

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: P368169

Luminaire Tested: **MSA-SA3D-830-U-SL4-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368169  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3D-830-U-SL4-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13081 lumens  
Efficiency: N/A  
Efficacy: 68.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3

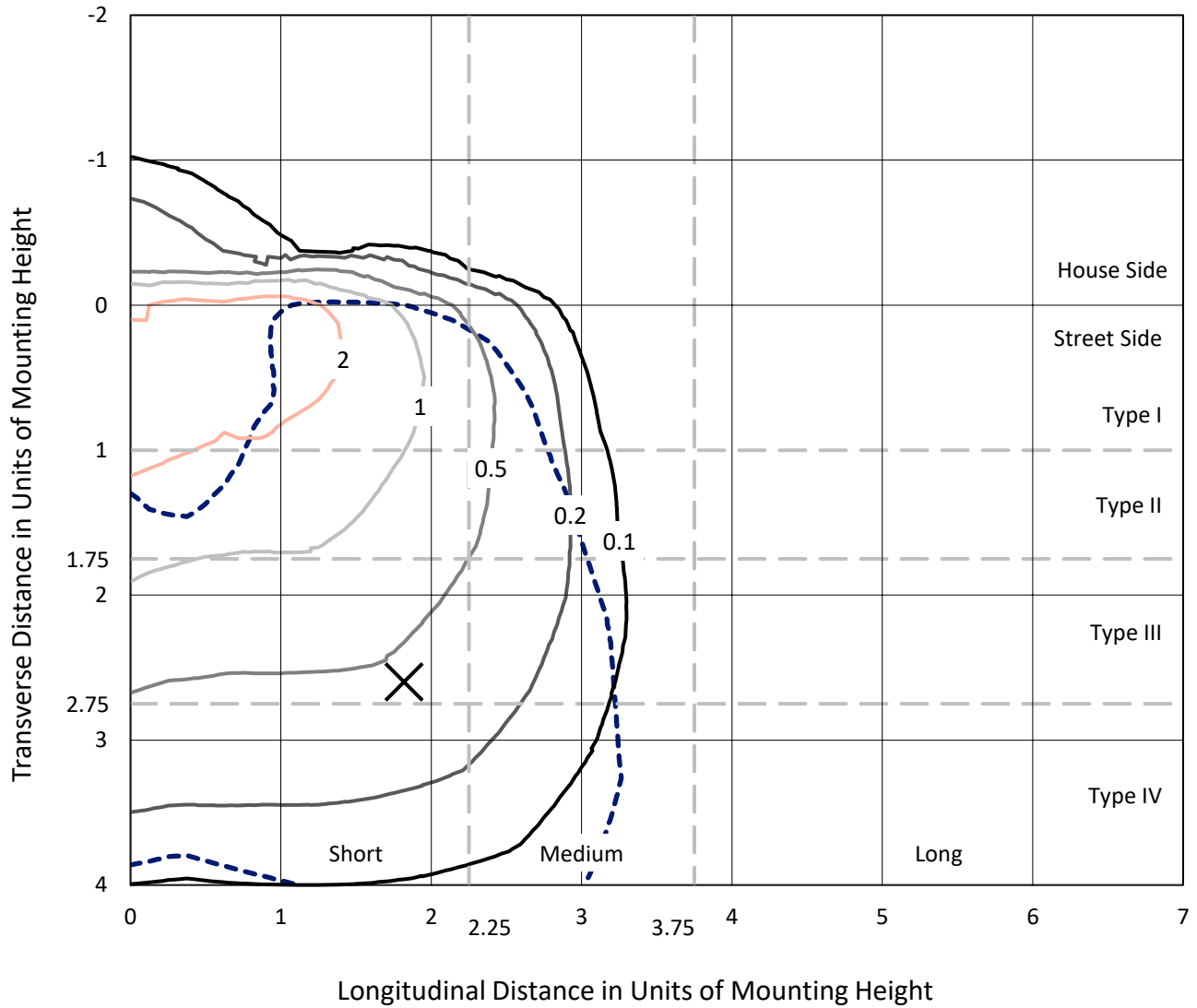
Input Watts (W): 192  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

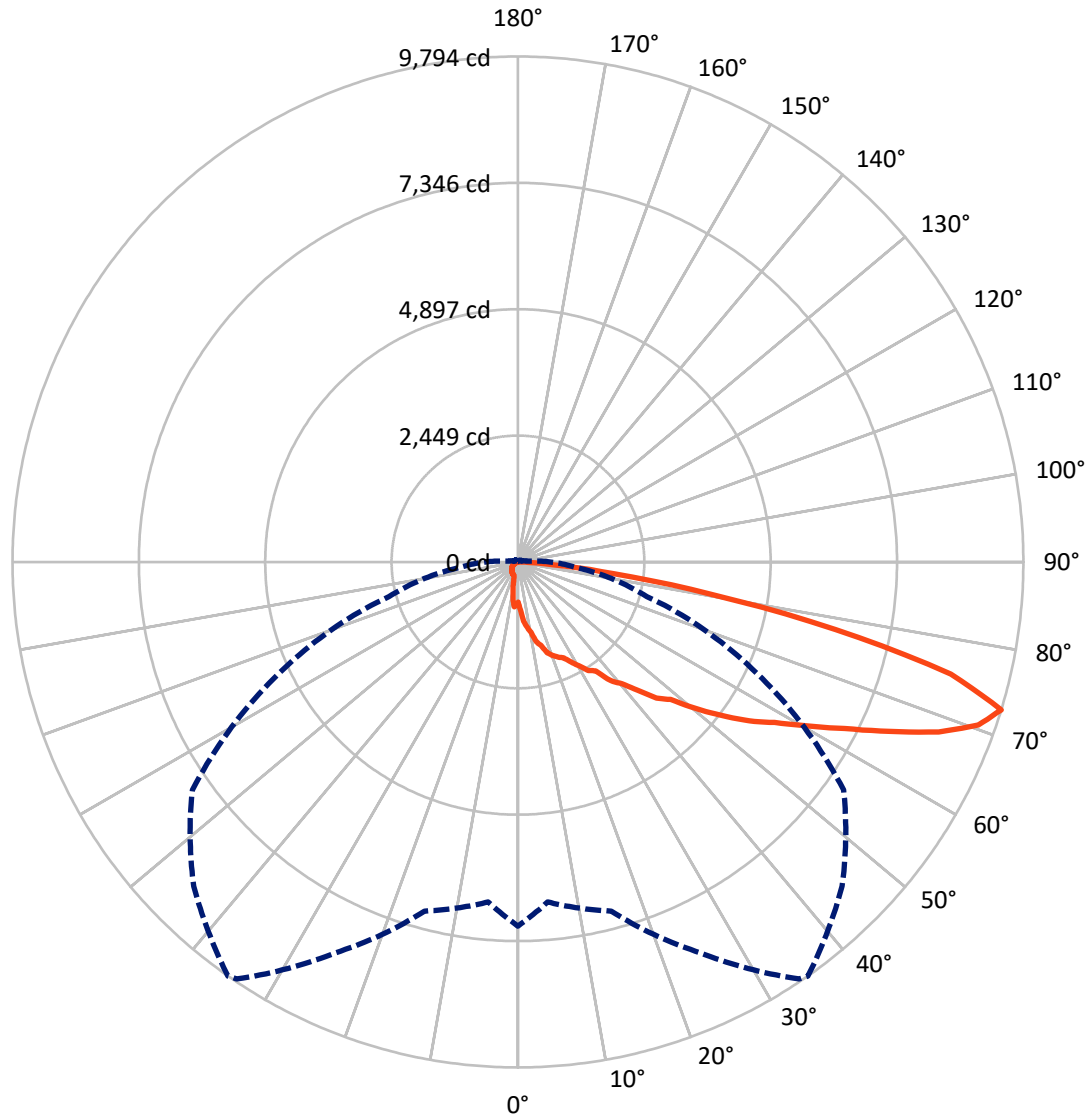
× Max cd  
 - - - 1/2 Max cd



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 35-Deg Lateral      - - - Horizontal Cone Through 72.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1020.3	0.0	1020.3
	% Fixture	7.8	0.0	7.8
<b>Street Side</b>	Lumens	12060.7	0.0	12060.7
	% Fixture	92.2	0.0	92.2
<b>Total</b>	Lumens	13081.0	0.0	13081.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.4	0.8
10°-20°	334.8	2.6
20°-30°	609.6	4.7
30°-40°	1051.6	8.0
40°-50°	1869.3	14.3
50°-60°	2789.4	21.3
60°-70°	3563.8	27.2
70°-80°	2479.5	19.0
80°-90°	283.6	2.2
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°	13081.0	100.0
0°-180°	13081.0	100.0

**Coefficient of Utilization**



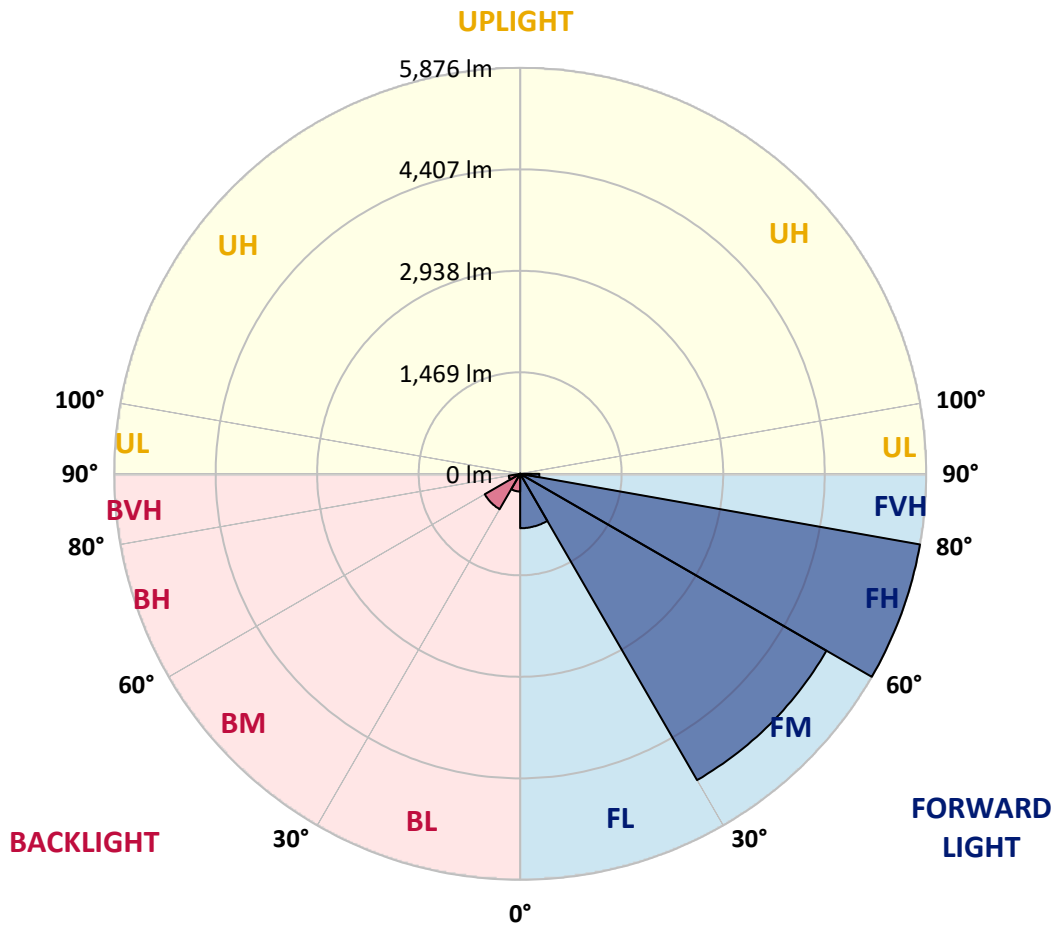
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	787.2	6.0			
FM (30°-60°)	5118.7	39.1			
FH (60°-80°)	5876.0	44.9			G3/7500
FVH (80°-90°)	278.9	2.1			G3/500
BL (0°-30°)	256.6	2.0	B1/500		
BM (30°-60°)	591.6	4.5	B1/1000		
BH (60°-80°)	167.3	1.3	B1/500		G1/500
BVH (80°-90°)	4.8	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	34°	35°	45°	55°	65°	75°	85°
0°	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2
2.5°	991.6	952.8	889.7	894.3	922.6	928.5	937.1	914.7	895.0	860.1	927.8
5°	1270.4	1214.6	1179.0	1167.9	1151.4	1152.7	1112.6	1127.1	1123.1	1148.8	1179.7
7.5°	1427.6	1396.7	1352.0	1339.5	1279.0	1272.4	1223.1	1289.5	1296.1	1286.9	1337.5
10°	1490.1	1449.3	1454.6	1407.9	1377.6	1385.5	1393.4	1398.7	1407.2	1415.8	1354.0
12.5°	1526.9	1534.1	1605.8	1557.2	1587.4	1587.4	1640.7	1584.1	1586.1	1524.3	1534.8
15°	1692.6	1732.7	1700.5	1699.8	1667.0	1675.5	1737.3	1692.6	1715.6	1697.2	1626.2
17.5°	1900.4	1908.3	1847.1	1820.2	1849.8	1850.4	1824.1	1822.2	1741.9	1877.4	1791.3
20°	1966.8	2011.5	1924.7	1819.5	1942.5	1936.6	1934.6	1903.7	1770.2	1958.3	1887.3
22.5°	2147.7	2083.9	2024.7	1955.6	2003.6	2003.6	1996.4	1928.7	1876.7	1951.0	1981.3
25°	2204.2	2212.1	2135.2	2112.8	2114.1	2054.9	2049.7	2020.7	1970.8	2097.7	2037.2
27.5°	2398.9	2395.6	2210.8	2273.3	2193.7	2194.3	2049.0	2114.1	2122.7	2104.9	2172.6
30°	2590.2	2643.5	2364.7	2443.6	2360.1	2335.1	2193.0	2250.9	2266.0	2245.6	2331.1
32.5°	2834.2	2912.4	2641.5	2563.9	2436.3	2507.4	2409.4	2272.6	2347.6	2529.7	2577.7
35°	3092.6	3130.7	2842.1	2733.6	2589.6	2588.9	2585.6	2596.8	2679.6	2884.8	2925.6
37.5°	3556.9	3466.8	3205.7	2957.1	2989.4	2917.7	2867.7	2920.3	3006.5	3344.5	3518.7
40°	3815.9	3750.8	3383.3	3236.0	3076.2	3102.5	3237.9	3232.0	3461.5	3815.3	4076.3
42.5°	4067.8	4006.0	3644.3	3525.3	3320.1	3391.8	3451.0	3525.9	3996.1	4566.9	4710.3
45°	4292.0	4110.5	3855.4	3860.0	3753.5	3762.0	3866.6	3935.6	4615.6	5200.8	5301.4
47.5°	4427.5	4278.2	4033.6	4029.0	4022.4	3982.3	4474.8	4538.0	5109.4	5804.5	5813.7
50°	4618.2	4431.4	4217.1	4221.0	4372.9	4457.7	5045.6	5039.0	5586.1	6308.2	6095.8
52.5°	4855.6	4627.4	4391.3	4566.9	4801.7	4939.7	5417.2	5611.8	6098.4	6624.5	6206.2
55°	5159.4	4874.0	4646.5	4871.4	5383.6	5436.9	5780.8	6191.8	6656.7	6947.3	6241.8
57.5°	5515.8	5175.2	4991.0	5353.4	5864.3	5865.6	6310.1	6809.9	6999.3	7078.9	6201.6
60°	5899.8	5502.6	5317.2	5643.4	6394.3	6448.2	6898.7	7151.2	7347.2	7145.3	6130.0
62.5°	6237.8	5799.2	5655.2	6038.6	6975.6	7103.2	7411.6	7375.4	7598.3	7228.8	5947.8
65°	6640.3	6183.2	6088.5	6654.7	7734.5	7910.0	7987.6	7773.3	7682.5	7164.3	5473.7
67.5°	7038.7	6611.3	6608.7	7337.9	8729.4	8789.9	8708.3	8334.2	7584.5	6596.2	4605.0
70°	7319.5	6860.5	7033.5	8086.3	9633.6	9463.9	9120.6	8599.2	6877.0	5055.5	3008.4
72.5°	7055.8	6613.3	7003.2	8352.6	9745.3	9794.0	8881.9	7702.9	5109.4	2585.6	1089.0
75°	5361.9	5091.0	6080.7	7410.3	8652.4	8663.6	7413.6	5432.9	2515.9	702.3	301.2
77.5°	2700.7	2614.5	3848.8	5260.6	6312.8	6294.4	5093.6	2910.5	809.5	233.4	151.9
80°	1367.1	1298.1	1638.0	2838.1	3748.9	3776.5	2908.5	1303.3	408.4	126.9	105.2
82.5°	839.7	797.0	896.3	1284.3	1819.5	1863.6	1103.4	825.3	253.2	75.0	96.0
85°	162.4	171.0	514.9	643.1	726.6	709.5	326.8	679.3	76.3	44.7	69.7
87.5°	0.0	2.6	119.0	209.8	210.4	186.8	74.3	150.6	10.5	12.5	8.5
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2	779.2
2.5°	939.0	929.2	847.0	837.8	839.7	825.9	821.3	792.4	785.2	829.9	837.8
5°	1166.5	1100.8	1024.5	996.9	954.1	881.8	871.3	852.9	832.5	840.4	834.5
7.5°	1306.0	1218.5	1137.0	991.6	871.3	766.1	749.0	717.4	685.9	686.5	706.9
10°	1328.3	1254.7	1142.2	965.3	827.9	696.4	582.0	499.1	461.6	428.1	437.9
12.5°	1457.9	1389.5	1182.3	957.4	764.8	559.6	409.7	328.8	293.3	281.4	280.1
15°	1561.8	1507.8	1250.7	933.1	624.7	393.9	293.3	269.6	263.0	274.2	270.9
17.5°	1716.3	1619.0	1243.5	832.5	476.1	299.2	270.3	267.0	274.9	281.4	283.4
20°	1784.0	1644.0	1194.2	674.7	356.4	274.2	263.7	257.1	271.6	291.3	287.4
22.5°	1852.4	1686.7	1136.3	552.4	286.7	262.4	256.5	251.2	262.4	281.4	286.0
25°	1883.3	1755.1	1071.9	431.4	266.3	248.6	244.6	246.6	255.8	272.9	270.9
27.5°	2039.2	1763.0	948.9	340.6	257.8	238.7	238.7	243.3	243.3	266.3	264.3
30°	2136.5	1896.5	848.9	286.7	247.9	224.9	232.8	234.8	231.5	256.5	258.4
32.5°	2307.5	1933.3	751.6	263.0	232.1	222.9	221.6	222.9	225.6	249.9	250.5
35°	2570.5	2114.8	618.8	253.8	224.2	213.1	203.9	211.1	217.7	235.4	238.7
37.5°	3084.7	2300.9	504.4	246.6	220.3	203.9	200.6	199.2	211.1	231.5	238.0
40°	3501.0	2630.3	410.3	240.7	212.4	198.6	190.0	190.7	201.2	216.3	226.2
42.5°	4090.2	2868.4	347.9	231.5	201.2	187.4	177.5	183.5	188.1	203.9	210.4
45°	4582.0	3053.1	306.4	225.6	190.0	176.9	169.0	175.6	171.0	178.9	188.1
47.5°	4973.3	3214.3	275.5	211.1	182.8	171.0	161.1	159.1	151.2	153.2	161.8
50°	5188.3	3187.3	249.9	196.6	173.6	165.1	151.2	137.4	126.9	126.3	131.5
52.5°	5264.6	3043.3	228.8	184.1	162.4	151.9	136.1	117.0	106.5	103.2	107.8
55°	5285.6	2836.1	209.8	170.3	151.9	135.5	119.0	98.6	87.5	82.2	86.8
57.5°	5217.2	2517.2	191.4	157.2	139.4	119.7	101.9	80.9	70.4	63.8	67.7
60°	5048.2	2112.1	174.9	140.7	126.3	105.9	86.1	65.1	53.9	48.0	50.0
62.5°	4674.1	1655.8	157.2	125.6	112.4	92.7	72.3	51.3	40.8	35.5	36.2
65°	4104.6	1234.3	136.8	111.1	100.0	80.2	57.9	39.5	30.9	26.3	25.6
67.5°	3270.1	836.4	116.4	96.0	88.8	67.7	46.0	30.9	24.3	21.0	19.7
70°	1922.1	421.5	96.7	82.9	76.3	56.6	36.2	25.0	22.4	19.7	18.4
72.5°	633.9	182.1	75.6	68.4	63.1	45.4	28.3	23.0	21.7	19.1	17.8
75°	220.9	105.2	55.9	52.6	50.0	34.2	23.7	21.0	21.0	18.4	16.4
77.5°	144.7	81.5	41.4	38.1	37.5	25.0	20.4	19.7	18.4	15.1	12.5
80°	120.3	46.0	28.9	27.0	26.3	15.8	16.4	14.5	11.2	6.6	2.6
82.5°	111.1	27.6	15.1	16.4	15.1	5.9	9.2	7.9	5.9	2.6	0.0
85°	65.1	12.5	8.5	8.5	6.6	1.3	4.6	4.6	2.6	0.7	0.0
87.5°	7.2	5.9	4.6	4.6	3.3	0.0	2.0	1.3	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)