

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: P368708

Luminaire Tested: **MSA-SA4D-830-U-T4FT**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368708  
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-SA4D-830-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: 20954 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G4

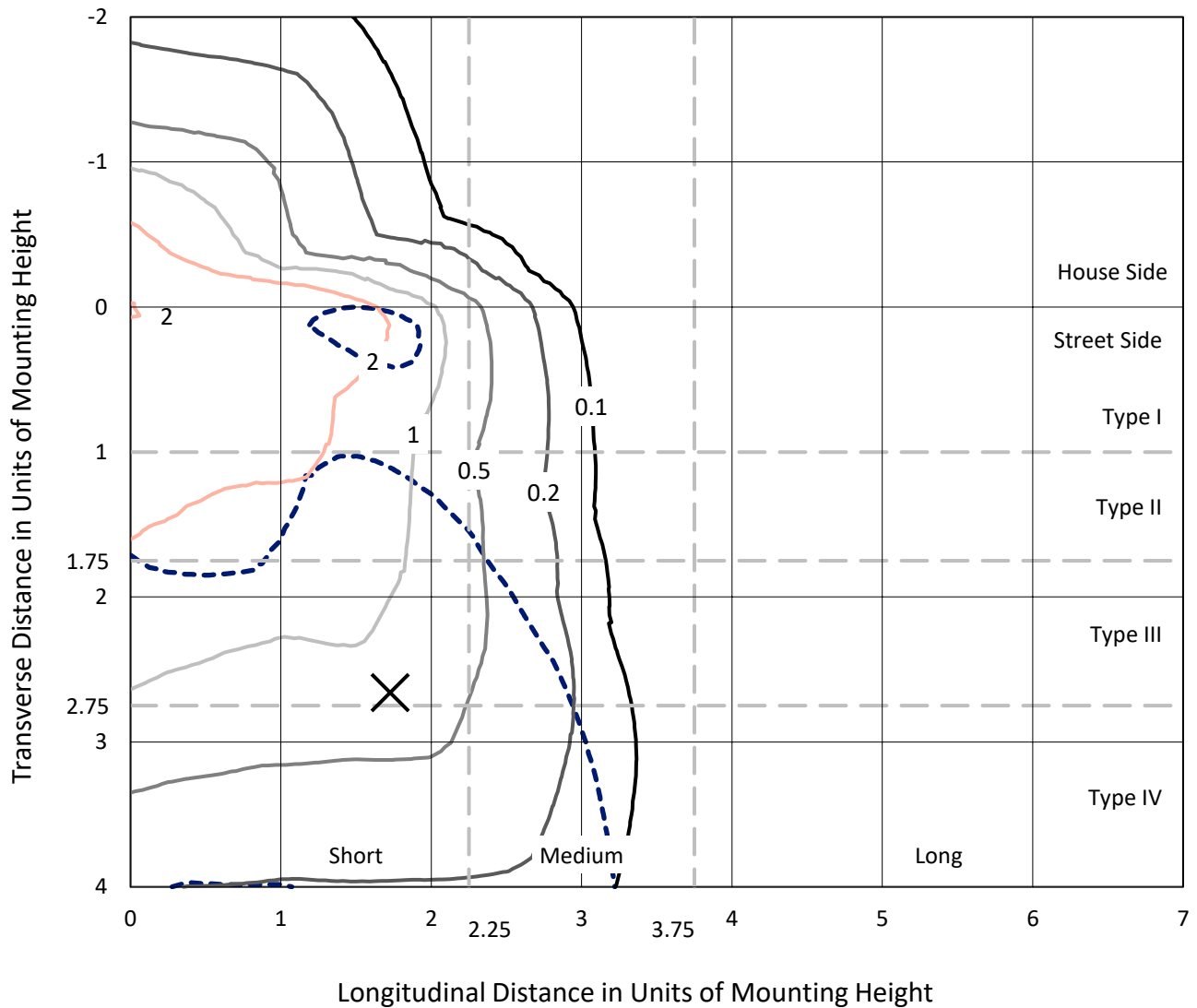
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P368708  
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### Iso-Footcandle Lines of Horizontal Illumination

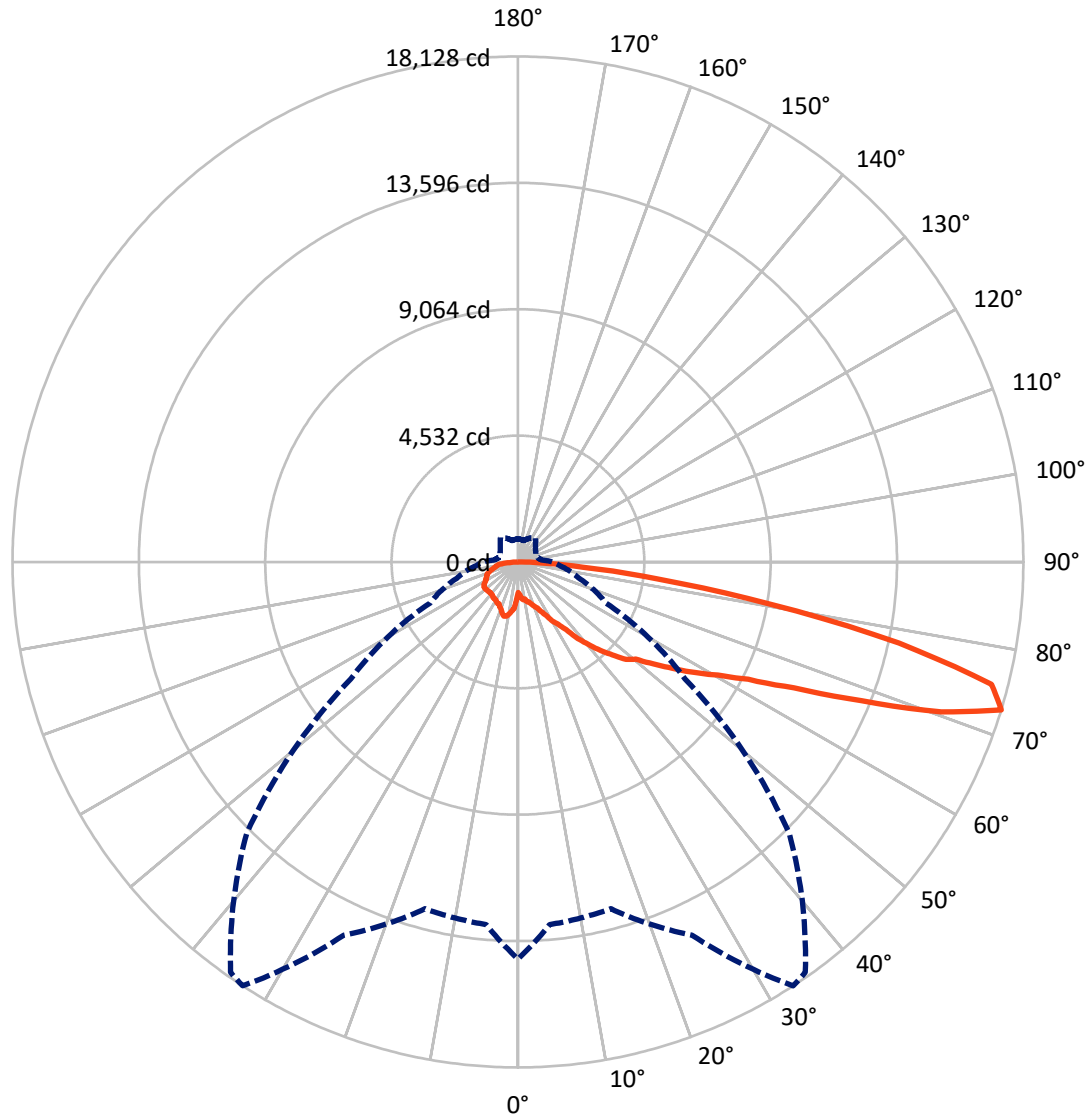
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 fc  
 Type IV - Short - N/A

REPORT NUMBER: P368708  
CATALOG NUMBER: MSA-SA4D-830-U-T4FT

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P368708

CATALOG NUMBER: MSA-SA4D-830-U-T4FT

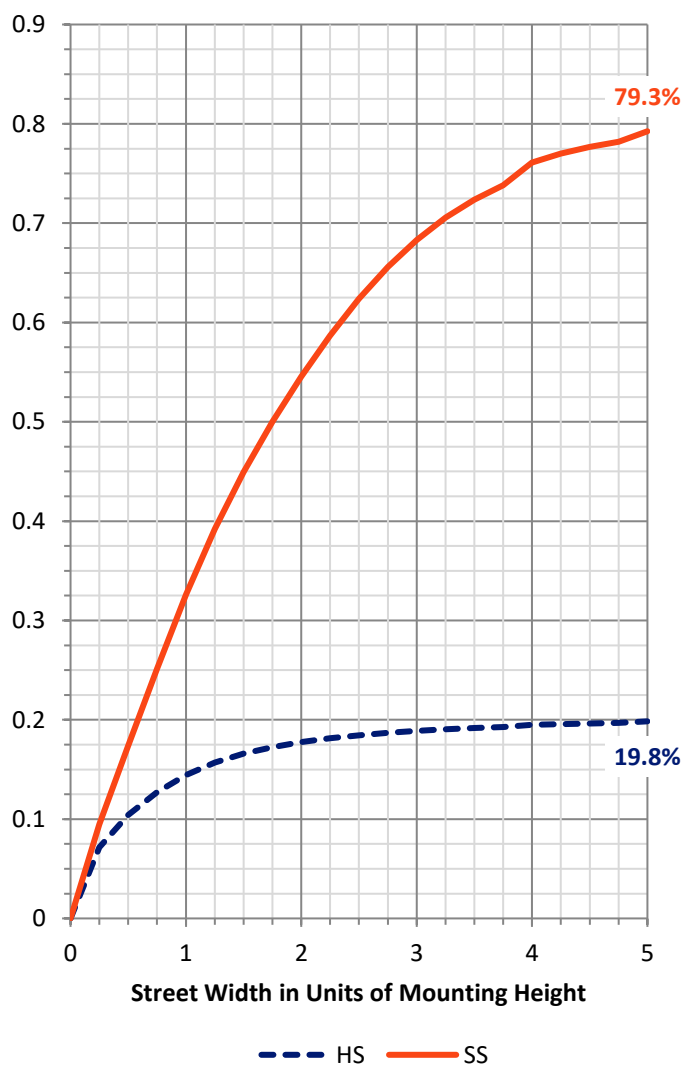
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4238.9	0.0	4238.9
	% Fixture	20.2	0.0	20.2
<b>Street Side</b>	Lumens	16715.1	0.0	16715.1
	% Fixture	79.8	0.0	79.8
<b>Total</b>	Lumens	20954.0	0.0	20954.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.1	0.7
10°-20°	558.3	2.7
20°-30°	1018.1	4.9
30°-40°	1722.3	8.2
40°-50°	2865.3	13.7
50°-60°	4205.1	20.1
60°-70°	5379.3	25.7
70°-80°	4376.6	20.9
80°-90°	677.8	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°	20954.0	100.0
0°-180°	20954.0	100.0

**Coefficient of Utilization**

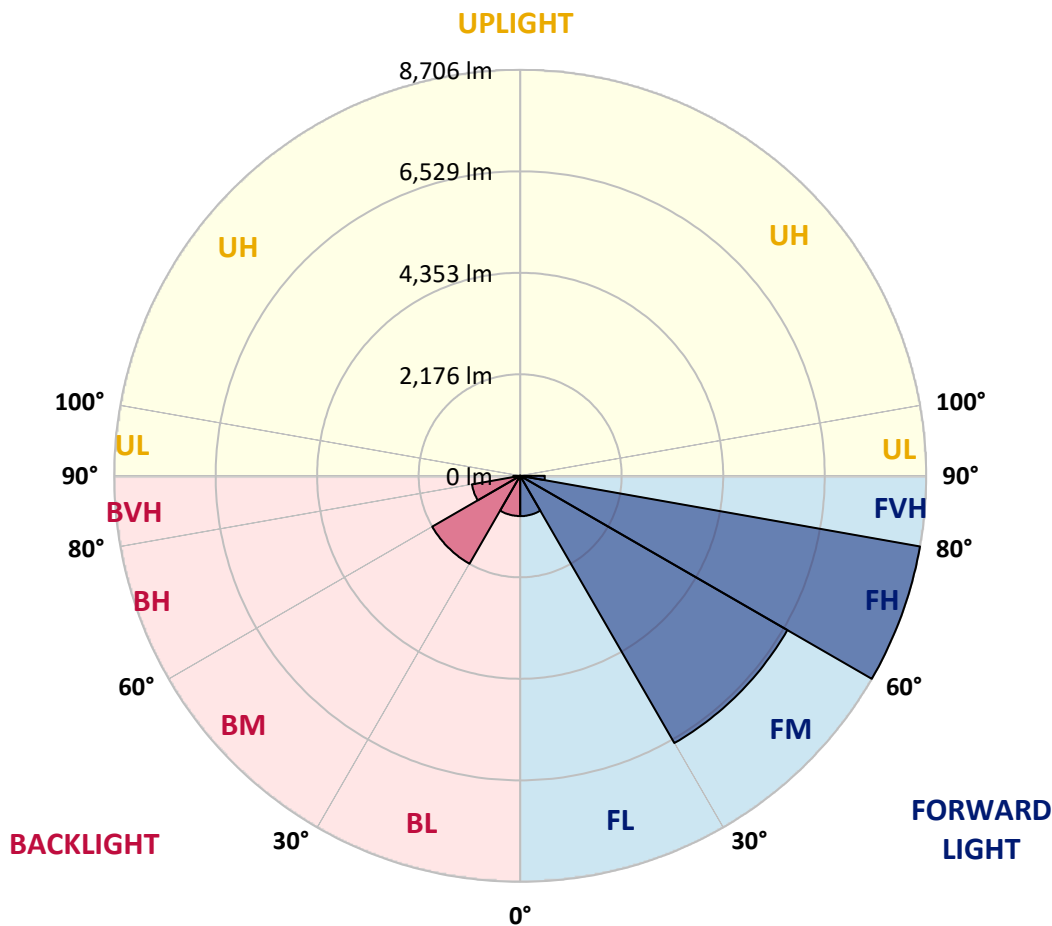


REPORT NUMBER: P368708  
 CATALOG NUMBER: MSA-SA4D-830-U-T4FT

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	864.8	4.1			
FM (30°-60°)	6615.7	31.6			
FH (60°-80°)	8705.6	41.5			G4/12000
FVH (80°-90°)	529.0	2.5			G4/750
BL (0°-30°)	862.7	4.1	B2/1000		
BM (30°-60°)	2177.1	10.4	B2/2500		
BH (60°-80°)	1050.3	5.0	B3/2500		G3/2500
BVH (80°-90°)	148.8	0.7			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7
2.5°	1245.7	1206.5	1142.2	1140.5	1176.1	1183.9	1207.4	1209.1	1217.8	1203.9	1303.0
5°	1374.3	1332.6	1307.4	1316.1	1299.5	1319.5	1319.5	1376.9	1453.4	1542.1	1668.1
7.5°	1404.7	1374.3	1345.6	1367.3	1370.8	1351.7	1370.0	1504.7	1642.9	1731.6	1933.2
10°	1343.9	1313.5	1335.2	1342.1	1341.3	1384.7	1479.5	1587.3	1741.1	1904.6	2013.2
12.5°	1332.6	1354.3	1364.7	1376.9	1459.5	1472.5	1616.0	1727.2	1882.0	2025.4	2307.9
15°	1500.3	1529.0	1464.7	1460.4	1487.3	1499.5	1648.1	1760.3	1986.3	2227.0	2480.9
17.5°	1739.4	1749.8	1634.2	1575.1	1595.1	1604.7	1669.9	1810.7	1949.8	2394.8	2711.2
20°	1970.6	1977.6	1760.3	1628.1	1698.5	1709.0	1769.8	1850.7	1960.2	2488.7	2866.8
22.5°	2213.1	2168.8	1930.6	1763.7	1804.6	1807.2	1842.8	1887.2	2042.8	2473.9	3056.3
25°	2478.3	2450.4	2150.6	1990.6	1988.9	1953.2	1955.0	2018.4	2130.6	2632.1	3180.6
27.5°	2830.3	2833.8	2398.3	2312.2	2177.5	2154.0	2036.7	2154.9	2282.7	2633.9	3449.2
30°	3286.7	3202.4	2743.4	2604.3	2471.3	2421.8	2262.7	2363.5	2419.2	2784.2	3741.3
32.5°	3657.9	3633.5	3103.3	2892.9	2675.6	2733.0	2557.4	2468.7	2568.7	3043.3	4183.8
35°	4013.4	3933.4	3484.0	3210.2	2981.6	2946.8	2832.9	2847.7	2908.5	3371.0	4761.8
37.5°	4543.6	4500.2	4022.9	3584.8	3477.9	3336.2	3264.1	3310.1	3262.3	3790.8	5628.5
40°	5136.5	4884.4	4473.2	4082.9	3883.0	3783.0	3808.2	3764.8	3728.3	4262.0	6405.6
42.5°	5704.1	5474.6	4772.2	4596.7	4335.9	4377.6	4239.4	4269.8	4373.3	4930.4	7124.5
45°	6322.1	5825.8	5089.5	4934.8	4747.9	4800.9	4911.3	4878.3	5047.8	5718.9	7801.6
47.5°	6630.7	6158.7	5479.0	5226.9	5224.3	5113.9	5785.8	5858.8	5593.7	6303.0	8489.2
50°	6928.0	6463.8	5768.4	5598.0	5474.6	5711.0	6624.6	6456.9	6087.4	6973.2	9245.5
52.5°	7341.8	6812.4	6100.5	5918.8	6071.8	6290.8	7294.0	7260.9	6571.6	7662.5	9902.6
55°	7657.3	7122.7	6600.3	6431.7	6723.7	6938.4	7975.5	7776.4	6986.3	8168.4	10319.0
57.5°	8210.2	7661.7	7338.3	6963.7	7488.7	7485.2	8632.6	8478.8	7429.6	8584.0	10486.8
60°	9089.0	8444.9	8106.7	7674.7	8237.1	8437.9	9383.7	8940.4	7743.4	8846.5	10184.3
62.5°	10322.5	9557.5	9009.0	8581.3	9267.2	9630.5	10311.2	9276.8	7763.4	8771.7	9388.9
65°	11848.0	10917.9	10199.0	9747.0	10878.8	11397.8	11432.5	9484.5	7579.1	7998.9	7716.4
67.5°	13336.2	12290.5	11540.3	11626.4	13278.8	13524.8	12647.8	9658.4	6589.0	6423.0	5358.1
70°	14315.9	13182.3	12682.5	13595.2	16105.7	15853.6	13632.6	9200.3	5188.6	4163.8	3017.2
72.5°	14242.0	13055.4	12875.5	14765.3	18127.6	17970.2	13752.6	7316.6	3475.3	2276.6	1504.7
75°	11602.9	10680.6	11089.2	13977.7	17545.2	17537.3	11940.2	4528.9	1782.9	1169.2	951.0
77.5°	6415.1	6057.0	7257.5	10583.3	13969.9	14041.2	8067.6	2054.1	961.4	828.4	716.3
80°	2247.0	2214.0	3145.0	5711.0	9189.8	9207.2	3751.7	939.7	698.9	626.7	525.9
82.5°	821.5	814.5	1303.9	2653.0	5060.0	5048.7	1423.0	585.0	518.1	443.3	346.8
85°	327.7	320.8	596.3	1177.8	2324.4	2287.0	552.9	332.1	339.0	264.3	170.4
87.5°	90.4	93.9	202.5	368.6	711.9	659.8	139.1	112.1	137.3	107.8	53.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P368708

CATALOG NUMBER: MSA-SA4D-830-U-T4FT

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7
2.5°	1320.4	1329.1	1243.0	1273.5	1312.6	1333.4	1343.9	1299.5	1314.3	1376.9	1374.3
5°	1694.2	1659.4	1626.4	1660.3	1637.7	1605.5	1657.7	1655.1	1689.0	1722.9	1730.7
7.5°	1973.2	1928.0	1912.4	1835.9	1759.4	1682.0	1749.0	1790.7	1799.4	1883.7	1919.3
10°	2074.1	2056.7	2062.8	1961.9	1952.4	1960.2	1898.5	1831.5	1872.4	1837.6	1863.7
12.5°	2307.0	2350.5	2242.7	2174.0	2167.9	2120.1	1996.7	1953.2	1907.2	1955.0	1930.6
15°	2493.9	2574.8	2459.1	2338.3	2201.8	2128.0	2022.8	1956.7	1926.3	1936.7	1907.2
17.5°	2767.7	2843.4	2549.5	2364.4	2223.6	2114.9	1954.1	1813.3	1888.0	1894.1	1860.2
20°	2949.4	2954.6	2580.0	2300.1	2173.2	1984.5	1828.1	1704.6	1790.7	1878.5	1916.7
22.5°	3126.7	3087.6	2617.3	2248.8	1989.7	1807.2	1730.7	1722.9	1787.2	1861.1	1869.8
25°	3259.7	3265.8	2639.1	2229.7	1882.0	1633.3	1633.3	1689.8	1746.3	1921.9	1913.2
27.5°	3582.2	3344.9	2554.8	2141.9	1732.4	1531.6	1634.2	1709.8	1736.8	1927.2	1946.3
30°	3816.9	3662.2	2572.1	1991.5	1581.2	1483.8	1568.1	1662.9	1737.7	1957.6	1950.6
32.5°	4210.7	3794.3	2613.0	1780.2	1468.2	1465.6	1540.3	1640.3	1729.8	1924.5	1935.0
35°	4646.2	4183.8	2499.1	1619.4	1441.2	1455.1	1551.6	1591.6	1696.8	1911.5	1921.1
37.5°	5452.0	4387.2	2427.0	1495.1	1423.8	1463.8	1500.3	1562.1	1668.1	1846.3	1908.9
40°	5924.9	4806.1	2159.2	1423.0	1387.3	1456.9	1475.1	1527.3	1584.7	1768.1	1808.1
42.5°	6547.3	4938.3	1930.6	1343.0	1369.1	1428.2	1483.0	1496.0	1534.2	1644.6	1717.7
45°	7066.2	5037.4	1688.1	1278.7	1307.4	1491.7	1495.1	1489.0	1482.1	1522.9	1582.9
47.5°	7603.4	5303.4	1464.7	1207.4	1283.9	1543.8	1501.2	1445.6	1416.9	1422.1	1477.7
50°	8196.3	5496.3	1306.5	1149.2	1289.1	1543.8	1530.8	1401.2	1343.9	1329.1	1387.3
52.5°	8717.8	5518.9	1186.5	1102.2	1267.4	1490.8	1550.8	1373.4	1276.9	1241.3	1296.1
55°	9002.1	5233.0	1099.6	1059.6	1211.8	1443.0	1540.3	1357.8	1196.1	1169.2	1217.8
57.5°	8996.0	4758.3	1025.7	1000.5	1148.3	1376.0	1482.1	1272.6	1146.6	1130.9	1178.7
60°	8671.7	4202.0	969.2	951.8	1083.1	1278.7	1377.8	1217.0	1098.7	1090.9	1143.1
62.5°	7936.4	3627.4	914.5	900.6	1022.3	1210.0	1328.2	1155.2	1049.2	1048.3	1097.9
65°	6499.5	2912.0	863.2	859.7	965.7	1142.2	1281.3	1103.1	997.9	1015.3	1065.7
67.5°	4478.4	2046.2	808.4	818.8	913.6	1077.0	1245.7	1068.3	944.0	979.7	1024.9
70°	2457.4	1265.6	747.6	768.4	847.5	1001.4	1190.0	1011.8	873.6	928.4	959.7
72.5°	1250.0	844.1	671.9	705.0	766.7	890.1	1085.7	930.1	798.0	818.8	835.4
75°	839.7	635.4	587.6	624.1	668.5	784.1	963.1	853.6	725.8	723.2	741.5
77.5°	634.6	496.3	499.0	540.7	569.4	689.3	865.8	789.3	665.0	658.9	685.8
80°	464.2	376.4	401.6	445.1	471.1	618.9	802.3	718.0	582.4	558.1	580.7
82.5°	307.7	266.9	297.3	340.8	361.6	517.2	728.4	609.4	474.6	412.9	416.4
85°	145.2	140.0	177.3	198.2	225.1	320.8	545.0	421.6	302.5	250.3	261.6
87.5°	33.0	44.3	58.2	57.4	66.9	86.1	169.5	118.2	87.8	60.0	40.0
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)