ALTIMET

ADVANCED 4D METROLOGY

AYONIS®

ALTIMET

Ayonis, your expert in dimensional metrology

www.altimet.fr

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 «close to the line».

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.

MADE IN FRANCE

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.

Summary

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

Energies | Medtech | Watchmaking | Electronics | Automotive | Aeronautics | Cosmetic

CONTACTLESS MEASUREMENT: FROM MANUAL PROFILE PROJECTOR TO DIGITAL PROFILE PROJECTOR

Manual profile projector

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

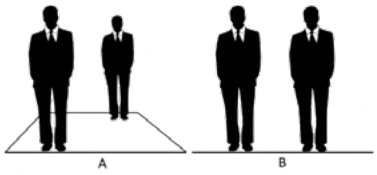
The optical chain ensures a magnification determined between the size of the projected image and the actual size of the part (ex. x10, x50, x100).
This instrument is used for the control by superimposing a layer on the screen, or the measurement of simple 2D geometric elements, such as a distance, an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

Despite a great number of machines installed, the manual profile projector presents 3 major weaknesses 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 data recording is still mostly manual.

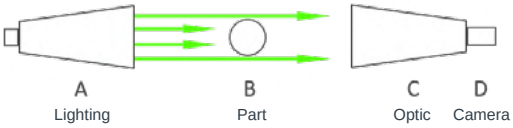
The AYONIS digital profile projector allows the correction of these weaknesses, while increasing the performances of this kind of measuring means.

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.

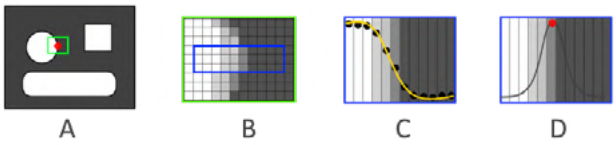


The so-called bi-telecentric optics allow, unlike traditional photographic type optics (A), to transcribe the image without defect in perspective (B).

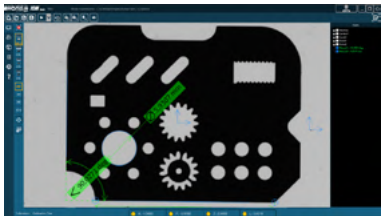
Collimated lighting ensures perfect sharpness of the part's edges.



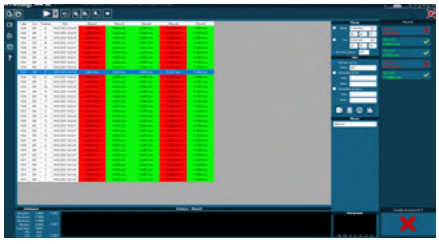
Finally, the camera makes it possible to transcribe the image of the part in a very precise way, to allow the computer to automatically extract its profile.

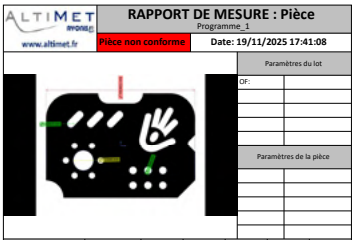


The whole processing is performed by the computer, which enables detection in less than one second.



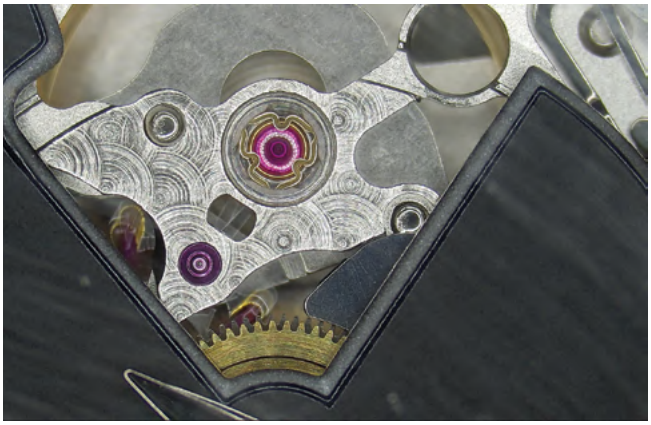
This new generation of projectors is linked to a computer system, so that all measurement results are stored in a database. The information can then be processed by our software, or exported to a database, to obtain statistics (SPC).





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 can be saved on a USB stick, for further analyses and future discussions

Machine:

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

Optical lens:

- Magnification (6 positions) from x 45 to x 230
- Resolution: from 3.9 µm (4.5x) to 11.2 µm (0.7x)
- Working distance: 88 mm +/- 2 mm
- Optional x0.25 & x0.5 lens with extension to increase the field of vision

Camera:

- HD color camera
- Episcopic lighting ring
- White balance: auto or manual
- Exposure: auto or manual
- Focus: auto or manual
- Integrated measurement functions
- Image refresh rate: 1080P (60 frame / s)
- Working temperature: 0°C ~ 50°C

Computer:

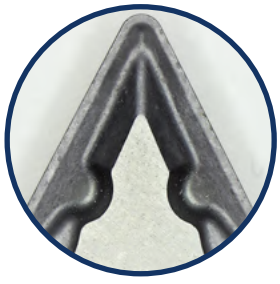
- Embeded software
- User control via mouse
- Direct connection to the screen via HDMI
- Backup on USB storage
- Supplied with a 24'' screen

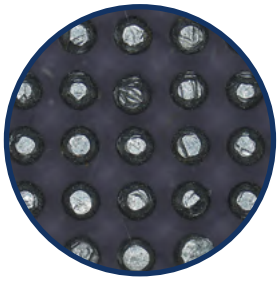
Optional configurations & accessories:

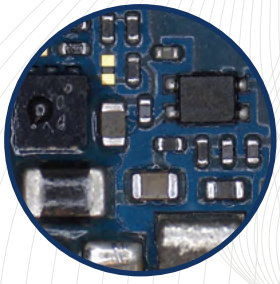
- Diascopic lighting
- XY Manual Table

Models	Min FOV*	Max FOV*
	Magnification x 4.5	Magnification x 0.7
M	4.5 x 2.5 mm	32 x 18 mm
XL	10 x 5.5 mm	70.5 x 39.5 mm

*Field Of View

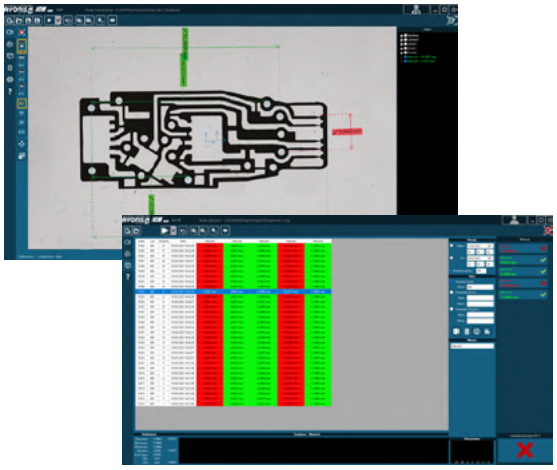






ICM D2P

2D digital profile projector



Drop it, 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.

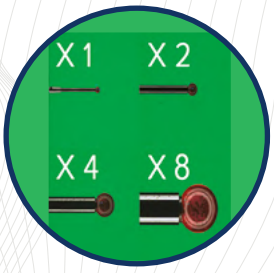
Increased accuracy, reproducibility and objectivity of the measurements while reducing control time.

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

Within one second

Machine structure:

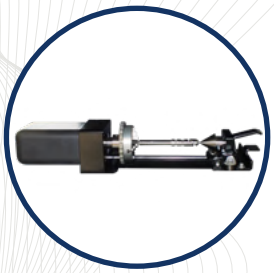
- Robust aluminum structure allowing “close to the line” use
- Bi-telecentric optics for extremely accurate full field measurements
- Z travel: up to 130 mm



4 magnifications

Measurement ranges:

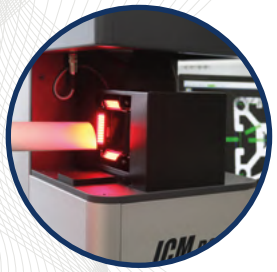
Field of view	Zoom position				
	1	2	3	4	5
072	67.6 x 56.5 mm	33.8 x 28.3 mm	16.9 x 14.1 mm	8.4 x 7.1 mm	
036		33.8 x 28.3 mm	16.9 x 14.1 mm	8.4 x 7.1 mm	4.2 x 3.5 mm
Field depth	53 mm	13.2 mm	3.3 mm	0.8 mm	0.2 mm
«P» uncertainties in the field (2σ)	± 5 µm	± 2.5 µm	± 1.3 µm	± 0.7 µm	± 0.4 µm


Rotary axis

- Fixe field of view available:
  5 MPX : 61.6 x 51.4 mm (uncertainties ± 5 µm)
  20 MPX : 120 x 80 mm (uncertainties ± 6 µm)

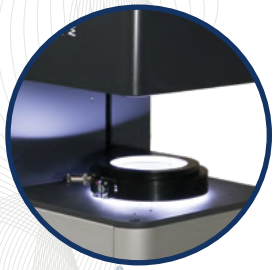
Vision:

- 5 to 20 MPX high definition digital color camera
- Fixed or motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
  - Episcopic white LED
  - Diascopic collimated LED
  - Optional motorized lighting device


Profiles measurement

Computer:

- Embedded or external computer
- 24” screen
- Offline programation licence
- Windows 11 / 64 bits


3 in 1 lighting device

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:

- Workstation
- Motorized rotary axis (W)
- Mounting with integrated lighting for the control of profiles or long tubes
- V-shaped installation for checking cylindrical parts
- Statistical Process Control (SPC) function

Terms of use:

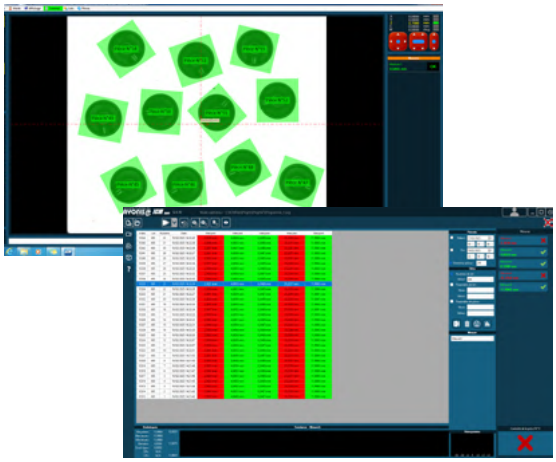
- Power supply: 220 V or 110 V, 50 or 60 Hz, 250 VA
- Temperature range ensuring accuracy: θo ± 1°C (θo = ambient and calibration temperature, standard temperature θo = 20°C)
- Operating temperature: 15 to 35°C

ICM SCAN

2D digital profile projector

Motorized 2-axis table

NEW



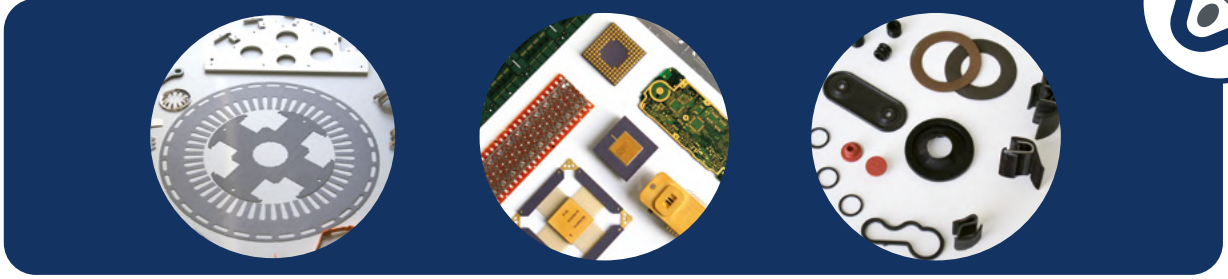
Drop it, Measure it!

Control of parts regardless of their position and orientation in a field of view up to 410 x 220 mm.

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

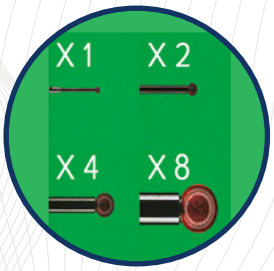
Recording ans statistical analysis of measurements to optimize traceability and quality control.

Height and flatness mesurement with confocal chromatic sensor.



Machine structure:

- Cast aluminium frame
- Maximum XY measuring capacities: 410 x 220 mm (zoom 1)
- Z travel: up to 140 mm
- Load capacity: 10 kg
- Cross roller guide
- Encoder resolution: 0.1 µm
- X, Y, Z speed: 100 mm/s max



4 magnifications

Measurement ranges:

Field of view	Zoom position				
	1	2	3	4	5
072	67.6 x 56.5 mm	33.8 x 28.3 mm	16.9 x 14.1 mm	8.4 x 7.1 mm	
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Field depth	53 mm	13.2 mm	3.3 mm	0.8 mm	0.2mm
«P» uncertainties in the field (2σ)	± 5 µm	± 2.5 µm	± 1.3 µm	± 0.7 µm	± 0.4 µm

- Fixe field of view available:
  5 MPX : 61.6 x 51.4 mm (uncertainties ± 5 µm)
  20 MPX : 120 x 80 mm (uncertainties ± 6 µm)


Rotary axis

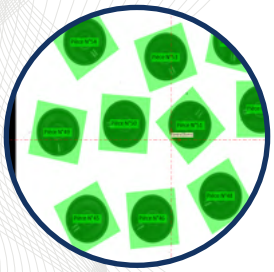
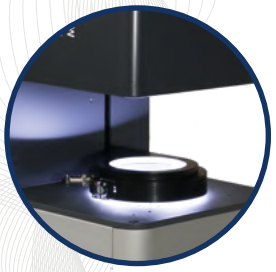

Multi-parts control

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 to 20 MPX high definition digital color camera
- Fixed or motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
  - Episcopic white LED
  - Diascopic collimated LED
  - Optional motorized lighting device

Optional configurations & accessories:

- Workstation
- Motorized rotary axis (W)
- Mounting with integrated lighting for the control of profiles or long tubes
- V-shaped installation for checking cylindrical parts
- Statistical Process Control (SPC) function

Computer:

- Embedded or external computer
- 24" touch screen (optional)
- Offline programation licence
- Windows 11 / 64 bits

Terms of use:

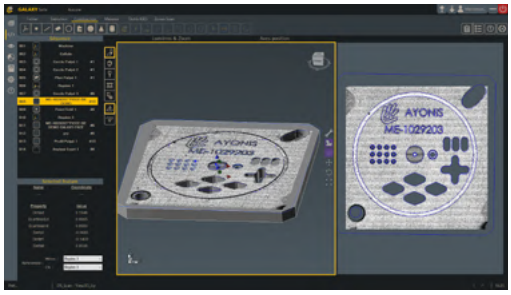
- Power supply: 220 V or 110 V, 50 or 60 Hz, 600 VA
- Temperature range ensuring accuracy: θo ± 1°C (θo = ambient and calibration temperature, standard temperature θo = 20°C)
- Operating temperature: 15 to 35°C

ICM suite software:

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

OS 211

3D metrology scanner



High performance 3D scanner

Step into another dimension

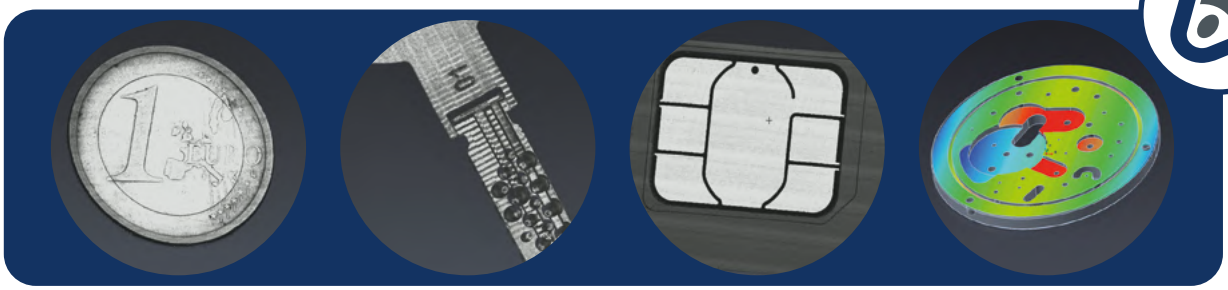
2D and 3D metrology of small parts.

Different measuring means gathered into an automated one.

Designed for control in production environment.

Offline programming (frome CAD files).

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



Machine structure:

- Cast aluminium frame
- High precision cross-motion XY table
- XYZ axis capacities: 250 x 150 x 100 mm
- Load capacity: 10 kg
- Encoder resolution: 0.1 µm
- X, Y speed: up to 100 mm/s

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

Secondary measuring sensor:

- High resolution digital camera 5
- Fixed or motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
  - 8-sector red or white LED sectorized episcopic light
  - Diascopic LED collimated green

Field of view				
	2	3	4	5
036	33.8 x 28.3 mm	16.9 x 14.1 mm	8.4 x 7.1 mm	4.2 x 3.5 mm
Field depth	13.2 mm	3.3 mm	0.8 mm	0.2 mm
«P» uncertainties in the field (2σ)	± 2.5 µm	± 1.3 µm	± 0.7 µm	± 0.4 µm

Uncertainties of measurement (2σ):

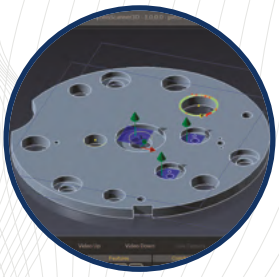
- XY: from 2.5 µm
- Z height (1 side): from 0.5 µm

Computer:

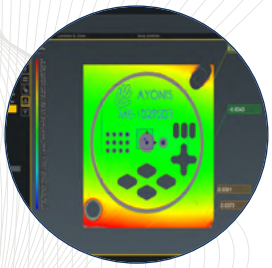
- Embedded computer
- 24" touch screen
- OS Windows 11 / 64 bits

GALAXY suite software:

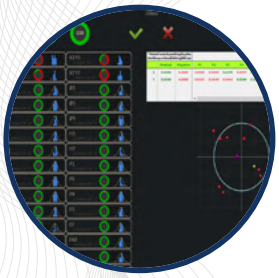
The new GALAXY Suite™ software enables offline programming, parts control, data record, processing of measurement results and reporting.



Offline programming



2D & 3D comparison



Report

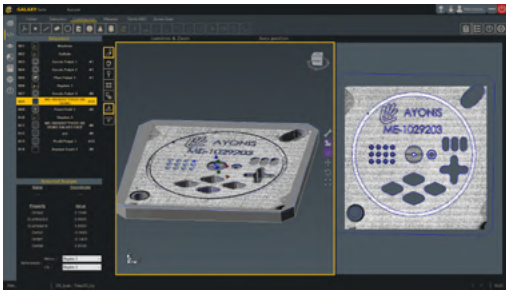
Dashboard

Terms of use:

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

GALAXY DS 331

Double-sided 3D measuring system



High performance 3D scanner

Step into another dimension

2D and 3D metrology of small parts.

Different measuring means gathered into an automated one.

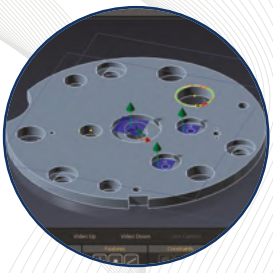
Designed for control in production environment.

Offline programming (frome 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) measurin range: 300 x 300 x 100 / 50 mm
- Metrological structure isolated by antivibration pads
- Structure compatible with a production environment
- Load capacity: 20 kg
- X, Y speed: up to 200 mm/s (depending on configuration)

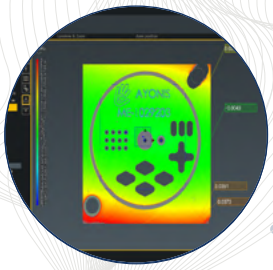


Offline programming

Main measurement sensor:

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

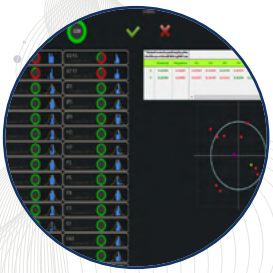
Configuration	Line width	Pitch	Axial resolution	Z range
High accuracy	**1.98 mm**	**10 µm**	**80 nm**	**1 mm**
High capacity	**4.80 mm**	**25 µm**	**320 nm**	**4 mm**



2D & 3D comparison

Secondary measuring sensor:

- High resolution digital camera 5
- Fixed or motorized bi-telecentric zoom (4 indexed positions)
- Programmable lighting devices:
    - Episcopic red sectored LED
    - Diascopic LED collimated green



Report

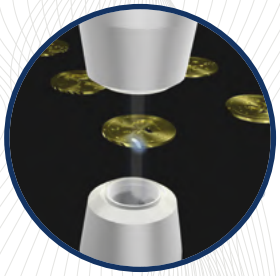
Uncertainties of measurement (2σ):

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

Dashboard

Computer:

- 24'' touch screen
- Offline programation licence
- OS Windows 10 / 64 bits



Double sided scan

GALAXY suite software:

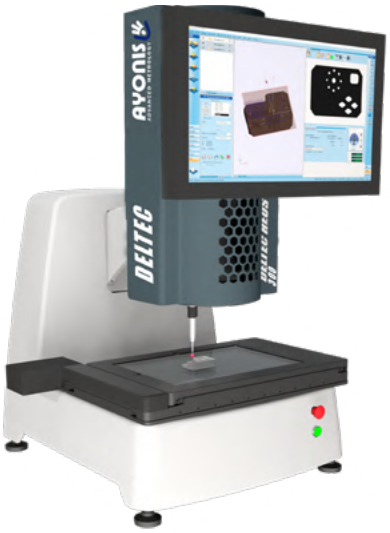
The new GALAXY Suite™ software enables offline programming, parts control, data record, processing of measurement results and reporting.

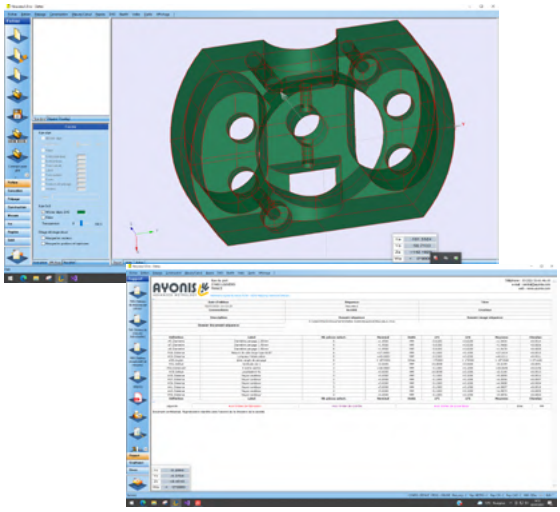
Terms of use:

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

DELTEC LEOS

3D automated measuring system
multisensor





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

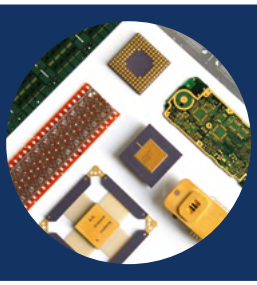
This machine brings together all the tools for your dimensional metrology (software suite and 3D structure).

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

Programming by self-learning.

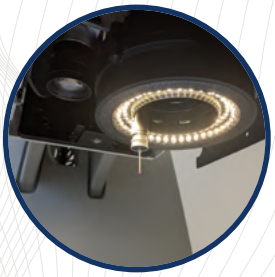
Automatic control of parts (single or multiple), by matrix execution.

Ergonomic workstation with one or two screen(s).



Machine structure:

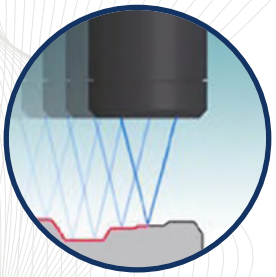
- Cast aluminium frame
- Measuring capacities (X, Y, Z): 200 x 380 x 150 mm
- Load capacity: 10 kg
- Encoders resolution: 0.1 µm
- X, Y, Z speeds: 75 mm/s maximum



Multi-sensor head

Uncertainties of measurement (2σ):

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



Confocal sensor

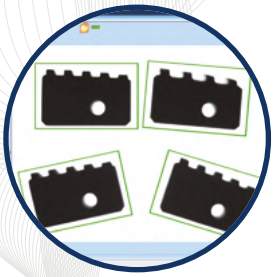
Vision:

- 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

Touch

Touch probe (option):

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



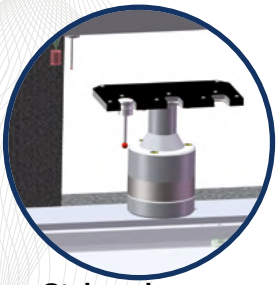
Automated alignment

Confocal (option):

- "Confocal Chromatic" measurement sensor (white light)
- Measuring pencils 1.4 mm to 12 mm (consult us for other ranges)

Computer:

- Embedded computer
- Screens 2 x 24"
- Windows 11 / 64 bits
- Software: Deltec Suite™



Stylus charger

Terms of use:

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

DELTEC TEOS XL

3D automated measuring system
multisensor
Large capacity

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 mm
    - 800 x 1000 x 200 mm
    - 1200 x 1000 x 200 mm
    - Other dimensions on request
- Load capacity: 20 kg
- Encoders resolution: 0.5 µm
- X, Y, Z speed: 200 mm/s maximum

Uncertainties of measurement (2σ):

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

Vision:

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

Touch probe (option):

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

Confocal (option):

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

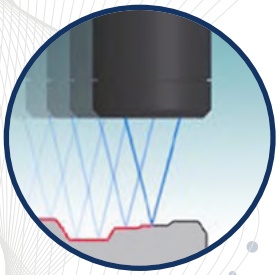
Computer:

- External computer
- Screens 2 x 24''
- Windows 11 /64 bits
- Software: Deltec Suite™

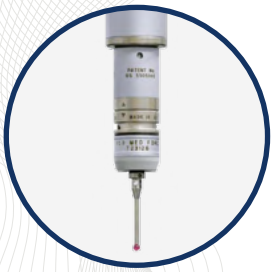
Terms of use:

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

Multi-sensor head



Confocal sensor



Touch

Stylus charger

Dual screen workstation

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