

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: P368694

Luminaire Tested: **MSA-SA4D-830-U-SL2**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368694  
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-830-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: 20767 lumens  
Efficiency: N/A  
Efficacy: 80.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G4

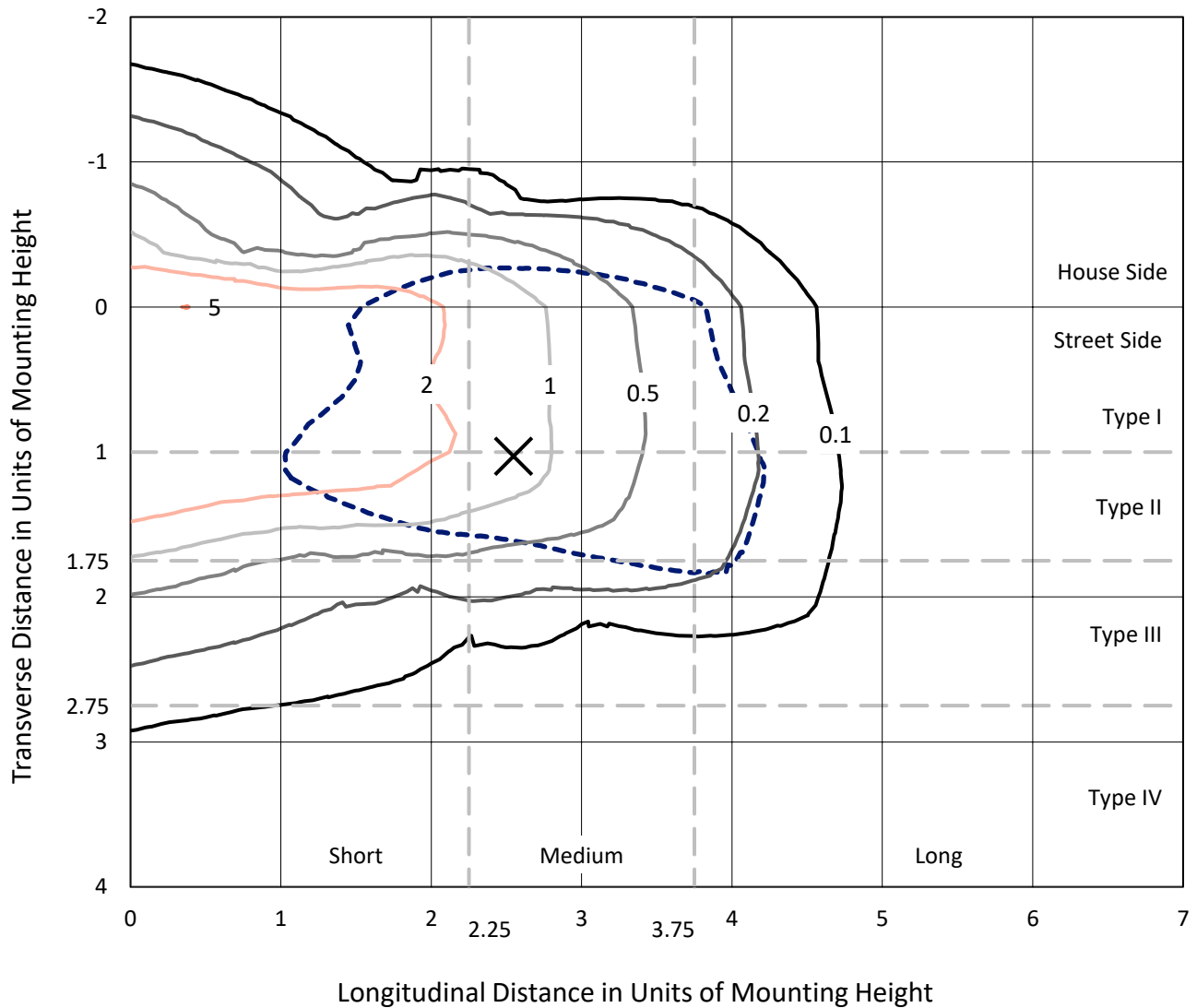
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

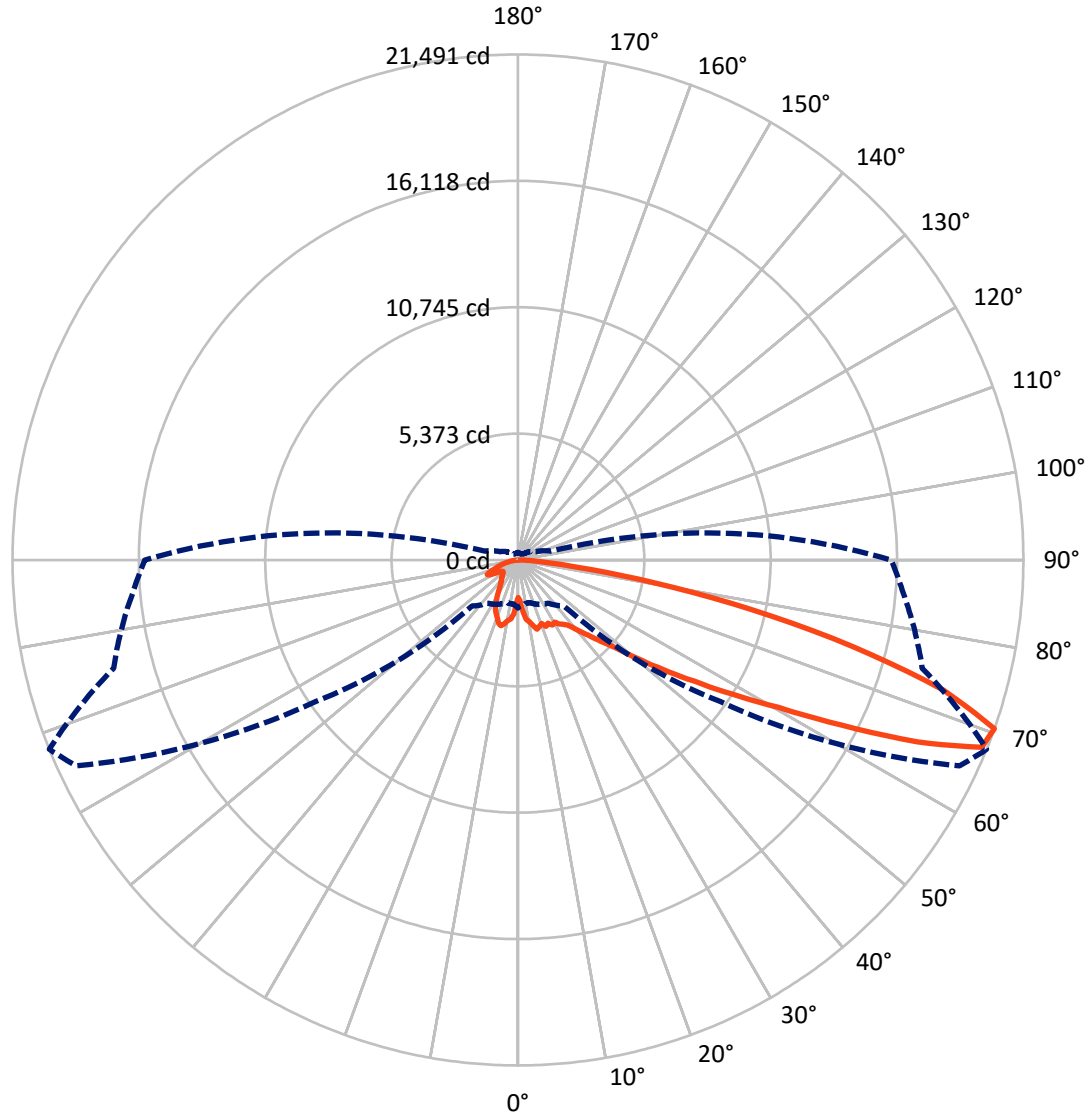
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5 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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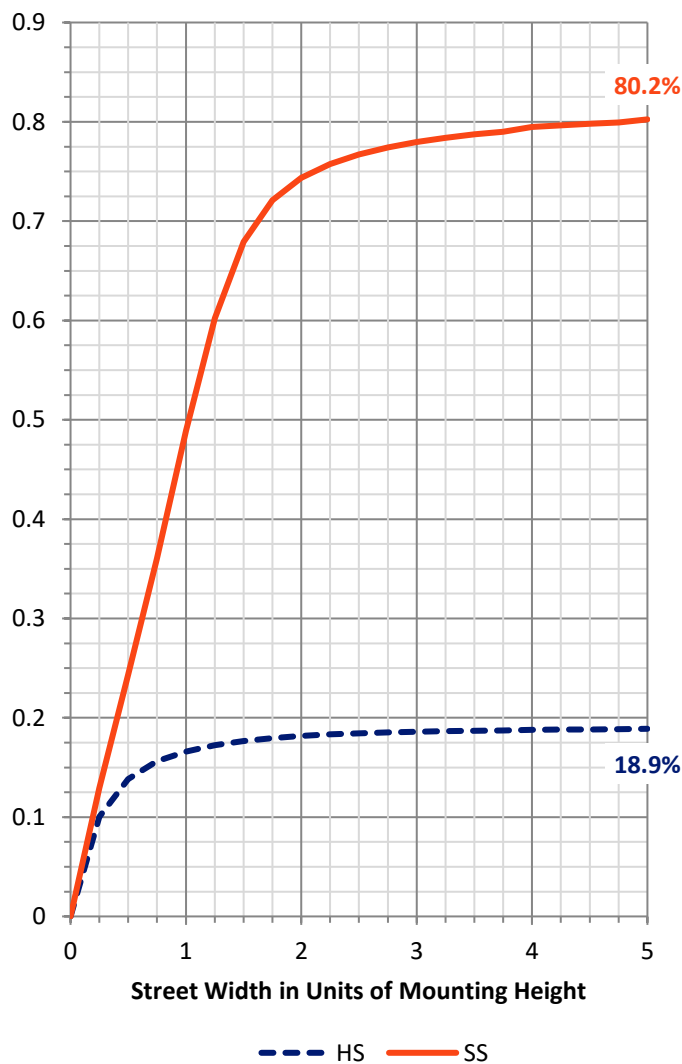
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3964.9	0.0	3964.9
	% Fixture	19.1	0.0	19.1
<b>Street Side</b>	Lumens	16802.1	0.0	16802.1
	% Fixture	80.9	0.0	80.9
<b>Total</b>	Lumens	20767.0	0.0	20767.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.6	1.0
10°-20°	693.1	3.3
20°-30°	1054.4	5.1
30°-40°	1610.5	7.8
40°-50°	2769.1	13.3
50°-60°	4583.5	22.1
60°-70°	5650.8	27.2
70°-80°	3629.9	17.5
80°-90°	563.1	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°	20767.0	100.0
0°-180°	20767.0	100.0

**Coefficient of Utilization**



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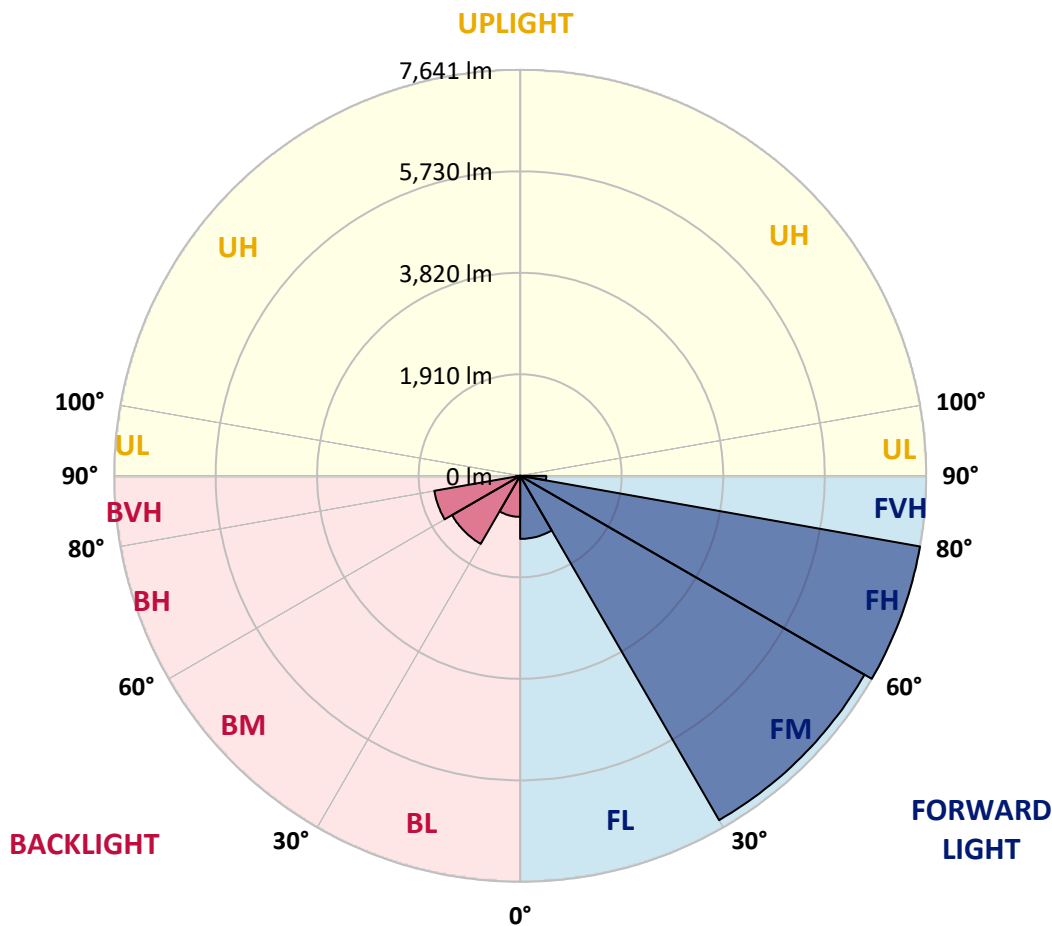
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1187.5	5.7			
FM (30°-60°)	7483.2	36.0			
FH (60°-80°)	7640.6	36.8			G4/12000
FVH (80°-90°)	490.8	2.4			G3/500
BL (0°-30°)	772.6	3.7	B2/1000		
BM (30°-60°)	1479.9	7.1	B2/2500		
BH (60°-80°)	1640.1	7.9	B3/2500		G3/2500
BVH (80°-90°)	72.3	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 Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3
2.5°	1829.6	1755.7	1680.9	1717.4	1775.7	1826.9	1816.5	1822.6	1752.2	1742.6	1927.8
5°	2155.5	2028.6	2026.0	2027.7	2032.9	1973.8	2118.1	2192.9	2209.4	2285.9	2467.5
7.5°	2268.5	2217.2	2165.0	2191.1	2125.1	2131.2	2308.5	2503.1	2549.2	2604.8	2853.4
10°	2245.0	2196.3	2212.0	2216.3	2228.5	2326.7	2440.6	2627.4	2666.5	2843.9	2908.2
12.5°	2248.5	2239.8	2312.8	2315.4	2445.8	2622.2	2667.4	2839.5	2855.2	2985.5	3254.1
15°	2367.6	2427.5	2386.7	2408.4	2433.6	2644.8	2710.0	2956.8	3050.7	3218.5	3420.1
17.5°	2599.6	2617.0	2494.5	2462.3	2544.9	2609.2	2757.8	2864.7	2962.9	3431.4	3709.5
20°	2653.5	2700.4	2554.4	2388.4	2563.1	2652.6	2756.1	2804.7	2881.2	3462.7	3857.3
22.5°	2884.7	2787.4	2610.9	2466.6	2524.0	2610.9	2685.7	2869.1	3069.8	3373.2	4005.0
25°	3015.9	2959.4	2802.1	2647.4	2598.8	2601.4	2745.6	2909.9	2979.4	3504.4	4034.6
27.5°	3333.2	3242.8	2889.0	2859.5	2676.1	2533.6	2755.2	3010.7	3132.4	3401.8	4178.9
30°	3730.4	3661.7	3197.6	3158.5	2878.6	2630.0	2876.9	3085.5	3068.1	3468.8	4278.8
32.5°	4052.0	4166.7	3698.2	3389.7	3190.6	2952.5	2838.6	3072.4	3245.4	3624.3	4448.3
35°	4510.9	4618.7	4088.5	3879.9	3447.9	3102.0	3105.5	3251.5	3358.4	3806.0	4637.8
37.5°	5305.3	5210.5	4783.8	4454.4	4178.0	3661.7	3507.0	3455.7	3541.8	4028.5	5008.9
40°	5878.0	5798.1	5295.7	5108.0	4570.0	4270.1	3846.0	3797.3	3949.4	4258.0	5312.2
42.5°	6556.9	6414.3	5946.7	5792.0	5229.7	4689.1	4261.4	4289.2	4363.1	4690.8	5722.5
45°	7247.8	6901.9	6636.8	6624.6	6249.2	5502.6	4928.1	4905.5	4908.1	5327.9	6183.1
47.5°	7796.3	7485.1	7181.8	7037.5	6848.0	6909.7	5896.3	5631.2	5551.2	5969.3	6874.1
50°	8167.4	7809.3	7466.0	7432.1	7937.9	8270.8	6805.4	6522.1	6571.6	6887.1	7795.4
52.5°	8175.2	7750.2	7392.1	7629.4	8821.0	9297.3	8371.6	7579.8	7738.0	7952.7	8997.4
55°	7606.8	7166.1	6933.2	7473.8	9166.0	10515.0	10572.3	9274.7	9092.2	9171.3	10434.1
57.5°	6408.2	5963.2	5827.6	6475.2	8511.6	11689.2	13230.2	11299.8	10764.4	10434.1	11906.5
60°	4823.8	4438.7	4354.4	4767.3	7056.6	11344.1	15382.2	13820.3	12729.5	11844.8	13383.1
62.5°	3617.4	3341.0	3214.1	3273.2	4882.9	10222.1	16795.4	17004.9	15460.4	13384.9	14825.9
65°	2939.5	2716.1	2603.1	2526.6	3036.8	7904.0	16539.9	19685.3	18650.2	15002.4	15948.9
67.5°	2455.3	2257.2	2205.0	2279.8	2400.6	4585.6	14540.8	21184.6	21255.0	16598.1	16605.1
70°	2038.2	1891.3	1872.1	2084.2	2243.3	2767.4	10502.8	20713.5	21490.6	17794.9	16451.2
72.5°	1574.9	1495.8	1493.2	1826.1	2228.5	2358.9	6254.4	17894.0	18937.9	17412.5	14945.9
75°	1092.5	1037.8	1079.5	1501.0	2177.2	2392.8	3569.6	13937.7	14719.0	14817.2	11972.5
77.5°	751.8	705.7	750.9	1085.6	1944.3	2450.1	2497.1	10077.8	10164.7	9936.1	6857.6
80°	523.2	491.1	525.8	768.3	1513.2	2424.9	2125.9	6344.8	5821.6	4434.4	2195.5
82.5°	324.2	314.6	352.9	547.6	1065.6	2205.9	2014.7	3274.1	2499.7	1223.8	784.0
85°	170.4	156.4	205.1	357.2	666.6	1731.3	1887.8	1494.1	964.8	434.6	314.6
87.5°	50.4	45.2	79.1	144.3	282.5	776.1	1080.4	633.6	359.8	127.8	98.2
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°	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3	1592.3
2.5°	1940.8	1931.2	1802.6	1819.1	1846.9	1853.9	1853.0	1806.1	1756.5	1894.7	1890.4
5°	2471.9	2385.8	2321.5	2307.6	2228.5	2149.4	2177.2	2167.7	2155.5	2218.1	2225.9
7.5°	2854.3	2735.2	2660.5	2468.4	2285.9	2127.7	2178.1	2193.7	2162.4	2275.4	2309.3
10°	2955.1	2861.2	2780.4	2533.6	2432.7	2340.6	2204.2	2048.6	2027.7	1962.5	1970.4
12.5°	3215.0	3201.9	2926.4	2709.1	2577.9	2394.5	2099.9	1911.3	1749.6	1757.4	1710.5
15°	3420.1	3427.1	3095.9	2791.7	2439.7	2159.8	1813.0	1578.4	1412.4	1379.3	1345.4
17.5°	3695.6	3681.7	3109.8	2692.6	2246.7	1836.5	1411.5	1178.6	1150.8	1169.9	1140.3
20°	3815.6	3693.0	3021.2	2446.7	1945.2	1395.0	1066.4	943.0	996.9	1073.4	1075.1
22.5°	3923.3	3713.9	2975.1	2248.5	1543.6	1014.3	856.1	833.5	897.0	1000.4	1009.1
25°	3919.0	3810.3	2892.5	2048.6	1196.8	791.8	744.0	760.5	836.1	943.9	950.0
27.5°	4116.3	3736.5	2677.8	1786.1	901.3	677.9	690.1	720.5	756.2	858.7	878.7
30°	4114.5	3873.8	2570.1	1467.1	724.0	621.4	652.7	678.8	708.4	802.2	813.5
32.5°	4211.9	3784.3	2504.9	1141.2	649.3	607.5	615.4	641.4	684.0	747.5	755.3
35°	4329.2	3886.0	2296.3	906.5	621.4	595.4	601.5	616.2	655.3	713.6	721.4
37.5°	4705.6	3905.1	2213.7	764.0	619.7	590.2	589.3	597.1	641.4	694.4	717.9
40°	4852.5	4079.8	1973.0	713.6	613.6	590.2	578.0	582.3	618.8	686.6	704.9
42.5°	5204.5	4138.0	1794.8	696.2	613.6	579.7	560.6	567.6	610.1	670.1	698.8
45°	5566.9	4220.6	1582.7	692.7	612.7	578.9	542.3	558.0	592.8	643.2	674.5
47.5°	6083.2	4517.8	1370.6	682.3	605.8	583.2	538.0	537.1	567.6	611.0	640.6
50°	6925.4	4982.0	1206.4	669.2	606.7	579.7	529.3	517.1	537.1	575.4	604.1
52.5°	8097.9	5772.9	1142.1	662.3	599.7	565.8	514.5	495.4	506.7	537.1	564.9
55°	9458.9	6841.1	1205.5	662.3	585.8	544.1	493.7	471.1	477.2	498.0	525.0
57.5°	11049.5	8168.3	1512.3	652.7	568.4	518.0	468.5	442.4	444.1	462.4	486.7
60°	12710.4	9651.0	2199.8	644.9	556.3	489.3	438.9	412.0	409.4	426.8	448.5
62.5°	14374.0	11019.1	2922.9	663.2	552.8	465.0	407.6	380.7	379.8	395.5	413.7
65°	15696.8	11954.3	3102.9	737.0	575.4	437.2	375.5	350.3	348.5	361.6	381.6
67.5°	16346.1	12089.9	2357.1	829.2	623.2	411.1	344.2	320.7	319.0	332.9	350.3
70°	15865.4	11163.3	1455.0	838.7	620.6	380.7	312.0	292.0	288.6	303.3	316.4
72.5°	14087.2	9764.9	1105.6	742.3	537.1	337.2	279.9	262.5	257.3	270.3	282.5
75°	11306.7	7752.8	885.7	598.8	423.3	284.2	247.7	231.2	225.1	237.3	247.7
77.5°	6586.4	4361.4	647.5	467.6	319.8	232.1	211.2	196.4	189.5	202.5	210.3
80°	2141.6	1453.2	406.8	335.5	233.8	181.7	171.2	160.8	153.8	162.5	165.1
82.5°	769.2	540.6	225.1	206.0	155.6	130.4	129.5	123.4	114.7	118.2	118.2
85°	340.7	246.8	133.8	110.4	93.0	69.5	81.7	77.4	68.7	66.9	64.3
87.5°	95.6	81.7	48.7	37.4	30.4	11.3	26.1	23.5	19.1	17.4	12.2
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)