

# METAL PACKAGING TEST AND MEASUREMENT SOLUTIONS

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WHO ARE WE

# OVER A CENTURY OF EXPERIENCE

**At Industrial Physics we've made test and measurement solutions that have revolutionized metal packaging design for over 50 years.**

When you're working with metal packaging, you'll need reliable testing equipment to ensure the quality of your product. We have the gauges, testers, inspection systems, and software to ensure the quality and integrity of your finished products and packaging.

From seam inspection and burst testing, to coating measurements and finished can inspection, you'll find the support you need across our unrivalled portfolio of metal packaging testing devices.

Two decades ago, we invented automatic, double seam inspection and became recognized as a world leader in the industry. Today we remain at the forefront of change, delivering solutions that ensure the quality of lightweight and recycled sustainable designs. Whatever industry you work in, wherever

you're based, you'll find the device(s) that will perfect your packaging from across our family of specialist brands - including **CMC-KUHNKE, Torus, SpecMetrix, TQC Sheen, and United Testing Systems.**

OUR BRANDS:

CMCKUHNKE

TQC  
sheen

torus

spec METRIX

UNITED TESTING  
SYSTEMS

INDUSTRY KNOWLEDGE

**Metal packaging testing is vital for quality control processes, and Industrial Physics' instruments are renowned throughout the industry for their exceptional accuracy and reliability.**

If you make, or use, metal packages, then our reliable test and measurement devices and accessories are here to check that the quality of your containers meet your needs.

Whether you work with 2-piece or 3-piece cans, aerosols or can ends, our portfolio of testing tools caters for the entire metal packaging industry. From coating measurements, to crush and buckling testers, abrasion and enamel testers – our devices offer unmatched innovation to surpass your quality control needs. With solutions across the entire supply chain - from metal ends, to filled metal containers - we're here to help.



# DOUBLE SEAM INSPECTION & NON-DESTRUCTIVE SEAM INSPECTION

**Problems with seams on a canning line can be costly and time-consuming.**

Seam inspection is critical for protecting yourself against leaking cans and ensuring the quality of your metal packaging.

With a high-quality double seam inspection instrument, you can save time, hassle, cost, and protect yourself against unwanted product recalls.

At Industrial Physics, we're masters of double seam inspection – in fact, twenty years ago a brand in our family became recognized as a world leader in this market by inventing automatic, double seam inspection.

Our solutions are varied. Whether you're looking for destructive, non-destructive, or inline equipment, we can provide a solution to meet your needs. Everything from seam thickness, height, gap through to countersink depth, overlap and more – we're here to help.



## NON-DESTRUCTIVE SEAM INSPECTION



**Zero-waste solution**



**Unique radial measurement**



**Automated robot handling system**



**Versatile test and inspection machine**

## CMC-KUHNKE AUTO-XTS

The AUTO-XTS is available fully-automated through integration with line control or used as a standalone measurement system that provides non-destructive, double seam inspection. The AUTO-XTS will increase the accuracy and speed of your inspection processes and reduce spoilage, saving you time and money.

### X-ray imaging with the AUTO-XTS

This test and measurement solution combines the internal x-ray seam measurements of the SEAMscan XTS with a second station for external measurements into one robust unit, providing faster inspection results, and reduced labor costs. The proven, patented technology of our zero-waste solution lets you measure cans in a fraction of the time.

### Versatile testing

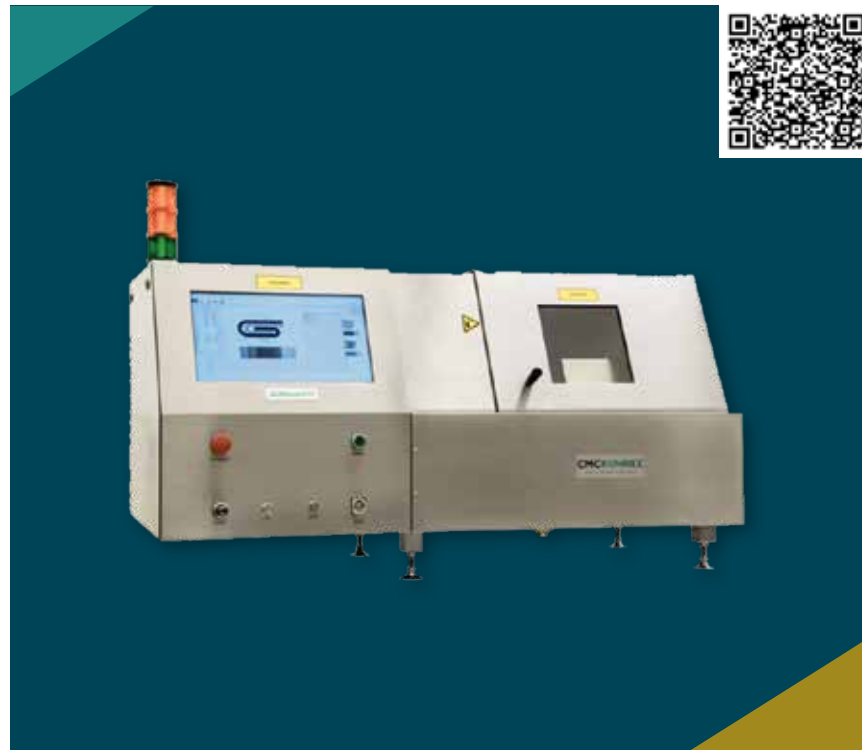
The AUTO-XTS is a versatile testing unit that offers excellent safety features. Its automated process protects users from seam saws, metal burrs or seam teardowns. It allows you to assess: seam thickness, countersink depth, seam height, body hook, cover hook, overlap, seam gap, and % body hook butting.

Additionally, our unique radial measurement provides accurate, single-point measurement allowing users to assess wrinkle detection and monitor tightness.

### Technical features:

- Versatile test and measurement solution, capable of measuring a wide range of seam characteristics
- Automated robot handling system, for a faster and more efficient testing process
- Visionary QC™ Pro SPC software collects data, which is instantly available for statistical analysis and presented in an easy-to-read and understand touch-screen format
- Non-destructive testing
- Trusted by the top 10 global beverage giants for new lines and upgrades





Zero-waste solution


Comprehensive  
360° measurement


Fast and safe


Proven and patented  
technology

## CMC-KUHNKE SEAMscan XTS III

This third generation of our popular SEAMscan XTS double seam inspection equipment is a stand-alone measurement system. The accurate gauge performs fast cross-sectional measurements and 360° tightness scans that reduce your labor costs.

It's a powerful double seam inspection tool that will accurately measure the double seam of any round can (seam height, body hook, cover hook, overlap, seam gap, and % body hook butting).

In addition, our unique radial measurement provides accurate, single-point measurement allowing users to assess wrinkle detection and monitor tightness.

### Safe, fast and precise double-seam inspection

When you use the SEAMscan XTS III double seam inspection tool you'll be protected by excellent X-Ray-shielding (TÜV Rheinland tested and certified to < 0.1 mSv per year).

This latest model features improved handling and increased versatility and precision, enabled by new generation image processing.

#### Technical features:

- Non-destructive testing
- Faster and safer than conventional cross-sectional methods
- Proven and patented operator independent technology
- Easy to use calibration / verification mode
- Compact design with integrated PC

## CMC-KUHNKE QbyV SEAMetal HD

The SEAMetal HD is one of the most accurate and repeatable double seam inspection systems in the world. Using our state-of-the-art optical technology and intelligent software, you'll automatically capture and analyze the double seam dimensions of all beverage cans. Effortlessly simple to use, it measures both two and three-piece cans with unprecedented resolution and accuracy.


Powerful SEAM  
doctor software

Adaptive seam  
detection algorithm

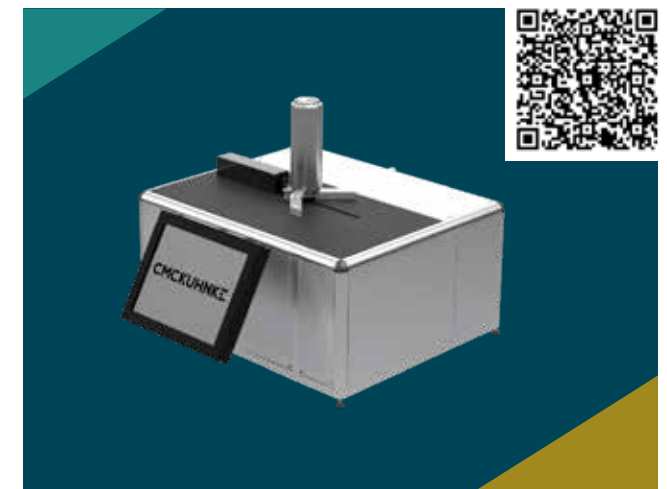
Inspect any radius,  
angle, distance  
or area

#### Technical features:

- SEAM-explorer™ allows you to inspect any radius, angle, distance or area of double seam inspection
- Measure wrinkle / tightness on the optical unit
- Multi touch support (zoom, pan)
- Communicates with any SPC data collection system
- External gauge support (can height, flange width, double seam thickness, double seam length and more)
- Portable double seam inspection equipment

## CMC-KUHNKE Z310 Combination Seam Gauge

The semi-automatic CMC-KUHNKE Z310 Combination Seam Gauge provides precise seam thickness and countersink depth measurements for both food and beverage cans, including a 360° scan around the can. This powerful universal gauge delivers automated, multi-measuring capabilities, enhancing efficiency and accuracy in can inspection processes.


Time saving  
combination  
seam gauge

360 degree  
analysis


High precision

#### Technical features:

- Complete 360° seam thickness profile
- Automatic can rotation
- No change parts required
- Multiple simultaneous measurements
- Automatic seam gauge data transfer
- Fully-automatic version available

# CAN END & CAN MEASUREMENT

Cans are used throughout a variety of end-markets, from food and drinks to pharmaceuticals, paint, cosmetics and cars. They come in all shapes and sizes, so it's essential that you have the right measurement tools for assessing your metal container.

The majority of the world's beverages are contained in aluminum cans. Not only is

this cheap and efficient, it's also infinitely recyclable. The rest are made from tin-coated steel, a popular choice for food cans. Our global expertise encompasses all types of metal containers, including 2-piece and 3-piece cans and aerosols. Across our vast product portfolio we manufacture automatic and manual gauges and devices that analyze can ends, shells or the finished product.



## CANS AND ENDS INSPECTION



Fast and accurate measurements



Multi-positional radial measurement



Fully automatic



Modular concept

## Torus Z301 Automatic Trimmed Can Inspection Gauge

The Torus Z301 Trimmed Can Inspection Gauge features fixed-top and mid-wall probe positions for multi-positional radial measurement, with a dedicated caliper to ensure the correct top and mid-wall thickness measurement positions every time. Also available in manual bench top and floor standing semi-automatic options.

### Measurement Features

- Trimmed Can Height | 1-16 positions | Accuracy:  $\pm 0.010$  mm
- Top Wall Thickness | 1-16 positions | Accuracy:  $\pm 0.010$  mm
- Upper Mid Wall Thickness | 1-16 positions | Accuracy:  $\pm 0.010$  mm
- Lower Mid Wall Thickness | 1-16 positions | Accuracy:  $\pm 0.010$  mm
- Wall Step
- Dome Depth | Single Point | Accuracy:  $\pm 0.010$  mm

### Confidence in your production process

The Z301 Trimmed Can Inspection Gauge provides you with speed and accuracy for your production processes. In addition, it is also a modular system that can develop and grow to meet your needs and can provide a cost-effective upgrade path for extra modules to be added.

### Technical features:

- In-line ready. Ideal for wall-to-wall plants, significantly increasing throughput and data collection
- Can Dome Depth Range: Typical Range 9 – 13 mm
- Trimmed Can Height, Top Wall Thickness, Upper Mid Wall Thickness, Lower Mid Wall Thickness, Wall Step and Dome Growth
- Can Range: Typical Range  $\varnothing 202 - \varnothing 307$  body diameters
- Can Materials: Aluminum / Steel
- Can Height Range: Typical Range 87 – 210 mm



Fast and accurate measurements



Modular concept



Removes operator bias



State-of-the-art technology

## Torus Z302 Automatic Finished Can Back End Inspection Gauge

The Torus Z302 Finished Can Back End Inspection Gauge measures finished can height, flange width and internal neck diameter in one solution. The gauge features high-precision transducer technology, using dedicated probe contact for accurate, reliable and traceable measurement of your finished cans 24/7. Also available in manual bench top and floor standing semi-automatic options.

### Measurement Features

- Finished Can Height | 3 positions | Accuracy:  $\pm 0.010$  mm
- Flange Width | 4 positions | Accuracy:  $\pm 0.010$  mm
- Internal Neck Diameter | 2 positions | Accuracy:  $\pm 0.010$  mm

### Confidence in your production process

The Z302 Finished Can Inspection Gauge provides you with speed and accuracy for your production processes. In addition, it is also a modular system that can develop and grow to meet your needs and can provide a cost-effective upgrade path for extra modules to be added.

### Technical features:

- Measures can height, flange width and internal neck diameter in a single solution
- Modular concept to cater for future upgrades
- Fully automated, removing operator bias
- In-line ready. Ideal for wall-to-wall plants, significantly increasing throughput and data collection
- Can Range: Typical Range  $\varnothing 202 - \varnothing 307$  body diameters



Modular concept



Accurate and versatile measurements



Innovative technology

## Torus Z307 Automatic Beverage Can Destructive Gauge

The Torus Z307 Automatic Beverage Can Destructive Gauge defines the standard for destructive testing and inspection. The gauge includes our Automatic Axial Load modules, which determines the maximum axial load force that can be applied prior to container failure, within a short cycle time. The system can also include our Z308 Dome Growth/ Dome Reversal module to provide detailed information about the overall change in length of the can when pressure is applied.

### Measurement Features

- Axial Load | Accuracy:  $\pm 10$  N
- Dome Growth | Accuracy:  $\pm 0.10$  mm
- Dome Reversal | Accuracy:  $\pm 0.05$  bar

### Gauge Features

The Torus Z307 Destructive Gauge is available for both straight walled and finished cans with Industry standard location patterns for component neck support. The gauge features selectable crush speed and factory set patterns ensure parallelism between gauge tooling faces. We also have a version available for testing food cans too.

Our modular gauge setups are unique and allow you to customize your gauge as and when you require, giving you the flexibility to ensure you have a total quality solution.

### Technical features:

- Available for both straight walled and finished beverage cans (another system available for food cans)
- Multi-size capability with no change tooling for both necked and straight walled can inspection
- Short cycle times
- Customer-specific data outputs (kgs, lbf, newtons etc.)
- High-accuracy axial load cell technology
- Modular concept to cater for future upgrades





Fully automatic



World-leading technology



Obtain complete confidence in colors and artwork

### Torus Z345 Automatic Color Inspection Gauge (Powered by X-rite®)

The Z345 Automatic Color Inspection Gauge is our next-generation color and artwork inspection solution for cans. If you're seeking complete confidence in the colors and artwork displayed on your cans, then the X-Rite® powered Torus Z345 Automatic Color Inspection Gauge is the ideal solution.

#### Tried and trusted color inspection technology

Renowned for its precision across the can making industry, the integrated X-Rite Ci64 unit offers you the most traceable color measurements. Each Z345 gauge is supplied with 'PatoneLive' ready, opening up the additional benefits of the cloud-based connection to the pantone color library. So, you can be confident that all of your measurements are traceable to global color standards and will operate consistently across all of your production sites.

Our high-resolution color scan camera and bar light reads and 'unwraps' your labels, taking a flattened image of the can decoration. Your scan is compared to a master image. Then the gauging automatically aligns to ensure accurate and repeatable measurement locations.

The Ci64 is an industry standard for color measurement within the metal packaging industry and our technology even features an advanced spectrophotometer. You can inspect your cans at pre-defined, user selected locations with unmatched positional repeatability. Simply drag and drop measurement points within the program to inspect any aspect of a can's decoration.

#### Technical features:

- Globally respected X-Rite Ci64 technology provides the most traceable color measurements
- Aluminum or steel cans rapidly inspected accurately and consistently, both straight walled and finished cans
- Measurements are traceable to global color standards – optimizing color consistency
- Quantifiable, traceable color measurement – complete L\*, a\*, b\*, Cmc, E2000 and E94 data
- Fully automatic can loading, alignment and rotation – slash human error, save time and money

### Torus Z346 Manual Bench Top Color Inspection Gauge (Powered by X-rite®)

The Z346 Manual Bench Top Color Inspection Gauge is capable of inspecting 202-300 body diameter, straight walled and finished cans with minimal change parts. Providing direct correlation to Torus' Z345 Automatic Color Inspection System, the Z346 boasts an easy-to-use platform for the inspection of multiple decorations, giving you direct data transfer into your chosen SPC package.



Fast measurements



Quantifiable color measurement



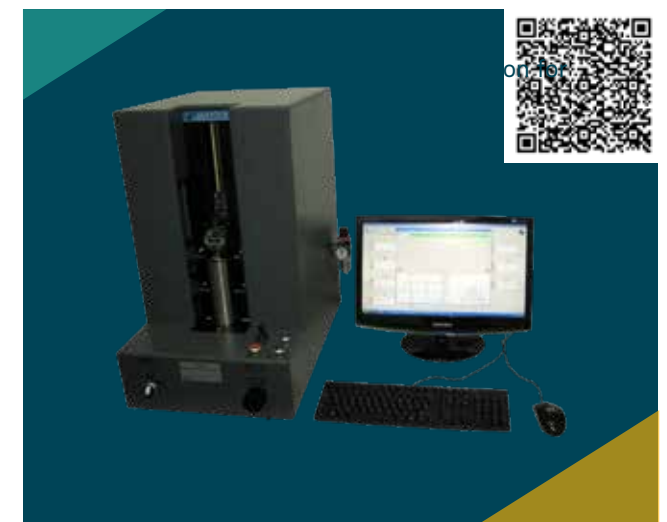
Reliable performance

#### Technical features:

- Delivers fast, reliable, accurate color inspection of the decorated aluminum or steel beverage can
- Provides complete L\*, a\*, b\*, Cmc, E2000 and E94 data for full traceability
- Early warning limits meaning decorators can be adjusted before colors go out of tolerance

### CMC-KUHNKE QbyV Multidimensional Automatic Gauge

The non-destructive, affordable technology of the MDA-100 can gauge, is suitable for all two and three piece cans. It speeds up your production line by inspecting all can dimensions in less than a second and three sections in just 10 seconds. The results are swiftly presented in an easy-to-analyze format, clearly flagging any aerosol can dimensions that don't meet your specifications. With the MDA's special centering mechanism and high-accuracy zero-drift gauges, there's no operator influence on the measurement process.



Innovative technology



Rapid measurements



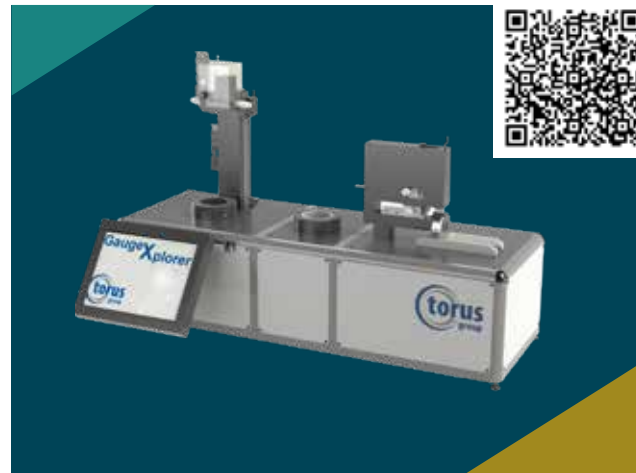
Industry leading accuracy

#### Technical features:

- Rapid can gauge measurement: three sections in 10 seconds
- Motorized can height gauge stops at force of 7N
- No change-parts needed from one can size to another
- Includes factory certified calibration gauge
- SPC software included

## Torus Z338 Manual Front End Trimmed Can Gauge

The Z338 Manual Front End Trimmed Can Gauge is designed for fast and accurate measurement of trimmed can ends. This easy-to-use system ensures that manufacturers can maintain high-quality standards while reducing inspection time. Designed to eliminate operator subjectivity and improve reliability and repeatability, the Z338 measures Trimmed Can Height, Mid and Top Wall Thickness, and Dome Depth.



Highly accurate and reliable



Removes operator bias



Multiple measurement capability

### Technical features:

- Quick-change manual tooling adapts to various body diameters.
- Compact bench-top design for easy transport between the lab and shop floor.
- Simple manual operation enables fast and accurate measurements.
- High-accuracy contact gauge ensures reliable results.
- Robust design for long-term performance in production environments

## Torus Z339 Manual Back End Finished Can Gauge

The Z339 Manual Back End Finished Can Gauge provides fast and reliable measurement of essential features, including Finished Can Height, Internal Neck Diameter, and Flange Width in necked beverage cans. It allows operators to manually position finished cans within the system, where a high-accuracy contact gauge determines critical dimensional parameters. By eliminating operator subjectivity, the gauge enhances repeatability and ensures reliable quality control.



Highly accurate and fast



Removes operator bias



Versatile instrument

### Technical features:

- Measures finished can height, flange width, internal neck diameter with accuracy of  $\pm 0.01$  mm
- Typical inspection is completed in 30 seconds
- Easy-to-use manual operation for quick measurements
- High-accuracy contact gauge ensures reliable results
- Automatic location tooling for 200 and 202 neck diameters
- No change tooling for multiple diameters

## Torus Z308 Semi-Automatic Bench Top Dome Growth/Dome Reversal Gauge

The Torus Z308 Semi-Automatic Bench Top Dome Growth/Dome Reversal Gauge is a high-precision tool designed to meet the rigorous demands of beverage can manufacturers. With its advanced capabilities, the Z308 provides accurate and reliable measurements for dome growth and dome reversal ensuring cans meet stringent performance requirements.



Highly accurate



Reliable and traceable measurements



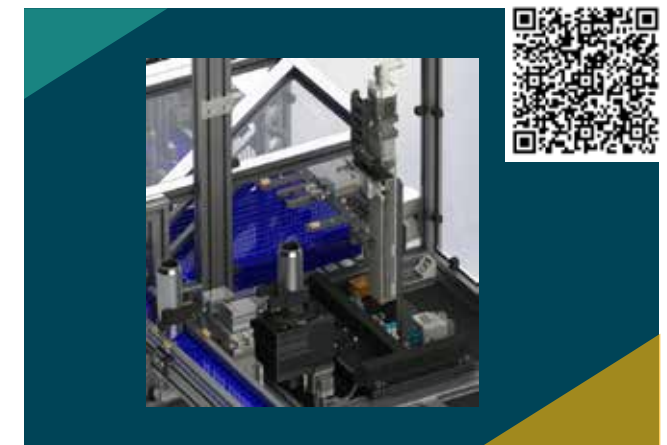
Advanced technology

### Technical features:

- High-accuracy pressure sensor technology
- Multi-size capability with quick-change tooling
- Measures dome growth to  $\pm 0.10$  mm accuracy
- Measures dome reversal pressure to  $\pm 0.05$  bar accuracy
- Cost-effective solution for off-line dome growth and reversal testing

## Torus Z705 Body Maker (BM) Recognition Module

The Z705 Body Maker Recognition Module operates both single and double-digit Alphanumeric Code, without any influence from the application of Body Maker underlining, vent holes or spray head traceability markings. A multi-segment illumination source, operates simultaneously with image acquisition, rotating around an optimal search area, collecting multi-image captures throughout the range.



Supports process control



World leading technology



Highly accurate

### Technical features:

- Body Maker Character Recognition Accuracy:  $> 95\%$
- Trimmed and finished components within one Body Maker camera
- Measurement data process traceability control for both trimmed and finished components
- On-site customer training capability (previously completed remotely due to complex nature of training)





**Extremely precise measurements**  
( $<1$  micron)



**Industry changing technology**



**Automatic and non-contact**

### Torus Z606 Automatic Score Inspection Gauge

Impressively precise, the uniquely innovative technology of our revolutionary score inspection gauge reimagines industry expectations and standards. With pioneering technology developed by Torus, the Z606 allows end manufacturers to access real-time, advanced data and highly precise residual score measurements.

With the Z606 Automatic Score Inspection Gauge, end manufacturers can have confidence in the thickness of their scores – reducing the number of defective batches and any potential customer complaints.

#### Unprecedented precision and data collection

The Torus Z606 is extremely precise. With precision levels of less than 1 micron, users are able to obtain incredibly detailed analysis of their residual scores. When you consider that a human hair is around 70 microns, you get a picture of how advanced our dual sensor technology really is!

Our R&D team achieved this feat with the power of white light scanning interferometry technology. This is combined with a narrow band light source and a high-resolution voice coil positioning slide so the upper and lower surfaces of the score area can be scanned with high-resolution.

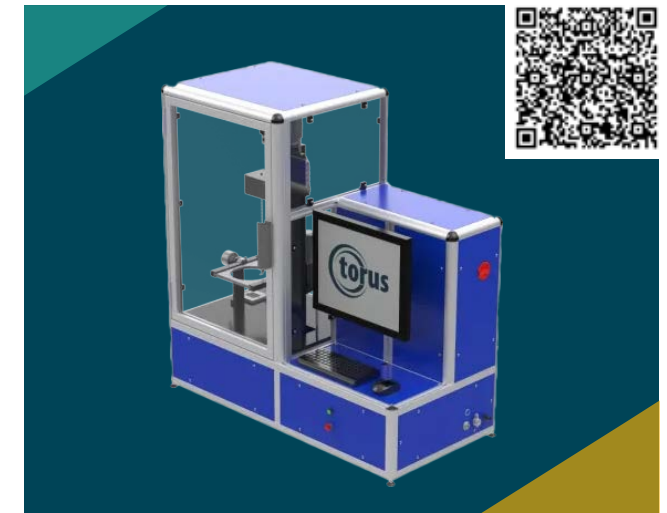
Each automatic score inspection gauge features two interferometry sensors that scan the 2.3 million surface data points. By combining vertical scanning with X, Y area scans, it achieves unprecedented resolution with each and every residual thickness measurement.

#### Technical features:

- Industry changing technology – the first of its kind and proven to work
- Ideal for supporting high-speed production lines
- Extremely precise measurements ( $<1$  micron)
- Scans 2.3 million data points per point location – increased through-put & data generation
- ROI on tooling information – understand manufacturing equipment better and gain greater information on your manufacturing processes

### Torus Z603 Semi-Automatic Bench Top Opening Force Gauge

The Z603 Semi-Auto Bench Top Opening Force Gauge checks the tabs on batches of your food or beverage can ends, making sure they're fit for purpose. It applies increasing pressure, simulating the action of opening a can to offer you precisely controlled tests including pop and tear and tab strength inspections. You get clear and accurate results in both graph and numerical format – in just 35 seconds.



**Extremely fast results**



**Highly accurate**



**Multiple measurements in one instrument**

#### Technical features:

- Measures pop force, pull force, tear force, pop angle, tear angle, tab force and tab strength
- Reliable accuracy of  $\pm 0.09$  kg and 0.045 kg force repeatability
- Fast opening force tests – 35 seconds per test
- Automatic tab rotation and alignment
- Set pass, warning or fail conformance tolerance limits

### Torus Z605 Automatic Beverage End Buckle and Burst Gauge

Torus Z605 Automatic Beverage End Buckle and Burst Gauge is the world's first End Buckle and Burst Gauge with up to three size capability with no manual change parts. Load and go! The operator simply loads a batch of ends into the gauge to initiate both the buckle and burst tests. The collated data is then quickly exported to the customers SPC data acquisition system for analysis.



**World leading technology**



**Efficient and accurate**



**Removes operator bias**

#### Technical features:

- World's first end buckle and burst gauge with up to three size capability with no manual change parts
- Removing operator error ensuring correct tooling is used, which in turn saves time and improves efficiency
- Using our modular design concept the system can be specified for your exact needs for now and in the future

## Torus Z401 Automatic Beverage Shell Inspection Gauge

The Torus Z401 Automatic Beverage Shell Inspection Gauge defines the standard for precise, automated dimensional inspection of beverage and beer can shells, ensuring accuracy and repeatability in critical measurements. The Z401 has been designed to cover multiple measurement capabilities, including **countersink depth, panel depth, curl height, curl diameter, average metal thickness** and more.



**Multiple measurements in one instrument**



**Removes operator bias**



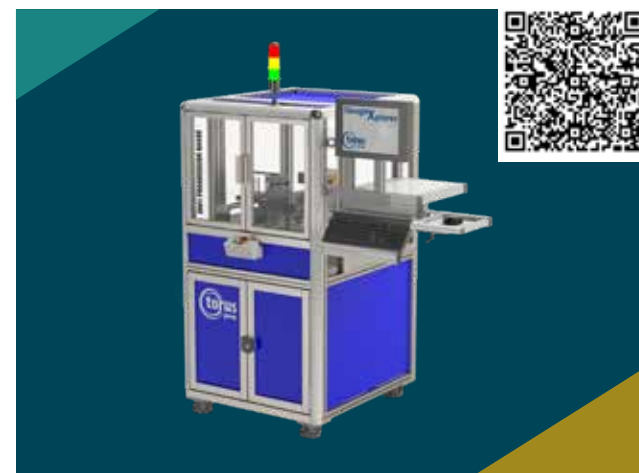
**Fast and accurate measurements**

### Technical features:

- No change parts required
- Capable of measuring pre-curl and finished shells without mechanical changeover
- Automatic Grain Alignment for precision measurement positioning
- Hopper-type handling system for efficient loading and unloading
- Operator-defined feature selection at up to 16 measurement positions

## Torus Z601 Automatic Beverage End EOE Progression

The Z601 Automatic Beverage End EOE Progression sets the standard for inspecting all standard and enhanced inspection features across all conversion types. The non-contact technology gives the operator the reassurance that no influence or bias has occurred during measurement, giving you full confidence in your production process. The system is available in two variants: Standard and Enhanced.



**Multiple measurements in one instrument**



**Removes operator bias**



**Extremely fast results**

### Technical features:

- All conversion types supported (SOT & RPT)
- Live data transfer to customer specific SPC package
- Standard feature cycle time <4 minutes per full progression
- Enhanced feature cycle time <8 minutes per full progression
- Fully automated so no change of parts

## Torus Z411 Automatic Food Shell Inspection Gauge

Designed for perfect food can shell production, the Torus Z411 provides essential contact measurement data for dimensional inspection of food can shells. Using our next generation systems, you will enjoy cycle time enhancements that will save you both time and money, while protecting your brand. Our technology is designed to cover a wide range of industry standard end sizes and help high volume manufacturers to thrive.



**No mechanical changeover**



**Efficient and accurate**



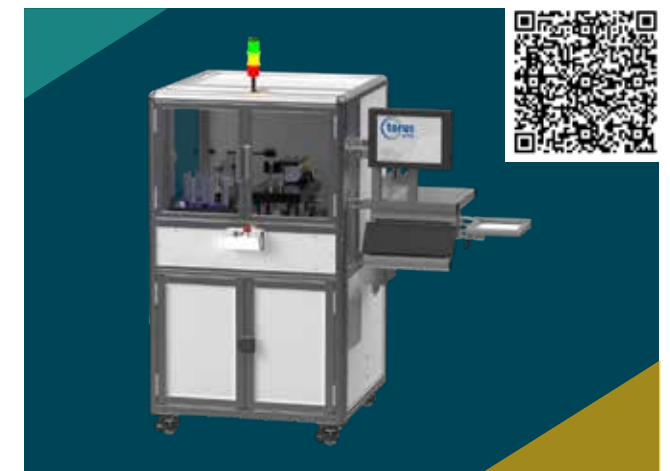
**Suited for industry standard end sizes**

### Technical features:

- Measures pre-curl, form and finished shell stages
- Fast and accurate measurement data with no change parts
- Covers a wide range of industry standard end sizes
- Can be supplied for a single-fixed diameter of food shell, or for facilities producing multiple sizes

## Torus Z611 Automatic Food End EOE Progression Gauge

Designed for perfect food can end production, the Torus Z611 provides essential contact and non-contact measurement data for total control over your manufacturing process. With automatic non-contact sensors, developed to eliminate operator error, you can have total confidence that no influence or bias can occur during measurement.



**Remove operator bias**



**Reliable and highly accurate**



**Suited for industry standard end sizes**

### Technical features:

- Measures full conversion stages
- Developed for convenience – all conversion types supported
- Covers a wide range of industry standard end sizes
- Improve productivity, industry specific processes, and quality
- assurance with our TMS GaugeXplorer measurement and machine control software



# COATING THICKNESS MEASUREMENT

When it comes to flexible packaging, precise measurement of coating thickness is essential. The thickness of the coating not only affects the durability and functionality of the packaging but also its aesthetic appeal. Consistency is key, whether you're working with barrier coatings, adhesives, or protective layers.

Through our advanced measurement systems, we offer reliable solutions for coating thickness testing. Our instruments provide real-time, non-contact, and non-destructive

data, giving manufacturers the tools they need to ensure quality, optimize material use, and maintain the highest standards across production lines.

From offline sample testing in lab environments to real-time in-line measurements during production, we deliver the flexibility to monitor and control coating processes at every stage. Whether you're working with flexible films, foils, or papers, our measurement solutions ensure precision and efficiency for the packaging industry.



## COATING THICKNESS MEASUREMENT



Real-time, non-contact measurements



Ultra precise



Broad range of use



Flexible and scalable

### SpecMetrix® ACS System

Brought to you by SpecMetrix, the ACS Systems are our most advanced and precise coating thickness and film weight measurement systems, specifically for metal packaging containers. They have broad application capabilities for coated metal can manufacturers and the coating suppliers that support them. In particular, the ACS line is ideal for measuring the interior and exterior coatings of cans.

The ACS Systems are configured to meet your specific can plant needs. From flexible single can models or plant-floor ready systems for multiple containers, we offer a semi-automated non-contact solution that delivers highly precise film weight data that supports your intended process control, QA or claims review uses.

- **Single can:** The ACS-1 System can measure the coatings of single cans, using either a 90° or flexible angle probe, and is well suited for container QA, R&D and coating supplier use.
- **Multiple cans:** The ACS-10 System provides plant teams with the flexibility to measure 1 to 10 containers in batches in the lab or can be tested on production floor environments.

#### Technical features:

- Measurement range is from 0.3 to 250 microns for coatings
- Accuracy: +/-1% of coating thickness (nominal)
- System Speed: 1-2 minute per container based upon plant selected measurement parameters
- Measurement Speed: Up to 50 per second
- Container Size Range: Up to 3.5 in (8.5 cm) diameter and up to 9.5 in (24 cm) height
- Modular system designs can be configured for use with multiple automation, scanning, inspection and process control options



## SpecMetrix® In-line Coating Measurement Systems

Industry-leading solutions designed to deliver unmatched precision in real-time coating thickness measurements, these systems integrate seamlessly into production lines, enabling manufacturers to achieve superior quality control and process efficiency. Utilizing patented, non-contact ROI optical technology, they provide non-destructive and highly accurate data for coatings applied to a wide variety of substrates.



**Real-time, non-contact measurements**



**Designed for seamless integration**



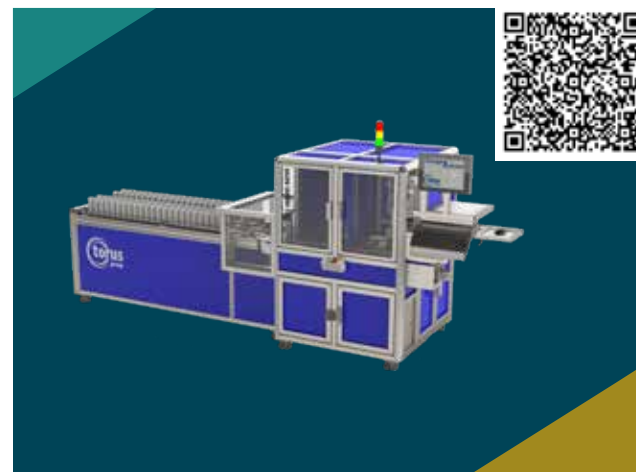
**Eco-friendly and safe technology**

### Technical features:

- Accurate measurement range is from 0.3 to 350 microns for coatings
- Measurement speed allows for up to 150 readings per second
- Eco-friendly and safe technology uses non-radioactive and non-invasive optical sources
- Powerful software stores real-time data for analysis and export to Excel®
- Modular design includes fixed or traversing system configurations to suit diverse production needs

## Torus Z313 Can Enamel Rating Gauge

The Z313 Series Automatic Enamel Rater measures the lacquer integrity of metal aerosol cans, with a typical throughput speed of 3 cans per minute and can be specified for conveyor loaded (automatic) or fully line fed (in-line) operation. The Z313 Gauge can be specified with the optional LSM/ISG Recognition Camera Module, ensuring SPC data output is "tagged" with the relevant traceability for effective remedial actions.



**Highly accurate**



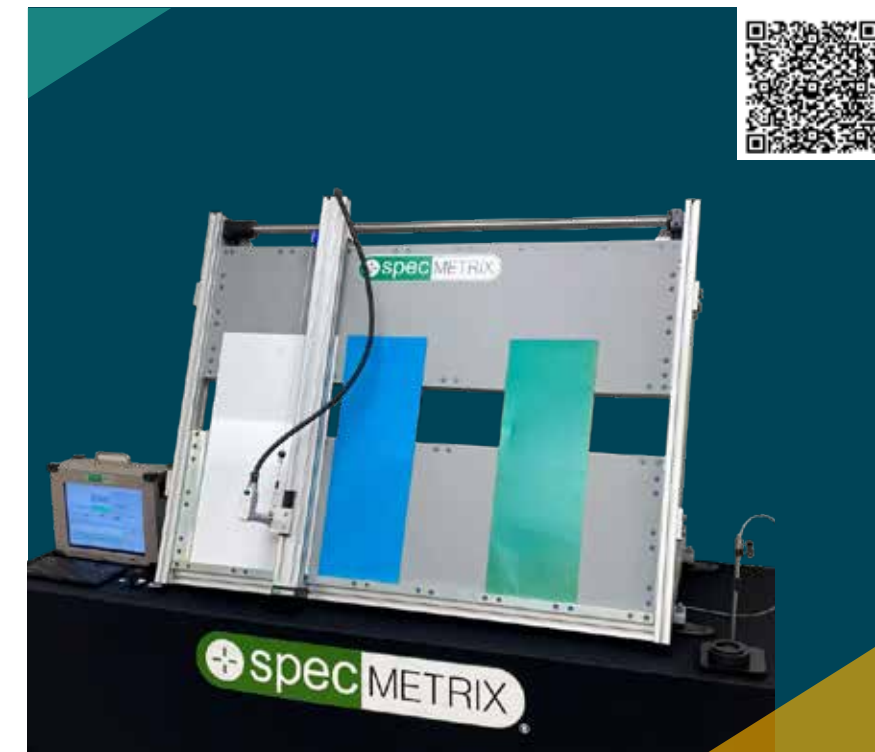
**State-of-the-art technology**



**Increase QC efficiency**

### Technical features:

- Conveyor loaded or in-line operation
- Optional 'internal spray gun' recognition camera module
- 'Posi-Fill' system for complete fill speed and level control
- 3 cans per minute throughput
- In-cycle conductivity monitoring giving customers confidence in their mA results



**Flexible and fast**



**Non-contact measurements**



**Ultra precise**



**Highly accurate**

## SpecMetrix® Film Weight Station (FWS)

Brought to you by SpecMetrix, the Film Weight Station offers a higher standard for non-contact, non-destructive, real-time offline thickness measurement testing for coated samples and flat films. Highly accurate and fast, the Film Weight Station provides thickness testing through both single-point and scanning modes. In addition, it can also deliver automated length and width scanning measurements of dry coated films or coil strips in laboratories or on coating lines.

The SpecMetrix® Film Weight Station is designed to streamline quality control testing and improve process control for film weight and coating thickness. It is one of our preferred laboratory measurement tools due to its unmatched ability to identify and quantify absolute film weight thickness with nanometric accuracy. The Film Weight Station system accelerates off-line film testing and improves incoming and finished product inspections.

With SpecMetrix's precise and innovative optical technology, users can obtain complete film weight and coating measurement data for their products and samples. Our technology will allow you to obtain coating measurements through non-contact and non-destructive means.

### Technical features:

- Measurement range is from 0.2 to 250 microns for coating thickness
- Accuracy: +/-1% of coating thickness (nominal) \* based on accuracy verification using NIST traceable thickness standards over the entire measurement range of 0.2 to 250 microns
- Measurement Speed: Up to 100 per second
- Temperature Range: 0° to 45° C
- Powerful SensorMetric Software – User-friendly software package automatically stores all data to Excel® or plant networks

# ADDITIONAL TEST AND MEASUREMENT SOLUTIONS

With unrivalled knowledge across a wealth of specialisms, we're able to provide testing tools to companies across a broad range of applications. Perhaps you need to analyze the durability of your coatings or check the strength and hardness of your metal materials.

When it comes to ensuring quality, there's no room for error – checking every aspect

of your product is vital. Take a look through some of the additional tests we have on offer...

With decades of experience in metal packaging, we can be a "one-stop shop" for all your test and measurement needs. Just contact us with your application needs, and we'll see how we can support you.



## ADDITIONAL MEASUREMENT

### United Testing Rockwell Hardness Tester Tru-Blue II

The Tru-Blue II is a high quality rockwell hardness tester that was designed for accurate testing and simplicity of use across various materials from aluminum, metals and steel to tinplate. The Tru-Blue II Rockwell Hardness Tester is built for durability, precision and ease of use, complete with a removable clamping device that secures your test, reducing operator influence. This benchtop hardness tester offers superior precision and accuracy compared to portable testers, due to its stable setup and controlled testing environment.



Highly accurate



Versatile measurement capabilities



Range of vertical heights

#### Technical features:

- Offers 15 regular scales: A, B, C, D, E, F, G, H, K, L, M, N, P, S, V
- Offer 15 superficial scales: 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y and 45Y
- Meets all NIST, ISO, CE, ASTM requirements, including ASTM E18 and ISO 6508
- Five preset load dwell times including NIST and plastics
- Computer controlled application of forces via load cell (closed-loop)

### United Testing Tru-Blue Micro VT

The Tru Blue Micro VT is a semi-automatic microhardness tester that offers industry-standard features and high-quality performance when performing Vickers hardness (HV) or Knoop hardness (HK). The Tru Blu Micro VT will verify heat treatments, test the strength of your samples and ensure that your material will perform as expected. The fully digital programming and control coupled with high-quality optics make running a test quick and easy for every user.



Versatile testing capabilities



Easy-to-use touchscreen



Highly accurate

#### Technical features:

- Performs both Vickers Microhardness and Knoop Microhardness testing
- Automatic-motorized turret rotation
- Meets range of industry standards
- 0-60 Second Dwell Time
- Test forces: 10gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1000gf



## ADDITIONAL MEASUREMENT

### TQC Sheen Comprehensive Abrasion Test

The Comprehensive Abrasion Test is a universal test machine designed to test the coating abrasion resistance on cans or other packaging or material types. The abrasion tester's reciprocating motion mimics in-the-field transportation damage of coatings, equivalent to the Gavarti Associates "GV-CAT" system.

This Comprehensive Abrasion Test machines is used in coating test laboratories for quality control work and is particularly useful in beverage can testing.



Innovative design



Highly accurate



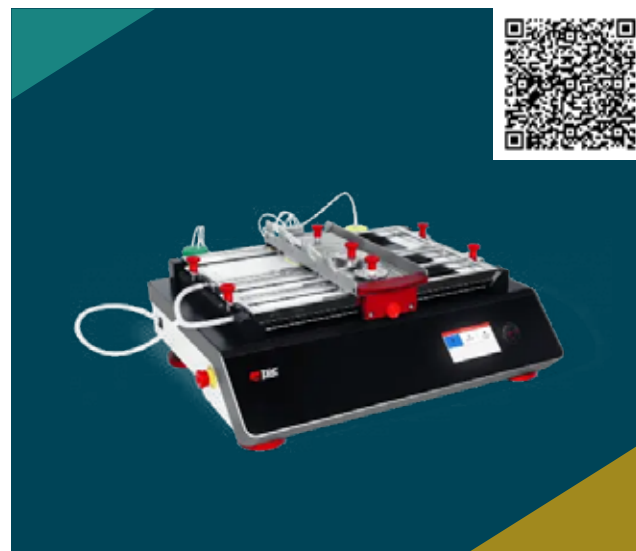
Simulates real-life wear and tear

#### Technical features:

- Test abrasion resistance of coatings
- Mimics in-the-field transportation damage
- Operating temperature: 0-50 °C / 32-122 °F
- Can dimensions: 150 – 1000 ml / 5.07 – 33.8 fl. oz.

### TQC Sheen Scrub Abrasion and Washability Tester

This robust abrasion tester measures scratch, wear and color loss resistance caused by wet or dry abrasion. By simulating everyday wear from cleaning actions or general use it will show you whether your paints, varnishes and coatings are fit for purpose. You can decide to set a 'pass or fail' test to a specified number of strokes. Or you can define the minimum number of strokes at which a coating will fail by checking at regular intervals. Our scrub abrasion and washability tester is suitable for a wide range of international standard requirements, including ASTM, ISO and DIN.



Versatile test capabilities



Highly accurate



Simulates real-life wear and tear

#### Technical features:

- Easy intuitive operating interface with Triple i Control (Intelligent Illumination Interface)
- Full color display
- Easy to update software
- Preset range option

## SUPPORT & SERVICES

**Wherever you are in the world, our experts are on hand to support your needs – whatever they may be. From installation to calibration, repair, and preventative maintenance, we've got you covered.**

We understand that being fast, efficient, and truly reliable is critical when it comes to servicing the instruments that keep your business running. And that's why we've established a global network of dedicated service specialists – allowing local experts across the world to support the needs of your facility.

### INSTALLATION

Our installation team are here to ensure a smooth set-up and effective configuration of your instruments. And our trained technicians will ensure your operators are clued up on how to use the machine straight away.

The familiarization process can take place on-site or remotely – whatever you prefer! We can also arrange group training.

### CERTIFICATES OF ACCREDITATION

As your global test and measurement partner, we hold many certificates of accreditation. You can visit our website or speak directly to our team to find out more information about this.

### EXTENDED WARRANTY

We have a host of services and extended warranty options available.

You can decide to select this when you purchase a new piece of equipment, or you can purchase this for equipment that is already in use – the choice is yours!

### CALIBRATION, REPAIR & PREVENTATIVE MAINTENANCE

Whether it's a one-off repair, scheduled calibration, or preventative maintenance, our dedicated team is here to assist you.

You can rest assured that all instruments are calibrated using accurate testing equipment that meets accepted industry standards. Our preventative maintenance options allow you to minimize unplanned downtime and optimize the lifetime of your instrument. And of course, if you need a repair, you can reach out to us for emergency support.



GET IN TOUCH

Find out more about how we  
can support your unique needs,  
get in touch today, email:  
[info@industrialphysics.com](mailto:info@industrialphysics.com)

