The Directional Coupler Specification Sheet

Here are some typical parameters used to specify **technical** the performance of directional couplers!

Bandwidth (Hz)

A directional coupler, like all other devices, can effectively operate only within a **finite bandwidth**. Generally, bandwidth is defined as the frequency range where the **coupling** is that of the specified value, within some minimum deviation (e.g., 3 dB).

Port Impedance (Γ, return loss, VSWR, S_{11}, Z_{in})

A parameter that specifies the match of the input ports. Can (and will) be specified any number of ways.

Input power (Watts)

The maximum input power the coupler can handle before it will be **damaged**.

Coupling (dB)

Directivity (dB)

Isolation (dB)

Mainline Loss (dB)

Coupling Loss (dB)

Insertion Loss (dB)

Coupling Flatness (dB)

This parameter specifies how much the coupling varies over the bandwidth of the device. **Typically** this value is 1 to 2 dB or less.

Note that many of the values are dependent! For example,

ML= CL + IL (dB)

and

I = C + D (dB)