

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: P368707

Luminaire Tested: **MSA-SA4D-830-U-T4FT-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368707  
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-830-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: 15655 lumens  
Efficiency: N/A  
Efficacy: 60.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G4

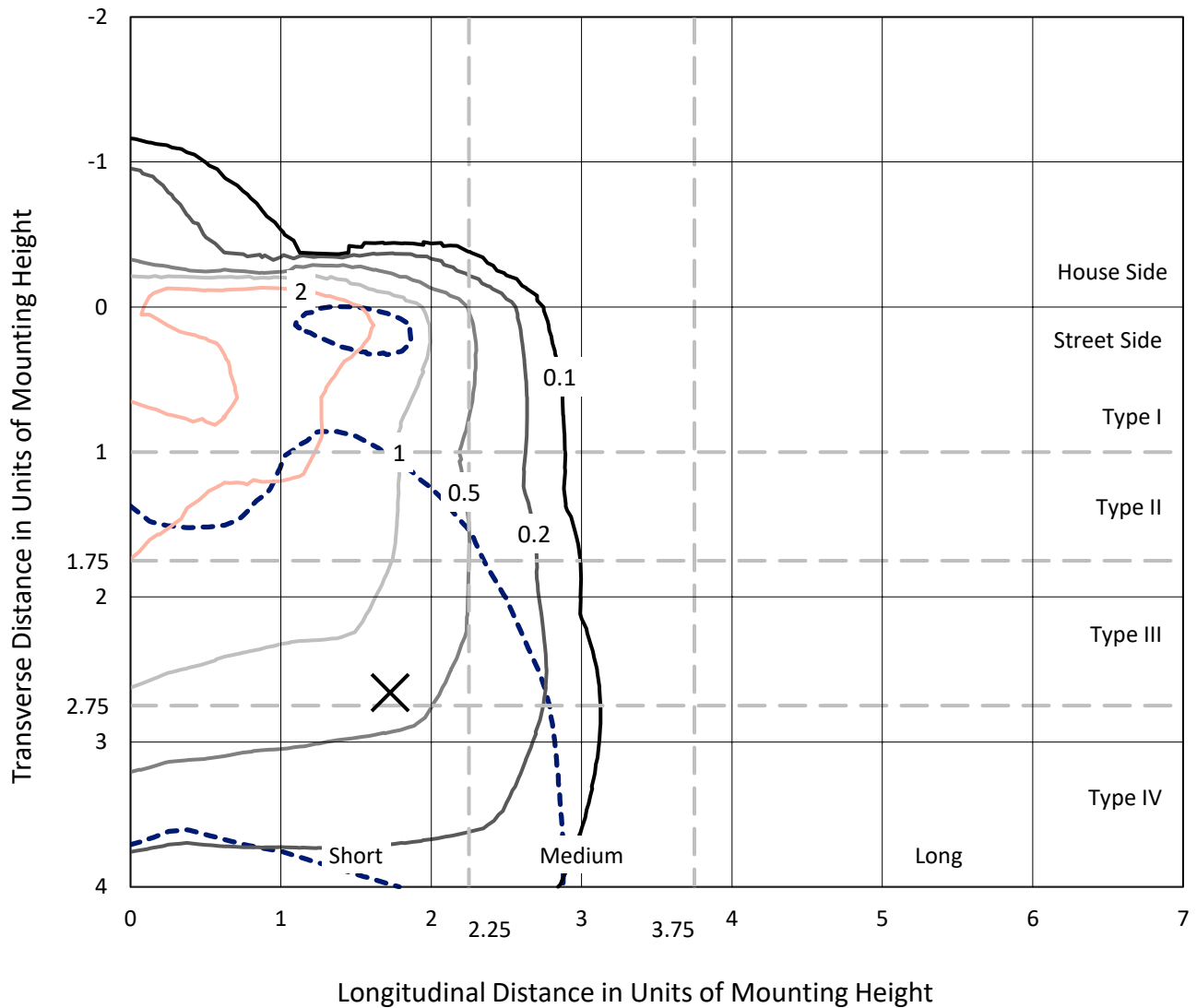
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

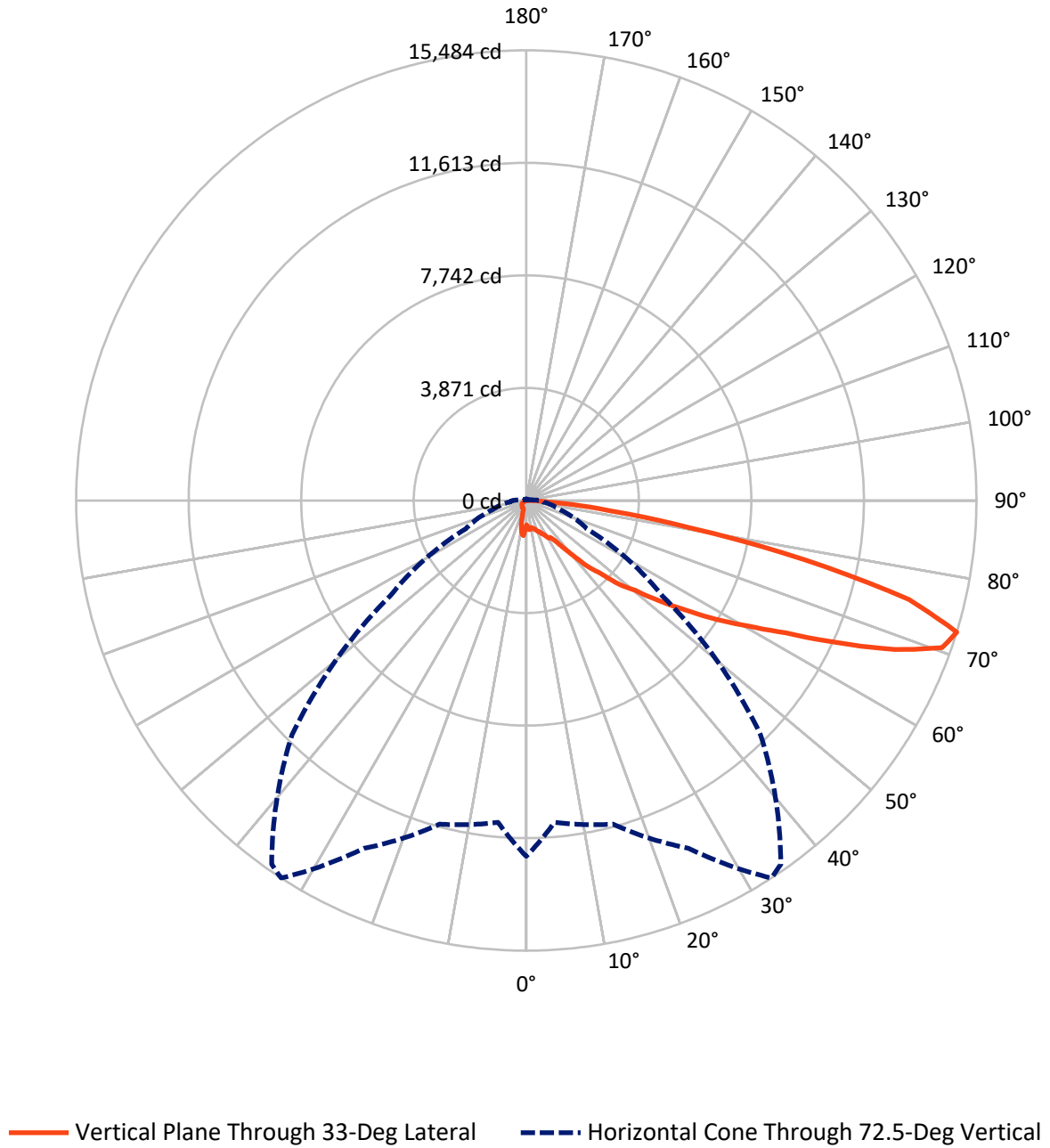
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.9 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1447.5	0.0	1447.5
	% Fixture	9.2	0.0	9.2
<b>Street Side</b>	Lumens	14207.5	0.0	14207.5
	% Fixture	90.8	0.0	90.8
<b>Total</b>	Lumens	15655.0	0.0	15655.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.8	0.7
10°-20°	321.1	2.1
20°-30°	544.6	3.5
30°-40°	996.7	6.4
40°-50°	2103.7	13.4
50°-60°	3519.6	22.5
60°-70°	4711.2	30.1
70°-80°	3077.4	19.7
80°-90°	272.8	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°	15655.0	100.0
0°-180°	15655.0	100.0

**Coefficient of Utilization**



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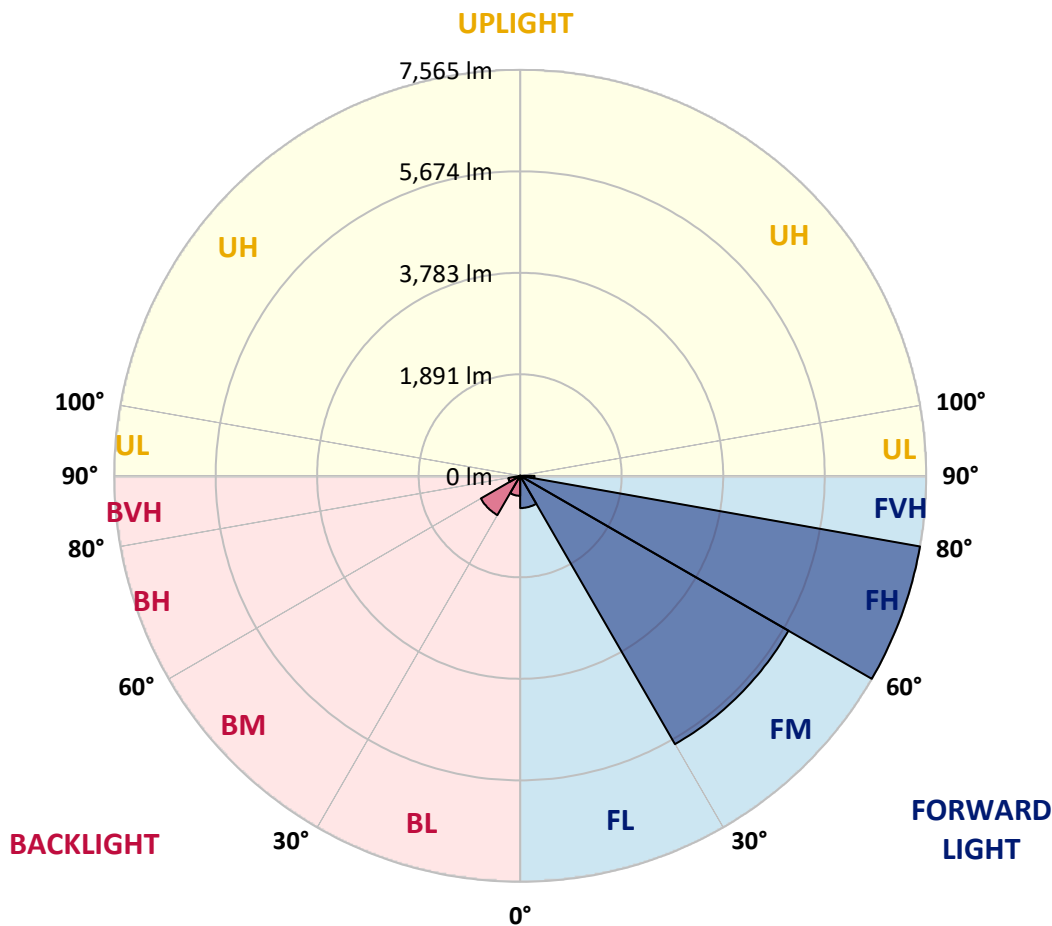
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	601.0	3.8			
FM (30°-60°)	5773.8	36.9			
FH (60°-80°)	7565.2	48.3			G4/12000
FVH (80°-90°)	267.6	1.7			G3/500
BL (0°-30°)	372.6	2.4	B1/500		
BM (30°-60°)	846.2	5.4	B1/1000		
BH (60°-80°)	223.4	1.4	B1/500		G1/500
BVH (80°-90°)	5.3	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-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	33°	35°	45°	55°	65°	75°	85°
0°	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7
2.5°	992.6	954.3	898.7	902.2	911.8	919.6	940.4	931.7	915.2	914.4	992.6
5°	1051.7	1009.1	1005.6	1010.8	1008.2	1022.1	1004.8	1061.3	1109.1	1166.4	1258.6
7.5°	1023.0	1003.0	977.8	1003.9	1003.0	996.1	1007.4	1122.1	1237.7	1310.7	1462.8
10°	940.4	917.8	937.0	945.7	939.6	970.0	1045.6	1139.5	1277.7	1430.7	1504.5
12.5°	917.0	930.9	937.8	937.8	996.1	1011.7	1127.3	1216.0	1380.2	1501.1	1715.7
15°	1008.2	1035.2	987.4	976.9	995.2	1003.9	1132.5	1239.4	1449.8	1670.5	1850.5
17.5°	1153.4	1151.6	1077.8	1036.9	1065.6	1086.5	1157.7	1282.9	1406.3	1803.5	2064.3
20°	1253.3	1255.1	1122.1	1036.9	1131.7	1143.8	1222.9	1322.9	1420.2	1870.5	2204.2
22.5°	1382.0	1335.9	1189.0	1106.5	1170.8	1182.1	1269.0	1348.1	1491.5	1862.6	2383.3
25°	1487.1	1457.6	1272.5	1215.1	1272.5	1256.8	1335.9	1455.0	1568.0	1986.9	2488.4
27.5°	1650.6	1600.1	1331.6	1342.0	1338.5	1349.8	1368.1	1550.6	1702.7	1993.0	2731.8
30°	1802.7	1773.1	1463.7	1463.7	1497.6	1475.8	1488.9	1709.7	1833.1	2133.8	3005.6
32.5°	1960.0	1961.7	1619.3	1536.7	1509.7	1599.3	1687.1	1787.0	1990.4	2375.4	3424.5
35°	2376.3	2341.5	1917.4	1711.4	1689.7	1684.5	1825.3	2095.6	2269.4	2690.1	3988.6
37.5°	3215.1	3094.2	2558.8	2107.7	2026.0	1998.2	2158.1	2435.4	2608.4	3152.5	4921.2
40°	4075.5	3853.9	3259.4	2750.9	2485.8	2365.9	2551.9	2787.4	3095.1	3663.5	5784.3
42.5°	4830.8	4557.1	3787.0	3444.5	3099.5	3047.3	2872.6	3255.9	3790.4	4407.6	6630.0
45°	5567.0	5028.1	4256.3	3985.1	3566.2	3595.8	3536.6	3868.7	4512.7	5222.8	7380.1
47.5°	6073.8	5589.6	4831.7	4479.7	4311.9	4139.0	4608.3	4953.4	5155.9	5740.9	8028.5
50°	6619.6	6129.4	5326.3	5080.3	4859.5	5034.2	5643.5	5689.6	5673.1	6224.1	8470.1
52.5°	7324.5	6746.5	5893.8	5615.7	5740.9	5914.7	6617.9	6626.5	6132.9	6630.9	8788.2
55°	7976.4	7335.8	6650.0	6387.5	6649.1	6796.0	7575.7	7289.7	6400.6	6907.3	8944.6
57.5°	8895.1	8153.7	7655.6	7193.2	7723.4	7582.6	8417.9	7992.9	6701.3	7090.7	8887.3
60°	10056.3	9183.6	8684.7	8195.4	8763.8	8859.4	9240.1	8344.0	6817.8	7150.7	8542.2
62.5°	11237.5	10359.6	9703.4	9371.4	10016.3	10330.9	10001.5	8518.7	6677.8	7033.3	7760.8
65°	12702.9	11579.1	10812.5	10617.8	11812.9	12275.3	10902.0	8561.3	6407.5	6387.5	6239.8
67.5°	13706.8	12612.5	11909.4	12235.3	13679.0	13716.4	11710.3	8574.4	5497.5	5001.2	4095.5
70°	13945.0	12773.3	12458.7	13418.2	15167.9	14697.7	11971.1	7913.8	4077.3	2968.2	1872.2
72.5°	12241.4	11113.2	11522.6	13194.9	15484.3	15268.7	11394.8	5709.6	2295.5	1187.3	574.5
75°	7508.8	6826.5	8643.9	11187.1	13592.1	13453.0	8889.9	2950.0	924.8	474.6	214.7
77.5°	3265.5	3032.5	4511.0	7422.7	9766.9	9642.6	5208.9	1086.5	478.0	333.8	108.6
80°	1080.4	1048.2	1708.8	3514.9	5720.9	5611.4	2194.7	452.0	340.7	267.7	60.8
82.5°	256.4	254.7	596.3	1617.5	2914.3	2823.1	673.6	249.5	246.8	211.2	32.2
85°	64.3	66.1	165.1	661.4	1183.8	1043.9	175.6	124.3	173.8	143.4	16.5
87.5°	0.0	0.0	42.6	94.7	179.0	112.1	19.1	33.0	48.7	51.3	8.7
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°	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7	832.7
2.5°	1010.0	1000.4	922.2	941.3	970.9	968.3	987.4	972.6	959.6	1023.9	1017.8
5°	1284.6	1232.5	1208.1	1242.0	1223.8	1181.2	1216.8	1210.8	1200.3	1222.1	1238.6
7.5°	1490.6	1442.8	1421.1	1349.8	1246.4	1164.7	1177.7	1147.3	1118.6	1152.5	1187.3
10°	1558.4	1532.3	1529.7	1390.7	1293.3	1175.1	1035.2	914.4	882.2	839.6	858.7
12.5°	1742.7	1758.3	1660.1	1497.6	1309.8	1083.0	834.4	663.2	593.6	548.4	551.1
15°	1893.9	1948.7	1806.1	1514.1	1152.5	825.7	555.4	401.6	358.1	346.8	343.3
17.5°	2119.0	2172.1	1851.3	1396.8	929.1	559.7	357.2	312.9	315.5	323.3	321.6
20°	2285.9	2278.1	1812.2	1189.0	684.9	366.8	299.0	292.9	306.8	329.4	324.2
22.5°	2446.7	2392.8	1787.9	996.9	443.3	294.6	288.6	287.7	300.7	322.5	328.5
25°	2561.4	2570.1	1747.0	780.5	322.5	273.8	279.0	286.8	299.9	323.3	319.9
27.5°	2890.0	2646.6	1576.7	566.7	272.0	262.5	275.5	291.2	295.5	325.1	325.9
30°	3102.9	2935.2	1465.4	381.6	251.2	242.5	268.6	289.4	294.6	332.9	335.5
32.5°	3474.1	3059.5	1336.8	283.3	233.8	236.4	252.9	280.7	305.1	345.9	347.7
35°	3935.6	3458.4	1103.8	254.7	227.7	223.4	231.2	263.4	303.3	347.7	356.4
37.5°	4814.3	3697.4	875.3	246.8	227.7	219.9	227.7	246.8	298.1	365.1	383.3
40°	5402.8	4184.2	631.0	245.1	223.4	216.4	219.0	238.2	283.3	354.6	381.6
42.5°	6127.6	4389.3	465.0	240.8	219.0	208.6	210.3	234.7	268.6	332.9	352.9
45°	6721.3	4538.8	365.9	239.0	208.6	205.1	208.6	232.1	254.7	286.0	304.2
47.5°	7172.4	4712.6	293.8	227.7	206.0	205.1	200.8	217.3	231.2	239.0	251.2
50°	7502.7	4673.5	243.4	210.3	197.3	202.5	194.7	197.3	200.8	196.4	210.3
52.5°	7705.2	4532.7	202.5	189.5	186.9	191.2	181.7	173.8	167.7	164.3	173.0
55°	7779.1	4250.2	172.1	162.5	168.6	170.4	162.5	148.6	138.2	133.0	139.9
57.5°	7639.1	3820.0	149.5	134.7	148.6	148.6	138.2	123.4	111.3	102.6	109.5
60°	7284.5	3344.6	133.0	112.1	126.9	127.8	115.6	100.0	90.4	81.7	86.0
62.5°	6623.9	2826.5	116.5	97.3	109.5	110.4	95.6	80.8	73.9	64.3	67.8
65°	5302.8	2161.6	99.1	86.0	94.7	92.1	79.1	68.7	60.0	51.3	53.0
67.5°	3441.9	1334.2	86.0	78.2	80.0	77.4	66.9	60.0	50.4	43.5	44.3
70°	1541.0	574.5	75.6	70.4	69.5	65.2	56.5	55.6	49.5	43.5	43.5
72.5°	475.4	216.4	65.2	63.4	60.0	54.8	49.5	53.0	48.7	41.7	40.9
75°	187.7	99.1	53.9	53.9	52.2	45.2	44.3	47.8	45.2	38.2	36.5
77.5°	98.2	62.6	44.3	46.1	45.2	34.8	40.0	43.5	41.7	32.2	26.9
80°	58.2	38.2	33.0	37.4	36.5	24.3	30.4	27.8	20.0	9.6	2.6
82.5°	32.2	17.4	14.8	21.7	21.7	8.7	15.6	13.9	7.8	0.0	0.0
85°	15.6	12.2	11.3	12.2	8.7	2.6	7.8	7.8	4.3	0.0	0.0
87.5°	7.8	7.0	5.2	4.3	3.5	0.0	2.6	3.5	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)