

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: P368593

Luminaire Tested: **MSA-SA4D-727-U-T2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368593  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4D-727-U-T2-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16594 lumens  
Efficiency: N/A  
Efficacy: 64.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B1 - U0 - G3

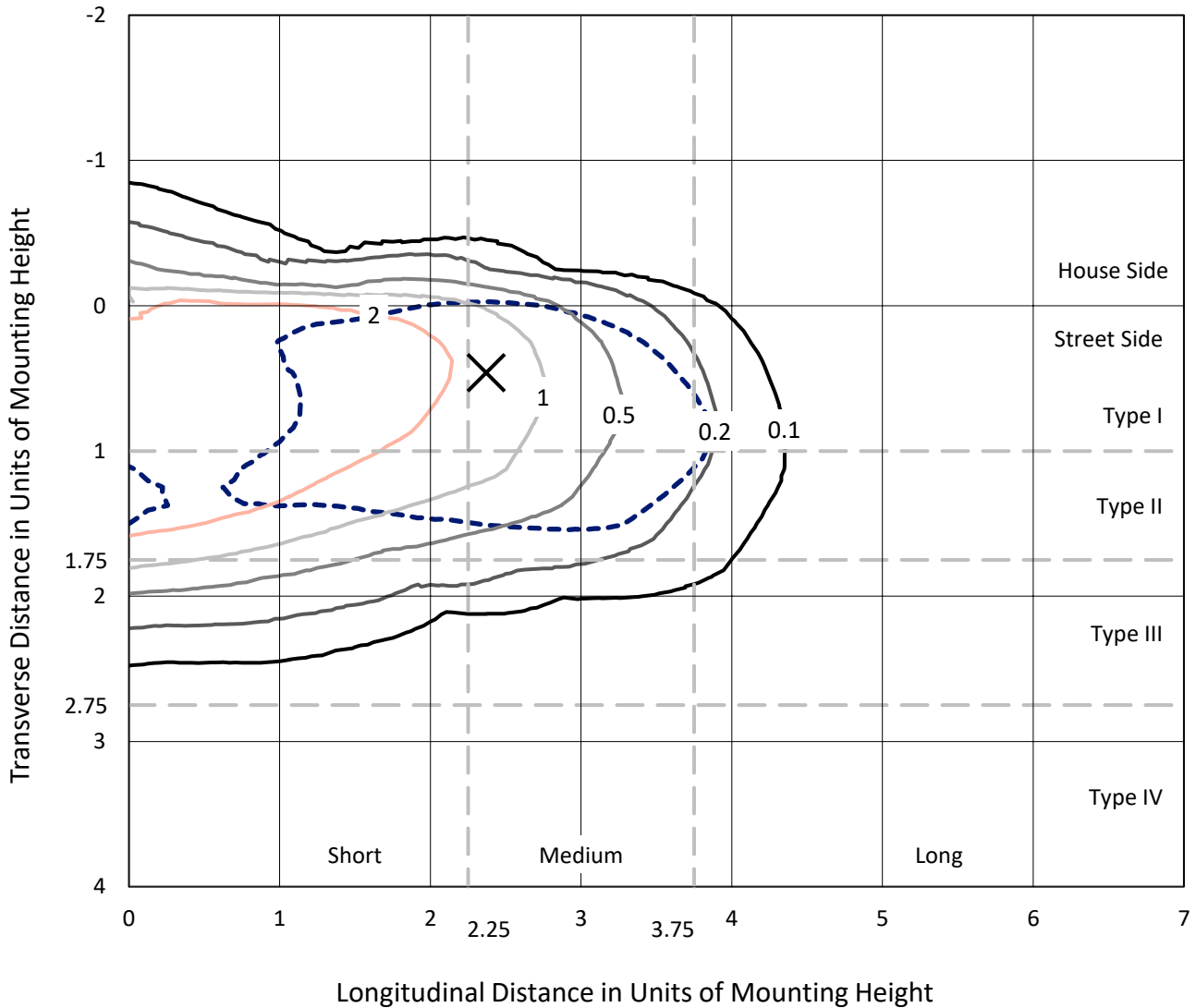
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

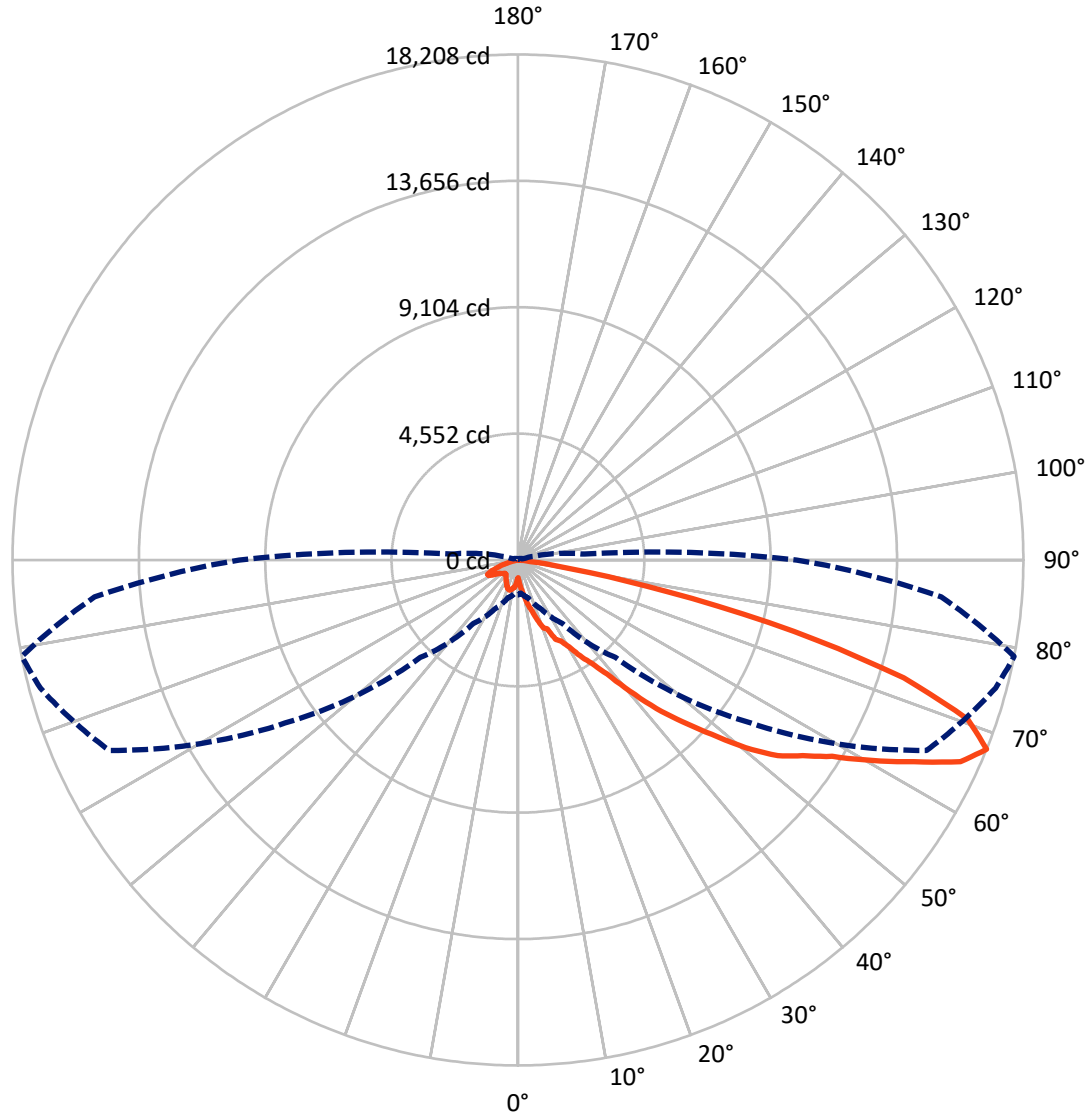
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5 fc  
 Type II - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral      - - - Horizontal Cone Through 67.5-Deg Vertical

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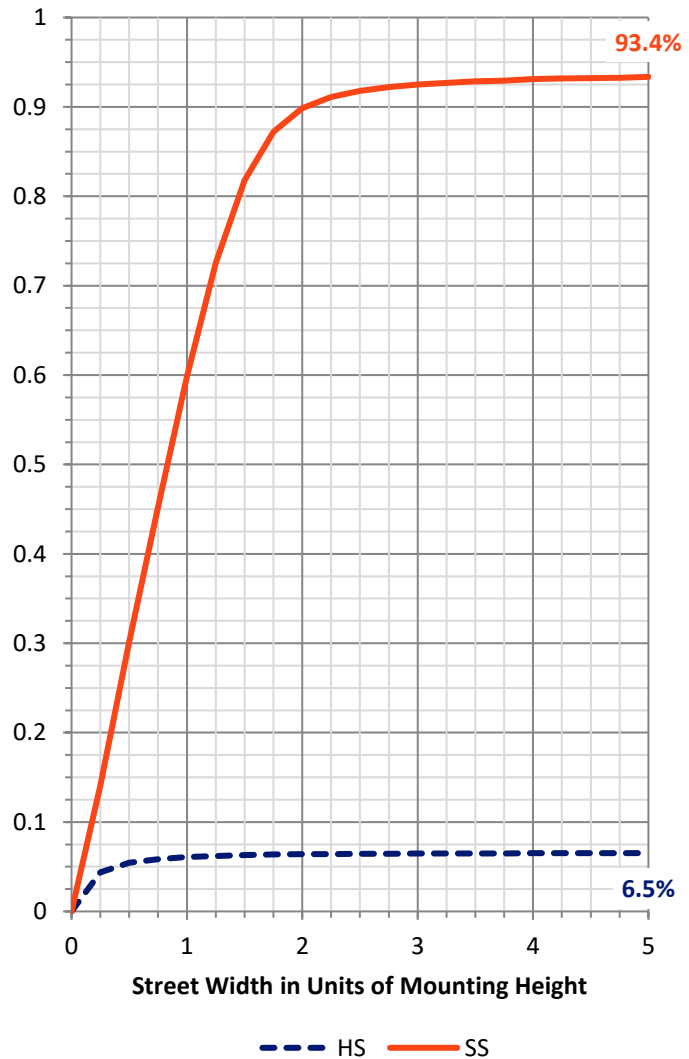
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1090.3	0.0	1090.3
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	15503.7	0.0	15503.7
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	16594.0	0.0	16594.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.0	0.6
10°-20°	370.8	2.2
20°-30°	715.3	4.3
30°-40°	1405.2	8.5
40°-50°	2814.9	17.0
50°-60°	4499.2	27.1
60°-70°	4527.0	27.3
70°-80°	2042.3	12.3
80°-90°	126.4	0.8
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°	16594.0	100.0
0°-180°	16594.0	100.0

**Coefficient of Utilization**



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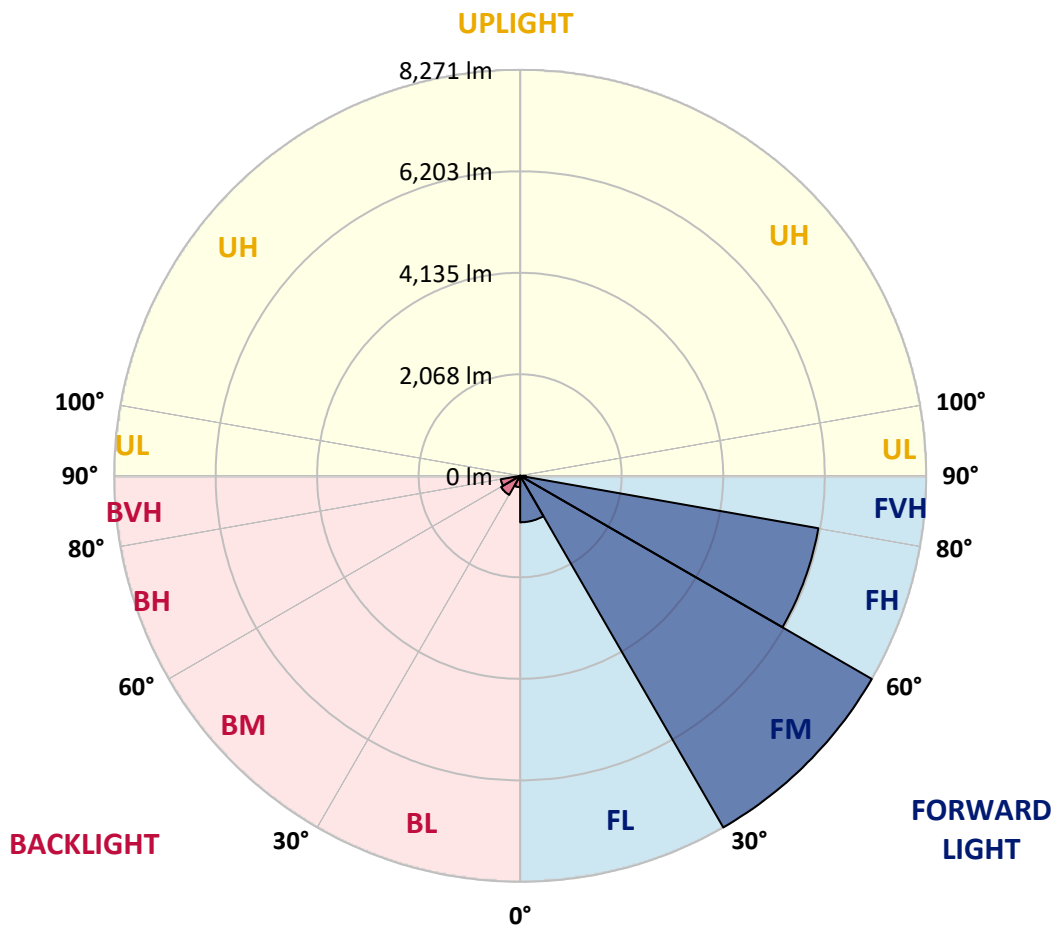
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	947.3	5.7			
FM (30°-60°)	8270.7	49.8			
FH (60°-80°)	6167.3	37.2			G3/7500
FVH (80°-90°)	118.3	0.7			G2/225
BL (0°-30°)	231.8	1.4	B1/500		
BM (30°-60°)	448.6	2.7	B1/1000		
BH (60°-80°)	401.9	2.4	B1/500		G1/500
BVH (80°-90°)	8.0	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G3**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4
2.5°	863.5	832.4	782.1	810.5	808.6	823.3	795.8	765.6	717.2	765.6	769.3
5°	1243.1	1185.5	1148.9	1141.6	1101.4	1063.9	1055.6	1024.5	1000.7	957.7	996.2
7.5°	1548.7	1522.1	1457.2	1449.9	1351.1	1296.2	1313.6	1299.9	1209.3	1164.5	1202.0
10°	1678.6	1632.8	1642.0	1632.8	1590.7	1606.3	1570.6	1529.5	1457.2	1383.1	1289.8
12.5°	1728.9	1721.6	1797.5	1788.3	1887.1	2006.0	1926.5	1857.9	1690.5	1672.2	1545.0
15°	1836.8	1882.6	1871.6	1910.0	1973.1	2175.3	2173.4	2189.9	2012.4	1917.3	1733.5
17.5°	1932.9	1966.7	1911.8	1955.7	2127.7	2250.3	2414.0	2350.0	2370.1	2273.2	1988.7
20°	1891.7	1930.1	1875.2	1848.7	2151.5	2383.8	2602.5	2555.8	2676.6	2616.2	2223.8
22.5°	2148.7	2076.5	1938.4	1852.4	2078.3	2381.1	2669.2	2864.1	2843.0	2694.9	2442.4
25°	2466.2	2422.3	2256.7	2104.8	2125.0	2364.6	2879.6	3165.9	3228.2	3165.0	2650.0
27.5°	2894.3	2884.2	2545.7	2479.9	2284.1	2292.4	2912.6	3546.5	3404.7	3305.9	2892.4
30°	3453.2	3373.6	2972.0	2886.0	2597.0	2455.2	3113.8	3874.9	3770.6	3636.1	3120.2
32.5°	4054.2	4066.1	3553.8	3270.2	3037.9	2869.6	3034.2	4028.6	4223.4	4114.5	3404.7
35°	4736.6	4789.6	4163.0	3830.1	3378.2	3130.3	3376.3	4500.6	4850.0	4563.7	3786.1
37.5°	5787.6	5785.8	5054.0	4390.8	4062.4	3793.5	3946.2	4929.6	5620.2	5217.7	4470.4
40°	6712.4	6511.2	5830.6	5068.6	4556.4	4483.2	4372.5	5516.9	6442.6	6200.2	5078.7
42.5°	7403.1	7261.3	6438.9	5846.2	5211.3	4979.0	4939.6	6377.6	7656.5	7317.1	5946.8
45°	8229.1	7764.4	7158.8	6624.6	5977.9	5910.2	5817.8	7251.2	9068.8	8304.1	6701.5
47.5°	8969.1	8531.9	7959.2	7273.2	6530.4	7088.4	6733.5	8018.7	10096.1	9378.0	7533.9
50°	9592.1	9127.4	8486.1	7963.8	7645.5	8024.2	7432.3	8650.8	11205.7	10623.9	8312.3
52.5°	9909.5	9383.5	8887.7	8564.8	8759.6	8674.6	8380.0	9416.4	12151.5	11716.1	9002.1
55°	9648.8	9134.7	8927.0	9087.1	9679.0	9432.9	9456.7	10602.9	13044.3	12444.3	9602.1
57.5°	8492.5	8023.3	8115.7	8553.8	9688.1	10332.1	10684.3	11755.4	13760.6	13351.7	10527.9
60°	6424.3	6046.5	6388.6	7166.1	8777.0	10152.8	11555.1	12908.0	14784.2	14656.1	11929.3
62.5°	3923.4	3718.5	4203.3	5172.9	6994.2	9273.7	12062.8	14444.8	15879.1	16015.4	13415.7
65°	2001.5	1909.1	2313.4	3165.9	4725.6	7618.0	11696.0	15399.8	17010.7	17513.8	14832.7
67.5°	1260.5	1201.1	1416.9	1931.0	2788.2	4968.9	10240.6	16235.0	17810.2	18208.1	15305.6
70°	873.6	836.1	1022.7	1325.5	1759.1	2676.6	7603.4	15455.6	17176.3	17194.5	14161.2
72.5°	554.3	525.1	707.1	981.5	1298.0	1382.2	4358.8	12127.8	14702.8	14533.5	11468.2
75°	359.5	344.9	449.1	719.0	997.1	852.5	2154.2	8183.4	10542.5	10277.2	7617.1
77.5°	258.0	248.8	301.0	480.2	709.8	596.4	966.0	4877.4	6044.7	5464.7	3697.4
80°	155.5	154.6	217.7	301.0	504.9	420.8	446.4	2214.6	2343.6	1910.9	1129.7
82.5°	77.8	80.5	121.7	193.9	324.7	275.3	204.0	737.3	629.3	463.8	228.7
85°	18.3	22.9	64.0	133.6	162.8	109.8	97.0	193.0	172.9	130.8	66.8
87.5°	0.0	0.0	20.1	32.0	43.9	18.3	32.9	36.6	46.7	36.6	13.7
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°	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4	639.4
2.5°	770.2	759.2	692.5	675.1	673.3	654.0	658.6	640.3	641.2	682.4	682.4
5°	981.5	917.5	853.5	796.7	758.3	703.4	683.3	675.1	667.8	684.2	694.3
7.5°	1152.6	1058.4	943.1	819.6	705.3	626.6	615.6	595.5	588.2	604.6	617.5
10°	1228.5	1111.4	953.2	773.0	665.9	601.9	548.8	520.5	515.0	514.1	518.7
12.5°	1389.5	1244.1	964.1	755.6	639.4	569.0	508.6	461.0	417.1	421.7	417.1
15°	1518.5	1346.5	964.1	713.5	575.4	504.9	398.8	375.0	368.6	378.7	370.5
17.5°	1713.3	1448.0	915.7	638.5	520.5	392.4	352.2	350.3	363.2	377.8	368.6
20°	1830.4	1461.8	834.3	552.5	427.2	340.3	325.7	311.0	329.3	341.2	336.6
22.5°	1952.1	1462.7	752.8	506.8	343.9	310.1	286.3	274.4	277.2	288.1	290.0
25°	2004.2	1427.0	676.9	446.4	311.9	277.2	252.5	239.7	235.1	240.6	238.7
27.5°	2146.0	1358.4	594.6	380.5	296.4	246.1	223.2	207.6	193.9	203.1	204.9
30°	2166.1	1336.4	549.8	338.5	276.3	217.7	197.6	181.1	171.1	183.9	183.9
32.5°	2230.2	1215.7	526.9	321.1	255.2	201.2	173.8	161.9	160.1	168.3	169.2
35°	2329.0	1162.6	493.1	307.4	236.0	182.0	156.4	150.9	149.1	155.5	155.5
37.5°	2663.8	1096.8	455.5	295.5	219.5	172.0	151.8	142.7	143.6	149.1	152.8
40°	2886.0	1105.0	399.7	280.8	200.3	162.8	142.7	136.3	135.4	138.1	140.9
42.5°	3298.6	1111.4	375.0	265.3	185.7	151.8	133.6	129.0	125.3	128.1	130.8
45°	3759.6	1145.3	362.2	252.5	177.5	145.4	125.3	122.6	114.3	116.2	119.8
47.5°	4204.2	1268.8	346.7	234.2	170.1	141.8	117.1	110.7	105.2	104.3	107.9
50°	4709.1	1388.6	329.3	214.1	162.8	136.3	108.9	98.8	95.1	95.1	97.9
52.5°	5161.0	1502.9	312.8	200.3	157.3	126.2	101.5	91.5	88.7	88.7	92.4
55°	5636.7	1622.8	298.2	187.5	150.0	116.2	95.1	86.0	85.1	83.2	86.0
57.5°	6476.4	1884.4	279.9	176.5	140.0	107.9	89.6	80.5	78.7	75.9	78.7
60°	7699.4	2286.0	256.1	165.6	128.1	102.5	85.1	74.1	71.4	66.8	67.7
62.5°	8895.0	2610.7	228.7	151.8	117.1	97.0	77.8	66.8	62.2	56.7	57.6
65°	9919.5	2738.8	199.4	135.4	106.1	84.2	67.7	58.5	52.1	44.8	43.9
67.5°	10040.3	2418.6	171.1	119.8	95.1	71.4	57.6	52.1	42.1	35.7	33.8
70°	9035.9	1802.1	142.7	106.1	82.3	60.4	49.4	45.7	39.3	33.8	31.1
72.5°	7195.4	1330.0	119.8	94.2	72.3	51.2	42.1	43.0	39.3	32.9	29.3
75°	4758.5	761.1	97.9	78.7	60.4	41.2	38.4	38.4	37.5	31.1	27.4
77.5°	2289.6	328.4	75.0	62.2	48.5	31.1	34.8	34.8	35.7	28.4	22.9
80°	649.5	98.8	46.7	42.1	35.7	21.0	27.4	26.5	23.8	16.5	10.1
82.5°	116.2	38.4	21.0	22.0	20.1	8.2	15.6	14.6	11.9	6.4	0.9
85°	32.0	14.6	11.9	12.8	10.1	2.7	6.4	8.2	6.4	3.7	0.0
87.5°	8.2	6.4	8.2	9.1	7.3	0.9	2.7	0.9	2.7	0.9	0.0
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)