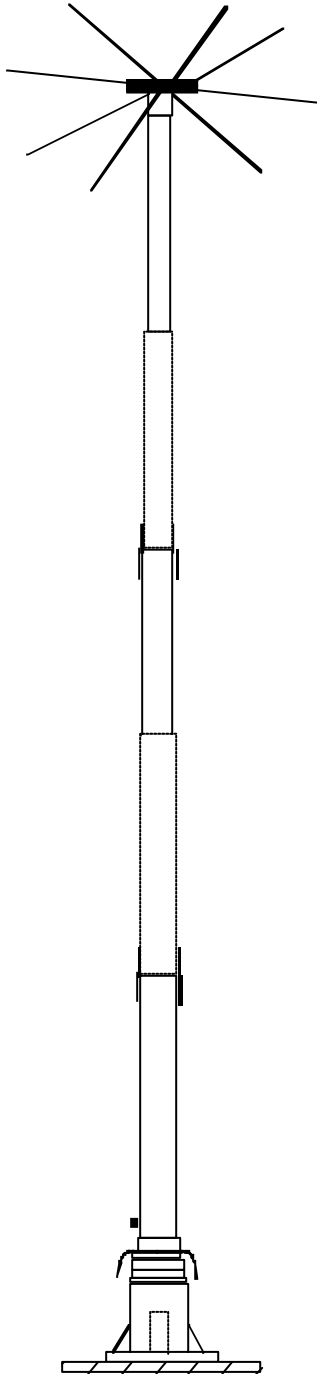




MOONRAKER

Type 100MF

Professional high quality self supporting MF antenna system



Designed for use both on offshore platforms and land base stations as non directional beacons and low power AM broadcast stations operating in the 300 to 2000 KHz band where space or cost precludes the use of tower supported wire antennas.

The Type 100MF is a base mounted 10 metre (32.8 ft) heavy duty top loaded (inductance and capacitance) antenna system. The antenna is designed to withstand winds of 216 km/h (134 mph) without permanent deformation and with minimal top deflection.

Construction is from heavy gauge tempered marine grade aluminium alloy to give a large low loss surface area for maximum radiating efficiency.

The radiator, capacity top radials and cast alloy base mount are finished with a high durability epoxy based coating, resistant to chemical attack, abrasion and the effects of ozone and ultra-violet radiation. The base insulator is ribbed high strength low loss polypropylene. RF connection is via a stainless steel side terminal above the base insulator. A corona shield is fitted to minimise leakage during wet weather.

For ease of transport the antenna breaks down into three sections which slip together and fasten with stainless steel locking screws. The top radials are similarly assembled into their mounting boss. Joint sealing kits are provided to prevent water ingress. The top loading coil is easily replaced for maintenance purposes and the base flange has the industry standard mounting dimensions and hole spacings.

Systems are tailored to suit individual frequency and ground conditions and can be used with commonly available couplers. Design of earth system is critical as actual overall performance depends mainly upon the antenna coupling unit Q and earth losses relating to soil type, soil conductivity and earth system.

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The following performance figures are theoretical and based upon the assumption that the following installation conditions apply:

- . The antenna is mounted in a location that is reasonably clear from other antennas and metal structures which may absorb power, cause distortion of the omnidirectional pattern and affect tuning.
- . Earth loss resistance of 1Ω and an ATU (coupler) working Q of 300. Radiation efficiency is directly affected by earth system and ATU losses.
- . Field strength is the expected value based on 100w CW input to the antenna and over an unobstructed sea water path. Performance for land based systems will differ.

Specifications

Frequency Range	300-500 kHz (with suitable ATU); may be extended to 2000 kHz		
Overall Length	10m (32.8ft)		
Top Loading	8 x 2m (6.5ft) radials and loading coil, overall diameter 4m (13.1ft)		
Radiator Diameter	101.6mm (4 in) at base tapering to 50mm (2 in) at top		
Pattern	Omnidirectional		
Polarisation	Vertical		
Power Capability	100w CW plus 100% amplitude modulation		
Wind Survival	216 km/h (134 mph/60 m/s)		
Top Deflection	Less than 3m (9.8ft) at 216 km/h (134 mph)		
Mounting	285mm (11.2 in) diameter with 6 equally spaced 13mm (9/16 in) holes on 243mm (9.6 in) diameter		
Connection	Via 12.7mm (½ in) Whitworth stainless steel stud and lock nuts		
Earth Mat	Systems available to suit site conditions		
Radiation Efficiency	300 kHz: 1.5%; 500 kHz: 4.9%		
System Bandwidth	300 kHz: 1.128 kHz at -3 dB; 500kHz: 1.990 kHz at -3 dB		
Effective Base Capacitance	300 kHz: 258 pf; 500 kHz: 291 pf		
Unattenuated Field Intensity at 100 Nautical Miles	300 kHz 62 v/M +36dB ref 1µv	400 kHz 87 v/M +39dB ref 1µv	500 kHz 111 v/M +41dB ref 1µv
Approximate Weights	Antenna 83 kg (166 lbs), Tilt Mount 26.5 kg (58 lbs) Packed: Antenna 92 kg (205 lbs), Tilt Mount 30 kg (66 lbs)		