

MEASUREMENT IS SO SIMPLE

ADVANCED 4D METROLOGY

AYONIS®

ALTIMET

Ayonis, your expert in dimensional metrology

AYONIS



30 YEARS OF EXPERIENCE

AYONIS range: over 30 years of experience in the field of high precision metrology.

We offer a range of high-tech machines perfectly suited to current industry requirements.

Equipped with powerful software suites, our machines perform in laboratories as well as in production environments «on the line edge».

Innovation and reactivity are the real competitive advantages of AYONIS.

#RELIABILITY #TIME SAVING

OUR SERVICES

Training

Our training courses allow you to work with our metrology machines by optimizing the use of dedicated software.

Maintenance

Our maintenance contracts include an annual visit and online support. They are available for all models and provide serenity and confidence.

Durability

The retrofit proposed by our company offers the opportunity to upgrade your measuring equipment, whether it is a 2D or 3D machine. Our team will work on your measuring tool and send you an updated and efficient machine.

Your partner to meet your metrological requirements!

Ayonis is a French brand specialized in the design, production and marketing of contactless automatic measuring equipment, ranging from 2D digital profile projectors to multi-sensor 3D measurement machines.

We also develop software for metrology and data processing.

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Visionis

The smart inspection system

Our instruments allow you to check the dimensional conformity of your industrial products, in many sectors of activity such as:

Medtech | Watchmaking | Electronics | Automotive | Aeronautics | Cosmetic

CONTACTLESS MEASUREMENT: FROM MANUAL PROFILE PROJECTOR TO DIGITAL PROJECTOR



Manual profile projector.

The manual profile projector is an optical measurement device. Based on the shadow puppet principle, the part profile is projected on a screen.

The optical chain ensures a magnification determined between the size of the projected image and the actual size of the part (ex. x10, x50, x100). This instrument is used for the control by superimposing a layer on the screen, or the measurement of simple 2D geometric elements, such as a distance, an angle, a diameter ...

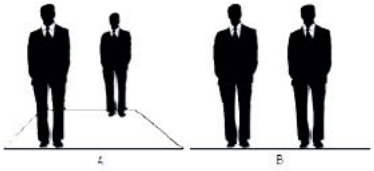
Despite a great number of machines installed, the manual profile projector presents 3 major drawbacks and cannot meet the increasing requests of the users.

- Lack of objectivity of the measures. Manual point capture, eyestrain, and eyesight difference can affect performance.
- Control time is very slow.
- Lack of traceability: the reading of values remains mostly manual.

The AYONIS digital profile projector allows the correction of these drawbacks, while increasing the performances of this kind of measuring means.

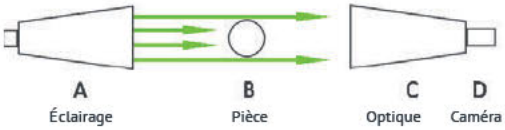


In a digital profile projector, the optical chain is replaced by a high-resolution camera, telecentric lens and lighting devices. These three systems meet strict criteria to transcribe as faithfully as possible the image of the part to be measured.



The so-called bi-telecentric optics allow, unlike traditional photographic type optics (A), to transcribe the image without defect in perspective (B).

Collimated lighting ensures perfect sharpness of the part's edges.



Finally, the camera makes it possible to transcribe the image of the part in a very precise way, to allow the computer to automatically extract its profile.

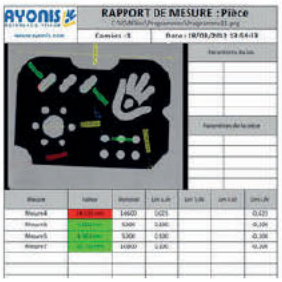


The whole processing is performed by the computer, which enables detection in less than one second.



This new generation of projectors is linked to a computer system, so that all measurement results are stored in a database. The information can then be processed by our software, or exported to a database, to obtain statistics (SPC).

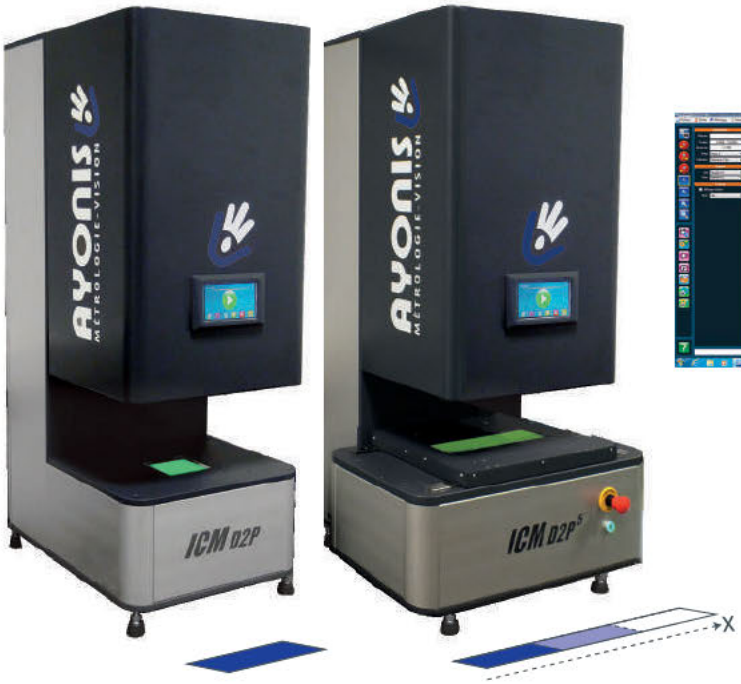


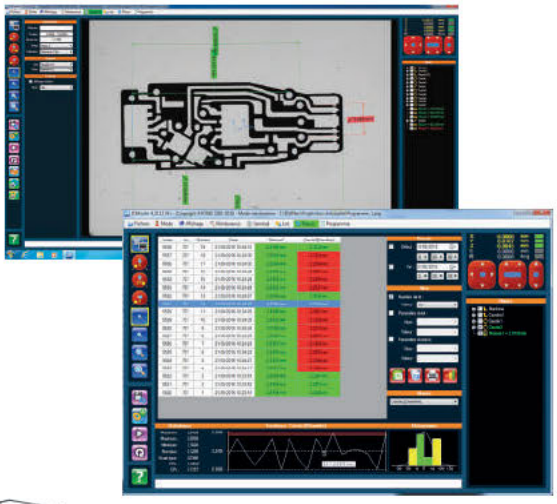


ICM D2P

2D digital profile projector







You drop it, you measure it!

Parts recognition and automatic selection of the corresponding program.

Control of parts regardless of their position and orientation in the field of view.

Increased accuracy, reproducibility and objectivity of the measurements while reducing control time.

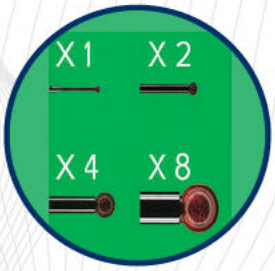
Recording and statistical analysis of measurements to optimize traceability and quality control.

Within one second



Machine structure:

- Robust aluminum structure allowing “line edge” use
- Bi-telecentric optics for extremely accurate full field measurements
- Optional X motorized axis
- Embedded computer

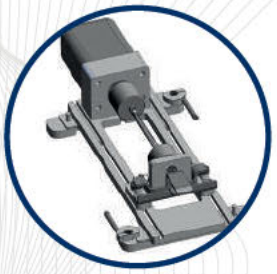


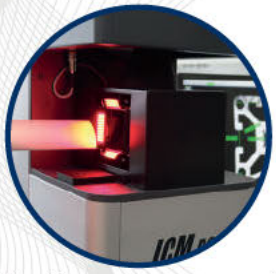
4 magnifications

Measurement ranges:

	Zoom position			
	1	2	3	4
Field of view	67.6 x 56.5mm	33.8 x 28.3mm	16.9 x 14.1mm	8.4 x 7.1mm
«P» uncertainties in the field (2σ)	±5 µm	±2.5 µm	± 1.3µm	±0.7 µm

	ICM D2P 200	ICM D2P 400	ICM D2P 600
Maximum measuring range with axes	200 x 67.6 mm	400 x 67.6 mm	600 x 67.6 mm
XY uncertainties (2σ)	P + (2.5 + L/200) µm (L in mm)		


Rotary axis


Profiles measurement

Vision:

- 5 MPX high definition digital color camera
- Motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
  - Episcopic white LED
  - Diascopic collimated LED
- Optional motorized 3-in-1 lighting device (episcopic, low angle, dark field)


3 in 1 lighting device

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go mini (embedded computer)
- 24'' touch screen
- Windows 10 / 64 bits

ICM suite software:

The ICM D2P machine is provided with the “ICM suite™” software, that enables control of parts, exploitation of measurement results, and reporting of equipment use. It includes a powerful library of tools perfectly suited to your profession (watchmaking, micromechanics, cables, seals, electronics ...).

Optional configurations & accessories:

- 5 MPX camera with single field up to 67 x 56 mm
- 20 MPX camera with single field up to 120 x 80 mm
- 71 MPX camera with single field up to 67 x 47 mm
- Workstation
- Motorized rotary axis (W)
- Mounting with integrated lighting for the control of profiles or long tubes

Terms of use:

- Power supply: 220 V or 110 V, 50 or 60Hz, 500VA
- Temperature range ensuring accuracy: θo ±1°C (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C

ICM Scan

2D digital profile projector





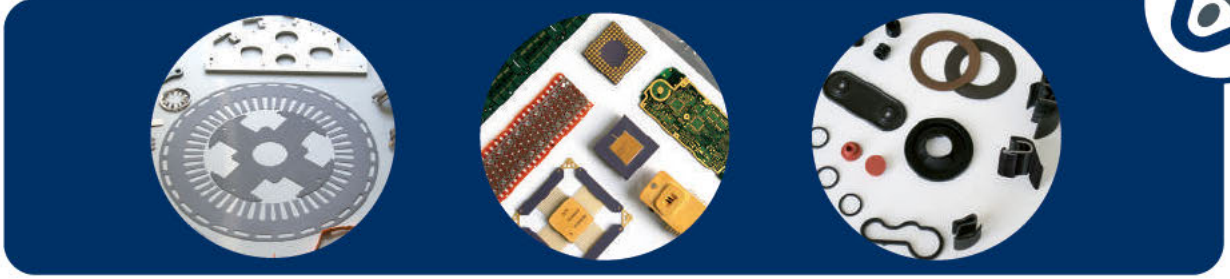


You drop it, you measure it!

Control of parts regardless of their position and orientation in a field of view up to 300x200 mm.

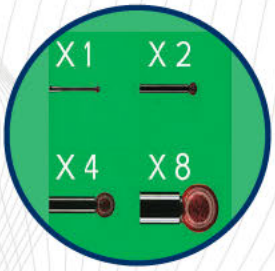
Increased accuracy, reproducibility and objectivity of the measurements while reducing the control time.

Recording and statistical analysis of measurements to optimize traceability and quality control.



Machine structure:

- Structure in cast aluminum alloy
- XY stroke: 150 x 150 or 250 x 150 mm
- Maximum XY measuring capacities: 200 x 200 mm or 300 x 300 mm (zoom 1)
- Load capacity: 10 kg.
- Cross roller guide
- Encoder resolution: 0.1 µm.
- X, Y, Z speed: 100 mm/s max
- Bi-telecentric optics for extremely precise full field measurements.

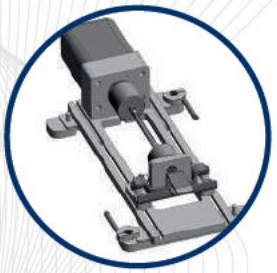


4 magnifications

Measurement ranges:

	Zoom position			
	1	2	3	4
Field of view	67.6 x 56.5mm	33.8 x 28.3mm	16.9 x 14.1mm	8.4 x 7.1mm
«P» uncertainties in the field (2σ)	±5 µm	±2.5 µm	± 1.3µm	±0.7 µm

	ICM SCAN 2020	ICM SCAN 3020
Maximum measuring range / zoom 1	200 x 200 mm	300 x 200 mm
XY uncertainties (2σ)	P + (2.5 + 5L/1000) µm (L en mm)	


Rotary axis

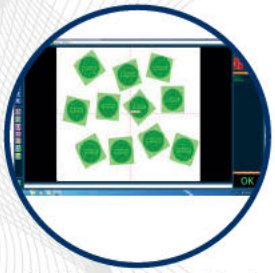

Multi-parts control

Image Stitching:

- The advanced stitching function allows optimization of the reconstruction of a global image from the acquisition of a multitude of images.


3 in 1 lighting device

Vision:

- 5 MPX high definition digital color camera
- Motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
  - Episcopic white LED
  - Diascopic collimated LED
  - Optional motorized 3-in-1 lighting device (episcopic, low angle, dark field)
- Magnification x14 to x112 (as an indication in full-field display on 24'' screen)

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go mini
- 24'' touch screen
- Windows 10 / 64 bits

ICM suite software:

The ICM D2P machine is provided with the "ICM suite™" software, that enables control of parts, exploitation of measurements results, and reporting of equipment use. It includes a powerful library of tools perfectly suited to your profession (watchmaking, micromechanics, cables, seals, electronics...).

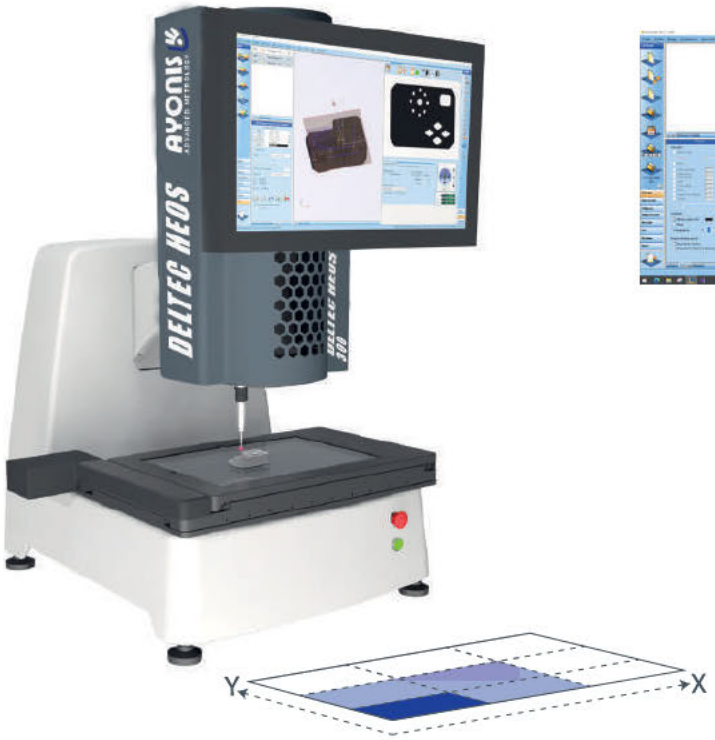
Terms of use:

- Power supply: 220 V or 110 V, 50 or 60Hz, 600VA
- Temperature range ensuring accuracy: θo ±1°C (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C

DELTEC Heos

2D/3D hybrid digital profile projector





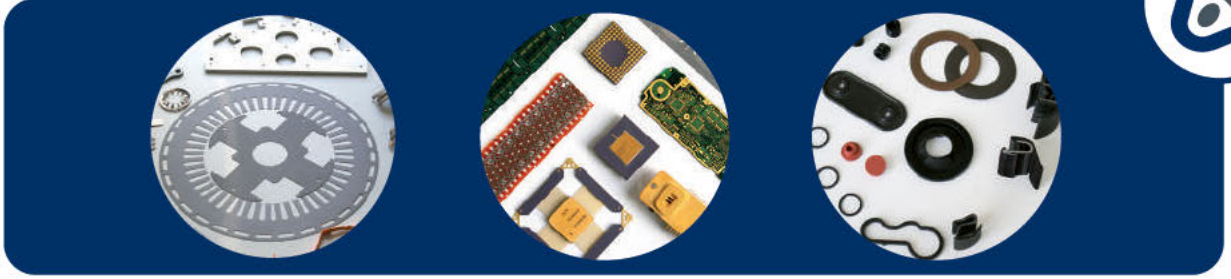


You drop it, you measure it!

Control of parts regardless of their position and orientation in a field of view up to 300x200 mm.

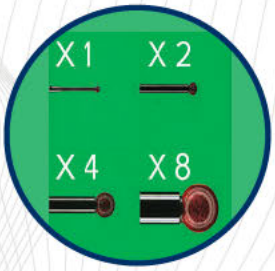
Vision measure of 2D elements (circle, line, radius…)

Touch measurement of 3D elements (plane, sphere, cylinder...), as well as dimensions inaccessible in vision (inner dimensions).



Machine structure:

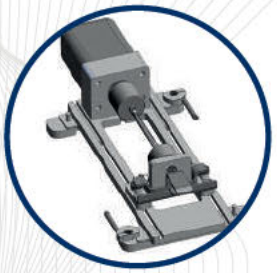
- Structure in cast aluminum alloy
- XY stroke: 150 x 150 or 250 x 150 mm
- Maximum XY measuring capacities: 200 x 200 mm or 300 x 300 mm (zoom 1)
- Load capacity: 10 kg.
- Cross roller guide
- Encoder resolution: 0.1 µm.
- X, Y, Z speed: 100 mm/s max
- Bi-telecentric optics for extremely precise full field measurements.



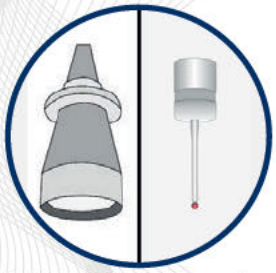
4 magnifications

Measurement ranges:

	Zoom position			
	1	2	3	4
Field of view	67.6 x 56.5mm	33.7 x 28.2mm	16.8 x 14.1mm	8.4 x 7.1mm
«P» uncertainties in the field (2σ)	±5 µm	± 3.0 µm	± 1.9 µm	± 1.1 µm


Rotary axis

- XY E2 : à partir de (3.1 + 5 L /1000) µm (vision, zoom n°4)
- XY E2: (2.5 + 5 L/1000) µm (touch probe)
- Z E1: (2.5 + 5 L/1000) µm (touch probe)


Vision + touch probe

Touch probe

- Renishaw ® TP200
- Renishaw ® TP20

Vision:

- High definition 5 MPX color camera
- Bi-telecentric motorized zoom with 4 indexed positions
- Programable lighting devices:
  - Episcopic white LED
  - Diascopic collimated LED
  - Optional motorized 3-in-1 lighting device (episcopic, low angle, dark field)
- Magnification x14 to x112 (as an indication in full-field display on 24'' screen)


3 in 1 lighting device

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go mini
- 24'' LCD screen
- Windows 10 / 64 bits

Terms of use:

- Power supply: 220 V or 110 V, 50 or 60Hz, 600VA
- Temperature range ensuring accuracy: θo ±1°C (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C

DELTEC suite software:

The DELTEC HEOS machine is provided with the «DELTEC » software, including multiple tools to optimize and make dimensional control more reliable:

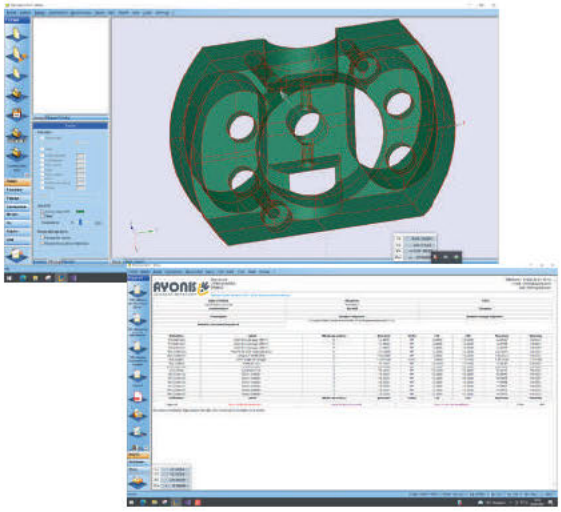
· 2 sensors (vision + touch probe) managed in a single program.
· Parameters are controlled by the software (magnifications, lights…).
· Powerful library of tools (mathematical, geometrical, 2D and 3D).
· Automatic storage and export of the results into database.

DELTEC LEOS

3D automatied measuring system
multisensor







LEOS 200/300

DPM: a unique system for multi-parts detecting by shape learning

This machine brings together all the tools for your dimensional metrology (software suite and 3D structure).

Suitable for all controls: first part, process, laboratory, at entrance, at exit, during production…

Programming by self-learning.

Automatic control of parts (single or multiple), by matrix execution.

Ergonomic workstation with one or two screen(s).



Machine structure:

- Structure in cast aluminum alloys
- Measuring capacities (X, Y, Z): 200 x 200 x 150 mm / 200 x 300 x 150 mm
- Load capacity: 10 kg
- Cross rollers guides
- Encoders resolution: 0.5 µm
- X, Y, Z speeds: 75 mm/s maximum



Multi-sensor head

Uncertainties of measurement (2σ):

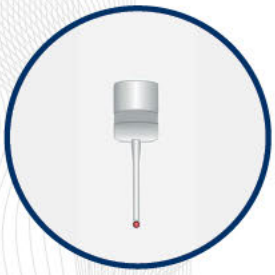
- XY E2: (±2.5+5L/1000) µm (vision, probe)
- Z E1: (±4+5L/1000) µm (vision)
- Z E1: (±2.4+5L/1000) µm (probe)



Confocal sensor

Vision:

- High definition 1.3 MPX B&W digital camera
- Programmable lighting devices:
  - Episcopic white LED 8 sectors
  - Coaxial LED
  - Diascopic collimated green LED
- Motorized zoom with 6 indexed positions
- Magnifications x30 to x200 (as an indication in full field display on 24'' screen)
- Second camera with wide field for an automatic control of multi parts
- Positioning eased thanks to laser pointing



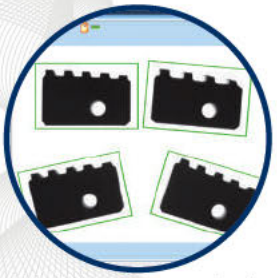
Touch

Touch probe (option):

- Renishaw® TP200
- Stylus charger (3 or 5 positions)

Confocal (option):

- "Confocal Chromatic" measurement sensor (white light)
- Measuring pencils (1.4, 4 and 12 mm)



Multi-parts control

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go minimum
- Screens 2 x 22''
- Windows 10 / 64 bits
- Software: Deltec Suite™

Terms of use:

- Power supply: 110 or 220V, 50 or 60Hz, 600VA
- Temperature range ensuring accuracy: θo ±1°C
  (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C



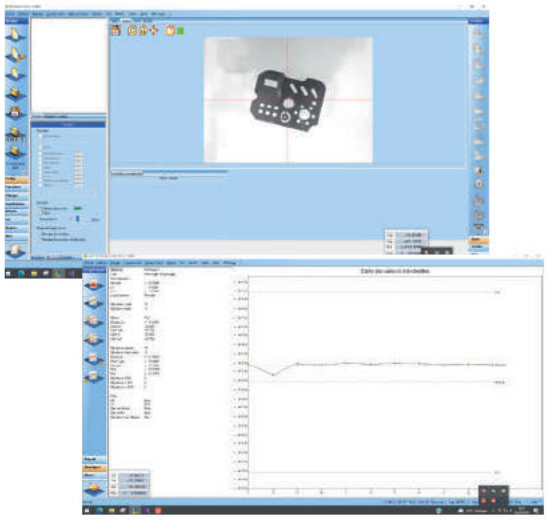
Dual screen workstation

DELTEC TEOS

3D automatied measuring system
multisensor







TEOS 400

Your made to measure 3D metrology machine

This machine brings together all the tools for your dimensional metrology (software suite and 3D structure).

Compatible with all types of parts (automotive, mechanical, electronic, pharmaceutical, and so on) and materials (metallic, plastic, rubber, glass, and so on).

Suitable for all controls: first part, process, laboratory, at entrance, at exit, during production…

Ability to manage multiple sensors: vision, probe (Renishaw®), confocal.

Programming by self-learning.

Automatic control of parts (single or multiple).



Machine structure:

- Column type structure in solid granite
- XY stage with crossed movements and open frame
- Cross roller guide
- Measuring capacities (X, Y, Z): 400 x 400 x 200 mm
- Load capacity: 20 kg
- Encoders resolution: 0.5 µm
- X, Y, Z speeds: 75 mm/s maximum



Granite structure

Uncertainties of measurement (2σ):

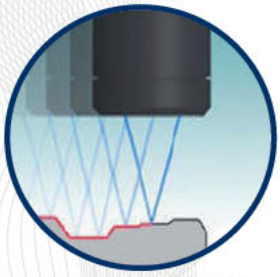
- XY E2: (±2.5+5L/1000) µm (vision, probe)
- Z E1: (±4+5L/1000) µm (vision)
- Z E1: (±2.4+5L/1000) µm (probe)



Multi-sensor head

Vision:

- High definition 1.3 MPX B&W digital camera
- Programmable lighting devices:
  - Episcopic white LED 8 sectors
  - Coaxial LED
  - Diascopic collimated green LED
- Motorized zoom with 6 indexed positions
- Magnifications x30 to x200 (as an indication in full field display on 22'' screen)
- Second camera with wide field for an automatic control of multi parts
- Positioning eased thanks to laser pointing



Confocal sensor

Touch probe (option):

- Renishaw® TP200
- Stylus charger (3 or 5 positions)

Confocal (option):

- "Confocal Chromatic" measurement sensor (white light)
- Measuring pencils (1.4, 4 and 12 mm)



Stylus charger

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go minimum
- LCD screens 2 x 22''
- Windows 10 / 64 bits
- Software: Deltec Suite™

Terms of use:

- Power supply: 110 or 220V, 50 or 60Hz, 1400VA
- Temperature range ensuring accuracy: θo ±1°C
  (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C



Dual screen workstation

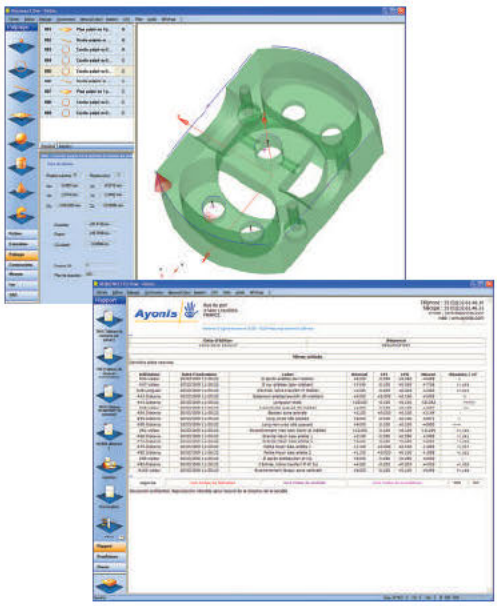
DELTEC TEOS XL

3D automatied measuring system
multisensor





TEOS XL



Your made to measure 3D metrology machine

This machine brings together all the tools for your dimensional metrology (software suite and 3D structure).

Compatible with all types of parts (automotive, mechanical, electronic, pharmaceutical, and so on) and materials (metallic, plastic, rubber, glass, and so on).

Suitable for all controls: first part, process, laboratory, at entrance, at exit, during production…

Ability to manage multiple sensors: vision, probe (Renishaw®), confocal.

Programming by self-learning.

Automatic control of parts (single or multiple).



Machine structure:

- Structure with mobile gantry
- Base and gantry in solid granite
- Linear roller guides
- Ball screws and DC motors
- Measuring capacities (X, Y, Z):
  - 600 x 800 x 200
  - 800 x 1000 x 200
  - 1200 x 1000 x 200
- Load capacity: 20 kg
- Encoders resolution: 0.5 µm
- X, Y, Z speed: 200 mm/s maximum



Multi-sensor head

Uncertainties of measurement (2σ):

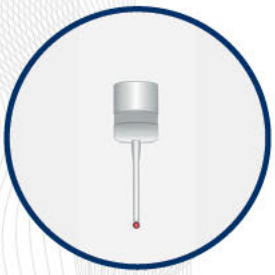
- XY E2: (±4.0+5L/1000) µm (vision, probe)
- Z E1: (±4+5L/1000) µm (vision)
- Z E1: (±2.4+5L/1000) µm (probe)



Confocal sensor

Vision:

- High definition 1.3 MPX B&W digital camera
- Programmable lighting devices:
  - Episcopic white LED 8 sectors
  - Coaxial LED
  - Diascopic collimated green LED
- Motorized zoom with 6 indexed positions
- Magnifications x30 to x200 (as an indication in full field display on 24'' screen)
- Positioning eased thanks to laser pointing



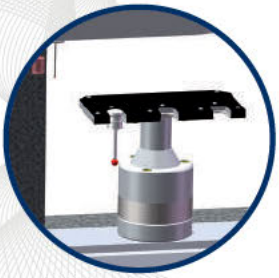
Touch

Touch probe (option):

- Renishaw® TP200
- Stylus charger (3 or 5 positions)

Confocal (option):

- "Confocal Chromatic" measurement sensor (white light)
- Measuring pencils (1.4, 4 and 12 mm)



Stylus charger

Computer:

- CPU INTEL Core I5, 8 Go, HDD 250 Go minimum
- Screens 2 x 22''
- Windows 10 / 64 bits
- Software: Deltec Suite™



Dual screen workstation

Terms of use:

- Power supply: 110 or 220V, 50 or 60Hz, 3500VA
- Temperature range ensuring accuracy: θo ±1°C
  (θo = ambient and calibration temperature, standard temperature θo = 20°)
- Operating temperature: 15 to 35°C

OS 211

3D metrology scanner









High performance 3D scanner

Enter another dimension!

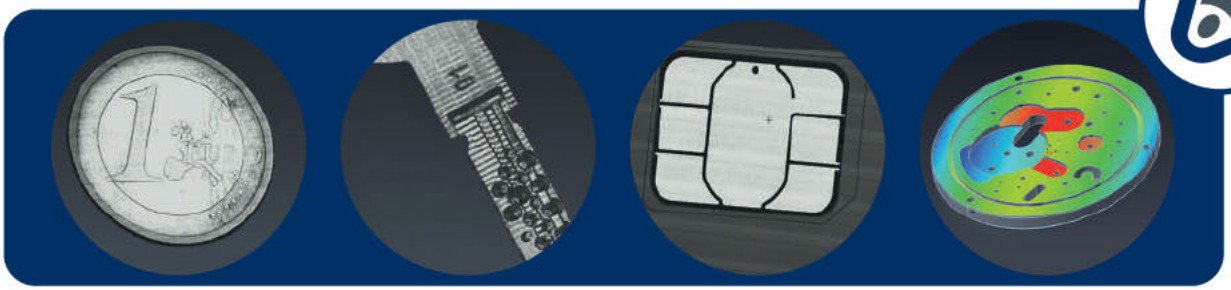
2D and 3D metrology of small parts.

Different measuring means gathered into an automated one.

Designed for control in production environment.

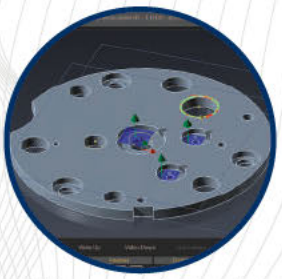
Offline programming (from CAD files).

Recording and statistical analysis of measurements to optimize traceability and quality control.



Machine structure:

- Structure in cast aluminum alloy
- High precision cross-motion XY table.
- XYZ stroke: 250 x 150 x 150 mm.
- Load capacity: 10 kg.
- Encoder resolution: 0.1 µm.
- X, Y speed: up to 100 mm/s.

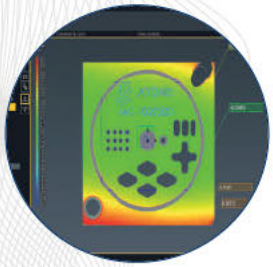


Offline programming

Main measuring sensor:

- Line sensor based on Confocal Chromatic technology (white light sensor).
- Up to 384 000 measuring points per second and per side.
- 2 types of sensors to fit your needs (high accuracy / high capacity).

Configuration	Line width	Pitch	Axial resolution	Z range
High accuracy	1.98 mm	10 µm	80 nm	1 mm
High capacity	4.80 mm	25 µm	320 nm	4 mm



2D & 3D comparison

Secondary measuring sensor:

- High resolution digital camera 5, 20 or 71 MPX
- Configurations: Mono vision range or 300 mm motorized, 4 magnifications
- Programmable lighting devices:
  - Episcopic red sectored LED
  - Diascopic LED collimated green
- Motorized zoom with 6 indexed positions

Uncertainties of measurement (2σ):

- XY: from 2.5 µm
- Z height (1 side): from 0.5 µm



Report

Computer:

- CPU INTEL Core I7, 32 Go, HDD 250 Go mini
- 24'' touch screen
- OS Windows 10 / 64 bits

GALAXY suite software:

The new "GALAXY Suite™" software enables offline programming, parts control, data record, processing of measurement results and reporting.

Terms of use:

- Power supply: 220V, 50 or 60Hz, 600VA
- Temperature range ensuring accuracy: 20°±1°C



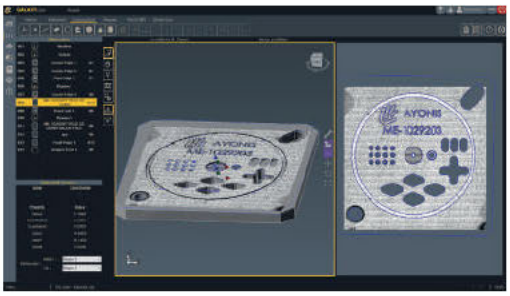
Dashboard

GALAXY DS 331

3D metrology scanner









High performance 3D scanner

Enter another dimension!

2D and 3D metrology for small parts.

Different measuring means gathered into an automated one.

Designed for control in production environment.

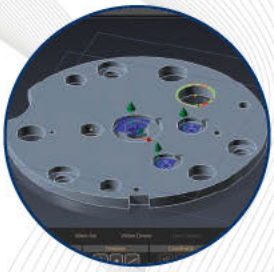
Offline programming (from CAD files).

Recording and statistical analysis of measurements to optimize traceability and quality control.



Machine structure:

- Solid granite structure.
- High precision cross-motion XY table with linear motors.
- XYZ (upper / lower) measuring range: 300 x 300 x 100 / 50 mm.
- Metrological structure isolated by antivibration pads.
- Structure compatible with a production environment.
- Load capacity: 20 kg.
- Encoder resolution: 3 nm.
- X, Y speed: up to 200 mm/s (depending on configuration).

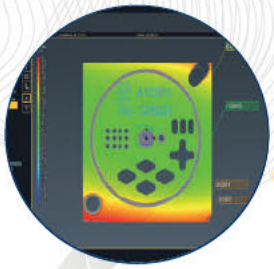


Offline programming

Main measurement sensor:

- Line sensor based on Confocal Chromatic technology (white light sensor).
- Single or double sided.
- Up to 350 000 measuring points per second and per side.
- 2 types of sensors to fit your needs (high accuracy / high capacity).

Configuration	Line width	Pitch	Axial resolution	Z range
High accuracy	1.98 mm	10 µm	80 nm	1 mm
High capacity	4.80 mm	25 µm	320 nm	4 mm



2D & 3D comparison

Secondary measuring sensor:

- High resolution digital camera 5, 20 or 71 MPX
- Mono or multi-field configuration
- Programmable lighting devices:
  - Episcopic red sectored LED
  - Diascopic LED collimated green



Report

Uncertainties of measurement (2σ):

- XY: from 2.5 µm
- Z height (1 side): from 0.5 µm
- Z thickness (2 sides): from 1.0 µm

Computer:

- CPU INTEL Core I7, 32 Go, HDD 250 Go mini
- 24'' touch screen
- OS Windows 10 / 64 bits



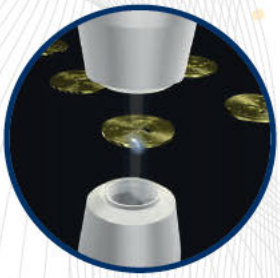
Dashboard

GALAXY suite software:

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Terms of use:

- Power supply: 220V, 50 or 60Hz, 3500VA
- Temperature range ensuring accuracy: 20°±1°C



Double sided scan

VISIONIS

The smart inspection system







Simplified visual control!

Analysis and observation device for the visual control of your parts.

Autofocus provides great simplicity and comfortable use.

A high-resolution camera, combined with a manual zoom, thus makes it possible to detect even the smallest defects.

Images and videos may be saved on a USB stick, for further analysis and future discussions.

Machine:

- Dimensions: 320 x 308.5 x 417.5 mm
- Weight: 5kg
- Maximum height of the parts to be inspected: 50 mm

Optical lens:

- Magnification (6 positions) from x 45 to x 230
- Resolution: from 3.9µm (4.5 x) to 11.2 µm (0.7 x)
- Working distance: 88 mm +/- 2mm
- Video distortion: <0.02%
- Optional x 0.5 lens to double the field of view

Camera:

- Image sensor: CMOS color
- Resolution: 2 MPX
- Episcopic lighting device
- White balance: auto / manual
- Exposure: auto / manual
- Image refresh rate: 1080P (60 images / s)
- Working temperature: 0°C ~ 50°C

Visionis:

- User control via mouse
- Direct connection to the screen via HDMI
- Backup on USB key
- Supplied with a 24"screen

Visionis+:

- Connection to the PC via USB
- Supplied with viewing and backup software
- PC and screen not supplied

