OVEN MICROWAVE CHAMBER (with spectral windows)

Objectives
Prototype chamber for recreate the mixing gas in the interstellar medium. This prototype has been built to demonstrate the astronomical receivers can be used for molecular characterization in experimental gas chambers (spectroscopy and/or chemical reactivity) in laboratory astrophysics. It was designed with non-parallel windows to avoid multiple reflections between the two windows during the spectra acquisition with astronomical receivers.

Environmental conditions
- UHV vacuum standard chamber with CF flanges.
- To control the chemical process during the experiments, a differentially pumped quadrupole mass spectrometer working up to 100uma.
- Depending on the molecular excitation and dissociation process, inductively coupled radio frequency (RF) discharge or UV radiation, different instrumentation was placed inside the chamber.

Technical parameters
- Stainless still cylinder of 40cm length and 25cm diameter giving a total volume of 20 liters.
- UHV vacuum standard chamber with CF flanges.
- Quartz windows in DN250CF