

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: P367652

Luminaire Tested: **MSA-SA2D-830-U-T4FT**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367652  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2D-830-U-T4FT  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10743 lumens  
Efficiency: N/A  
Efficacy: 83.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

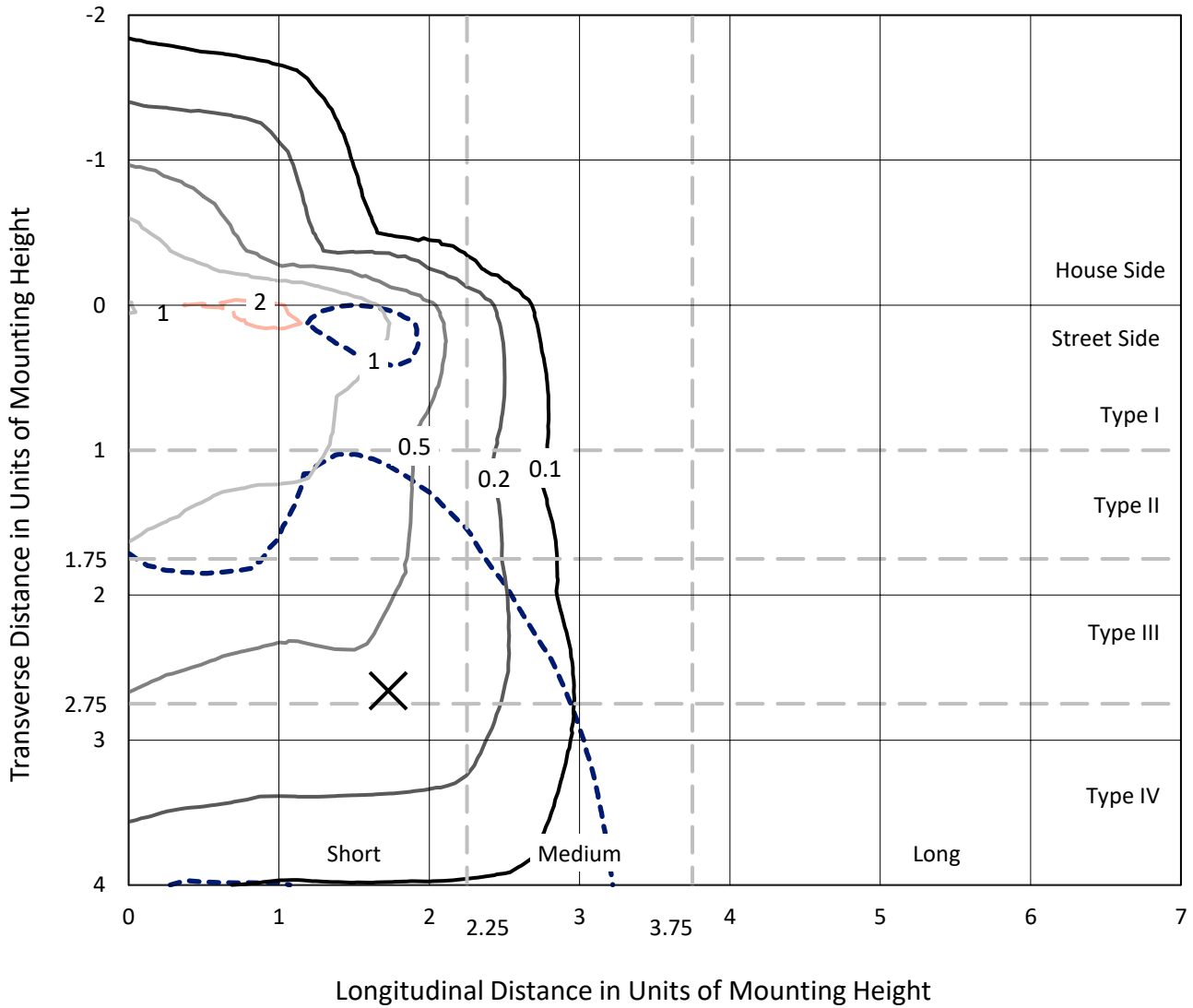
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P367652  
 CATALOG NUMBER: MSA-SA2D-830-U-T4FT

### Iso-Footcandle Lines of Horizontal Illumination

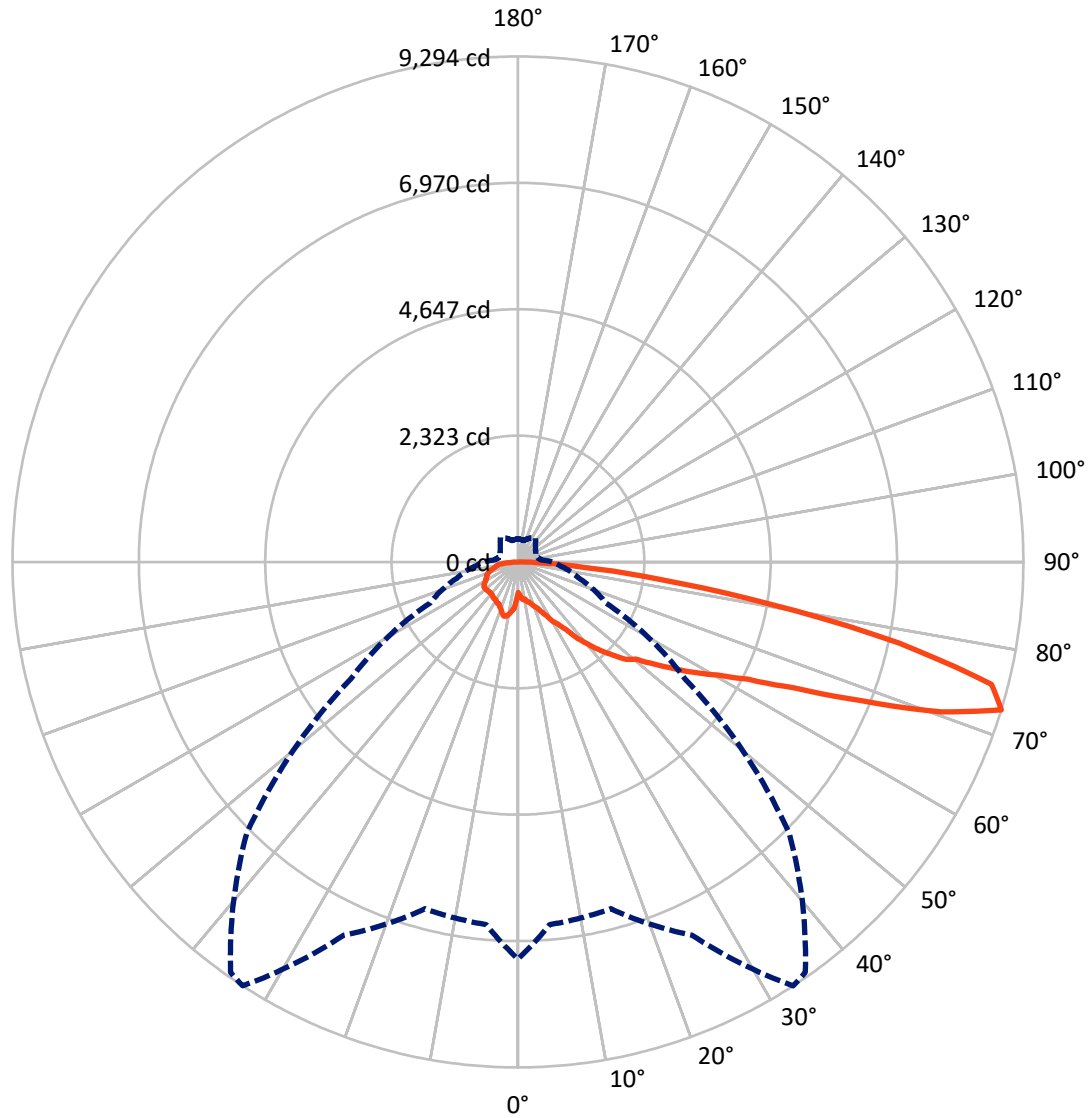
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.2 fc  
 Type IV - Short - N/A

REPORT NUMBER: P367652  
CATALOG NUMBER: MSA-SA2D-830-U-T4FT

### Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral      - - - Horizontal Cone Through 72.5-Deg Vertical

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 CATALOG NUMBER: MSA-SA2D-830-U-T4FT

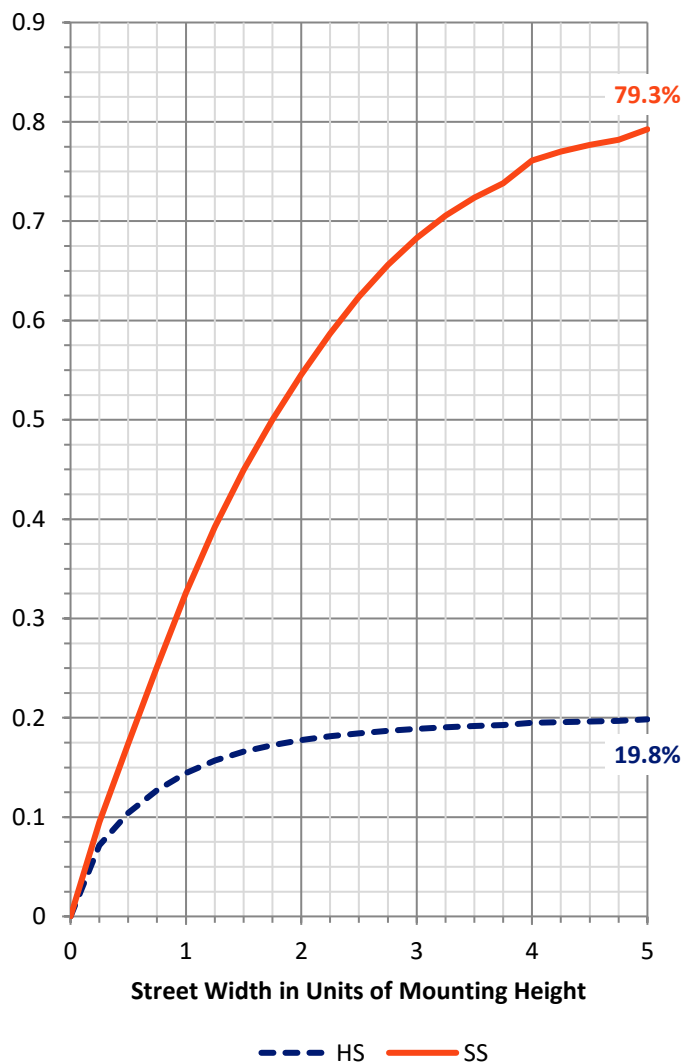
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2173.3	0.0	2173.3
	% Fixture	20.2	0.0	20.2
<b>Street Side</b>	Lumens	8569.7	0.0	8569.7
	% Fixture	79.8	0.0	79.8
<b>Total</b>	Lumens	10743.0	0.0	10743.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	77.5	0.7
10°-20°	286.2	2.7
20°-30°	522.0	4.9
30°-40°	883.0	8.2
40°-50°	1469.0	13.7
50°-60°	2155.9	20.1
60°-70°	2758.0	25.7
70°-80°	2243.9	20.9
80°-90°	347.5	3.2
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°	10743.0	100.0
0°-180°	10743.0	100.0

**Coefficient of Utilization**

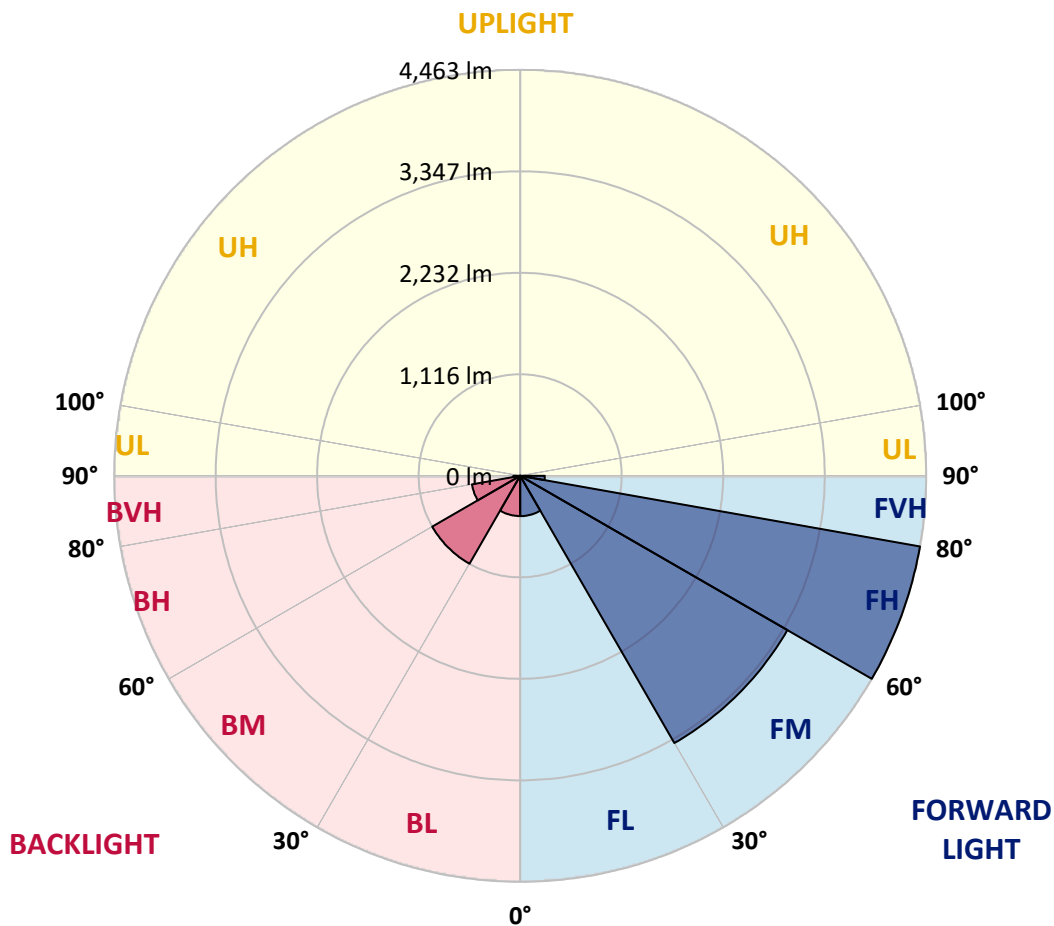


REPORT NUMBER: P367652  
 CATALOG NUMBER: MSA-SA2D-830-U-T4FT

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	443.4	4.1			
FM (30°-60°)	3391.8	31.6			
FH (60°-80°)	4463.3	41.5			G2/5000
FVH (80°-90°)	271.2	2.5			G3/500
BL (0°-30°)	442.3	4.1	B1/500		
BM (30°-60°)	1116.2	10.4	B2/2500		
BH (60°-80°)	538.5	5.0	B2/1000		G2/1000
BVH (80°-90°)	76.3	0.7			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°	33°	35°	45°	55°	65°	75°	85°
0°	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3
2.5°	638.6	618.6	585.6	584.7	603.0	607.0	619.0	619.9	624.4	617.2	668.1
5°	704.6	683.2	670.3	674.7	666.3	676.5	676.5	705.9	745.2	790.6	855.2
7.5°	720.2	704.6	689.9	701.0	702.8	693.0	702.4	771.4	842.3	887.8	991.2
10°	689.0	673.4	684.5	688.1	687.7	709.9	758.5	813.8	892.7	976.5	1032.2
12.5°	683.2	694.3	699.7	705.9	748.3	755.0	828.5	885.5	964.9	1038.4	1183.2
15°	769.2	783.9	750.9	748.7	762.5	768.8	845.0	902.5	1018.3	1141.8	1271.9
17.5°	891.8	897.1	837.9	807.5	817.8	822.7	856.1	928.3	999.6	1227.8	1390.0
20°	1010.3	1013.9	902.5	834.7	870.8	876.2	907.4	948.8	1005.0	1275.9	1469.8
22.5°	1134.7	1111.9	989.8	904.3	925.2	926.5	944.8	967.5	1047.3	1268.4	1567.0
25°	1270.6	1256.3	1102.6	1020.6	1019.7	1001.4	1002.3	1034.8	1092.3	1349.5	1630.7
27.5°	1451.1	1452.9	1229.6	1185.5	1116.4	1104.4	1044.2	1104.8	1170.3	1350.4	1768.4
30°	1685.1	1641.8	1406.5	1335.2	1267.0	1241.6	1160.1	1211.8	1240.3	1427.5	1918.1
32.5°	1875.4	1862.9	1591.0	1483.2	1371.8	1401.2	1311.1	1265.7	1316.9	1560.3	2145.0
35°	2057.6	2016.6	1786.2	1645.8	1528.6	1510.8	1452.4	1460.0	1491.2	1728.3	2441.4
37.5°	2329.5	2307.2	2062.5	1837.9	1783.1	1710.5	1673.5	1697.1	1672.6	1943.5	2885.7
40°	2633.4	2504.2	2293.4	2093.3	1990.8	1939.5	1952.5	1930.2	1911.5	2185.1	3284.1
42.5°	2924.5	2806.8	2446.7	2356.7	2223.0	2244.4	2173.5	2189.1	2242.1	2527.8	3652.7
45°	3241.3	2986.8	2609.4	2530.0	2434.2	2461.4	2518.0	2501.1	2588.0	2932.0	3999.8
47.5°	3399.5	3157.5	2809.0	2679.8	2678.4	2621.8	2966.3	3003.8	2867.9	3231.5	4352.4
50°	3552.0	3314.0	2957.4	2870.1	2806.8	2928.0	3396.4	3310.4	3121.0	3575.1	4740.1
52.5°	3764.1	3492.7	3127.7	3034.5	3113.0	3225.3	3739.6	3722.6	3369.2	3928.5	5077.0
55°	3925.9	3651.8	3383.9	3297.5	3447.2	3557.3	4089.0	3986.9	3581.8	4187.9	5290.5
57.5°	4209.3	3928.1	3762.3	3570.2	3839.4	3837.6	4425.9	4347.0	3809.1	4400.9	5376.5
60°	4659.9	4329.6	4156.3	3934.8	4223.1	4326.1	4811.0	4583.7	3970.0	4535.5	5221.4
62.5°	5292.3	4900.1	4618.9	4399.6	4751.2	4937.5	5286.5	4756.1	3980.2	4497.2	4813.6
65°	6074.4	5597.6	5229.0	4997.2	5577.5	5843.6	5861.4	4862.7	3885.8	4101.0	3956.2
67.5°	6837.4	6301.3	5916.7	5960.8	6808.0	6934.1	6484.4	4951.8	3378.1	3293.0	2747.1
70°	7339.7	6758.5	6502.3	6970.2	8257.3	8128.0	6989.4	4716.9	2660.2	2134.7	1546.9
72.5°	7301.8	6693.4	6601.2	7570.1	9293.9	9213.2	7050.9	3751.2	1781.8	1167.2	771.4
75°	5948.7	5475.9	5685.4	7166.3	8995.3	8991.3	6121.7	2321.9	914.1	599.4	487.6
77.5°	3289.0	3105.4	3720.9	5426.0	7162.3	7198.8	4136.2	1053.1	492.9	424.7	367.2
80°	1152.0	1135.1	1612.4	2928.0	4711.6	4720.5	1923.5	481.8	358.3	321.3	269.6
82.5°	421.2	417.6	668.5	1360.2	2594.2	2588.4	729.6	299.9	265.6	227.3	177.8
85°	168.0	164.5	305.7	603.9	1191.7	1172.5	283.4	170.2	173.8	135.5	87.4
87.5°	46.3	48.1	103.8	189.0	365.0	338.3	71.3	57.5	70.4	55.3	27.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P367652

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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3	563.3
2.5°	677.0	681.4	637.3	652.9	673.0	683.7	689.0	666.3	673.8	705.9	704.6
5°	868.6	850.8	833.8	851.2	839.6	823.1	849.9	848.5	865.9	883.3	887.3
7.5°	1011.7	988.5	980.5	941.2	902.0	862.4	896.7	918.1	922.5	965.8	984.0
10°	1063.4	1054.4	1057.6	1005.9	1001.0	1005.0	973.3	939.0	960.0	942.1	955.5
12.5°	1182.8	1205.1	1149.8	1114.6	1111.5	1087.0	1023.7	1001.4	977.8	1002.3	989.8
15°	1278.6	1320.1	1260.8	1198.8	1128.9	1091.0	1037.1	1003.2	987.6	992.9	977.8
17.5°	1419.0	1457.8	1307.1	1212.2	1140.0	1084.3	1001.9	929.7	968.0	971.1	953.7
20°	1512.1	1514.8	1322.7	1179.2	1114.2	1017.5	937.2	873.9	918.1	963.1	982.7
22.5°	1603.1	1583.0	1341.9	1152.9	1020.1	926.5	887.3	883.3	916.3	954.2	958.6
25°	1671.2	1674.4	1353.0	1143.1	964.9	837.4	837.4	866.4	895.3	985.4	980.9
27.5°	1836.6	1714.9	1309.8	1098.1	888.2	785.3	837.9	876.6	890.4	988.0	997.8
30°	1956.9	1877.6	1318.7	1021.0	810.7	760.8	804.0	852.6	890.9	1003.6	1000.1
32.5°	2158.8	1945.3	1339.7	912.7	752.7	751.4	789.7	841.0	886.9	986.7	992.1
35°	2382.1	2145.0	1281.3	830.3	738.9	746.0	795.5	816.0	869.9	980.0	984.9
37.5°	2795.2	2249.3	1244.3	766.5	730.0	750.5	769.2	800.9	855.2	946.6	978.7
40°	3037.7	2464.1	1107.0	729.6	711.3	746.9	756.3	783.0	812.4	906.5	927.0
42.5°	3356.8	2531.8	989.8	688.6	701.9	732.2	760.3	767.0	786.6	843.2	880.6
45°	3622.8	2582.6	865.5	655.6	670.3	764.8	766.5	763.4	759.9	780.8	811.6
47.5°	3898.2	2719.0	750.9	619.0	658.2	791.5	769.7	741.1	726.4	729.1	757.6
50°	4202.2	2817.9	669.8	589.2	660.9	791.5	784.8	718.4	689.0	681.4	711.3
52.5°	4469.6	2829.5	608.3	565.1	649.8	764.3	795.1	704.2	654.7	636.4	664.5
55°	4615.3	2682.9	563.8	543.3	621.3	739.8	789.7	696.1	613.2	599.4	624.4
57.5°	4612.2	2439.6	525.9	513.0	588.7	705.5	759.9	652.5	587.8	579.8	604.3
60°	4446.0	2154.3	496.9	488.0	555.3	655.6	706.4	623.9	563.3	559.3	586.1
62.5°	4068.9	1859.8	468.8	461.7	524.1	620.4	681.0	592.3	537.9	537.5	562.9
65°	3332.2	1493.0	442.5	440.8	495.1	585.6	656.9	565.5	511.6	520.5	546.4
67.5°	2296.1	1049.1	414.5	419.8	468.4	552.2	638.6	547.7	484.0	502.3	525.4
70°	1259.9	648.9	383.3	394.0	434.5	513.4	610.1	518.8	447.9	476.0	492.0
72.5°	640.9	432.7	344.5	361.4	393.1	456.4	556.6	476.9	409.1	419.8	428.3
75°	430.5	325.8	301.3	320.0	342.7	402.0	493.8	437.6	372.1	370.8	380.2
77.5°	325.3	254.5	255.8	277.2	291.9	353.4	443.9	404.7	340.9	337.8	351.6
80°	238.0	193.0	205.9	228.2	241.6	317.3	411.3	368.1	298.6	286.1	297.7
82.5°	157.8	136.8	152.4	174.7	185.4	265.2	373.5	312.4	243.3	211.7	213.5
85°	74.4	71.8	90.9	101.6	115.4	164.5	279.4	216.1	155.1	128.4	134.1
87.5°	16.9	22.7	29.9	29.4	34.3	44.1	86.9	60.6	45.0	30.8	20.5
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)