



# LABORATORY ANALYZERS



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# The next-gen of digitalization for products and supply chains

Our journey continues towards technological excellence, guided by one shared vision and the mission to accelerate technological innovation and digitalization by connecting the physical and digital world with the integrated value chain.

We aim to protect and create value for brands, governments and for all the people, to improve the quality of life.

## **QUALITY INSPECTION**

Quality control for products, packaging and printing

### TRACK AND TRACE

Serialization and aggregation solutions

### DIGITAL FACTORY

Performance and efficiency in manufactoring

### SUPPLY CHAIN TRANSPARENCY

End-to-end supply chain digitalization and end user connectivity

### **SERVICE**

360° support, 365/24 assistance





Since 1998, FT System has developed technologies and competence in inspection aimed to guarantee the quality control of beverage products and packaging. Expertise and technologies that continue within Antares Vision Group

### LASER SPECTROSCOPY DIVISION

WE ARE SPECIALISTS IN DESIGNING AND PROVIDING **SENSORS** AND **MEASUREMENT SYSTEMS**BASED ON "**TDLAS**" TECHNOLOGY REALIZED TO BE INTEGRATED IN **NON-DESTRUCTIVE INSPECTION** SOLUTIONS
FOR THE BEVERAGE, FOOD AND PHARMACEUTICAL INDUSTRIES

# TDLAS LASER SPECTROSCOPY TECHNOLOGY

## WHAT IS "TDLAS" TECHNOLOGY?

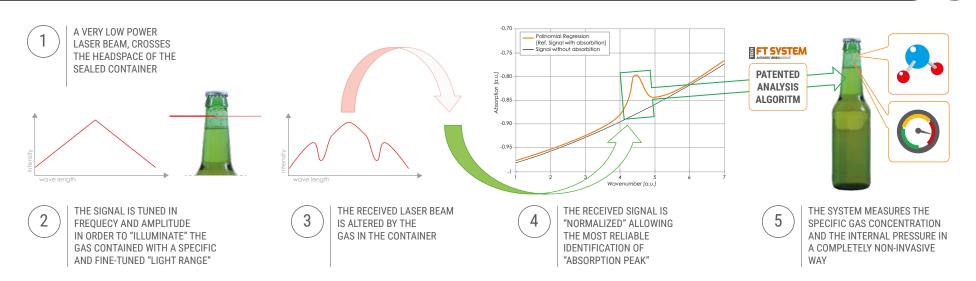
# Tunable Diode Laser Absorption Spectroscopy It's a rapid, reliable and non-destructive analytical method suitable for monitoring Gas concentration and pressure/vacuum measurement in sealed containers

Certain molecules in their gaseous state have specific frequencies at which they absorb light.

This type of molecula acts as a filter, but only for its specific light frequencies.

The analysis of light changes due to the molecula interaction with a laser light provides many information in a totally non-invasive way

## HOW DOES IT WORK?



### CO2 CONTENT ANALYSIS AND PRESSURE MEASUREMENTS

EVO-01 CO2







### TOTAL PRESSURE MEASUREMENT IN NITROGEN DOSED PRODUCTS EVO-01 N2







#### **MARKET**





BEER







### **MEASUREMENTS**

- Total pressure
- CO2 Partial pressure
- CO2 Dissolved in the liquids
- Temperature

Results available at room temperature and at 20%C

#### **CHARACTERISTICS**

- Measuring Range 0.5 10 bar\*
- Accuracy Down to ± 50 mbar
- Measuring Cycle ~ 5 sec
- \* Absolute bar

### **USEFUL FOR**

- Fermentation process monitoring
- Pressure evolution in time
- Sealing after pasteurization
- Bottle permeability in time
- Closure sealing in time
- New closure test
- Quality control

**JUICE** 

WATER

**MARKET** 



SOFT-

**DRINKS** 

### **MEASUREMENTS**

- Total pressure
- Temperature

Results available at room temperature and at 2011C

#### **CHARACTERISTICS**

- Measuring Range 0.5 2.5 bar\*
- Accuracy Down to ± 50 mbar
- Measuring Cycle ~ 5 sec
- \* Absolute bar

### **USEFUL FOR**

- Nitrogen doser monitoring
- Leak detection
- Pressure evolution in time
- Bottle permeability in time
- Closure sealing in time
- New closure test

### VACUUM LEVEL MEASUREMENT IN BOTTLES OR JARS

EVO-01 V







## LOW CO2 CONCENTRATION MEASUREMENT IN BOTTLES OR JARS



**EVO-01 TRACE** 







### **MARKET**









**JUICE** 

### **MEASUREMENTS**

- Vacuum measurement
- Temperature

### **CHARACTERISTICS**

- Measuring Range 0.5 2.5 bar\*
- Accuracy Down to ± 50 mbar
- Measuring Cycle ~ 5 sec
- \* Absolute bar

### **USEFUL FOR**

- Leak detection
- Sealing after pasteurization
- · Closure sealing in time
- Foil sealing/permeability in time
- Filling+Capping Process monitoring
- New closure test

### **MARKET**



FOOD







### CO2 Low concentration

**MEASUREMENTS** 

Temperature

#### **CHARACTERISTICS**

• Measuring Range 0 - 30% of CO<sub>2</sub>

~ 15 sec

- Accuracy Down to ± 0.05% of CO<sub>2</sub>
- Measuring Cycle

#### **USEFUL FOR**

- CO2 increase due to possible bacterial activity
- CO2 evolution in time
- Test on contaminants



**BASED** 



### **02 CONCENTRATION MEASUREMENT** IN BOTTLES OR JARS

EVO-01 02





### 02/C02 CONCENTRATION MEASUREMENTS IN MAP FOOD TRAYS AND FLEXIBLE PACKS

EV0-P







### **MARKET**



**FOOD** 

SOFT-

DRINKS

**PHARMA** 





### **MEASUREMENTS**

• 02 Concentration

### **CHARACTERISTICS**

- Measuring Range 0 100% of 02
- Accuracy Down to ± 0.2% of O2
- Measuring Cycle ~ 20 sec

#### **USEFUL FOR**

- Quality control
- 02 variance in time
- Sealing after pasteurization
- Bottle permeability in time
- Closure sealing in time
- New closure test

TRAYS MAP Packed

#### **MARKET**



**BAGS** MAP Packed

#### **MEASUREMENTS**

- O2 Concentration
- CO2 Concentration

Upon request are available these configurations: 02 only | C02 only | 02+C02

### **CHARACTERISTICS**

- 02 Measurement
- Range 0 - 100% of O<sub>2</sub>
- · Accuracy ± 0.3% of O<sub>2</sub>
- CO2 Measurement
- 0 100% of CO<sub>2</sub>
- Accuracy ± 1% of CO2
- Measuring Cycle ~ 30 sec

### **USEFUL FOR**

- Packaging process monitoring
- MAP gas monitoring
- Leak detection
- Package permeability in time
- Gas development in time
- Gas evolution in time
- New sealing process test



7" Touch screen

- High definition
- Colors



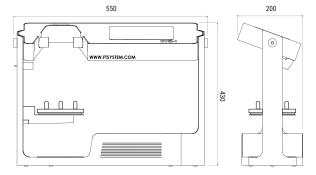
Few touches for

- All results
- Products settings
- Data exchange



Maximum user support

- Auto-alignment system
- Automatic change over
- Motorized vertical adjustment





Compact and easy to move

- Automatic changeover
- Customized formulas
- Specific supports for non-standard bottles
- Remote assistance
- Automatic measurement of product temperature
- Dedicated training classes

### **ALL KIND OF CONTAINERS AND CLOSURES**

 Results not affected by material\* and color of container and closure

### RELIABLE AND REPEATABLE **MEASUREMENTS**

- Not affected by physiological variation in containers and closures
- Test repeatable in time on the same product

### **SAFE AND HYGIENIC**

- Maximum safety [no package pierce]
- No products preparation for test
- No contamination risks while testing

### **COST REDUCTION**

- No products disposal
- Products marketable after test
- No consumable or wear-off parts
- Extremely long lifecycle of laser sensors

### **NEW PACKAGING DEVELOPMENT SUPPORT**

- Container permeability test
- Sealing test on new closures
- Pressure/vacuum changes in time
- Gas development/evolution in time

## INTEGRABLE SENSORS AND GAS SENSING SOLUTIONS

### OVERHEAD THE VALUE OF YOUR PRODUCTS, BREAKTHROUGH YOUR MARKET PRESENCE

#### **PHARMA**

02 Measurement 02 Measurement Relative HUMIDITY VACUUM measurement C02 Measurement [Low pressurized Vials]
[Low O2 concentration in "mixture" atmosphere]
[Vials with lyophilic substances]
[Vials with liquids]
Low CO2 concentration in vials
with liquids or lyophiles]

LEAK detection

### **FOOD BOTTLED**

PRESSURE measurement VACUUM measurement CO2 Measurement

[Nitrogen dosed]
[Hot-filled or pasteurized]
[Low CO2 concentration - fermentation or microbacteriological activity]

LEAK detection

#### FOOD "MAP" PACKED

O2 Measurement CO2 Measurement LEAK detection [In bags – MAP packaged] [In bags and trays – MAP packed] [In bags and trays – MAP packed]

### **BEVERAGE**

PRESSURE measurement VACUUM measurement LEAK detection [Carbonated - Nitrogen dosed] [Hot-filled or pasteurized]

#### **KEGS Line**

Micro-Leak detection [CO2]

#### SOME APPLICATION EXAMPLES





Integrated sensor - "pharma" line





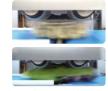
Integrated sensor "Milk based" lin





Integrated sensor "shredded cheese" lin





Integrated sensor "MAP packed food" line





Integrated sensor "beverage" line





Integrated sensor "kegs" line



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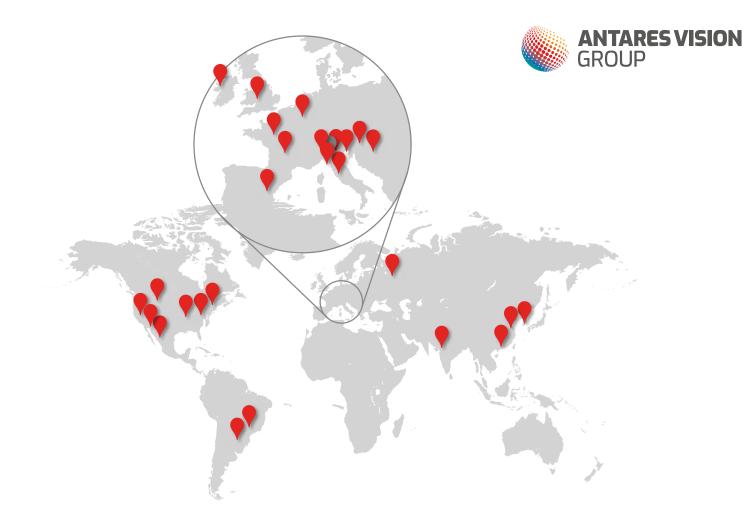






# **COMPANY SITES**

ITALY (7) (Global Headquarters) ARGENTINA (1) ASIA PACIFIC (1) BRAZIL (1) CHINA (1) CROATIA (1) FRANCE (3) **GERMANY (1)** INDIA (1) IRELAND (1) MEXICO (1) RUSSIA (1) SERBIA (1) SPAIN (1) **SOUTH KOREA (1)** 





UK (1) USA (7) [Incl. CANADA]

> Experience the power of TRUSTPARENCY®

Our mission is to accelerate technology innovation and digitalization by connecting the physical and digital worlds with the integrated value chain. We empower our customers to protect product, profit, people and planet through a comprehensive technology ecosystem: inspection systems for quality control; track and trace solutions for anti-counterfeiting and supply chain transparency; and smart data management tools for maximized efficiency and digitalization of the supply chain, from raw materials to the final consumer.





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