



# Process Measurement, Inspection And Quality Control Equipment



CO2 & O2 Measurement



Torque Measurement



Food Texture



Stress Measurement



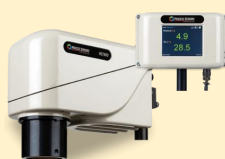
Refractometer



Leak Test



Box Compression



Moisture Measurement



Methanol Measurement



Temperature & Humidity  
Logger



Colour Meter



Headspace O2  
Measurement



Bottle & Can Filler



Fill Level Measurement



Label Inspection



## About Techotrix

Techotrix is proud to be a wholly owned Australian company and its founder Tarun Patel is Professional Electrical Engineer with member of Engineers Australia. He has worked last 27 years in variety of industry in Australia and New Zealand and gained high respect for excellent support and services.

Techotrix specializes in **Sales and Service of Quality Control Equipment** to suit various industry needs. We strive to maintain a high level of technical advice and support on all equipment we sell. We pride on our technical knowledge, flexibility and ability to provide cost effective solutions to industry we serve.



## Techotrix Services

### Product Selection

Techotrix is authorised distributor and supply world class QC equipment and process control products. We are known for providing excellent technical support and right advice on which products will best suit your needs.



### Maintenance and Services

Techotrix offers an array of support and service plans to help and ensure that your process equipment continues to meet your expectations in regard to plant availability, product quality and process safety.

- In-House Repair and Routine Maintenance Services
- Field Breakdown and Calibration Services
- Service Level Agreement
- Function Modification



### Spare Parts Supply

Techotrix keeps full stock of high-quality original parts for preventative maintenance and repairs of all equipment we sell. Whatever is your problem or immediate need, we assure you delivery of right parts or alternative solution to keep your process up and running in shortest possible time.



### Calibration Services

At Techotrix, we offer full range of calibration services for all quality control and measuring equipment that we supply. Our company trained technicians are experienced, qualified and performing calibration job on-site or in-house with highest possible standards and unrivalled quality assurance.



### Instrument Training

Techotrix aims that customer must achieve best performance and consistence result of instrument supplied. Hence, we provide customized training to enhance knowledge and skills of operator, electricians, advanced users and laboratory technicians either on site or in our office conference room. Our training provides valuable insight into the theory, principles, operation, maintenance, safety and calibration.



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## Torque Measure



### ADATMV5-S, On-line Automated Torque Tester

Automated Torque Tester is a quality control system which has been designed for connecting to the production lines to carry out the automatic torque control and provide measure data for instant inspection. With weighing control and bubble test options, machine is able to integrate the online weighing and secure seal control. Customize screen display and cycles are available which provides more flexibility on your control requirements.



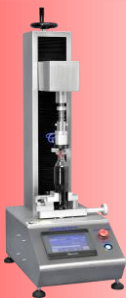
### ADAITS, Online Automated Integrated Tester

The ADAITS Online Automated Integrated Tester for bottled beverage is a fully automatic quality control system specially developed by AT2E based on their years of instrument design and application requirements of customers. The ADAITS consists of different testing modules, which can be integrated to test the torque, weight, application angle, secure seal performance, inner-pressure, top load, etc., and each testing modules can be freely combined according to the demand to meet the different testing requirements of customers.



### ADATMV5, Monopost Automated Torque Tester

Fully automatic torque tester with servo motor. Possible options are: top load system, pneumatic 3 claws chuck, analog curve control, customized display and special cycles, neck clamping, mini printer.



### ADATMV-ECO, Semi-Automated Torque Tester

Semi-automatic torque tester for beverage, cosmetic, chemical, food and electrical products. High speed microprocessor and precision stepper motor integrated, higher accuracy and repeatability, one key start, automatic zero before restarting cycle. Possible options are: pneumatic 3 claws chuck, quick clamping system, mini printer.



### TMV7, Touch Screen Electronic Torque Tester

AT2E Torque tester is designed with a special mechanical system for measuring torque which cancels most non-coaxial and top load influences on the measurement. These features cancel most operator induced influences on the measurement for maximum repeatability. It comes with 7" touch screen colour display, SS body and 30 product memory.



Food & Beverage / Pharmaceuticals / Brewing & Vinery / Cosmetic  
/ Chemistry / Metrology / Packaging / Enclosure Supplier



### TMV-Eco Torque Tester

AT2E torque testers are designed with a special mechanical system for measuring torque which cancels most non-coaxial and top load influences. These features cancel most operator induced influences on the measurement for maximum repeatability. AT2E ECO model is entirely mechanically, meaning it doesn't need electricity to operate and can be placed on any work environment without considering outlet or cable placement.



### AMTT-2 Automated Torque Tester

AT2E's AMTT 2 Automated Torque Tester is specially designed for measuring and controlling the torque of cap on cassette bottle, vials and plastic bottle. It's stainless steel design complies with the industrial standard. Our AMTT 2 is designed with a special mechanical system for measuring torque which cancels most non coaxial and top load influences on the measurement. Our quick clamping system is compatible for different sizes of samples and makes the sample clamping easy and simple. These features cancel most operator induced influences on the measurement for maximum repeatability.



### BT ETA TORQUE ECO, Dynamometric Torque Bottle

The new AT2E BT ETA TORQUE ECO has been developed in order to allow operators and calibration team to check in a fast way the accuracy of any torque testers. Easy to use, just install the BT ETA TORQUE BOTTLE on the torque tester's measurement table and turn slowly and smoothly in opening or closing direction. Then just compare the value on your equipment to the BT ETA TORQUE ECO torques setting



### BT ETA TORQUE, Dynamometric Torque Bottle

It is designed to be installed under capping heads. AT2E's BT ETA TORQUE is built in with special mechanism permitting to avoid top load influence on measurement. It's also built in a high-speed electronic reading of measurements. Device can be custom-made according to different bottle or can profile. Using with our BT ETA Measure software, it's very convenient for users to save, manage and analyse the data.



### BT ETA 5, Touch Screen Dynamometric Torque Bottle

It is designed to be installed under capping heads. AT2E torque meters are designed with a special mechanical system for measuring torque which cancels most non-coaxial and top load influences on the measurement. These features cancel most operator influences on the measurement for maximum repeatability.





## Leak Test – Pressure / Vacuum



### SSA-ECO, Secure Seal Analyzer

It is for testing the secure seal performance of products. With AT2E patent needle, it makes the installation and piercing very quick and easy in any medium. By vacuum technology, stainless steel body and special design, the needle uses a function of self-holding on the tested products. Typical screwed needle is also available.



### SSA-D, Secure Seal Analyzer

It is for testing the secure seal performance of products. With AT2E patent needle, it makes the installation and piercing very quick and easy in any medium. By vacuum technology and special design, the needle uses a function of self-holding on the tested products. Automatic 2 steps speed increasing pressure regulators and tempo / Stainless steel body / RS 232 communication output.



### SSA-AUTO, Automatic Secure Seal Analyzer

It's an automated machine with automated piercing process and pressurizing process for testing the secure seal performance on products. By vacuum technology and special design, the needle uses a function of self-holding on the tested products. Stainless steel design makes it resistant to any explosion during the test and ensures the operator's safety.



### SSA-AUTO-F, Waterless Automatic Secure Seal Analyzer

It's an automated waterless machine with automated piercing process and pressurizing process for testing the secure seal performance on products. It detects leak automatically and records leaking pressure. Integrating AT2E patent needle, it allows automated installation. By vacuum technology and special design, the needle uses a function of self-holding on the tested products. Stainless steel design makes it resistant to any explosion during the test and ensures the operator's safety.



### CLA-ECO Can Leak Analyzer (3 positions)

CLA-ECO Can Leak Analyzer is specifically designed for analyzing the secure seal ability of the empty 3-pieces tin plate cans. Water bath design with free rotating can holders allows a 360° observation on the can body (especially welding position) for air bubbles. It also ensures no defect spot can be missed and provides reliable test result.



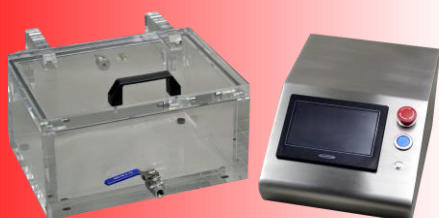
### VLT-ECO, Vacuum Leak Tester

VLT ECO is a manual operating vacuum leak tester. It's visual and easy to operate. Available for bottle, cap, can and soft packaging.



### VLT-ST, Vacuum Leak Tester

VLT-ST is equipped with a touch screen. It's visual and easy to operate. Adjustable vacuum and holding time stage setting, meets different test requests of various products. Available for bottle, cap, can and soft packaging.



### VLT-PLC, Vacuum Leak Tester

VLT-PLC is equipped with a touch screen and PLC system. It's visual and easy to operate. User defined test cycle (up to 16 modes). Pre-defined up to 4 steps of each test. Vacuum level and holding time adjustable. It offers product name, limit, operator, batch number memorization and printing function. Available for bottle, cap, can and soft packaging.



### SSA-PLC-12, Secure Seal Analyzer (12 Positions)

The SSA-PLC-12 Secure Seal Analyzer (12 Positions) is a special instrument developed by AT2E for control of the secure seal performance of caps on preforms. Linear pressurizing, able to set up to 4 pressurization steps, and hold the pressure according to the predefined period. Flexible position selection, each position can be controlled separately by system, users can choose to enable the positions (from 1 to 12) according to their needs.



### CTLT, Cosmetic Tube Leak Tester

AT2E CTLT Cosmetic Tube Leak Tester is for testing the secure seal performance of the cosmetic tube products. With the special design, use a seal rubber to form a temporary sealed condition from the tube bottom, then apply a certain pressure level to test the secure seal ability of the tube. Controlled by touching display, it's visual and easy to operate. Adjustable pressure and holding time stage setting meets different test requests of various products.





## Force Measure / Compression / Dynamometers



### BTLT-2, Glass Bottle Top Load Tester

Maximum top load resistance tester for glass bottle. PLC integrated and touch screen control. Suitable for different size of bottle by changing corresponding spacers. The top load test of containers is made up to a predefined pressure point (trial test) or until destruction. Huge sample capacity up to 600 mm high bottle.



### TCT-2, Traction and Compression Tester (Universal Tester)

Maximum top load resistance tester for PET bottles. PLC integrated and various of safety design. Suitable for different size of bottle or can by changing corresponding spacers.



### POT-1, Pull Off Tester

POT-1 has been studied and developed to be able to open step by step the pull off caps for carbonated beverages. The POT-1 includes an accurate dynamometer tester and semi-automatic cycle. Angle of the both steps is adjustable. And it's been designed for testing different height of bottle with cap. Easy to use, high repeatability in testing and built-in dynamometer with software.



### FT-1, Fatigue Tester

The "FT-1 Fatigue Tester" is used to test and analyse the durability and quality of all packaging in compression or traction direction. It's widely used in cosmetic, pharmaceutical and other industries.



### BT ETA FORCE SHF, Dynamometric Force Bottle

AT2E dynamometers include a special mechanical design permitting to avoid all influence from non-coaxial efforts. Also, built-in a high-speed electronic reading of measurements. It is designed to be installed directly under capping head (screw cap, pilfer proof, secure child) to control in real conditions (speed and top load) without dismantling.



#### **CET-1, Cork Extraction Tester**

CET-1 Cork Extraction Tester is a force test system. It has been designed for wine producer and cork manufacturing industries. Easy to use, it allows to measure cork extraction or insertion and permits to improve the cork products and assembly/sealing process. CET-1 ensures a repeatedly and accurate measure to check the push-in or pull-off force necessary to insert or extract the cork from bottles.



#### **DYNA-4000, Dynamometer**

Maximum top load resistance tester for PET bottles & Cans. PLC integrated and various of safety design. Suitable for different size of bottle or can by changing corresponding spacers.



#### **GBIT, Glass Bottle Impact Tester**

Special instrument for testing the impact resistance ability of various glass bottles and jars. The sample clamp is able to move flexibly on vertical or horizontal direction, convenient for adjusting the sample position. Instrument design accord with the law of the conservation of energy, ensured the testing accuracy and test reliability. Stable and accurate pendulum able to rotate and release freely. With stainless steel safety shield and user-friendly design, easier for operation.



#### **BTT-1, Bottle Tilt Tester**

Bottle Tilt Tester is a standard equipment to measure and evaluate the bottles resistance to tilt. Mainly used by glass, beverages, pharmaceutical and cosmetic industries. BTT-1 is friendly to use with its touch screen control to start test, adjust tilt angle and speed. BTT-1 automatically detects falls during test. It's equipped with non-contact visual sensors

### **CO<sub>2</sub> Measure / Pressure / Vacuum**



#### **CO<sub>2</sub>-CS, Automatic CO<sub>2</sub> Calculating System**

CO<sub>2</sub>-CS Automatic CO<sub>2</sub> Calculating System is an innovative and fully automatic CO<sub>2</sub> content calculating system which is newly developed by AT2E. With the innovative shaking system and design, it will be safer for operator. Integrated touch screen design offers a user-friendly operating process and abundant measuring information.



### **CO<sub>2</sub>DA, Automatic Shaker & CO<sub>2</sub> Calculator**

AT2E CO<sub>2</sub>DA - Automatic Shaker & CO<sub>2</sub> Calculator is a special instrument which is used for calculating the carbon dioxide content in filled glass/PET bottles and cans. The simple operation which also guarantees high reproducibility makes it become a significant equipment of quality control in the beverage industry.



### **CO<sub>2</sub>EASY / CO<sub>2</sub>EASY-D, CO<sub>2</sub> Measuring Device**

For a constant quality and taste of all kinds of carbonated drinks, the critical parameter is the CO<sub>2</sub> (carbon dioxide) content in the liquid. Our CO<sub>2</sub> measuring device is a standard equipment and widely used in breweries and in the non-alcoholic beverage industry for frequent measuring of the CO<sub>2</sub> content during production. Allows a fast and accurate determination of the CO<sub>2</sub> content in beer and carbonated drinks after piercing.



### **ABSD-1 Automatic Beverage Sampling Device**

ABSD – Piercing and" Automatic Beverage Sampling Device" allows sampling bottled or canned products. Without any operation, connect the pressurizing pipe to pressure source, install the beverage onto the base, press start and the piercing will be performed, then by pressure effect, liquid will flow into the measuring instrument installed beside. Several application in analysis suitable depending on the analysis instrument linked to your product. Mainly used in Beer and soft drinks industries.



### **CO<sub>2</sub>-P, CO<sub>2</sub> Purity Tester**

The CO<sub>2</sub>-P CO<sub>2</sub> Purity Tester is a special instrument which is for calculating the purity of CO<sub>2</sub>. The principle is based on absorption burette to measure the impurities (O<sub>2</sub> and N<sub>2</sub>) of CO<sub>2</sub> in a mixture of gases. It is widely used in breweries, the laboratory measurement of CO<sub>2</sub> recycling and purchasing.



### **PVG-A/D/P/SA/SD, PVG Series Pressure or Vacuum Testers**

The "PVG" is used to measure pressure or vacuum of can or bottle. Simply place the sample under the entity manometer or vacuum meter and lower the lever. Then read the value.



#### **BSD-1 Beverage Sampling Device**

BSD – Piercing and” Beverage Sampling Device” allows sampling bottled or canned products. With very easy operation, connect the pressurizing pipe to pressure source, install the beverage onto the base, lift up the handle and the piercing will be performed. Down the piercing needle up to the bottom’s sample, then open the micro tap to raise pressure into sample’s airspace, with pressure effect, liquid will flow into the measuring instrument installed beside. Many analysis applications are suitable, depending on the analysis instrument linked to your product.



#### **CDP-1, Pressure Calibration Device**

CDP-1 is a device for calibrating the pressure indicator. It allows operator to carry out a visual comparison between the calibrated indicator and the certified one. It is available for analog and digital indicator with different screw thread. With the high precision pressure regulating valve, users can easily adjust the target pressure value.



#### **BVPT-1, Bottle Vacuum-Pressure Tester**

BVPT-1 Bottle Vacuum-Pressure Tester is a device for controlling the result of vacuum action on bottle and check the potential deformation. It allows operator to carry out a visual comparison. Calibrated vacuum gauge indicator allows an accurate and easy reading. With the high precision pressure regulating valve, users can easily adjust the target vacuum value



#### **Permanent Aphrometer**

This aphrometer checks the evolution of the pressure during the secondary fermentation. Remove one bottle without cap from the filling machine and put the aphrometer on the bottleneck. The permanent aphrometer will remain on the bottleneck during the entire secondary fermentation. A gasket ensures the airtightness between the aphrometer and the bottleneck.



#### **Crown Cap Aphrometer**

This aphrometer is designed to check the pressure during the secondary fermentation. This Champagne pressure gauge checks instantaneously the pressure in the bottles topped on with a crown cap with or without plastic shutter. A gasket ensures the air tightness between the aphrometer and the crown cap.



### Simplified Aphrometer

The simplified Aphrometer is designed to check the pressure and the vacuum in the bottles of still wine (Bordeaux bottles, Burgundy bottles). Thanks to its sting this pressure gauge pierces corks and some synthetic corks, but it cannot pierce crown caps or all other metallic shutters. The cork ensures the air tightness.



### Cork Aphrometer

This aphrometer is designed to check the pressure after the disgorging process of sparkling wines. It measures the pressure in the champagne bottles topped on with a wire-hood and a cork. Its strong mechanism allows it to pierce easily the wire-hood and the cork to check. The cork ensures the air tightness during the test.

## Stress Application



### SCT-D, Stress Crack Tester (26 Positions)

The AT2E SCT-D Stress Crack Tester is designed to test the internal stress in bottle base and for determining the stress crack resistance of blow-moulded PET carbonated soft drink bottles by measuring the propensity for base cracking upon exposure to an aqueous sodium hydroxide solution under a controlled environment, so that to estimate the long term behaviour of bottles. Available in 6, 12, 18, 24, 26, 30, 32 and 36 positions.



### SCT-PLC, Stress Crack Tester

The AT2E Stress Crack Tester is designed to test the internal stress in bottle base and for determining the stress crack resistance of blow-moulded PET carbonated soft drink bottles by measuring the propensity for base cracking upon exposure to an aqueous sodium hydroxide solution under a controlled environment, so that to estimate the long term behaviour of bottles. Water filling, solution filling, pressurising, hold time and rest operations are fully automatic. Available in 1, 6 and 12 positions.



### SCT-Eco Stress Crack Tester (12 Positions)

The AT2E SCT-D Stress Crack Tester is designed to test the internal stress in bottle base and for determining the stress crack resistance of blow-molded PET carbonated soft drink bottles by measuring the propensity for base cracking upon exposure to an aqueous sodium hydroxide solution under a controlled environment, so that to estimate the long-term behavior of bottles.





#### **PL-P, Polarization Light for PET Preform**

Many of the defects found in PET container preforms can be detected by using the PL-P. Preforms viewed in polarized light exhibit a coloured birefringence pattern. The birefringence is a result of the polymer flow lines (molecular orientational strain) produced during the injection moulding process. The coloured pattern observed with preform held at 45° to the polarizing axis is known as an isochromatic fringe indicating the amount of birefringence. By correctly interpreting these flow patterns many preform defects can be detected.



#### **PL-G, Polarization Light for Glass**

The "PL-G" Glass Stress Viewer has been designed for the qualitative inspection of glass components including tableware, small bottles, jars, scientific glassware and ampoules. The adjustable working space and sloped design accommodate a wide range of products with the option of a magnifier to aid the inspection of small parts.



#### **TWB-1, Thermostatic Water Bath**

The TWB-1 Thermostatic Water Bath is a thermostatic water bath equipment that developed by AT2E. It is use to perform the thermostatic tests for products in various field, so that to provide reliable data for estimating the product quality.



#### **PLS, Production Line Simulator**

The PLS Production Line Simulator allows to simulate in a reproducible and accelerated way the friction on a packaging line. The testing process simulates the abrasions associated with contacts between bottles, typical of packaging lines. It is the ideal device for determining the build quality of glass bottles as well as their coatings, decorations and labelling.

### **Dimensional Measure**



#### **PBMS, Preform & Bottle Measuring System**

It is an automatic instrument for measuring the general dimension of preforms and bottles. The contour was extracted by the bi-telecentric lens and parallel light source, which ensures that the contour is not deformed and the measurement accuracy is ensured. Auto positioning and measuring the dimensions of the preform, not only the regular dimensions like neck diameter, thread diameter and the outer diameter of locking ring, etc., but also the flashing, concentricity and overall height, etc., the instrument can also recognize and record the cavity number automatically.





### UBPT-1, Universal Bottle Perpendicularity Gauge

UBPT-1 Universal Bottle Perpendicularity Gauge is used to measure the perpendicularity (deviation) of bottle and it's a standard equipment for packaging and beverage industries. It's applicable for various sizes of bottle with the special design of clamping and rotatory system. With automatic calculator, data can be sent to the calculator and read easily.



### PPG-A/D, Preform Perpendicularity Gauge

The PPG-D Preform Perpendicularity Gauge is used to measure the perpendicularity (deviation) of the preform. It is standard equipment for PET and beverage industries. With the high accuracy three jaws chuck, it can ensure the accurate measurement of different sizes of preform.



### AMTG-2, Accurate Magnetic Thickness Gauge

It is portable feeler gauge used to measure the thickness of non-magnetic materials, such as plastic, glass, ceramic, aluminium, titanium, copper etc. The accuracy of the measurement is not affected by the shape of the samples. Resolution of 0.01 or 0.001 mm. Simply place the steel ball on one side of the sample and the probe on the opposite side. Move the sample, steel ball will be drawn by probe and accurate thickness measurement between probe tip and steel ball will be done by Hall Effect sensor.



### PTG-A/D, Preform Thickness Gauge

PTG Preform Thickness Gauge is used to measure the preform thickness. It's easy to operate and applicable for various sizes of preform (various supports for different sizes of preform).



### BTG-D, Glass Bottle Wall Thickness Gauge

BTG-D Digital Glass Bottle Wall Thickness Gauge is a manual operating gauge which is used for measuring the wall thickness of glass bottles. It can offer quick and convenient way of thickness measurement for glass bottle production.



### HG -1, Height Gauge

HG-1 Height Gauge which is equipped with a measuring platform can be used to measure the height of bottle, can and other packaging. The gauge can be connected to AT2E "Seam Check" software or SPC system via the adapter and cable.



### FHG, Fill Height Gauge

Simple and useful measuring tool for fill height measurement. It's designed for all size bottles. Gauge may be present in inches or millimetres to check fill height level on production line or may be used to measure exact fill point of bottle and then compared to standard. Ruler may be raised or lowered to compensate for the thickness of various crown caps.



### BCG, Base Clearance Gauge

It is specifically designed for measuring the dome height in the bottom of PET containers. The Base Clearance Gauge adopted with a high accuracy Mitutoyo digital indicator with built-in port for serial communications. The ultra-flat measurement base ensures the high accuracy of measuring.

- Measuring range: 0-10 mm or 0-25 mm.
- Resolution 0.01 mm.
- Can be supplied with metal or transparent PMMA base plate.



### GCG, Gate Centre Gauge

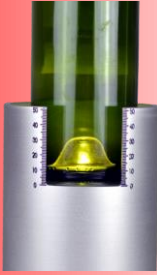
The GCG Gate Center Gauge is for quick and easy verify of the centricity of the injection point of a blown bottle. The adjustable centering clamp and easy-observing scale enables the quick and easy operation.



### LSS, Lightening System

A convenient device for quick check of glass bottle during production.

- Stainless steel design with white glass and LED light.
- Button on/off.
- Power source 230V/50 HZ or other on request.
- Dimensions on request.
- Adjustable light intensity (Optional).
- Bottom light (Optional).



### LS-1, Dome Height Lightening System for Glass Bottle

A convenient device for quick check of dome height of a glass bottle.

- Aluminum and water-proof design.
- LED light and graduation equipped.
- Button on/off.
- Power source 230V/50 HZ or other on request.
- Sample capacity:  $\varnothing 89$  mm, overall size:  $\varnothing 110 \times 175$  mm.



### PC-1, Preform and Bottle Neck Cutter

Allows to cut easily the bottles neck in order to prepare the bubble test with adapted cap holder or to measure some accurate points on a preform.



### FHS, Fill Height Syringe

FHS Fill height syringe is used to adjust water level in a bottle to a pre-determined fill height. It's a useful tool for accurate and quick checking the content of bottle.

## Crown Cap Measure & Test



### ODG-1, Outer Diameter Gauge

The aim of this unit is to test whether the outside diameter of the tested sample is within standard or not.

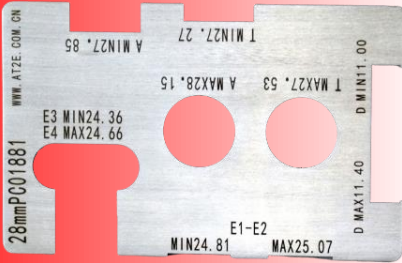
- Judgment of reference: the samples must adapt to the larger hole, while the samples must not adapt to the small hole.
- It can be custom-made as different diameters in numbers of holes.



### IDG-1, Internal Diameter Gauge

The aim of this unit is to test whether the internal diameter of the tested sample is within standard or not.

- Judgment of reference: the small end must adapt to the internal circle of the samples, while the larger end should not adapt to the internal circle of the samples.
- It can be custom-made as different diameters.



### PGNG, Go-no-Go Gauge

Quality control gauges for checking the threaded tops of glass and plastic containers. Check the threads, outside diameter, spacing, etc.



### CCLT, Crown Cap Leak Tester

Used for testing the air tightness of the crown cap. Stainless steel design ensures the durability of the tester during test. Cap the crown cap on the neck of the bottle mould, plunge the cap in the water tank, then increase the internal pressure and observe if there are air bubbles coming out, so that to test the air tightness of the caps. Widely used in breweries, beverages and caps manufacturing industries.



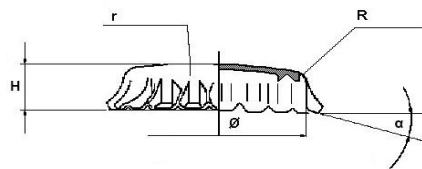
### HDC, Height and Thickness Gauge of Crown Cap

This unit has an excellent basis for measuring. It's easy to use. Crown cap height and thickness are measured by analog indicator. It is widely used in crown cap, brewery and beverage industries.



### CCAG, Crown Cap Angle Gauge

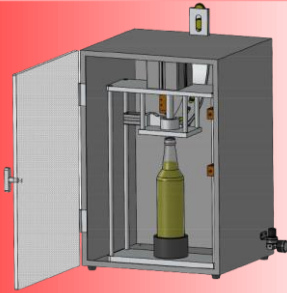
This unit is used to get a rapid and accurate measure of angle  $\alpha$  (see photo below) of the crown cap.



### ACD-1, Automatic Capping Device

It is an automatic capping device for laboratory using purpose.

- Pneumatic controlled.
- Various of safety design.
- Fully automatic capping, the capping process will be accomplished when the operator closes the door.
- Customize bottle spacer according to the sample dimensions.
- Stainless steel frame, strong and durable.



### ACCC-1, Automated Crown Capper

It is an automated crown cap capper for laboratory using purpose.

- Pneumatic controlled, various of safety design.
- Fully automatic capping, the capping process will be accomplished when the operator closes the door.
- Customize bottle spacer according to the sample dimensions.
- Stainless steel frame, strong and durable.
- Efficient cap preload design, up to 12 caps can be preloaded.



### CCTT, Tumbling Tester for Crown Closure

The CCTT Tumbling Tester for Crown Closure is mainly applicable to determine the shedding condition metal and coating off the situation. It is an indispensable instrument for cap manufacturing enterprises, breweries and quality inspection institutions.

## Burst Test



### PBBT-2, PET Bottle Burst Tester

PBBT-2 PET Bottle Burst Tester is a specialized test equipment for testing the internal pressure resistance of PET bottles. It's designed in accordance with the three international test methods which are commonly used. The PBBT-2 is capable to test the capacity of resilience under certain pressure or the rupture test of the PET bottle. Through the reproduction of the pressurization, the process has been linearized and it increases to the predetermined point or the point of bursting. After selecting the test program, the cycle will start automatically depending on the settings.



### PBBT-ECO, PET Bottle Burst Tester

PBBT-ECO PET Bottle Burst Tester is a specialized test equipment for testing the internal pressure resistance of PET bottles. It provides a high pressure, rapid pressurization testing function for the PET bottles. The PBBT-ECO is capable to test the capacity of resilience under certain pressure or the rupture test of the PET bottle. Using and maintenance of PBBT-ECO are easy and simple. It's free of electricity, which makes it more compatible and adaptable to different working environments. It's suitable for both plastic container manufacturers and users.



### GBBT-Auto, Automated Glass Burst Tester

GBBT-AUTO Automated Glass Bottle Burst Tester is a full-automatic instrument for testing the internal pressure resistance of glass containers. The GBBT-AUTO adopts full automated controlling system, no operator is required during the test process, and the test data will be sent to the data acquisition system automatically, making the test procedure easier and more efficient.





### ACBT-1, Aerosol Can Burst Tester

The ACBT-1 is an instrument for testing the internal pressure resistance of aerosol can (for both 3-pcs aerosol can and mono-block aerosol can). It has been widely used by the aerosol can manufacturers and users. It offers an important technical reference to the manufacturers for maintaining or improving the product quality and performance.



### GBBT-1, Glass Bottle Burst Tester

The GBBT-1 is an instrument for testing the internal pressure resistance of glass containers. It has been widely used by the glass container manufacturers and users. As a standard testing instrument for the glass container industry, it offers an important technical reference to the manufacturers for maintaining or improving the product quality and performance. Designed for easy operation and maintenance, comply with the testing standard of ISO 7458:2004. The pressure test of containers is made up to a predefined pressure point (trial test) or until destruction.



### GBBT-2, Glass Bottle Burst Tester

The GBBT-2 is an instrument for testing the internal pressure resistance of glass containers. It has been widely used by the glass container manufacturers and users. As a standard testing instrument for the glass container industry, it offers an important technical reference to the manufacturers for maintaining or improving the product quality and performance. Designed for easy operation and maintenance, comply with the testing standard of ISO 7458:2004. The pressure test of containers is made up to a predefined pressure point (trial test) or until destruction.

## Weighing Control Equipment



### HWBC-2, Automatic Hot Wire Bottle Cutter

HWBC-2 offers an automated and cost saving way for cutting containers for section weight analysis. A clean section without deformation will be obtained by a quick cutting of bottles through heated hot wires. With HWBC-2, an automatic and steady cutting process will be carried out after pressing the button. With exhaust fan and safety door design, the exhaust gas will be away from the operator during cutting. With HWBC-2, a PET bottle could be cut up to 5 predetermined sections under a steady force and excellent section plane could be obtained.



### HWBC-1 Hot Wire Bottle Cutter

The HWBC-1 Hot Wire Bottle Cutter offers an easy and cost saving way for cutting containers for section weight analysis. A clean section without deformation will be obtained by a quick cutting of bottles through heated hot wires. A precision and repeatable cutting task is easy to achieve and it's necessary for a proper analysis. With HWBC-1, a PET bottle could be cut up to 5 predetermined sections, each section will be checked to ensure that it conforms to the exact weight assigned.





### ACWD-1 – Automatic Bottle Cutting & Weighing Device

The AT2E ACWD-1 Automatic Bottle Cutting & Weighing Device offers an automated and cost saving way for cutting containers for section weight analysis. Automatic cutting and weighing, automated process controlling, ensures the cutting accuracy and repeatability, increases the analysing accuracy, provides a better solution for bottle section weight analysis and more reliable data. With ACWD-1, a PET bottle could be cut up to 5 predetermined sections and auto weighing to each section.



### BWCS-A Bottle Weight Control System

BWCS-A Bottle Weight Control System is an automatic system for controlling the bottle weight of crown capped products. It measures automatically the gross weight of the samples then measure the net weight of the bottles after they were emptied. Multi-position design, higher efficiency and better repeatability. Measure data can be sent out to Data Acquisition Software for better data analysis and management.



### Precision Balance

Many typical laboratory functions have been expanded to include a clear graphics screen, which shows the relevant information visually and makes it significantly easier to operate and read the weights off the display.



### CTC, Cosmetic Tube Cutter

CTC Cosmetic Tube Cutter is a preparation instrument for cutting the plastic or metallic tubes for quality controls. Cutting with the CTC, the tubes can be easily and accurately cut into different sections with predetermined size.

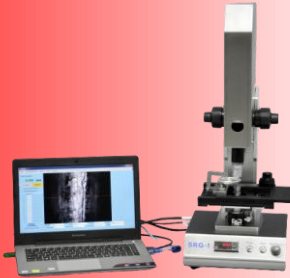


### PPS-1, Preform Profile Saw

The PPS-1 Preform Profile Saw is suitable for cutting different kinds of preforms for quality control of material distribution, especially for multi-layer preforms. The total mechanical design and electricity free, more compatible and adaptable to various working environments.



## Can Testing Equipment



### SRG-1, Score Residue Gauge

AT2E SRG-1 Score residue gauge is used to measure the score residue of can ends. Adopted with the high precision optical components, which ensures the high definition of the score profile images and measure accuracy. Equipped with long working distance lens which is more compatible to different types of end with different score positions. Applicable for the score measurement of various kinds of can ends. Such as RPT, SOT, EO, etc.



### ER-1, Enamel Rater

AT2E ER-1 Enamel Rater offers a fast and accurate method to measure the integrality of internal coating of containers. A measuring will be started automatically when the electrical probe is inserted and contacts the solution inside the container. The position of exposed metal can be detected visually by pressing the "REVERSE" button. Bubbles of gas come out on the exposed points.



### SeamCheck Plus, Automatic Double Seam Projector

The standard quality control instrument for the double seam of metal cans. Adopted the latest UHD CCD camera which provides higher image resolution and definition, with the further enhanced image contrast, the SeamCheck Plus is able to obtain a better seam profile image. It provides the most convenient way to accomplish the seam inspection. It provides 9 measuring parameters: Seam Length, Body Hook Length, End Hook Length, Overlap, Seam gap, Overlap rate, Body Hook lapping rate, End Hook lapping rate and On-screen Seam Thickness.



### ANSS, Anti-noise Seaming Cutting Saw

The Anti-noise Seaming Cutting Saw is a saw with a noise resistant design and a double blade for double seaming inspections. It has been specially designed for 2-pcs can and 3-pcs can (65 mm diameter or less). It can apply a speed of 1450 rev/min which enables the use of this saw on very simple cutting surfaces. With ANSS, a clear seam section will be obtained which is very necessary and important for a reliable double seam inspection.



### SS1, Seaming Cutting Saw

SS-1 Seaming Cutting Saw is a specially designed saw for seam cutting purpose. Equipped with linear guide rail, can's moving during cutting will be very precise and accurate in track. Comparing to typical seam saw, a clearer seam section will be obtained.



### CSM, Can Seam Micrometer

CSM Can Seam Micrometres is used for a quick measurement of seam thickness and seam length. It's an easy-operated tool and widely use in canning industry.



### ECDG-1, End Curl Diameter Gauge

ECDG-1 End Curl Diameter Gauge is for quick measure of the Curl Diameter of ends. Easy-operation design offers a fast and accurate measurement of the Curl Diameter. For each end type, a corresponding calibration block will be supplied along with the gauge. In order to avoid the manual recording error.



### STG -1, Seam Thickness Gauge

STG-1 Seam thickness gauge is used to measure the Seam thickness of cans. Easy-operation design offers a fast and accurate measurement of seam thickness. With measure angle compensation and adjusted centre measure point, the can could be auto positioned in the centre easily during measurement.



### SLG-1, Seam Length Gauge

SLG-1 Seam Length Gauge is for quick measure of the Seam length (Seam height) Easy-operation design offers a fast and accurate measurement of the Seam length (Seam height). Reliable design, invariable measuring pressure and measuring angle which enable the operators perform the measurement accurately. The can body was aligned vertically, measurement results are more reliable.



### CIDG-1, Can Internal Diameter Gauge

The CIDG-1 Can Internal Diameter Gauge is for quick checking the internal diameter of necked-in cans. For each diameter, a corresponding calibration block will be supplied along with the gauge. It can be custom made to compatible for different can sizes in one gauge.



### PTG -1, Plate Thickness Gauge

PTG -1 Plate Thickness Gauge is for quick checking of the thickness of plates. Easy-operation design offers a fast and accurate measurement of the plate thickness.



### CG-D, Countersink Gauge

CG-D Countersink Gauge is a digital gauge for measuring countersink depth of can and end. For fast and easy measurement, the zeroization base is equipped. In order to avoid the manual recording error, the gauge can be connected to "SPC" system or AT2E "SeamCheck" software with DTB-1 Data Transporting Box and cable. So that, the data can be transferred to "SPC" system or "SeamCheck" software through DTB-1 and cable.



### FWG 1, Flange Width Gauge

FWG-1 Flange Width Gauge is used to measure the flange width of empty cans. Easy-operation design offers a fast and accurate measurement of flange width.



### STR-1, Seam Stripper

The STR-1 Seam Stripper is used for cutting and stripping both aluminum and steel cans in a single motion. Due to the unique configuration of the roller cutters, only the cover hook is cut. The body hook and cover hook are in perfect condition for measurement or visual inspection.



### AS-1, Auto Seamer (Laboratory type)

AT2E Auto Seamer is for automatic sealing, enables the users to do lab tests. Such as, adjusting some technique, enhancing the products quality, test the empty cans and lids, to put the temperature recorder into the can before tracking the temperature, and so on. It is easy operation and convenient for lab tests, fast, easy and high efficiency.



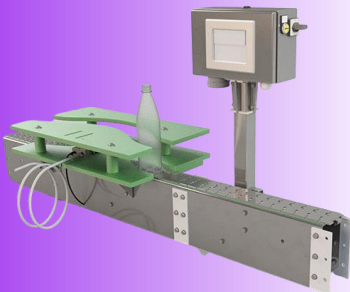
## Empty Bottle Inspection



### David 2, Empty Bottle Inspector

Complete inspection of empty bottles after the washer and before the filler: base, finish, thread, sidewall etc. 500+ machines in use worldwide.

- Individually configurable, latest computer technology.
- Up to 72,000 bottles per hour.
- Lighting throughout with maintenance-free high-performance LEDs.
- Machine design by the highest hygienic standards.
- Optimum accessibility, easy to use.
- No format parts required for different bottle types etc.



### LC2, Residual Liquid Detector

Very accurate inspection of the bottle for residual liquids containing caustic solution after the washing machine and before the filler. Wetting through caustic solution will already be detected as a fault. Water residues are strictly distinguished from caustic residues. The machine is operated by using a 5.7" touchscreen with access through a user defined password. Comprehensive statistics for individual types of faults are available. Connection to an external production data acquisition system is possible.

## Filler Monitoring



### FM 2, Filler Monitor

It is designed to locate incorrect filling due to defect filling valves in combination with a fill level inspection system. Automatic sampling of bottles of a complete filler or capper round, also without having chosen a start valve or capper head. An information text shows in this case from which filler valve or capper head the first rejected bottle of the sampling came. Valve specific sample rejection, capper head allocation is equally possible. A pre-configured sampling can be started automatically when the product type is changed.



### MX, Filling Pipe Detection

Inspection unit using X-ray technology to check for metal foreign bodies like filling tubes in filled and closed beverage cans (aluminum or steel cans), PET and glass bottles.



## Fill Level & Cap Control



### Newton Optics 3, Fill Level and Cap Control

Optical inspection device after the filler and seamer to check for correct fill level and closure (slanted, not rolled on). Suitable for glass or PET bottles as well as for plastic containers food or homecare. Precise control of the fill level even with foaming products such as wheat beer.

To measure the fill level for any underfilling and overfilling and to inspect the cap of bottles using the optical method. State-of-the-art camera and lighting technology that uses multi-optical axes (offset by 90°/ 270° coverage) and variable lighting.



### Newton HF 2, Fill Level Control

Control of underfilling AND overfilling in one device, bio-compatible: Control device based on a high-frequency measuring method for installation after the filler and capper and for checking for the correct fill level as long as it is non-foaming product. To check the fill level for any underfilling in transparent glass and PET bottles, easy handling. In addition, the bottle is inspected to see if the cap is present: metal caps via inductive proximity switches or plastic caps via light barriers. The system compensates for any fluctuations in temperature through self-calibration.



### Newton IR 2, Fill Level Control

To check the fill level for any underfilling and overfilling in glass and PET bottles, easy handling. The inspection is carried out by an infrared measuring method (absorption) by two independently adjustable measuring spots. Optionally, the bottle can be inspected for the presence of the cap.

The inspection head can be adjusted when changing the bottle type. In addition, the measurement point for overfilling can be manually adjusted independently of the measuring point for underfilling.



### Newton X2P, Fill Level Control

To check the fill level for any underfilling in containers such as bottles, carton packaging and beverage cans, regardless of the product or the label (metal foil is also possible). Broad spectrum of applications: even foaming products to be controlled! The measurement is based on an X-ray technology especially developed for this purpose. Minimum radiation exposure, since pulsed X-ray radiation is only generated at the short moment of measurement. The radiation emission is typically below the naturally occurring levels in enclosed spaces.



### Newton X2Z, Fill Level Control

To check the fill level for any underfilling and overfilling in bottles and beverage cans, regardless of the product or the label (metal foil is also possible). The measurement is based on an X-ray technology especially developed for this purpose. By using a line detector (fill level measurement range: 20mm), it is possible to accurately inspect any underfilling or overfilling with just one inspection head. Minimum radiation exposure, since pulsed X-ray radiation is only generated at the short moment of measurement.





## End-of-line & Label-inspection



### Allround, 360° End-of-Line Inspection

For a final quality inspection of filled and labelled containers by at least 4 cameras to ensure a 360 ° inspection of all features of the cap, labels, EAN barcode, lot number and BBD.

Labels can be inspected for the following criteria:

- Presence, correct position.
- Accuracy, intact.
- expiry date present and complete.
- expiry date: logical correctness (serial fault detection).



### EC 2, Label Control

Simple control of the presence of the label directly in the labeller: Via light sensor, requires little space for installation and can be retrofitted to almost any labeller.

Label Inspection Unit miho EC 2 to detect the presence of labels directly in the labelling machine, on the aligned bottle. Touch user interface in stainless steel housing, for the evaluation of up to 12 reflected light sensors.



### EC-Cam, Label Control

Evaluation unit for checking the presence of labels and the position of glass and PET bottles. The inspection is carried out by colour cameras and a high-performance LED lighting system in reflected light mode. Mirror system with an extended field of vision for inspecting the entire container body in one image, up to 300 mm vertical inspection area and up to 80° in circumference (with circular containers). Labels can be checked for the following criteria:

- Presence, correct position and expiry date.
- Easy teach-in of new product variant by the operator.

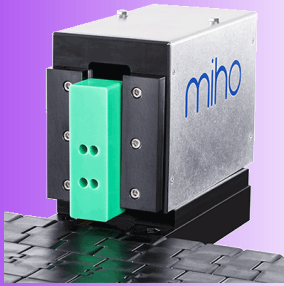
## Sealing Inspection



### Feeler 2, Sealing Inspection for PET

Device for use after the filler and capper to check the internal pressure of the container. A sensor wheel with sensor finger measures the internal pressure without squeezing the bottle. Hygienic, as no leakage is forced. The tightness is checked by checking the internal pressure of the container using sensor fingers that are stored in a sensor wheel. This results in a “direct” measurement of the internal pressure and there are no mechanical loads on the containers or on the machine, which can lead to wear and tear, damage or uncontrolled product leakage.

## Reject Systems



### HSP, High Speed Pusher

- For the reject of contaminated containers.
- Pneumatic reject system with a specially designed reject element.
- During the reject procedure a slightly vertical pressure is brought downwards upon the container. This increases the stability.
- The guiderail is connected with the horizontal adjustment of the reject system. Hence the exact distance between container and reject element can be guaranteed at all times.
- With 8mm or 15mm stroke.



### HSPM, Multi-Reject System

Reject system with linear drive for universal use in glass and plastic bottles as well as in cans or carton packaging (empty or filled). Rejection to two channels (for example, return belt / container) is possible by adjusting the stroke length for each class of fault. The machine is suitable for use in bottling plants with a capacity of up to 72000 containers per hour. The rejection process is individually configured for different container types and can therefore be optimized to the respective container type.



### Leonardo SK, Segment Reject System for Crates

Reject system for crates and packs in the beverage industry with rejection to 2 or 3 parallel lanes. Controlled segments from above divert the crate accordingly.

Dynamic segmented rejecter miho SK: 3 way cross rejection.  
The crates are being directed to two parallel lines via activatable segmented guiding.



### Leonardo M, Linear Reject System for Bottles

Segment rejector for upright rejection of a wide variety of container types, whether filled or empty. Ideal for sorting in the dry section of returnable lines, Rejection monitoring included.

Secure standing rejection of bottles, cans and carton packaging. Secure standing rejection even of difficult bottles in terms of shape and centre of gravity. Suitable for sorting tasks. 20 years of experience with linear reject systems.



### CR 2, Crate Reject System

Simple and robust rejection system for crates and containers in the beverage industry via a pneumatic drive.

Electro-pneumatic, incl. trigger light barrier, without conveyor.



## Vacuum Control



### VacU, Vacuum Control

Device to inspect the vacuum state of filled containers, based on laser triangulation / profile analysis. The system is built in stainless steel, easy to access and easy to maintain.

Features:

- Profile analysis by using laser triangulation.
- Manual height adjustment.

## Conveyor Control & Container Transport



### Conveyance, Container Transport System

- Conveyor construction made out of stainless steel.
- Conveyor stands made of 50x50 mm stainless steel tubes with adjustable calotte feet (max. conveyor height 1500mm).
- Depending on the project conveyor chains made out of stainless steel or plastic are possible. Multichain conveyors are made as gapless construction.
- Curve conveyors are made with magnetic chain guides and magnetic conveyor chains, chain sprockets are dividable.



## Bottle Sorting Systems



### Multicon 4, Bottle Sorting System

Camera based system for the detection and sorting of glass or PET bottles or other containers according to shape, colour and size differences. In addition, lying bottles or bottle breakages can be detected and rejected. The detection and evaluation of bottles may also be carried out via secondary features such as embossing, ACL or also via the degree of scuffing of the bottle. Sample bottles must be tested here. The construction is made of stainless steel, easily accessible and easy to maintain.



### Unicon 4, Bottle Sorting System

To detect too high and too low bottles, and lying bottles detection via light sensor, operation via touchscreen, including height adjustment.



### FZ 2, Bottle Counter

Counter with memory to count the produced bottles including closure presence detection for metal / plastic closures. The counter can be installed at various positions on single lane conveyors. The counter is operated by using a 5.7" touchscreen with access through a user defined password. Comprehensive statistics for individual types of faults are available. Connection to an external production data acquisition system is possible. In addition, the operator is informed via an acoustic / optical signal.

## Test Cans and Dud Cans



### Omit Test Can (Go / No Go) and Dud Cans

Test cans provide the best solution for verifying your gamma / X-Ray based fill level inspectors are set to the correct height and for inspecting missing lid (seam).

Good Dud and Adjustable Dud cans are designed to work with equipment that checks for proper pressurization by looking at the height of the center of the lid.



## Refractometer



### VariRef, Full-Range Refractometer

With the VariPol's rapid temperature control and adjustable sample compartment, both liquid and solid samples can be measured.

- Highest precision measurements, multi-point calibration
- Fastest temperature control.
- Flat sample room.
- LED light source.
- Virtually maintenance free.



### ATR-L, Abbe Refractometer Multi-Wavelength

It is multi-wavelength refractometer, capable of performing simple dispersion measurements at seven wavelengths over the full visible range. The digital, fully automatic spectral refractometer ATR-L consists of an electronic unit separated from the robust stainless steel measuring unit. High-precision refractometer.

- Automatic dispersion measurement.
- Automatic ABBE number measurement.
- Ideal for research and development.



### iPR FR2, Full-Range In-Line Measurement

- Permanent real-time concentration measurement.
- Wide measuring range and broad range of applications.
- Suitable for tough conditions and aggressive chemicals, sample temperatures up to 150 °C.
- Configurable digital switches.
- User defined scales programmable.
- Cleaning In Place (CIP) with liquid-based or ultrasonic cleaning device.



### iPR HR2, High-Resolution Refractometer

World's most precise process sensor with broad variety of applications. Highest resolution and precision equals laboratory analysis.

- Perfect reliability in even the toughest process conditions and testing of aggressive chemicals.
- For applications with very low solid concentrations.
- Stand-alone sensor with integrated electronic,
- Compliant with international food & beverage regulations and standards.



### iPR B3, Inline Brix Refractometer

- Highly flexible and easy to use.
- Competitive price/performance ratio.
- Two analog and two digital interfaces.
- Permanent real-time concentration measurement.
- Stand-alone sensor with integrated electronic.
- Maintenance free, minimal maintenance costs.
- Proven for years in a wide variety of applications.





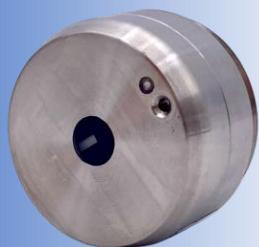
#### **iPR C2, Compact Inline Process Refractometer**

- Compact and light size, easily fits in tight conditions.
- Precise, fast and reliable.
- Connects easily with ethernet (LAN) and WIFI.
- Use of smart design and materials to withstand process conditions up to 65°C and aggressive fluids.
- Simple, flexible, and uncompromising integration into your process through isolated analog 4-20 mA output and digital interfaces
- Excellent price-performance ratio.



#### **iPR-EX, Explosion Protected inline Measurement**

- Explosion-protected version of the iPR-B3.
- Suitable for all applications in explosion-proof areas.
- Certified according to European Classification ATEX II 1 G Ex ia IIC T4 Ga.
- Permanent inline real-time measurement of the concentration of dissolved solids.



#### **iCS, Concentration Sensor and iCS EG, Ethylene Glycol Sensor**

- Compact and light size, easily fits in tight conditions.
- Simple, flexible, and uncompromising integration into your process.
- Technically easy to implement and low-cost integration as well as maintenance.
- Longstanding proven technology especially effective for monitoring ethylene glycol concentration.

## **Polarimeter**



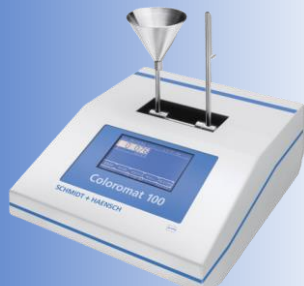
#### **Varipol**

- Especially designed for pharmaceutical applications - 21 CFR part 11 ready.
- Peltier system for automatic temperature control.
- Modular configuration and rapid measuring.
- Multi-user concept and remote control via internet browser.
- Energy saving durable LED's
- Constant precision over the whole measuring range, space saving.





## Spectrophotometer and Colorimeter



### Coloromat 100

The Coloromat allows an easy and reliable color measurement of liquids. It is equipped with a continuous measuring mode with free configurable sampling rate for monitoring color changes in product streams.

- Measurement of transmission/extinction.
- Color determination of liquid samples.
- Up to 9 fixed wavelengths.
- Polarimeter tubes up to 100 mm.
- Integrated ICUMSA Methods.

## Density Meter



### VariDens

This practical benchtop density meter with sleek design offers precise and reliable measurements. With the proven oscillating U-tube principle, the VariDens provides density and concentration measurements of pharmaceutical products, chemicals, and petrochemicals.

- Intuitive user interface, multiple users.
- Fast temperature control.
- Easy cleaning, maintenance free.
- Compliant with 21 CFR part 11, ELN/LIMS ready.

## Dosage and Filtration



### AutoDosage, Universal Dosage System

- Automatic, fast and reliable dosing for laboratories.
- Up to 4 different liquids.
- Gravimetric or volumetric dosage.
- Up to 70 different dosage or dilution programs storable.
- Timesaving, error free sample preparation.



Beer / Bioethanol / Biogas / Beverage / Cider / Dairy & Food  
/ Mineral & Bottled Water / Wine & Spirits



## Online Headspace Oxygen Measurement



### TecSense HSA – Headspace Analyzer for Bottle and Can

- Determination of the headspace O<sub>2</sub> in 30 sec.
- Determination of the O<sub>2</sub> and CO<sub>2</sub> content.
- Semi automatic piercing.
- Determination of foreign gas.
- Calculation of the O<sub>2</sub> concentration mg/L in the bottle.
- Digital data connection.
- Touchscreen.



### TecSense Ox100 – Online O<sub>2</sub> Measurement & Leak Detection in MAP Packaging

- Optical O<sub>2</sub> sensor system, 100% online process control.
- O<sub>2</sub>-detection with sensor-spot in packages/containers.
- None invasive, no gas extraction, repeatable (shelf-life test).
- Detection of 0.2 mm leaks.
- Sensor-spots factory calibrated.
- Minimized reject goods – saving of process and guarantee costs.
- Simple calibration check.



### TecSense Micro Fluid - Online O<sub>2</sub> Measurement

- Optochemical O<sub>2</sub> sensor system for liquids.
- No maintenance, Extremely fast.
- SIP and CIP stable (TecMicro Fluid Trace & TecMicro Fluid Low).
- Self-diagnostic system TecService software (sensor reports when 80% of its lifetime has been reached).
- Replaceable sensor cap, Factory Calibrated – Plug & Play.
- Easy implementation in your system, No problem with smaller particles.
- Extremely accurate measurement results in the trace ranges.

## Laboratory Headspace Oxygen Measurement



### TecPen Dot – Handheld Non-Invasive O<sub>2</sub> Measurement in MAP Packages

- No waste of food, Cost reduction.
- Reduction of plastic packaging waste.
- Highest quality assurance for the customer.
- Easy handling, Can be used everywhere.
- Time and date stamp for each individual measurement.
- Effortless traceability of the measurements through ready-made recipes.
- Integrated temperature sensor.



### TecPen Fiber – Optical O<sub>2</sub> Measurement for QC and R&D



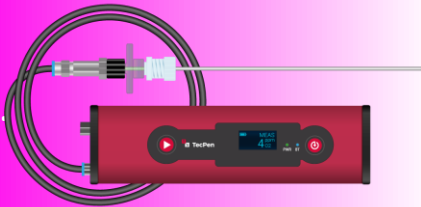
- Measurement at the needle tip – no gas extraction.
- Suitable for smallest gas and fluid volumes.
- Factory calibrated, no periodical calibration necessary, plug and play.
- Self diagnostic system.
- Short measurement time < 5 Seconds.
- Opto-chemical O<sub>2</sub> sensor system for gases and fluids (pH 01 -13).
- Glass fiber-sensor 0.4mm diameter in flexible protective hose, max. 4m.

### TecPen MAP – Portable O<sub>2</sub> Measurement in QC & Production Processes



- Measurement of O<sub>2</sub> content in all closed and pierceable containers.
- Optical O<sub>2</sub> sensor system for gaseous media.
- High flexibility due to handy design.
- Suitable for very low gas volumes, High measuring accuracy.
- Easy to use due to factory calibration and built-in display.
- Immediate operational readiness without warm-up time.
- Integrated memory & data transfer via USB.

### TecPen Weld – Optical O<sub>2</sub> Measurement in Gaseous Media



- Monitoring of oxygen concentration in forming gases.
- Ensuring the highest quality welding seams by avoiding oxidation.
- High flexibility due to handy design.
- Easy to use due to factory calibration and built-in display.
- Immediate operational readiness without warm-up time.
- High measuring accuracy.
- Integrated memory & data transfer via USB.

### TecPen Fluid – Dissolved O<sub>2</sub> Measurement in Beverages



TecPen Fluid is a hand-held sensor system for determining the residual oxygen content in beverages such as beer, wine or soft drinks. It is attached directly to a sample outlet and rinsed with the beverage and measures thereby the residual oxygen content.

- High flexibility and measuring accuracy.
- Easy to use due to factory calibration and built-in display.
- Immediate operational readiness without warm-up time.
- Integrated memory, data transfer via USB.



## Laboratory



### CR100LG, Laboratory Colour Gauge with Automatic Turntable

The CR100LG uses the latest solid state white light LED to illuminate the product to be measured. A variety of colour space outputs are available such as the widely accepted CIE L\* a\* b\* standard, or other common colour spaces. The CR100LG can be used for quality control in a wide variety of industrial processes, providing fast accurate results every time.

## On-Line



### CR100FF, On-line Colour Sensor

The on-line CR100 monitors the colour of process variables up to 500 readings a second directly above the product. The sensor analyses the returned white light and determines the L\* a\* b\* values (or other colour components). The optional operator interface displays this colour on a graphical display. The outputs are available to plant control via analogue or field bus options. It is built to last, very simple to install and use and virtually maintenance free for years of reliable results.



### OPC100, Opacity Measurement for Translucent Material

Senware provide a simple, cost-effective solution for the measurement of opacity in translucent materials with the proven OPC100 range of instruments. It is rugged, simple to use and highly reliable whether used on a bench or on-Line.

The OPC100 uses solid state LED technology for high stability, thus enabling consistent product quality from roll to roll, sheet to sheet saving money and time.

## Hand Held



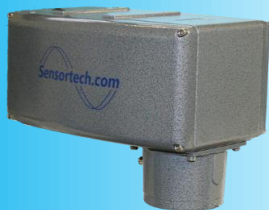
### CR100HH, Portable Hand Held Colour Measurement

Simple, easy to use, reproducible results. With  $\Delta E^*$  and  $\Delta H^*$  to display deviation from standard samples.

- Compact, light weight and bright touch screen LCD for set up.
- Rugged construction and simple to use.
- Internal Data Storage / Product Setup.
- Download Data to PC via USB, Export Data to Excel.
- Long Life Battery / USB rechargeable.

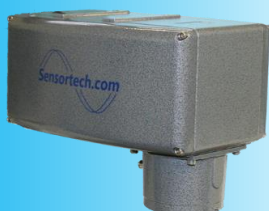


## Moisture Measurement – NIR Series



### Sensortech: NIR-6000, Industrial Grade Analyzer

- Custom-built to your specifications using NIR technology.
- Measures up to three constituents simultaneously.
- Thousands of measurements per second, online, in process, inline.
- Operates in temperatures from -20°C to 85°C.
- Mounting options to accommodate diverse process locations.



### Sensortech: NIR-6700, High Sensitivity Analyzer

- Custom-built to your specifications using NIR technology.
- High sensitivity hardware with applied environmental durability.
- Thousands of measurements per second, online, in process, inline.
- Operates in temperatures from -20°C to 85°C.
- Mounting options to accommodate diverse process locations.



### PSC: Guardian – HD Web Profiler

The Process Sensors Guardian-HD Web Profiling Series is a rugged and world-class analyzer to measure moisture, coat weight, adhesive thickness, and web temperature for all paper, film, and web-converting processes. It provides a non-contact, non-destructive on-line measurement of a complete zoned web profile, helping operators reduce instances of edge curl and lay flat issues that can result from improper moisture control. This translates to improved quality and consistency, less waste, and a quick return-on-investment.



### PSC: MCT 466-SF Online NIR Sensor for Snack Food

The Process Sensors MCT466-SF is designed for demanding environmental conditions in food and snack food manufacturing. These sensors are being used at many of the largest food manufacturing plants in the world. They help operators control moisture, oil, and other parameters to meet product specs every time. The MCT466-SF is built using NIR technology, which is widely used and accepted in food production.



### PSC: QuikCheck

The Process Sensors QuikCheck at-line or lab analyzer is a rotating “look-down” near infrared (NIR) benchtop solution for the analysis of non-homogenous solids and powders for moisture, oil (fat) content and other important quality parameters. Example sample types include:

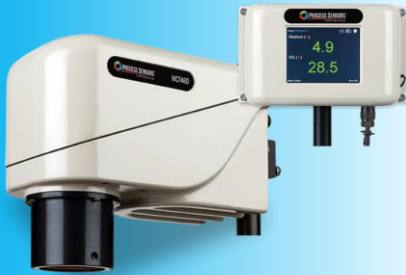
- Snack foods, Cereals.
- Food ingredients.
- Tobacco.
- Chemicals and more.





#### PSC: MCT469-SF Washdown – Compatible On-Line NIR Sensor

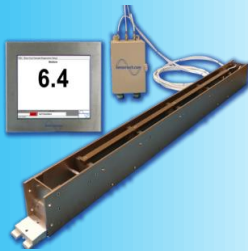
The Process Sensors MCT469-SF is designed for washdown conditions in food and snack food manufacturing. The sensors help operators control moisture and oil/fat to meet product specifications every time. The MCT469-SF is IP69 rated and is built using NIR technology, which is widely used and accepted in food production.



#### PSC: MCT460 Online Smart NIR Sensor Series

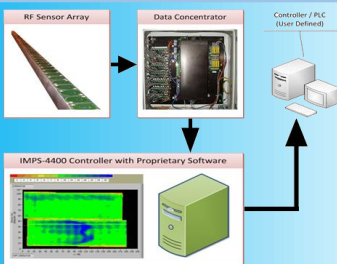
The Process Sensors MCT460 Series of On-Line Smart NIR Sensors continuously monitor moisture, oil and other parameters of the materials on a food or industrial process line. With the MCT460 Series, manufacturing operators can monitor raw ingredients and in-line processes, allowing them to maintain consistent product quality, increase yield, and minimize waste.

### Moisture Measurement – RF Series



#### Sensortech: ST-3300, RF Smart Analyzer

- Custom-built to your specifications using RF technology.
- Operates in temperatures from 0 – 60°C / 260 °C / 540°C.
- Mounting options to accommodate diverse process locations.
- Signal processing capabilities integrated into the transmitter electronics.
- Interfaces directly to your PC, PLC, HMI, or other preferred platform.
- Unaffected by product pH and salinity.
- Ethernet TCP/IP communication, other options available.



#### Sensortech: IMPS-4400, Moisture Profiling System

- RF Dielectric measurement provides a true moisture profile.
- Non-contact multi-sensor moisture profiling array.
- Easy communication between profiler and HMI system.
- Proprietary software offering broad product diagnostics.
- Data-logging and trend time plot for statistical analysis.
- Totally solid state system.
- Moisture profiling tools.



#### Sensortech: PMT-330, Portable Moisture Tester

- Accurate.
- Lightweight.
- Simple Operation.
- Multiple calibrations.
- Rechargeable battery.
- Non-Destructive measurement.



## IR Series Pyrometer

### PSC: Diadem Pyrometer Series DS09 / DI13 / DI16



Ultra-High precision transfer standard pyrometer. A high-accuracy solution for high-precision calibration verification and calibration transfer to secondary pyrometers and blackbody calibration sources. Temperature ranges from 250 to 3500°C. Diadem pyrometers are traceable to the International Temperature Scale ITS 90. They are calibrated with PTB - calibrated reference devices and adjusted. They are also easily transportable and verifiable as opposed to calibration sources.

### PSC: Metis M3 Pyrometer



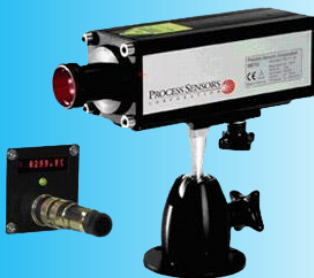
The high-performance Process Sensors Metis M3 Series pyrometers are available in one-color and two-color versions with adjustable focus, through lens, laser, or video sighting optics. Temperature ranges from 50°C to 3300°C. Comes with an on-board temperature display. Fiber optics for high temperature ambient conditions are available.

### PSC: Metis H3 Pyrometer Series



The ultra-high speed (40 us) Metis H3 Series pyrometers are available in single and dual wavelength versions. Temperature ranges from 120°C to 3300°C.

### PSC: Metis MB35 Pyrometer



The Metis MB35 is a stand-alone pyrometer which measures low temperatures for metal, ceramic, and composite surfaces. Temperature ranges from 35 to 1000°C.

### PSC: Metis MB39 Pyrometer



The Metis MB39 pyrometer was made to look through environmental obstacles such as clean flame or combustion gases to measure a target's temperature. With a narrow wavelength of 3.95  $\mu\text{m}$ , metal parts, glass, ceramics, composites, and etc can be accurately measured despite flame or gas interference. Temperature ranges from 150 to 2500°C.



#### **PSC: Metis MY45 & MY 46 Pyrometers**

Metis model MY45 and MY46 pyrometers are used for boiler and furnace applications that measure CO<sub>2</sub> gas and flame temperature. These IR temperature sensors measure temperature in the high absorption CO<sub>2</sub> gas band wavelength. At this optimized wavelength, the PSC model MY45/46 sensors measure Hot CO<sub>2</sub> gas, which is a constituent of an oxygenated flame. Standard MY46 temperature measurement ranges of 500°C to 2000°C. Starting temperature ranges for the MY45 are 100°C to 1500°C. Other temperature ranges available upon request.



#### **PSC: Metis MY51 & MY80 Pyrometer Series**

The Metis MY51 series is used for glass surface temperature measurement, while the MY80 series is used to measure fluoro carbon plastics. These precision on-line process pyrometers offer adjustable, focusable optics for pinpointing very small targets. Temperature ranges from 50 to 2500°C



#### **PSC: SR10 Series**

A 2-color pyrometer with on-board temperature display and push button menu. Ideal for industrial and research applications. Has various temperature ranges from 500 to 3000°C. Includes a protective quartz window for optical lens. Has three aiming methods (laser, through lens, or video camera sighting) with variable focus optics.



#### **PSC: 52LT Pyrometer**

The PSC-52LT offers high resolution laser-sighted, fixed focus optics with small spot sizes. Optical and electronics parts are enclosed in a rugged stainless-steel housing for use in harsh environments. Ideal for low temperature general purpose applications with dull surface materials. Temperature range from 0 to 1000°C.



#### **PSC: 54 Series**

The PSC-54 Series provides either laser or video output, delivering high resolution fixed focus optics with small spot sizes. Optical and electronics parts are enclosed in a rugged stainless-steel housing and companion cooling jackets for use in harsh environments. Offers a wide range of temperatures spanning from 200 to 3200°C



#### PSC: 55N Series

A self-contained, stainless-steel sensor with 4 to 20 mA and RS485 Modbus RTU outputs. On-board temperature menu display with three aiming methods: laser, through lens, or video. Available in one or two color versions. Has high-resolution fixed or motorized adjustable focus optics. Temperature ranges from 200 to 3000°C. Reliable endurance for long-lasting, demanding operations in harsh conditions.



#### PSC: 56 Series

Rich in features, the self-contained two-color model PSC-SR56N and one-color models PSC-G56N/PSC-S56N pyrometers offer a choice of four sighting methods. Has five temperature ranges spanning from 200 to 3200°C with on-board temperature display menu.



#### PSC: 44 Series

The PSC-44 Series offers fast response speed, high accuracy and repeatability, linear 4-20mA analog output and a digital RS485 interface for Glass and Metal applications. Temperature ranges from 0°C to 2500°C.



#### PSC: 40 Series

The PSC-40 Series is a two-wired, loop-powered IR sensor which provides accurate temperature measurement from -40 to 2500°C. Also available with fiber optics. An optional programming cable with software allow for the adjustment of pyrometer parameters. The simplicity of the wiring and integration make it ideal for industrial applications including induction heating, steel making, glass, kilns, food, dryers, ovens, furnaces, medical apparatus and R&D.



#### PSC: 42 Series

The PSC-42 Series of simple, 2-wire loop powered sensors offer on-board emissivity adjustment, multiple wavelength options and wide temperature ranges. Ideal for industrial and OEM machine building applications with temperature ranges from -40°C to 2500°C. When used with our rugged stainless steel cooling jacket, the series can endure ambient temperatures up to 250°C.



#### PSC: SRF11N

A 2-color fiber optic pyrometer ideal for industrial applications. Has various temperature ranges from 600 to 3000°C. All parameters are adjustable via push-buttons displayed directly on the device. The fiber optic cable and lens assembly can be used in ambient temperatures up to 250°C without cooling.



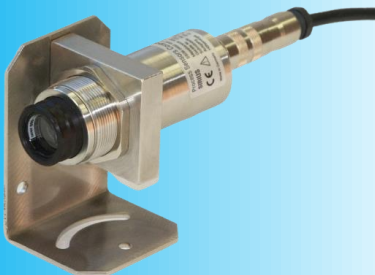
#### PSC: GRF11N

A 2-color low temperature fiber optic pyrometer ideal for industrial applications. Has various temperature ranges from 300°C to 2300°C. All parameters are adjustable via push-buttons displayed directly on the device. Multiple wavelengths available through 2 channels.



#### PSC: SF30/34NG Series

Lower cost, 2-wire, loop-powered fiber optic IR temperature pyrometers with wide temperature range from 600°C to 1800°C. For molten glass, metals, ceramics, composites, and crystal growth applications.



#### PSC: Sirius Series SS09, SI16, SI23

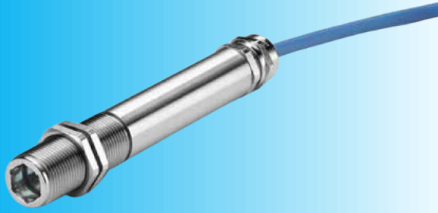
The Sirius Series sensors are small, compact and easy-to-install with digital and analog outputs. Shorter wavelengths make them an excellent choice for measurement of ferrous and non-ferrous metals above 50°C. Temperature range from 50°C to 2500°C.



#### PSC: Polaris Series PS09, PI16

The Polaris Series is a cost-efficient and accurate infrared temperature switching device used for the recognition of hot parts. Hot metal detector. Available in temperature ranges from 250 to 1800°C. LEDs on the rear of the sensor indicate which switch state the Polaris is in.





#### **PSC: EX301-XT-CB5**

Intrinsically safe, self-contained, fixed focus two-wire sensor, the PSC-EX301-XT-CB5 is designed primarily for precise measurements of non-reflective surfaces in the -20 to 1000°C temperature range.



#### **PSC: SSS-Laser Series**

Two pieces digital model PSC-SSS-Laser Series offers high resolution optics, dual lasers for aiming, fast response speed, on board back lit temperature display, and a large choice of wavelengths for a variety of industrial, medical, and scientific applications. Offered in temperature ranges from -40 to 2200°C



#### **PSC: CS Laser Series**

Self-contained, two-wire and loop-powered digital IR thermometer packed with powerful features and functionality. Dual lasers for aiming. Temperature ranges from -30°C to 1600°C with a variety of wavelengths. Provides a fast response time of 10ms.



#### **PSC: IR-USB Series**

PSC-IR-USB series are loop-powered two-wire sensors with fixed focus optics, 4-20mA output and USB to PC cable connection. Using the PSC Config software and supplied USB cable, operational settings can be adjusted from the PC. Temperature ranges from -40°C to 2000°C with a response time of 200ms. Offered in two different models, one is designed for low-reflection, dull surface materials, and the other built for high reflection surfaces.



#### **PSC: CX**

Loop-powered, low cost 2-wire sensor with fixed focus optics, 4 - 20 mA output, & optional software ideal for general purpose, dull surface applications. Temperature range from -30°C to 900°C with an FOV (field of view) of 20:1.



### PSC: SSS-PM Series



Miniature sensing head design for measurement of inaccessible or moving objects. Optional bright touch screen for indication, graphing, configuration and data logging to MicroSD card. Temperature ranges from -20°C to 2000°C. 2 alarm outputs are standard with wavelengths of 8-14  $\mu\text{m}$  or 2.2  $\mu\text{m}$  for metals and shiny targets.

### PSC: 4LT



The PSC-4LT pyrometer is suitable for temperature measurement from 0°C to 1000°C on a variety of low reflection materials. Its' 12mm OD sensor head enables set-up in incredibly tight spaces. The sensor head can be operated in high ambient temperatures up to 180°C / 356°F. Best used for conveyed material, dryers, and ovens.

### PSC: SSS Series



Highly versatile low-cost solution for reliable temperature measurement. Two-piece sensor systems with ultra small sensing head, analog & digital outputs, and built-in temperature display for OEM and end user applications. Temperature ranges from -50°C to 1600°C.

### PSC: PMB-Solo



An industrial infrared non-contact miniature digital sensor that can operate independently via RS-485 Modbus and interface directly to a PLC. Temperature range from -20°C to 1000°C. Used for general purpose and dull surface applications.

### PSC: PC & PSC-PE Series



Ideal for OEM applications and intended for temperature measurement on non-reflective materials from -20 to 500°C, these low-cost, compact, but durable sensors are simple to install. Two-wired and loop-powered, these multipurpose sensors can be used for paper, gypsum board, plastics, asphalt, aggregates, etc.



#### PSC: CSM Series



Low-cost ultra-compact sensor with small spot size, fast response time, alarm options & a variety of wavelengths. The pyrometer provides 0-10 volt or 4-20 mA outputs, with temperature ranges from -30°C to 1600°C.

#### PSC: CS-LT15-TCK



Our lowest-priced self-contained infrared pyrometer. The PSC-CS-LT15-TCK has a wide temperature range from -40°C to 1030°C, usable up to 80°C ambient temperature without cooling. The IR sensor provides an alarm and switchable analog outputs (0-5Vdc, 0-10VDC or K type thermocouple type) making it easy to integrate into current factory systems. Ideal for non-reflective surfaces.

### Thermal Imaging Camera Systems

#### PSC: Surveyor Series Thermal Imaging Cameras



The Process Sensors Surveyor camera series offers a comprehensive range of imaging and line scanning camera systems to continuously monitor and control industrial processes. Measures temperatures starting from -20 to 1800°C

#### PSC: X80LT & PSC-X400LT



The PSC-X80LT is an industrial imager with 80x 80 pixels. Its autonomous operation (without continuous use of PC) with automatic hot spot finder and direct analog output make it ideal for a multitude of manufacturing process applications. The PSC-X400LT is a higher resolution industrial thermal imaging camera with 382 x 288 pixels and 80 Hz frame rate perfect for fast thermal processes. Both cameras share a temperature range of -20°C to 900°C and can be switched from thermal imaging mode to line scanning mode.

#### PSC: 12C-DW



PSC-12C-DW represents state of the art, advanced high temperature process monitoring. This specialized high temperature imaging system allows multiple cameras/detectors to operate in different spectral wavebands to share a common furnace lens. The PSC-12C-DW is the industry's first and only system allowing utilization of a broad spectrum from visible light to MWIR on a common optical path - this technology is critical for waveband optimization of each system's optics.



## Portable IR Thermometers



### PSC: Capella C3 Series

The Capella C3 Series of hand-held, battery operated 1 and 2 color IR thermometers brings all the advanced measurement capabilities of PSC fixed mounted pyrometers to the workplace in portable form. This rugged, comprehensive model series offers green laser or through lens sighting, ultra fast speed of response, short-wave devices for precise measurement of metals, welding, molten glass, furnace refractory, kilns, semi-conductors and ceramics. Features temperature ranges from 250°C to 3300°C.



### PSC: MS Series Portable Thermometer

The PSC MS MiniSight portable thermometers enable you to measure objects as small as 13mm across a wide temperature range. Just spot the object, press the trigger and the infrared thermometers will show the temperature in an instant. Capable of reading temperatures of -32 to 760°C



### PSC: PTLST Series Handheld Thermometers

A handheld portable IR thermometer series with temperature ranges beginning at 0°C and ending at 1800°C. Enables precise aiming at extended targets due to twin lasers and built-in optical telescope.



## Automatic Filling & Bottling Lines



### Automatic Filling Machine – 3000 to 18000 BPH



Top tier in our production range. Rotary, fully automatic filling machine with an annular tank and up to 60 filling valves, usually in the block with a rotary rinsing unit and a rotary multi position closing unit. Sufficient output rate for larger breweries and beverage producers. The machine is driven by an electric motor and a system of gears. It is required to use an automatic palletizer/depalletizer in the bottling line.



### Small Automatic Filling Machine – 700 to 3000 BPH



Range of small automatic filling machines is an entry to the world of continuous carousel machines. A popular choice among medium-sized breweries and producers. Fully automatic rotary filling machine with a cylindrical tank, usually in the block with a rotary rinsing unit and a single position closing unit. A universal closing unit for crowns and screw caps is available, a can seaming unit can be added as well.



### Step-by-Step Filling Machine – 500 to 600 BPH



The second step in our range are step-by-step filling machines, suitable for small breweries and producers. Usually as a block with a rinsing unit and a single head closing unit. The machine is driven mostly by pneumatic actuators. As the name suggests, the machine works in steps. The whole filling principle, valve internals and hygienic standards are same as used for bigger continuous machines. The advantage is an avoidance of operator contact with filled and open bottle, since the operator only puts empty bottles at inlet and then takes the fully closed bottles at the end.



### Semi-Automatic Filling Machine – 100 to 400 BPH



In the range from 100 to 400 bottles per hour, we offer small semi-automatic filling machines with automatic filling process, but manual bottle operation. Usually in the block with a closing unit, separated manual rinser can be delivered too. This range is suitable for very small craft breweries who want to treat and fill their beverage in the same quality as big companies. The whole filling principle, valve internals and hygienic standards are same as used for bigger machines, but in smaller and inexpensive package.



### Bottle Rinser

Rotary bottle rinsers are designed for rinsing bottles from mechanical impurities or for sterilizing bottles before filling them with beverages and other liquids. The rinsing units are custom-made according to customer's requirements in versions for glass, PET, HDPE and other bottles. The rinser is usually a part of the filling block with capacity according to the filling machine, but can also be supplied as separate machine. For the small semi-automatic fillers, the rinser is always a separate machine and is operated manually.





Food / Brewing / Beverage / Vinery / Chemical



### Bottle Capping

Bottle capping machines are used for capping filled bottles. They are available in designs for crowns, screw metal and plastic caps, bugels and other special types of closures. The machines for cans contain a seaming unit. The unit is usually a part of the filling block with capacity according to the filling machine. An execution and a number of closing heads vary according to the capacity. Semi-automatic machines have a pneumatic one-head unit with manual bottle inserting.



Distilleries / Chemical industry / Healthcare / NGOs / Customs & Police / Laboratories & Universities



## Methanol Measurement



### Mobile Methanol Detection for Immediate Quality Control

The Spark M-20 is the world's first portable methanol detector. It was developed together with government institutions in Europe and renowned distilleries to ensure maximum user-friendliness and quality.

- Direct measurement on-site; results in minutes.
- Methanol content can be measured within 0.01% accuracy.
- Multipurpose: fruit brandy, grappa, whisky, calvados, rum, brandy, but also perfumes and hand sanitizers can be measured.
- Laboratory in pocket format, can store up to 1,000 measurement results.



## Box Compression Tester



### Val series, Box Compression Tester

To perform compression and resistance tests to packaging according to International Standard specifications.

- Robust construction, 3 or 4 Load cells for highest accuracy.
- Range: 30kN to 300kN, Platen size: 125 to 185 cm.
- Digital Display for load & deflection (PC).
- Oscillating (ISO-FEFCO) & Fixed Plate (TAPPI) Precision Ball Screw drive system, top fixed and parallel plate (TAPPI).
- Force reading in N – kg & lb, Deflections reading: mm/in.



### Validator, Box Compression Tester

Designed for testing compressive strength in Packing and Packaging according to international standards. Designed for medium sized packages.

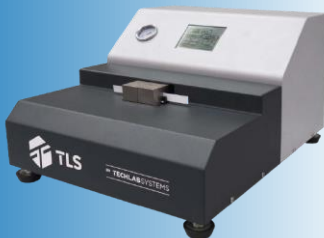
- Robust construction, 3 Load cells for highest accuracy.
- Max. Force 25 kN, Platen size: 800 x 800 mm.
- Digital Display for load & deflection (in PC).
- Oscillating (ISO-FEFCO) & Fixed Plate (TAPPI).
- Maximum opening between platens: 910 mm.
- Force reading in N – kg & lb, Deflections reading: mm/in.



### CDM-5, Sample Crush Tester

To perform compression strength tests on standardized samples of paper (liner & medium) and corrugated cardboard such as CMT - RCT - CCT - ECT - FCT – PAT.

- Robust construction, easy to use, overload protection.
- Force range from 10 to 5000 N (resolution 0.01% = 0.5N).
- Selectable units in N – Kg & Lb.
- Statistics: Max – Min – Average & Standard Deviation.
- USB interface and closed loop control from PC.



### SCT-1, Sort Span Compression Tester

Measures compressive strength in short span SCT samples of paper and cardboard to international standards. Designed to meet standards: ISO 9895 - TAPPI T826 - DIN 54518 - SCAN Q46 - UNE 57142 - BS 7325.

- Digital display.
- LYNX Compatible.
- Built-in RS232 data output.
- Clamping force 2300 ± 500 N.
- Compatible with Quality Test Management LYNX Software System.

## Corrugated Testing



### M5, Micrometer (Paper)

Manually operated by rotating crank, to accurately measure the thickness of the paper, tissue, compact and corrugated cardboard.

- Range: 0 to 15 mm, Resolution: 0.01 mm (10 microns)
- Contact pressure: 20 kPa ( 200 g/cm<sup>2</sup>), Contact area: 10 cm<sup>2</sup>.
- Digital display with reset to "0" function.
- Manual drive by ergonomic handle.
- Robust and precise equipment.
- Compatible with Quality Integral Management LYNX Plus & Pro System.



### CT-10/25/50/100 Series, COBB Sizing Tester

To determine the water absorption capacity of paper and corrugated cardboard (quick clamping grip).

- Test area – 100-50-25 or 10 cm<sup>2</sup> (to choose).
- Stainless steel.
- hand roll – 10 kg.
- Soft rubber gasket.
- All in stainless steel.



### FT-07, Medium Fluter Concora Type

To prepare corrugated medium paper specimens under pressure and temperature to perform standard CMT and CCT tests on a standardized crush tester.

- Robust and precise equipment.
- Easy to use.
- Precise controlled temperature.
- Programmable temperature with digital display: 177°C ± 2°C.



### PT48, Puncture Tester

To determine the absorbed energy or puncture resistance of corrugated and compact cardboard.

- Strong steel frame, designed to avoid any vibrations during test (Subsequently, energy losses are avoided).
- Touch Screen Control of 10" and USB port.
- Pendulum arm with a circular angle of 90°.
- Striking head in the shape of a triangular pyramid.
- Release mechanism, with safety system, safety cover screen.



### BT10, Burst Tester "Mullen Type"

To determine the bursting resistance of Paper and Corrugated Board.

- Units, in kPa – kg/cm<sup>2</sup> – Bar & PSI.
- Measure range: Paper 0 to 1500 kPa, Board 200 to 5.000 kPa.
- Statistics: Max = Min = Average and Standard Deviation.
- Operating security system.
- Pneumatic operation of clamping system.
- Acrylic protection screen (tests area).
- Compatible with Quality Test Management LYNX Plus & Pro.



#### Porosity / Air Permeability “Gurley” (Densometers)

To measure accurately the Smoothness & Air Permeability (or Porosity) of materials such as paper and cardboard, wovens, plastics and membranes.

- Automatic and manual test mode, choice of various volumes of air.
- Output units: BEKK – BENDTSEN – GURLEY – SHEFIELD.
- Automatic calculation of Medium values of Standard Deviations.
- Not require use of oil, Pneumatic operation.
- RS-232 output.
- Compatible with the Integral Management System LYNX.



#### 4190 N + 4320 model, Porosity / Air Permeability Meters

To quickly and accurately determine the Smoothness, Air Porosity and Softness (or Compressibility) in paper and cardboard using the GURLEY method. This is the most popular and traditional model for the measurement of porosity / air permeability in medium value materials.

- Digital reading in seconds (4320 model).
- Cylinder graduated 20 oz. and diameter measuring 1 square inch.
- RS-232 Output.
- Compatible with the Integral Management System LYNX.



#### Porosity / Air Permeability Meters “Gurley” (High Pressure)

For measuring the porosity, air-permeability or air-resistance of materials having low permeability. Typical materials include coated papers, plastics and membranes. High Pressure units are recommended whenever a standard unit would yield excessive measurement times.

- Automatic and manual test mode.
- If the Densometer is equipped with 4320 Digital Module with RS-232 output is compatible with the Laboratory Management System LYNX.



#### Smoothness Meter Air Porosity Meter “Gurley”

To measure accurately the Smoothness & Air Permeability (or Porosity) of paper and paperboard samples.

- Automatic and manual test mode, choice of various volumes of air.
- Output units: BEKK – BENDTSEN – GURLEY – SHEFIELD.
- Automatic calculation of Medium values of Standard Deviations.
- Not require use of oil, Pneumatic operation.
- RS-232 output & compatible with Integral Management System LYNX.



#### Portable Moisture Meter for Paper & Corrugated Cardboard

Portable paper and cardboard moisture meters used directly on the reels and already stacked reams.

- Direct reading of moisture in %.
- Works with a standard 9V block battery.
- Easy to use.
- With contact electrodes (non-destructive).



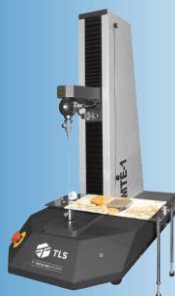
## Folding Carton Testing



### OP50, Open Force Tester

This equipment quickly and accurately determines the force necessary to unfold and to open boxes and cardboard cases.

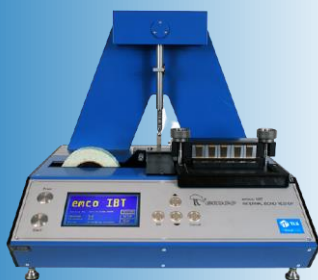
- Management Module with basic statistics.
- Robust and highly accurate, Load Cell 50N force capacity.
- Quick return to initial start position.
- Additional grips allows these tests: Separation glued lines – Bending – Static & Dynamic Friction Coefficients – Tension / Compression.



### FT-10, Friction Tester

It is designed to determine static and dynamic coefficients of friction in samples of paper, cardboard, Plastic Film etc.

- Easy to operate, LYNX Management Module with basic statistics.
- Load cell 10 N force capacity.
- Performing tensile tests (grips optional) is possible.
- Determines Dynamic and Static friction coefficient automatically
- Compatible with our widely popular Test Management System software package LYNX plus & Pro, Mini PC included.



### IBT, Internal Bond Tester

Method to determine the resistance of internal adhesion between paper and cardboard layers by dynamic delamination.

- Sample preparation integrated for 5 samples simultaneous (bonding, pressing, cutting).
- 4 measuring ranges approx. 52.5 J/m<sup>2</sup> to 2100 J/m<sup>2</sup> (Scott bond low and high included).
- Processor controlled clamping pressure and press time.
- Statistic function (AVG – average value, DEV – standard deviation).

## Paper Testing

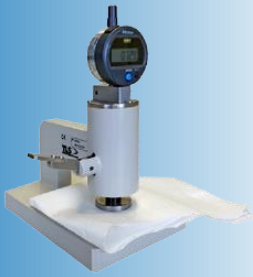


### MTE-1, Tensile Tester

Universal Testing Machine designed to perform tensile, compression, bending, shearing, peeling etc tests of very light materials up to 1 kN.

- Robust, ergonomic and highly accurate.
- Load cells are available 1000 – 500 – 250 – 100 – 50 or 10 N.
- Quick return to initial start position.
- Compatible with/the Integral Test Management System LYNX.
- Accuracy  $\pm 0.5\%$  (Class 0.5).
- LYNX Management Module with basic statistics.





#### M5, Micrometer (Tissue Paper)

To measure with accuracy of thickness of Tissue Paper according to standards: NF DIN EN ISO UNE 12625-3 - SCAN P47.

- Range: 0 to 10 mm.
- Reading Resolution: 0.001 mm (1 microns).
- Contact area: 10 cm<sup>2</sup>.
- Contact pressure: 2 kPa ( 20 g/cm<sup>2</sup>).
- Digital display with reset to "0" function.
- Manual drive by ergonomic handle.



#### SLY-S1, Tearing Tester 'Elmendorf Method'

It is designed for the tearing test of films, sheets, flexible PVC, PVDT, waterproof films, woven materials, polypropylene, polyester, paper, cardboard, textiles and nonwovens.

- Computer controlled tester; desktop PC included.
- Fast and easy data acquisition, selectable capacities of the pendulum.
- Pneumatic clamping and release device of the sample.
- Integrated sample cutter, tearing range is easy to change.
- Assistant system of horizontal adjustment by computer .

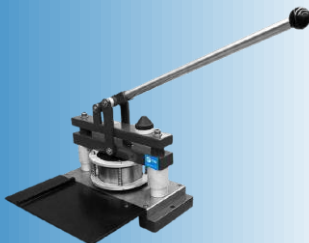
### Cutters



#### CD, Circular Cutter (Paperboard- Cardboard) "DISC" Series

Manually operated by rotary knob to cut samples accurately from Paper Corrugated Cardboard, Aluminum Foil, Films for grammage determination.

- Rotating handle (pushing down and turning simultaneously) results in a perfect cut of the sample.
- Replacement of blades is easily done on the side of the equipment.
- Sample cutting up to 5 mm thick.



#### Samples Presses Cutter (Hand Operated)

Precision punch & die presses to cut rectangular or circular precision samples with high accuracy, +/- 0.1 mm in order to evaluate Tensile, Basis Weight, SCT, CMT, RCT, CCT, CLT... for Paper (Liner / Medium).

- Cut rectangular, square, or circular precision samples.
- High accuracy (+/- 0.1mm).
- Cuts paper board, tissue paper, aluminum foil, and more.



#### Pneumatic ECT Cutters

For precision cutting of corrugated cardboard samples for ECT compression testing on the Sample Crush Tester.

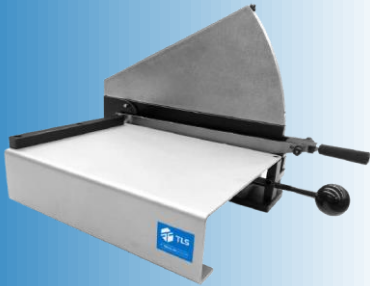
- Easy and safe to use.
- Robust design.
- With ejection system of the samples after making the cut.
- Thickness of samples up to 15 mm.
- CE marking.
- Cutting width (to select one upon request).



### PP Series Pneumatic Sample Cutting Press

Precision rectangular or circular sample cutting presses for paper, cardboard and tissue pneumatically actuated to cut samples with great accuracy, in order to perform Traction, Grammage, SCT, CMT, RCT, CCT ... tests under the conditions of international standards.

- Cut rectangular, square or circular samples with accuracy (+/- 0.1mm).
- Cuts paper board, tissue paper, aluminum foil and more.
- Equipment is provided with methacrylate security cover protection.



### Twin Blade Cutters

To cut samples of Paper, Foils, Aluminum, etc. to different width 12.7, 15, 20, 25, 25.4 and 50 mm.

- Fixed blade and two movable cutter blades.
- Size : : 455 x 285 x 270 mm (width x depth x height).
- Equipment is provided with methacrylate security cover protection.

## Pulp Testing



### NPFI-02, Laboratory Beater "PFI type"

For laboratory use in the process of refining chemical pastes under standard conditions and even for the defibration of semi-cooked fibers.

- High economic for a fast operation and small volume of pulp (30 g.).
- Can beat from 5 to 40 g of pulp in concentrations from 5 to 50 % (max. 450 ml of suspension).
- Excellent repetitive to be used in quality control and research.
- Security element protection for the user and equipment.
- Up and down beater cylinder by electric automatic operation.



### VB50, Laboratory Valley Beater

For laboratory use in the refining process of pulp under standard conditions.

- Beating tank made of stainless steel.
- Repeatable and adjustable beating pressure by means of a weighted lever.
- Volume of tank: 25 liters, Sample size: 360 g.
- It allows to work out the used strength to obtain the wished freeness value.
- Carrying out coloring tests and mass pasting.
- Security cover – CE mark.



### CC100, Wood Chip Classifier

For quick and reproducible classification and analysis of wood chips. It is supplied with 1 fines collection tray and 5 sorter trays: (1) With holes Ø 45 mm (1,771") and triangulated 60 mm (2,362") wheelbase. (2) With holes Ø 13 mm (.512"). (3) With Grooves 8mm (.315"). (4) With holes Ø 7 mm (.276") and triangulated 8.5 mm (.335") wheelbase. (5) With holes Ø 3 mm (.118"), and triangulated 8 mm (.315") wheelbase.

- Chip Quality Optimization Tool.
- Robust chip classifier, screener optimization tool.



#### CF-04/05, Bauer Mc Nett Type Fibres Classifier

For testing the fibre length distribution in pulp.

- Manufactured in stainless steel.
- Each classifying unit is equipped with a stirring motor.
- Easy replacement screen frames.
- Vacuum pump to accelerate the drainage at the end of the test.
- Protection cabin (aluminum profile and transparent polycarbonate walls).
- CE Marked.



#### PD-10, Pulp Disintegrator

For the mechanical disintegration of cellulose pulp suspension.

- Made of stainless steel, Movable top, easy to clean.
- Digital pre-selection of the revolutions.
- High-performance motor of low voltage.
- Low noise level, New Design, modern and compact.
- Electronic parts protected and installed in the upper part.
- Acryl container according standard (optional made of stainless steel).
- Mechanical and electrical safety with additional stop button.



#### WR-01, Manual Sheet Former – TAPPI

To manufacture paper samples in the Laboratory, according to: ISO 5269/1 – TAPPI T205 – SCAN C26 – PAPTAC C4.

- A base in communication with the formation recipient.
- A grill covered with a metallic mesh, blade Size: 159 mm. diameter.
- Upper metallic screen: 150 mesh according to TAPPI.
- Screen bottom bracket: 20 mesh.
- Suction height: 800 mm, Made of Stainless Steel.
- Drainage time:  $3.8 \pm 0.2$  seconds, at  $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ .



#### NPT10, Pneumatic Press – TAPPI

For pressing wet sheets of paper and pulp, under standard conditions Press made of corrosion-proof materials.

- Max. opening: 210 mm, Stroke: 75 mm.
- Pressure max. force: 16 kN.
- Plate dimensions: 350 x 350 mm.
- Time pressure controlled by two timers, adjustable.
- Drainage channel incorporated to evacuate the water.
- Security door with electrical interlock, CE marked.



#### RD-10 & SRD Series, Rapid Dryers for Wet Paper Sheets

For fast drying of wet paper pulp sheets mainly from laboratory sheet former according to TAPPI or SCAN standards.

- Rapid drying wet sheets of paper, rectangular drying plates.
- Uniform heat transfer through special plate (stainless steel).
- Temperature controlled by an integrated thermostat (RD-10 model) with temperature regulation from room temperature up to  $+180^{\circ}\text{C} \pm 10^{\circ}\text{C}$ .
- Digital temperature controller up to  $+180^{\circ}\text{C} \pm 1^{\circ}\text{C}$  (SDR series).



#### **SR-10 (Manual), Freeness Tester Schopper – Riegler Type**

To determine the refining degree and draining velocity of paper fibres, according to: ISO 5267/1 - SCAN C 19/M3 - NF Q 50-003 - BS 6035/1...

- Opening and closing the cone by weight release.
- Easy to use and clean.
- Stainless steel.
- Robust equipment.
- Ergonomic.



#### **SR-1 (Pneumatic), Freeness Tester Schopper – Riegler Type**

To determine the refining degree and draining velocity of paper fibres – Schopper-Riegler method, according to: ISO 5267/1 - SCAN C 19/M3 - NF Q 50-003 - BS 6035/1...

- Opening and closing the cone pneumatically.
- Easy to use and clean.
- Stainless steel.
- Robust equipment.
- Ergonomic.



#### **CSF-20, Canadian Standard Method Freeness Tester**

To determine the refining degree and draining velocity of paper fibres, according to: ISO 5267/1 - SCAN C 19/M3 - NF Q 50-003 - BS 6035/1...  
Easy to use and clean.

- Easy to use and clean.
- Stainless steel.
- Robust equipment.
- Ergonomic.



## Food Texture



### FTM-50, Food texture analyzer

The Food Texture Analyzer (Texturometer) FTM-50 is a cost-effective and easy-to-use solution for detailed texture analysis up to 1 kN in applications like Pet Food, Fruits, Snacks, Meats, Vegetables, Fish, Dairy, Nuts, Biscuits, Sausages etc.

It uses interchangeable load cells as a force measurement element. The equipment can be adjusted with a series of jaws, fixings and accessories specifically designed for the food industry, as well as for general applications such as evaluation of the resistance and integrity of the food packaging.

## Fluidity of Plastic



### MFI-100, Basic Melt Flow Indexer for Thermoplastics

Basic Plastometer to determine the melt flow rate (melt index) in thermoplastic materials by the gravimetric method.

- Gravimetric method.
- Low cost, Automatic Sample Cutting.
- Robust design with high rigidity.
- PID temperature controller (maintain  $\pm 0.1^{\circ}\text{C}$ ).
- Time programmer and number of cutting cycles.
- Equipment ready to work with corrosive materials such as PVC.



### MFI-500/AP, Computerised Melt Flow Indexer

Computerised Plastometer to determine the flow rate in thermoplastic materials by means of selectable Volumetric and Gravimetric methods.

- Computerized by Software of Melt Flow Index (PC included).
- Manually Weighing Testing System, Automatic cutting system of samples.
- Low Cost – Robust Design of great Rigidity.
- Temperature Controller (maintain  $\pm 0.1^{\circ}\text{C}$ ).
- Test equipment ready to work with corrosive materials such as PVC.



### MFI-500/Auto, Computerised Auto Melt Flow Indexer

The melt index meter is used to determine the melt flow rate of an extruded polymer in a molten state through a calibrated nozzle and using a reference weight.

- Volumetric and Gravimetric methods selectable.
- Computerised by Fluency Index Software (PC included).
- Motorized Weight Application System, automatic cutting of extruded samples, Temperature controller (keeping  $\pm 0.1^{\circ}\text{C}$ ).
- Equipment prepared to work with corrosive materials such as PVC.





Food / Metals & Alloys / Paper & Packaging / Plastic/ Adhesives  
/ Composites / Rubber & Elastomers / Wood & Agglomerates



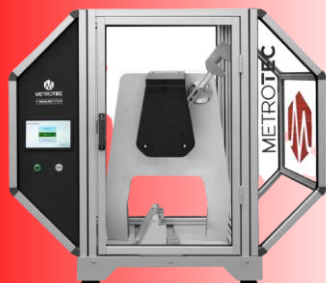
## Tensile / Compression



### **MTE Series (1 to 750 kN), Electromechanical Material Testing**

The 2-column universal testing machines are designed to test a wide range of materials such as Plastics, Light Metals, Rubber, Adhesives, Leather, Textiles, Threads, Ropes, Non-woven ... in Tension – Compression – Bending – Shear – tear etc, up to 750 kN. It is controlled in a closed loop by a high-performance Touch Screen PC, which allows to operate Automatically when carrying out the tests, by means of the modular Materials Testing Software “METROTEST”. We have a wide range of test accessories (Clamps, Extensometers, Thermal Test Chambers, Bending Bridges, Special Devices).

## Impact / Resilience Plastic



### **PIT-25, Charpy/Izod Pendulum Impact Tester for Plastics**

To perform tests of resistance to axial impact (resilience) in standardized specimens of rigid plastic specimens, composites, ceramics etc ranging from 0.5 – 25 Joules. The equipment basically consists of a robust tabletop frame, digital touch-screen display and polycarbonate cabin to protect the loading and unloading operations. The pendulum type test equipment after the impact on the sample can be stopped by means of a manual brake that is activated by a hand located on the front panel.



### **FIT-2000/A, Free Falling Drop Weight Impact Tester**

The falling drop weight Impact tester is mainly used to determine impact resistance of thermoplastic pipes and fittings under specified conditions of impact by means of a falling weight.

The equipment consists of a base with housing of the steel test cases of dimensions 800 x 600 mm, and a guide frame where the striker that provides the impact vertically, with a motorized lifting system.



### **RB Series, Rebound Resilience Testers**

The test apparatus allows to determine the percentage of rebound of the hammer measured on its height of fall. The test piece used is circular, 44.6 mm in diameter and 6 mm thick. Otherwise, a piece of round or square rubber, of approximate dimensions, may be used.

- Power: 0.5 Joules – 5 Kg. cm.
- Rebound rate: 0-100%.
- Drop angle: 90°C.



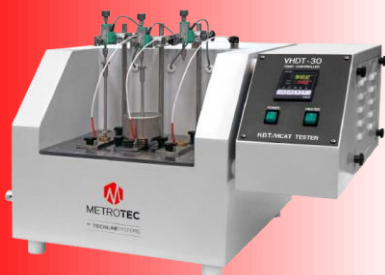
Food / Metals & Alloys / Paper & Packaging / Plastic/ Adhesives  
/ Composites / Rubber & Elastomers / Wood & Agglomerates



### **MNC-10, Notching Machine for Plastic Impact Specimens Charpy-Izod**

Equipment designed to perform standardized notches on samples, which are then subjected to monoaxial impact resistance tests, according to the CHARPY and IZOD procedures. 2 blades at a fixed angle of  $45^\circ \pm 1^\circ$ : 1 according to ASTM D 256 with radius of  $0.25 \text{ mm} \pm 0.01 \text{ mm}$ , 1 according to ISO 179/180 to choose from: Type A with  $0.25 \text{ mm} \pm 0.05 \text{ mm}$  radius, Type B with radius of  $1 \text{ mm} \pm 0.05 \text{ mm}$  and Type C with radius of  $0.1 \text{ mm} \pm 0.02 \text{ mm}$ . Analog micrometer with depths of 0-25 mm with a resolution of 0.01 mm.

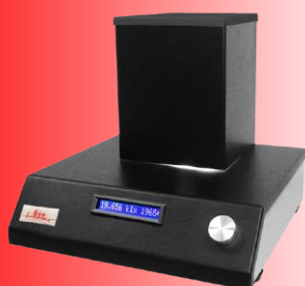
## **VICAT / H.D.T**



### **VHDT-30 HDT & VICAT, Softening Point Tester**

Laboratory equipment for the determination of the VICAT Softening Point and the HDT flexing temperature in thermoplastic materials. The VICAT softening point is the temperature at which a flat needle of 1 mm  $\times$  2 of section penetrates a sample at a depth of 1 mm. H.D.T. is the temperature of flexion under load, expressed as the temperature at which the sample reaches a certain arrow. This testing equipment is very effective in Quality Control and Research and Development work. Computerized with software that represents in Deflexion / Temperature Graph.

## **Transparency / Opacity**



### **OF10, Opacity Meter in Plastic Film**

Precision instrument designed to measure the Opacity in plastic films, transparent, clear or diffused, black or black/white, formed with Polyethylene and co-polymers. Designed to use in Horticulture, Floriculture, Alimentation, Garbage Bag ... Long-life lighting.

- Luminosity adjustment, resolution 0.0001 luxes.
- Fast stability measurement, reproducibility of results.
- Compatible with the LYNX Management System.
- Auto adjustment from 0.0001 to 200.000 luxes.



## Temperature & Relative Humidity Data Logger



### tlog TAG Single-Use Temperature USB Logger

- Range: -30 to +70°C.
- Memory: 8000 readings
- Indication: Green LED during Logging & Red LED during Alarm conditions.
- Case: Sleek, Robust & Tamper-proof.
- PC Interface: Direct USB – No special PC Interface cable is required.



### tlog TAG TL-464 USB Temp. + RH Data Logger

- Model No.: TL-464.
- Range: -30 to +70°C / 0 to 100% RH.
- Memory: 32000 readings.
- Indication: Green LED during Logging & Red LED during Alarm conditions.
- Case: Sleek, Robust & Tamper-proof.
- PC Interface: Direct USB 2.0, A-Type Plug – No special PC Interface cable is required.
- Software: Direct PDF report – No software is required.



### tlog TAG TL-463 USB Temperature Data Logger

- Model No.: TL-463.
- Range: -30 to +70°C.
- Memory: 16000 readings.
- Indication: Green LED during Logging & Red LED during Alarm conditions.
- Case: Sleek, Robust & Tamper-proof.
- Software: Direct PDF report – No software is required.



### tlog Smart TL-783 USB Temp. Logger with LCD display

- Model No.: TL-783
- Range: -30 to +70°C.
- Memory: 16000 readings.
- Indication: LCD display showing Current Readings.
- Case: Sleek, Robust & Tamper-proof.
- PC Interface: Direct USB 2.0, A-Type Plug – No special PC Interface cable is required.
- Software: Direct PDF report – No software is required.



### tlog Smart TL-784 USB Temp. + RH Logger with LCD Display

- Model No.: TL-784.
- Range: -30 to +70°C / 0 to 100% RH.
- Memory: 32000 readings.
- Indication: LCD display showing Current Readings.
- Case: Sleek, Robust & Tamper-proof.
- PC Interface: Direct USB 2.0, A-Type Plug – No special PC Interface cable is required.
- Software: Direct PDF report – No software is required.



Beer / Bioethanol / Biogas / Beverage / Cider / Dairy & Food  
/Mineral & Bottled Water / Wine & Spirits



**HAFFMANS**

## **Haffmans – Pentair QC Equipment Authorised Service Centre**

Pentair Haffmans supplies quality control equipment, micro-filtration and carbon dioxide (CO<sub>2</sub>) systems for the brewing, soft drink, wine, bioethanol and biogas industries. Haffmans is a market leader in state-of-the-art technology and we proudly service, maintain and calibrate their full range of following popular QC equipment.



**Portable Optical CO<sub>2</sub> / O<sub>2</sub> / TPO Meter**



**Portable Optical O<sub>2</sub> / TPO Meter**



**Portable Analog CO<sub>2</sub> Meter**



**Inpack Sampling Device 2.0**



**Automatic Inpack C-TPO Meter**



**Turbidity Meter**



**In-line CO<sub>2</sub> / O<sub>2</sub> Meter**



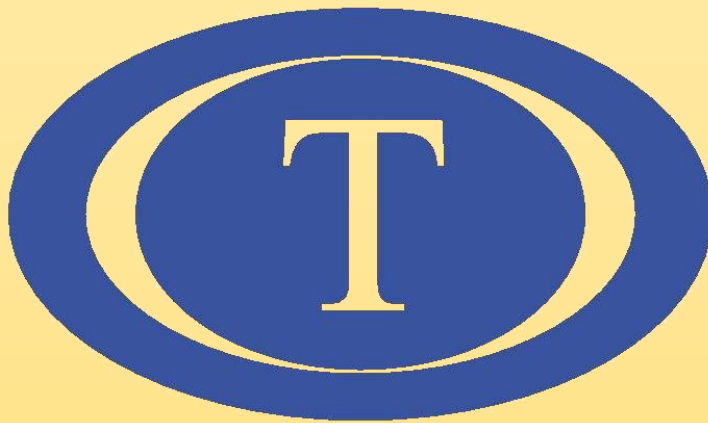
**Pasteurization Monitor - RPU**



**Automatic Package Content Analysis**

# TECHOTRIX PTY LTD

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