

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: P368703

Luminaire Tested: **MSA-SA4D-830-U-T2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368703  
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-830-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: 15767 lumens  
Efficiency: N/A  
Efficacy: 60.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B1 - U0 - G3

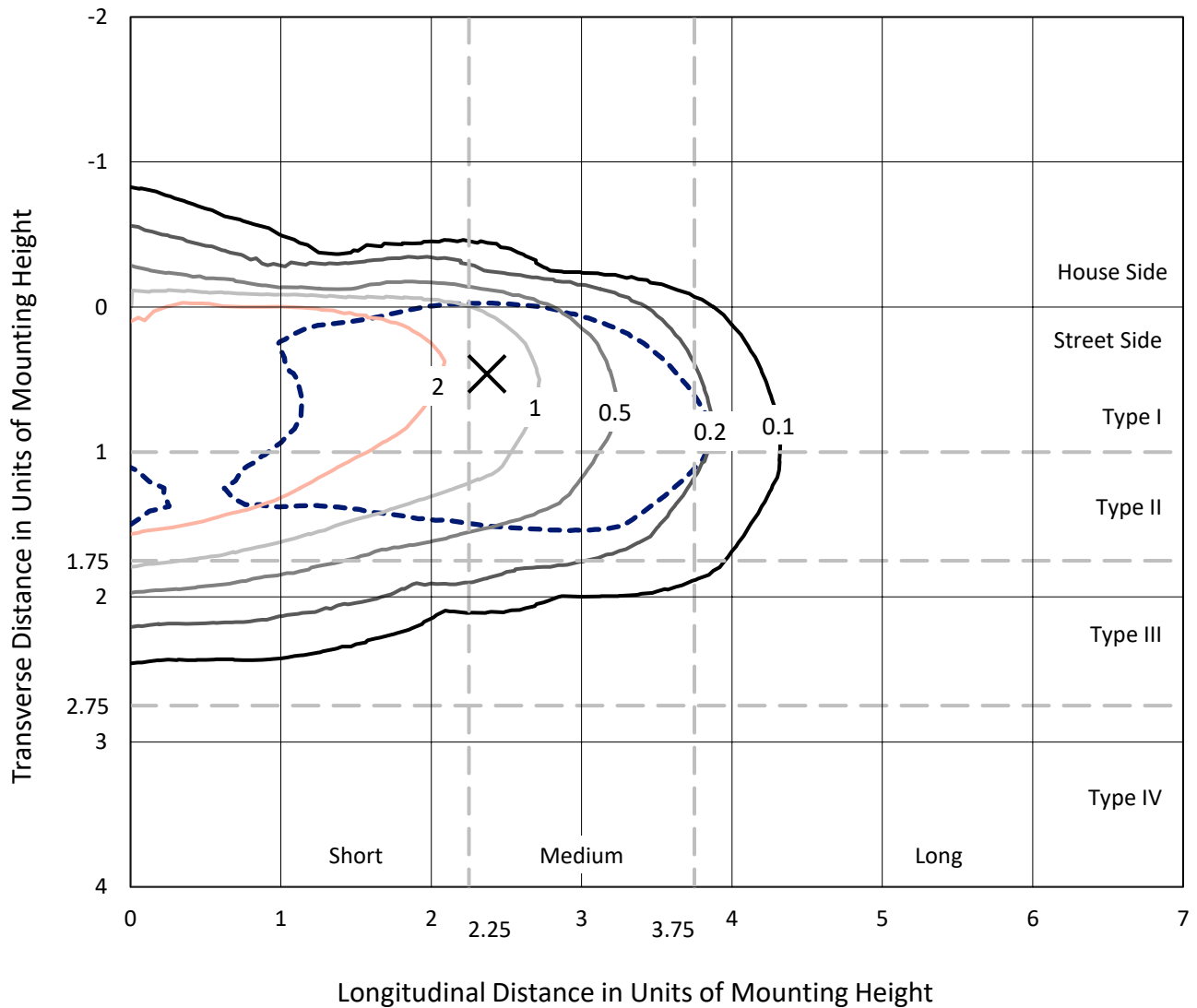
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

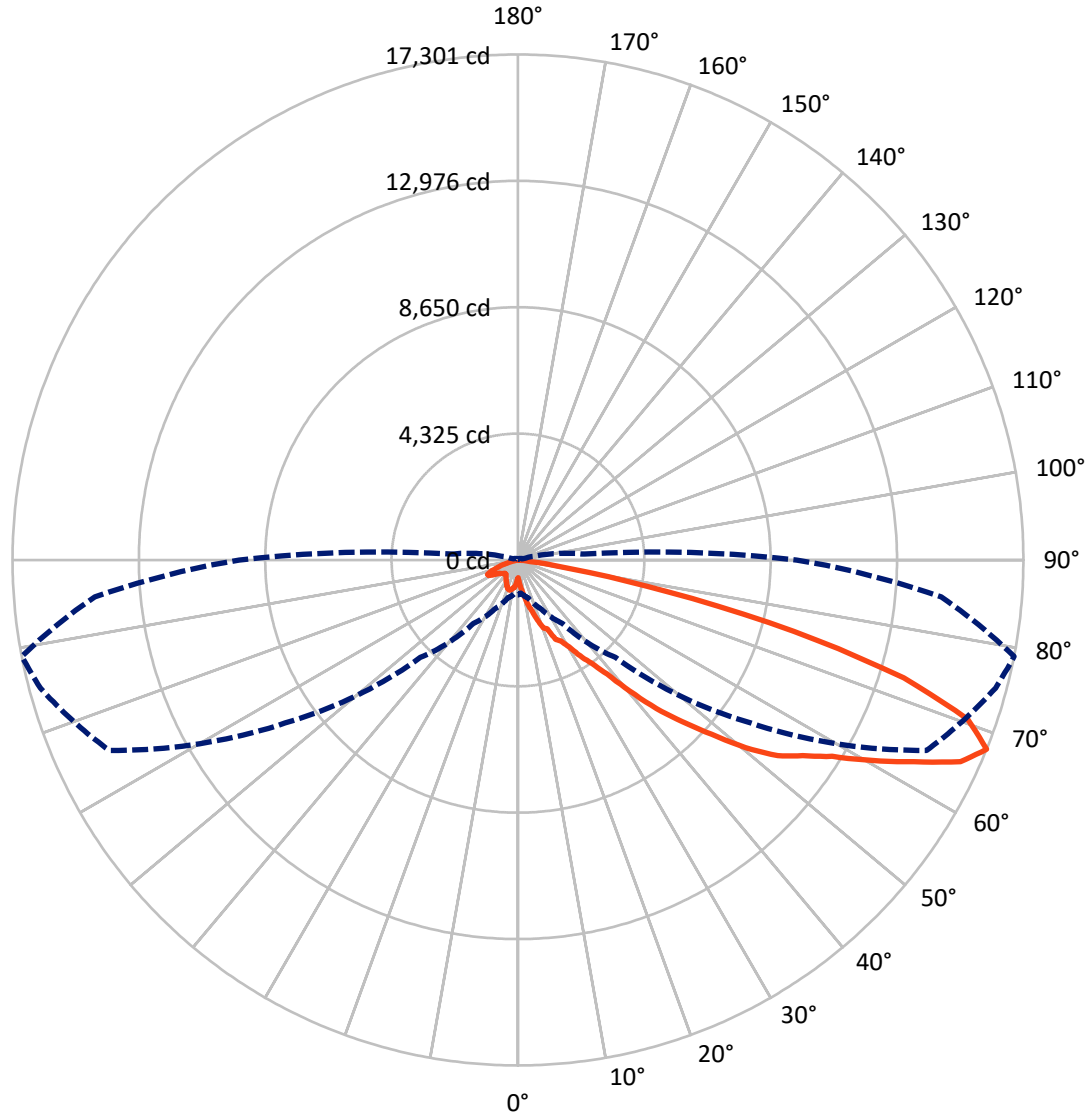
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 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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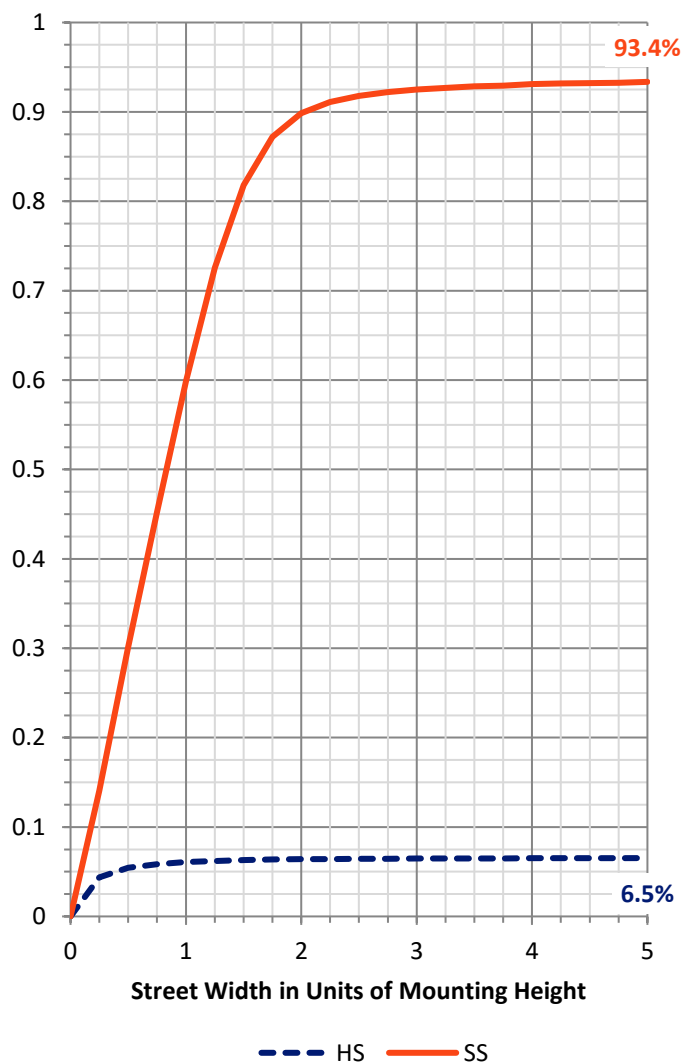
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1036.0	0.0	1036.0
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	14731.0	0.0	14731.0
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	15767.0	0.0	15767.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.4	0.6
10°-20°	352.3	2.2
20°-30°	679.7	4.3
30°-40°	1335.1	8.5
40°-50°	2674.6	17.0
50°-60°	4275.0	27.1
60°-70°	4301.4	27.3
70°-80°	1940.5	12.3
80°-90°	120.1	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°	15767.0	100.0
0°-180°	15767.0	100.0

**Coefficient of Utilization**



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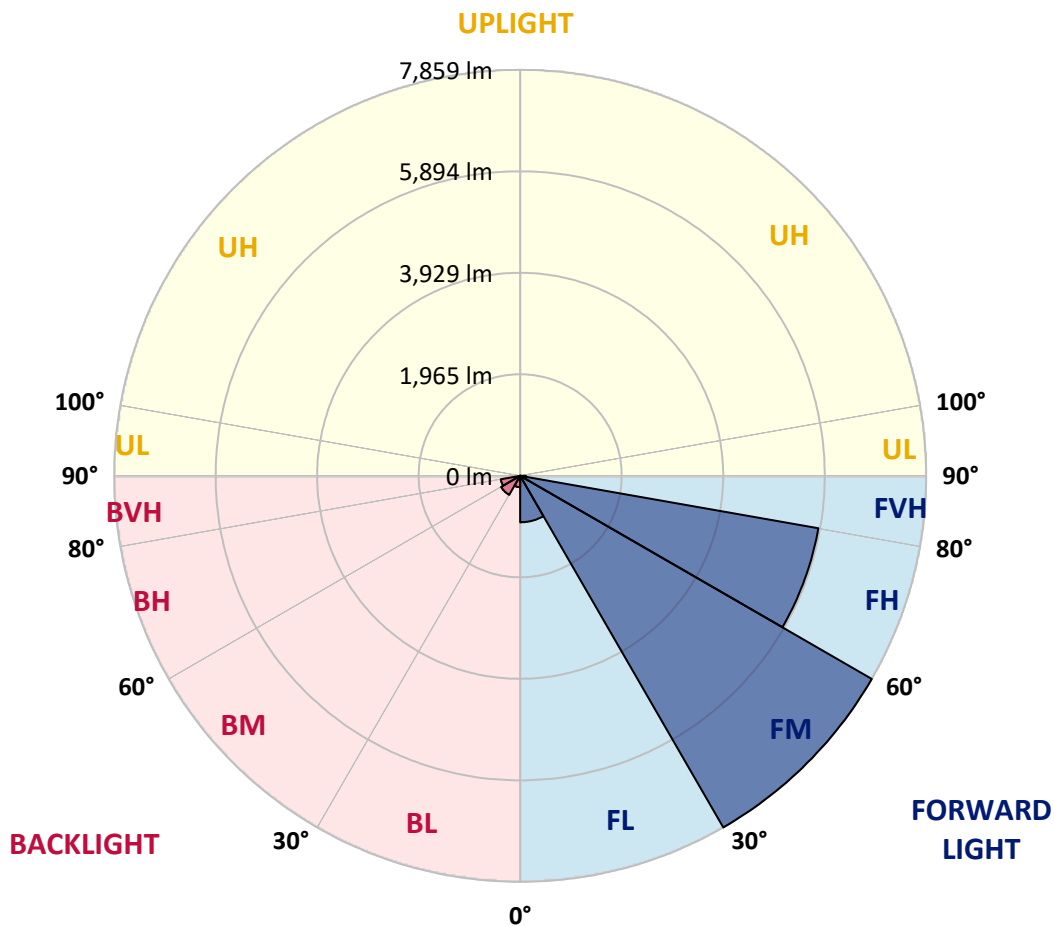
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	900.1	5.7			
FM (30°-60°)	7858.5	49.8			
FH (60°-80°)	5860.0	37.2			G3/7500
FVH (80°-90°)	112.4	0.7			G2/225
BL (0°-30°)	220.2	1.4	B1/500		
BM (30°-60°)	426.2	2.7	B1/1000		
BH (60°-80°)	381.9	2.4	B1/500		G1/500
BVH (80°-90°)	7.7	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°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	820.5	790.9	743.1	770.1	768.3	782.2	756.2	727.5	681.4	727.5	731.0
5°	1181.2	1126.4	1091.7	1084.7	1046.5	1010.8	1003.0	973.5	950.9	910.0	946.5
7.5°	1471.5	1446.3	1384.6	1377.6	1283.8	1231.6	1248.1	1235.1	1149.0	1106.4	1142.1
10°	1594.9	1551.5	1560.1	1551.5	1511.5	1526.2	1492.3	1453.2	1384.6	1314.2	1225.5
12.5°	1642.7	1635.8	1707.9	1699.2	1793.1	1906.1	1830.5	1765.3	1606.2	1588.8	1468.0
15°	1745.3	1788.7	1778.3	1814.8	1874.8	2066.9	2065.1	2080.8	1912.2	1821.8	1647.1
17.5°	1836.5	1868.7	1816.5	1858.3	2021.7	2138.1	2293.7	2232.9	2252.0	2159.9	1889.6
20°	1797.4	1833.9	1781.8	1756.6	2044.3	2265.0	2472.8	2428.4	2543.2	2485.8	2112.9
22.5°	2041.7	1973.0	1841.8	1760.1	1974.7	2262.4	2536.2	2721.3	2701.4	2560.5	2320.7
25°	2343.3	2301.5	2144.2	1999.9	2019.1	2246.8	2736.1	3008.2	3067.3	3007.3	2518.0
27.5°	2750.0	2740.5	2418.9	2356.3	2170.3	2178.1	2767.4	3369.7	3235.0	3141.1	2748.3
30°	3281.1	3205.5	2823.9	2742.2	2467.5	2332.8	2958.6	3681.8	3582.7	3454.9	2964.7
32.5°	3852.1	3863.4	3376.7	3107.3	2886.5	2726.6	2883.0	3827.8	4012.9	3909.5	3235.0
35°	4500.5	4550.9	3955.6	3639.2	3209.8	2974.3	3208.1	4276.3	4608.3	4336.2	3597.5
37.5°	5499.2	5497.4	4802.1	4172.0	3859.9	3604.4	3749.6	4683.9	5340.1	4957.7	4247.6
40°	6377.9	6186.7	5540.0	4816.0	4329.3	4259.8	4154.6	5241.9	6121.5	5891.2	4825.6
42.5°	7034.1	6899.4	6118.0	5554.8	4951.6	4730.8	4693.5	6059.8	7274.9	6952.4	5650.4
45°	7819.0	7377.4	6802.1	6294.5	5680.0	5615.6	5527.9	6889.8	8616.9	7890.2	6367.5
47.5°	8522.1	8106.7	7562.6	6910.7	6204.9	6735.1	6397.9	7619.1	9592.9	8910.6	7158.4
50°	9114.0	8672.5	8063.2	7566.9	7264.4	7624.3	7061.9	8219.7	10647.2	10094.4	7898.1
52.5°	9415.6	8915.9	8444.8	8138.0	8323.1	8242.3	7962.4	8947.1	11545.9	11132.2	8553.4
55°	9167.9	8679.4	8482.1	8634.2	9196.6	8962.8	8985.4	10074.4	12394.2	11824.1	9123.6
57.5°	8069.3	7623.4	7711.2	8127.5	9205.3	9817.2	10151.8	11169.6	13074.8	12686.3	10003.2
60°	6104.1	5745.2	6070.2	6809.0	8339.6	9646.8	10979.2	12264.7	14047.4	13925.7	11334.7
62.5°	3727.8	3533.1	3993.8	4915.1	6645.6	8811.6	11461.6	13724.9	15087.8	15217.3	12747.1
65°	1901.7	1813.9	2198.1	3008.2	4490.1	7238.4	11113.1	14632.3	16162.9	16641.0	14093.4
67.5°	1197.7	1141.2	1346.3	1834.8	2649.2	4721.3	9730.3	15425.9	16922.6	17300.7	14542.8
70°	830.0	794.4	971.7	1259.4	1671.4	2543.2	7224.5	14685.3	16320.2	16337.6	13455.5
72.5°	526.7	498.9	671.9	932.6	1233.3	1313.3	4141.6	11523.3	13970.0	13809.2	10896.7
75°	341.6	327.7	426.8	683.2	947.4	810.1	2046.9	7775.5	10017.1	9765.0	7237.5
77.5°	245.1	236.4	286.0	456.3	674.5	566.7	917.8	4634.4	5743.4	5192.4	3513.1
80°	147.8	146.9	206.9	286.0	479.8	399.8	424.2	2104.2	2226.8	1815.7	1073.4
82.5°	73.9	76.5	115.6	184.3	308.6	261.6	193.8	700.5	598.0	440.7	217.3
85°	17.4	21.7	60.8	126.9	154.7	104.3	92.1	183.4	164.3	124.3	63.4
87.5°	0.0	0.0	19.1	30.4	41.7	17.4	31.3	34.8	44.3	34.8	13.0
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°	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5	607.5
2.5°	731.8	721.4	658.0	641.4	639.7	621.5	625.8	608.4	609.3	648.4	648.4
5°	932.6	871.8	810.9	757.0	720.5	668.4	649.3	641.4	634.5	650.1	659.7
7.5°	1095.1	1005.6	896.1	778.8	670.1	595.4	584.9	565.8	558.9	574.5	586.7
10°	1167.3	1056.0	905.7	734.4	632.7	571.9	521.5	494.6	489.3	488.5	492.8
12.5°	1320.3	1182.1	916.1	717.9	607.5	540.6	483.3	438.1	396.3	400.7	396.3
15°	1442.8	1279.4	916.1	677.9	546.7	479.8	379.0	356.4	350.3	359.8	352.0
17.5°	1627.9	1375.9	870.0	606.7	494.6	372.9	334.6	332.9	345.1	359.0	350.3
20°	1739.2	1388.9	792.7	525.0	405.9	323.3	309.4	295.5	312.9	324.2	319.9
22.5°	1854.8	1389.8	715.3	481.5	326.8	294.6	272.0	260.7	263.4	273.8	275.5
25°	1904.3	1355.9	643.2	424.2	296.4	263.4	239.9	227.7	223.4	228.6	226.9
27.5°	2039.1	1290.7	565.0	361.6	281.6	233.8	212.1	197.3	184.3	193.0	194.7
30°	2058.2	1269.8	522.4	321.6	262.5	206.9	187.7	172.1	162.5	174.7	174.7
32.5°	2119.0	1155.1	500.6	305.1	242.5	191.2	165.1	153.8	152.1	159.9	160.8
35°	2212.9	1104.7	468.5	292.0	224.2	173.0	148.6	143.4	141.7	147.8	147.8
37.5°	2531.0	1042.1	432.8	280.7	208.6	163.4	144.3	135.6	136.5	141.7	145.1
40°	2742.2	1049.9	379.8	266.8	190.3	154.7	135.6	129.5	128.6	131.2	133.9
42.5°	3134.2	1056.0	356.4	252.1	176.4	144.3	126.9	122.6	119.1	121.7	124.3
45°	3572.3	1088.2	344.2	239.9	168.6	138.2	119.1	116.5	108.6	110.4	113.9
47.5°	3994.7	1205.5	329.4	222.5	161.7	134.7	111.3	105.2	100.0	99.1	102.6
50°	4474.4	1319.4	312.9	203.4	154.7	129.5	103.4	93.9	90.4	90.4	93.0
52.5°	4903.8	1428.0	297.3	190.3	149.5	119.9	96.5	86.9	84.3	84.3	87.8
55°	5355.8	1541.9	283.3	178.2	142.5	110.4	90.4	81.7	80.8	79.1	81.7
57.5°	6153.7	1790.5	266.0	167.7	133.0	102.6	85.2	76.5	74.7	72.1	74.7
60°	7315.7	2172.0	243.4	157.3	121.7	97.3	80.8	70.4	67.8	63.4	64.3
62.5°	8451.7	2480.6	217.3	144.3	111.3	92.1	73.9	63.4	59.1	53.9	54.8
65°	9425.2	2602.3	189.5	128.6	100.8	80.0	64.3	55.6	49.5	42.6	41.7
67.5°	9539.9	2298.1	162.5	113.9	90.4	67.8	54.8	49.5	40.0	33.9	32.2
70°	8585.6	1712.2	135.6	100.8	78.2	57.4	46.9	43.5	37.4	32.2	29.6
72.5°	6836.8	1263.8	113.9	89.5	68.7	48.7	40.0	40.9	37.4	31.3	27.8
75°	4521.4	723.1	93.0	74.7	57.4	39.1	36.5	36.5	35.6	29.6	26.1
77.5°	2175.5	312.0	71.3	59.1	46.1	29.6	33.0	33.0	33.9	26.9	21.7
80°	617.1	93.9	44.3	40.0	33.9	20.0	26.1	25.2	22.6	15.6	9.6
82.5°	110.4	36.5	20.0	20.9	19.1	7.8	14.8	13.9	11.3	6.1	0.9
85°	30.4	13.9	11.3	12.2	9.6	2.6	6.1	7.8	6.1	3.5	0.0
87.5°	7.8	6.1	7.8	8.7	7.0	0.9	2.6	0.9	2.6	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)