

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: P368334

Luminaire Tested: **MSA-SA4B-727-U-T4FT**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368334  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4B-727-U-T4FT  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16286 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

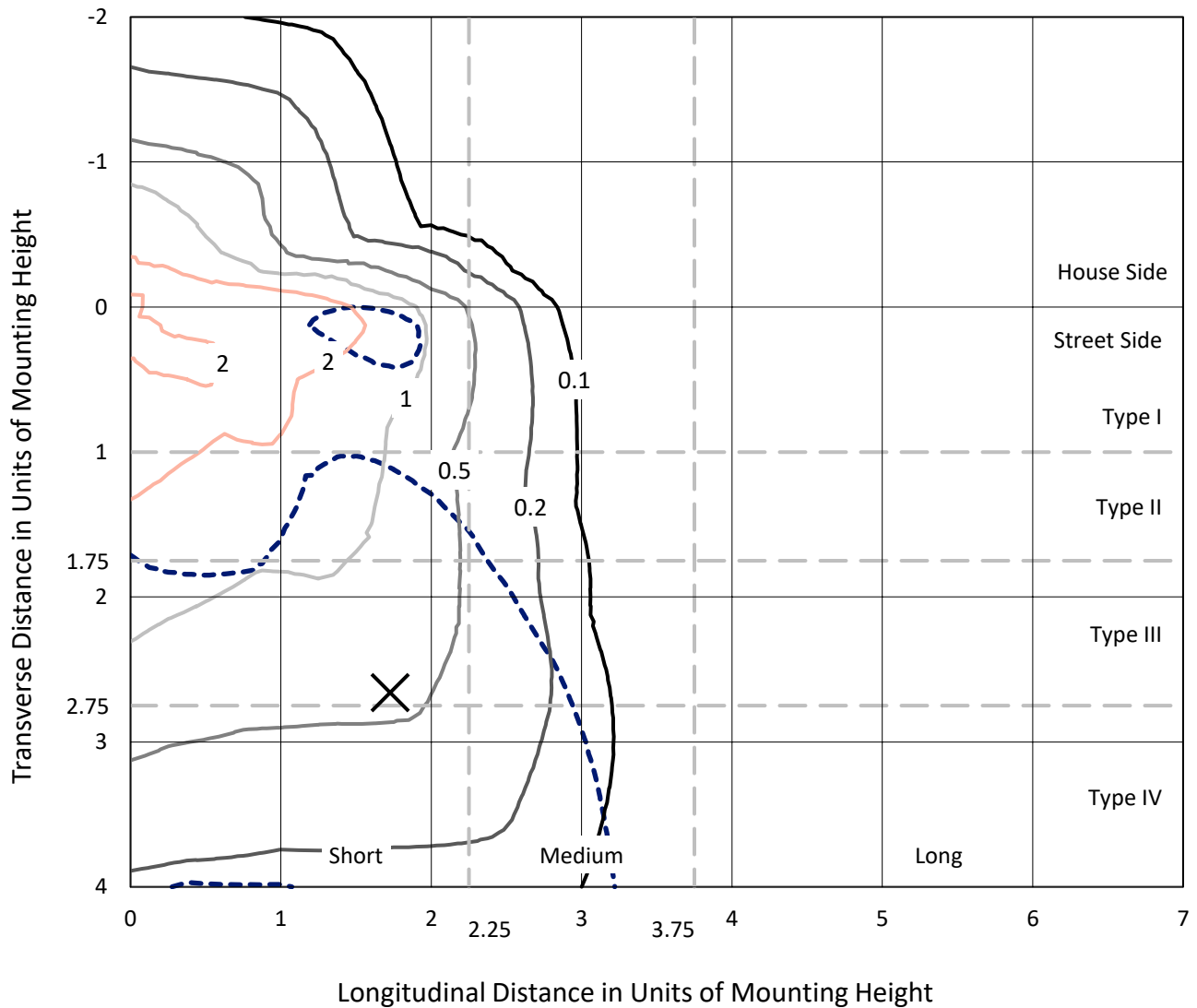
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

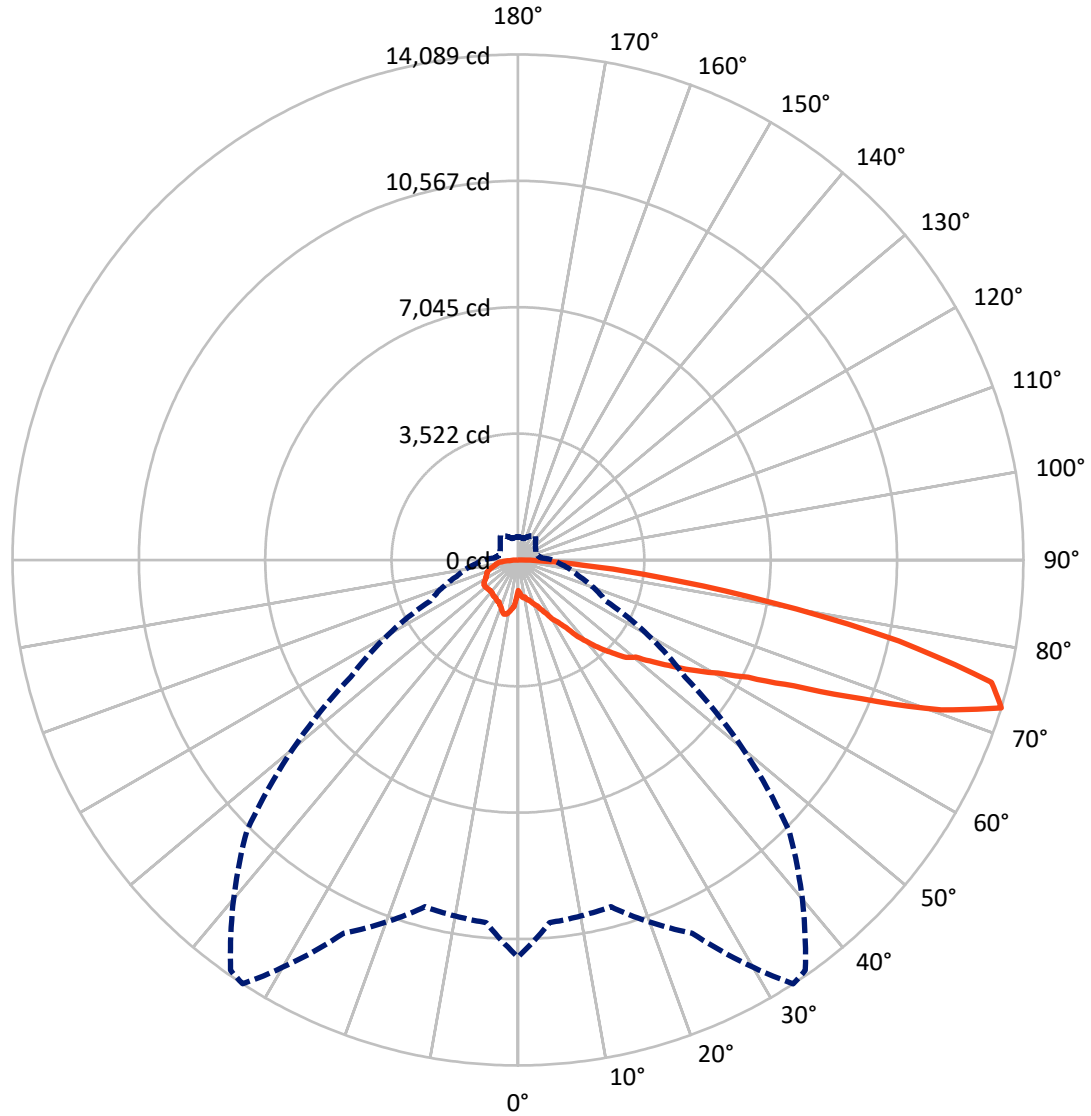
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.3 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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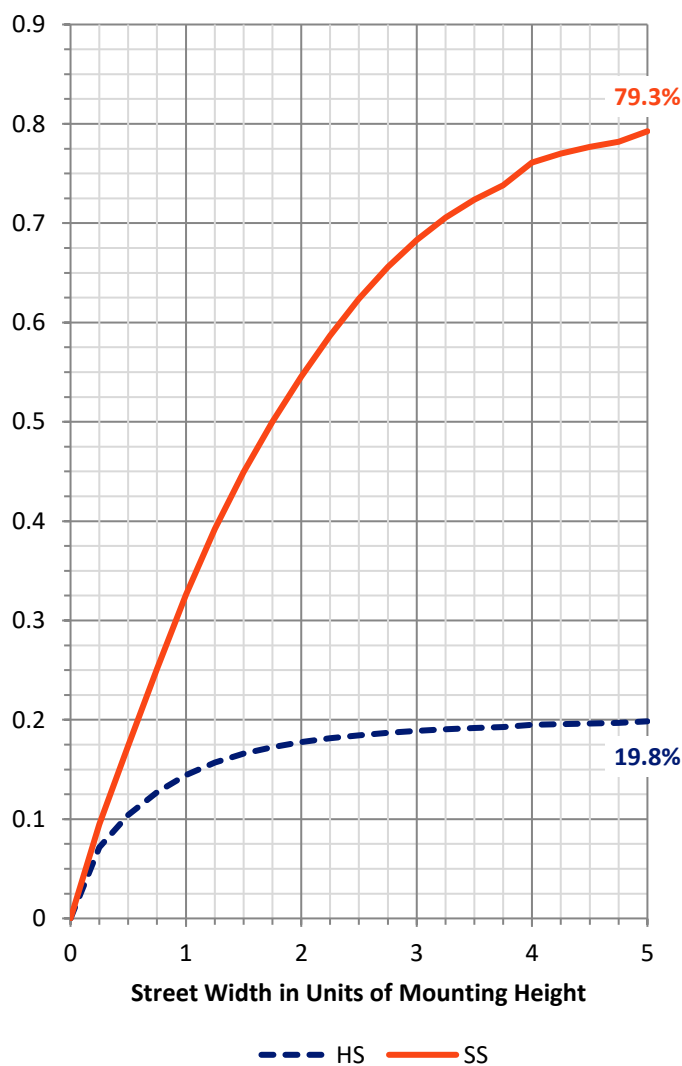
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3294.6	0.0	3294.6
	% Fixture	20.2	0.0	20.2
<b>Street Side</b>	Lumens	12991.4	0.0	12991.4
	% Fixture	79.8	0.0	79.8
<b>Total</b>	Lumens	16286.0	0.0	16286.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.4	0.7
10°-20°	433.9	2.7
20°-30°	791.3	4.9
30°-40°	1338.6	8.2
40°-50°	2227.0	13.7
50°-60°	3268.3	20.1
60°-70°	4181.0	25.7
70°-80°	3401.6	20.9
80°-90°	526.8	3.2
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°	16286.0	100.0
0°-180°	16286.0	100.0

**Coefficient of Utilization**



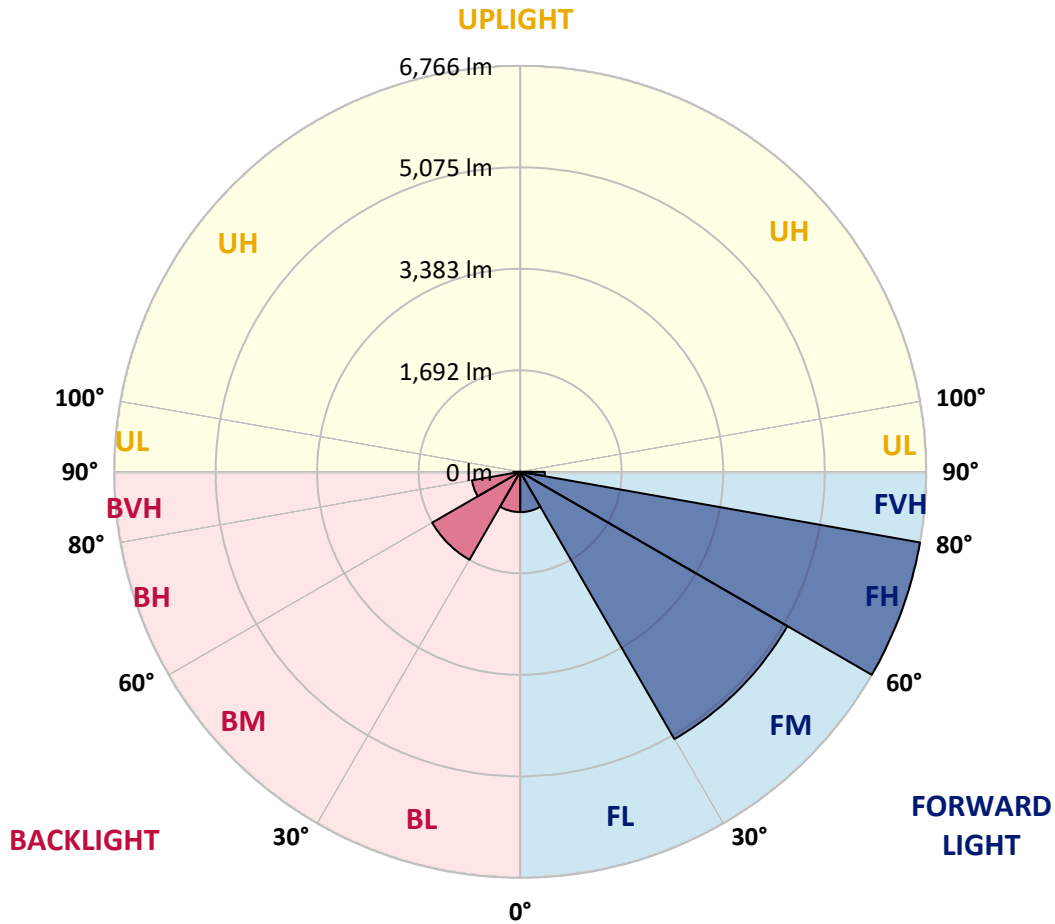
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	672.1	4.1			
FM (30°-60°)	5141.9	31.6			
FH (60°-80°)	6766.2	41.5			G3/7500
FVH (80°-90°)	411.2	2.5			G3/500
BL (0°-30°)	670.5	4.1	B2/1000		
BM (30°-60°)	1692.1	10.4	B2/2500		
BH (60°-80°)	816.3	5.0	B2/1000		G2/1000
BVH (80°-90°)	115.7	0.7			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0
2.5°	968.2	937.8	887.8	886.4	914.1	920.2	938.4	939.8	946.5	935.7	1012.7
5°	1068.1	1035.7	1016.1	1022.9	1010.0	1025.6	1025.6	1070.2	1129.6	1198.5	1296.5
7.5°	1091.8	1068.1	1045.8	1062.7	1065.4	1050.6	1064.8	1169.5	1276.9	1345.8	1502.6
10°	1044.5	1020.9	1037.7	1043.1	1042.5	1076.3	1149.9	1233.7	1353.3	1480.3	1564.7
12.5°	1035.7	1052.6	1060.7	1070.2	1134.4	1144.5	1256.0	1342.4	1462.7	1574.2	1793.8
15°	1166.1	1188.4	1138.4	1135.0	1156.0	1165.4	1281.0	1368.1	1543.8	1730.9	1928.2
17.5°	1351.9	1360.0	1270.2	1224.2	1239.7	1247.2	1297.9	1407.3	1515.4	1861.3	2107.2
20°	1531.6	1537.0	1368.1	1265.4	1320.1	1328.3	1375.5	1438.4	1523.5	1934.3	2228.2
22.5°	1720.1	1685.7	1500.5	1370.8	1402.6	1404.6	1432.3	1466.8	1587.7	1922.8	2375.5
25°	1926.2	1904.6	1671.5	1547.2	1545.8	1518.1	1519.5	1568.8	1655.9	2045.8	2472.1
27.5°	2199.8	2202.5	1864.0	1797.1	1692.4	1674.2	1583.0	1674.8	1774.2	2047.1	2680.8
30°	2554.5	2489.0	2132.2	2024.1	1920.8	1882.3	1758.6	1837.0	1880.2	2164.0	2907.8
32.5°	2843.0	2824.1	2411.9	2248.4	2079.5	2124.1	1987.7	1918.7	1996.4	2365.3	3251.7
35°	3119.3	3057.1	2707.9	2495.0	2317.4	2290.3	2201.8	2213.3	2260.6	2620.0	3701.0
37.5°	3531.4	3497.6	3126.7	2786.2	2703.1	2593.0	2536.9	2572.7	2535.6	2946.3	4374.6
40°	3992.2	3796.3	3476.7	3173.4	3018.0	2940.3	2959.9	2926.1	2897.7	3312.5	4978.6
42.5°	4433.4	4255.0	3709.1	3572.6	3370.0	3402.4	3295.0	3318.6	3399.0	3832.1	5537.3
45°	4913.7	4528.0	3955.7	3835.5	3690.2	3731.4	3817.2	3791.5	3923.3	4444.9	6063.6
47.5°	5153.6	4786.7	4258.4	4062.5	4060.4	3974.6	4496.9	4553.6	4347.6	4898.9	6598.0
50°	5384.6	5023.9	4483.4	4350.9	4255.0	4438.8	5148.8	5018.5	4731.3	5419.8	7185.8
52.5°	5706.2	5294.8	4741.4	4600.2	4719.2	4889.4	5669.1	5643.4	5107.6	5955.5	7696.6
55°	5951.5	5536.0	5129.9	4998.9	5225.9	5392.7	6198.7	6044.0	5429.9	6348.7	8020.2
57.5°	6381.2	5954.9	5703.5	5412.3	5820.4	5817.7	6709.5	6589.9	5774.5	6671.7	8150.6
60°	7064.2	6563.6	6300.8	5965.0	6402.1	6558.2	7293.2	6948.7	6018.4	6875.7	7915.5
62.5°	8022.9	7428.4	7002.0	6669.6	7202.7	7485.1	8014.1	7210.1	6033.9	6817.6	7297.3
65°	9208.6	8485.7	7927.0	7575.6	8455.3	8858.6	8885.7	7371.6	5890.7	6217.0	5997.4
67.5°	10365.2	9552.5	8969.4	9036.3	10320.7	10511.9	9830.2	7506.7	5121.1	4992.1	4164.5
70°	11126.7	10245.7	9857.2	10566.6	12517.8	12321.8	10595.6	7150.7	4032.7	3236.2	2345.1
72.5°	11069.2	10147.0	10007.2	11476.0	14089.2	13966.9	10688.9	5686.6	2701.1	1769.4	1169.5
75°	9018.1	8301.3	8618.8	10863.9	13636.6	13630.5	9280.2	3519.9	1385.7	908.7	739.1
77.5°	4986.0	4707.7	5640.7	8225.6	10857.8	10913.2	6270.4	1596.5	747.2	643.9	556.7
80°	1746.5	1720.8	2444.4	4438.8	7142.6	7156.1	2915.9	730.3	543.2	487.1	408.7
82.5°	638.5	633.0	1013.4	2062.0	3932.7	3924.0	1106.0	454.7	402.7	344.6	269.6
85°	254.7	249.3	463.5	915.5	1806.6	1777.5	429.7	258.1	263.5	205.4	132.4
87.5°	70.3	73.0	157.4	286.5	553.3	512.8	108.1	87.2	106.7	83.8	41.9
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°	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0	854.0
2.5°	1026.3	1033.0	966.1	989.8	1020.2	1036.4	1044.5	1010.0	1021.5	1070.2	1068.1
5°	1316.8	1289.7	1264.1	1290.4	1272.9	1247.9	1288.4	1286.4	1312.7	1339.1	1345.1
7.5°	1533.6	1498.5	1486.3	1426.9	1367.4	1307.3	1359.3	1391.8	1398.5	1464.1	1491.8
10°	1612.0	1598.5	1603.2	1524.9	1517.4	1523.5	1475.5	1423.5	1455.3	1428.2	1448.5
12.5°	1793.1	1826.9	1743.1	1689.7	1685.0	1647.8	1551.9	1518.1	1482.3	1519.5	1500.5
15°	1938.3	2001.2	1911.3	1817.4	1711.3	1653.9	1572.2	1520.8	1497.2	1505.3	1482.3
17.5°	2151.2	2209.9	1981.6	1837.7	1728.2	1643.8	1518.8	1409.3	1467.4	1472.2	1445.8
20°	2292.4	2296.4	2005.2	1787.7	1689.0	1542.4	1420.8	1324.9	1391.8	1460.0	1489.7
22.5°	2430.2	2399.8	2034.3	1747.8	1546.5	1404.6	1345.1	1339.1	1389.1	1446.5	1453.2
25°	2533.5	2538.3	2051.2	1732.9	1462.7	1269.5	1269.5	1313.4	1357.3	1493.8	1487.0
27.5°	2784.2	2599.8	1985.6	1664.7	1346.5	1190.4	1270.2	1328.9	1349.9	1497.8	1512.7
30°	2966.6	2846.4	1999.1	1547.8	1228.9	1153.3	1218.8	1292.4	1350.5	1521.5	1516.1
32.5°	3272.7	2949.0	2030.9	1383.7	1141.1	1139.1	1197.2	1274.9	1344.5	1495.8	1503.9
35°	3611.1	3251.7	1942.4	1258.7	1120.2	1131.0	1206.0	1237.0	1318.8	1485.7	1493.1
37.5°	4237.4	3409.8	1886.3	1162.1	1106.7	1137.7	1166.1	1214.1	1296.5	1435.0	1483.6
40°	4605.0	3735.5	1678.2	1106.0	1078.3	1132.3	1146.5	1187.1	1231.6	1374.2	1405.3
42.5°	5088.7	3838.2	1500.5	1043.8	1064.1	1110.0	1152.6	1162.7	1192.5	1278.3	1335.0
45°	5492.1	3915.2	1312.0	993.8	1016.1	1159.4	1162.1	1157.3	1151.9	1183.7	1230.3
47.5°	5909.6	4121.9	1138.4	938.4	997.9	1199.9	1166.8	1123.5	1101.2	1105.3	1148.5
50°	6370.4	4271.9	1015.4	893.2	1001.9	1199.9	1189.8	1089.1	1044.5	1033.0	1078.3
52.5°	6775.7	4289.5	922.2	856.7	985.0	1158.7	1205.3	1067.5	992.5	964.8	1007.3
55°	6996.6	4067.2	854.7	823.6	941.8	1121.5	1197.2	1055.3	929.6	908.7	946.5
57.5°	6991.9	3698.3	797.2	777.6	892.5	1069.5	1151.9	989.1	891.1	879.0	916.1
60°	6739.9	3265.9	753.3	739.8	841.8	993.8	1070.8	945.9	854.0	847.9	888.4
62.5°	6168.3	2819.3	710.7	699.9	794.5	940.5	1032.3	897.9	815.5	814.8	853.3
65°	5051.6	2263.3	670.9	668.2	750.6	887.8	995.9	857.4	775.6	789.1	828.3
67.5°	3480.8	1590.4	628.3	636.4	710.1	837.1	968.2	830.3	733.7	761.4	796.5
70°	1910.0	983.7	581.0	597.2	658.7	778.3	924.9	786.4	679.0	721.6	745.9
72.5°	971.5	656.0	522.2	547.9	595.9	691.8	843.8	722.9	620.2	636.4	649.3
75°	652.6	493.9	456.7	485.1	519.5	609.4	748.6	663.5	564.1	562.1	576.3
77.5°	493.2	385.8	387.8	420.2	442.5	535.8	672.9	613.5	516.8	512.1	533.1
80°	360.8	292.5	312.1	345.9	366.2	481.0	623.6	558.1	452.7	433.7	451.3
82.5°	239.2	207.4	231.1	264.8	281.1	402.0	566.2	473.6	368.9	320.9	323.6
85°	112.8	108.8	137.8	154.0	175.0	249.3	423.6	327.7	235.1	194.6	203.4
87.5°	25.7	34.5	45.3	44.6	52.0	66.9	131.7	91.9	68.2	46.6	31.1
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)