

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: P368170

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

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368170  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)  
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  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15407 lumens  
Efficiency: N/A  
Efficacy: 80.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

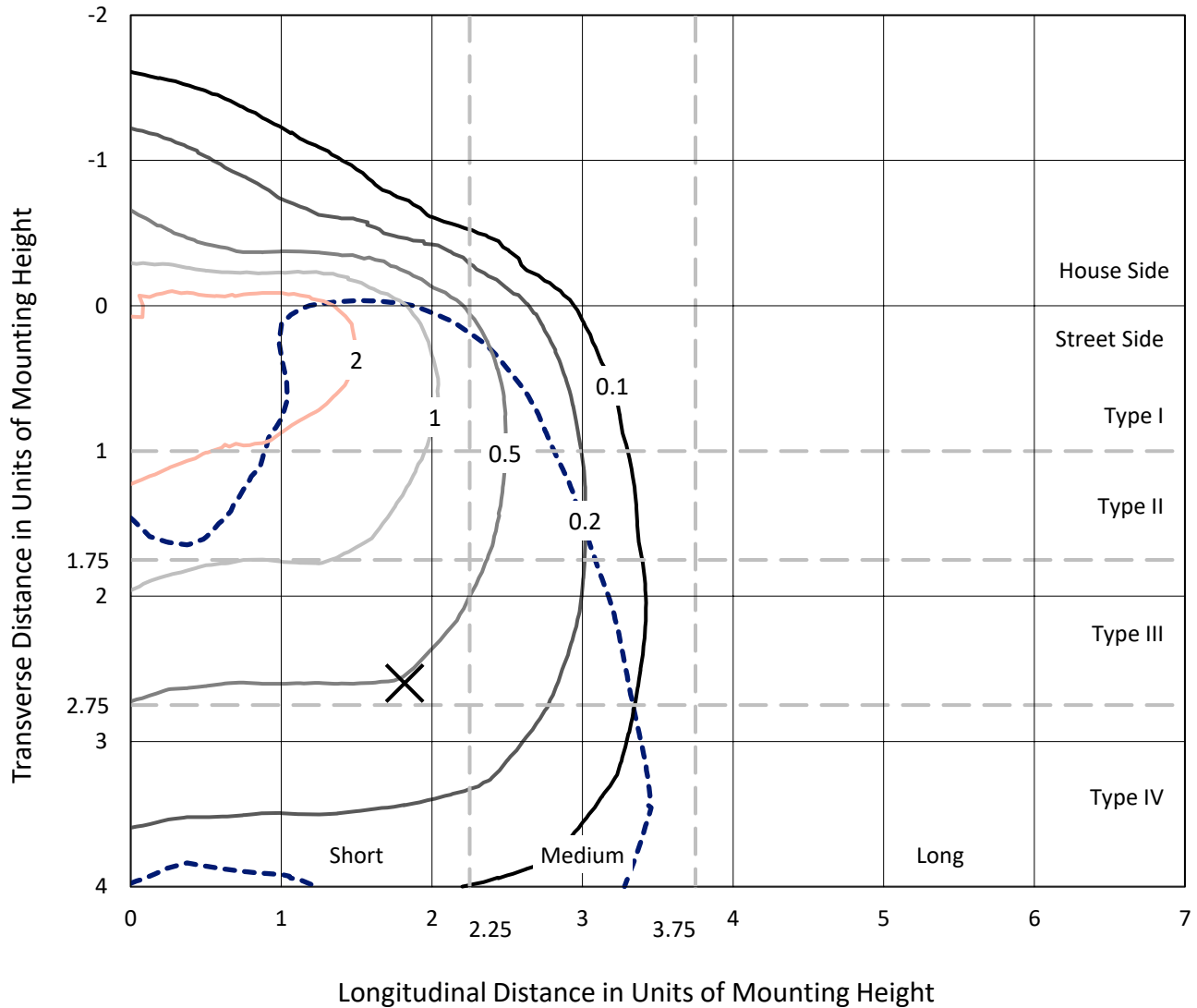
Input Watts (W): 192  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

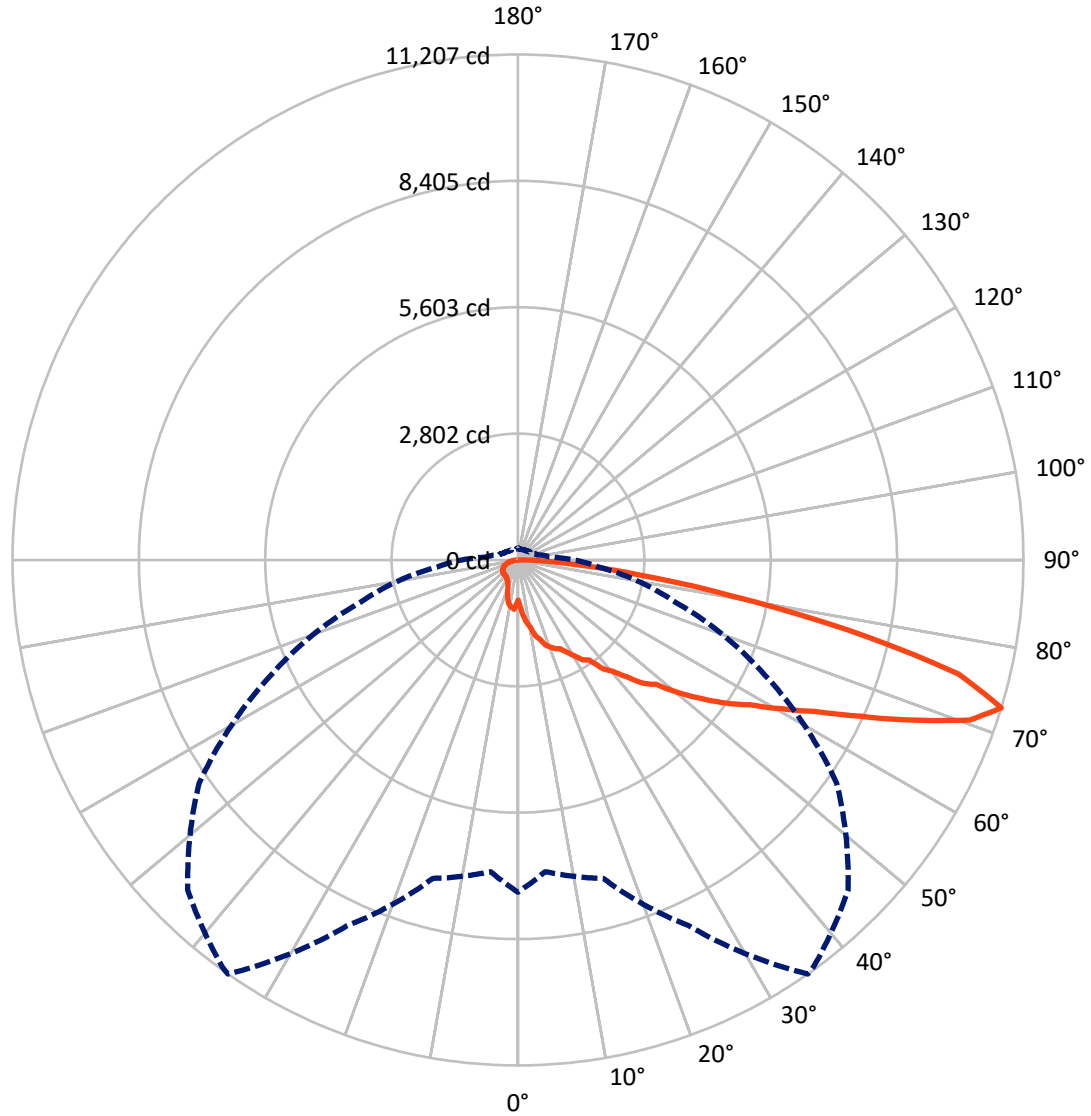
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.1 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	2067.6	0.0	2067.6
	% Fixture	13.4	0.0	13.4
<b>Street Side</b>	Lumens	13339.4	0.0	13339.4
	% Fixture	86.6	0.0	86.6
<b>Total</b>	Lumens	15407.0	0.0	15407.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.3	0.8
10°-20°	416.8	2.7
20°-30°	724.3	4.7
30°-40°	1210.5	7.9
40°-50°	2101.0	13.6
50°-60°	3176.2	20.6
60°-70°	4114.7	26.7
70°-80°	3036.2	19.7
80°-90°	508.9	3.3
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°	15407.0	100.0
0°-180°	15407.0	100.0

**Coefficient of Utilization**



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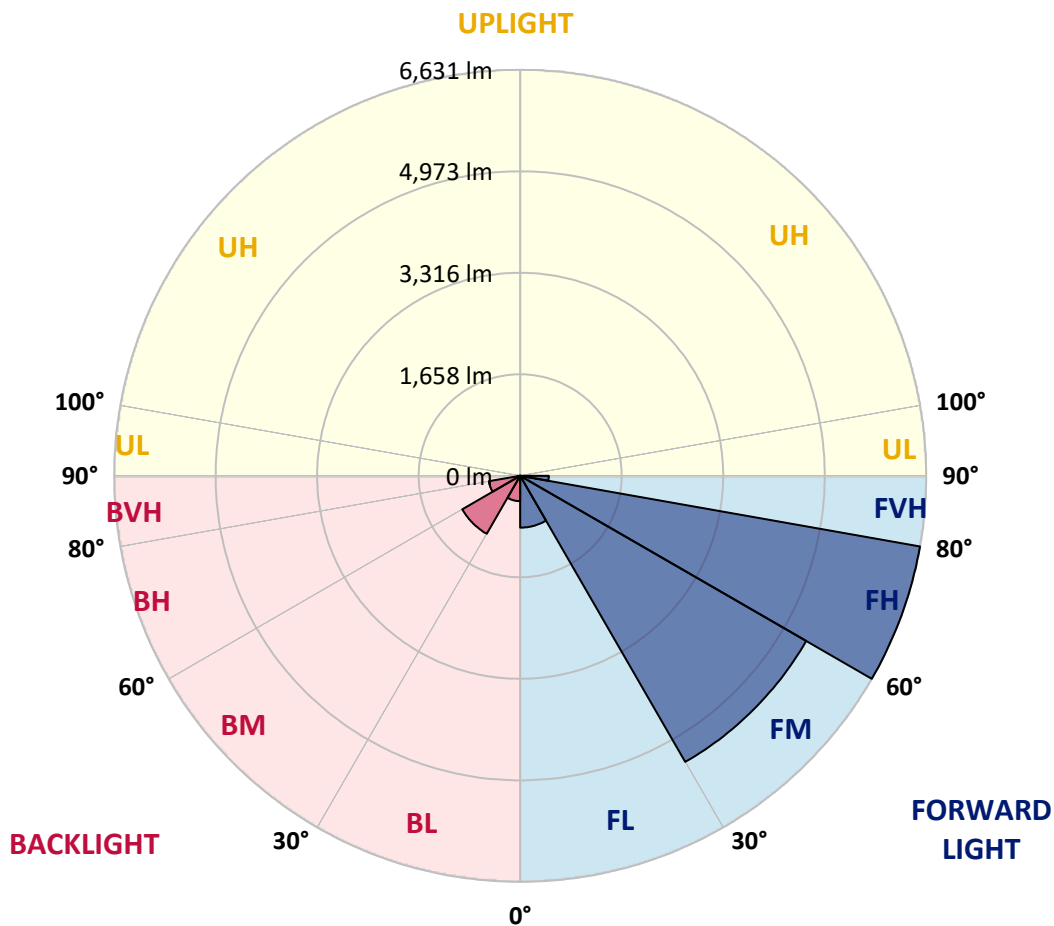
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	846.2	5.5			
FM (30°-60°)	5395.0	35.0			
FH (60°-80°)	6631.0	43.0			G3/7500
FVH (80°-90°)	467.2	3.0			G3/500
BL (0°-30°)	413.3	2.7	B1/500		
BM (30°-60°)	1092.7	7.1	B2/2500		
BH (60°-80°)	519.9	3.4	B2/1000		G2/1000
BVH (80°-90°)	41.7	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4
2.5°	1110.7	1057.4	1011.4	1009.4	1052.1	1068.6	1062.0	1047.5	1030.4	994.3	1073.2
5°	1391.5	1315.2	1300.7	1283.6	1244.8	1255.3	1192.2	1240.2	1255.3	1290.2	1342.8
7.5°	1557.2	1512.5	1477.6	1463.1	1396.1	1388.2	1341.5	1409.9	1438.8	1434.2	1512.5
10°	1622.3	1581.5	1584.1	1536.8	1515.1	1524.3	1529.6	1530.9	1548.6	1563.1	1523.6
12.5°	1655.8	1671.6	1729.5	1697.2	1724.9	1736.0	1791.3	1734.7	1736.7	1662.4	1703.2
15°	1824.8	1864.3	1830.7	1829.4	1820.9	1839.3	1886.6	1848.5	1878.1	1854.4	1801.8
17.5°	2028.7	2040.5	1976.1	1949.8	1983.9	1978.0	1966.2	1972.1	1898.5	2035.2	1970.8
20°	2091.1	2137.8	2053.0	1949.8	2062.9	2078.0	2075.4	2049.7	1923.5	2120.7	2058.3
22.5°	2272.6	2209.5	2142.4	2076.7	2134.5	2143.1	2128.6	2067.5	2025.4	2100.3	2149.7
25°	2354.8	2339.7	2254.2	2246.3	2182.5	2152.3	2177.3	2159.5	2118.1	2251.6	2197.0
27.5°	2542.9	2525.1	2328.5	2409.4	2316.7	2308.8	2176.6	2235.8	2277.2	2267.4	2348.9
30°	2756.0	2776.3	2489.0	2569.9	2462.7	2448.2	2315.4	2390.3	2418.6	2427.8	2529.7
32.5°	2992.7	3048.6	2763.2	2696.8	2639.6	2649.4	2537.0	2400.2	2510.0	2725.1	2769.1
35°	3249.2	3272.2	2973.0	2873.0	2723.7	2713.2	2715.2	2732.3	2843.4	3088.7	3122.9
37.5°	3723.3	3616.7	3354.4	3101.2	3051.2	2953.2	3019.7	3072.3	3183.4	3559.5	3702.9
40°	4015.2	3936.3	3536.5	3389.9	3251.8	3261.0	3385.3	3384.6	3647.0	4035.0	4254.0
42.5°	4285.5	4199.4	3822.6	3675.3	3544.4	3576.6	3612.1	3674.6	4177.7	4803.0	4903.0
45°	4503.2	4314.4	4043.5	4010.6	3902.8	3860.1	4010.6	4110.6	4812.2	5424.5	5482.3
47.5°	4651.1	4495.9	4230.9	4202.0	4122.4	4227.0	4638.0	4702.4	5304.1	6048.5	6043.9
50°	4876.0	4663.6	4424.3	4409.1	4633.4	4689.3	5190.4	5183.8	5782.8	6566.7	6458.2
52.5°	5135.1	4867.5	4607.7	4770.2	5112.1	5139.7	5574.4	5751.3	6305.6	7066.5	6783.0
55°	5433.0	5133.8	4882.6	5099.6	5608.6	5527.0	5967.0	6399.0	6959.9	7593.2	7017.8
57.5°	5801.9	5438.9	5235.7	5565.8	6061.7	6134.0	6529.2	7073.0	7486.7	7920.7	7188.8
60°	6191.2	5765.1	5579.0	5893.3	6696.2	6779.1	7165.8	7633.3	8077.2	8229.1	7156.6
62.5°	6562.8	6101.8	5933.4	6321.4	7399.9	7605.0	7890.4	8188.3	8568.4	8304.0	6766.6
65°	6976.4	6514.7	6408.9	6990.8	8354.0	8557.9	8930.7	8841.3	8736.7	8038.4	6121.5
67.5°	7414.3	6945.5	6965.2	7767.5	9479.2	9514.0	10086.8	9492.3	8538.8	7334.8	5038.5
70°	7649.7	7169.7	7372.9	8595.4	10624.0	10574.1	10691.1	9667.2	7731.9	5798.0	3472.7
72.5°	7364.4	6936.3	7308.5	8943.9	11206.7	11152.7	10351.8	8628.9	6045.2	3605.6	1800.5
75°	6235.3	5822.3	6391.8	7972.6	10088.7	10138.7	8809.7	6416.8	3460.9	1450.0	747.7
77.5°	4236.9	4023.8	4511.7	5942.6	7493.9	7666.8	6536.4	3752.2	1453.3	600.4	452.4
80°	2239.1	2137.8	2498.2	3423.4	4745.2	4874.1	3843.6	1868.9	744.4	388.6	322.9
82.5°	1216.5	1173.8	1367.1	1760.4	2696.1	2808.6	1993.2	1241.5	501.7	243.3	197.3
85°	817.4	800.9	929.2	945.6	1275.1	1311.9	1044.3	956.1	301.2	119.0	130.2
87.5°	409.0	392.6	489.2	432.0	486.6	487.3	478.7	610.2	76.3	39.5	23.7
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°	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4	890.4
2.5°	1074.5	1051.5	971.9	971.3	983.1	975.2	981.1	948.9	935.1	998.2	994.9
5°	1335.6	1266.5	1200.1	1177.1	1150.1	1091.6	1094.9	1095.5	1085.7	1123.2	1125.8
7.5°	1488.8	1405.9	1344.8	1222.5	1126.5	1051.5	1061.4	1072.5	1061.4	1111.3	1129.7
10°	1511.1	1445.4	1372.4	1236.3	1172.5	1104.8	1036.4	975.9	968.6	945.6	952.8
12.5°	1644.0	1589.4	1436.8	1287.6	1213.3	1109.4	984.4	915.4	857.5	867.4	848.9
15°	1753.1	1714.3	1531.5	1336.2	1158.7	1029.8	897.0	802.3	750.3	744.4	726.0
17.5°	1901.1	1845.9	1540.1	1302.7	1088.3	933.8	783.8	676.7	654.3	645.1	635.9
20°	1972.1	1872.8	1509.2	1197.5	1006.1	819.4	672.1	580.0	573.4	589.9	586.6
22.5°	2033.9	1895.2	1481.6	1133.7	877.9	703.6	595.8	535.3	528.0	549.1	553.0
25°	2070.1	1959.0	1451.3	1068.6	798.3	617.5	538.6	504.4	505.7	533.3	530.0
27.5°	2233.2	1981.3	1375.0	991.6	706.9	553.7	510.9	493.2	486.0	524.1	527.4
30°	2335.8	2127.3	1357.9	910.1	639.2	507.0	486.0	478.7	477.4	523.4	526.7
32.5°	2526.5	2176.0	1365.8	821.3	578.0	492.5	467.5	466.9	480.0	524.1	529.4
35°	2790.8	2381.1	1327.7	770.7	544.5	470.2	453.1	458.3	480.7	528.7	535.9
37.5°	3306.4	2574.5	1339.5	723.3	533.3	462.9	449.1	452.4	488.6	540.5	560.3
40°	3714.7	2925.0	1321.1	699.7	518.2	461.6	440.6	453.7	487.9	547.1	564.9
42.5°	4306.6	3204.4	1323.1	676.0	517.5	456.4	439.3	455.1	486.6	541.2	565.5
45°	4814.2	3455.0	1351.3	662.2	510.9	464.9	437.3	457.0	478.1	520.2	547.1
47.5°	5230.5	3734.5	1380.3	649.0	508.3	472.8	435.3	443.2	463.6	496.5	520.8
50°	5569.8	3931.1	1417.1	646.4	508.3	468.9	430.1	429.4	446.5	472.8	495.8
52.5°	5834.1	4069.8	1442.1	649.7	508.3	453.7	423.5	418.2	428.7	447.8	470.8
55°	6025.5	4112.6	1421.7	658.2	507.7	439.9	411.7	407.0	412.3	425.5	447.2
57.5°	6102.4	4000.1	1300.1	643.1	507.7	430.1	397.2	391.9	397.2	407.0	428.7
60°	5909.8	3638.4	1124.5	604.3	497.8	416.9	380.7	377.5	385.3	393.9	414.9
62.5°	5426.4	3157.7	937.1	558.3	477.4	405.7	365.0	365.6	378.1	390.0	411.0
65°	4675.5	2576.4	781.2	511.6	451.8	388.0	348.5	353.1	370.9	386.7	407.7
67.5°	3679.2	1909.0	657.6	466.2	415.6	359.0	330.1	331.4	343.9	359.0	379.4
70°	2459.4	1214.6	540.5	413.0	368.3	321.6	301.8	297.2	293.9	307.1	324.8
72.5°	1247.4	717.4	443.9	353.1	317.0	280.8	265.7	253.8	244.6	252.5	266.3
75°	653.6	501.7	358.4	293.3	261.7	238.7	227.5	211.7	205.2	209.8	219.6
77.5°	462.3	392.6	290.0	232.1	213.1	189.4	191.4	174.9	169.7	172.3	182.8
80°	355.1	311.0	222.9	175.6	164.4	141.4	148.0	138.1	131.5	130.2	138.1
82.5°	242.0	234.1	158.5	123.0	115.1	98.6	107.8	103.9	95.4	90.1	94.0
85°	163.1	155.2	96.7	71.0	67.7	51.3	65.8	63.1	55.9	48.0	48.7
87.5°	28.3	51.9	27.6	17.8	16.4	5.9	15.1	14.5	13.2	6.6	5.3
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)