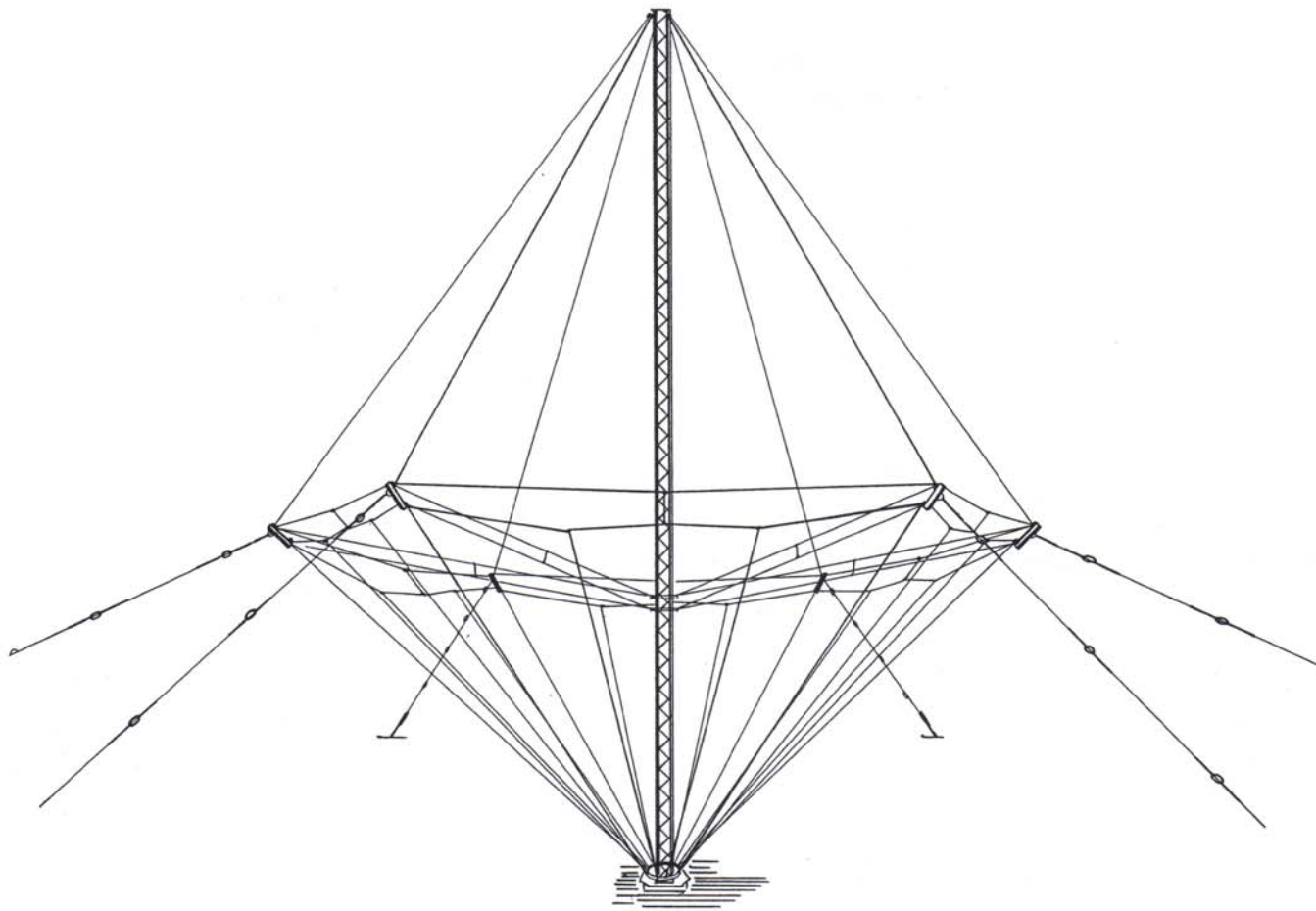




# Omni-directional HF Antennas

## CV430-x

- ★ Wide Band Operation, 10:1 Bandwidth
- ★ Nominal VSWR 2.5:1, Average 2.0:1
- ★ Single Mast, Easy to Erect



CV430-x. Illustration

### DESCRIPTION AND APPLICATION

The CD model CV430-Series are omni-directional HF vertically polarized antenna designed to provide a broadband and high power radiation capability for fixed transmitting and receiving sites. These broadband HF monopole antennas are useful throughout the frequency ranges of 1.6 to 30 Megahertz. The antennas have a low angle radiation pattern and provide both short and long range HF communications by ground wave and skywave respectively. The radiation pattern in the azimuth plane is essentially omni-directional while the elevation pattern varies with frequency.

The antennas are formed by two vertical cones, attached together at the base and supported by a vertical tower running through the center of each antenna. The SWR is nominally 2.5:1. To prevent radiation pattern deterioration at the higher frequencies, the upper cone is electrically decoupled so that only the lower cone can radiate. At these frequencies, the antenna assumes the characteristics of an inverted discone.

The two cones are formed by a wire cage fabricated of alumoweld wires. The upper cone consists of 6 wires while the lower cone uses 18 wires to improve the impedance characteristics. The monopole is guyed at 6 places around the periphery of the antenna at the junction of the cones. The upper radiating elements also serve as guys for the upper portion of the structure. 36 radials form the ground screen. Installation of this antenna requires approximately 45 man-hours excluding time required for pouring and curing of concrete foundations and ground screen installation.

A highly corrosion-resisted alumoweld wire is used for the radiator and guy wire of this CV430. Tower is hot-dipped galvanized steel. As an optional, an aluminum tower (A6061-T6) is available.

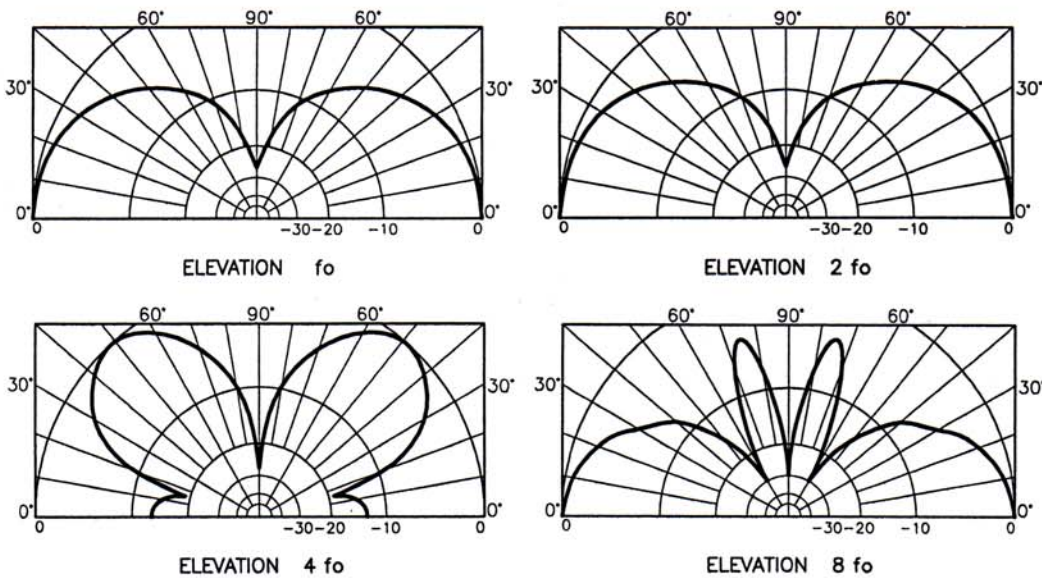
**SPECIFICATION SUMMARY**

| Model No.                                       | CV430A              | CV430B                  | CV430F              |
|---|---------------------|-------------------------|---------------------|
| Frequency Range                                 | 2.5~25 MHz          | 4~30 MHz                | 2~20 MHz            |
| Polarization                                    | Vertical            | Vertical                | Vertical            |
| Power Handling Capability (Ave/PEP)             |                     | - Refer to NOTE below - |                     |
| Gain Over Perfect Ground<br>(Over Average Soil) | 4~7dBi<br>(2~5 dBi) | 4~7dBi<br>(2~5 dBi)     | 4~7dBi<br>(2~5 dBi) |
| VSWR. Average                                   | 2.0:1               | 2.0:1                   | 2.0:1               |
| Maximum   | 2.5:1               | 2.5:1                   | 2.5:1               |
| Input Impedance                                 | 50 ohms             | 50 ohms                 | 50 ohms             |
| Antenna Height                                  | 19.9 m              | 12.5 m                  | 24.7 m              |
| Guy Radius                                      | 17.5 m              | 12 m                    | 21.5 m              |
| Ground Screen Radius                            | 25 m                | 16 m                    | 32 m                |
| Wind Survival Rating                            | 45 m/s              | 45 m/s                  | 45 m/s              |
| System Net Weight                               | 850 kg              | 550 kg                  | 950 kg              |

Note: Use an appropriate sub-model number when specifying or ordering a system.

|   | Connector          |
|---|--------------------|
| CV430-x-1. Receive or Transmit, 1 kW/2 kW | Type "N" Female    |
| CV430-x-2. Transmit, 5 kW/10 kW           | 7/8" EIA. Female   |
| CV430-x-3. Transmit, 10 kW/20 kW          | 1-5/8" EIA. Female |

**Radiation Patterns. CV430 Series 36-Ground Radials/Average Soil.**



- Notes:
1. Omnidirectional / Azimuth Pattern.
  2. Patterns are in over perfect ground.
- DWGA.064F

**Model CV430 VSWR DATA, Typical Installation**

