

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: P366976

Luminaire Tested: **MSA-SA1C-830-U-RW**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366976  
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-SA1C-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: 5118 lumens  
Efficiency: N/A  
Efficacy: 86.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2

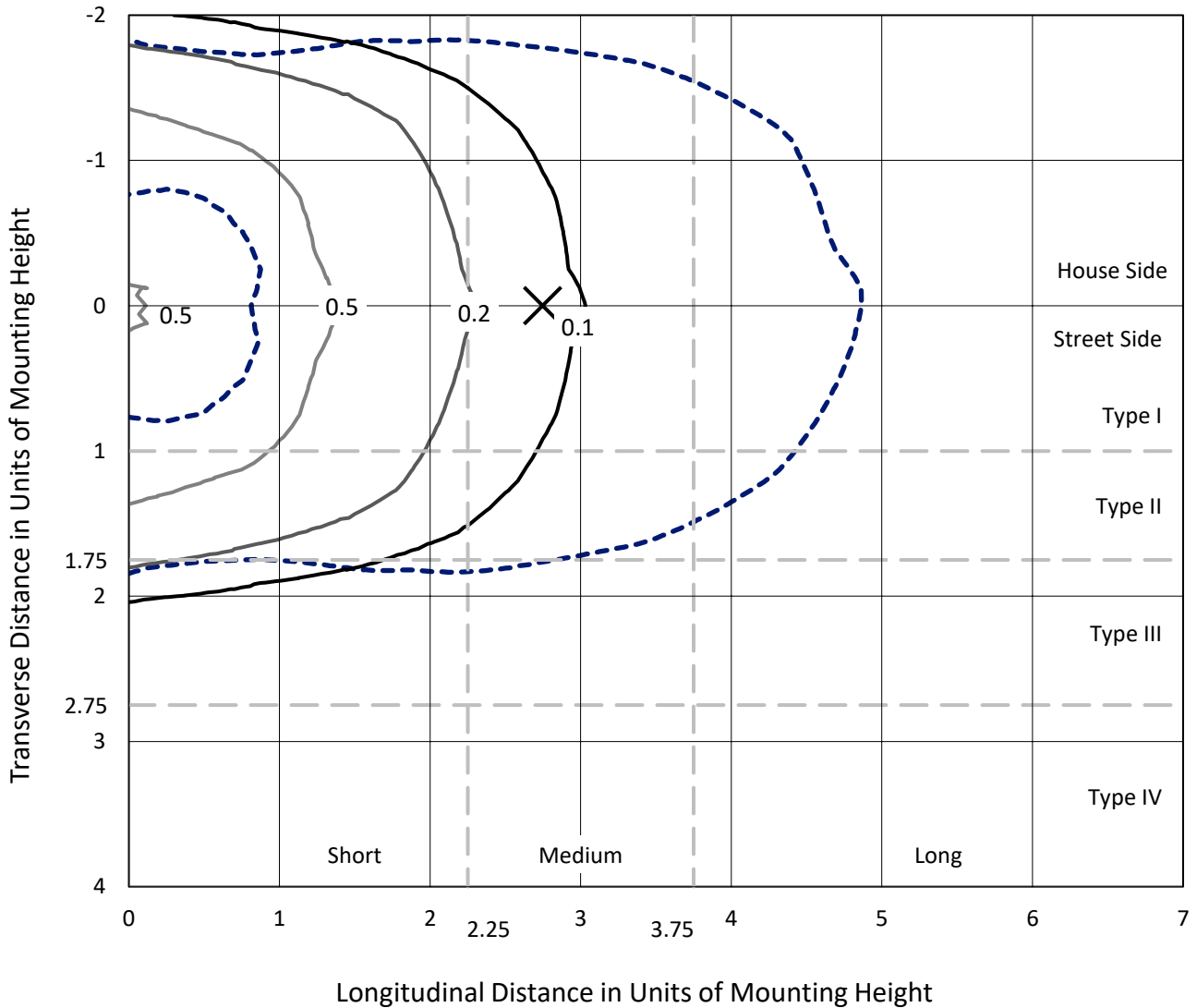
Input Watts (W): 59  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

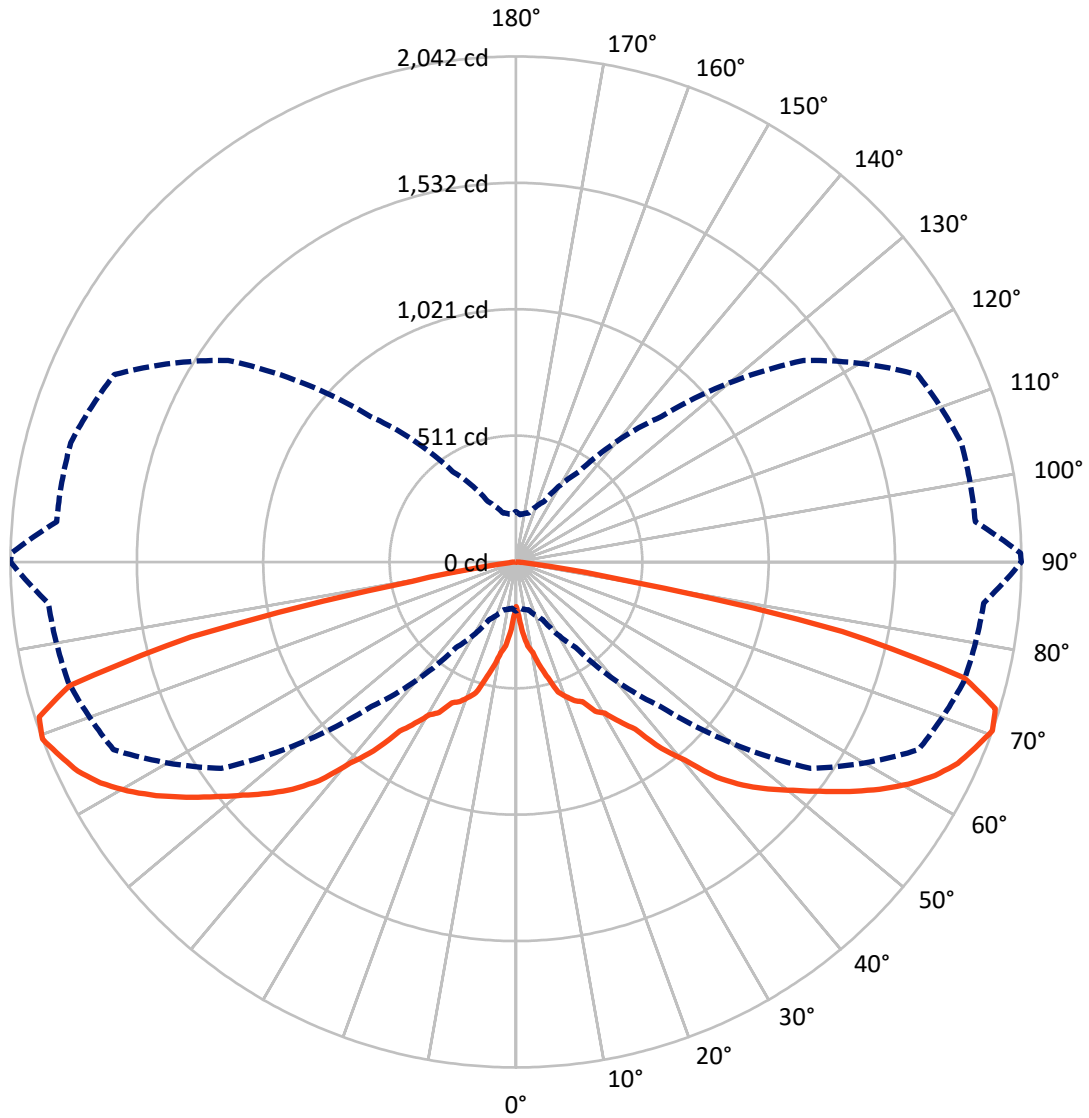
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 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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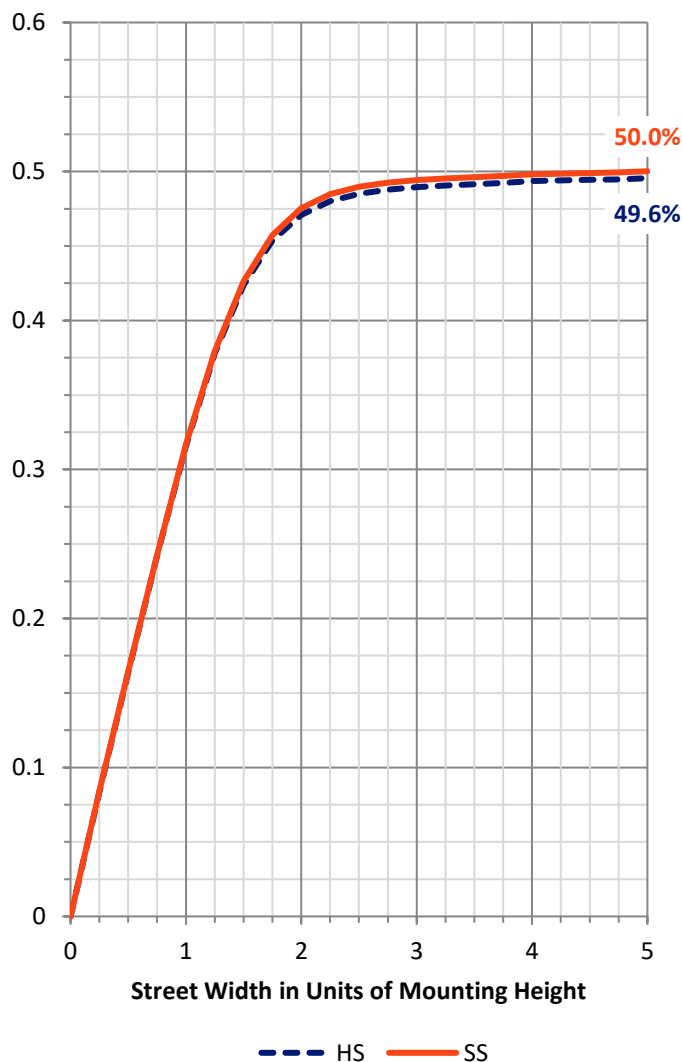
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2549.5	0.0	2549.5
	% Fixture	49.8	0.0	49.8
<b>Street Side</b>	Lumens	2568.5	0.0	2568.5
	% Fixture	50.2	0.0	50.2
<b>Total</b>	Lumens	5118.0	0.0	5118.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	27.1	0.5
10°-20°	124.2	2.4
20°-30°	268.5	5.2
30°-40°	512.3	10.0
40°-50°	930.7	18.2
50°-60°	1307.4	25.5
60°-70°	1248.3	24.4
70°-80°	640.7	12.5
80°-90°	58.7	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°	5118.0	100.0
0°-180°	5118.0	100.0

**Coefficient of Utilization**



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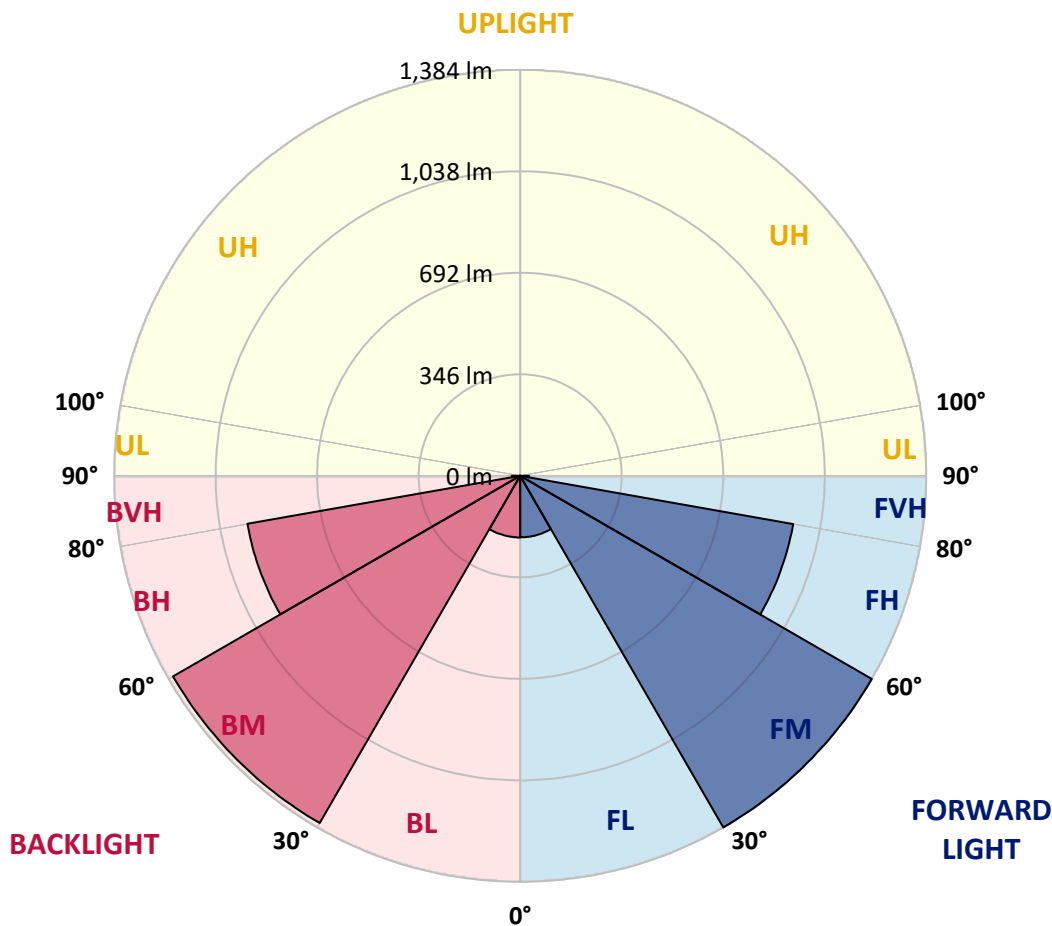
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	209.7	4.1			
FM (30°-60°)	1384.0	27.0			
FH (60°-80°)	945.0	18.5			G1/1800
FVH (80°-90°)	29.8	0.6			G1/100
BL (0°-30°)	210.1	4.1	B1/500		
BM (30°-60°)	1366.5	26.7	B2/2500		
BH (60°-80°)	944.0	18.4	B2/1000		G2/1000
BVH (80°-90°)	28.9	0.6			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 III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6
2.5°	217.6	209.5	199.3	205.4	207.8	212.2	211.6	209.5	200.6	215.5	217.2
5°	272.3	259.5	254.7	253.9	255.1	251.0	264.5	260.5	267.8	281.3	284.4
7.5°	310.1	300.6	290.4	293.5	280.6	278.8	296.2	311.8	315.7	340.4	342.0
10°	327.9	318.6	321.3	319.4	318.0	330.0	338.1	349.5	365.9	368.2	371.7
12.5°	343.1	346.8	358.6	358.2	377.7	399.1	396.0	407.8	410.5	439.1	430.4
15°	381.5	389.1	388.3	395.6	404.1	439.1	439.3	459.4	477.9	489.1	486.2
17.5°	437.7	440.4	429.2	429.6	454.3	468.6	484.5	481.0	529.1	551.1	552.6
20°	471.3	478.1	465.3	448.2	492.0	511.7	520.6	500.1	551.5	581.2	581.2
22.5°	530.0	512.3	492.8	481.4	520.0	541.0	539.9	534.1	561.5	614.0	609.0
25°	562.3	552.4	542.6	545.5	565.0	575.8	590.1	576.6	602.4	641.4	625.0
27.5°	623.7	605.3	557.4	595.5	595.5	587.4	617.7	624.1	607.3	670.8	683.1
30°	693.2	686.8	619.0	659.4	647.0	624.1	682.2	678.1	649.9	714.6	709.0
32.5°	759.0	780.1	715.8	693.6	712.3	721.0	690.5	703.0	708.4	770.8	768.1
35°	859.8	877.6	792.4	786.8	755.6	747.6	770.8	774.9	775.4	841.1	829.1
37.5°	1034.2	1008.5	924.3	884.7	888.2	878.4	883.0	850.2	854.8	950.2	956.2
40°	1161.8	1132.7	1039.0	1010.6	940.9	982.6	945.7	942.3	933.2	1056.8	1053.5
42.5°	1302.6	1262.8	1159.1	1121.1	1047.1	1030.1	1013.1	1051.4	1048.9	1163.4	1188.8
45°	1409.0	1328.6	1274.4	1250.8	1206.4	1164.7	1148.5	1165.7	1157.8	1242.9	1287.1
47.5°	1476.2	1406.3	1344.1	1294.3	1251.8	1354.1	1272.1	1249.1	1233.1	1328.4	1370.9
50°	1529.8	1449.1	1375.6	1359.0	1392.7	1483.1	1353.9	1303.0	1322.5	1392.7	1450.5
52.5°	1544.3	1458.8	1392.9	1382.3	1473.1	1489.5	1468.6	1383.1	1377.9	1469.8	1539.7
55°	1499.9	1418.0	1386.6	1444.5	1544.9	1531.2	1563.2	1508.6	1471.9	1548.6	1636.6
57.5°	1385.6	1304.3	1296.8	1380.2	1506.7	1623.3	1639.1	1595.9	1547.8	1629.1	1732.8
60°	1197.9	1123.6	1142.5	1234.6	1425.4	1591.4	1675.2	1635.8	1620.8	1701.7	1822.0
62.5°	905.6	847.7	898.2	1026.5	1276.9	1550.1	1724.9	1718.7	1697.2	1778.9	1900.8
65°	577.5	547.0	598.4	728.9	1046.5	1475.0	1748.8	1757.1	1777.0	1838.4	1961.8
67.5°	335.6	319.4	350.8	457.6	745.3	1211.2	1704.4	1823.5	1833.8	1869.1	2001.9
70°	198.5	187.9	200.8	257.0	421.9	825.1	1453.8	1794.4	1872.8	1897.3	2042.3
72.5°	151.4	141.5	135.9	152.0	220.3	426.3	983.0	1521.0	1841.5	1878.6	2025.3
75°	130.9	121.3	114.7	116.2	131.1	202.4	532.9	1087.9	1569.2	1710.6	1870.8
77.5°	112.4	103.9	99.1	98.7	100.6	111.2	222.8	589.9	982.8	1229.6	1348.7
80°	90.0	83.4	82.3	82.3	79.7	78.8	110.8	224.4	374.0	443.5	425.2
82.5°	65.8	59.1	65.8	64.9	60.8	57.5	70.5	97.1	115.3	91.1	72.0
85°	44.4	38.4	43.4	44.2	40.2	29.9	42.3	48.5	49.8	31.1	25.7
87.5°	15.6	15.1	24.5	21.4	17.4	10.2	15.6	16.8	17.6	11.0	7.5
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°	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6	179.6
2.5°	217.8	215.3	202.9	204.7	209.5	211.8	214.1	204.7	200.2	214.7	213.2
5°	285.2	276.1	265.9	264.5	265.1	256.2	261.4	259.1	260.1	269.4	271.3
7.5°	341.6	330.6	317.2	306.6	288.3	273.8	286.0	292.3	294.1	310.7	316.9
10°	372.1	362.8	358.8	338.9	332.9	331.1	328.1	318.2	329.2	325.2	328.4
12.5°	431.9	430.0	409.5	396.4	397.6	401.2	382.9	373.0	358.6	381.0	373.0
15°	482.7	490.8	470.2	446.4	434.6	440.6	426.7	412.2	399.3	406.1	397.4
17.5°	547.6	547.4	507.4	481.8	480.8	480.4	459.9	427.9	443.3	438.5	438.9
20°	582.0	576.4	526.7	497.2	522.3	513.4	494.9	453.8	471.7	477.5	481.2
22.5°	610.9	607.8	547.4	525.8	542.0	542.2	523.7	502.2	499.9	517.9	508.2
25°	631.0	643.4	586.6	581.4	588.5	581.4	563.4	549.3	540.1	567.1	540.1
27.5°	678.7	661.1	592.6	622.1	626.4	591.0	613.6	597.0	571.7	605.1	616.1
30°	712.7	723.1	634.9	679.3	674.1	641.4	650.7	650.1	619.8	684.9	677.2
32.5°	771.2	758.8	704.0	700.5	712.9	711.5	695.7	703.4	710.8	758.1	769.5
35°	831.2	844.4	748.2	772.0	768.5	746.1	787.4	782.6	804.8	901.9	869.7
37.5°	966.4	903.1	847.3	844.2	867.9	871.4	858.1	879.1	927.0	1001.7	1036.1
40°	1055.0	1026.1	931.3	935.1	902.3	958.7	921.4	988.8	1025.3	1151.2	1139.0
42.5°	1189.0	1118.6	1027.6	1040.0	1033.4	1006.2	1055.4	1090.0	1142.3	1238.3	1300.3
45°	1288.7	1192.3	1149.1	1141.5	1140.6	1187.9	1181.7	1237.1	1255.8	1327.9	1379.4
47.5°	1364.4	1282.5	1218.6	1227.3	1202.0	1337.1	1265.1	1282.3	1320.1	1388.1	1448.0
50°	1454.3	1363.0	1290.4	1312.0	1373.6	1425.4	1360.3	1330.8	1349.3	1429.6	1496.4
52.5°	1537.4	1441.4	1361.5	1379.6	1480.2	1456.5	1449.5	1375.0	1372.7	1437.2	1513.2
55°	1634.7	1526.4	1455.9	1513.2	1548.8	1519.6	1508.4	1417.8	1361.7	1397.6	1469.2
57.5°	1730.1	1610.7	1540.5	1552.4	1597.6	1568.5	1484.5	1344.9	1275.0	1282.1	1354.5
60°	1819.5	1688.0	1630.2	1618.7	1654.8	1541.0	1393.9	1211.6	1118.9	1101.8	1164.5
62.5°	1896.1	1752.7	1698.0	1666.9	1701.3	1542.0	1252.6	997.5	895.7	838.0	886.7
65°	1956.8	1806.5	1767.5	1751.3	1763.7	1448.2	1032.6	732.4	607.5	543.7	572.1
67.5°	1997.3	1836.5	1818.7	1839.9	1673.9	1206.2	765.0	468.8	353.2	318.4	336.2
70°	2039.2	1863.1	1862.5	1790.5	1419.4	831.6	446.8	270.3	205.6	192.1	203.3
72.5°	2025.1	1831.6	1840.9	1565.9	983.6	444.5	235.8	152.9	139.2	144.0	153.9
75°	1875.3	1665.2	1620.2	1125.7	558.0	206.6	135.9	115.7	114.9	122.2	131.9
77.5°	1360.3	1159.7	1040.7	638.0	239.2	111.8	100.0	96.7	96.7	102.5	111.2
80°	448.5	388.1	404.5	246.8	113.0	77.2	78.0	79.4	79.0	80.5	87.7
82.5°	73.6	76.3	118.0	100.8	68.2	52.7	58.9	61.8	62.6	56.0	63.7
85°	26.1	29.5	50.2	46.7	39.4	26.6	38.8	43.4	42.7	37.3	41.3
87.5°	8.1	10.4	18.3	14.1	11.8	7.3	14.5	17.0	21.4	8.7	7.9
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)