

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: P368452

Luminaire Tested: **MSA-SA4C-727-U-SL2**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368452  
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-SA4C-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: 19990 lumens  
Efficiency: N/A  
Efficacy: 88.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G3

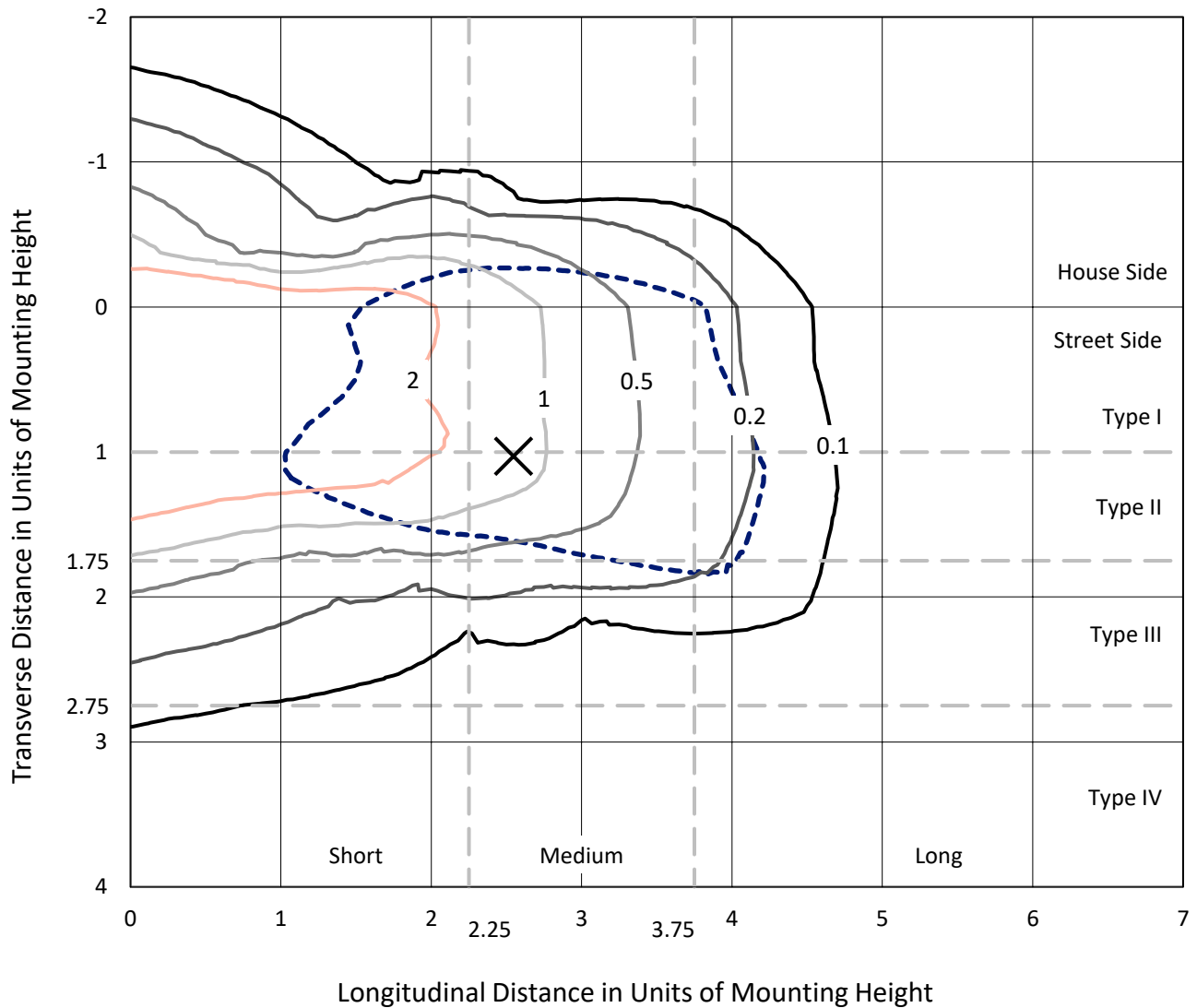
Input Watts (W): 225  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

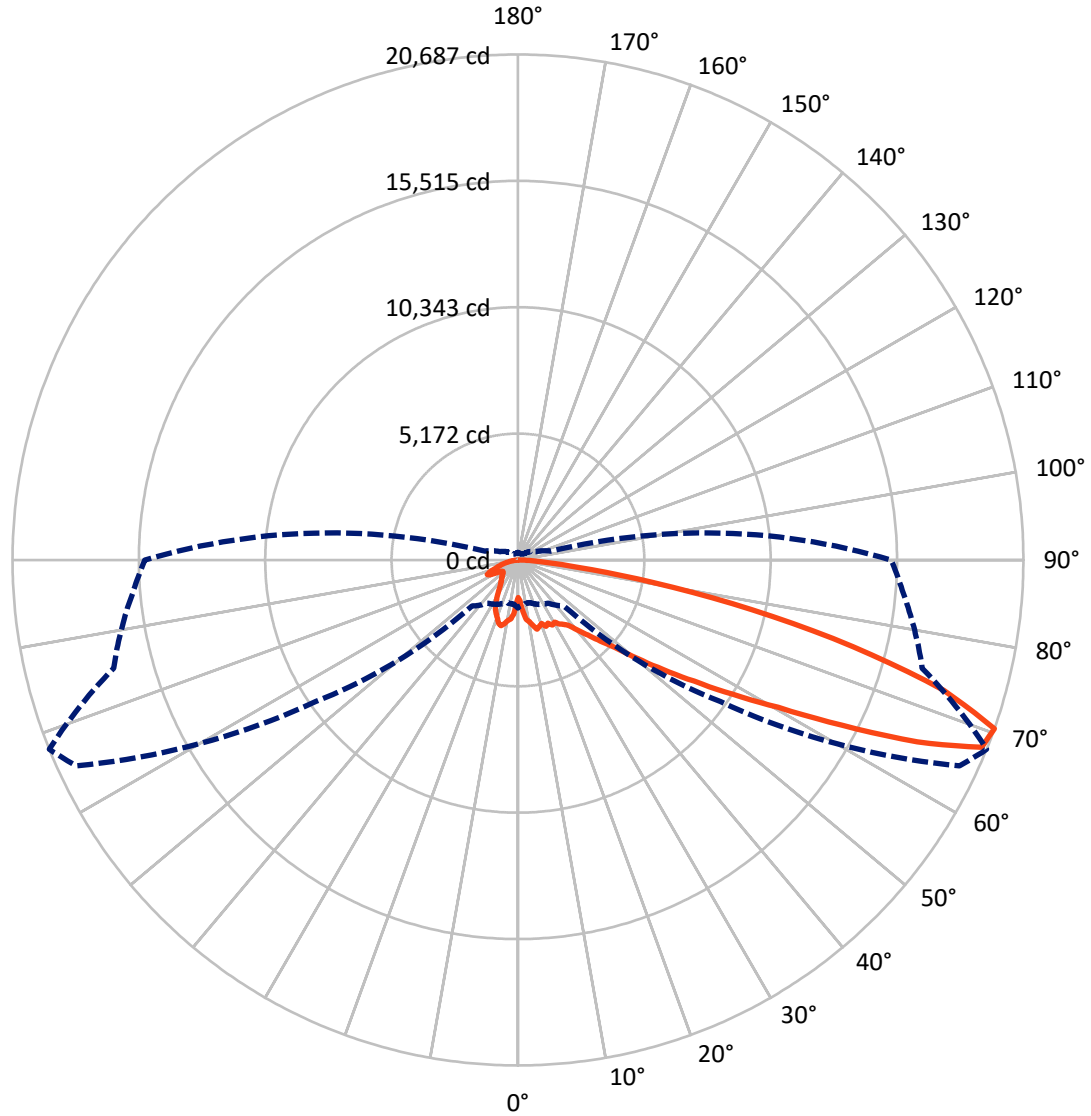
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.9 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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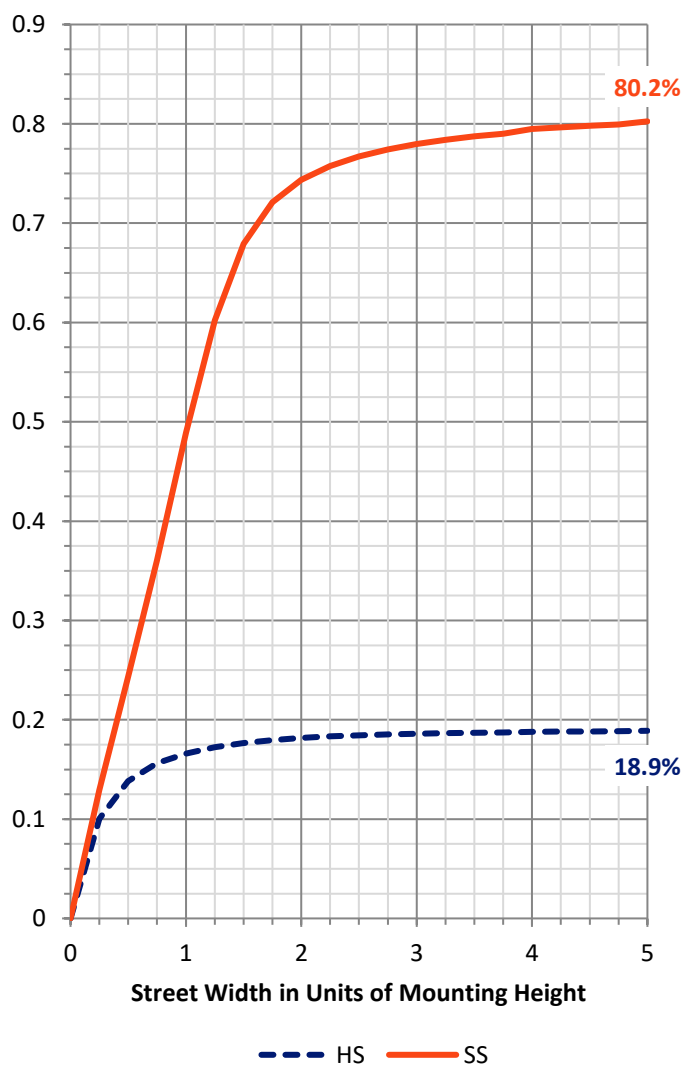
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3816.6	0.0	3816.6
	% Fixture	19.1	0.0	19.1
<b>Street Side</b>	Lumens	16173.4	0.0	16173.4
	% Fixture	80.9	0.0	80.9
<b>Total</b>	Lumens	19990.0	0.0	19990.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	204.7	1.0
10°-20°	667.2	3.3
20°-30°	1014.9	5.1
30°-40°	1550.2	7.8
40°-50°	2665.5	13.3
50°-60°	4412.0	22.1
60°-70°	5439.4	27.2
70°-80°	3494.1	17.5
80°-90°	542.0	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°	19990.0	100.0
0°-180°	19990.0	100.0

**Coefficient of Utilization**



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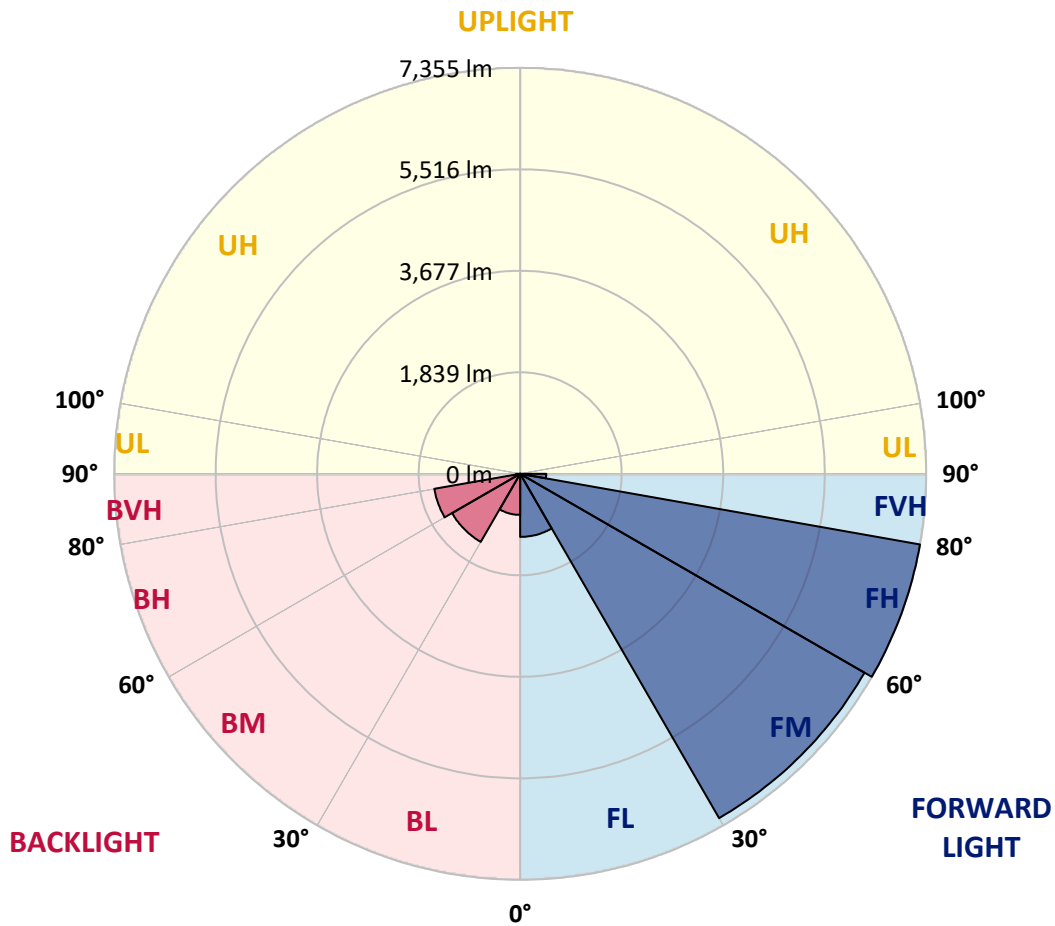
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1143.1	5.7			
FM (30°-60°)	7203.2	36.0			
FH (60°-80°)	7354.8	36.8			G3/7500
FVH (80°-90°)	472.4	2.4			G3/500
BL (0°-30°)	743.7	3.7	B2/1000		
BM (30°-60°)	1424.6	7.1	B2/2500		
BH (60°-80°)	1578.7	7.9	B3/2500		G3/2500
BVH (80°-90°)	69.6	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-G3**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7
2.5°	1761.1	1690.0	1618.0	1653.2	1709.2	1758.6	1748.6	1754.4	1686.6	1677.4	1855.6
5°	2074.8	1952.7	1950.2	1951.9	1956.9	1900.0	2038.9	2110.8	2126.7	2200.3	2375.2
7.5°	2183.6	2134.2	2084.0	2109.1	2045.6	2051.4	2222.1	2409.5	2453.8	2507.4	2746.7
10°	2161.0	2114.2	2129.2	2133.4	2145.1	2239.7	2349.3	2529.1	2566.8	2737.4	2799.4
12.5°	2164.4	2156.0	2226.3	2228.8	2354.3	2524.1	2567.6	2733.3	2748.3	2873.8	3132.3
15°	2279.0	2336.7	2297.4	2318.3	2342.6	2545.9	2608.6	2846.2	2936.6	3098.0	3292.1
17.5°	2502.4	2519.1	2401.1	2370.2	2449.6	2511.6	2654.6	2757.5	2852.1	3303.0	3570.7
20°	2554.2	2599.4	2458.9	2299.1	2467.2	2553.4	2653.0	2699.8	2773.4	3333.1	3713.0
22.5°	2776.8	2683.1	2513.2	2374.4	2429.6	2513.2	2585.2	2761.7	2955.0	3247.0	3855.2
25°	2903.1	2848.7	2697.3	2548.4	2501.5	2504.0	2642.9	2801.0	2868.0	3373.3	3883.6
27.5°	3208.5	3121.5	2781.0	2752.5	2576.0	2438.8	2652.1	2898.1	3015.2	3274.6	4022.5
30°	3590.8	3524.7	3078.0	3040.3	2770.9	2531.6	2769.2	2970.0	2953.3	3339.0	4118.7
32.5°	3900.4	4010.8	3559.9	3262.9	3071.3	2842.0	2732.4	2957.5	3124.0	3488.7	4281.9
35°	4342.1	4445.8	3935.5	3734.7	3318.9	2985.9	2989.3	3129.8	3232.7	3663.6	4464.3
37.5°	5106.8	5015.6	4604.8	4287.7	4021.7	3524.7	3375.8	3326.4	3409.3	3877.8	4821.5
40°	5658.1	5581.2	5097.6	4916.9	4399.0	4110.4	3702.1	3655.2	3801.6	4098.6	5113.5
42.5°	6311.5	6174.3	5724.2	5575.3	5034.0	4513.6	4102.0	4128.8	4199.9	4515.3	5508.4
45°	6976.6	6643.7	6388.5	6376.8	6015.4	5296.7	4743.7	4721.9	4724.4	5128.5	5951.8
47.5°	7504.6	7205.0	6913.1	6774.2	6591.8	6651.2	5675.7	5420.5	5343.5	5746.0	6616.9
50°	7861.8	7517.1	7186.6	7154.0	7640.9	7961.4	6550.8	6278.1	6325.8	6629.4	7503.7
52.5°	7869.3	7460.2	7115.5	7343.9	8490.9	8949.4	8058.4	7296.2	7448.5	7655.2	8660.8
55°	7322.2	6898.0	6673.8	7194.2	8823.1	10121.5	10176.8	8927.7	8752.0	8828.1	10043.7
57.5°	6168.5	5740.1	5609.6	6232.9	8193.1	11251.8	12735.2	10877.0	10361.6	10043.7	11461.0
60°	4643.3	4272.7	4191.5	4588.9	6792.6	10919.7	14806.7	13303.2	12253.3	11401.6	12882.4
62.5°	3482.0	3216.0	3093.9	3150.7	4700.2	9839.6	16167.0	16368.6	14882.0	12884.1	14271.2
65°	2829.5	2614.5	2505.7	2432.1	2923.2	7608.3	15921.0	18948.8	17952.4	14441.1	15352.1
67.5°	2363.5	2172.7	2122.5	2194.5	2310.8	4414.1	13996.8	20392.0	20459.8	15977.1	15983.8
70°	1961.9	1820.5	1802.1	2006.2	2159.3	2663.8	10109.8	19938.5	20686.5	17129.1	15835.7
72.5°	1516.0	1439.8	1437.3	1757.8	2145.1	2270.6	6020.4	17224.5	18229.3	16761.0	14386.7
75°	1051.6	998.9	1039.1	1444.9	2095.8	2303.2	3436.0	13416.2	14168.3	14262.8	11524.6
77.5°	723.7	679.3	722.8	1044.9	1871.5	2358.5	2403.6	9700.7	9784.4	9564.3	6601.0
80°	503.7	472.7	506.2	739.6	1456.6	2334.2	2046.4	6107.4	5603.7	4268.5	2113.3
82.5°	312.1	302.9	339.7	527.1	1025.7	2123.4	1939.3	3151.6	2406.1	1178.0	754.6
85°	164.0	150.6	197.4	343.9	641.7	1666.6	1817.2	1438.2	928.7	418.3	302.9
87.5°	48.5	43.5	76.1	138.9	271.9	747.1	1039.9	609.9	346.4	123.0	94.5
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°	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7	1532.7
2.5°	1868.2	1859.0	1735.2	1751.1	1777.8	1784.5	1783.7	1738.5	1690.8	1823.9	1819.7
5°	2379.4	2296.5	2234.6	2221.2	2145.1	2069.0	2095.8	2086.6	2074.8	2135.1	2142.6
7.5°	2747.5	2632.9	2560.9	2376.0	2200.3	2048.1	2096.6	2111.7	2081.5	2190.3	2222.9
10°	2844.5	2754.2	2676.4	2438.8	2341.7	2253.0	2121.7	1971.9	1951.9	1889.1	1896.6
12.5°	3094.7	3082.1	2816.9	2607.8	2481.4	2304.9	2021.3	1839.7	1684.1	1691.7	1646.5
15°	3292.1	3298.8	2980.1	2687.3	2348.4	2079.0	1745.2	1519.3	1359.5	1327.7	1295.1
17.5°	3557.3	3544.0	2993.5	2591.9	2162.7	1767.8	1358.7	1134.5	1107.7	1126.1	1097.7
20°	3672.8	3554.8	2908.1	2355.1	1872.4	1342.8	1026.5	907.7	959.6	1033.2	1034.9
22.5°	3776.5	3574.9	2863.8	2164.4	1485.9	976.3	824.1	802.3	863.4	963.0	971.3
25°	3772.4	3667.8	2784.3	1971.9	1152.0	762.2	716.2	732.1	804.8	908.6	914.4
27.5°	3962.3	3596.7	2577.7	1719.3	867.6	652.6	664.3	693.6	727.9	826.6	845.8
30°	3960.6	3728.9	2473.9	1412.2	696.9	598.2	628.3	653.4	681.9	772.2	783.1
32.5°	4054.3	3642.7	2411.2	1098.5	625.0	584.8	592.3	617.4	658.4	719.5	727.0
35°	4167.2	3740.6	2210.4	872.6	598.2	573.1	578.9	593.2	630.8	686.9	694.4
37.5°	4529.5	3759.0	2130.9	735.4	596.5	568.1	567.2	574.8	617.4	668.5	691.1
40°	4670.9	3927.1	1899.1	686.9	590.7	568.1	556.4	560.5	595.7	660.9	678.5
42.5°	5009.7	3983.2	1727.6	670.1	590.7	558.0	539.6	546.3	587.3	645.0	672.6
45°	5358.6	4062.7	1523.5	666.8	589.8	557.2	522.1	537.1	570.6	619.1	649.2
47.5°	5855.6	4348.8	1319.4	656.8	583.1	561.4	517.9	517.0	546.3	588.2	616.6
50°	6666.3	4795.6	1161.2	644.2	584.0	558.0	509.5	497.8	517.0	553.8	581.5
52.5°	7794.9	5556.9	1099.3	637.5	577.3	544.6	495.3	476.9	487.8	517.0	543.8
55°	9105.0	6585.1	1160.4	637.5	563.9	523.7	475.2	453.5	459.3	479.4	505.3
57.5°	10636.1	7862.6	1455.7	628.3	547.2	498.6	450.9	425.8	427.5	445.1	468.5
60°	12234.9	9289.9	2117.5	620.8	535.4	471.0	422.5	396.6	394.1	410.8	431.7
62.5°	13836.2	10606.8	2813.6	638.3	532.1	447.6	392.4	366.4	365.6	380.7	398.2
65°	15109.5	11507.0	2986.8	709.5	553.8	420.8	361.4	337.2	335.5	348.0	367.3
67.5°	15734.5	11637.5	2268.9	798.1	599.9	395.7	331.3	308.7	307.0	320.4	337.2
70°	15271.8	10745.7	1400.5	807.3	597.4	366.4	300.3	281.1	277.8	292.0	304.5
72.5°	13560.1	9399.5	1064.2	714.5	517.0	324.6	269.4	252.7	247.6	260.2	271.9
75°	10883.7	7462.7	852.5	576.4	407.4	273.6	238.4	222.5	216.7	228.4	238.4
77.5°	6340.0	4198.2	623.3	450.1	307.9	223.4	203.3	189.1	182.4	194.9	202.5
80°	2061.5	1398.8	391.5	322.9	225.1	174.9	164.8	154.8	148.1	156.4	159.0
82.5°	740.4	520.4	216.7	198.3	149.8	125.5	124.7	118.8	110.4	113.8	113.8
85°	328.0	237.6	128.8	106.3	89.5	66.9	78.6	74.5	66.1	64.4	61.9
87.5°	92.0	78.6	46.9	36.0	29.3	10.9	25.1	22.6	18.4	16.7	11.7
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)