

# 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<sub>0m6</sub> modes

- frequency range: 1 – 5 GHz
- dielectric constant: Dk = 1 – 100 (accuracy:  $\delta Dk < 0.5\%$ )
- loss tangent: Df > 10<sup>-4</sup> (achievable accuracy:  $\delta Df < 2\%$ )
- temperature: 0 – 100°C

## 2. Cavity resonators operating at TE<sub>011</sub> modes

- frequency range: 10 – 24 GHz
- dielectric constant: Dk = 1 – 20 (accuracy:  $\delta Dk < 0.5\%$ )
- loss tangent: Df > 10<sup>-4</sup> (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<sup>-4</sup> (achievable accuracy:  $\delta Df < 2\%$ )
- room temperature only

