

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: P368417

Luminaire Tested: **MSA-SA4B-760-U-T2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368417  
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-SA4B-760-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: 14654 lumens  
Efficiency: N/A  
Efficacy: 85.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B1 - U0 - G3

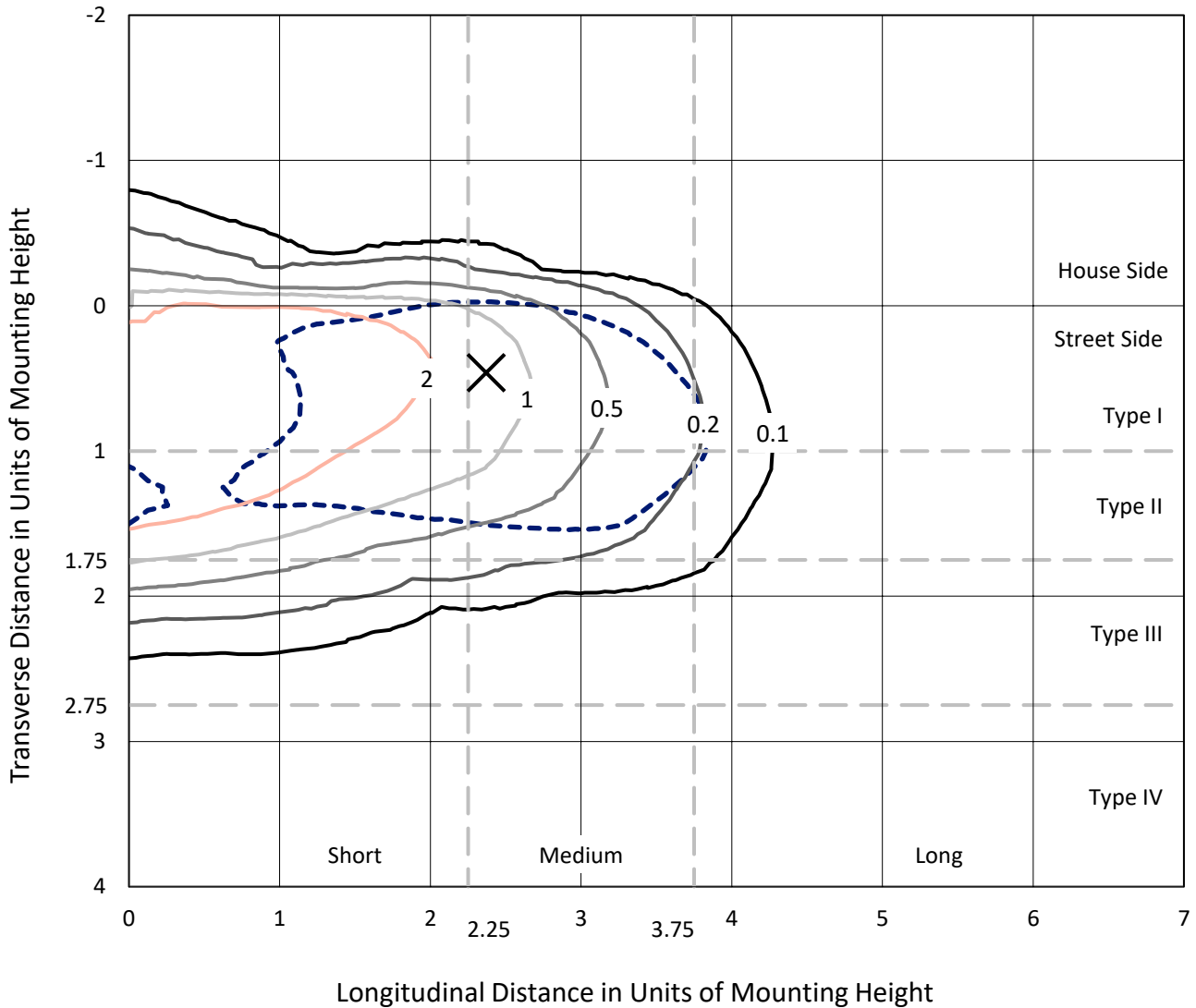
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

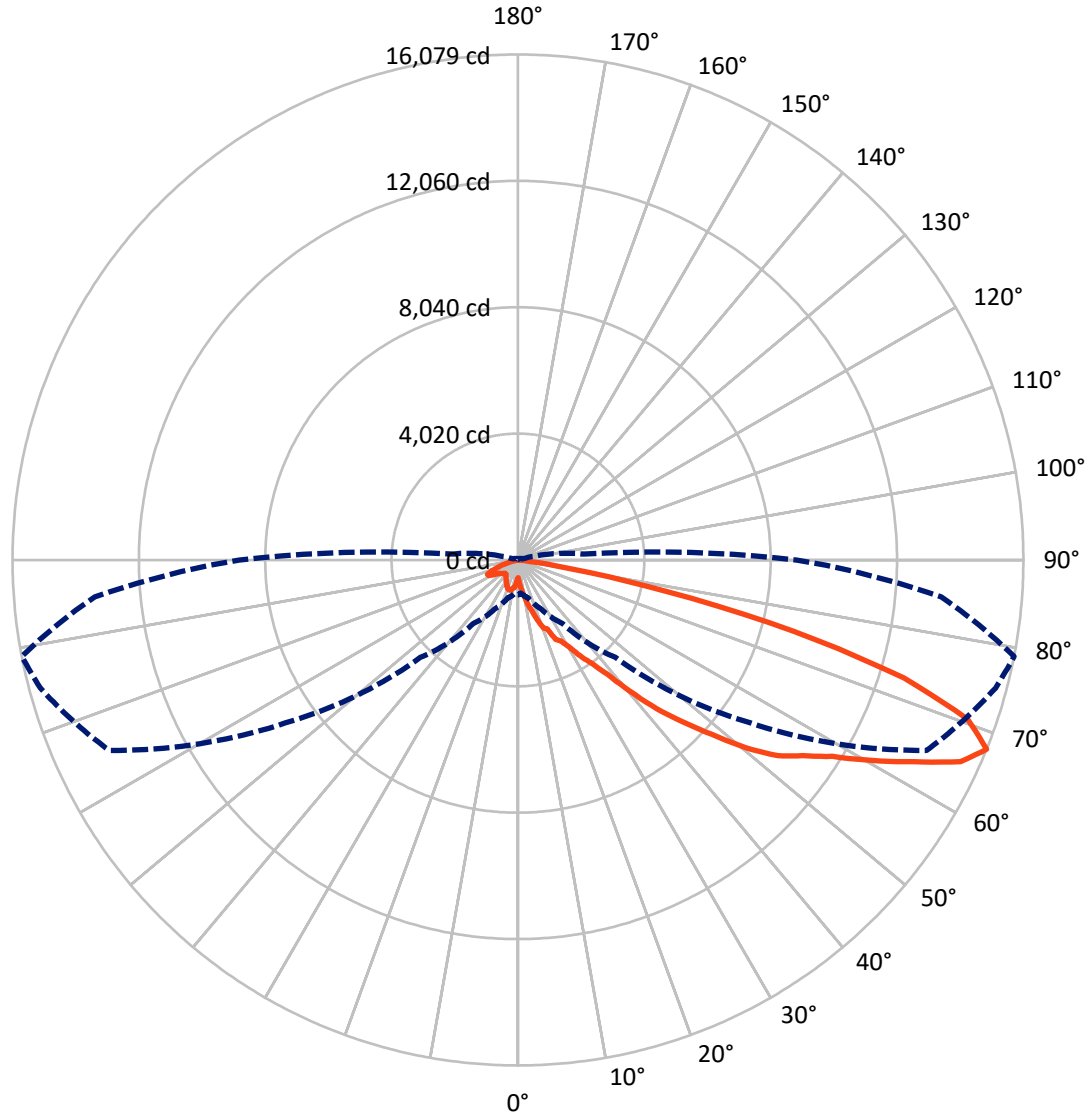
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.4 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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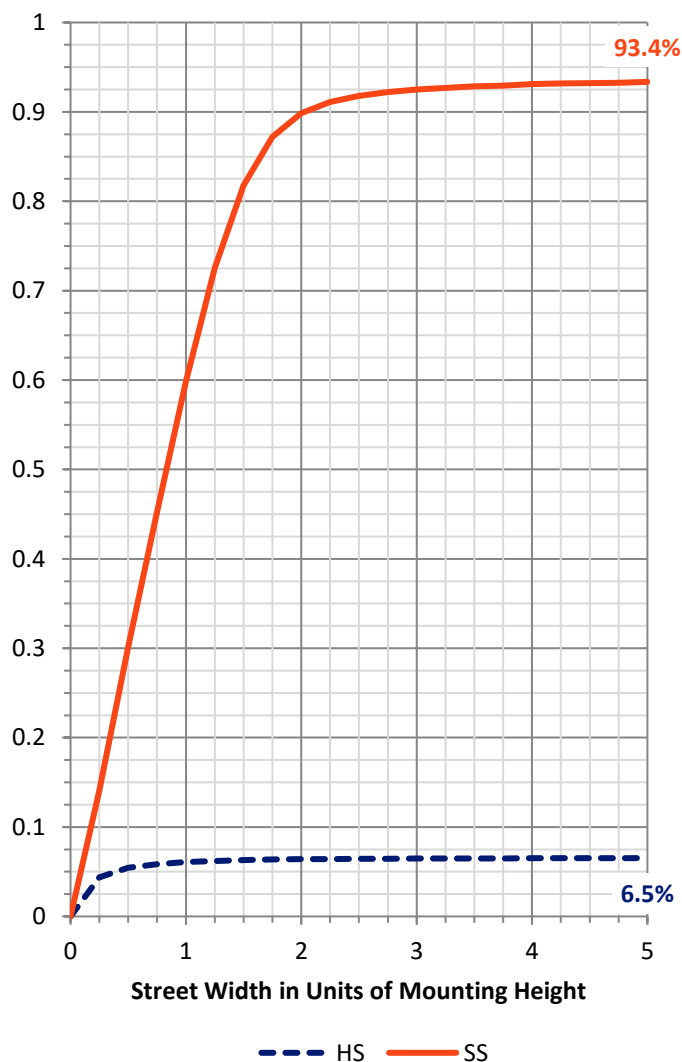
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	962.9	0.0	962.9
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	13691.1	0.0	13691.1
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	14654.0	0.0	14654.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.1	0.6
10°-20°	327.4	2.2
20°-30°	631.7	4.3
30°-40°	1240.9	8.5
40°-50°	2485.8	17.0
50°-60°	3973.2	27.1
60°-70°	3997.7	27.3
70°-80°	1803.5	12.3
80°-90°	111.6	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°	14654.0	100.0
0°-180°	14654.0	100.0

**Coefficient of Utilization**



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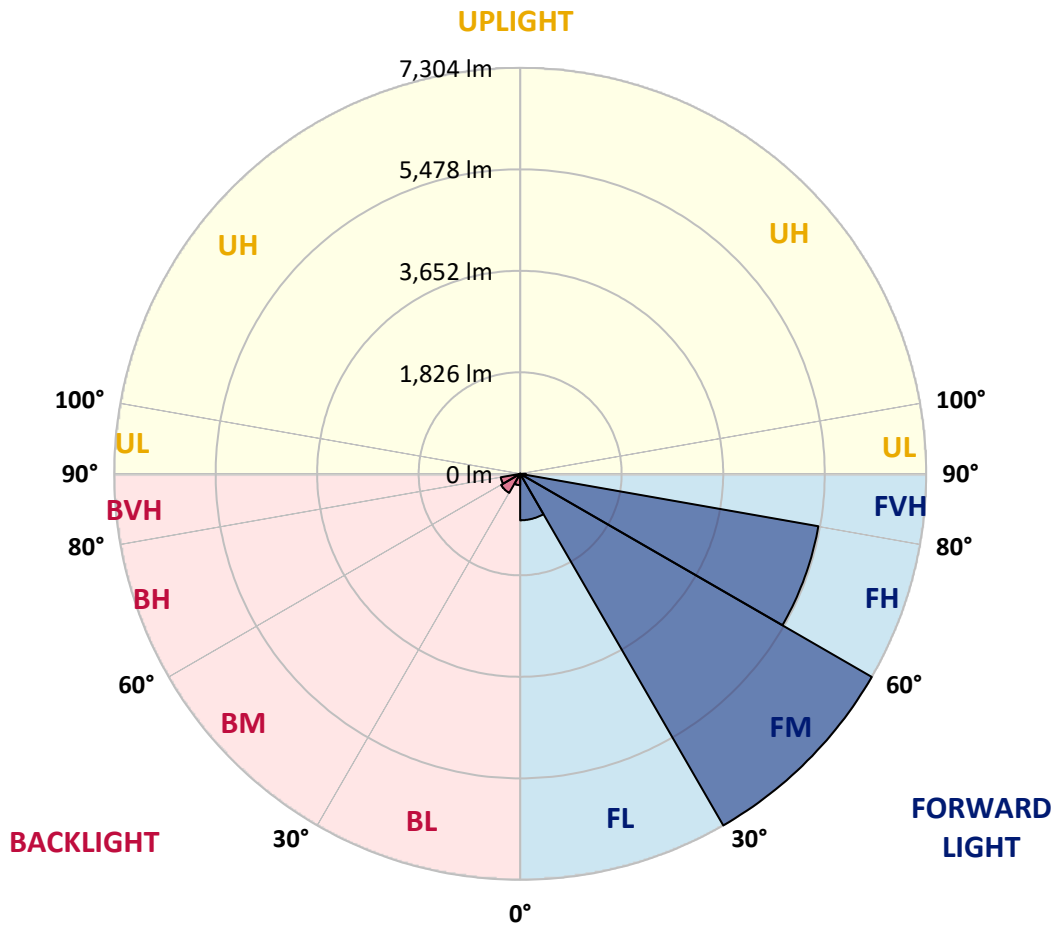
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	836.6	5.7			
FM (30°-60°)	7303.8	49.8			
FH (60°-80°)	5446.3	37.2			G3/7500
FVH (80°-90°)	104.5	0.7			G2/225
BL (0°-30°)	204.7	1.4	B1/500		
BM (30°-60°)	396.2	2.7	B1/1000		
BH (60°-80°)	354.9	2.4	B1/500		G1/500
BVH (80°-90°)	7.1	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°	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7
2.5°	762.6	735.1	690.7	715.7	714.1	727.0	702.8	676.1	633.3	676.1	679.4
5°	1097.8	1046.9	1014.6	1008.1	972.6	939.5	932.2	904.7	883.7	845.8	879.7
7.5°	1367.6	1344.2	1286.8	1280.4	1193.1	1144.7	1160.0	1147.9	1067.9	1028.3	1061.5
10°	1482.3	1441.9	1450.0	1441.9	1404.8	1418.5	1387.0	1350.7	1286.8	1221.4	1139.0
12.5°	1526.8	1520.3	1587.3	1579.3	1666.5	1771.5	1701.2	1640.7	1492.8	1476.7	1364.4
15°	1622.1	1662.5	1652.8	1686.7	1742.4	1921.0	1919.3	1933.9	1777.2	1693.2	1530.8
17.5°	1706.9	1736.8	1688.3	1727.1	1879.0	1987.2	2131.8	2075.3	2093.0	2007.4	1756.2
20°	1670.5	1704.5	1656.0	1632.6	1900.0	2105.1	2298.2	2257.0	2363.6	2310.3	1963.8
22.5°	1897.5	1833.7	1711.7	1635.8	1835.3	2102.7	2357.2	2529.2	2510.7	2379.8	2156.8
25°	2177.8	2139.1	1992.9	1858.8	1876.5	2088.2	2543.0	2795.8	2850.7	2795.0	2340.2
27.5°	2555.9	2547.0	2248.1	2190.0	2017.1	2024.4	2572.1	3131.9	3006.7	2919.4	2554.3
30°	3049.5	2979.2	2624.6	2548.6	2293.4	2168.2	2749.8	3421.9	3329.8	3211.0	2755.4
32.5°	3580.2	3590.7	3138.3	2887.9	2682.7	2534.1	2679.5	3557.6	3729.6	3633.5	3006.7
35°	4182.8	4229.7	3676.3	3382.3	2983.2	2764.3	2981.6	3974.4	4283.0	4030.1	3343.5
37.5°	5111.0	5109.4	4463.1	3877.5	3587.5	3350.0	3484.9	4353.3	4963.2	4607.7	3947.8
40°	5927.7	5750.0	5149.0	4476.1	4023.7	3959.1	3861.3	4871.9	5689.4	5475.3	4484.9
42.5°	6537.6	6412.4	5686.2	5162.7	4602.1	4396.9	4362.2	5632.0	6761.3	6461.6	5251.6
45°	7267.0	6856.7	6321.9	5850.1	5279.0	5219.2	5137.6	6403.5	8008.6	7333.3	5918.0
47.5°	7920.5	7534.4	7028.7	6422.9	5766.9	6259.7	5946.3	7081.2	8915.8	8281.6	6653.1
50°	8470.7	8060.3	7494.0	7032.8	6751.6	7086.1	6563.4	7639.4	9895.6	9381.9	7340.5
52.5°	8751.0	8286.5	7848.6	7563.5	7735.6	7660.4	7400.3	8315.6	10730.9	10346.4	7949.6
55°	8520.7	8066.8	7883.4	8024.8	8547.4	8330.1	8351.1	9363.3	11519.3	10989.4	8479.5
57.5°	7499.7	7085.3	7166.9	7553.8	8555.5	9124.2	9435.2	10381.1	12151.8	11790.7	9297.0
60°	5673.2	5339.6	5641.7	6328.4	7750.9	8965.8	10204.2	11399.0	13055.8	12942.7	10534.6
62.5°	3464.7	3283.7	3711.9	4568.1	6176.5	8189.5	10652.5	12756.1	14022.7	14143.1	11847.3
65°	1767.5	1685.9	2042.9	2795.8	4173.1	6727.4	10328.6	13599.4	15022.0	15466.3	13098.6
67.5°	1113.2	1060.6	1251.3	1705.3	2462.2	4388.0	9043.4	14337.0	15728.0	16079.4	13516.2
70°	771.5	738.3	903.1	1170.5	1553.4	2363.6	6714.5	13648.7	15168.2	15184.3	12505.7
72.5°	489.5	463.7	624.4	866.8	1146.3	1220.6	3849.2	10709.9	12983.9	12834.4	10127.5
75°	317.5	304.5	396.6	634.9	880.5	752.9	1902.4	7226.6	9310.0	9075.7	6726.6
77.5°	227.8	219.7	265.8	424.1	626.9	526.7	853.0	4307.2	5338.0	4825.8	3265.2
80°	137.3	136.5	192.3	265.8	445.9	371.6	394.2	1955.7	2069.6	1687.5	997.6
82.5°	68.7	71.1	107.4	171.3	286.8	243.1	180.1	651.1	555.8	409.6	202.0
85°	16.2	20.2	56.5	117.9	143.8	96.9	85.6	170.4	152.7	115.5	59.0
87.5°	0.0	0.0	17.8	28.3	38.8	16.2	29.1	32.3	41.2	32.3	12.1
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°	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7	564.7
2.5°	680.2	670.5	611.5	596.2	594.5	577.6	581.6	565.5	566.3	602.6	602.6
5°	866.8	810.2	753.7	703.6	669.7	621.2	603.4	596.2	589.7	604.2	613.1
7.5°	1017.8	934.6	832.8	723.8	622.8	553.3	543.7	525.9	519.4	534.0	545.3
10°	1084.9	981.5	841.7	682.6	588.1	531.5	484.7	459.6	454.8	454.0	458.0
12.5°	1227.1	1098.6	851.4	667.2	564.7	502.5	449.1	407.1	368.4	372.4	368.4
15°	1341.0	1189.1	851.4	630.1	508.1	445.9	352.2	331.2	325.5	334.4	327.2
17.5°	1513.0	1278.8	808.6	563.8	459.6	346.5	311.0	309.4	320.7	333.6	325.5
20°	1616.4	1290.9	736.7	487.9	377.2	300.5	287.6	274.7	290.8	301.3	297.3
22.5°	1723.9	1291.7	664.8	447.5	303.7	273.8	252.8	242.3	244.8	254.5	256.1
25°	1769.9	1260.2	597.8	394.2	275.5	244.8	223.0	211.6	207.6	212.5	210.8
27.5°	1895.1	1199.6	525.1	336.0	261.7	217.3	197.1	183.4	171.3	179.3	180.9
30°	1912.9	1180.2	485.5	298.9	244.0	192.3	174.5	159.9	151.1	162.4	162.4
32.5°	1969.4	1073.6	465.3	283.5	225.4	177.7	153.5	143.0	141.4	148.6	149.4
35°	2056.7	1026.7	435.4	271.4	208.4	160.8	138.1	133.3	131.7	137.3	137.3
37.5°	2352.3	968.6	402.3	260.9	193.9	151.9	134.1	126.0	126.8	131.7	134.9
40°	2548.6	975.8	353.0	248.0	176.9	143.8	126.0	120.4	119.6	122.0	124.4
42.5°	2913.0	981.5	331.2	234.3	164.0	134.1	117.9	113.9	110.7	113.1	115.5
45°	3320.1	1011.4	319.9	223.0	156.7	128.4	110.7	108.2	101.0	102.6	105.8
47.5°	3712.7	1120.4	306.2	206.8	150.3	125.2	103.4	97.7	92.9	92.1	95.3
50°	4158.6	1226.3	290.8	189.0	143.8	120.4	96.1	87.2	84.0	84.0	86.4
52.5°	4557.6	1327.2	276.3	176.9	138.9	111.5	89.7	80.8	78.4	78.4	81.6
55°	4977.7	1433.0	263.3	165.6	132.5	102.6	84.0	75.9	75.1	73.5	75.9
57.5°	5719.3	1664.1	247.2	155.9	123.6	95.3	79.2	71.1	69.5	67.0	69.5
60°	6799.3	2018.7	226.2	146.2	113.1	90.5	75.1	65.4	63.0	59.0	59.8
62.5°	7855.1	2305.5	202.0	134.1	103.4	85.6	68.7	59.0	54.9	50.1	50.9
65°	8759.9	2418.6	176.1	119.6	93.7	74.3	59.8	51.7	46.0	39.6	38.8
67.5°	8866.5	2135.8	151.1	105.8	84.0	63.0	50.9	46.0	37.2	31.5	29.9
70°	7979.5	1591.4	126.0	93.7	72.7	53.3	43.6	40.4	34.7	29.9	27.5
72.5°	6354.2	1174.6	105.8	83.2	63.8	45.2	37.2	38.0	34.7	29.1	25.8
75°	4202.2	672.1	86.4	69.5	53.3	36.4	33.9	33.9	33.1	27.5	24.2
77.5°	2021.9	290.0	66.2	54.9	42.8	27.5	30.7	30.7	31.5	25.0	20.2
80°	573.5	87.2	41.2	37.2	31.5	18.6	24.2	23.4	21.0	14.5	8.9
82.5°	102.6	33.9	18.6	19.4	17.8	7.3	13.7	12.9	10.5	5.7	0.8
85°	28.3	12.9	10.5	11.3	8.9	2.4	5.7	7.3	5.7	3.2	0.0
87.5°	7.3	5.7	7.3	8.1	6.5	0.8	2.4	0.8	2.4	0.8	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)