

PM1-17-G Application Guide



The PM1-17-G is manufactured by:

**Polar Focus[®], Inc.
20 Industrial Dr. East.
South Deerfield, MA 01373 USA
413-586-4444
www.polarfocus.com**

1.0 Introduction:

The purpose of this application guide is to allow potential users of the PM1-17-G pole mount system to quickly and easily see if the system satisfies their requirements, and allow them to specify the system that suits their specific needs. This guide will show the benefits of using the PM1-17-G mounting system as opposed to other systems with lower design factors and less rugged construction. The guide will also show the installer how to take the measurements that allow Polar Focus to create the package that fits their application.

2.0 Why the PM1-17-G Was Created

The PM1-17-G was created by Polar Focus after being inundated with requests from industry installers for an outdoor PA mounting system that was not only easy to install but had the high design factor that Polar Focus is known for. By using high strength 5/16" rigging rated stainless steel chain, and galvanized forged turnbuckles that pivot to remain in the plane of actuation, the PM1-17-G is better able to withstand fatigue and torsional loads than other mounting systems that use banding. The PM1-17-G has been designed to remain tightly fastened to the pole when experiencing the torsional loading and high fatigue that all pole mounting systems can expect to be subject to in high wind situations. In similar situations banded systems can experience catastrophic failure with little or no warning. The PM1-17-G has also been designed to withstand a variety of weather conditions; all structural components are galvanized or stainless steel, and all points that in contact with the pole are shielded with UV rated rubber hose or neoprene padding that meets leading pole manufacturers latest warranty requirements. If and when a mount is moved, un-mounting is a quick and easy process that leaves no marring on the pole structure. In addition, no specialized tools (such as a band crimping tool) are needed. This ensures that any installer can correctly install the system tightly and correctly with minimal hassle when high above the ground. The end result is a safe, easy to install system that can save time and money in both the short and long run.

3.0 Scope of PM1-17-G

3.1 Numbers at a Glance

Table 1: Pole Diameter Guide

Number of PM1-17-Gs at a Single Mounting Height	Minimum Pole Diameter at Mounting Height
1-2	10" (254 mm)
3	11 ½" (292.1 mm)
4	14 ¾" (374.56 mm)

*For visual representation see Appendix A section 1.

- Net Weight without chain kit: 54 lbs (24.5 kg).
- Overall Length: 30 ⅛" (765.18 mm)
- Overall Height: 25 ½" (647.7 mm)
- Overall Width: 11 ⅞" (301.63 mm)
- See Figure 1 for more key dimensions.
- EPA of PM1-17-G: 2.1 square feet.
- EPA with Community R2 and yoke attached to PM1-17-G: 7.1 square feet.
- EPA represents the Effective Projected Area; this is a composite value calculated by multiplying the FPA (frontal projected area) and the drag coefficient of a surface. For the purpose of these calculations a drag coefficient of 1.2 was used. For a more in depth explanation of EPA and how to calculate it refer to: <http://hydrel.acuitybrands.com/-/media/files/hydrel/resources/effective%20projected%20area%20calculation.pdf>
- Working Load Limit: The PM1-17-G has been designed in such a manner that the weight of the speaker is not the determining factor in what size speaker may be attached. Instead placement is limited by the total systems EPA, and maximum mounting positions; Two speakers that utilize a ½" standard mounting axle may be mounted to each PM1-17-G.
- Note: The PM1-17-G will also accommodate ⅝" diameter mounting hardware.

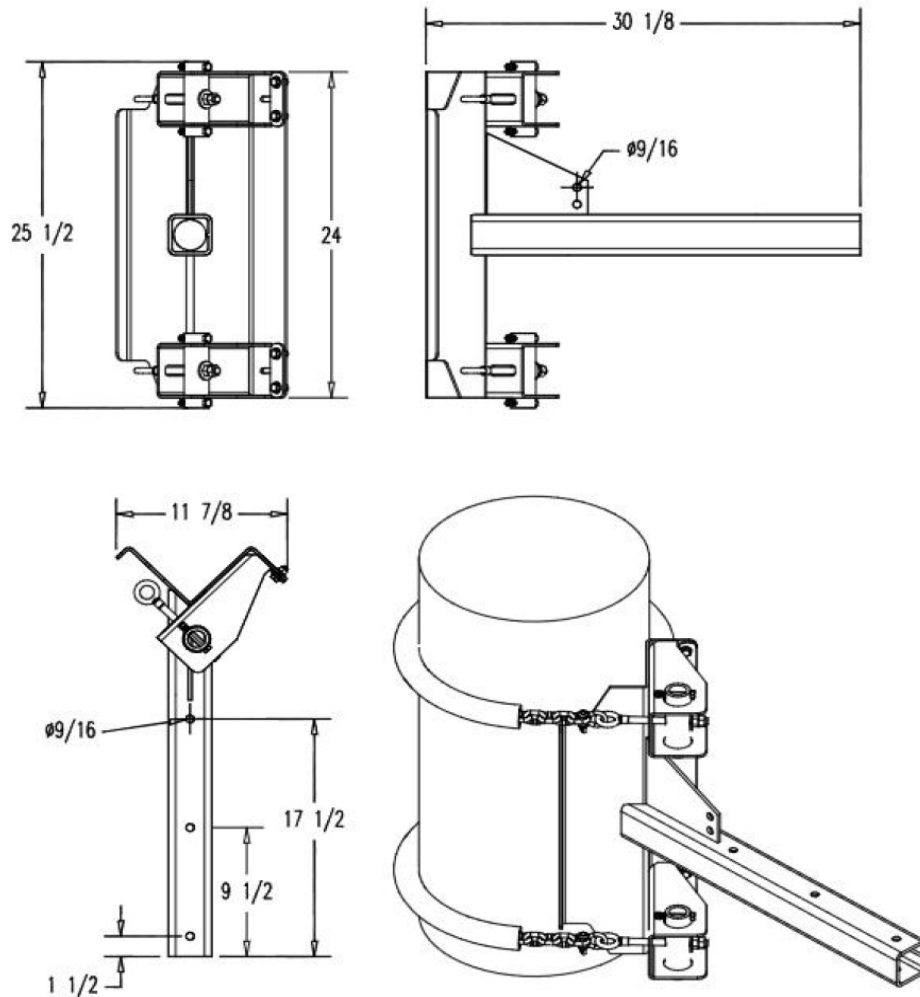


Figure 1: Key Dimensions (All values are given in inches).

3.2 Poles That Will Accept the PM1-17-G

- All round and polygonal tapered poles 10" in diameter (at the mounting height) and above. Common pole manufacturers include but are not limited to: Musco Lighting, and Valmont Structures.
- Some uniform diameter poles: contact Polar Focus for more detail.
- Note: Structural suitability of each pole mounting application should be determined by a local licensed structural engineer or other qualified individual.

3.3 Speakers That Can Be Mounted to the PM1-17-G

- Community R.15, R.35, R.5, R1, R2, etc. Not suitable for R6.
- JBL Pro AW, and AW compact
- Technomad Noho, Soho, Berlin, Chicago, Vernal, Vienna, and Paris
- Atlas Soundolier
- One Systems loudspeakers
- Many other systems; contact Polar Focus if you do not see the speakers listed that you would like to use.
- Note: All speakers, and yokes/u-brackets must be rated for outdoor use to avoid corrosion and unsafe situations that can arise from wind loading.

3.4 Color Specification

The PM1-17-G can be ordered in the following finishes:

- Unpainted Galvanized
- Black powder coat
- White powder coat
- User specified color custom powder coat
- Note: regardless of exterior color all PM1-17-Gs are galvanized to prevent corrosion.

3.5 Configuration styles

The PM1-17-G can be configured in a multitude of positions and styles as can be seen in Figure 2. The configurations shown in this figure do not represent all possible configurations, and other configurations may suit your application better. Pan angle of speakers is limited only by interference with the pole. Tilt of bottom mounted speakers can range between 0° and -90°. Tilt of the top speaker can be limited by collision of the speaker and yoke and or speaker and mounting beam. If necessary Polar Focus can provide specialized mounting structures to increase tilt angle beyond these restrictions. Through the utilization of different configurations and wide pan and tilt angles, speakers can be aimed virtually anywhere desired. All configuration styles allow for the speaker wire to be run through the cantilever beam and neatly out of the bottom of the mounting plate, this allows for a clean and professional look.

One Mount					
Two Mounts					
Three Mounts One Speaker per Mount					
Three Mounts Two Speakers per Mount					
Four Mounts One Speaker per Mount					
Four Mounts Two Speakers per Mount					
Polar Focus	Polar Focus, Inc. 20 Industrial Dr. E., Unit 2 South Deerfield, MA. 01373 Ph. 413-586-4444 www.polarfocus.com		PM1-17 Mounting Variations		
		Scale: 1:96	11/17/2014		
		Notes: -The number of mounting possibilities is not limited to what is shown above -Minimum Pole Diameter, 1 Pole Mount 10", 2 Pole Mounts 10", 3 Pole Mounts 11.25", 4 Pole Mounts 14.75"			

Figure 2: Mounting Configurations.

3.6 What the System Comes With

- 1, Assembled PM1-17-G.
- 2, Neoprene pads.
- 2, ½" Axle kits, containing necessary bolts, washers, and nuts to mount two speaker yokes to PM1-17-G.
- 2, Safety ties.

4.0 Installation; What to Expect

4.1 Tools Needed

Most installations require only the following tools:

- Two 9/16" and two 3/4" Wrenches
- Thread lock (such as loc-tite 242 thread lock)
- Ratchet-strap (for holding PM1-17-G while positioning as seen in figure 3)
- Installer lift and material lift.
- Exacto knife for trimming hosing to exact size.

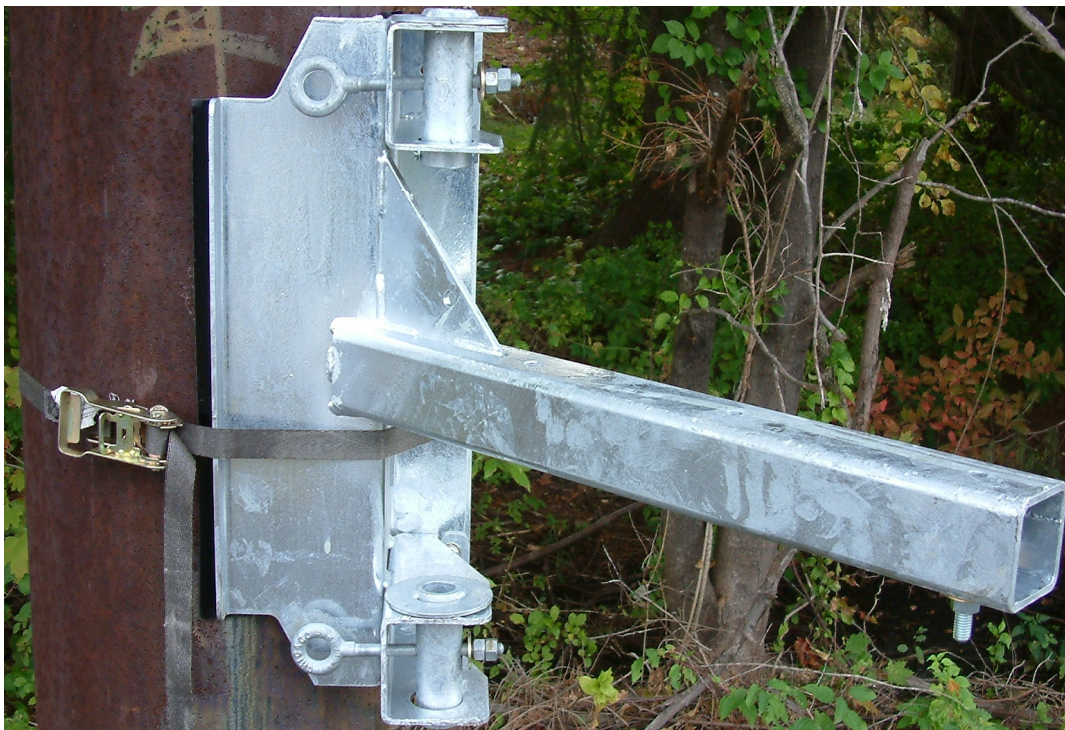


Figure 3. Using a Ratchet-strap to easily Position PM1-17-G.

4.2 Average Man Hours Installation Time

Mounting a single PM1-17-G installation on average takes less than 1 man-hour, at location, with all materials and proper tools.

5.0 How to Order Your PM1-17-G System

5.1 Fill out PM1-17-G Worksheet

- Record measurements from the PM1-17-G worksheet (which can be found in appendix A, section 2, Figure 1A) for each unique mounting instance.
- H1, H2, H3, H1 Circumference, and H2 Circumference are required.

- Note: When taking Circumference measurements a flexible fabric tape measure must be used, as seen in appendix A section 2, to insure an accurate measurement.

5.2 Enter Values in Application Calculator

- After taking measurements, enter all values in the Application Calculator, found at: polarfocus.com/PM1-17CalculatorWorksheet.xls, for each unique mounting instance.
- Follow all instructions within the Application Calculator for accurate results.
- The Calculator will output the diameter at H3, as well as the applicable chain and hose kit for a single mount configuration.

5.3 Contact Polar Focus With Product Number or Applicable Data

- For single pole mount configurations, simply contact Polar Focus with a copy or PDF of the completed Application Calculator, well as the quantities needed of kits needed.
- For applications with more than 1 pole mount attached at a single height contact Polar Focus with the H3 diameter obtained in the Application Calculator.
- Polar Focus can be reached in the following ways:
Phone: 413-586-4444
Email: info@polarfocus.com

Appendix A.
Section 1.

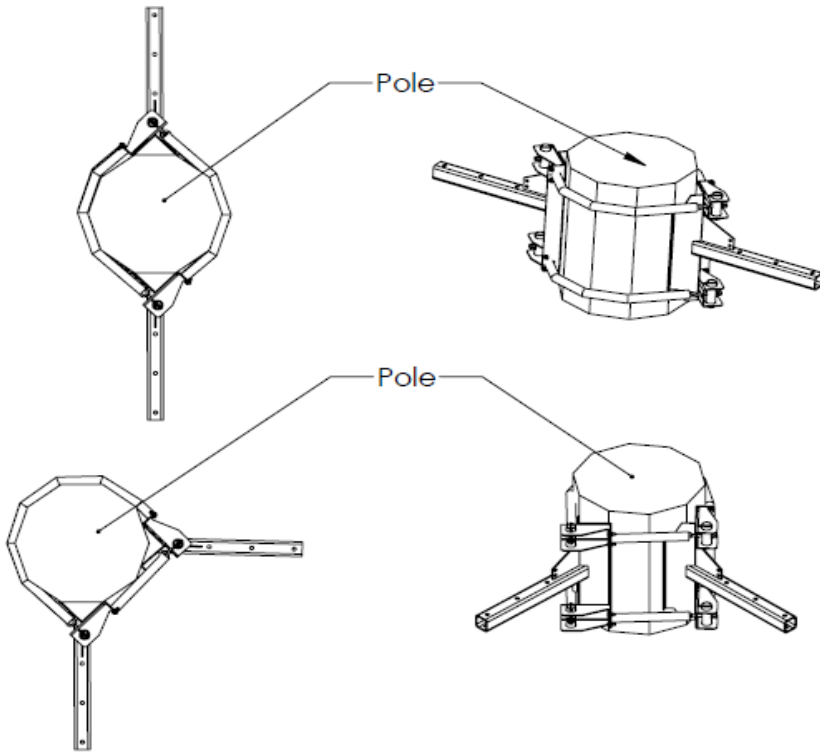


Figure 1A. Two PM1-17-Gs Installed at a Single Height.

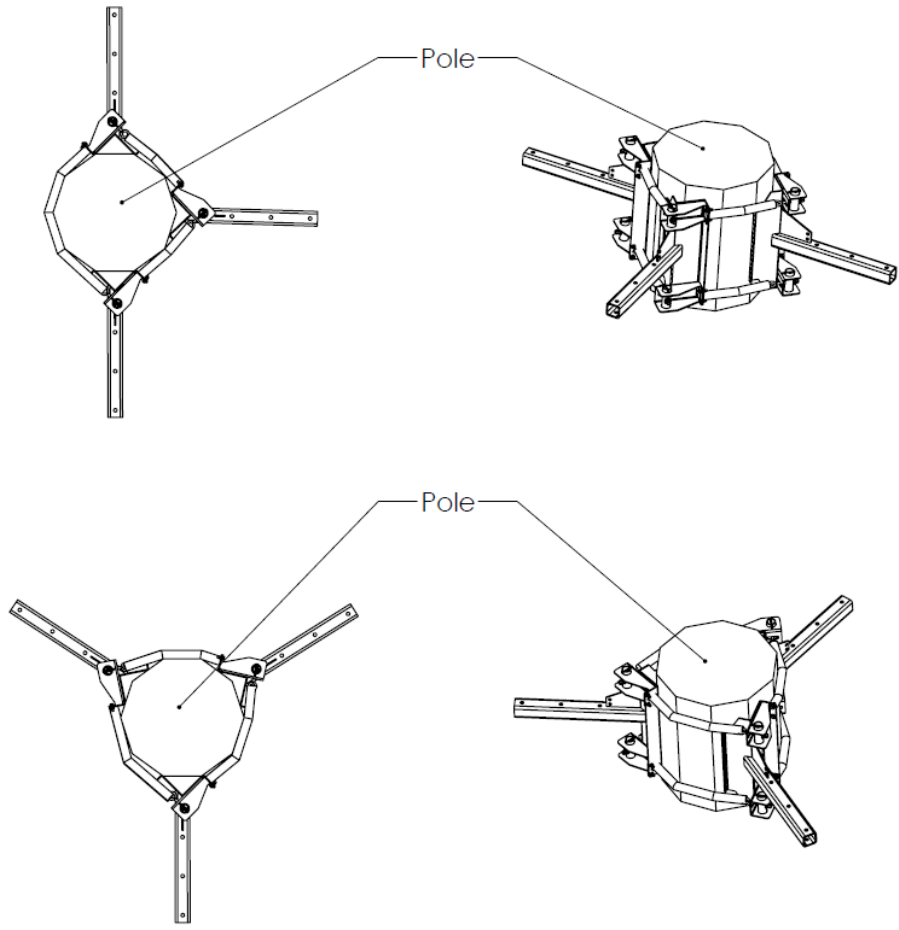


Figure 1B. Three PM1-17-Gs Installed at a Single Height.

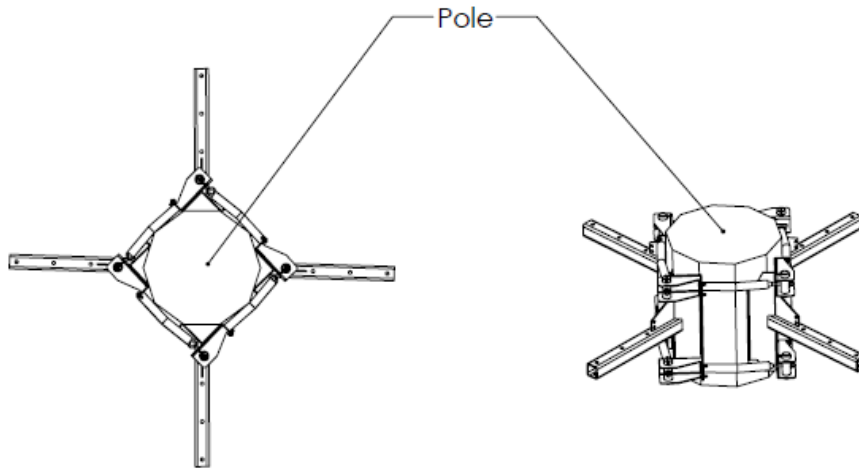
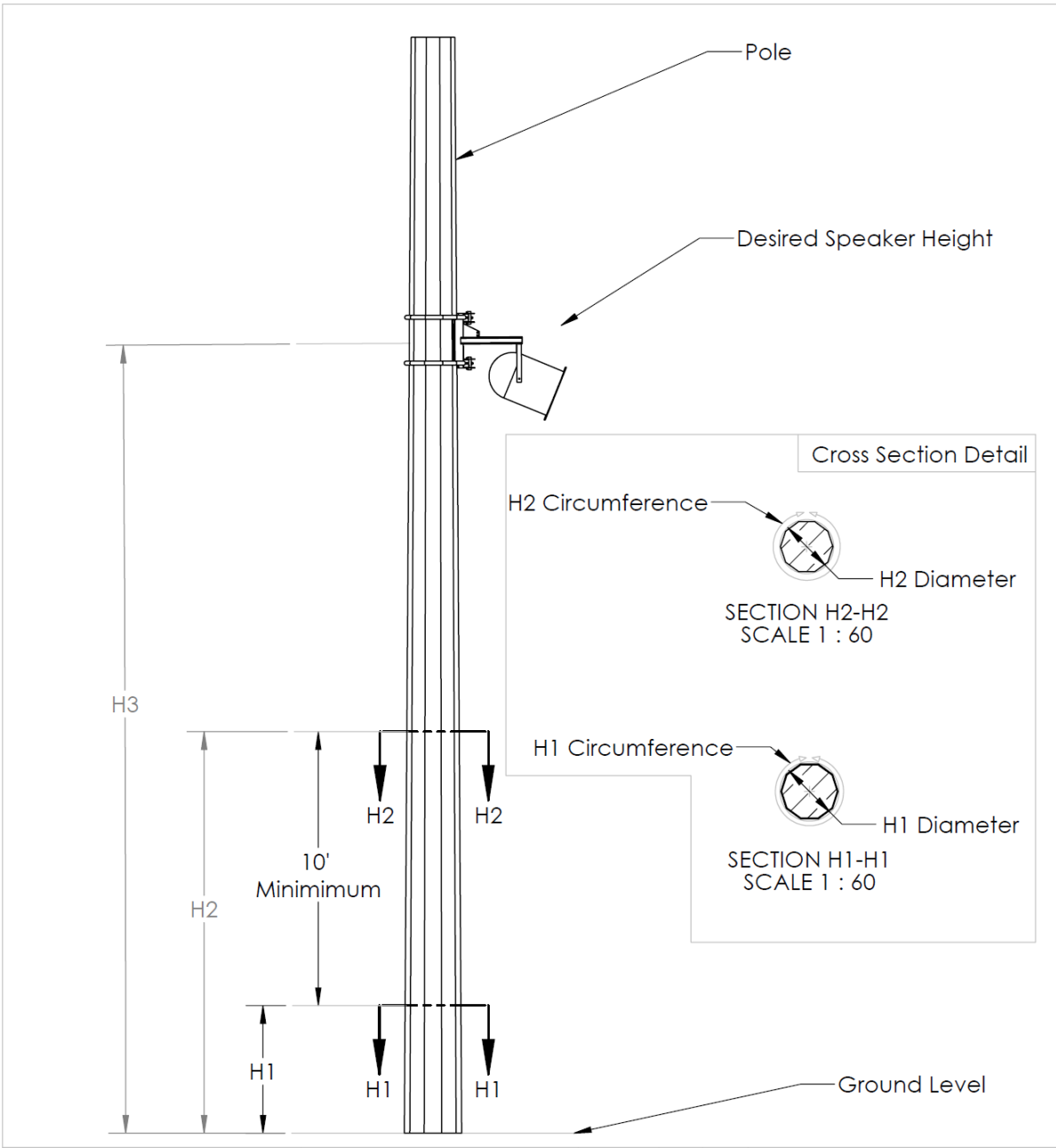


Figure 1C. Four PM1-17-Gs Installed at a Single Height.

Section 2.



	<p>This configuration drawing is for discussion only. For this configuration to be safely used in the field:</p> <ol style="list-style-type: none"> 1. All parts and components must be correct and able to safely support the load applied 2. All parts must be used with the correct technique(s) 3. Any pole structure element(s) carrying or transferring the load(s) must be able to safely do so as determined by a qualified person (i.e structural engineer, building inspector, etc.) 4. All height measurements should be in reference to the ground. 5. All Circumference (distance around the pole) measurements should be taken with a not stiff measurement tape. <p>COPYRIGHT © 2015 Polar Focus, Inc.</p>	NAME	DATE	<p>PM1-17-G Pole Mount Sizing Worksheet</p>	
		DRAWN	CW		11/14/2014
		CHECKED			
		ENG APPR.			
				<p>Polar Focus, Inc. 20 Industrial Dr. E., Unit 2 South Deerfield, MA. 01373 Ph. 413-586-4444 www.polarfocus.com</p>	
<p>NOTES: FABRICATION TOLERANCES ARE ± 1/16" LASER CUT ± .005. ALL EYEBOLTS SHOULD BE TURNED SO THAT THE LOAD IS IN THE PLANE OF THE EYE. OUR PRODUCTS ARE DESIGNED AS A COMPLETE SET. POLAR FOCUS WILL NOT BE RESPONSIBLE IF ANY CHANGES AND/OR ALTERATIONS ARE MADE WITHOUT WRITTEN CONSENT AND ENGINEERING APPROVAL.</p>	<p>MATERIAL: Various</p> <p>FINISH: Galvanized</p>	<p>SIZE DWG. NO.</p> <p>A PM1-17-G L213-003</p>	<p>REV.</p> <p>3</p>	<p>SCALE: 1:96 WEIGHT: N/A SHEET 1 OF 1</p>	

Figure 2A. PM1-17-G Worksheet.



Figure 2B. Correctly Measuring Circumference.

Note: Most tapered poles have a 0.14" per foot reduction in diameter, because of this small value relationship it is essential to take accurate measurements. To take an accurate circumference measurement follow these steps:

1. Find the exact height at which the circumference needs to be taken.
2. Use a flexible measuring tape, like the fiberglass measuring tape shown in figure 2B.
3. Wrap the tape around the pole at the given height location, ensure that the tape sits horizontally around the pole with no binds, kinks, twists, or obstructions.
4. Record the measurement to the nearest available gradation (16th, 8th etc.)