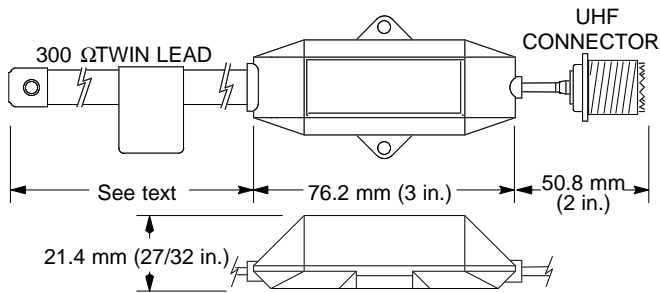


### MODEL WA490 HALF-WAVE ANTENNA FOR WIRELESS MICROPHONE APPLICATIONS

The Shure Model WA490 is a half-wave wireless microphone antenna that provides up to 3 dB more gain than the standard quarter-wave antennas supplied with Shure wireless microphone receivers. A low-cost alternative to conventional telescoping half-wave antennas, the WA490 offers the additional advantages of ruggedness and the capability for unobtrusive wall- or ceiling-mounting in or around the operating area. When locating the antenna at a distance from the receiver, a half-wave antenna such as the WA490 must be always be used instead of the standard quarter-wave antenna.

This WA490 consists of a small molded plastic housing with two mounting flanges molded into its body (see Figure 1). One end of the housing contains a short length of RG-174/U coaxial cable terminated in a female UHF coaxial connector for connection to the wireless receiver antenna input through an extension cable (Shure WA421: 6.1 meters—20 feet, or equivalent). The other end of the housing contains a length of 300 Ω twin-lead wire, cut to a length that matches the wireless frequency range in use.

**NOTE:** Diversity receivers require two WA490 antennas. When both antennas are remotely located, each must use an extension cable.



OVERALL DIMENSIONS  
FIGURE 1

#### Selecting the Proper Antenna

The WA490 is available in three configurations, which correspond to three frequency bands, as follows:

MODEL	FREQUENCY RANGE	APPROXIMATE LENGTH
WA490A	169 to 185 MHz	1.13 m (44 <sup>1</sup> / <sub>2</sub> in.)
WA490B	185 to 200 MHz	1.04 m (41 in.)
WA490C	200 to 216 MHz	0.95 m (37 <sup>17</sup> / <sub>32</sub> in.)

For best performance, choose the antenna that corresponds to your system's operating frequency. If you are using the WA490 with an antenna distribution system such as Shure's Model WA405, select the antennas as follows:

- If the frequencies are all in the same band, select the antennas for that band.

- If the frequencies span two adjacent bands, select antennas for the lower frequency band.
- If the frequencies span all three bands, use one WA490A antenna and one WA490C antenna.

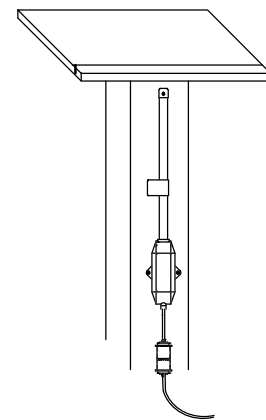
#### Installing the WA490

For best results with diversity receivers, the receiver antennas must be separated by at least one wavelength (1.5 meters—60 inches) or more.

Study the area in which the wireless microphone system is to be used. Locate an optimum wall or ceiling surface that will provide continuous line-of-sight contact between the transmitter and the WA490. While the WA490 can be easily removed for use in other locations, it is most readily used in permanent or semi-permanent installations. Mount the WA490 using the two mounting flange holes (3.81 mm—0.150 in. diameter) and the eyelet hole (3.18 mm—0.125 in. diameter). The type of mounting hardware used depends on the mounting surface. If desired, the WA490 can be painted or otherwise disguised after mounting (non-metallic covering).

The WA490 can also be fastened to wooden beams, scenery flats, curtains, or to the rear (away from the audience) of lecterns or altars (Figure 2).

**IMPORTANT:** Avoid mounting the WA490s along metal beams or metal-studded walls; the antennas must always be well away from any metallic object or surface, and always within the transmitter line of sight.



LECTERN MOUNTING  
FIGURE 2