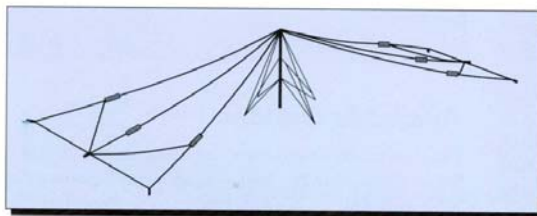


FAA5526 NVIS Antenna

FANLITE™

Manportable Theater Range HF Antenna Type LFH

(NSN 5985-01-342-9592ZX)



In Service With

AN/TSC Quick Reaction
Package (QRP)

AN/TRC 181 Air Logistics
Communication Elements (ALCE)

- Broadband 2–30 MHz, NVIS
- Rapid Deployment
- Light, compact manportable package
- Excellent performance characteristics
- 0–2000 mile range, omnidirectional
- 1 kW continuous operation
- Ideal for frequency-agile and ALE radios
- Available options:
 - Reconfiguration kit for long range
 - 500 W operation
 - Fixed-station version, LFH(P)

email: tactmast@mindspring.com

www.tactmast.com

FANLITE LFH Manportable Theater Range Antenna

Services Provided

- Omnidirectional theater range HF skywave communications
- Long-range directional communications (Optional)

Applications

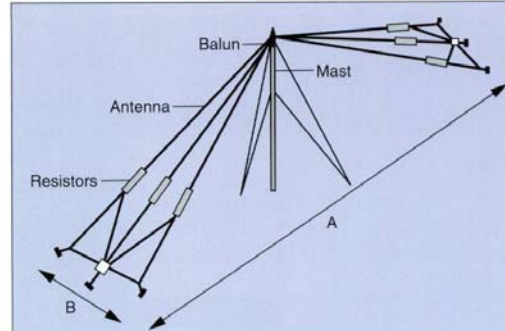
- Temporary Base Stations
- Contingency Communications
- Short-Range Communications in Mountainous or Difficult Terrain
- Counter-Narcotics Operations
- Ground to Air
- Shore to Ship
- Diplomatic Communications (Available Rooftop Mounting)
- Covert Communications (Available Low-Profile Kit)

Description

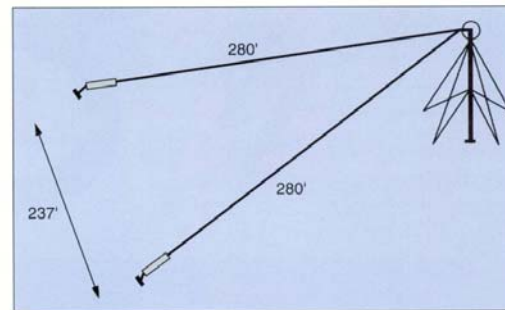
The LFH 230 "FANLITE" antenna is a lightweight, transportable HF wire antenna intended primarily for omnidirectional skywave communications to a range of about 1000 miles, including short-range Near Vertical Incidence Skywave (NVIS) operation. Supplied in a rapidly assembled kit form, the antenna is designed for use with CSA's telescopic "CARRYMAST." When erected on one of these masts, the LFH may be set up by two people in less than 25 minutes.

The antenna is rated for 1 kW continuous operation and is broadband, with a VSWR not exceeding 2.2:1 from 2 to 30 MHz. An antenna coupler is unnecessary.

The primary configuration is a fan dipole. Viewed from above, the elements resemble a bow tie. In this configuration, the center of the antenna beam over the lower portion of the HF band is directed straight upwards for optimum NVIS operation. Here, the radiation pattern is omnidirectional ± 1 dB over the frequency range 2 to 8 MHz at angles at or above 60° above the horizon. At higher frequencies, the antenna beam becomes approximately hemispherical, providing useful single-hop performance to about 1000 miles.



	LFH 1.630	LFH 230	LFH 330
A	64 m (210')	48 m (150')	32 m (106')
B	18.4 m (60')	13.8 m (45')	9.2 m (30')



Available Options

For directional long-range communications (2000+ miles), the antenna may be deployed as a sloping vee or sloping long wire using CSA's available SVK reconfiguration kit. (The SVK is supplied as standard equipment when NSN 5985-01-342-9592ZX is ordered.)

For covert operations, the fan dipole may be deployed without an antenna mast. In this configuration, a central ground stake and camouflaged nonconducting rods are used to support the antenna and balun at a height of about 18 inches. The additional equipment necessary for the low-profile vertical incidence configuration weighs less than 2 kg (5 lb) and is available as an optional accessory kit: KFH(C).

Specifications

A fixed-station version of FANLITE is also available from CSA. This model, the LFH(P), provides omnidirectional communications to ranges in excess of 1000 miles, has permanent fixtures and a conventional copper wire antenna curtain and can be supplied suitable for ground or rooftop mounting.

CSA's lightning protection kit (LPK) is designed to divert lightning strike energy to ground via a deliberate and controlled path.

LFH Fan Dipole

Electrical

■ Frequency Range	2-30 MHz
■ Input Impedance	50 V
■ VSWR	Less than 2.2:1 across band
■ Power Rating	1 kW continuous
■ Polarization	Horizontal

■ Gain	See typical Gain Table on back page
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Mechanical

■ Weight	19 kg (42 lb)
■ Stowed Size	0.25 x 0.25 x 0.6 m (10" x 10" x 24")
■ Deployed Size	48 x 13.8 m (150 x 45 ft)
■ Erection Time	25 minutes (2 people) (with CSA "CARRYMAST" telescopic mast)
■ Max Wind Speed	145 km/hr (90 mph)
■ Temperature Range	-40° to +160°F
■ Antenna Elements	Kevlar and Copper
■ Fittings	Stainless Steel

LFH Sloping Vee Configuration (Available Option)

Electrical

■ Frequency Range	2-30 MHz (8-26 MHz optimum)
■ Input Impedance	50 V
■ VSWR	Less than 2:1 across band
■ Power Rating	1 kW continuous
■ Polarization	Horizontal

■ Gain	See typical Gain Table on back page
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Mechanical

■ Weight	19 kg (42 lb)
■ Stowed Size	0.25 x 0.25 x 0.6 m (10" x 10" x 24")
■ Deployed Size	86 x 76 m (280 x 250 ft)
■ Erection Time	25 minutes (2 people) (with CSA "CARRYMAST" telescopic mast)
■ Max Wind Speed	145 km/hr (90 mph)
■ Temperature Range	-40° to +160°F
■ Antenna Elements	Kevlar and Copper
■ Fittings	Stainless Steel

Options

■ LFH	500 W Balun
■ Mast	CSA's CARRYMAST CTM12, CTM15 or SP30
■ LPK	Lightning Protection Kit
■ LFH(P)	Permanent Site Version (rooftop mounting details on request)
■ LFH(C)	Covert Operations Kit (details on request)
■ SVK	Kit to reconfigure to sloping vee or sloping long wire (Included as standard equipment when NSN 5985-01-342-9592ZX is ordered)

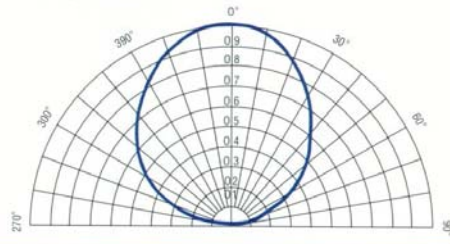
Power Gain & Radiation Diagrams

Typical Power Gain (dBi)

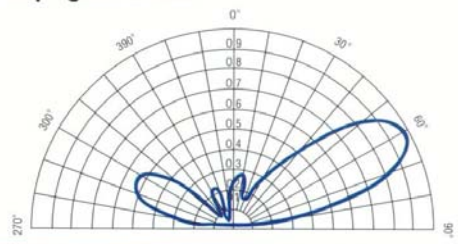
Frequency (MHz)	2	3	4	6	8	10	12	16	20	30	40
Fan Dipole	-2.5	-2.0	-1.0	0	+2.0	+2.5	+3.0	+3.0	+2.5	+2.0	-
Sloping Vee 280'	-9.4	-6.5	-1.8	-1.7	+4.6	+6.4	+7.5	+8.2	+8.5	+9.6	+10.0

- Notes:**
- The sloping vee data refers to an antenna with 86 m (280 ft) leg lengths.
 - Power gain for sloping vee assumes apex angle between legs is 50° for frequencies below 24 MHz and 35° for frequencies above 24 MHz. This equates to leg spacings of 73 m (237 ft) and 53 m (172 ft), respectively.
 - Gains are stated for antennas supported on a 15 m mast over average ground. (Conductivity 10 mS/m; relative permittivity 10).

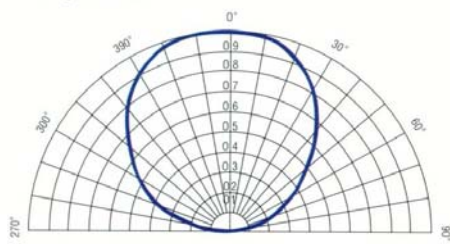
Fan Dipole 6 MHz



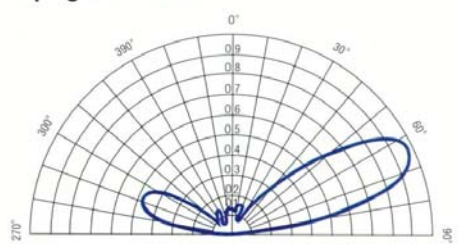
Sloping Vee 6 MHz



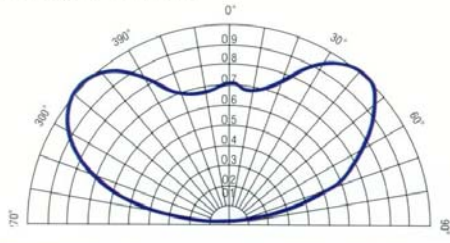
Fan Dipole 10 MHz



Sloping Vee 10 MHz



Fan Dipole 16 MHz



Sloping Vee 16 MHz

