

BGR (Biological Geological Reactor)

Objectives

Simulate subsoil conditions under an ice layer of telluric planets (Mars, The Earth, The Moon, Europa) under low pressure conditions. Analyze through real-time spectroscopic techniques the physical chemical evolution of the substrate and the gases of the atmosphere, as well as the production of oxygen in bio samples such as algae, lichens and cyanobacteria.

The BGR are inside MARTE vacuum system on sample holder.

Technical parameters

- All materials compatible with vacuum: Stainless Still, ABS, Peek, Aluminium, Alumina, Cooper.
- Temperature range: $-85^{\circ}\text{C} < T < 125^{\circ}\text{C}$
- Sample dimensions: 90mm diameter, height maximum: 50mm
- Water ice window from 5mm thickness and 100mm of diameter.
- Wheather control (pressure, gas composition, surface and ambient temperature, radiation (UV & VIS), humidity and hydration).

Analytical Techniques

- **RGA** (Residual Gas Analyzer).
- **PAM fluorescence**
- **RAMAN**

