

## IBR (Ice Biological Reactor)

### Objectives

To simulate the interior of ice-formed cavities analogous to those found within the polar regions of terrestrial planets. To transform these cavities into a water-ice repository capable of filtering radiation and providing thermal and environmental isolation of the interior from the exterior. Within the reactor, the main environmental variables can be modified and monitored while astrobiologically relevant organic material is present inside. The IBR is located inside the MARTE chamber, within a thermal-exchange ring that enables real-time ice generation.

### Technical parameters

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

