

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: P368446

Luminaire Tested: **MSA-SA4B-830-U-T4W**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368446  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4B-830-U-T4W  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15654 lumens  
Efficiency: N/A  
Efficacy: 91.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G3

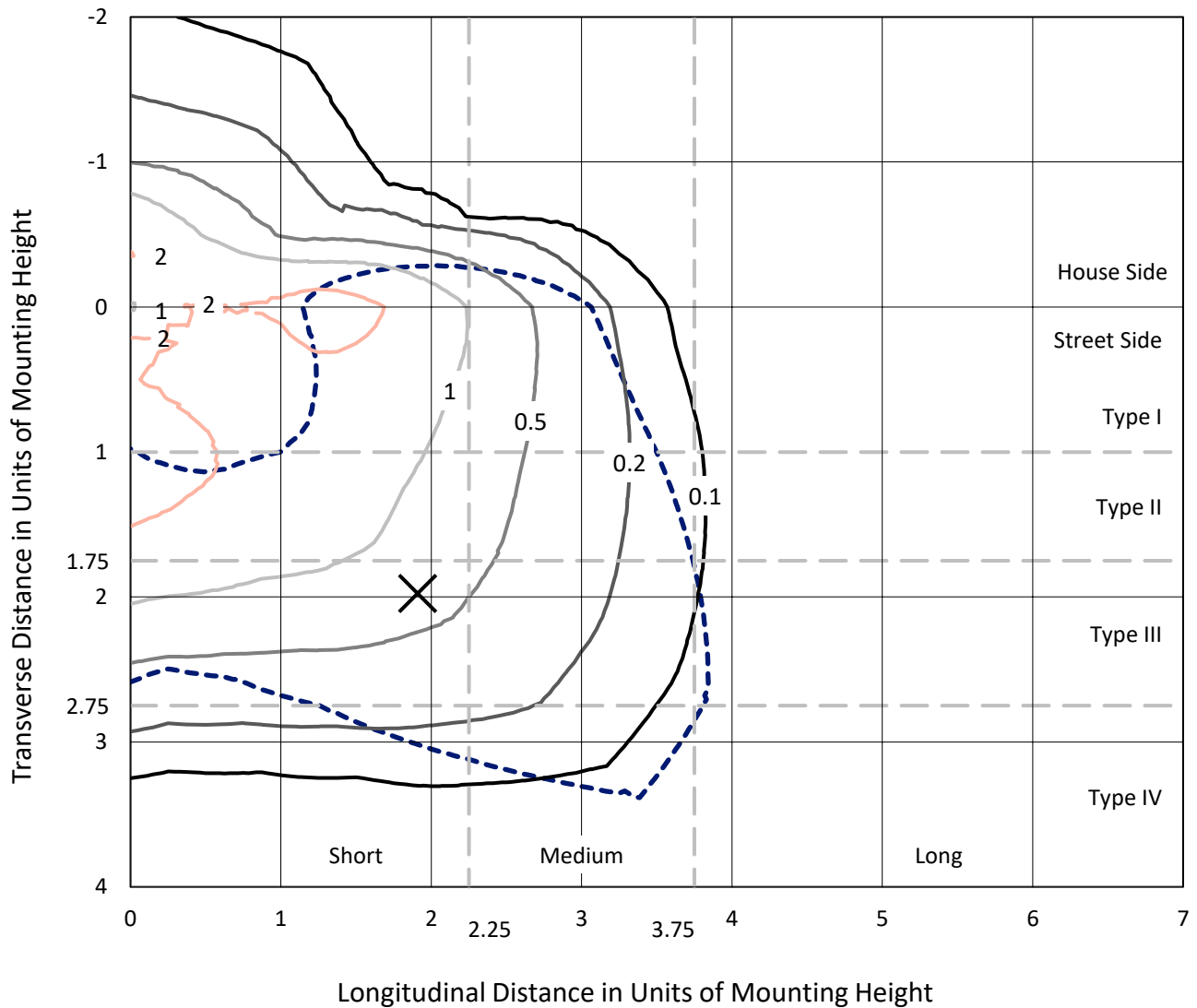
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

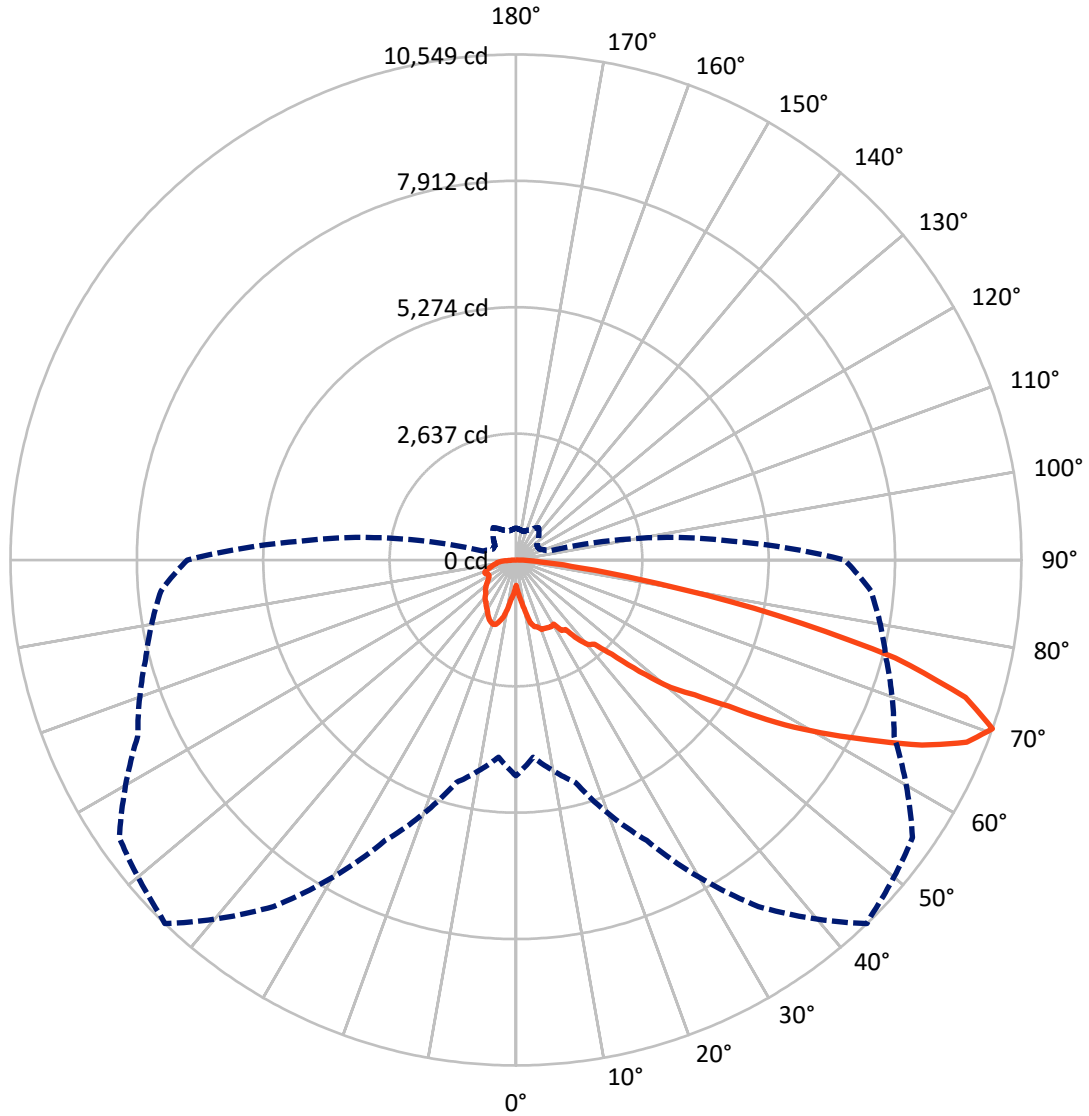
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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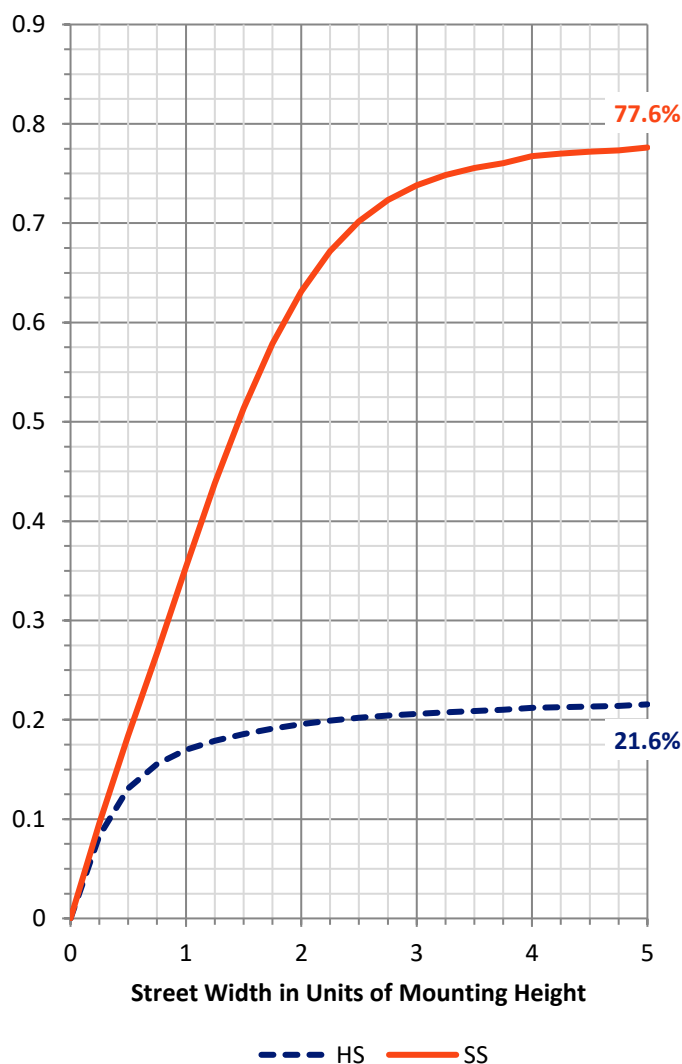
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3453.9	0.0	3453.9
	% Fixture	22.1	0.0	22.1
<b>Street Side</b>	Lumens	12200.1	0.0	12200.1
	% Fixture	77.9	0.0	77.9
<b>Total</b>	Lumens	15654.0	0.0	15654.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.4	0.5
10°-20°	384.2	2.5
20°-30°	717.9	4.6
30°-40°	1152.4	7.4
40°-50°	1945.1	12.4
50°-60°	3466.2	22.1
60°-70°	4741.3	30.3
70°-80°	2788.1	17.8
80°-90°	375.4	2.4
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°	15654.0	100.0
0°-180°	15654.0	100.0

**Coefficient of Utilization**

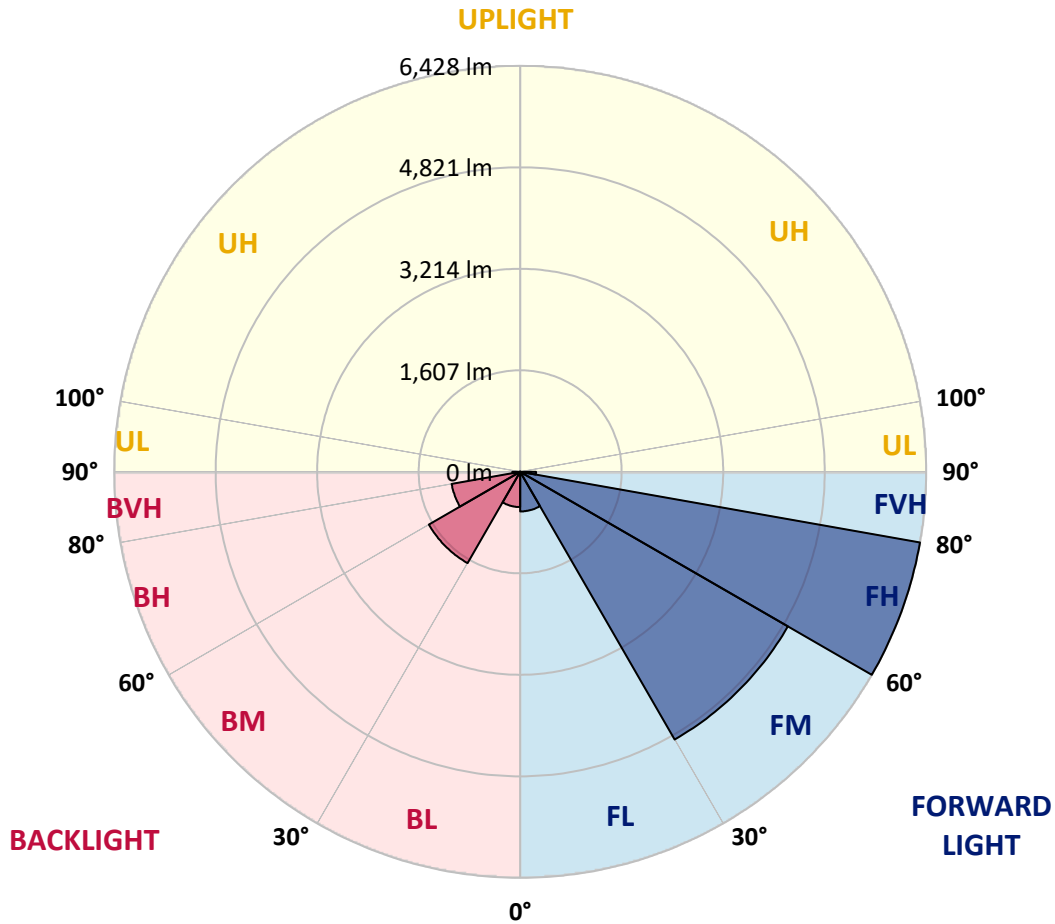


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	627.3	4.0			
FM (30°-60°)	4894.6	31.3			
FH (60°-80°)	6428.0	41.1			G3/7500
FVH (80°-90°)	250.2	1.6			G3/500
BL (0°-30°)	558.2	3.6	B2/1000		
BM (30°-60°)	1669.1	10.7	B2/2500		
BH (60°-80°)	1101.4	7.0	B3/2500		G3/2500
BVH (80°-90°)	125.2	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1
2.5°	645.7	632.9	602.1	612.3	625.2	630.3	629.0	627.7	607.8	600.8	636.1
5°	877.4	849.2	826.7	817.7	788.2	765.1	751.0	788.2	782.4	792.1	816.4
7.5°	1095.7	1077.7	1027.0	1009.0	948.7	908.9	904.4	933.9	941.6	926.2	967.9
10°	1236.2	1205.4	1195.1	1152.1	1110.4	1104.0	1100.1	1086.7	1068.1	1066.8	1029.5
12.5°	1345.3	1361.4	1369.7	1320.3	1321.6	1344.7	1332.5	1277.9	1246.5	1191.3	1195.8
15°	1541.1	1564.2	1498.1	1466.6	1406.3	1441.0	1436.5	1390.9	1386.4	1350.5	1308.7
17.5°	1711.8	1722.1	1611.7	1539.8	1519.3	1469.2	1482.7	1484.0	1424.9	1489.1	1451.9
20°	1726.0	1762.5	1635.5	1492.3	1553.9	1547.5	1549.4	1536.6	1458.9	1564.8	1550.7
22.5°	1795.3	1739.4	1625.2	1520.6	1536.6	1546.2	1555.2	1539.8	1535.3	1594.4	1637.4
25°	1782.4	1764.5	1648.9	1560.4	1562.3	1564.2	1568.7	1614.9	1609.8	1690.0	1712.5
27.5°	1902.5	1874.9	1656.0	1634.2	1584.1	1573.2	1542.4	1638.7	1713.8	1711.8	1835.7
30°	2131.0	2102.7	1820.3	1756.8	1666.3	1554.6	1613.6	1742.0	1801.1	1821.0	1978.2
32.5°	2487.8	2534.1	2143.8	1887.7	1775.4	1751.0	1744.6	1731.7	1878.1	1976.3	2119.4
35°	3000.0	2963.5	2525.1	2168.2	1890.3	1785.6	1799.8	1878.1	2052.0	2115.6	2247.8
37.5°	3586.7	3511.0	3013.5	2485.9	2221.5	2090.5	2043.7	2119.4	2157.9	2208.0	2478.2
40°	4183.0	3998.1	3493.0	2903.8	2420.4	2321.6	2280.5	2187.5	2278.0	2379.4	2722.8
42.5°	4758.7	4615.6	4014.8	3402.5	2755.5	2403.1	2380.7	2289.5	2570.0	2677.2	3075.8
45°	5362.1	5030.2	4549.5	3965.4	3245.2	2803.0	2769.6	2605.9	2965.4	3188.7	3573.9
47.5°	5767.7	5460.3	5039.2	4422.4	3655.4	3471.8	3408.3	3128.4	3454.5	3744.6	4343.5
50°	6151.6	5835.1	5392.9	4922.4	4398.0	4186.8	4051.4	3585.4	4063.6	4536.0	5330.0
52.5°	6701.0	6417.9	5803.7	5426.3	5195.8	4676.6	4575.8	4319.7	4776.1	5413.4	6408.3
55°	7288.3	6902.5	6346.0	6136.8	6043.7	5378.8	5296.6	5133.6	5724.7	6311.4	7456.5
57.5°	7547.6	7145.2	6838.4	6713.2	6705.5	6399.3	6305.0	6191.4	6694.6	7081.6	8443.0
60°	7753.6	7321.7	7199.1	7269.0	7523.2	7321.7	7199.1	7098.9	7484.1	7842.9	9247.9
62.5°	7715.8	7282.5	7345.4	7558.5	8207.4	8266.5	8172.1	7929.5	8266.5	8466.7	9709.4
65°	7104.7	6704.2	7070.7	7576.5	8843.5	9315.3	9310.1	8675.3	8792.2	8792.2	9660.6
67.5°	6034.1	5619.5	6219.6	7418.0	9283.2	10146.5	10147.8	9466.1	8840.3	8759.4	8905.8
70°	4505.8	4130.4	4804.9	6460.3	8829.4	10548.9	10490.5	10104.1	8708.1	8001.4	7439.1
72.5°	2691.3	2448.7	3069.4	4702.9	7531.6	9808.9	9964.2	9369.2	7971.9	6654.1	5317.8
75°	1222.1	1116.8	1442.3	2701.6	5376.8	8181.8	8350.6	7907.0	6331.9	4785.7	3073.2
77.5°	523.1	494.9	629.7	1198.3	2964.7	5595.1	5941.0	5650.9	4290.2	2781.2	1359.5
80°	336.3	318.4	387.0	576.4	1376.8	3023.2	3321.0	3212.5	2185.5	1081.5	478.8
82.5°	200.9	195.1	258.7	362.0	751.0	1330.6	1499.4	1539.2	907.6	485.2	274.1
85°	109.8	111.0	141.9	219.5	450.6	518.0	554.6	603.3	427.5	281.1	132.9
87.5°	36.6	42.4	57.1	89.2	160.5	146.3	147.0	170.7	180.4	116.8	42.4
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°	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1	532.1
2.5°	641.9	630.3	600.8	602.7	613.6	616.2	619.4	600.8	596.9	632.2	635.4
5°	820.3	782.4	765.1	759.3	742.6	736.9	767.7	781.8	795.9	823.5	837.0
7.5°	963.4	921.1	889.6	860.7	836.3	822.2	874.2	914.0	938.4	994.9	1020.6
10°	1028.9	992.3	980.8	957.7	976.3	1018.6	1028.3	1029.5	1083.5	1082.2	1093.1
12.5°	1159.2	1135.4	1097.6	1105.9	1154.7	1198.3	1186.2	1204.8	1224.0	1270.2	1249.1
15°	1277.9	1271.5	1236.2	1242.0	1251.6	1306.2	1313.2	1331.9	1361.4	1398.0	1372.9
17.5°	1424.3	1421.7	1335.7	1328.0	1350.5	1403.7	1387.1	1354.3	1451.9	1491.0	1480.8
20°	1523.8	1504.5	1394.1	1361.4	1418.5	1425.6	1406.3	1354.3	1439.0	1524.4	1547.5
22.5°	1606.6	1584.1	1470.5	1406.3	1394.8	1398.0	1398.0	1388.3	1430.1	1500.0	1499.4
25°	1673.3	1694.5	1550.1	1488.5	1426.8	1349.8	1340.2	1348.5	1372.3	1507.1	1502.6
27.5°	1840.8	1782.4	1577.0	1530.8	1404.4	1283.1	1309.4	1322.2	1329.9	1477.6	1501.9
30°	1950.0	1967.9	1673.3	1555.9	1371.7	1208.6	1217.6	1254.8	1299.8	1474.3	1481.4
32.5°	2096.9	2058.4	1823.5	1514.1	1284.4	1163.7	1147.0	1197.1	1263.8	1422.4	1441.6
35°	2233.7	2279.2	1887.1	1506.4	1223.4	1096.3	1114.3	1131.6	1200.9	1364.6	1387.1
37.5°	2554.6	2450.6	2065.5	1469.2	1172.7	1062.3	1043.0	1069.3	1128.4	1254.8	1306.8
40°	2798.5	2804.9	2104.0	1422.4	1075.8	1013.5	972.4	998.7	1023.8	1124.5	1147.0
42.5°	3256.1	3116.2	2198.4	1319.7	1014.8	940.3	917.2	928.8	932.6	975.0	1012.2
45°	3838.3	3510.3	2235.6	1181.7	934.5	910.2	863.3	857.5	836.3	842.1	874.9
47.5°	4643.8	4125.2	2208.6	1034.7	863.3	871.0	803.6	777.3	747.8	754.8	785.6
50°	5685.6	4910.9	2206.7	910.2	814.5	819.7	764.5	717.0	687.4	702.2	729.2
52.5°	6854.4	5699.1	2215.7	824.8	761.2	758.7	738.8	681.0	657.3	672.7	703.5
55°	7972.5	6376.9	2282.4	770.9	706.0	710.5	718.2	669.5	643.1	657.3	689.4
57.5°	8945.6	6912.2	2257.4	713.7	654.7	675.2	695.8	653.4	633.5	654.1	686.1
60°	9625.9	7160.6	2059.7	659.2	616.8	645.1	684.9	651.5	648.9	693.2	731.7
62.5°	9874.3	7068.8	1674.6	616.2	594.4	641.2	709.9	693.8	696.4	751.0	804.2
65°	9511.7	6586.1	1249.1	588.6	577.0	659.8	767.7	718.9	683.6	728.5	777.3
67.5°	8480.2	5727.9	912.7	564.8	557.1	689.4	820.9	716.3	650.8	696.4	736.2
70°	6860.8	4521.2	706.7	534.7	530.8	669.5	826.1	697.1	615.5	645.1	667.5
72.5°	4701.0	3095.7	585.4	505.8	485.2	593.1	784.4	654.1	573.2	590.5	609.1
75°	2627.1	1737.5	492.3	469.8	424.9	528.2	735.6	628.4	541.7	546.9	572.5
77.5°	1179.1	751.6	417.8	422.3	370.4	467.3	672.0	587.3	493.6	482.0	507.7
80°	446.1	366.5	338.9	356.9	311.3	405.0	605.9	550.1	442.9	428.1	442.9
82.5°	258.7	222.1	251.6	274.7	247.1	372.3	578.3	516.1	390.2	353.0	365.9
85°	120.0	114.9	150.8	178.4	172.7	290.1	494.9	388.3	277.9	234.9	260.0
87.5°	31.5	35.3	53.3	62.9	64.2	99.5	190.6	144.4	108.5	82.2	78.9
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)