

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: P368584

Luminaire Tested: **MSA-SA4D-727-U-SL2**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368584  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4D-727-U-SL2  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 21856 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G4

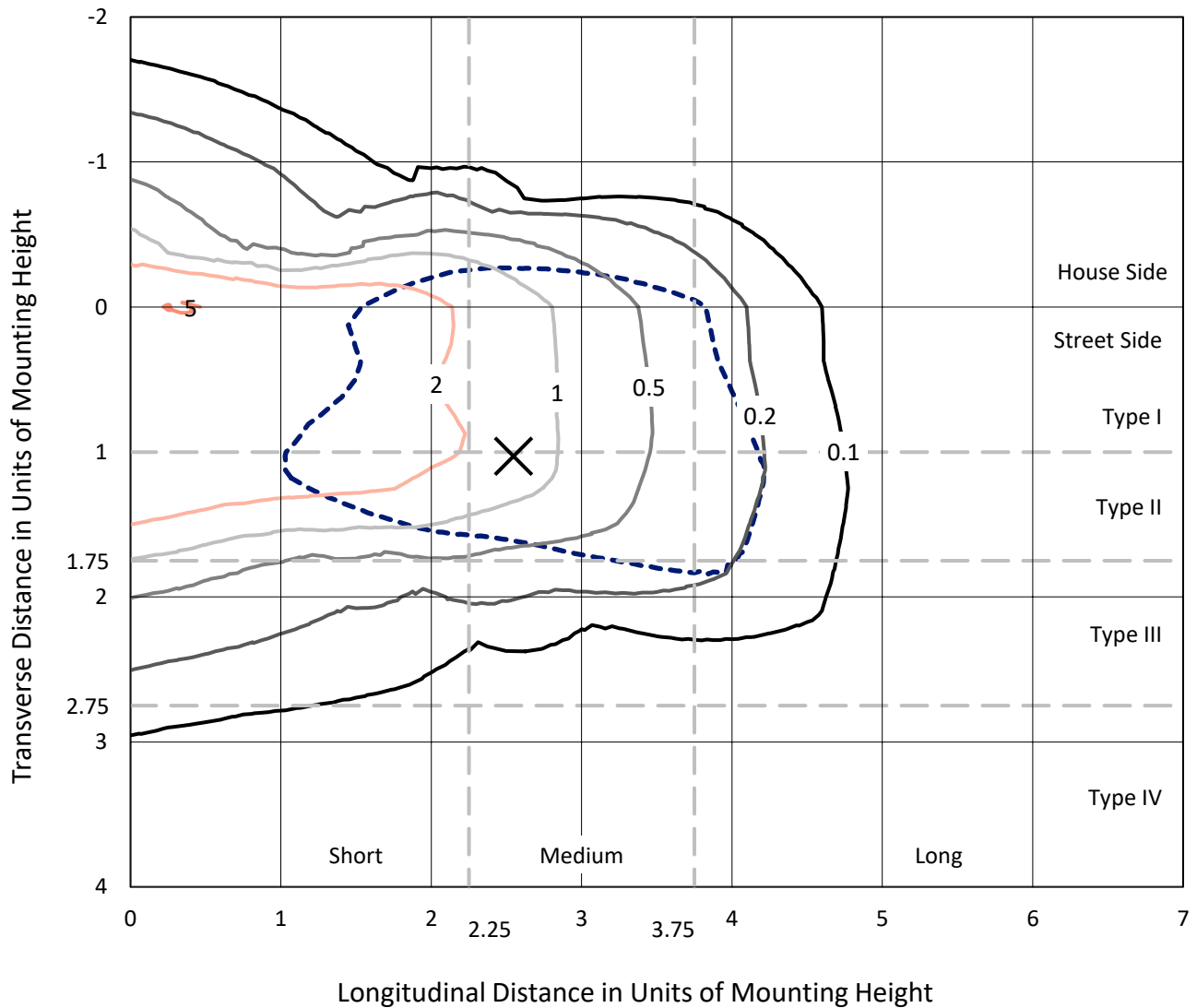
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

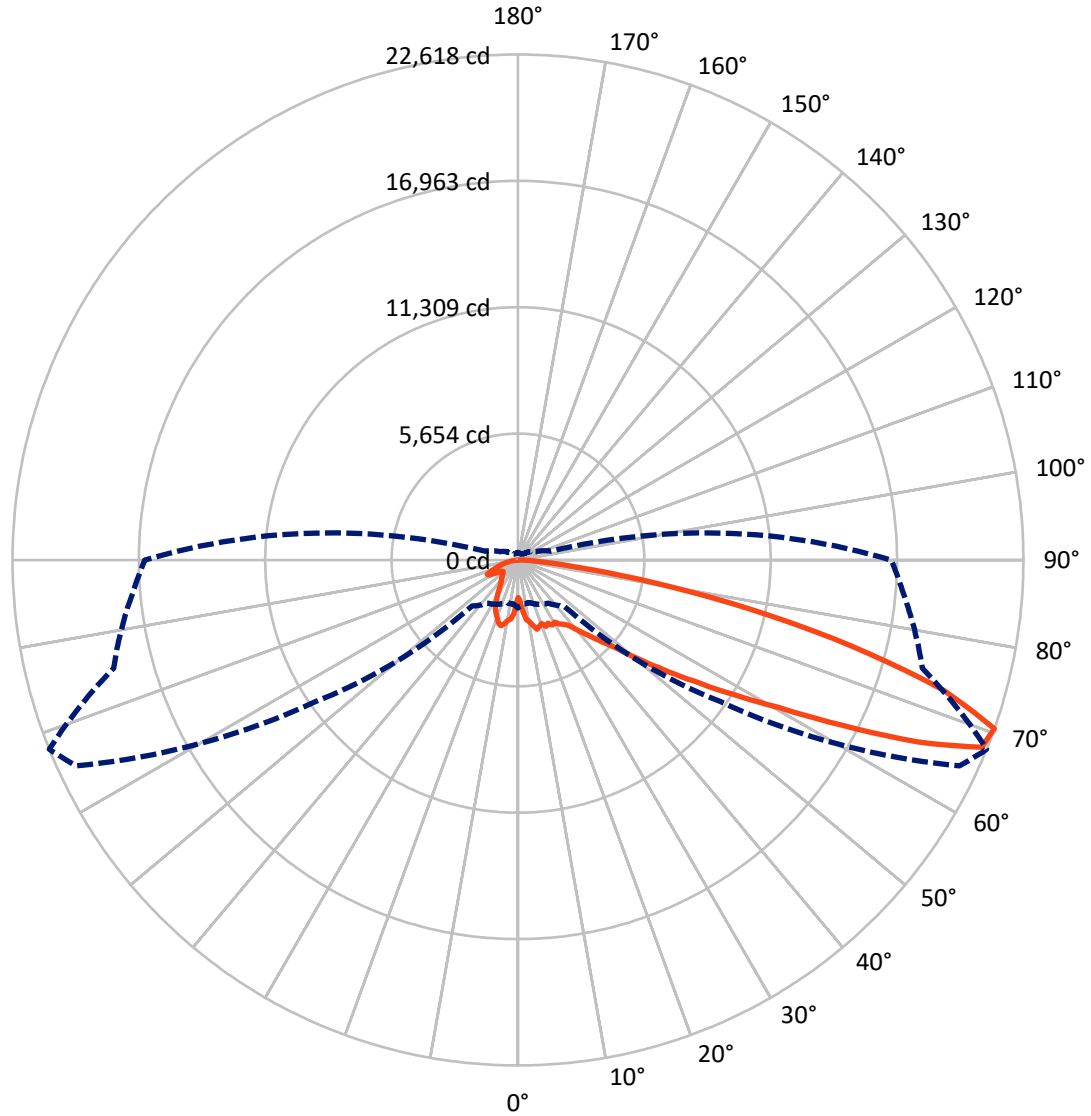
× Max cd  
 - - - 1/2 Max cd



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

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### Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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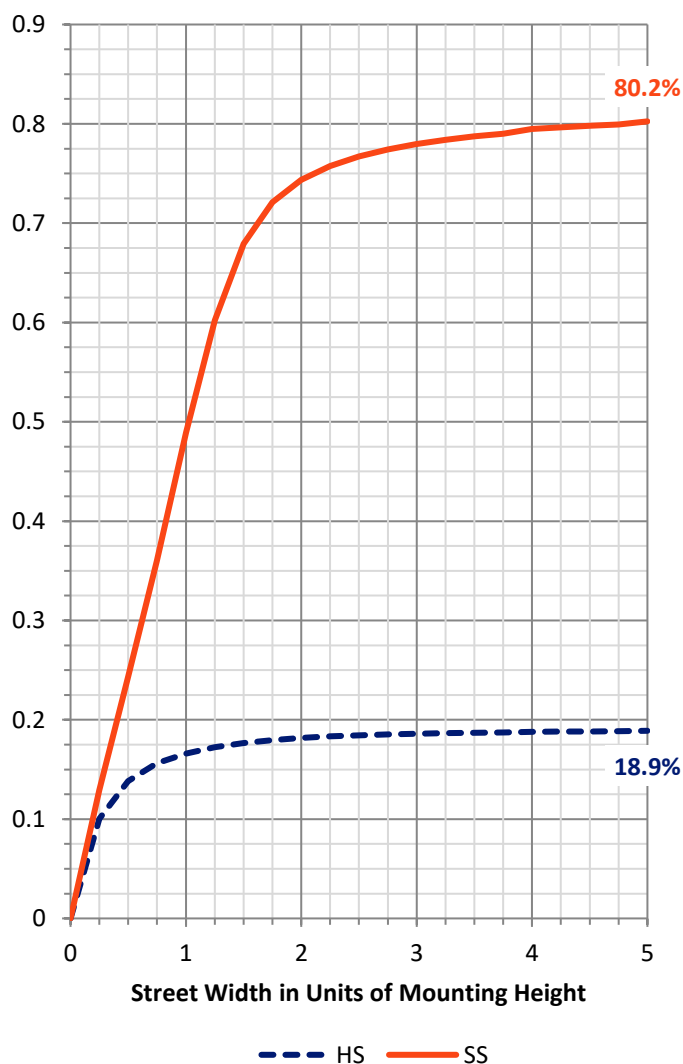
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4172.8	0.0	4172.8
	% Fixture	19.1	0.0	19.1
<b>Street Side</b>	Lumens	17683.2	0.0	17683.2
	% Fixture	80.9	0.0	80.9
<b>Total</b>	Lumens	21856.0	0.0	21856.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	223.8	1.0
10°-20°	729.5	3.3
20°-30°	1109.6	5.1
30°-40°	1694.9	7.8
40°-50°	2914.3	13.3
50°-60°	4823.8	22.1
60°-70°	5947.1	27.2
70°-80°	3820.3	17.5
80°-90°	592.6	2.7
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°	21856.0	100.0
0°-180°	21856.0	100.0

**Coefficient of Utilization**



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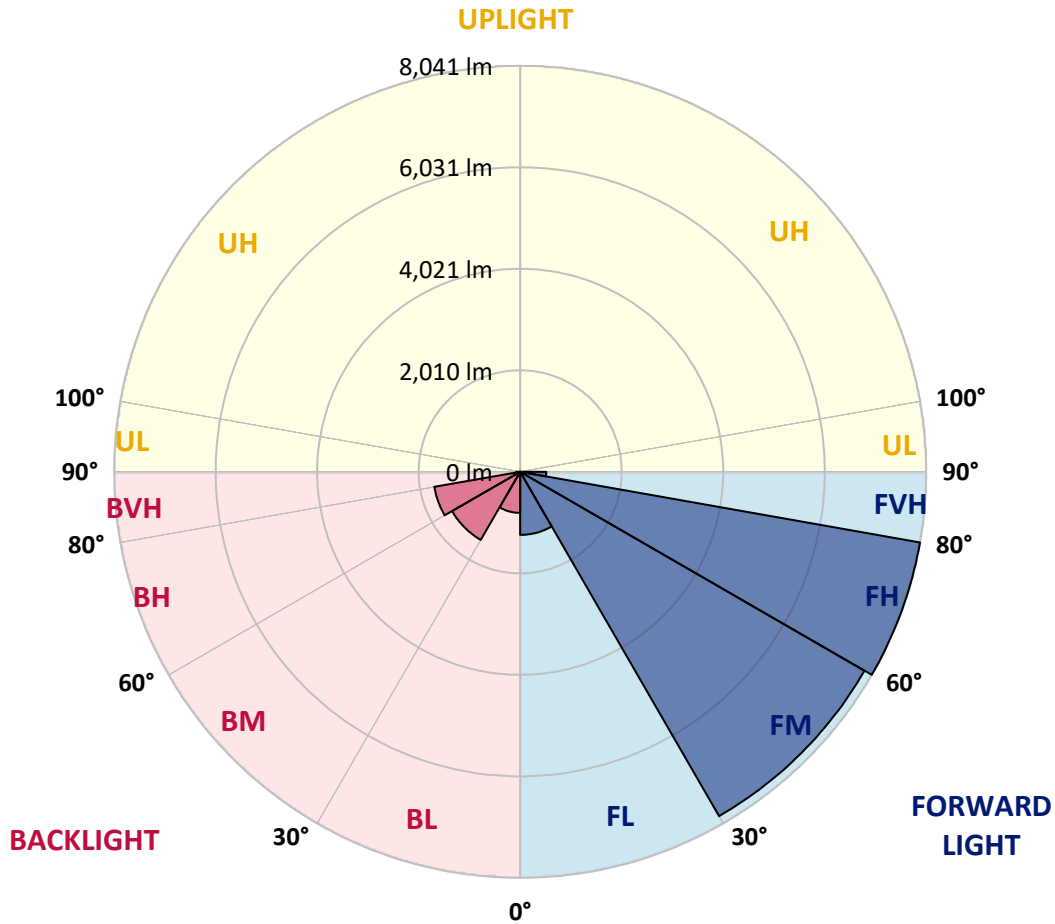
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1249.8	5.7			
FM (30°-60°)	7875.6	36.0			
FH (60°-80°)	8041.3	36.8			G4/12000
FVH (80°-90°)	516.5	2.4			G4/750
BL (0°-30°)	813.1	3.7	B2/1000		
BM (30°-60°)	1557.5	7.1	B2/2500		
BH (60°-80°)	1726.1	7.9	B3/2500		G3/2500
BVH (80°-90°)	76.1	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 Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8
2.5°	1925.5	1847.7	1769.1	1807.5	1868.8	1922.8	1911.8	1918.2	1844.1	1834.0	2028.9
5°	2268.5	2135.0	2132.2	2134.1	2139.5	2077.3	2229.2	2307.9	2325.2	2405.7	2596.9
7.5°	2387.4	2333.5	2278.6	2306.0	2236.5	2242.9	2429.5	2634.4	2682.9	2741.4	3003.0
10°	2362.7	2311.5	2328.0	2332.5	2345.4	2448.7	2568.5	2765.2	2806.4	2993.0	3060.7
12.5°	2366.4	2357.2	2434.1	2436.8	2574.0	2759.7	2807.3	2988.4	3004.9	3142.1	3424.7
15°	2491.7	2554.8	2511.8	2534.7	2561.2	2783.5	2852.1	3111.9	3210.7	3387.2	3599.4
17.5°	2735.9	2754.2	2625.3	2591.4	2678.3	2746.0	2902.4	3014.9	3118.3	3611.3	3904.0
20°	2792.7	2842.1	2688.4	2513.7	2697.5	2791.7	2900.6	2951.8	3032.3	3644.3	4059.6
22.5°	3036.0	2933.5	2747.8	2596.0	2656.4	2747.8	2826.5	3019.5	3230.8	3550.0	4215.1
25°	3174.1	3114.6	2949.1	2786.3	2735.0	2737.8	2889.6	3062.5	3135.7	3688.2	4246.2
27.5°	3508.0	3412.8	3040.5	3009.4	2816.4	2666.4	2899.7	3168.6	3296.7	3580.2	4398.0
30°	3926.0	3853.7	3365.3	3324.1	3029.6	2768.0	3027.7	3247.3	3229.0	3650.7	4503.2
32.5°	4264.4	4385.2	3892.2	3567.4	3358.0	3107.3	2987.5	3233.6	3415.6	3814.4	4681.6
35°	4747.4	4860.9	4302.9	4083.3	3628.7	3264.7	3268.3	3422.0	3534.5	4005.6	4881.0
37.5°	5583.5	5483.8	5034.6	4688.0	4397.1	3853.7	3690.9	3636.9	3727.5	4239.8	5271.6
40°	6186.3	6102.1	5573.4	5375.8	4809.6	4494.0	4047.7	3996.4	4156.5	4481.2	5590.8
42.5°	6900.7	6750.7	6258.6	6095.7	5503.9	4934.9	4484.9	4514.2	4591.9	4936.8	6022.6
45°	7627.9	7263.8	6984.8	6972.0	6576.9	5791.1	5186.5	5162.7	5165.5	5607.3	6507.4
47.5°	8205.1	7877.6	7558.4	7406.5	7207.1	7272.1	6205.5	5926.5	5842.4	6282.3	7234.6
50°	8595.7	8218.8	7857.5	7821.8	8354.2	8704.5	7162.3	6864.1	6916.2	7248.3	8204.2
52.5°	8603.9	8156.6	7779.7	8029.5	9283.5	9784.8	8810.6	7977.3	8143.8	8369.7	9469.2
55°	8005.7	7541.9	7296.8	7865.7	9646.7	11066.3	11126.7	9761.0	9568.9	9652.2	10981.3
57.5°	6744.3	6275.9	6133.2	6814.7	8957.9	12302.1	13924.0	11892.3	11328.9	10981.3	12530.8
60°	5076.7	4671.5	4582.8	5017.3	7426.7	11939.0	16188.8	14545.0	13397.1	12465.9	14084.9
62.5°	3807.1	3516.2	3382.7	3444.9	5138.9	10758.1	17676.2	17896.6	16271.1	14086.8	15603.4
65°	3093.6	2858.5	2739.6	2659.1	3196.1	8318.5	17407.2	20717.6	19628.2	15789.1	16785.2
67.5°	2584.1	2375.5	2320.7	2399.3	2526.5	4826.1	15303.4	22295.5	22369.6	17468.5	17475.8
70°	2145.0	1990.4	1970.3	2193.5	2360.9	2912.5	11053.5	21799.7	22617.5	18728.1	17313.9
72.5°	1657.5	1574.2	1571.5	1921.8	2345.4	2482.6	6582.4	18832.4	19931.0	18325.6	15729.6
75°	1149.8	1092.2	1136.1	1579.7	2291.4	2518.2	3756.8	14668.5	15490.9	15594.2	12600.3
77.5°	791.2	742.8	790.3	1142.5	2046.2	2578.6	2628.0	10606.2	10697.7	10457.1	7217.2
80°	550.7	516.8	553.4	808.6	1592.5	2552.1	2237.4	6677.5	6126.8	4666.9	2310.6
82.5°	341.2	331.1	371.4	576.3	1121.5	2321.6	2120.3	3445.8	2630.8	1287.9	825.1
85°	179.3	164.7	215.9	376.0	701.6	1822.1	1986.8	1572.4	1015.3	457.4	331.1
87.5°	53.1	47.6	83.2	151.8	297.3	816.8	1137.0	666.8	378.7	134.5	103.4
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°	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8	1675.8
2.5°	2042.6	2032.5	1897.1	1914.5	1943.8	1951.1	1950.2	1900.8	1848.7	1994.1	1989.5
5°	2601.5	2510.9	2443.2	2428.6	2345.4	2262.1	2291.4	2281.3	2268.5	2334.4	2342.6
7.5°	3004.0	2878.6	2800.0	2597.8	2405.7	2239.2	2292.3	2308.8	2275.8	2394.8	2430.4
10°	3110.1	3011.3	2926.2	2666.4	2560.3	2463.4	2319.7	2156.0	2134.1	2065.4	2073.7
12.5°	3383.6	3369.8	3079.9	2851.2	2713.1	2520.1	2210.0	2011.5	1841.3	1849.6	1800.2
15°	3599.4	3606.8	3258.3	2938.1	2567.6	2273.1	1908.1	1661.1	1486.4	1451.7	1416.0
17.5°	3889.4	3874.8	3272.9	2833.8	2364.6	1932.8	1485.5	1240.4	1211.1	1231.2	1200.1
20°	4015.6	3886.7	3179.6	2575.0	2047.2	1468.1	1122.4	992.5	1049.2	1129.7	1131.5
22.5°	4129.1	3908.6	3131.1	2366.4	1624.6	1067.5	901.0	877.2	944.0	1052.8	1062.0
25°	4124.5	4010.2	3044.2	2156.0	1259.6	833.3	783.0	800.4	880.0	993.4	999.8
27.5°	4332.1	3932.4	2818.3	1879.8	948.6	713.5	726.3	758.3	795.8	903.7	924.8
30°	4330.3	4076.9	2704.8	1544.1	762.0	654.0	687.0	714.4	745.5	844.3	856.2
32.5°	4432.8	3982.7	2636.2	1201.0	683.3	639.4	647.6	675.1	719.9	786.7	794.9
35°	4556.2	4089.7	2416.7	954.1	654.0	626.6	633.0	648.5	689.7	751.0	759.2
37.5°	4952.3	4109.9	2329.8	804.0	652.2	621.1	620.2	628.4	675.1	730.9	755.6
40°	5106.9	4293.7	2076.4	751.0	645.8	621.1	608.3	612.9	651.3	722.6	741.8
42.5°	5477.4	4355.0	1888.9	732.7	645.8	610.1	590.0	597.3	642.1	705.3	735.4
45°	5858.8	4441.9	1665.7	729.0	644.9	609.2	570.8	587.3	623.8	676.9	709.8
47.5°	6402.2	4754.7	1442.5	718.1	637.6	613.8	566.2	565.3	597.3	643.1	674.2
50°	7288.5	5243.2	1269.6	704.3	638.5	610.1	557.1	544.3	565.3	605.5	635.7
52.5°	8522.5	6075.6	1201.9	697.0	631.2	595.5	541.5	521.4	533.3	565.3	594.6
55°	9955.0	7199.8	1268.7	697.0	616.5	572.6	519.6	495.8	502.2	524.1	552.5
57.5°	11628.9	8596.6	1591.6	687.0	598.2	545.2	493.0	465.6	467.4	486.6	512.2
60°	13376.9	10157.1	2315.2	678.7	585.4	515.0	461.9	433.6	430.8	449.1	472.0
62.5°	15127.7	11596.9	3076.2	697.9	581.8	489.4	429.0	400.6	399.7	416.2	435.4
65°	16519.9	12581.1	3265.6	775.7	605.5	460.1	395.2	368.6	366.8	380.5	401.6
67.5°	17203.2	12723.8	2480.7	872.6	655.9	432.7	362.2	337.5	335.7	350.3	368.6
70°	16697.4	11748.7	1531.3	882.7	653.1	400.6	328.4	307.3	303.7	319.2	333.0
72.5°	14825.9	10276.9	1163.5	781.2	565.3	354.9	294.5	276.2	270.8	284.5	297.3
75°	11899.7	8159.4	932.1	630.2	445.5	299.1	260.7	243.3	236.9	249.7	260.7
77.5°	6931.8	4590.1	681.5	492.1	336.6	244.2	222.3	206.7	199.4	213.1	221.4
80°	2253.9	1529.4	428.1	353.1	246.1	191.2	180.2	169.2	161.9	171.1	173.8
82.5°	809.5	569.0	236.9	216.8	163.7	137.2	136.3	129.9	120.7	124.4	124.4
85°	358.6	259.8	140.9	116.2	97.9	73.2	86.0	81.4	72.3	70.4	67.7
87.5°	100.6	86.0	51.2	39.3	32.0	11.9	27.4	24.7	20.1	18.3	12.8
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)