

Technical specification of equipment

File number: 20LIC.008

1. Equipment description

Breathing Machine

The breathing machine is an instrument required by the European standards EN 149:2001, EN 405, and EN 13274 for conducting the test defined for respiratory protection equipment, and specifically, the pre-conditioning and simulated wearing of respiratory protection devices before testing, breathing resistance test (static and dynamic), and the determination of the inhalation carbon dioxide content.

The device is composed of solenoid valves, a CO₂ flow meter, and a CO₂ analyzer, allowing the simulation of a respiratory cycle. The use of the equipment is indicated for fixed installations, with a user selective breathing frequency of 25 cycles / min, and 2.0 liters for breathing strength.

2. Technical specifications

The equipment must comply with the technical specifications specified below:

- The system must allow selecting an appropriate swept volumes, including 1.0, 1.5, 1.75, 2, and 2.5 liter at variable rates up to 40 strokes per minute.
- Equipped with a CO₂ slave cylinder, two main lung valves and 3 CO₂ valves.
- Equipped with a CO₂ flow meter and a CO₂ analyzer
- Equipped with solenoid-operated valves to provide positive air flow control
- Equipped with a humidifier in the exhaled air circuit, so that the temperature of the exhaled air is 37 + 2 °C and 95% R.H.

The system must allow assembly in ITENE's laboratory without requiring local extraction systems

3. Other features

- Technical support coverage and speed of response from the technical service will be valued, as well as additional utility software packages.
- Availability of consumables and/or replacement parts for 10 years minimum.



- Global maintenance and calibration contract will be assessed: coverage must include preventive maintenance, repair, labour and periodic calibration of the equipment during the term of the contract.
- Training in the use of the equipment.