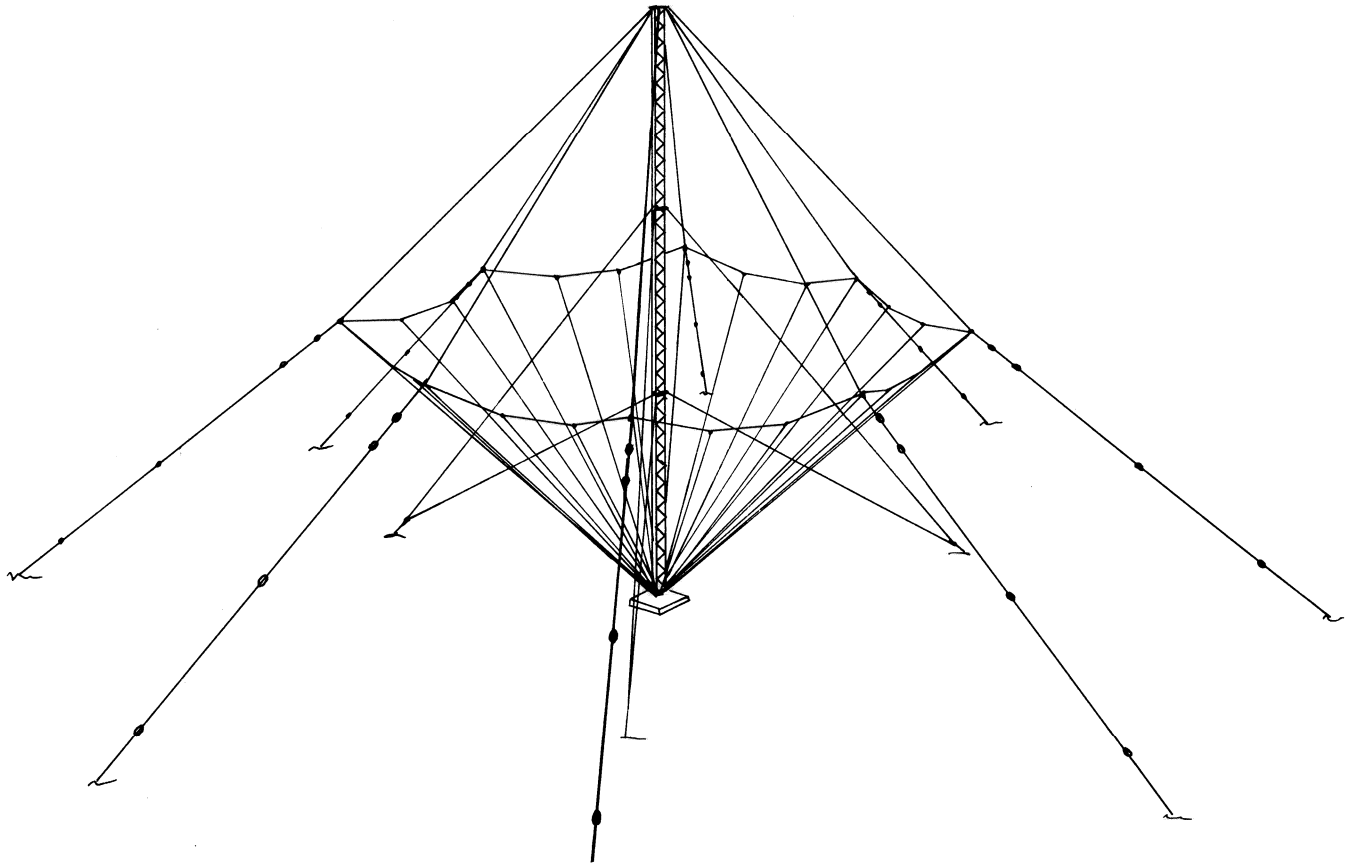
HF Broadband Omni-directional Antenna

CM230-x

- ★ Wide Band Operation 1.6~30MHz
- ★ 2.0:1 VSWR Nominal
- ★ Low Angle Radiation Patterns
- ★ Single Mast
- ★ Easy to Erect



DESCRIPTION AND APPLICATION

The CD model CM230 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 inverted cone 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 sky wave, respectively. The radiation pattern in the azimuth plane is essentially omni-directional, while the elevation pattern varies with frequency. These antenna systems are characterized by low VSWR through their respective band width of less than 2.0:1 nominal relative to 50 ohms unbalanced line.

For each model, a shaped radiator curtain forms a cage around the hot dip galvanized steel vertical support tower. Since the upper portion of the radiator curtain is connected directly to the tower, the main upper elements also serve as guys for the upper portion of the structure. The vertical radiators are terminated into the feed terminal assembly at the base of the antenna and insulated above ground by ceramic suspension insulators, with the mast. RF feed is accomplished through connection between the feed terminal assembly. Maximum utilization of electro-mechanical component proved an extremely reliable system, both electrically and mechanically. The use of cranes are not required for erection of CD inverted cone antenna systems.

The antennas operate over a ground screen of 36 and grounded at the perimeters by a series of copper clad ground rods. Installation of any of the models requires approximately 50 man-hours excluding time required for pouring and curing of concrete foundations and ground screen installation.

SPECIFICATION SUMMARY

Model No.	CM230-1	CM230-2	CM230-3	CM230-5
Frequency Range	1.6~30 MHz	2~30 MHz	2.5~30 MHz	4~30 MHz
Polarization	Vertical	Vertical	Vertical	Vertical
Power Handling Capability (Ave/PEP)		- Refer to NOTE below -		
Gain Over Perfect Ground	4~7dBi	4~7dBi	4~7dBi	4~7dBi
(Over Average Soil)	(2~5 dBi)	(2~5 dBi)	(2~5 dBi)	(2~5 dBi)
VSWR. Nominal	2.0:1	2.0:1	2.0:1	2.0:1
Antenna Height	42.4 m	32.7 m	27.8 m	17.8 m
Guy Radius	48 m	36 m	30 m	19.5 m
Ground Screen Radius	47 m	35 m	29 m	17.5 m
Wind Loading Capability	45 m/s	45 m/s	45 m/s	45 m/s
System Net Weight	1450 kg	1100 kg	850 kg	450 kg

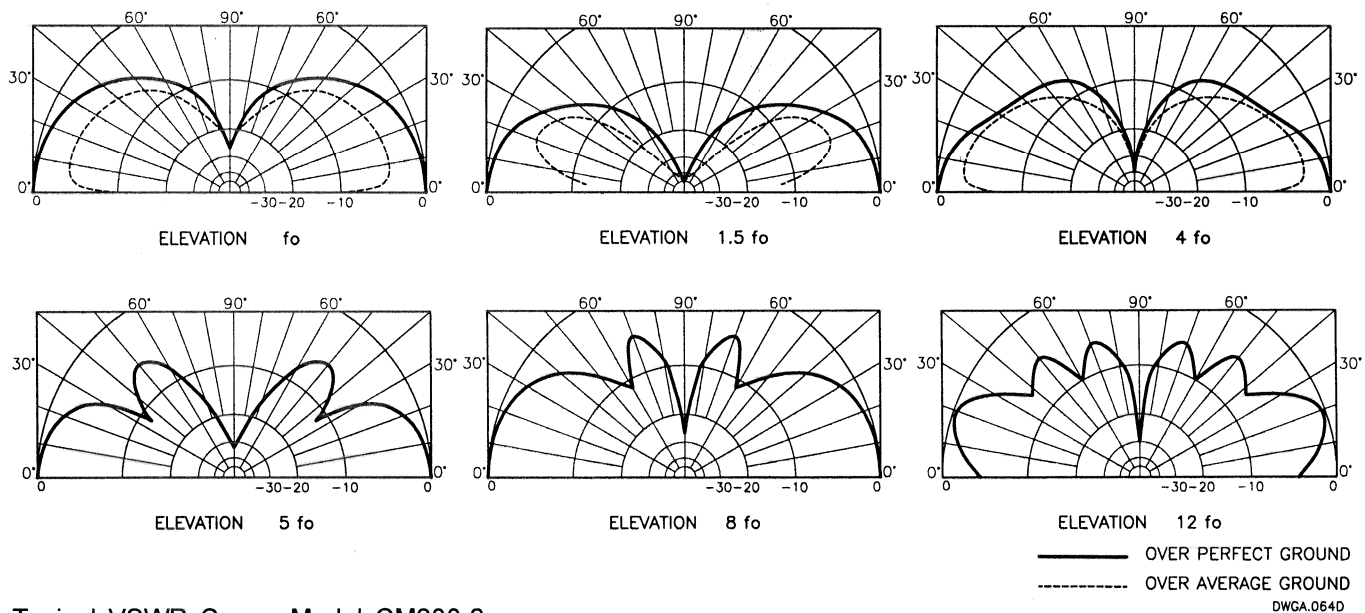
Note: Use an appropriate sub-model number when specifying or ordering a system.

		Connector
CM230-x-1.	Receive or Transmit, 1 kW/2 kW	Type "N" Female
CM230-x-2.	Transmit, 5 kW/10 kW	7/8" EIA. Female
CM230-x-3.	Transmit, 10 kW/20 kW	1-5/8" EIA. Female

OPTIONAL PARTS

Obstruction Light Kit,	1.	2-O.B. Light, OB-2S	110 or 220VAC 100W, Bulb
	2.	Cable	CV Cable
	3.	Photo Electric Control,	Type PC-1
	4.	Austin Transformer,	CA-07/CM230
	5.	Static Drain Resistor	SR150

Radiation Patterns. CM230-x, 36-Ground Radials/Average Soil.



Typical VSWR Curve, Model CM230-2.