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PRODUCT INFORMATION

January 2022

technical@astaaratechnology.com

Leak detection technology for flexible packaging



GVWWVTVB

O₂ analyser and leak detector laboratory set.



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 Food Safety Quality Inspection procedures and processes like ISO 22000 & HACCP. The values of Oxygen level and leak test are available in real time via a USB.

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 too stringent 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.

GammaLab unique feature: Altitude Resistance Simulation.

The objective of this simulation is to determine at what altitude a flexible packaging starts to leak when it is transported by air. The flexible packaging is exposed to a stepwise differential pressure increase (mBar), that exactly replicates the stress encountered during air transportation because of altitude increase. At the same time, a leak test is being performed. The manufacturer can therefore accurately identify the altitude at which his flexible packaging is starting to leak.

All parameters are configurable.

GammaLab main advantages:

- Measure leaks > 5 μ m.
- Establish the relation between the leak magnitude and the O₂ content over a period of time.
- Data immediately available.
- Accurate analyzed results.
- ISO 22000 & HACCP compliance.
- Resistance altitude simulation (unique feature).
- Brand protection and lasting taste for your products.
- Cost savings (the **GammaLab** operates without consumables).
- Manual calibration check.
- Visualization of the leak size via a coupler connection (optional CharlieH2O).

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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 O_2 test and the leak test or the altitude simulation test.

Results are visible on the **GammaLab** screen, these can be transferred instantly to a computer via a USB memory stick 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** (O_2 analyser & patented perforating device) and an **Astaara Leak Detector** (leak testing unit). The **GammaTower** & the **Astaara Leak Detector** are communicating via a PS/2 cable and a PU tubing.

1. GammaTower:



O₂ analyser & patented

perforating device.

- OLED display 1.5 ".

- 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 $\pm 5\%$ of full scale).

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

2. Astaara Leak Detector:

Leak Detector unit.

Leak detection technology for flexible packaging

Structure: steel and ABS.

Display: 4.3" resistive touch screen.

Internal air pump.

Electronic pressure controller from U.S.A., 1000 mbar scale.

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.

Optional: semi-automatic flow calibration check.

Astaara provides optional calibrated leaks for flow (**CharlieCal**). Each calibrated leak is delivered with a calibration certificate. A document is provided with the **CharlieCal** that allows to verify the correspondence between the flow rate measured by the Astaara leak detector and the value of the calibrated leak.

The **AlphaLab** is guaranteed 3 years.

WARRANTY TERMS AND CONDITIONS, other ASTAARA products, videos, dimensions, weights, drawings and further information @ www.ASTAARATECHNOLOGY.com.

Manufacturer: Astaara Technology Pte. Ltd.

Singapore.

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