



GAMMALAB

Bench-top O₂ analyser and leak detector.



The **GammaLab** has been developed to test soft Packaging using Modified Atmosphere Packaging (MAP). The Oxygen measurement is executed first, followed by a leak test. It has been specifically designed for laboratories in Factories that have to follow stringent Quality Inspection procedures and processes like **ISO 22000 & HACCP**. The values of Oxygen level and leak test are available in real time via a RS 232 line.

GammaLab and MAP.

MAP dramatically extends the shelf life of packaged food products, providing the gas recipe remains uncompromised throughout the storage period specified by the Manufacturer. Therefore, undesired exchanges of leaks between the gas inside the package and the outside atmosphere have to be limited to the absolute minimum.

Two extreme pitfalls have to be avoided:

- ◆ not checking at all the tightness of the package, and hoping for the best.
- ◆ placing stringent upper limits, which in turn create very high product rejection rates that would unnecessarily increase costs.

Therefore, Manufacturers need to identify the value of the maximum acceptable leak rate above which the gas recipe would be altered too much, therefore compromising committed quality levels.

One of the purposes of the **GammaLab** is to help manufacturers identifying this value.

To achieve this, the manufacturer will pick samples from his production line, store them, and test each of them after a predetermined time with a **GammaLab**. The leak (in cc/mn) and the O₂ level in each packaging will be measured and recorded for further study.

By testing a sufficient number of samples, the value of the leak (in cc/mn) above which a packaged product should be rejected will be identified.

GammaLab main advantages:

- ◆ Establish the relation between the leak magnitude and the O₂ content over a period of time for MAP.
- ◆ Data immediately available .
- ◆ Accurate analyzed results.
- ◆ Cost savings (the **GammaLab** operates without consumables).
- ◆ **ISO 22000 & HACCP** compliance.
- ◆ Brand protection and lasting taste for your products.
- ◆ Visualization of the leak size via a coupler connection.

Operating instructions:

Place a sample under the perforating tower, adjust the tower manually downwards until it is in contact with the sample. Perforation starts automatically, followed by the O₂ test and the leak test.

Results are visible on the **GammaLab** screen, these can be transferred instantly to a computer via a RS232 connection to study the results on a pivot table. These can also be visualised on a Gauss chart together with the pre-set parameters

Technical specification:

The **GammaLab** operates according to Flow measurement at a Constant Pressure, following DIN 55508-1 of 01/02/2018.

The **GammaLab** consists of 2 separate units: a **GammaTower** (O₂ analyser & patented perforating device) and a **GammaBox** (leak testing unit). The **GammaTower** & the **GammaBox** are communicating via a PS/2 cable and a PU tubing.

1. GammaTower:

O₂ analyser & patented perforating device.



OLED display 1,5".

Touch sensitive buttons for perforating depth, Oxygen-reject adjustment.

Servo driven internal perforating thin conical stainless steel pointer.

Silicon bellows diameter: 15mm* (* other sizes / shapes: consult us).

Cantilever holder for free movement of tower.

O₂ sensor: FIGARO KE 25 from Japan.

Temp: min/max 5 – 60°C.

When calibrated at both 0% and 100% of O₂, accuracy in the range from 0-100% O₂ shall be within ±1% of full scale).

Life expectancy at 20°C in normal air (1013hPa / 20.7% O₂): 3 years.

Micropump XAVITECH V200 orange from Sweden.

2. GammaBox:

Leak testing unit.



Structure: steel and ABS.

Display: 3,5" resistive touch screen.

Internal air pump.

Alicat electronic pressure controller from U.S.A., 1000 mbar scale.

Alicat mass flow meter from U.S.A., 1000 sccm scale.

Microprocessor: embedded ATMEL2560, 16 Mhz.

Calibrated leak port.

Foot print: 260 x 250 mm Weight: 10 Kg.

3. Options:

Calibration CheckLab.



This accessory allows you to compare the flow rate of your instrument against that of a calibrated leak.

If the flow rate of the **GammaLab** at a given pressure is between the minimum and maximum limits, no further checks are needed, and you can continue to use your **GammaLab**. If not, further investigation is required.

The **GammaLab** is guaranteed 3 years.

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