



U.H.F Television Aerial Type B 8240 (BD 435)

U.H.F CHANNELS are being used increasingly for television broadcasting, and aerials which can be constructed simply and economically into arrays of high gain are necessary. The B 8240 U.H.F Aerial fulfils the requirements admirably. It is constructed from basic units which can be assembled into either omni-directional or directional arrays. When so assembled it is both weatherproof and easily serviceable.

Features

Wideband, capable of radiating more than one channel simultaneously.

Omni-directional (or directional to special requirements).

Standard design is fully protected inside glass-fibre cylinder.

CONSTRUCTION

The basic unit is an eight-dipole panel complete with self-contained distribution feeder. A number of such panels are assembled, according to the horizontal pattern and gain required, inside a glass-fibre cylinder. This cylinder acts both as a supporting structure and a protective cover. The separate panels of dipoles are fed by individual semi-flexible coaxial feeders of standard type having a characteristic impedance of 50 ohms. These distribution feeders connect the feed points on the rear of the panels to distribution transformers which terminate the main feeders.

Provision is made inside the glass-fibre cylinder for a ladder to give access to the panels. A copper cage is mounted outside the cylinder to provide lightning protection.

Aviation obstruction lighting equipment can be fitted to the top of the cylinder if required.

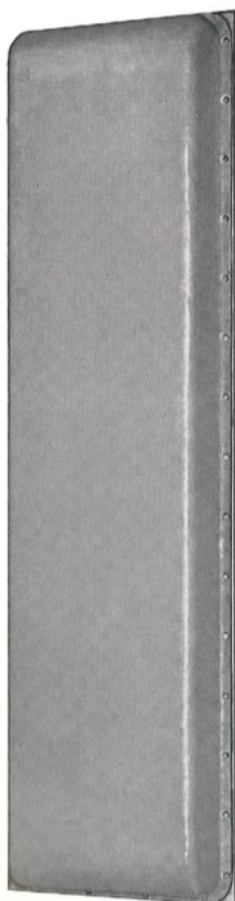
As an additional feature individual covers are provided for the panels, so that the entire distribution feeder system may be pressurized.

The horizontal radiation pattern of the standard design of aerial is omni-directional, but in many cases, special directional patterns can be obtained. The method of achieving this is normally by unequal power distribution to the different sectors. In the vertical pattern, the beam may be tilted and null filling achieved if required.

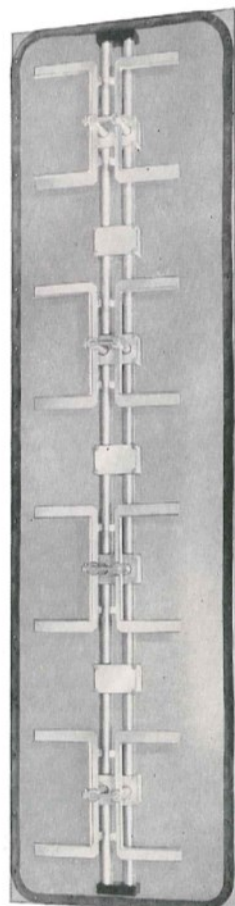
Two types of basic panel are used, one for Band IV and one for Band V, with an overlap in frequency of approximately 30 Mc/s. These panels are arranged in rings of four or five on the inside of the cylinder. The vertical aperture is built up from the sections of glass-fibre cylinder which is normally supplied in 16 ft (4.8 m) sections. One section can then accommodate (in the vertical dimension) two Band IV or two Band V panels.

Data Summary

	Band IV Panel	Band V Panel
Frequency:	470-630 Mc/s	600-870 Mc/s
Max. power:	3.5 kW (at 470 Mc/s)	2.2 kW (at 870 Mc/s)
V.S.W.R over specified band:	<1.15 (both).	
Nominal output impedance:	50 Ω (both).	
Gain (over a half-wave dipole) per panel:	14 dB approx. at mid-band (both).	
Polarization:	Horizontal	
Dimensions:		
Aerial panel		
Height	7 ft 6½ in. (2.3 m)	5 ft 3½ in. (1.6 m)
Width	2 ft (61 cm)	1 ft 5½ in. (44 cm)
Cylinder		
Diameter:	5 ft (1.5 m)	
Length of standard section:	16 ft (4.8 m)	



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An aerial panel with and without cover.

Marconi

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