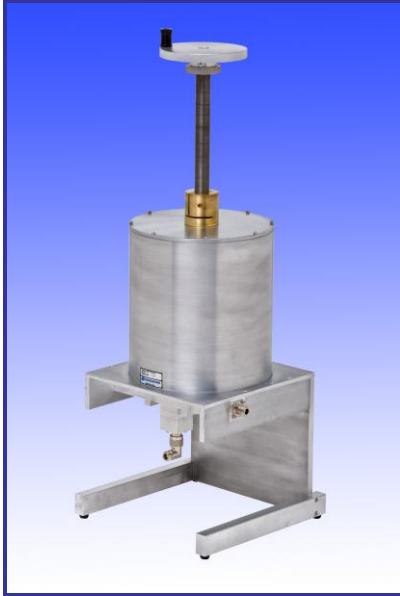# EM-7846 | Tunable Notch Filter Network

Description

The Electro-Metrics Model EM-7846 Tunable Notch Filter Network is a turntable cavity rejection filter operating from 2.2 to 3.1 GHz and used to perform specification compliance testing as stated in MIL-STD-462 and other related standards where attenuation is required at one selected frequency. The cavity exhibits very sharp resonances at the tuned frequency with low insertion loss and low skirt attenuation.

The EM-7846 has optimum performance when resonance in the TE011 mode and can operate over a wide range of power levels. The cavity and associated tuning mechanism is constructed of copper, brass, and aluminum alloys. The network is supported by four (4) legs mounted to the square base plate of the cavity cylinder.

Due to the precise nature of the cavity for operation in the designated frequency range, care should always be taken to ensure that the network mechanisms are not damaged when being used or transported.

Specifications

Electrical

Frequency Range: 2.2 GHz - 3.1 GHz

Rejection: 50 dB minimum @ tuned frequency
80 dB typical

Insertion Loss*: <5 dB typical.
15 dB worst case

Notch Characteristics:
Total Rejection ** 35dB or more at $f_o \pm (<0.006 f_o)$
40dB or more at $f_o \pm (<0.0002 f_o)$

Impedance: Designed for 50Ω system

Connector: Type N, female

Mechanical

Height: 59.5cm (23.4")
(with maximum screw extension)

Height, Cylinder: 23.1cm (9.1")

Diameter, Cylinder: 21.0cm (8.25")

Width, Stand: 26.7cm (10.5")

Weight: 26.7cm (10.5")

*In Cavity Notch Filters, insertion loss excludes the fundamental TE011 mode notch, TE011 fundamental harmonic notches, and notches created by modes other than the TE011 mode. In all notch filters, insertion loss versus frequency will change each time a notch is tuned to a different frequency. Determination of the insertion loss must be made after the unit is tuned to the fundamental to insure that the insertion loss is compensated for when data is being gathered during the test process.

** Total Rejection = Insertion loss at f_o + Notch Depth

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