ISOPOLE™ Antennas
by AEA

ISO-144
ISO-220

MASTS NOT SUPPLIED

The IsoPole has built a strong reputation for quality in design and superior performance. Patented IsoPole conical sleeve decouplers offer many design advantages.

All IsoPole antennas yield the **maximum gain attainable** for their respective lengths and a zero degree angle of radiation. Exceptional decoupling results in simple tuning and a significant reduction in TVI potential. Cones offer greater efficiency over obsolete radials which radiate in the horizontal plane. The IsoPole is also more esthetically pleasing to the eye than older obsolete ground plane designs.

The IsoPoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other when used with SWR protected solid state transceivers. **Typical SWR is 1.4 to 1, or better, across the entire band!**

A standard Amphenol 50 ohm SO-239 connector is recessed within the base sleeve of all VHF IsoPoles and is fully weather protected. With the factory-tuned matching network located at this connector, we are able to cancel out the impedance lump effects of this so called "UHF" connector. The UHF IsoPoles use type "N" connectors. Additionally, all IsoPole antennas are D.C. grounded. With the IsoPole, you will not experience aggravating changes in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. A new insulating material offers superb strength and dielectric properties, plus excellent long-term ultra-violet resistance. All mounting hardware is stainless steel. The decoupling cones and radiating elements are made of corrosion resistant aluminum alloys. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is **not supplied**). The IsoPole has even survived 140 mph storms unscathed. You can buy a mast from your local hardware or Radio Shack store, for less than the shipping cost of a single 10' mast!

Operating on MARS or CAP? The IsoPole and IsoPole Jr. antennas will typically operate at least ±2 MHz outside the respective ham band without retuning. However, by simple length adjustment, the IsoPoles can be tuned over a wider range outside the ham bands as shown in the SWR charts.

The IsoPole antennas are all impedance matched in the factory so that no field tuning is required. Instead of the typical 25-40 screws, the IsoPole has no more than 5 stainless steel screws to fasten, thereby significantly decreasing the time necessary for assembly and reducing the chance for errors.

ISOPOLE™ SPECIFICATIONS

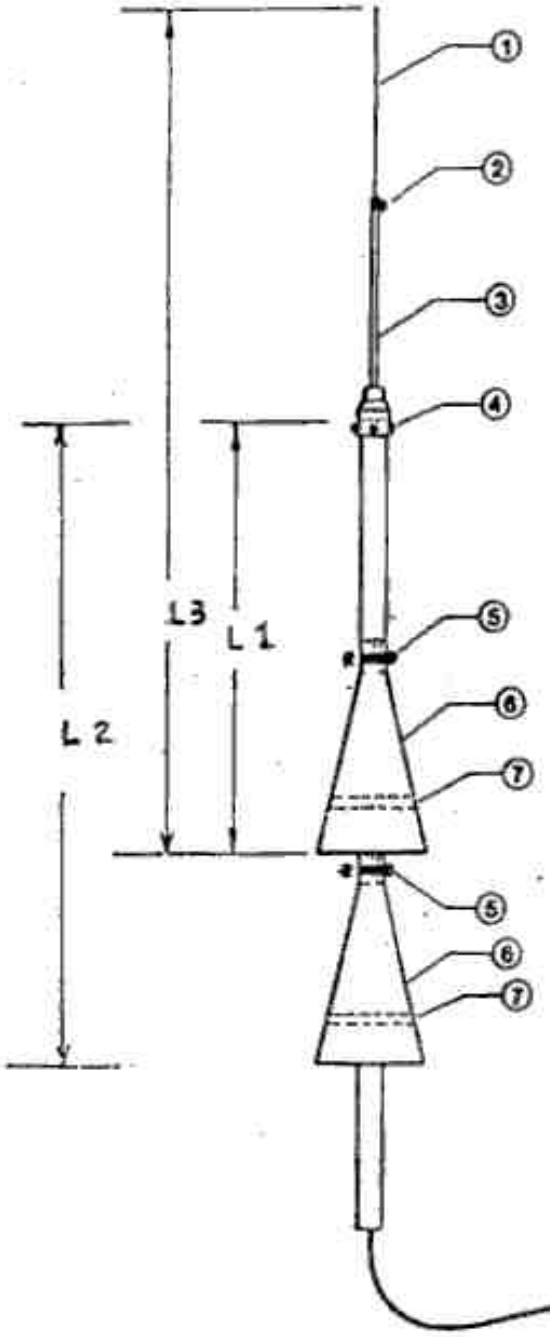
MODEL	144 SR	144 JR	220 SR	220 JR	440
Frequency Coverage (MHz)	135-160	135-155	210-230	210-230	415-465
2:1 VSWR bandwidth	> 12 MHz @ 148 MHz	> 10 MHz @ 148 MHz	> 15 MHz @ 220 MHz	> 12 MHz @ 220 MHz	> 22 MHz @ 435 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Power Rating	1 kw	1 kw	1 kw	1 kw	1 kw
Gain	3 dbd	0 dbd	3 dbd	0 dbd	3 dbd
Length of radiating elements	125.5" (3.2m)	76" (1.9m)	79.25" (2m)	51.75" (1.3m)	46" (1.2m)
Wind Area*	< 1 sq. ft.	< 75 sq. ft.	< 75 sq. ft.	< 6 sq. ft.	< 20 sq. ft.
Maximum Mast OD	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)
Maximum Mast Length**	8 ft. (2.4m)	3 ft. (1m)	5½ ft. (1.6m)	28" (.7m)	6" (150mm)
Weight (shipping)	5 lbs.	2 lbs.	4 lbs.	1¾ lbs.	2.5 lbs.
Coax Connector	PL 259	PL 259	PL 259	PL 259	Type N

dbd — db gain over a dipole in free space
*estimated
**mast not included

ISO-440

ISO-144JR
ISO-220JR

Specifications subject to change without notice or obligation.



ISOPOLE 144

For MHz	L1	L2	L3
137	55" 1.40M	80.5" 2.04M	110" 2.79M
146	50" 1.27M	75.5" 1.92M	100" 2.54M
151	48" 1.22M	73.5" 1.87M	96" 2.44M
153	47" 1.19M	72.5" 1.84M	94" 2.39M
158	44" 1.12M	69.5" 1.77M	88" 2.24M

Parts List

1. Tip Rod
2. Small Stainless Steel Hose Clamp
3. Upper Element Tube and Matching Network Assembly
4. 1/4" x 20 Stainless Set Screws (3 ea.)
5. Large Stainless Steel Hose Clamp (2 ea.)
6. Decoupling Cone (2 ea.)
7. Expanded Polyethelyne Cone Stabilizing Disc (2 ea.)

NOTE: The IsoPole is D.C. grounded. A short between the upper element and the mast should be evident with an ohmmeter.

*Scrape any paint off the mast where cone comes in contact. Apply silicone grease between mast and cone to prevent possible corrosion.

*Use standard TV hardware to mount.

Equipment Needed: Mast, recommend use of low cost steel 1 ¼" TV mast available at most hardware, TV shops or electronic stores, e.g., Radio Shack at less cost than shipping a single piece. Mast must be a minimum of 8' long for 144 MHz (no maximum length). Minimum inside diameter is 0.75" and maximum outside diameter is 1.275".

Tools Needed: Accurate measuring stick or tape; Flat bladed screw driver; nut drivers, 1/4" and 5/16"; flat file (for removing paint from mast); silicone grease or petroleum jelly.