

MICROWAVE CHARACTERIZATION OF LIQUIDS (1 - 50 GHz)



We offer the most accurate and highly repeatable resonant fixtures dedicated to the measurement of liquids in the **1 – 50 GHz** range. These fixtures allow measuring the **dielectric constant (Dk)** and **dissipation factor (Df)** of the liquid under test from the measured resonance frequency and the corresponding quality factor, respectively.

The family of solutions consists of:

1. **Dielectric resonators** operating at $TE_{0m\delta}$ modes
 - **frequency range:** 1 – 5 GHz
 - **dielectric constant:** $Dk = 1 - 100$ (accuracy: $\delta Dk < 0.5\%$)
 - **loss tangent:** $Df > 10^{-4}$ (achievable accuracy: $\delta Df < 2\%$)
 - **temperature:** 0 – 100°C
2. **Cavity resonators** operating at TE_{011} modes
 - **frequency range:** 10 – 24 GHz
 - **dielectric constant:** $Dk = 1 - 20$ (accuracy: $\delta Dk < 0.5\%$)
 - **loss tangent:** $Df > 10^{-4}$ (achievable accuracy: $\delta Df < 2\%$)
 - **temperature:** -40 – +100°C
3. **Fabry-Perot open resonator (FPOR)** operating at Gaussian modes
 - **frequency range:** 15 – 50 GHz (1.5 GHz resolution)
 - **dielectric constant:** $Dk = 1 - 15$ (accuracy: $\delta Dk < 0.5\%$)
 - **loss tangent:** $Df > 10^{-4}$ (achievable accuracy: $\delta Df < 2\%$)
 - **room temperature only**

