# QATM
**QUALITY ASSURED**

# Qness 250/750 CA/CA+ EVO
# Qness 250/750/3000 A/A+ EVO

**FULLY AUTOMATED UNIVERSAL HARDNESS TESTING**

# CUSTOMIZATION STRAIGHT TO THE POINT

part of **VERDER** scientific

FULLY AUTOMATED UNIVERSAL HARDNESS TESTING EVO
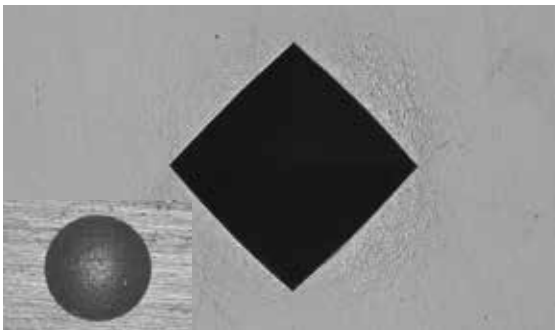
**FASTER
TEST METHOD CHANGE-OVER**

# 8-POSITION TOOL CHANGER

The easy way to serve universal applications: The sophisticated tool-changer concept with a rotational axis angle of 15° provides space for 8 tools in a uniquely compact unit. Downholder elements with a closed shape on three sides guarantee secure workpiece clamping around the test point – even for small test pieces.

## EFFICIENT AND SUSTAINABLE

# HIGHLY ACCURATE RESULTS IN ULTRA-SHORT TIME



**XLED TECHNIC**

### XLED BRINELL EVALUATION LENSES

XLED illumination modules revolutionize the analysis of Brinell indentations. Due to beading on commercially available lenses, soft Brinell indentations in particular can be subject to imprecise gauging results. In contrast, XLED lenses guarantee precise and repeatable measurements, regardless of material type and hardness, due to direct and wide-extension illumination.



### EXCELLENT IMAGE QUALITY

The optics system of the new EVO series has been completely redeveloped. It was built on site in the cleanroom at the QATM plant and benefits from the company's comprehensive expertise. All the new devices share one universal microscope system covering all the necessary visual ranges between 0.1 mm and 8 mm in maximum clarity and contrast. The QATM system guarantees uniform illumination across the entire image, regardless of the degree of magnification, and without dark edges.



### ETHERNET INDUSTRIAL COLOR CAMERA

High-quality CMOS 5-megapixel cameras with Ethernet data transfer define the current industrial standard. Unlike other camera systems, a far higher transmission stability is possible here. Additionally, the PC and hardness testing device can be set up remotely at great distances from each other. This is ideal in manufacturing environments in which the control infrastructure is installed in external switch cabinets.

## SUPPORTED TEST METHODS

### BRINELL
DIN EN ISO 6506, ASTM E-10

| HBW 1/1 | 1/2.5 | 1/5 | 1/10 | 1/30 |
|---------|-------|-----|------|------|
| 2.5/6.25 | 2.5/15.6 | 2.5/31.25 | 2.5/62.5 | 2.5/187.5 |
| 5/25 | 5/62.5 | 5/125 | 5/250 | 5/750 |
| 10/100 | 10/250 | 10/500 | 10/1000 | 10/1500 |
| 10/3000 | HBT (not acc. to standards) | | | |

### ROCKWELL
DIN EN ISO 6508, ASTM E-18

| HRA - HRV | HR 15-N/T/W/X/Y |
|-----------|-----------------|
| HR 30-N/T/W/X/Y | HR 45-N/T/W/X/Y |

### VICKERS
DIN EN ISO 6507, ASTM E-92, ASTM E-384

| HV0.3 | HV0.5 | HV1 | HV2 | HV3 | HV5 |
|-------|-------|-----|-----|-----|-----|
| HV10 | HV20 | HV30 | HV50 | HV60 | HV100 |
| HV120 | HVT (not acc. to standards) | | | | |

### KNOOP
DIN EN ISO 4545, ASTM E-92, ASTM E-384

| HK0.3 | HK0.5 | HK1 | HK2 |
|-------|-------|-----|-----|

### PLASTICS TESTING
DIN EN ISO 2039

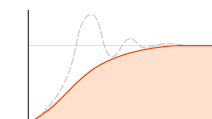| 49.03 N | 132.9 N | 357.9 N | 961 N |
|---------|---------|---------|-------|

### CARBON TESTING
DIN 51917 (optional)

### CONVERSION
DIN EN ISO 18265, DIN EN ISO 50150, ASTM E140



### FULLY AUTOMATED TEST CYCLE
With electronic weight application and closed-loop control

**FULLY AUTOMATED
UNIVERSAL HARDNESS TESTING**

# VERSION CA/CA+

| Proven concept – full automation with highly precise XY slide

| For applications with consistent sample height

## FULFILS CLEAR REQUIREMENTS

# SIMPLE AND RELIABLE



### TEST TABLE HEIGHT ADJUSTMENT

The height of the test table is infinitely adjustable (position can be fixed) via the play-free roller-bearing spindle guide - ideal for fully automatic series and progression tests on parts with identical test height. The test sequence is performed without clamping. Individual tests can also be carried out with the patented, swivelling downholder clamp.



### AUTOMATIC PROGRESSIONS

The automatic XY slide with high-precision positioning drive enables extensive test series and hardness curves. External joystick (option) for controlling the X and Y axis. Usable support surface: 170 x 250 mm, travels: X 260 / Y 266 mm.



### EMBEDDED SAMPLES

Two QATM sample holders, each with up to eight embedded samples, can be placed on the large workpiece support with integrated slots, allowing up to 16 specimens to be tested in one operation.



### SAMPLE IMAGE CAMERA

Ultimate ease of use with 5 megapixel colour camera for recording the entire sample for a perfect overview and documentation in the protocol. It is standard in the CA+ and A+ versions to record the entire table surface as sample image.



OPTION

AUTOSNAP
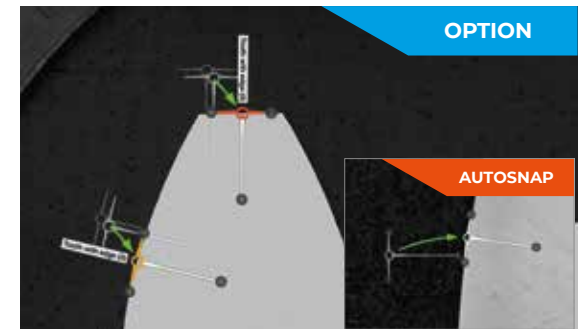
### EDGE RECOGNITION

Edge recognition involves automatic adaption of test row starting points to the sample edge when using project and sample templates. The module significantly increases the degree of automation and is an ideal add-on to the serially provided Auto-Snap function.

FULLY AUTOMATED UNIVERSAL HARDNESS TESTING EVO

## UNMATCHED PROFESSIONALISM

# VERSION A/A+

| Highly precise test head control by asynchronous motor
| Automatic XYZ test progressions
| Base cabinet and safety housing fully integrated into machine design

## HIGHLY PRECISE AND HIGHLY AUTOMATED

# CUSTOMIZED FOR YOUR TEST REQUIREMENTS



### FULLY AUTOMATED 3-AXIS CONTROL

Fully automatic and robust XY slide with high-precision positioning drive. Dynamic joystick to control all 3 axes (XYZ). Usable support surface 450 x 300 mm or, on request, larger travels and test tables available.



### DIFFERENT TEST HEIGHTS

For each XY test point position the Z height can be individually selected. During automatic testing, the machine changes between specimens of different height or different test levels safely and fully automatically. Thanks to the innovative CAS technology, the unit is protected against collisions. When testing clamped samples, the patented QATM "workpiece recognition" reduces the approach speed of the test head automatically via sensor detection (preserves machine and sample).



### MAXIMUM CLAMPING SAFETY

High-performance induction motor in the A/A+ version facilitates a workpiece clamping force of up to 3500 kg. Clamping power is adapted to the test method and is automatically set to be greater than the test force. Operators do not need to set levels and can rely on the device to guarantee safe, optimized adaption.
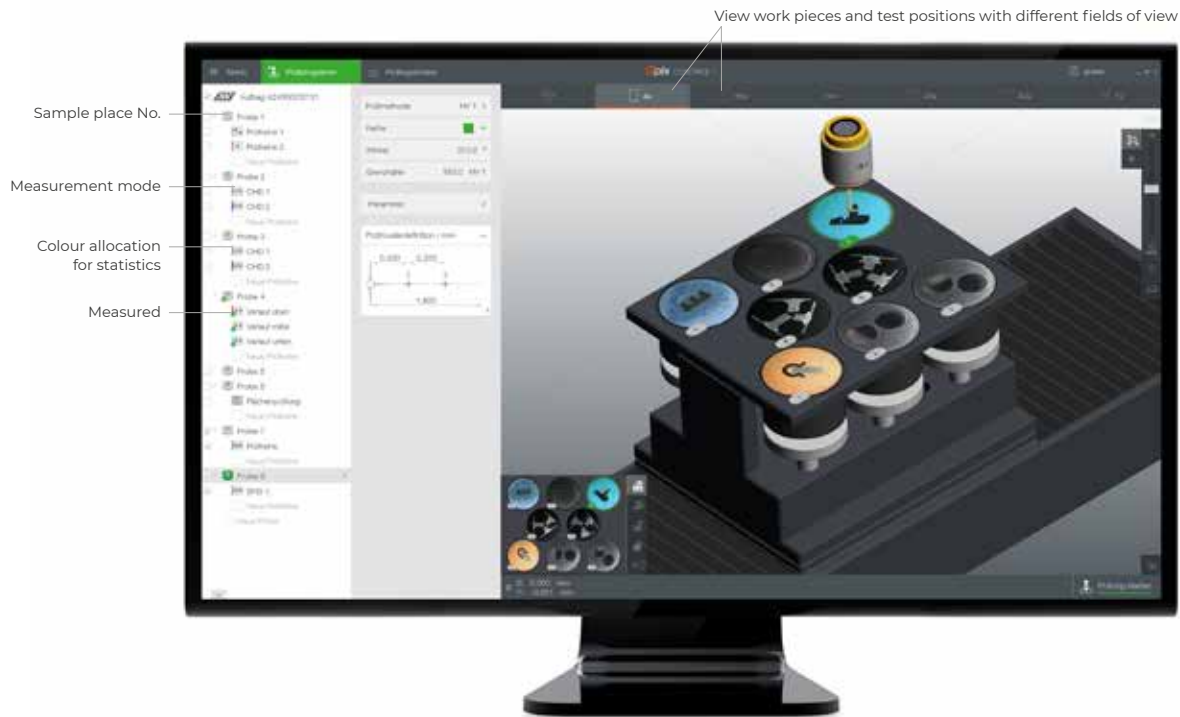


**PATENT**

### ELETRIC SWIVELING DOWNHOLDER

For hardness tests according to Rockwell or Brinell, parts securely fixed with the downholder are indispensable. For general processes, such as edge recognition or during the programming of test samples, however, the downholder is not required. Hence, the downholder clamp can be swivelled in or out by motor in a matter of seconds between different processes in the innovative EVO system. This improves operating convenience and further reduces cycle times.



### IDENTICAL SAMPLE TESTS

An entire range of relevant data, such as test patterns, test methods and user fields can be activated via pre-defined sample magazines. QATM can provide the most suitable clamping setup, matrices and cassette systems for every requirement.

View work pieces and test positions with different fields of view

Sample place No.

Measurement mode

Colour allocation
for statistics

Measured



**Qpix CONTROL 2**

## OPERATION VIA EXTERNAL PC SYSTEM

# REVOLUTIONARY 3D OPERATING CONCEPT

Intuitive, clearly organized and professional: Qpix Control2 next-generation hardness testing software, developed based on customer feedback and input for maximum user-friendliness. The controlled test head benefits from automatic height adjustment and contactless exploration, complete integration of the Qness sample holder, CAD compatibility with 3D imaging and a whole range of easily understood 3D control elements and views included in the software. It sets new standards in hardness testing.



LIVEVISION-TECHNIC

**CUSTOMER-SPECIFIC SAMPLE HOLDER**

Identical samples can be set up in the software in scale as a 3D model.



CAS-TECHNIC

**CAS TECHNOLOGY**

Innovative Collision Avoiding System (CAS) technology protects the mechanical parts in the device using predictive 3D motion calculations to visualize the effects of collisions and operation errors.

## INDUSTRY 4.0

# EQUIPPED FOR TODAY AND TOMORROW



### PROFESSIONAL DATA MANAGEMENT

Clearly structured batch management and effective use of templates from a wide range of test projects. Structured measurements with comprehensive background order information. Templates can be generated to contain all necessary information about test patterns, test methods, names and user-field information.





### QNESS CALIBRATION MANAGER: ADVANCED TEST BLOCK MANAGEMENT

Redefining calibration result management: The Qness Calibration Manager can be set up to provide users with reminders of necessary checks at selected intervals. Test results can be added to the ongoing statistical profile at the push of a button. A clearly comprehensible overview of permitted toler-ance values and long-term tracing of trends derived from all results, for every device and every test block. QATM test block data can be called up conveniently online without the need to enter test plate details. Extremely simple protocol access for purposes such as audits.
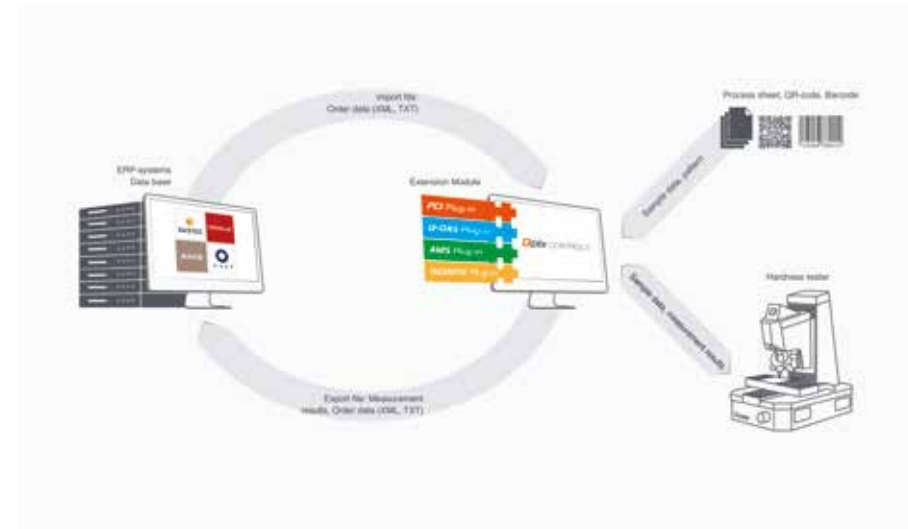
### COMPLETE INTERLINKABILITY

Optionally completely interlinkable with databases, CRM systems and statistics programs via the PCI software module and with a direct link-up to production control systems - also for completely unmanned operation via the Qpix Remote Plug-In interface. The expert QATM team looks forward to helping you conceive the best possible solution for every link-up option.

## APPLICATION EXAMPLES

# PERFECT SOLUTIONS FOR ANY APPLICATION



### TEST PIECE CLAMPING AND SAMPLE HOLDER RECOGNITION

Switchable industrial magnets enable power- and time-saving loading and unloading of the test system and, at the same time, guarantee a secure hold during the test. In addition, all QATM fixtures can be equipped with a sample holder recognition: via integrated sensors, the fixture is automatically recognized by the testing device and only the appropriate test programs are loaded.



### CUSTOMIZED SOLUTIONS IN LARGE FORMAT

Individual planning and professional project handling



### SWIVELLING TEST PIECE SUPPORT

The swivelling test piece support permits testing of samples even if the testing surface is not parallel to the support surface.



### JOMINY SAMPLE TESTING

Up to 8 samples can be placed in the Jominy sample holder for testing with the additional Jominy test module. The testing cycle is fully automatic and executed according to the norm. Larger sample holders are available on request.
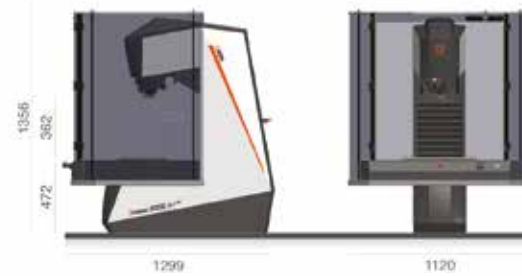


### TUBE TESTING

The Qness 250/750/3000 A or A+ EVO models allow testing tubes and tube segments fully automated and with maximum throughput according to valid standards.

| | **CA** EVO | **CA+** EVO | **A** EVO | **A+** EVO |
|---|---|---|---|---|
| Test force range | **Qness 250** 1 - 250 kg (9.81 - 2450 N)<br>**Qness 750** 0.3 - 750 kg (2.94 - 7358 N) | **Qness 250** 1 - 250 kg (9.81 - 2450 N)<br>**Qness 750** 0.3 - 750 kg (2.94 - 7358 N) | **Qness 250** 1 - 250 kg (9.81 - 2450 N)<br>**Qness 750** 0.3 - 750 kg (2.94 - 7358 N)<br>**Qness 3000** 0.3 - 3000 kg (2.94 - 29430 N) | **Qness 250** 1 - 250 kg (9.81 - 2450 N)<br>**Qness 750** 0.3 - 750 kg (2.94 - 7358 N)<br>**Qness 3000** 0.3 - 3000 kg (2.94 - 29430 N) |
| Sample image camera | - | Resolution 5 megapixel | - | Resolution 5 megapixel |
| Height adjustment | Handwheel on play-free roller bearing spindle guide including clamping device | | electrical via Asynchron motor | electrical via Asynchron motor |
| Test height / Throat depth | 250 / 220 mm | 250 / 220 mm | 362 / 320 mm | 362 / 320 mm |
| Test anvil / XY cross slide | Motorized 170 x 250 mm | Motorized 170 x 250 mm | Motorized 450 x 297 mm | Motorized 450 x 297 mm |
| Traverse path | X 260 / Y 266 mm | X 260 / Y 266 mm | X 460 / Y 350 mm | X 460 / Y 350 mm |
| Max. workpiece weight | 100 kg | 100 kg | 'unlimited' | 'unlimited' |
| Weight of basic device | 320 kg | 320 kg | 695 kg | 695 kg |

| | |
|---|---|
| Software | **Qpix** CONTROL EVO |
| Interfaces | 1x RJ45 (Ethernet) |
| Tool positions | 2 (Standard) or 8 (Tool Changer) |
| Power supply | 230~1/N/PE (option: 110~1/N/PE) |
| Max. power consumtion | ~ 480 W (CA / CA+), ~ 1680W (A / A+) |
| Accessories and options | XLED1, XLED2, XLED5, 5x, 10x, 20x, 50x, 100x<br>Indenters (Vickers, Rockwell, Brinell), fix or swivelling downholder, signal lamp (A / A+) etc. |
| Jominy | Jominy 8-position sample holder incl. test module (optional) |

# QATM
## QUALITY ASSURED

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# VERDER
## scientific

## VERDER SCIENTIFIC

# SCIENCE
# FOR SOLIDS

The Scientific Division of the VERDER Group sets standards in the development and manufacture of high-tech equipment for quality control, research and development of solid matter. The fields of activity cover sample preparation of solids as well as analysis technologies.

For decades our companies have been supplying production plants and research institutes, laboratories for quality testing and analytics, all kinds of technical specialists and scientists with modern, reliable devices to solve the many and varied challenges they face.

CARBOLITE GERO 30-3000°C

ELTRA

Retsch

QATM

MICROTRAC MRB