

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: P367108

Luminaire Tested: **MSA-SA1D-830-U-RW**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367108  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1D-830-U-RW  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5596 lumens  
Efficiency: N/A  
Efficacy: 83.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G3

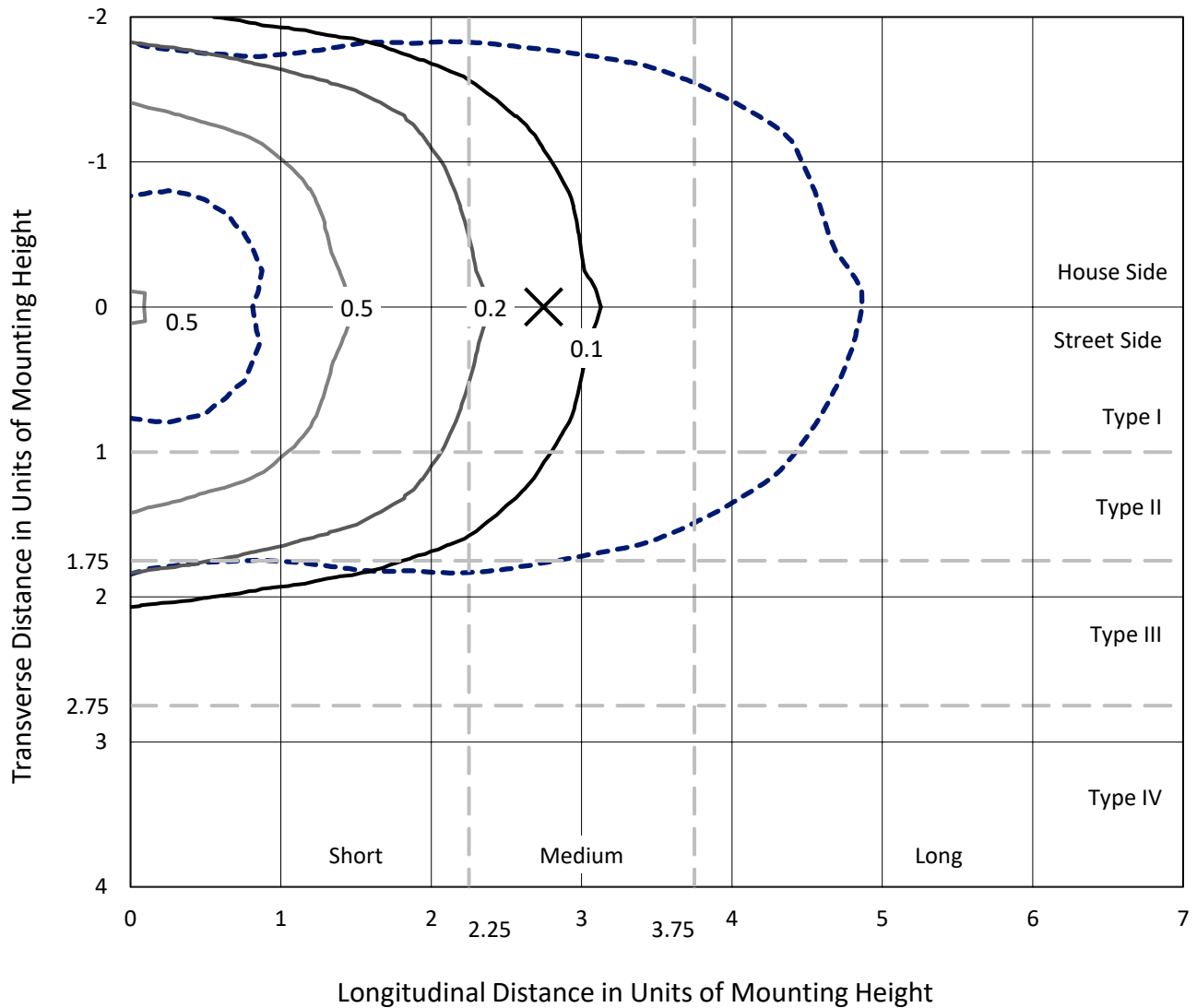
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

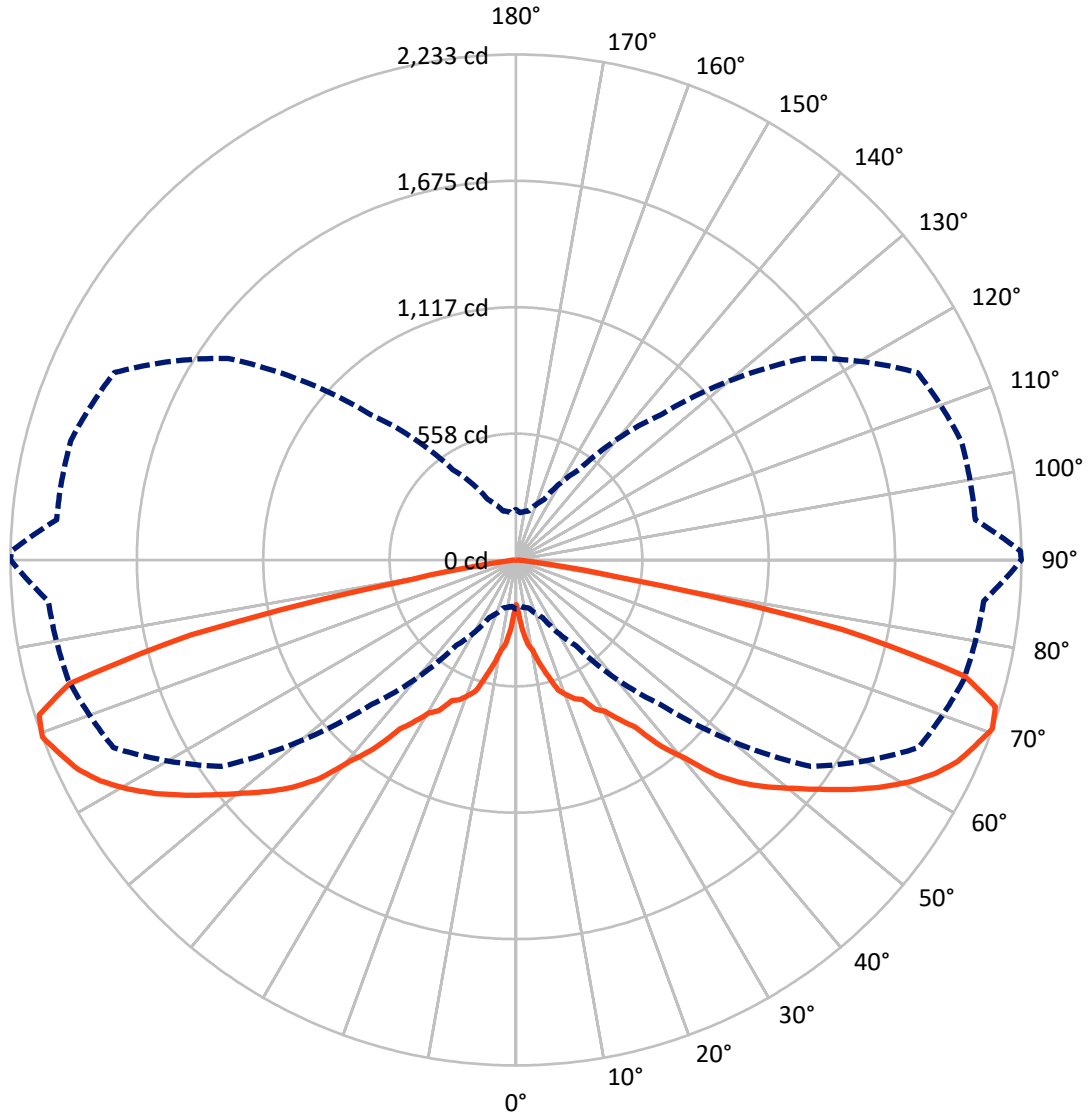
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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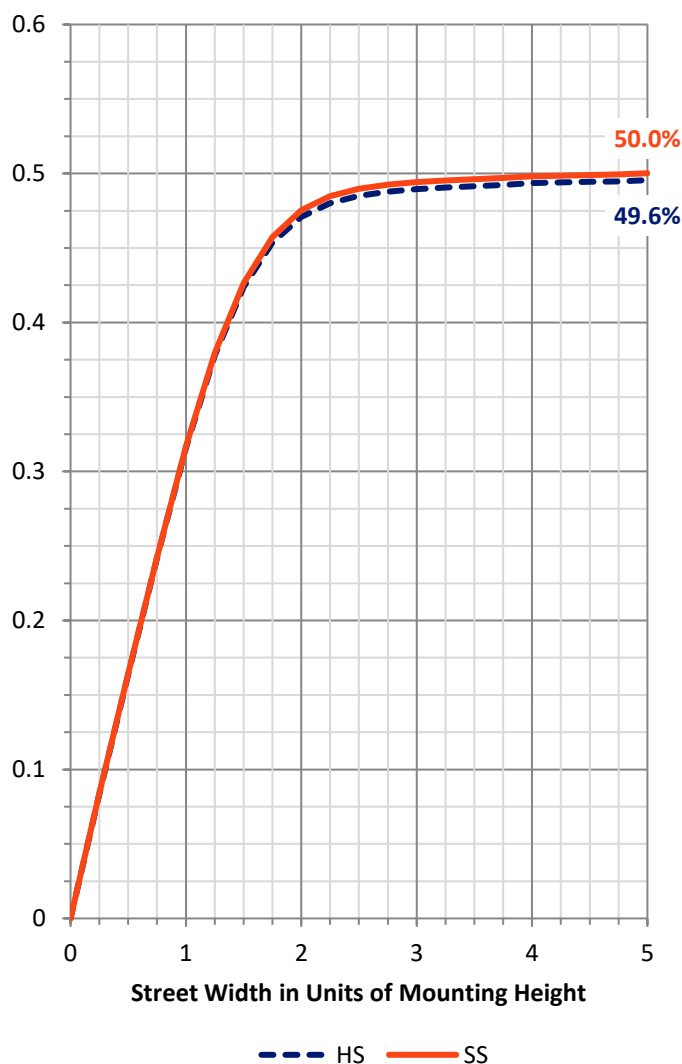
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2787.6	0.0	2787.6
	% Fixture	49.8	0.0	49.8
<b>Street Side</b>	Lumens	2808.4	0.0	2808.4
	% Fixture	50.2	0.0	50.2
<b>Total</b>	Lumens	5596.0	0.0	5596.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.6	0.5
10°-20°	135.8	2.4
20°-30°	293.6	5.2
30°-40°	560.2	10.0
40°-50°	1017.6	18.2
50°-60°	1429.5	25.5
60°-70°	1364.9	24.4
70°-80°	700.5	12.5
80°-90°	64.2	1.1
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°	5596.0	100.0
0°-180°	5596.0	100.0

**Coefficient of Utilization**



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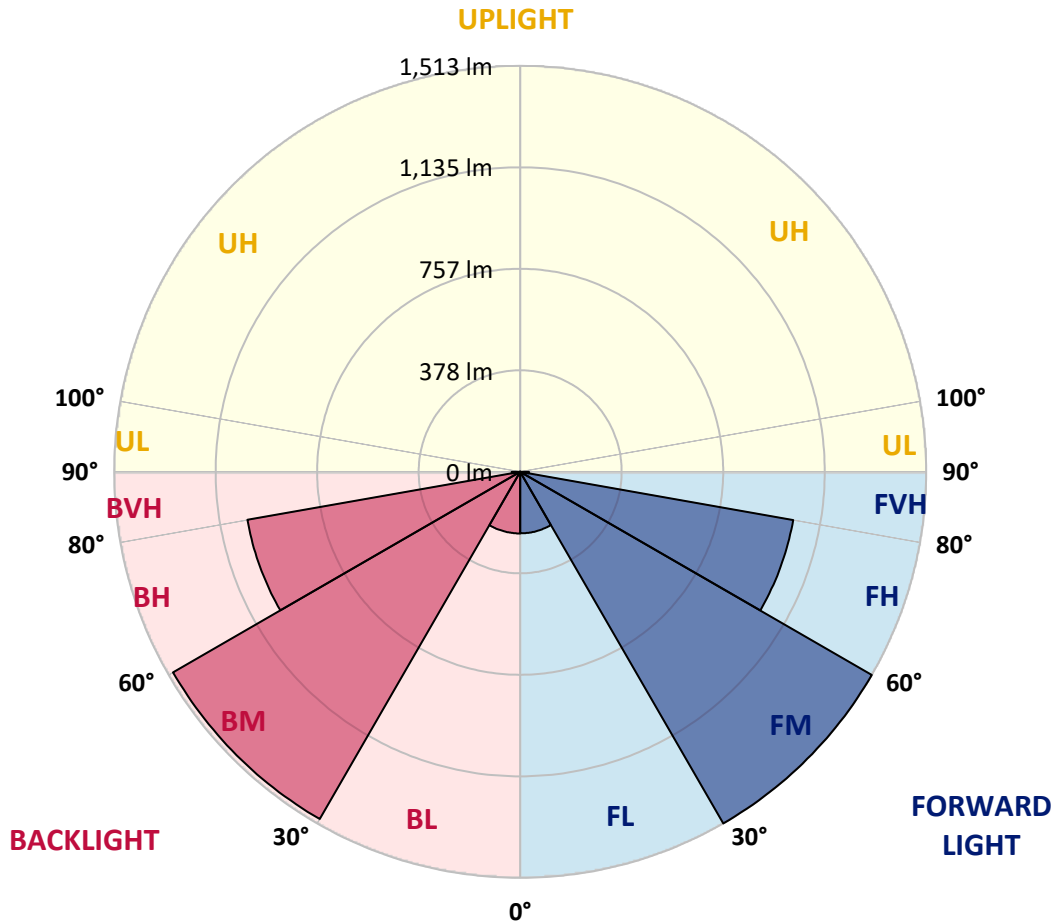
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	229.3	4.1			
FM (30°-60°)	1513.2	27.0			
FH (60°-80°)	1033.3	18.5			G1/1800
FVH (80°-90°)	32.6	0.6			G1/100
BL (0°-30°)	229.7	4.1	B1/500		
BM (30°-60°)	1494.1	26.7	B2/2500		
BH (60°-80°)	1032.1	18.4	B3/2500		G3/2500
BVH (80°-90°)	31.6	0.6			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4
2.5°	237.9	229.1	218.0	224.5	227.3	232.0	231.3	229.1	219.3	235.6	237.5
5°	297.8	283.7	278.5	277.6	279.0	274.4	289.2	284.9	292.8	307.5	310.9
7.5°	339.1	328.6	317.5	320.9	306.9	304.8	323.9	340.9	345.2	372.2	374.0
10°	358.6	348.4	351.3	349.3	347.7	360.8	369.7	382.2	400.1	402.6	406.4
12.5°	375.1	379.2	392.1	391.7	413.0	436.4	433.0	445.9	448.8	480.1	470.6
15°	417.1	425.5	424.6	432.5	441.8	480.1	480.4	502.4	522.5	534.8	531.6
17.5°	478.5	481.5	469.2	469.7	496.7	512.3	529.8	525.9	578.6	602.6	604.2
20°	515.3	522.8	508.7	490.1	538.0	559.5	569.3	546.8	603.1	635.5	635.5
22.5°	579.5	560.2	538.9	526.4	568.6	591.5	590.4	584.0	613.9	671.3	665.9
25°	614.8	604.0	593.3	596.5	617.8	629.6	645.2	630.5	658.6	701.3	683.3
27.5°	682.0	661.8	609.4	651.1	651.1	642.3	675.4	682.4	664.1	733.5	746.8
30°	758.0	750.9	676.8	721.0	707.4	682.4	745.9	741.4	710.6	781.3	775.2
32.5°	829.9	853.0	782.7	758.4	778.8	788.3	755.0	768.6	774.5	842.8	839.8
35°	940.1	959.6	866.4	860.2	826.2	817.4	842.8	847.3	847.8	919.7	906.5
37.5°	1130.8	1102.7	1010.6	967.3	971.1	960.5	965.5	929.6	934.6	1039.0	1045.5
40°	1270.3	1238.5	1136.0	1105.0	1028.8	1074.3	1034.0	1030.3	1020.4	1155.5	1151.9
42.5°	1424.3	1380.7	1267.3	1225.8	1144.9	1126.3	1107.7	1149.6	1146.9	1272.1	1299.8
45°	1540.6	1452.6	1393.4	1367.6	1319.1	1273.5	1255.8	1274.6	1266.0	1359.0	1407.3
47.5°	1614.1	1537.7	1469.6	1415.2	1368.7	1480.5	1391.0	1365.8	1348.3	1452.4	1498.9
50°	1672.6	1584.4	1504.1	1486.0	1522.7	1621.6	1480.3	1424.7	1446.1	1522.7	1586.0
52.5°	1688.5	1595.1	1522.9	1511.4	1610.7	1628.6	1605.7	1512.3	1506.6	1607.1	1683.5
55°	1640.0	1550.4	1516.1	1579.4	1689.2	1674.2	1709.1	1649.5	1609.4	1693.3	1789.4
57.5°	1515.0	1426.1	1417.9	1509.1	1647.5	1774.9	1792.2	1745.0	1692.4	1781.3	1894.7
60°	1309.8	1228.6	1249.2	1349.9	1558.6	1740.0	1831.6	1788.5	1772.2	1860.6	1992.2
62.5°	990.2	926.9	982.0	1122.4	1396.2	1694.9	1886.1	1879.2	1855.7	1945.0	2078.4
65°	631.4	598.1	654.3	797.0	1144.2	1612.8	1912.1	1921.2	1943.0	2010.1	2145.1
67.5°	367.0	349.3	383.5	500.3	814.9	1324.3	1863.6	1993.8	2005.1	2043.7	2188.8
70°	217.0	205.5	219.5	281.0	461.3	902.2	1589.6	1962.0	2047.8	2074.5	2233.1
72.5°	165.6	154.7	148.6	166.2	240.9	466.1	1074.8	1663.1	2013.5	2054.1	2214.5
75°	143.1	132.7	125.4	127.0	143.3	221.4	582.6	1189.6	1715.7	1870.4	2045.5
77.5°	122.9	113.6	108.4	108.0	110.0	121.6	243.6	645.0	1074.6	1344.5	1474.6
80°	98.4	91.2	90.0	90.0	87.1	86.2	121.1	245.4	408.9	484.9	464.9
82.5°	71.9	64.6	71.9	71.0	66.5	62.8	77.1	106.1	126.1	99.6	78.7
85°	48.5	42.0	47.4	48.3	44.0	32.7	46.3	53.1	54.4	34.0	28.1
87.5°	17.0	16.6	26.8	23.4	19.1	11.1	17.0	18.4	19.3	12.0	8.2
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):**

	91°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4
2.5°	238.1	235.4	221.8	223.8	229.1	231.6	234.1	223.8	218.9	234.7	233.1
5°	311.8	301.9	290.8	289.2	289.8	280.1	285.8	283.3	284.4	294.6	296.7
7.5°	373.5	361.5	346.8	335.2	315.2	299.4	312.8	319.6	321.6	339.7	346.5
10°	406.9	396.7	392.4	370.6	364.0	362.0	358.8	347.9	359.9	355.6	359.0
12.5°	472.2	470.2	447.7	433.4	434.8	438.6	418.7	407.8	392.1	416.6	407.8
15°	527.8	536.6	514.2	488.1	475.1	481.7	466.5	450.6	436.6	444.1	434.5
17.5°	598.7	598.5	554.7	526.9	525.7	525.3	502.8	467.9	484.7	479.5	479.9
20°	636.4	630.3	575.8	543.6	571.1	561.3	541.1	496.2	515.7	522.1	526.2
22.5°	667.9	664.5	598.5	574.9	592.6	592.8	572.7	549.1	546.6	566.3	555.7
25°	689.9	703.5	641.4	635.7	643.4	635.7	616.0	600.6	590.6	620.1	590.6
27.5°	742.1	722.8	648.0	680.2	684.9	646.1	670.9	652.7	625.1	661.6	673.6
30°	779.3	790.6	694.2	742.8	737.1	701.3	711.5	710.8	677.7	748.9	740.5
32.5°	843.2	829.6	769.8	765.9	779.5	777.9	760.7	769.1	777.2	828.9	841.4
35°	908.8	923.3	818.1	844.1	840.3	815.8	860.9	855.7	880.0	986.1	951.0
37.5°	1056.7	987.5	926.5	923.1	948.9	952.8	938.3	961.2	1013.6	1095.2	1132.9
40°	1153.5	1122.0	1018.3	1022.4	986.6	1048.3	1007.4	1081.1	1121.1	1258.7	1245.3
42.5°	1300.0	1223.1	1123.6	1137.2	1129.9	1100.2	1153.9	1191.8	1249.0	1354.0	1421.8
45°	1409.1	1303.6	1256.5	1248.1	1247.2	1298.9	1292.1	1352.6	1373.0	1452.0	1508.2
47.5°	1491.9	1402.3	1332.4	1342.0	1314.3	1461.9	1383.2	1402.1	1443.3	1517.7	1583.3
50°	1590.1	1490.3	1410.9	1434.5	1501.9	1558.6	1487.3	1455.1	1475.3	1563.1	1636.1
52.5°	1681.0	1576.0	1488.7	1508.4	1618.4	1592.6	1584.9	1503.4	1500.9	1571.5	1654.5
55°	1787.4	1669.0	1591.9	1654.5	1693.5	1661.5	1649.3	1550.2	1488.9	1528.2	1606.4
57.5°	1891.7	1761.1	1684.4	1697.4	1746.8	1715.0	1623.2	1470.6	1394.1	1401.8	1481.0
60°	1989.5	1845.7	1782.4	1769.9	1809.4	1684.9	1524.1	1324.7	1223.3	1204.8	1273.2
62.5°	2073.2	1916.4	1856.6	1822.5	1860.2	1686.0	1369.6	1090.7	979.3	916.3	969.6
65°	2139.6	1975.2	1932.5	1914.9	1928.5	1583.5	1129.0	800.8	664.3	594.4	625.5
67.5°	2183.8	2008.1	1988.6	2011.7	1830.3	1318.8	836.4	512.6	386.2	348.1	367.6
70°	2229.6	2037.1	2036.4	1957.7	1552.0	909.2	488.5	295.5	224.8	210.0	222.3
72.5°	2214.2	2002.6	2012.8	1712.1	1075.5	486.0	257.9	167.2	152.2	157.4	168.3
75°	2050.5	1820.7	1771.5	1230.8	610.1	225.9	148.6	126.6	125.6	133.6	144.2
77.5°	1487.3	1268.0	1137.8	697.6	261.5	122.2	109.3	105.7	105.7	112.0	121.6
80°	490.3	424.3	442.3	269.9	123.6	84.4	85.3	86.9	86.4	88.0	95.9
82.5°	80.5	83.5	129.0	110.2	74.6	57.6	64.4	67.6	68.5	61.2	69.6
85°	28.6	32.2	54.9	51.0	43.1	29.0	42.4	47.4	46.7	40.8	45.1
87.5°	8.8	11.3	20.0	15.4	12.9	7.9	15.9	18.6	23.4	9.5	8.6
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)