

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: P596544

Luminaire Tested: **MSA-SA1D-827-U-RW**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596544  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1D-827-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: 5177 lumens  
Efficiency: N/A  
Efficacy: 77.3 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

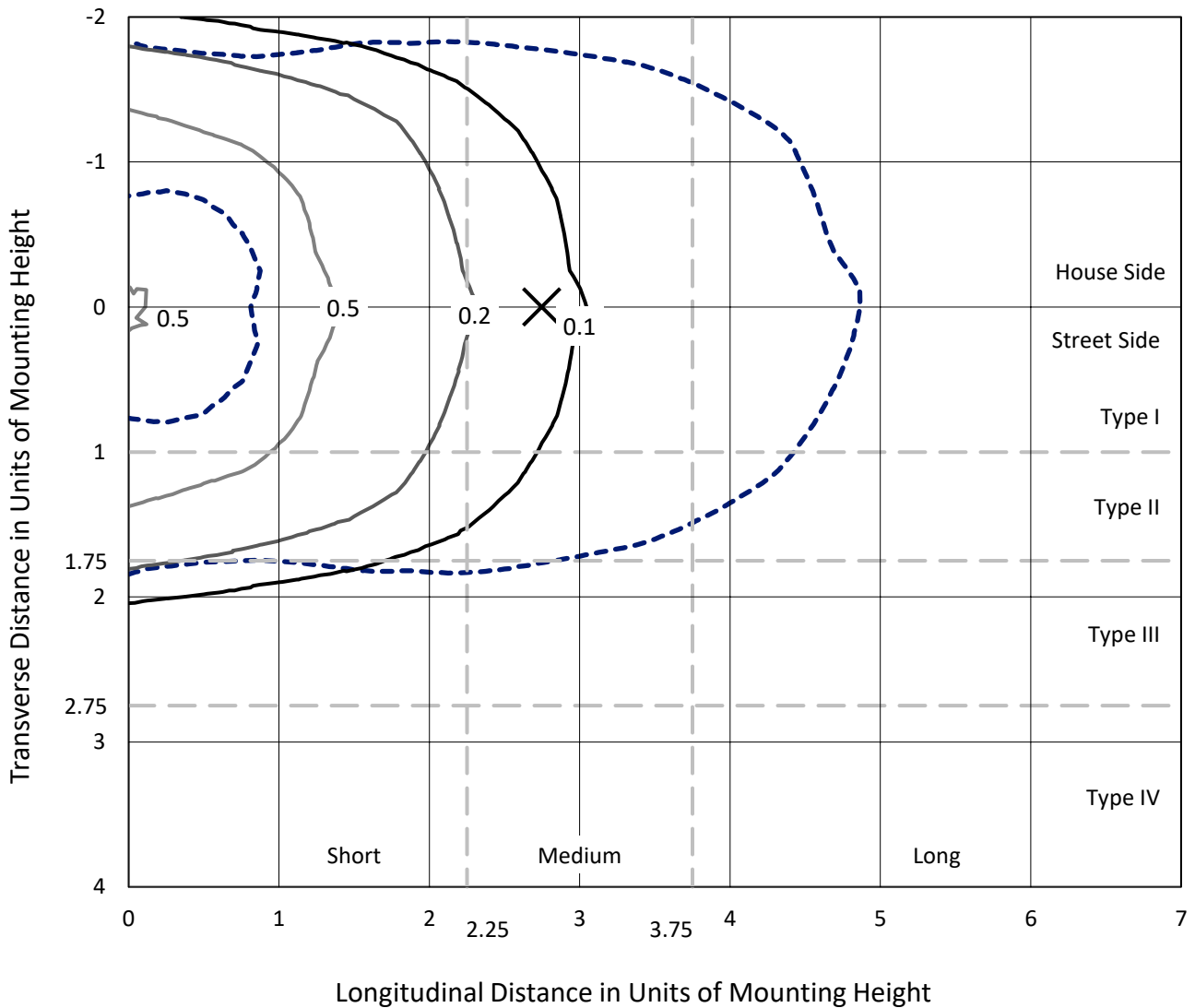
Input Watts (W): 67  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

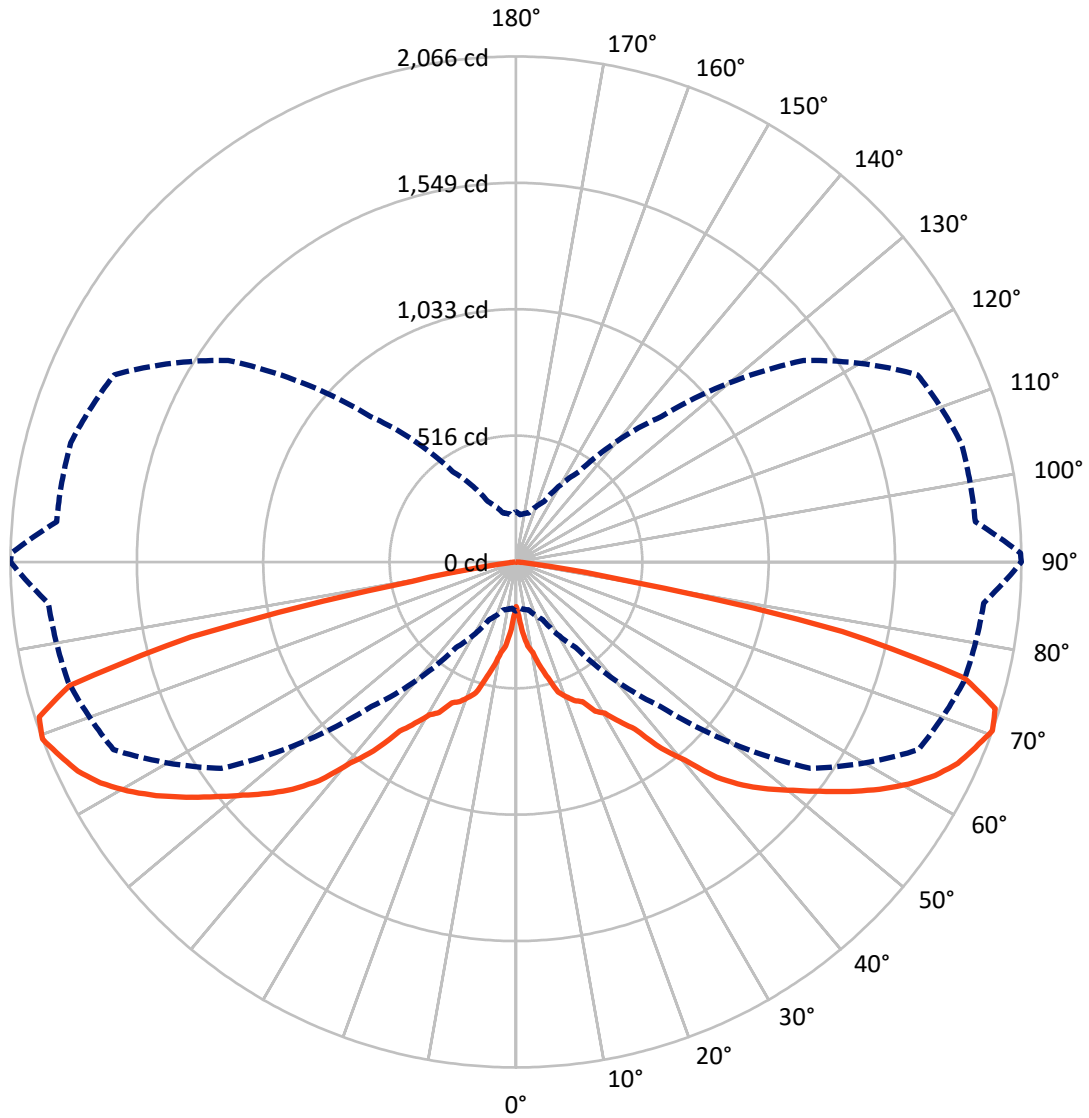
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 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	2578.9	0.0	2578.9
	% Fixture	49.8	0.0	49.8
<b>Street Side</b>	Lumens	2598.1	0.0	2598.1
	% Fixture	50.2	0.0	50.2
<b>Total</b>	Lumens	5177.0	0.0	5177.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	27.4	0.5
10°-20°	125.6	2.4
20°-30°	271.6	5.2
30°-40°	518.2	10.0
40°-50°	941.4	18.2
50°-60°	1322.5	25.5
60°-70°	1262.7	24.4
70°-80°	648.0	12.5
80°-90°	59.4	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°	5177.0	100.0
0°-180°	5177.0	100.0

**Coefficient of Utilization**



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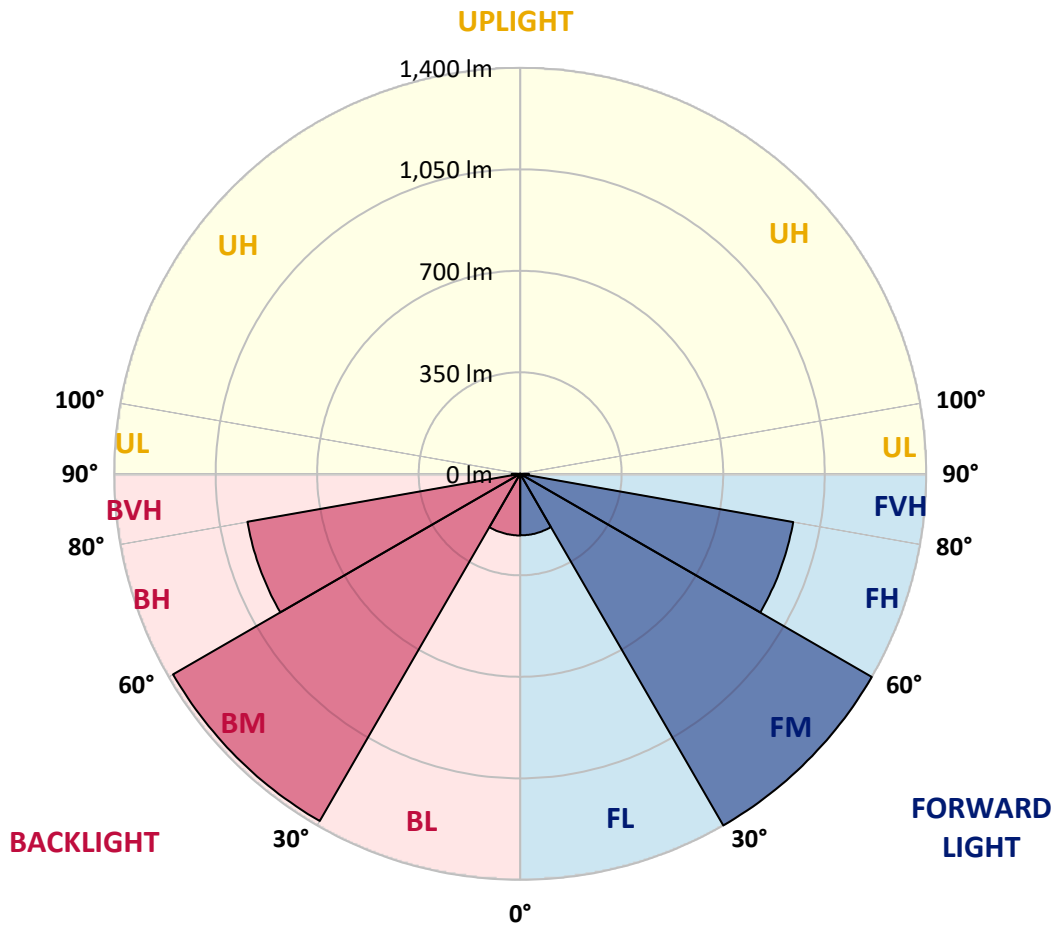
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	212.1	4.1			
FM (30°-60°)	1399.9	27.0			
FH (60°-80°)	955.9	18.5			G1/1800
FVH (80°-90°)	30.1	0.6			G1/100
BL (0°-30°)	212.5	4.1	B1/500		
BM (30°-60°)	1382.3	26.7	B2/2500		
BH (60°-80°)	954.9	18.4	B2/1000		G2/1000
BVH (80°-90°)	29.3	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°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7
2.5°	220.1	211.9	201.6	207.7	210.2	214.6	214.0	211.9	202.9	218.0	219.7
5°	275.5	262.5	257.7	256.8	258.1	253.9	267.5	263.5	270.9	284.5	287.7
7.5°	313.7	304.0	293.7	296.9	283.9	282.0	299.6	315.4	319.3	344.3	346.0
10°	331.7	322.3	325.0	323.1	321.6	333.8	342.0	353.5	370.1	372.4	376.0
12.5°	347.0	350.8	362.8	362.4	382.1	403.7	400.5	412.5	415.2	444.2	435.4
15°	385.9	393.6	392.8	400.1	408.7	444.2	444.4	464.7	483.4	494.7	491.8
17.5°	442.7	445.4	434.1	434.5	459.5	474.0	490.1	486.6	535.2	557.5	559.0
20°	476.7	483.6	470.6	453.4	497.7	517.6	526.6	505.9	557.9	587.9	587.9
22.5°	536.1	518.2	498.5	487.0	526.0	547.2	546.2	540.3	568.0	621.1	616.0
25°	568.8	558.7	548.9	551.8	571.5	582.5	596.9	583.3	609.3	648.8	632.2
27.5°	630.9	612.2	563.8	602.4	602.4	594.2	624.8	631.3	614.3	678.5	690.9
30°	701.2	694.7	626.1	667.0	654.4	631.3	690.1	685.9	657.4	722.8	717.2
32.5°	767.7	789.1	724.1	701.6	720.5	729.3	698.5	711.1	716.5	779.7	777.0
35°	869.7	887.7	801.5	795.8	764.4	756.2	779.7	783.9	784.3	850.8	838.6
37.5°	1046.1	1020.1	934.9	894.9	898.4	888.6	893.2	860.0	864.7	961.2	967.3
40°	1175.2	1145.8	1051.0	1022.2	951.7	993.9	956.6	953.2	944.0	1069.0	1065.7
42.5°	1317.6	1277.4	1172.5	1134.1	1059.2	1041.9	1024.7	1063.6	1061.0	1176.9	1202.5
45°	1425.3	1343.9	1289.1	1265.2	1220.3	1178.1	1161.8	1179.2	1171.2	1257.2	1301.9
47.5°	1493.3	1422.6	1359.6	1309.3	1266.2	1369.7	1286.8	1263.5	1247.4	1343.7	1386.7
50°	1547.4	1465.8	1391.5	1374.7	1408.7	1500.2	1369.5	1318.1	1337.8	1408.7	1467.2
52.5°	1562.1	1475.6	1408.9	1398.2	1490.1	1506.7	1485.5	1399.1	1393.8	1486.8	1557.5
55°	1517.2	1434.3	1402.6	1461.2	1562.7	1548.9	1581.2	1526.0	1488.9	1566.5	1655.5
57.5°	1401.6	1319.3	1311.8	1396.1	1524.1	1642.0	1658.0	1614.3	1565.6	1647.9	1752.8
60°	1211.7	1136.6	1155.7	1248.8	1441.9	1609.7	1694.5	1654.6	1639.5	1721.3	1843.0
62.5°	916.1	857.5	908.5	1038.4	1291.6	1568.0	1744.8	1738.5	1716.7	1799.4	1922.8
65°	584.1	553.3	605.3	737.3	1058.5	1492.0	1769.0	1777.4	1797.5	1859.6	1984.4
67.5°	339.5	323.1	354.8	462.9	753.9	1225.1	1724.1	1844.5	1855.0	1890.7	2024.9
70°	200.8	190.1	203.1	260.0	426.8	834.6	1470.6	1815.1	1894.4	1919.2	2065.9
72.5°	153.2	143.1	137.4	153.8	222.8	431.2	994.3	1538.6	1862.7	1900.3	2048.6
75°	132.4	122.7	116.0	117.5	132.6	204.8	539.0	1100.5	1587.3	1730.4	1892.3
77.5°	113.7	105.1	100.3	99.9	101.8	112.5	225.3	596.7	994.1	1243.8	1364.2
80°	91.1	84.3	83.3	83.3	80.6	79.7	112.0	227.0	378.3	448.6	430.1
82.5°	66.5	59.8	66.5	65.7	61.5	58.1	71.3	98.2	116.7	92.1	72.8
85°	44.9	38.8	43.9	44.7	40.7	30.2	42.8	49.1	50.4	31.5	26.0
87.5°	15.7	15.3	24.8	21.6	17.6	10.3	15.7	17.0	17.8	11.1	7.6
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°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7
2.5°	220.3	217.8	205.2	207.1	211.9	214.2	216.5	207.1	202.5	217.2	215.7
5°	288.5	279.3	269.0	267.5	268.1	259.1	264.4	262.1	263.1	272.6	274.4
7.5°	345.6	334.4	320.8	310.1	291.6	277.0	289.3	295.6	297.5	314.3	320.6
10°	376.4	367.0	363.0	342.8	336.8	334.9	331.9	321.9	333.0	329.0	332.1
12.5°	436.8	434.9	414.2	401.0	402.2	405.8	387.3	377.2	362.8	385.4	377.2
15°	488.2	496.4	475.7	451.5	439.6	445.6	431.6	416.9	403.9	410.8	402.0
17.5°	553.9	553.7	513.2	487.4	486.4	485.9	465.2	432.9	448.4	443.6	444.0
20°	588.7	583.1	532.7	502.9	528.3	519.3	500.6	459.1	477.1	483.0	486.8
22.5°	617.9	614.8	553.7	531.9	548.3	548.5	529.8	508.0	505.7	523.9	514.1
25°	638.3	650.9	593.4	588.1	595.2	588.1	569.9	555.6	546.4	573.6	546.4
27.5°	686.5	668.7	599.4	629.2	633.6	597.8	620.6	603.9	578.3	612.0	623.2
30°	720.9	731.4	642.2	687.1	681.9	648.8	658.2	657.6	626.9	692.8	685.1
32.5°	780.1	767.5	712.1	708.5	721.1	719.7	703.7	711.5	719.0	766.9	778.4
35°	840.7	854.2	756.8	780.9	777.4	754.7	796.5	791.6	814.1	912.3	879.8
37.5°	977.5	913.5	857.1	854.0	877.9	881.4	868.0	889.2	937.7	1013.2	1048.0
40°	1067.1	1038.0	942.1	945.9	912.7	969.8	932.0	1000.2	1037.1	1164.5	1152.1
42.5°	1202.7	1131.5	1039.4	1052.0	1045.3	1017.8	1067.5	1102.6	1155.5	1252.6	1315.3
45°	1303.6	1206.0	1162.4	1154.6	1153.8	1201.6	1195.3	1251.3	1270.2	1343.2	1395.3
47.5°	1380.2	1297.3	1232.7	1241.5	1215.9	1352.5	1279.7	1297.1	1335.3	1404.1	1464.7
50°	1471.0	1378.7	1305.3	1327.1	1389.4	1441.9	1376.0	1346.2	1364.9	1446.1	1513.6
52.5°	1555.2	1458.0	1377.2	1395.5	1497.2	1473.3	1466.2	1390.9	1388.6	1453.8	1530.6
55°	1653.6	1544.0	1472.7	1530.6	1566.7	1537.1	1525.8	1434.1	1377.4	1413.7	1486.1
57.5°	1750.1	1629.2	1558.3	1570.3	1616.0	1586.6	1501.7	1360.4	1289.7	1296.9	1370.1
60°	1840.5	1707.5	1648.9	1637.4	1673.9	1558.7	1410.0	1225.5	1131.7	1114.5	1177.9
62.5°	1917.9	1772.9	1717.6	1686.1	1720.9	1559.8	1267.1	1009.0	906.0	847.7	897.0
65°	1979.4	1827.3	1787.8	1771.5	1784.1	1464.9	1044.5	740.9	614.6	549.9	578.7
67.5°	2020.3	1857.7	1839.7	1861.1	1693.2	1220.1	773.8	474.2	357.3	322.1	340.1
70°	2062.7	1884.6	1883.9	1811.1	1435.8	841.2	451.9	273.4	207.9	194.3	205.6
72.5°	2048.4	1852.7	1862.1	1583.9	994.9	449.6	238.6	154.6	140.8	145.6	155.7
75°	1896.9	1684.4	1638.9	1138.7	564.4	209.0	137.4	117.1	116.2	123.6	133.4
77.5°	1376.0	1173.1	1052.6	645.4	241.9	113.1	101.1	97.8	97.8	103.6	112.5
80°	453.6	392.6	409.1	249.7	114.3	78.1	78.9	80.4	79.9	81.4	88.8
82.5°	74.5	77.2	119.4	102.0	69.0	53.3	59.6	62.5	63.4	56.7	64.4
85°	26.4	29.8	50.8	47.2	39.9	26.9	39.2	43.9	43.2	37.8	41.8
87.5°	8.2	10.5	18.5	14.3	12.0	7.3	14.7	17.2	21.6	8.8	8.0
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)