

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: P368685

Luminaire Tested: **MSA-SA4D-760-U-T4FT-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368685
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-13)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4D-760-U-T4FT-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19700 lumens
Efficiency: N/A
Efficacy: 76.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G4

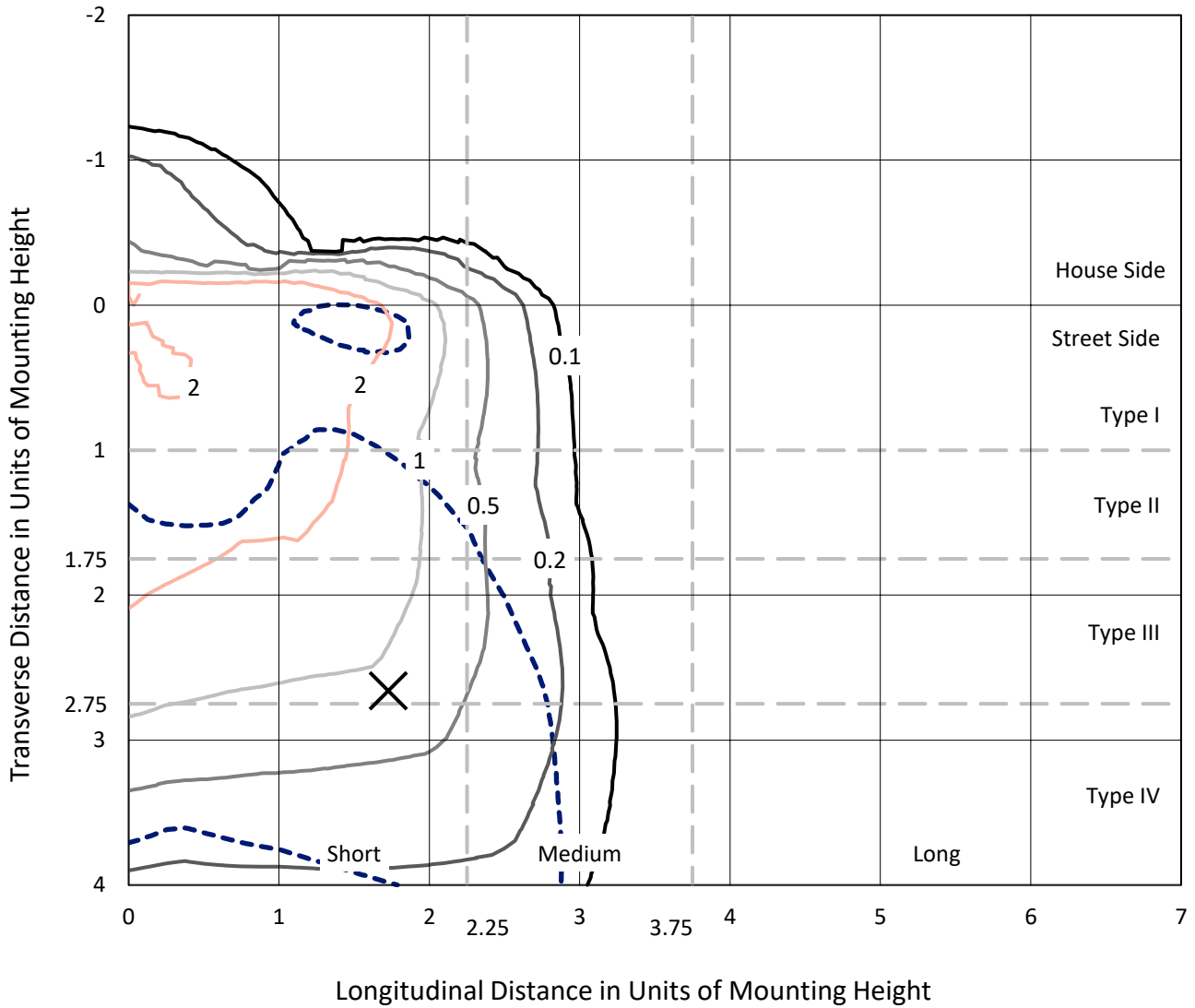
Input Watts (W): 259
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

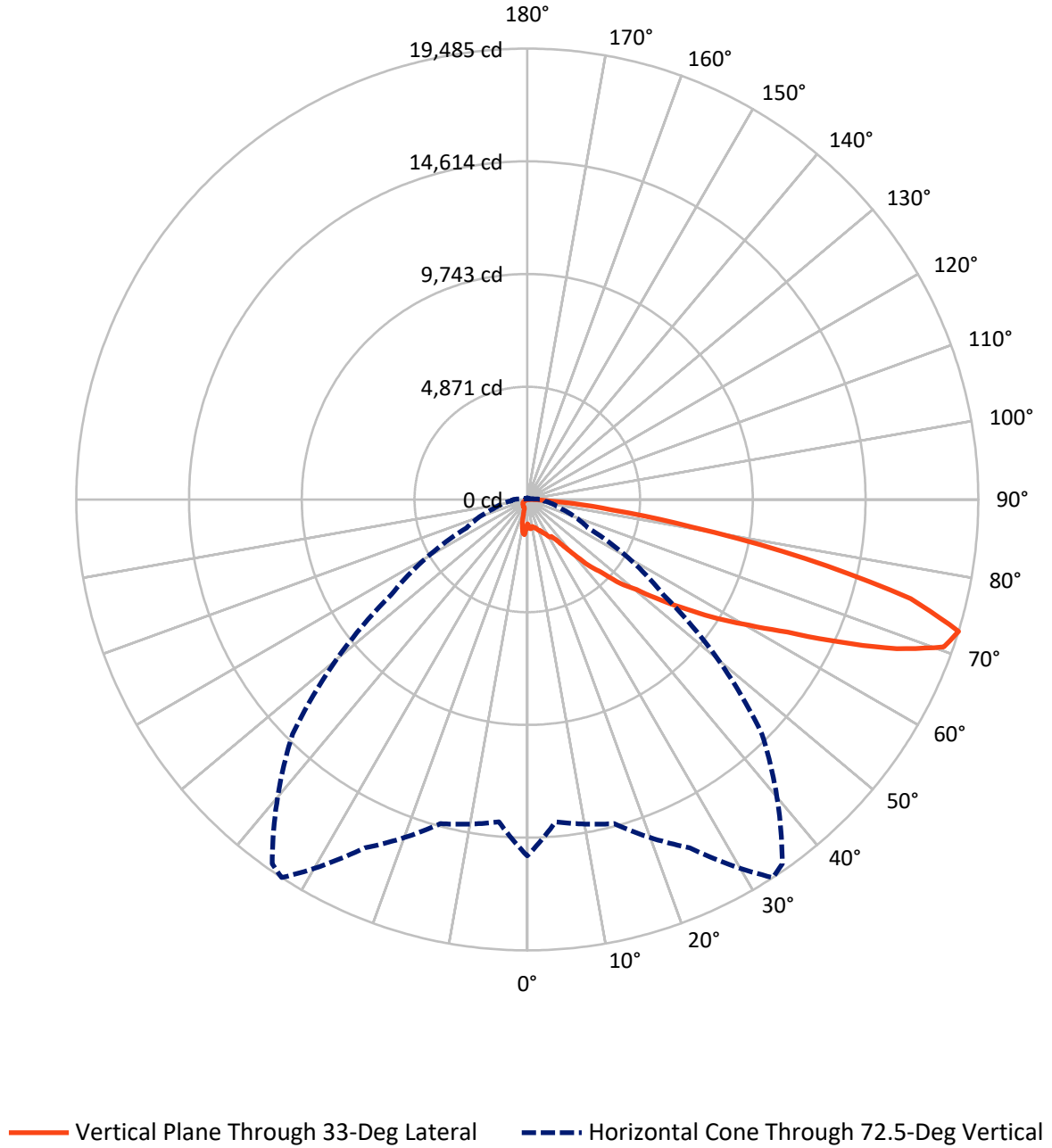
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1821.5	0.0	1821.5
	% Fixture	9.2	0.0	9.2
Street Side	Lumens	17878.5	0.0	17878.5
	% Fixture	90.8	0.0	90.8
Total	Lumens	19700.0	0.0	19700.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.6	0.7
10°-20°	404.1	2.1
20°-30°	685.3	3.5
30°-40°	1254.3	6.4
40°-50°	2647.2	13.4
50°-60°	4429.0	22.5
60°-70°	5928.5	30.1
70°-80°	3872.5	19.7
80°-90°	343.3	1.7
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°	19700.0	100.0
0°-180°	19700.0	100.0

Coefficient of Utilization



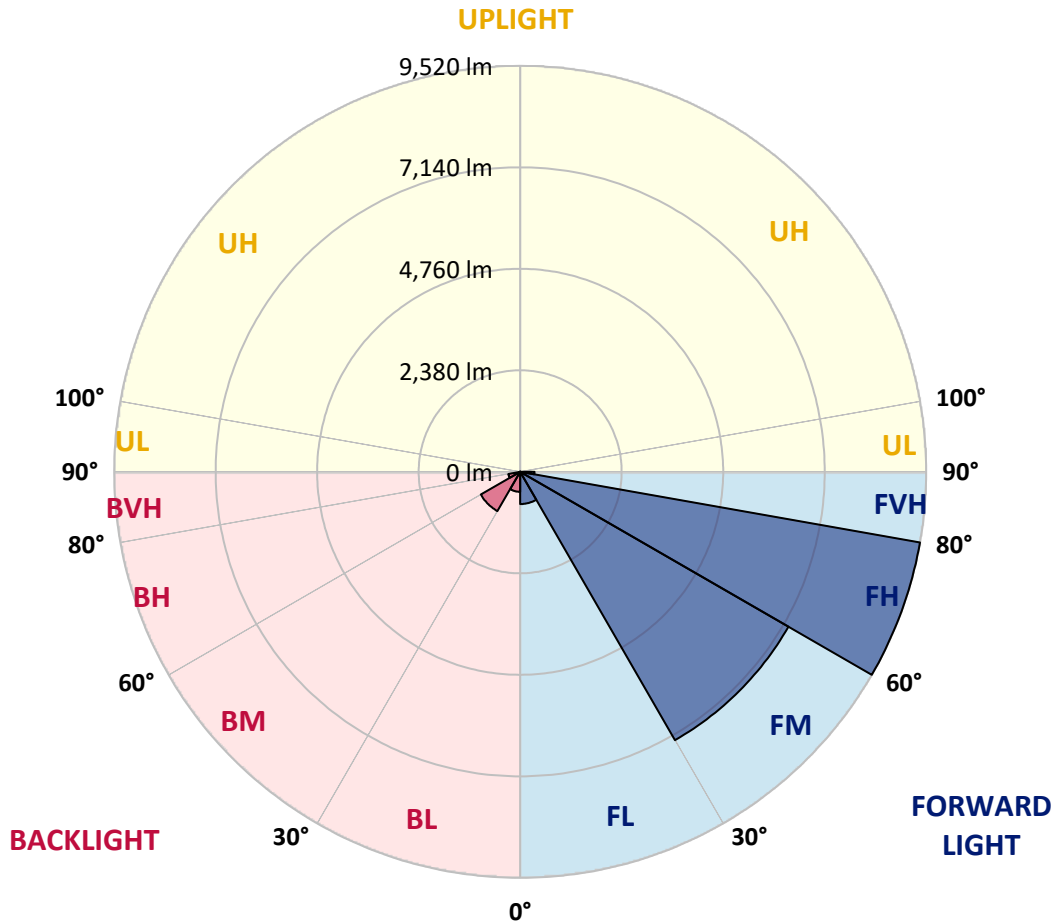
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	756.2	3.8			
FM (30°-60°)	7265.7	36.9			
FH (60°-80°)	9519.9	48.3			G4/12000
FVH (80°-90°)	336.7	1.7			G3/500
BL (0°-30°)	468.8	2.4	B1/500		
BM (30°-60°)	1064.9	5.4	B2/2500		
BH (60°-80°)	281.1	1.4	B1/500		G1/500
BVH (80°-90°)	6.6	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8
2.5°	1249.1	1200.9	1130.9	1135.3	1147.3	1157.2	1183.4	1172.5	1151.7	1150.6	1249.1
5°	1323.4	1269.8	1265.5	1272.0	1268.7	1286.2	1264.4	1335.5	1395.6	1467.8	1583.7
7.5°	1287.3	1262.2	1230.5	1263.3	1262.2	1253.4	1267.7	1412.0	1557.5	1649.4	1840.8
10°	1183.4	1155.0	1179.1	1190.0	1182.3	1220.6	1315.8	1433.9	1607.8	1800.3	1893.3
12.5°	1153.9	1171.4	1180.2	1180.2	1253.4	1273.1	1418.6	1530.2	1736.9	1888.9	2159.1
15°	1268.7	1302.7	1242.5	1229.4	1252.3	1263.3	1425.2	1559.7	1824.4	2102.2	2328.6
17.5°	1451.4	1449.2	1356.2	1304.8	1340.9	1367.2	1456.9	1614.4	1769.7	2269.5	2597.7
20°	1577.2	1579.4	1412.0	1304.8	1424.1	1439.4	1538.9	1664.7	1787.2	2353.7	2773.7
22.5°	1739.1	1681.1	1496.2	1392.3	1473.3	1487.5	1596.9	1696.4	1876.9	2343.9	2999.1
25°	1871.4	1834.2	1601.2	1529.1	1601.2	1581.6	1681.1	1830.9	1973.1	2500.3	3131.4
27.5°	2077.0	2013.6	1675.6	1688.7	1684.4	1698.6	1721.6	1951.2	2142.7	2508.0	3437.7
30°	2268.4	2231.2	1841.9	1841.9	1884.5	1857.2	1873.6	2151.4	2306.7	2685.2	3782.2
32.5°	2466.4	2468.6	2037.7	1933.7	1899.8	2012.5	2123.0	2248.7	2504.7	2989.2	4309.4
35°	2990.3	2946.6	2412.8	2153.6	2126.2	2119.7	2296.9	2637.0	2855.8	3385.2	5019.2
37.5°	4045.8	3893.7	3220.0	2652.3	2549.5	2514.5	2715.8	3064.7	3282.3	3967.0	6192.8
40°	5128.6	4849.7	4101.6	3461.7	3128.1	2977.2	3211.2	3507.7	3894.8	4610.2	7278.9
42.5°	6079.1	5734.5	4765.5	4334.5	3900.3	3834.7	3614.8	4097.2	4769.8	5546.4	8343.1
45°	7005.5	6327.3	5356.1	5014.8	4487.7	4524.8	4450.5	4868.3	5678.7	6572.3	9287.0
47.5°	7643.1	7033.9	6080.1	5637.2	5426.1	5208.4	5799.1	6233.3	6488.1	7224.2	10103.0
50°	8330.0	7713.1	6702.5	6393.0	6115.1	6335.0	7101.7	7159.7	7138.9	7832.3	10658.6
52.5°	9217.0	8489.7	7416.7	7066.7	7224.2	7443.0	8327.8	8338.7	7717.5	8344.2	11058.9
55°	10037.3	9231.2	8368.3	8038.0	8367.2	8552.0	9533.1	9173.3	8054.4	8692.0	11255.8
57.5°	11193.4	10260.5	9633.7	9051.9	9719.1	9541.9	10593.0	10058.1	8432.8	8922.8	11183.6
60°	12654.7	11556.5	10928.7	10313.0	11028.3	11148.6	11627.6	10500.0	8579.4	8998.3	10749.4
62.5°	14141.1	13036.4	12210.6	11792.8	12604.4	13000.3	12585.8	10719.8	8403.3	8850.6	9766.1
65°	15985.1	14570.9	13606.2	13361.2	14865.1	15447.0	13718.9	10773.4	8063.1	8038.0	7852.0
67.5°	17248.4	15871.4	14986.5	15396.7	17213.4	17260.4	14736.1	10789.8	6918.0	6293.4	5153.7
70°	17548.1	16073.7	15677.8	16885.3	19087.0	18495.3	15064.2	9958.6	5130.8	3735.2	2355.9
72.5°	15404.4	13984.7	14499.8	16604.2	19485.1	19213.9	14339.0	7184.8	2888.6	1494.1	723.0
75°	9448.9	8590.3	10877.3	14077.6	17104.0	16929.0	11186.9	3712.2	1163.7	597.2	270.2
77.5°	4109.2	3816.1	5676.6	9340.6	12290.5	12134.0	6554.8	1367.2	601.6	420.0	136.7
80°	1359.5	1319.1	2150.3	4423.1	7199.1	7061.2	2761.7	568.7	428.7	336.9	76.6
82.5°	322.7	320.5	750.3	2035.5	3667.3	3552.5	847.7	313.9	310.6	265.8	40.5
85°	80.9	83.1	207.8	832.3	1489.7	1313.6	220.9	156.4	218.7	180.5	20.8
87.5°	0.0	0.0	53.6	119.2	225.3	141.1	24.1	41.6	61.2	64.5	10.9
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°	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8	1047.8
2.5°	1270.9	1258.9	1160.5	1184.5	1221.7	1218.4	1242.5	1223.9	1207.5	1288.4	1280.8
5°	1616.6	1550.9	1520.3	1563.0	1540.0	1486.4	1531.2	1523.6	1510.5	1537.8	1558.6
7.5°	1875.8	1815.6	1788.3	1698.6	1568.4	1465.6	1482.0	1443.7	1407.7	1450.3	1494.1
10°	1961.1	1928.3	1925.0	1750.0	1627.5	1478.7	1302.7	1150.6	1110.2	1056.6	1080.6
12.5°	2193.0	2212.7	2089.1	1884.5	1648.3	1362.8	1050.0	834.5	747.0	690.2	693.4
15°	2383.3	2452.2	2272.8	1905.3	1450.3	1039.1	698.9	505.3	450.6	436.4	432.0
17.5°	2666.6	2733.3	2329.7	1757.7	1169.2	704.4	449.5	393.7	397.0	406.9	404.7
20°	2876.6	2866.7	2280.5	1496.2	861.9	461.6	376.2	368.6	386.1	414.5	408.0
22.5°	3078.9	3011.1	2249.8	1254.5	557.8	370.8	363.1	362.0	378.4	405.8	413.4
25°	3223.3	3234.2	2198.4	982.2	405.8	344.5	351.1	360.9	377.3	406.9	402.5
27.5°	3636.7	3330.5	1984.1	713.1	342.3	330.3	346.7	366.4	371.9	409.1	410.2
30°	3904.7	3693.6	1844.1	480.2	316.1	305.2	338.0	364.2	370.8	418.9	422.2
32.5°	4371.7	3850.0	1682.2	356.6	294.2	297.5	318.3	353.3	383.9	435.3	437.5
35°	4952.5	4352.0	1389.1	320.5	286.6	281.1	290.9	331.4	381.7	437.5	448.4
37.5°	6058.3	4652.8	1101.4	310.6	286.6	276.7	286.6	310.6	375.2	459.4	482.3
40°	6798.7	5265.3	794.1	308.4	281.1	272.3	275.6	299.7	356.6	446.2	480.2
42.5°	7710.9	5523.4	585.2	303.0	275.6	262.5	264.7	295.3	338.0	418.9	444.1
45°	8458.0	5711.6	460.5	300.8	262.5	258.1	262.5	292.0	320.5	359.8	382.8
47.5°	9025.6	5930.3	369.7	286.6	259.2	258.1	252.7	273.4	290.9	300.8	316.1
50°	9441.2	5881.1	306.2	264.7	248.3	254.8	245.0	248.3	252.7	247.2	264.7
52.5°	9696.1	5703.9	254.8	238.4	235.2	240.6	228.6	218.7	211.1	206.7	217.7
55°	9789.1	5348.4	216.6	204.5	212.2	214.4	204.5	187.0	173.9	167.3	176.1
57.5°	9613.0	4807.0	188.1	169.5	187.0	187.0	173.9	155.3	140.0	129.1	137.8
60°	9166.7	4208.7	167.3	141.1	159.7	160.8	145.5	125.8	113.7	102.8	108.3
62.5°	8335.5	3556.9	146.6	122.5	137.8	138.9	120.3	101.7	93.0	80.9	85.3
65°	6673.0	2720.2	124.7	108.3	119.2	115.9	99.5	86.4	75.5	64.5	66.7
67.5°	4331.2	1678.9	108.3	98.4	100.6	97.3	84.2	75.5	63.4	54.7	55.8
70°	1939.2	723.0	95.2	88.6	87.5	82.0	71.1	70.0	62.3	54.7	54.7
72.5°	598.3	272.3	82.0	79.8	75.5	68.9	62.3	66.7	61.2	52.5	51.4
75°	236.2	124.7	67.8	67.8	65.6	56.9	55.8	60.2	56.9	48.1	45.9
77.5°	123.6	78.7	55.8	58.0	56.9	43.7	50.3	54.7	52.5	40.5	33.9
80°	73.3	48.1	41.6	47.0	45.9	30.6	38.3	35.0	25.2	12.0	3.3
82.5°	40.5	21.9	18.6	27.3	27.3	10.9	19.7	17.5	9.8	0.0	0.0
85°	19.7	15.3	14.2	15.3	10.9	3.3	9.8	9.8	5.5	0.0	0.0
87.5°	9.8	8.7	6.6	5.5	4.4	0.0	3.3	4.4	0.0	0.0	0.0
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)