

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: P368445

Luminaire Tested: **MSA-SA4B-830-U-T4W-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368445  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4B-830-U-T4W-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11639 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

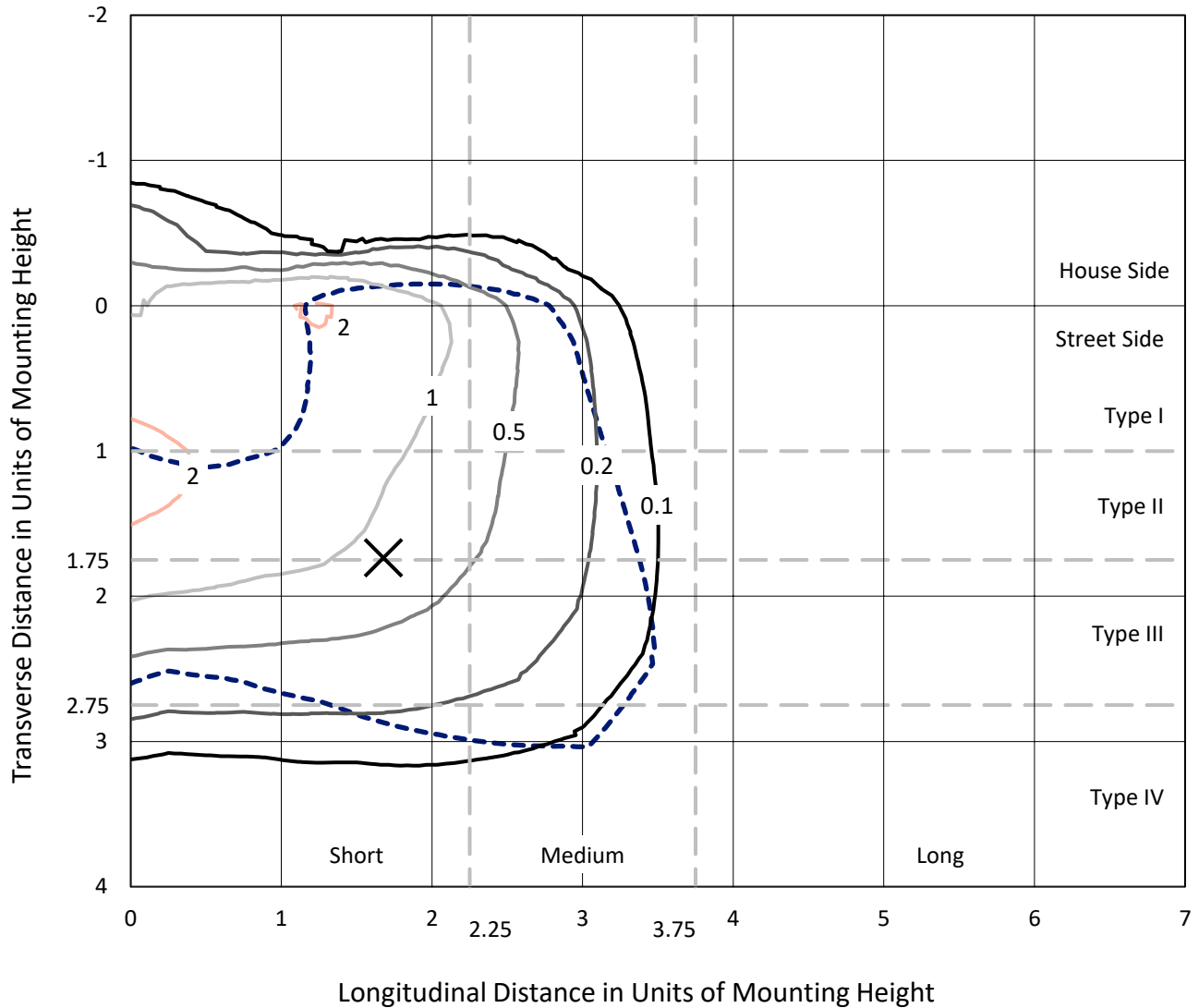
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

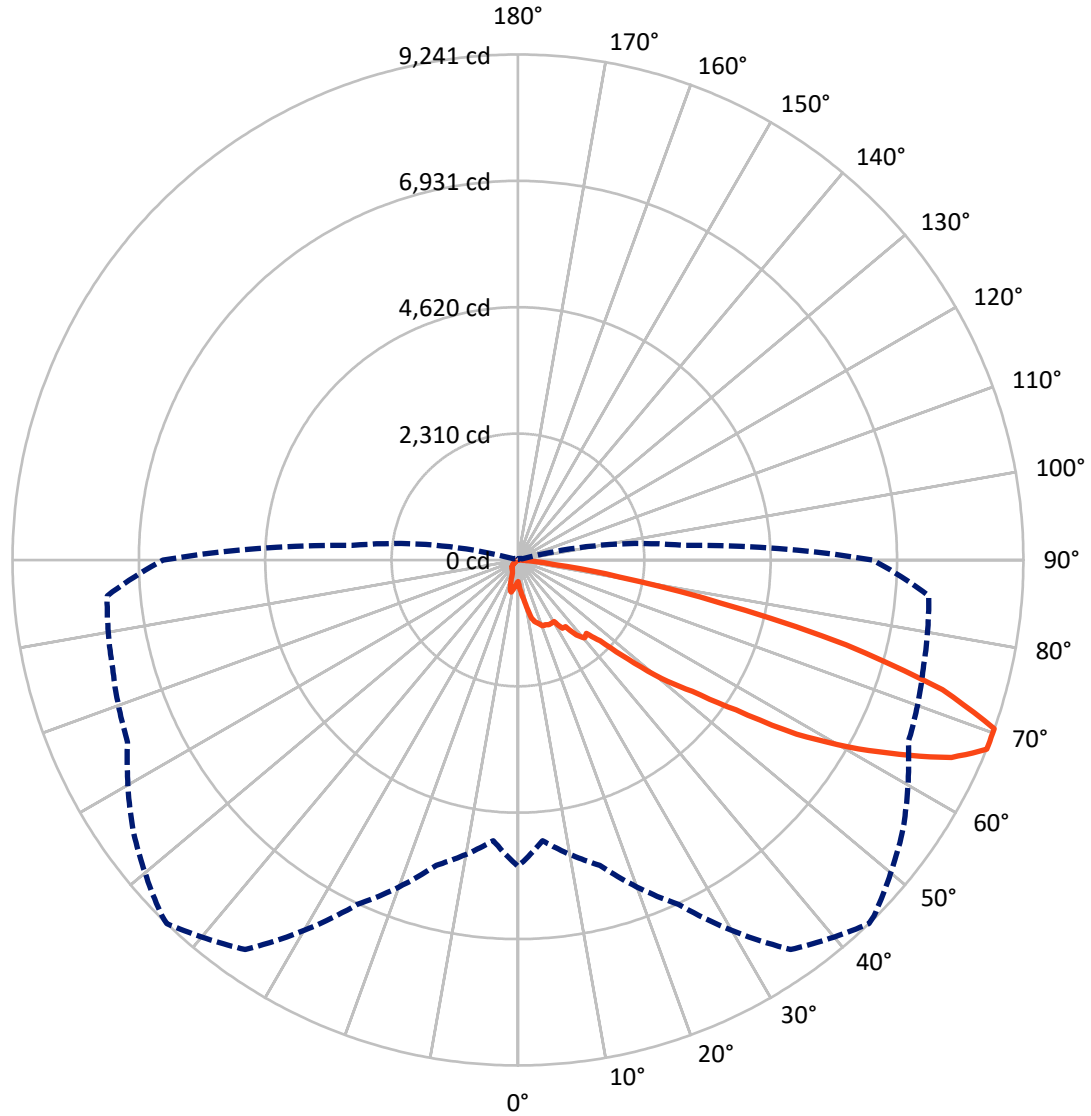
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.7 fc  
 Type IV - Short - N/A

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CATALOG NUMBER: MSA-SA4B-830-U-T4W-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1182.3	0.0	1182.3
	% Fixture	10.2	0.0	10.2
<b>Street Side</b>	Lumens	10456.7	0.0	10456.7
	% Fixture	89.8	0.0	89.8
<b>Total</b>	Lumens	11639.0	0.0	11639.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.1	0.5
10°-20°	243.3	2.1
20°-30°	431.1	3.7
30°-40°	700.7	6.0
40°-50°	1402.1	12.0
50°-60°	2876.4	24.7
60°-70°	3951.3	33.9
70°-80°	1857.2	16.0
80°-90°	118.9	1.0
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°	11639.0	100.0
0°-180°	11639.0	100.0

**Coefficient of Utilization**



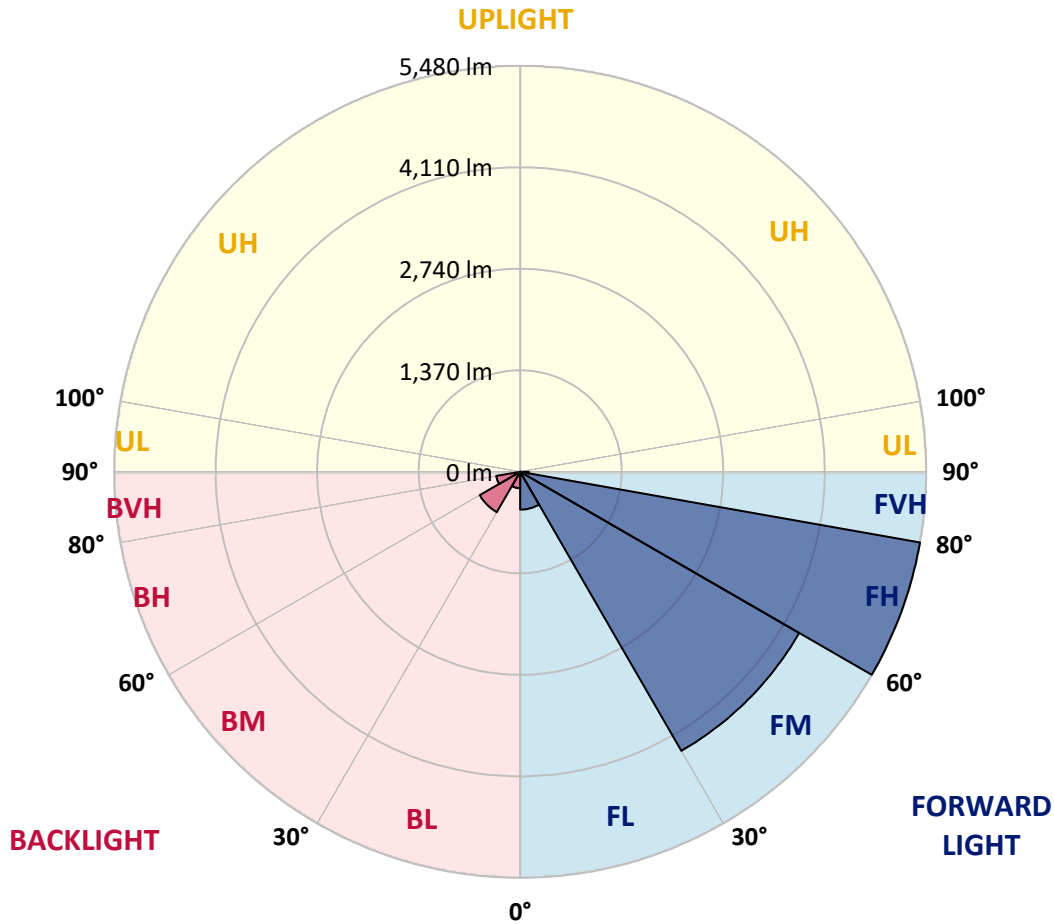
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 CATALOG NUMBER: MSA-SA4B-830-U-T4W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	510.5	4.4			
FM (30°-60°)	4349.3	37.4			
FH (60°-80°)	5480.4	47.1			G3/7500
FVH (80°-90°)	116.5	1.0			G2/225
BL (0°-30°)	222.0	1.9	B1/500		
BM (30°-60°)	629.8	5.4	B1/1000		
BH (60°-80°)	328.1	2.8	B1/500		G1/500
BVH (80°-90°)	2.4	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





REPORT NUMBER: P368445

CATALOG NUMBER: MSA-SA4B-830-U-T4W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1
2.5°	498.7	482.6	459.5	464.7	467.2	474.3	474.9	465.9	440.3	433.2	464.7
5°	698.9	659.8	652.7	638.0	608.4	592.4	588.5	604.6	584.0	577.6	586.0
7.5°	892.7	859.4	822.8	802.9	741.3	703.4	701.5	707.9	711.8	689.3	700.8
10°	1021.7	985.2	977.5	930.6	877.3	868.4	864.5	840.1	820.2	803.5	747.7
12.5°	1138.6	1137.9	1152.0	1084.6	1076.3	1085.3	1082.1	994.8	974.9	904.9	888.9
15°	1293.9	1332.4	1271.4	1214.9	1143.0	1173.9	1165.5	1109.7	1096.2	1048.7	980.0
17.5°	1455.0	1465.2	1363.2	1276.5	1257.9	1217.5	1225.8	1205.9	1137.9	1175.8	1107.7
20°	1458.8	1481.3	1372.2	1229.1	1286.2	1284.2	1284.9	1265.6	1175.8	1264.3	1202.1
22.5°	1512.7	1457.5	1356.1	1265.0	1275.3	1284.9	1295.2	1271.4	1252.2	1274.0	1285.5
25°	1490.9	1469.1	1371.5	1311.2	1301.6	1309.3	1311.8	1342.0	1329.8	1382.4	1353.6
27.5°	1547.4	1515.9	1341.4	1352.3	1318.3	1309.3	1293.9	1394.6	1430.6	1388.9	1465.9
30°	1644.3	1639.8	1393.4	1409.4	1383.1	1304.1	1345.2	1476.8	1521.7	1496.0	1589.7
32.5°	1795.8	1811.2	1545.5	1441.5	1455.0	1490.3	1474.9	1476.8	1590.4	1647.5	1722.0
35°	2010.8	2002.4	1693.7	1563.4	1492.8	1498.6	1520.4	1625.0	1772.0	1768.2	1847.1
37.5°	2433.1	2341.9	1956.2	1687.9	1709.1	1738.0	1722.0	1862.5	1876.6	1881.8	2070.5
40°	3055.6	2934.3	2370.2	1950.4	1746.3	1874.1	1866.4	1901.0	1995.4	2030.7	2306.0
42.5°	3875.8	3712.8	3098.6	2433.1	1926.0	1838.1	1885.6	1951.1	2268.1	2368.9	2670.5
45°	4782.1	4452.2	3825.1	3121.1	2376.6	2103.8	2139.8	2261.7	2701.3	2868.2	3201.3
47.5°	5369.3	5079.2	4544.6	3730.8	2846.4	2703.3	2706.5	2732.8	3210.3	3519.6	3966.3
50°	5879.5	5570.8	5074.7	4368.1	3677.5	3406.7	3345.1	3223.8	3858.5	4281.5	4776.9
52.5°	6599.6	6239.0	5604.9	5115.8	4625.5	3987.5	3965.7	4006.8	4622.9	5067.7	5608.1
55°	7249.1	6810.8	6205.6	5897.5	5706.3	4841.1	4859.7	4928.4	5604.2	5839.8	6347.4
57.5°	7536.0	7061.1	6749.8	6611.2	6509.2	6007.3	5944.4	5903.3	6378.2	6468.1	7122.1
60°	7724.1	7272.3	7131.1	7163.1	7472.5	6939.8	6882.7	6643.9	7018.7	7092.6	7816.5
62.5°	7605.3	7193.3	7223.5	7491.1	8177.8	7827.4	7662.5	7263.3	7542.5	7602.1	8315.2
65°	6857.7	6428.3	6815.9	7463.5	8715.7	8707.3	8630.9	7835.1	7832.5	7908.9	8353.7
67.5°	5601.6	5151.1	5778.1	6946.2	8693.2	9240.7	9204.7	8593.7	7874.3	7670.2	7538.6
70°	3894.5	3503.6	4214.7	5736.4	7918.5	9236.8	9179.0	9103.3	7544.4	6602.2	5844.9
72.5°	2023.6	1808.6	2470.9	3952.9	6312.1	8115.6	8306.2	8181.7	6441.8	4796.8	3442.0
75°	687.4	616.8	1019.2	2098.0	4196.1	6197.2	6420.6	6294.1	4375.2	2573.6	1361.3
77.5°	266.3	247.7	365.2	851.7	2105.1	3776.4	4019.0	3890.0	2346.4	942.8	320.3
80°	151.5	146.3	201.5	383.8	928.0	1878.6	2049.3	1858.7	845.9	317.7	83.4
82.5°	64.2	66.1	112.3	207.3	466.6	663.0	739.4	674.5	354.3	217.6	30.8
85°	14.1	17.3	53.3	115.5	195.7	189.3	198.3	220.1	217.6	159.8	13.5
87.5°	0.0	0.0	16.7	31.4	46.9	30.8	24.4	43.0	66.7	64.2	5.8
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°	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1	392.1
2.5°	470.4	464.0	423.6	421.0	423.6	416.5	415.9	401.1	402.4	435.8	438.4
5°	586.0	553.9	519.2	508.3	498.0	474.9	487.8	487.8	487.8	508.9	515.4
7.5°	690.6	647.6	598.8	557.7	517.9	489.1	508.9	523.1	531.4	559.0	571.8
10°	738.1	695.7	652.1	593.7	562.9	551.9	528.8	516.7	531.4	525.6	532.7
12.5°	839.5	801.0	725.9	665.5	642.4	605.2	537.2	489.7	458.2	453.1	451.8
15°	938.3	914.6	813.8	732.9	652.7	566.7	450.5	387.6	354.3	348.5	349.1
17.5°	1063.5	1029.4	881.2	765.0	629.0	474.3	347.9	293.9	291.4	305.5	306.8
20°	1146.9	1091.1	915.2	738.7	550.7	358.8	272.1	259.3	279.8	305.5	302.9
22.5°	1226.5	1166.2	960.1	715.6	426.8	272.1	250.3	251.6	268.9	296.5	303.6
25°	1279.1	1257.3	1015.3	661.7	325.4	235.5	239.4	249.0	263.8	290.1	290.1
27.5°	1437.6	1335.6	1008.9	557.1	250.3	219.5	228.5	240.7	248.4	279.8	283.0
30°	1533.9	1500.5	1042.3	450.5	219.5	199.0	216.3	227.2	232.3	268.3	269.6
32.5°	1652.0	1578.2	1082.7	332.5	204.1	197.7	193.8	202.2	216.9	248.4	250.3
35°	1795.8	1773.9	1025.0	261.2	199.0	184.8	177.1	181.6	191.3	212.4	216.9
37.5°	2089.1	1959.4	990.3	224.0	199.0	180.3	172.0	160.5	161.7	176.5	184.8
40°	2336.2	2296.4	893.4	217.6	190.0	173.9	153.4	139.3	129.6	134.1	137.3
42.5°	2789.9	2605.7	768.2	214.4	181.6	157.2	130.3	115.5	100.8	102.0	107.2
45°	3340.6	2943.3	656.6	211.2	175.9	140.6	109.7	92.4	77.0	77.7	82.8
47.5°	4076.1	3435.6	521.1	201.5	165.6	125.2	88.6	70.6	61.6	63.5	68.0
50°	4911.7	3867.5	412.0	186.8	153.4	110.4	71.9	57.1	53.9	55.8	61.0
52.5°	5658.1	4185.8	340.2	173.3	136.1	89.9	60.3	50.7	49.4	50.7	54.6
55°	6321.7	4370.7	284.3	157.9	116.8	72.5	54.6	46.9	46.2	45.6	48.1
57.5°	6944.3	4423.9	222.1	133.5	95.0	62.9	50.7	43.6	42.4	40.4	42.4
60°	7398.0	4332.8	163.0	107.2	77.7	57.1	47.5	39.1	37.2	34.0	35.3
62.5°	7616.9	4083.1	123.2	86.0	66.1	52.0	42.4	34.0	31.4	27.6	28.2
65°	7409.0	3671.7	96.9	72.5	56.5	43.6	35.9	28.9	25.7	21.8	21.8
67.5°	6488.0	3046.0	82.2	62.9	47.5	37.2	29.5	26.3	21.2	18.0	17.3
70°	4762.2	2191.1	70.6	55.2	41.1	32.1	25.0	23.7	20.5	17.3	16.0
72.5°	2687.9	1240.0	60.3	48.8	34.7	27.0	21.2	21.8	19.9	16.0	14.8
75°	1025.6	417.8	50.1	40.4	28.2	20.5	18.0	18.0	18.0	13.5	11.6
77.5°	254.2	106.5	39.8	32.7	22.5	13.5	14.8	15.4	15.4	11.6	8.3
80°	70.0	35.9	23.7	23.7	16.0	7.7	10.3	10.3	8.3	3.9	0.0
82.5°	25.7	13.5	8.3	10.3	7.1	2.6	3.9	2.6	1.9	0.0	0.0
85°	10.9	7.1	5.1	5.8	3.2	0.0	0.6	1.3	0.0	0.0	0.0
87.5°	4.5	3.2	2.6	2.6	1.3	0.0	0.0	0.0	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)