

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: P367648

Luminaire Tested: **MSA-SA2D-830-U-T2**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367648  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2D-830-U-T2  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10690 lumens  
Efficiency: N/A  
Efficacy: 82.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B2 - U0 - G2

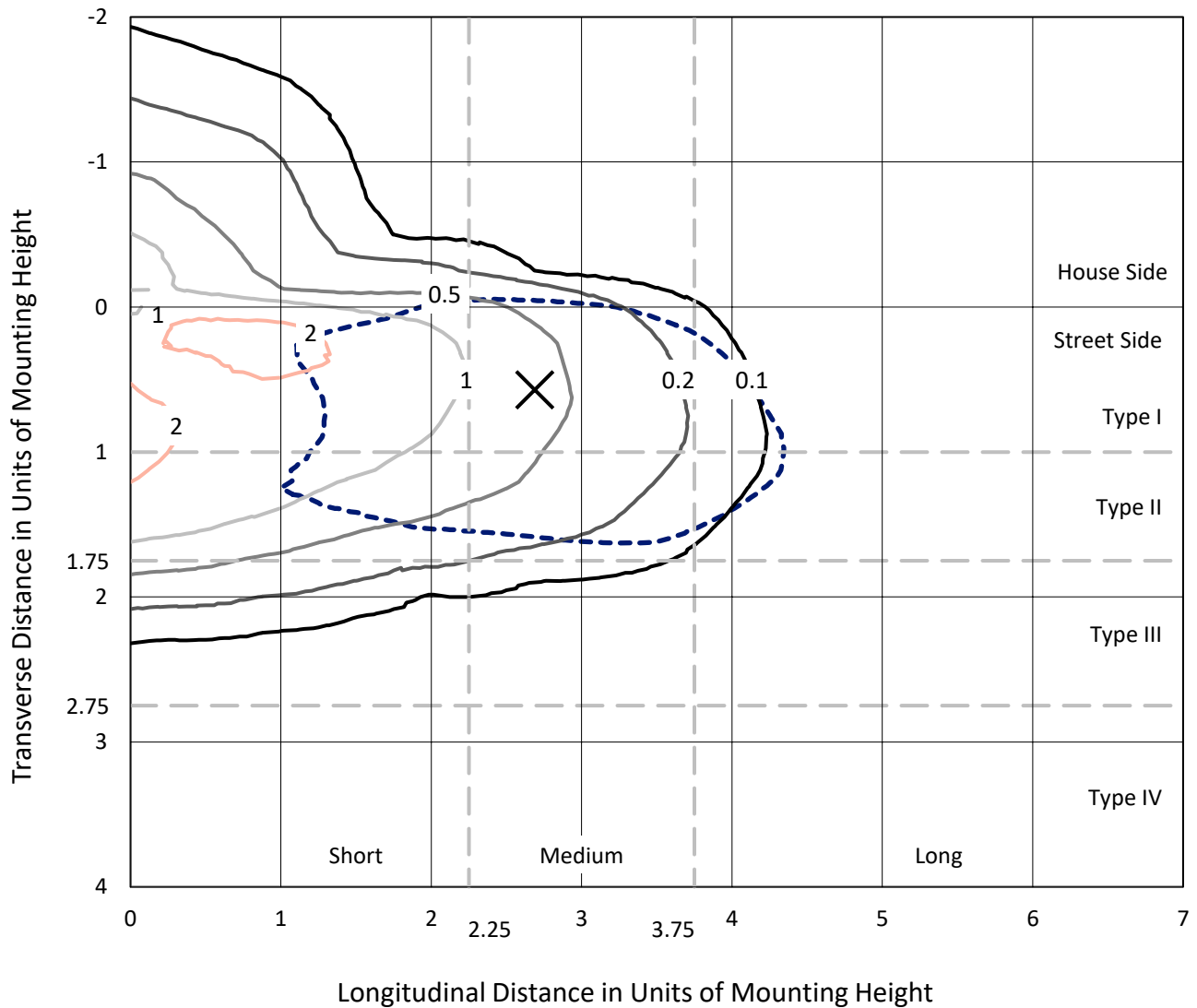
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

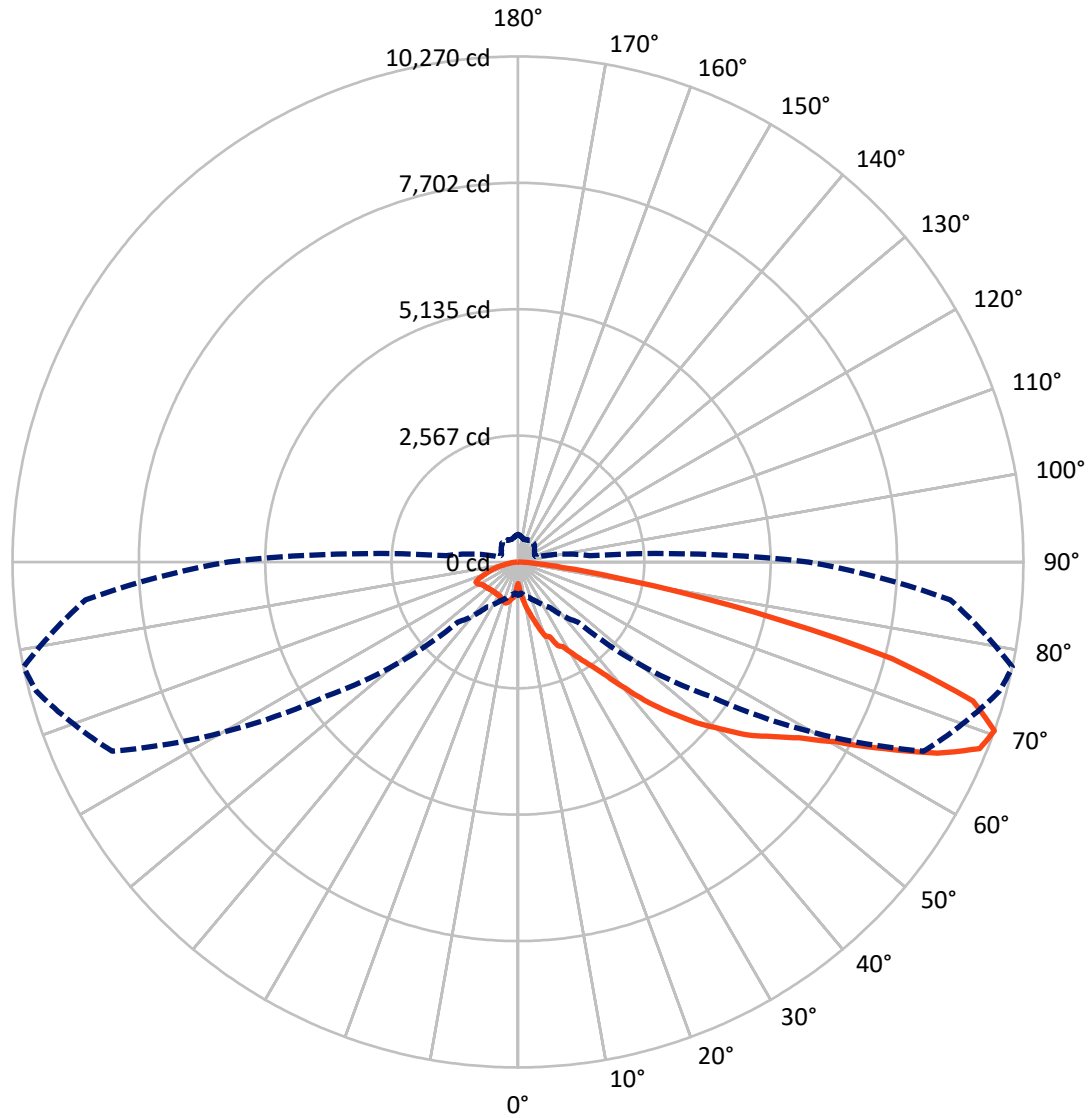
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.5 fc  
 Type II - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 78-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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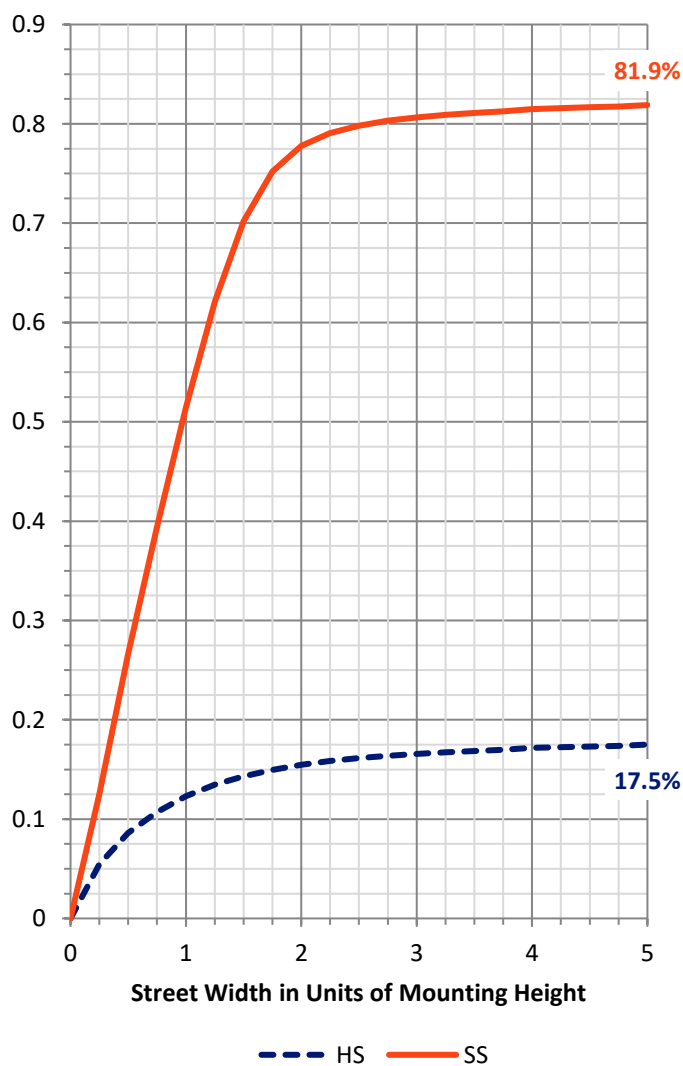
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1908.0	0.0	1908.0
	% Fixture	17.8	0.0	17.8
<b>Street Side</b>	Lumens	8782.0	0.0	8782.0
	% Fixture	82.2	0.0	82.2
<b>Total</b>	Lumens	10690.0	0.0	10690.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.4	0.6
10°-20°	296.8	2.8
20°-30°	571.2	5.3
30°-40°	962.1	9.0
40°-50°	1664.7	15.6
50°-60°	2513.5	23.5
60°-70°	2784.1	26.0
70°-80°	1605.1	15.0
80°-90°	225.1	2.1
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°	10690.0	100.0
0°-180°	10690.0	100.0

**Coefficient of Utilization**



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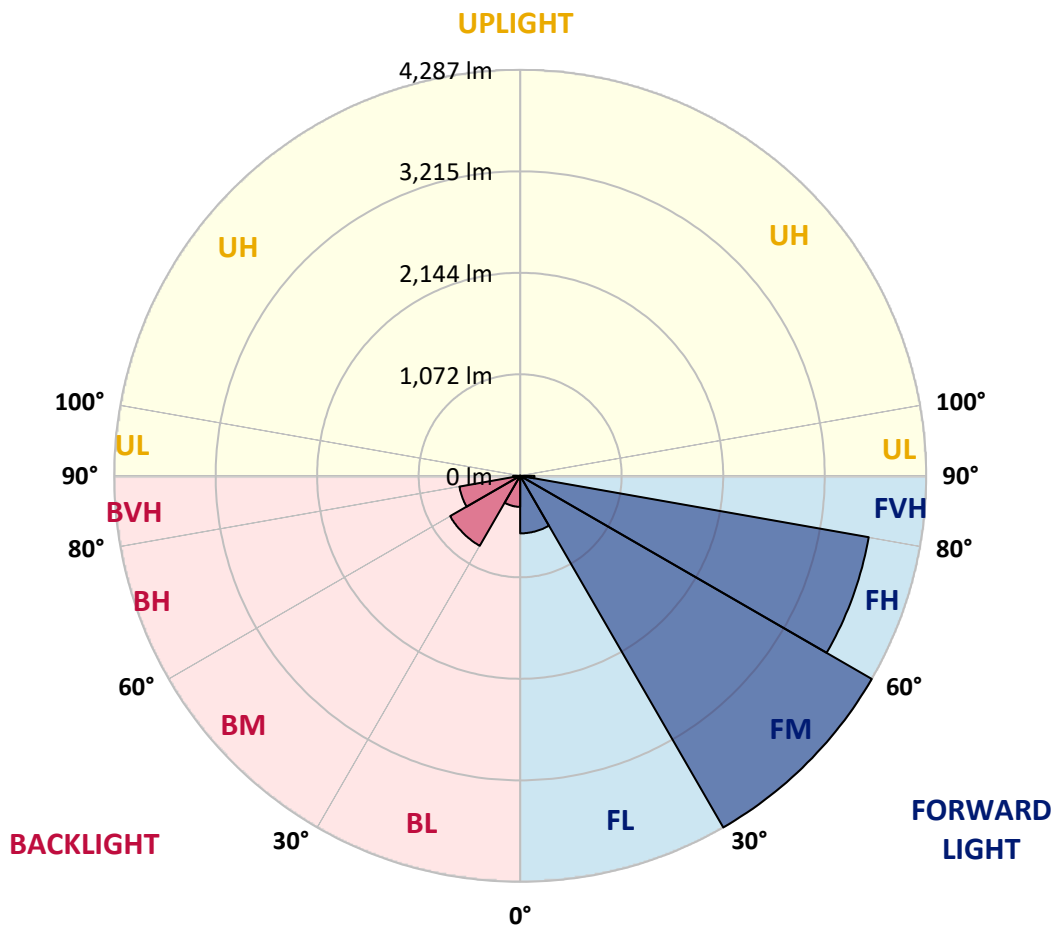
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	607.7	5.7			
FM (30°-60°)	4287.0	40.1			
FH (60°-80°)	3737.1	35.0			G2/5000
FVH (80°-90°)	150.2	1.4			G2/225
BL (0°-30°)	327.6	3.1	B1/500		
BM (30°-60°)	853.4	8.0	B1/1000		
BH (60°-80°)	652.1	6.1	B2/1000		G2/1000
BVH (80°-90°)	74.9	0.7			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	78°	85°
0°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	561.1	541.0	510.7	523.2	538.3	540.1	535.2	507.6	498.2	519.2	525.4
5°	786.1	752.2	731.7	725.1	702.3	655.1	689.0	671.6	675.1	664.9	684.9
7.5°	975.5	952.8	922.5	914.0	861.9	824.9	848.1	840.5	803.9	789.7	812.4
10°	1071.8	1046.8	1048.1	1029.9	1016.1	1019.6	1008.0	974.6	947.4	928.3	873.5
12.5°	1129.7	1135.9	1169.4	1160.0	1212.1	1254.9	1222.4	1172.9	1086.9	1069.5	1015.2
15°	1267.4	1290.6	1259.4	1273.6	1295.9	1377.9	1364.6	1353.9	1262.9	1229.1	1128.8
17.5°	1409.1	1413.6	1366.3	1358.8	1412.2	1453.7	1505.8	1445.7	1456.8	1433.2	1271.0
20°	1439.4	1470.2	1402.4	1355.6	1465.7	1547.7	1612.3	1548.6	1607.4	1613.7	1388.2
22.5°	1550.4	1513.4	1424.3	1378.4	1474.6	1575.3	1680.5	1716.2	1697.4	1644.9	1501.4
25°	1627.5	1607.9	1517.0	1466.2	1502.7	1595.4	1779.9	1873.0	1889.5	1882.4	1609.2
27.5°	1770.5	1780.3	1593.2	1607.4	1556.6	1565.1	1839.6	2081.1	1978.2	1949.7	1742.9
30°	1996.5	1952.8	1742.9	1754.5	1670.3	1656.0	1965.7	2260.7	2168.5	2134.2	1853.0
32.5°	2232.2	2236.2	1981.3	1882.4	1837.4	1823.1	1940.8	2354.8	2409.1	2364.6	2019.2
35°	2564.7	2541.5	2239.8	2109.7	1947.0	1922.0	2118.6	2627.5	2727.3	2602.5	2216.6
37.5°	3070.9	3000.9	2649.8	2349.0	2228.6	2200.1	2372.6	2872.2	3096.8	2941.7	2539.3
40°	3477.3	3335.2	3016.1	2649.8	2446.1	2481.3	2553.1	3168.9	3480.0	3392.7	2837.8
42.5°	3801.3	3675.2	3275.5	3017.9	2741.1	2697.5	2775.9	3536.6	4001.4	3915.8	3210.4
45°	4111.9	3855.2	3566.9	3335.2	3069.1	3122.2	3110.6	3911.8	4640.9	4377.5	3539.7
47.5°	4418.5	4177.4	3875.7	3564.2	3296.4	3626.6	3503.2	4190.8	5072.3	4877.1	3886.4
50°	4812.5	4547.3	4203.7	3890.4	3730.0	3971.5	3764.3	4427.0	5555.4	5326.3	4213.5
52.5°	5074.1	4816.0	4514.8	4291.1	4276.4	4183.2	4130.2	4726.0	5978.7	5839.7	4560.2
55°	5043.3	4794.6	4658.3	4682.8	4864.6	4550.4	4507.2	5168.5	6420.3	6259.5	4934.6
57.5°	4657.8	4386.4	4415.4	4560.7	5049.1	5195.3	5121.7	5641.4	6814.3	6741.2	5397.6
60°	3628.4	3488.9	3724.7	3990.3	4802.2	5384.2	5901.2	6218.0	7299.1	7415.9	6124.9
62.5°	2357.0	2170.7	2543.3	2994.3	4065.6	5259.4	6694.9	7311.6	8093.3	8358.4	7230.1
65°	1221.1	1191.2	1451.9	1866.3	2830.3	4484.5	6974.7	8458.7	9058.5	9367.4	8285.8
67.5°	887.7	832.5	953.2	1197.0	1727.7	3058.0	6444.4	9336.2	9833.5	10116.5	8899.4
70°	676.0	635.0	727.3	878.4	1128.4	1727.3	4757.2	9096.9	10132.5	10269.8	8817.9
72.5°	506.2	471.0	551.7	692.5	869.4	972.4	2812.0	7479.6	9622.3	9669.1	7914.1
75°	404.2	377.0	411.8	546.8	708.6	661.8	1493.8	5419.0	7817.9	7858.0	6045.1
77.5°	331.6	308.4	322.6	410.0	551.3	497.8	741.1	3447.0	4963.5	4902.0	3401.1
80°	270.5	250.4	257.1	296.4	419.8	371.7	416.2	1798.2	2367.7	2272.3	1414.5
82.5°	208.1	191.2	204.5	217.9	303.9	266.9	242.9	818.2	969.7	903.3	518.7
85°	139.5	123.9	177.8	163.5	198.8	164.0	132.8	325.8	361.4	336.9	182.3
87.5°	38.3	36.1	59.7	81.6	81.6	61.9	48.6	78.9	100.7	88.2	42.8
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°	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8	435.8
2.5°	528.1	518.3	492.4	490.2	496.4	497.3	493.3	484.0	479.1	505.8	501.8
5°	680.0	645.3	624.3	605.2	578.4	559.3	564.2	577.5	582.0	602.1	604.3
7.5°	798.1	752.2	706.3	644.8	604.3	578.4	598.0	612.3	623.5	652.0	663.6
10°	849.4	799.5	734.4	669.8	658.7	663.1	652.0	655.5	672.9	674.3	680.0
12.5°	944.8	888.2	771.0	712.6	709.5	718.8	714.8	731.3	743.3	775.9	762.0
15°	1036.1	963.9	798.6	738.9	725.9	744.7	766.5	794.1	820.0	850.7	835.1
17.5°	1147.1	1038.3	799.9	726.8	729.1	769.2	791.9	807.1	884.2	926.5	905.1
20°	1217.0	1045.9	770.1	697.0	729.1	765.2	796.8	813.3	899.7	963.5	978.2
22.5°	1280.3	1048.6	746.9	680.9	701.4	749.1	796.8	833.3	888.6	949.7	951.9
25°	1315.1	1046.4	717.0	682.3	701.0	724.6	766.9	800.4	841.4	926.5	928.7
27.5°	1404.2	1017.4	687.6	687.6	697.4	698.3	752.2	771.8	777.6	855.2	869.0
30°	1430.1	1023.6	684.1	686.7	691.6	682.7	706.3	719.3	727.7	794.6	796.8
32.5°	1471.5	973.7	694.8	678.7	672.5	671.1	676.9	688.5	692.1	733.1	740.7
35°	1521.9	953.7	698.3	676.5	664.0	657.3	674.7	660.4	671.6	719.7	725.1
37.5°	1685.9	926.0	716.6	676.5	660.4	652.9	644.4	651.1	690.7	737.1	765.6
40°	1790.6	934.5	712.1	683.2	648.4	641.3	627.0	651.5	713.0	795.0	816.4
42.5°	1974.2	939.4	717.5	680.0	652.4	624.8	634.1	660.9	725.5	772.3	805.3
45°	2164.0	954.6	713.9	670.7	643.5	656.4	643.5	667.6	698.3	699.7	724.6
47.5°	2350.3	1015.6	706.3	651.5	641.3	675.1	642.2	646.2	648.4	656.4	685.8
50°	2569.1	1080.7	695.6	624.8	644.4	676.0	647.1	627.5	625.2	651.5	684.5
52.5°	2817.8	1154.2	681.8	598.9	626.1	667.6	664.0	628.8	609.6	635.0	668.0
55°	3110.6	1238.0	665.8	573.1	606.1	668.5	673.4	619.4	610.1	637.7	672.9
57.5°	3499.6	1359.2	634.6	535.7	581.6	654.6	649.3	608.7	599.8	629.2	665.8
60°	4163.6	1592.3	590.0	498.7	555.3	620.8	629.7	589.6	580.7	613.2	651.5
62.5°	5052.7	1872.6	536.1	462.6	523.2	584.2	605.2	562.0	561.1	602.5	642.6
65°	5880.2	2031.7	480.4	429.6	490.2	550.4	577.5	536.1	537.9	590.0	630.1
67.5°	6224.3	1844.5	430.5	400.2	452.3	511.6	554.8	516.1	510.3	573.1	610.1
70°	5901.2	1465.3	387.3	369.0	409.5	469.7	523.2	489.3	475.9	533.0	562.0
72.5°	5221.6	1221.5	346.7	332.4	372.1	425.6	480.4	453.2	435.8	479.5	505.4
75°	4081.6	1002.2	300.4	296.4	329.3	385.5	435.8	417.1	394.8	422.5	448.3
77.5°	2324.0	634.1	252.2	254.9	278.5	337.8	382.4	367.7	344.9	356.5	386.4
80°	930.1	320.0	202.8	204.5	224.6	277.6	316.9	311.5	287.9	297.2	317.7
82.5°	347.6	175.6	149.7	150.6	170.7	219.7	270.5	267.8	245.5	238.9	250.4
85°	138.1	86.9	91.8	95.8	115.0	158.2	217.0	192.5	166.2	145.7	152.9
87.5°	33.0	27.6	32.1	33.9	37.4	49.5	79.3	63.7	65.5	52.6	39.2
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)