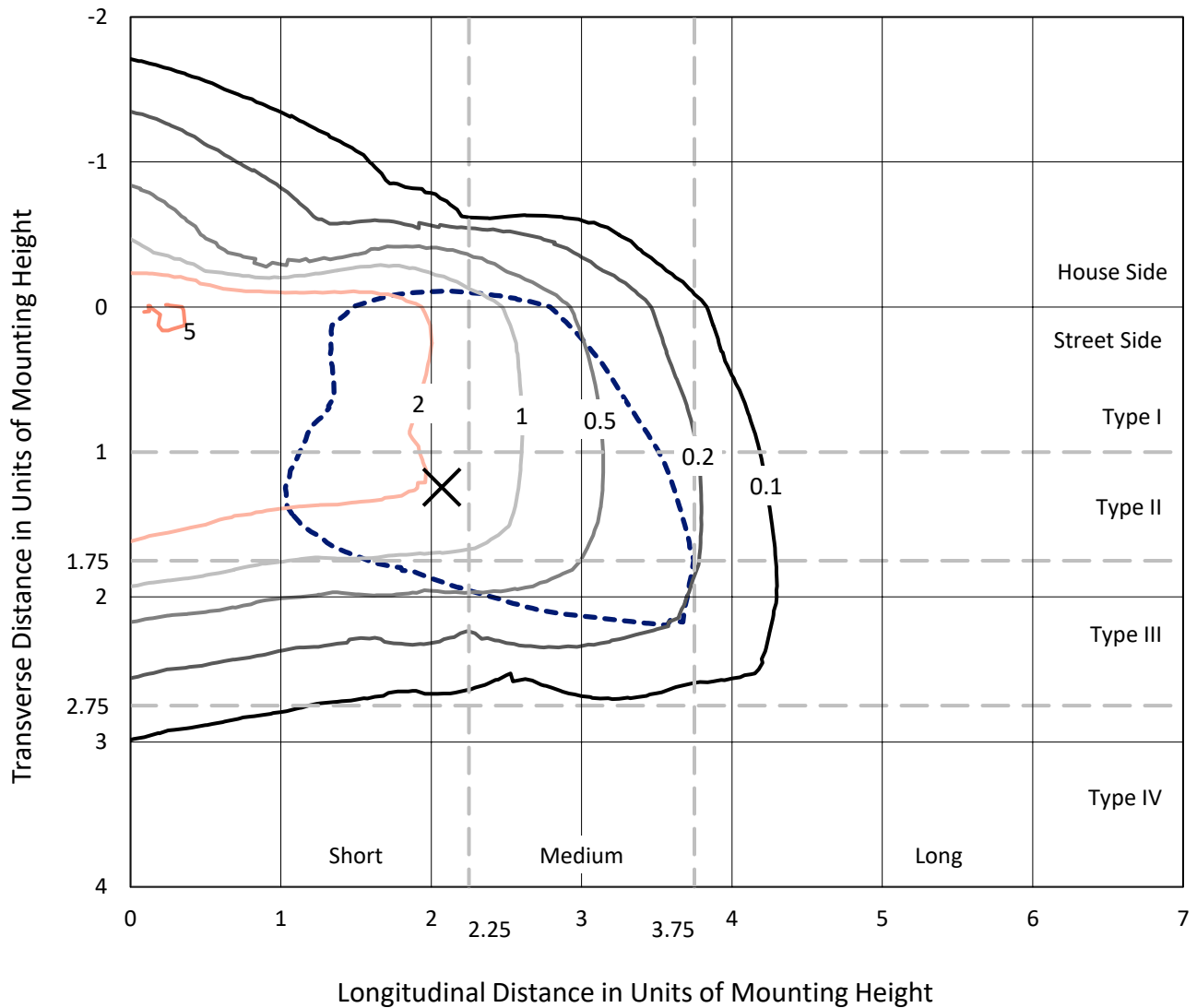
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

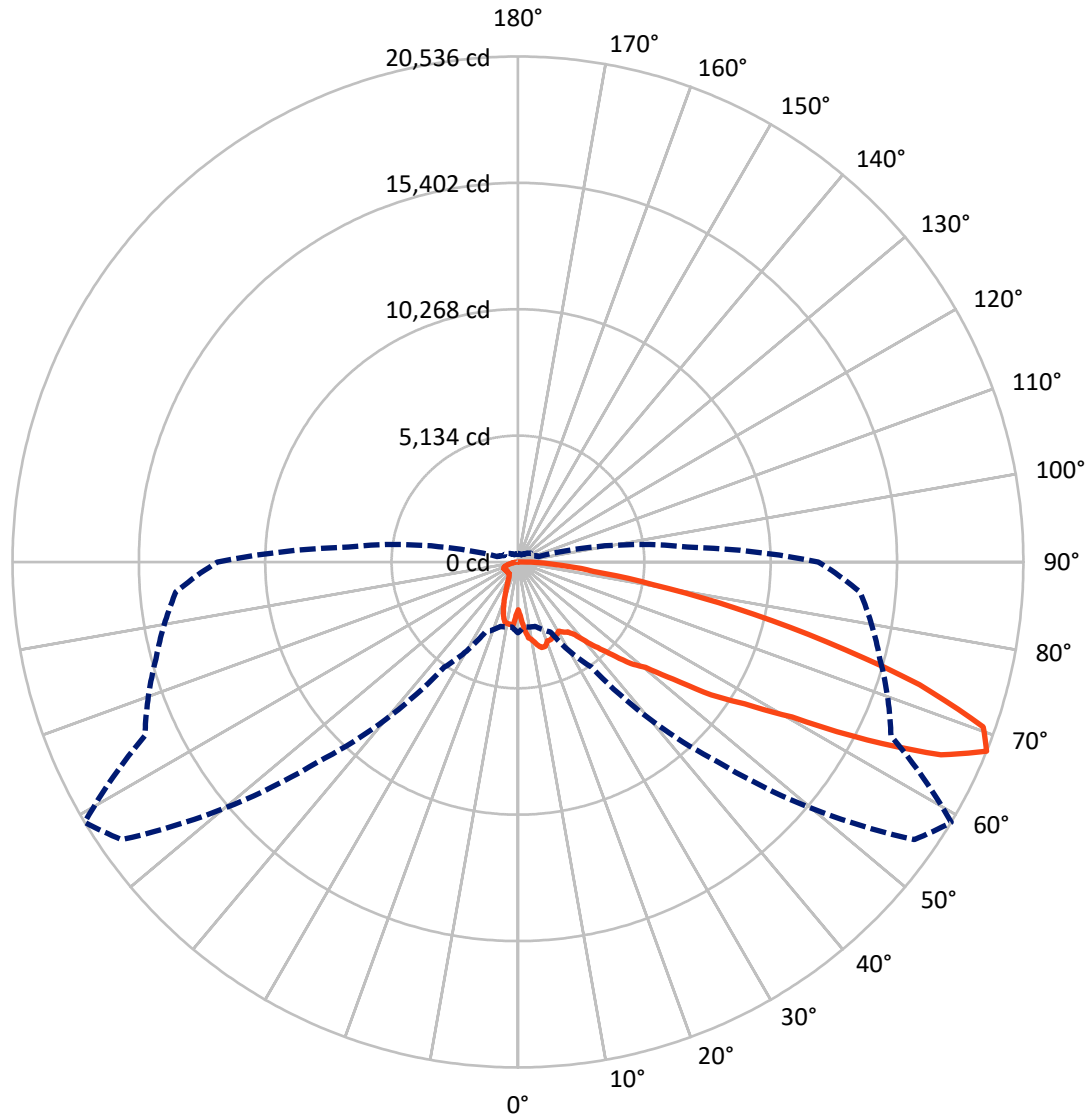
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3087.5	0.0	3087.5
	% Fixture	15.1	0.0	15.1
<b>Street Side</b>	Lumens	17424.5	0.0	17424.5
	% Fixture	84.9	0.0	84.9
<b>Total</b>	Lumens	20512.0	0.0	20512.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	253.5	1.2
10°-20°	750.2	3.7
20°-30°	1071.3	5.2
30°-40°	1578.6	7.7
40°-50°	2667.1	13.0
50°-60°	4641.3	22.6
60°-70°	5914.4	28.8
70°-80°	3131.8	15.3
80°-90°	503.8	2.5
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°	20512.0	100.0
0°-180°	20512.0	100.0

**Coefficient of Utilization**



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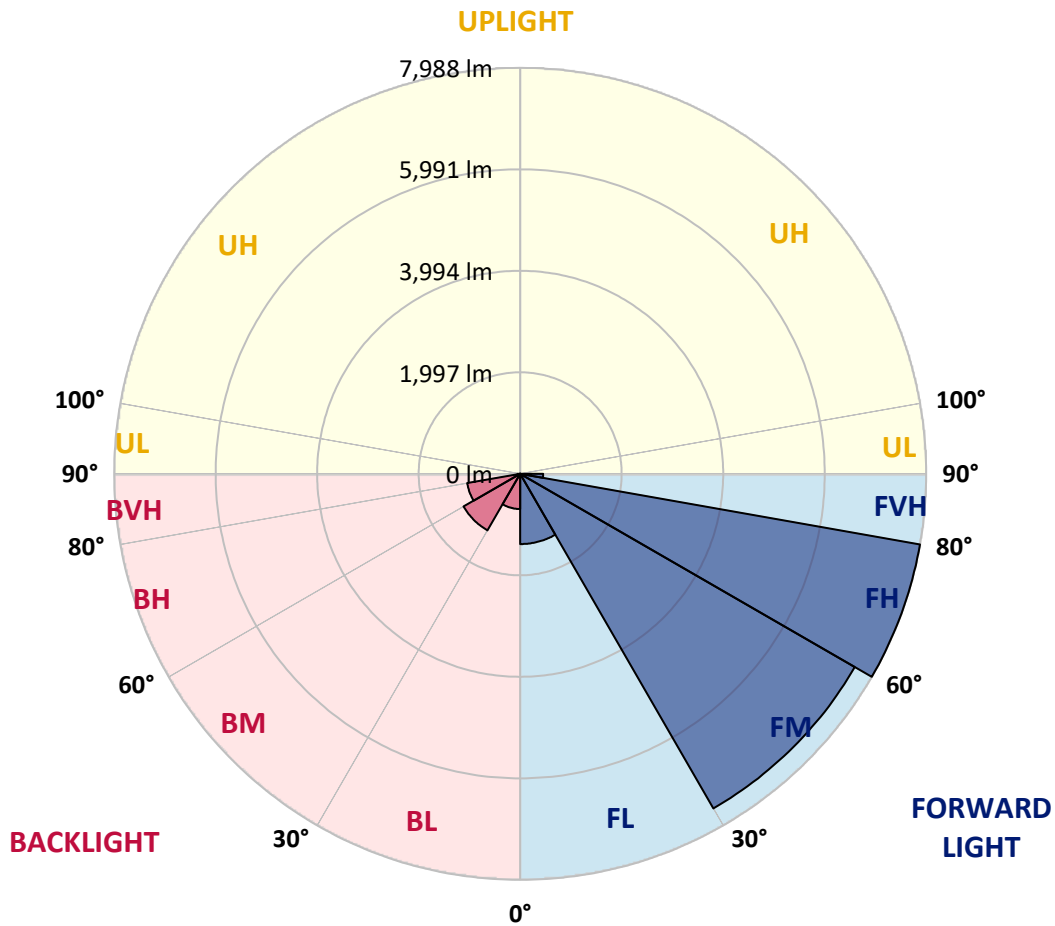
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1382.6	6.7			
FM (30°-60°)	7601.5	37.1			
FH (60°-80°)	7988.0	38.9			G4/12000
FVH (80°-90°)	452.5	2.2			G3/500
BL (0°-30°)	692.4	3.4	B2/1000		
BM (30°-60°)	1285.6	6.3	B2/2500		
BH (60°-80°)	1058.2	5.2	B3/2500		G3/2500
BVH (80°-90°)	51.3	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0
2.5°	2423.4	2310.4	2190.4	2224.3	2293.0	2324.3	2290.4	2257.4	2214.8	2164.4	2336.5
5°	2938.8	2771.1	2746.7	2745.9	2721.5	2624.2	2749.4	2740.7	2791.1	2843.2	2977.1
7.5°	3085.7	3023.2	2955.4	2987.5	2865.0	2859.7	3054.5	3110.1	3207.4	3175.3	3355.2
10°	3010.1	2939.7	2975.4	2962.3	2973.6	3102.3	3221.3	3224.8	3329.1	3431.7	3316.1
12.5°	2877.1	2882.3	3024.0	3018.8	3201.3	3440.4	3476.0	3448.2	3618.6	3549.0	3648.1
15°	2971.9	3035.3	2999.7	3030.1	3102.3	3406.5	3505.6	3606.4	3768.1	3830.7	3731.6
17.5°	3123.1	3157.0	2997.1	2980.6	3129.2	3273.5	3519.5	3605.5	3630.7	4076.7	3936.7
20°	3058.8	3127.5	2971.0	2770.2	3017.1	3208.3	3450.8	3424.7	3547.3	4095.8	3979.3
22.5°	3241.3	3127.5	2928.4	2785.9	2872.8	3048.4	3254.4	3425.6	3570.8	3983.7	4041.0
25°	3276.1	3222.2	3036.2	2894.5	2865.0	2927.5	3221.3	3333.5	3578.6	4136.6	4008.0
27.5°	3488.2	3407.4	3028.4	3032.7	2885.8	2775.4	3117.0	3352.6	3667.3	4041.9	4088.8
30°	3751.6	3689.9	3214.4	3231.8	3028.4	2825.0	3188.3	3259.6	3718.5	4189.7	4190.5
32.5°	3948.9	4057.5	3580.3	3343.9	3271.8	3119.6	3078.8	3399.5	3658.6	4457.4	4364.4
35°	4304.4	4388.7	3862.0	3672.5	3428.2	3257.0	3376.1	3491.7	3908.0	4809.4	4622.5
37.5°	4962.4	4865.0	4385.2	4087.1	3995.8	3749.0	3815.0	3734.2	4179.2	5204.9	5128.4
40°	5343.1	5258.8	4753.8	4588.6	4227.0	4258.3	4175.7	4234.9	4541.7	5625.6	5601.3
42.5°	5718.6	5605.6	5178.8	5064.1	4703.4	4550.4	4565.2	4756.4	5100.6	6305.3	6224.5
45°	6089.8	5800.3	5613.4	5643.9	5470.0	5156.2	5178.0	5357.9	5710.8	7082.4	6896.4
47.5°	6374.0	6135.0	5988.9	5951.6	5865.5	6285.4	6097.6	6170.6	6326.2	7774.3	7703.9
50°	6912.1	6633.0	6442.7	6388.8	6680.9	7265.0	6882.5	6725.2	7056.4	8668.8	8632.3
52.5°	7773.5	7425.8	7108.5	7105.0	7527.5	7906.5	8175.9	7904.7	8026.4	9584.9	9689.2
55°	8525.3	8122.9	7837.8	7995.1	8596.6	8828.7	9744.0	9531.9	9429.3	10509.8	10807.9
57.5°	8806.1	8335.9	8149.8	8381.9	9268.5	10461.1	11428.5	10870.5	10770.5	11556.3	12181.3
60°	8189.8	7692.6	7703.9	8141.1	9677.1	11659.8	13270.4	12796.7	12210.9	12859.3	13469.5
62.5°	6434.0	5984.6	6277.5	6942.5	9334.6	12824.5	15739.0	15939.0	13856.3	13939.7	14184.0
65°	4373.1	4061.9	4326.1	4977.2	7570.9	13459.9	18090.3	18891.7	15354.8	14647.3	14492.6
67.5°	2878.0	2658.1	2709.4	3142.2	5211.9	11474.6	19662.7	20536.3	16724.7	15227.9	13948.4
70°	2228.7	2051.4	2028.8	2255.6	3091.0	7971.6	18730.9	20059.1	17559.2	14683.8	12157.8
72.5°	1748.9	1614.1	1626.3	1844.5	2393.8	4422.6	14494.3	17057.6	16302.3	12663.7	9340.7
75°	1363.8	1253.4	1315.1	1564.6	2213.9	2748.5	10000.4	12946.2	12603.7	9377.2	5327.5
77.5°	990.0	918.8	1006.6	1332.5	2080.9	2358.2	6225.4	9032.1	8074.2	4814.6	1828.0
80°	649.3	609.3	681.5	1086.5	1887.1	2269.5	3847.2	5534.3	3989.7	1352.5	691.9
82.5°	382.5	365.1	425.1	735.4	1516.8	2127.0	2565.9	3075.3	1632.4	571.9	367.7
85°	200.8	187.8	252.1	422.4	1045.7	1941.8	2020.1	1841.0	788.4	248.6	175.6
87.5°	66.9	65.2	106.9	163.4	395.5	1030.9	1077.8	874.4	325.1	72.1	38.2
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0	1941.0
2.5°	2359.9	2325.2	2125.3	2153.1	2179.1	2166.1	2158.3	2067.9	2059.2	2187.8	2177.4
5°	2973.6	2829.3	2659.0	2651.1	2539.0	2424.3	2446.9	2410.4	2420.8	2473.8	2479.0
7.5°	3297.8	3117.9	2955.4	2691.1	2466.9	2285.2	2313.9	2305.2	2281.7	2401.7	2433.8
10°	3291.7	3131.8	2948.4	2628.5	2477.3	2329.5	2152.2	1984.4	1934.9	1875.8	1881.0
12.5°	3509.1	3367.4	2967.5	2641.6	2436.4	2181.8	1849.7	1666.3	1490.7	1487.2	1442.9
15°	3576.9	3472.5	3008.4	2566.8	2150.5	1785.4	1442.0	1243.0	1116.1	1090.9	1053.5
17.5°	3748.1	3584.7	2884.1	2325.2	1818.4	1396.0	1083.9	944.8	934.4	951.8	932.7
20°	3759.4	3494.3	2659.8	1967.9	1461.2	1057.8	884.0	814.5	851.8	894.4	892.7
22.5°	3749.8	3380.4	2466.0	1663.7	1097.8	850.1	774.5	758.8	793.6	857.1	864.9
25°	3652.5	3343.0	2223.5	1366.4	891.0	728.4	707.5	717.1	760.6	835.3	835.3
27.5°	3754.2	3190.9	1919.2	1111.7	749.3	648.4	663.2	687.6	719.7	804.9	820.5
30°	3721.1	3241.3	1674.1	895.3	660.6	592.8	625.8	650.2	686.7	775.3	783.2
32.5°	3809.8	3106.6	1468.1	752.7	602.4	571.1	578.9	611.9	659.7	729.3	743.2
35°	3945.4	3156.2	1231.7	677.1	573.7	545.9	560.6	586.7	634.5	702.3	713.6
37.5°	4378.3	3153.5	1068.3	635.4	568.5	540.7	547.6	565.9	621.5	683.2	709.3
40°	4656.4	3334.3	919.6	625.8	562.4	538.0	532.0	552.0	596.3	669.3	687.6
42.5°	5178.8	3444.7	855.3	622.4	561.5	523.3	517.2	540.7	584.1	651.9	679.7
45°	5730.8	3602.1	804.0	620.6	558.9	520.7	502.4	532.0	568.5	633.7	665.8
47.5°	6380.1	3935.0	775.3	614.5	553.7	524.1	497.2	512.0	552.8	618.0	650.2
50°	7230.2	4375.7	781.4	605.8	561.5	525.0	489.4	496.3	533.7	597.2	630.2
52.5°	8263.7	5058.0	820.5	609.3	566.7	520.7	485.9	482.4	514.6	570.2	603.2
55°	9509.3	6026.3	937.9	625.8	566.7	519.8	480.7	465.0	489.4	534.6	566.7
57.5°	11012.2	7147.6	1167.4	633.7	562.4	514.6	469.4	441.6	456.3	493.7	524.1
60°	12303.0	8052.5	1403.8	638.9	571.1	502.4	446.8	412.0	421.6	450.3	477.2
62.5°	12961.0	8306.3	1475.1	634.5	594.5	494.6	419.8	380.7	381.6	405.9	430.3
65°	13084.4	7968.2	1189.1	630.2	625.0	493.7	400.7	353.8	347.7	365.1	385.9
67.5°	12204.8	6916.4	857.9	620.6	628.4	488.5	387.7	332.0	316.4	328.6	346.0
70°	10362.9	5570.0	720.6	601.5	586.7	462.4	365.1	309.4	288.6	297.3	310.3
72.5°	7725.7	4121.0	628.4	560.6	511.1	395.5	330.3	284.2	262.5	268.6	278.2
75°	4292.2	2198.3	525.9	487.6	417.2	319.9	281.6	252.1	233.0	235.6	246.0
77.5°	1425.5	811.0	385.9	386.8	315.5	246.9	232.1	215.6	200.8	201.7	210.4
80°	645.8	448.5	276.4	278.2	219.9	179.1	178.2	173.0	163.4	160.8	166.9
82.5°	374.6	272.1	189.5	180.8	141.7	116.5	129.5	126.9	124.3	114.7	116.5
85°	184.3	146.0	99.1	93.9	78.2	58.2	69.5	72.1	69.5	59.1	58.2
87.5°	45.2	47.8	24.3	22.6	13.0	6.1	10.4	10.4	13.0	8.7	4.3
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)