



# ALTERA

Coordinate Measuring Machines



# ALTERA

# EXCELLENCE NOW

## Coordinate Measuring Machines

Nikon Metrology's range of premium quality ALTERA CMMs meet the varying needs of manufacturers, both today and in the future.

The superior ceramic design, with near perfect stiffness-to-weight ratio and greater resistance to temperature shifts, provides consistent performance across all manufacturing environments. Advanced multi-sensor ready technology optimizes CMM throughput and provides the opportunity to broaden the application scope to new materials and components as needs change. Innovative work-flows and intuitive software features facilitate complex inspection tasks and boost productivity.

### Unique accuracy guarantee

Nikon Metrology is the only manufacturer to guarantee the accuracy of its CMMs for 10 years.



Conditions apply, see Nikon Metrology website for full details.



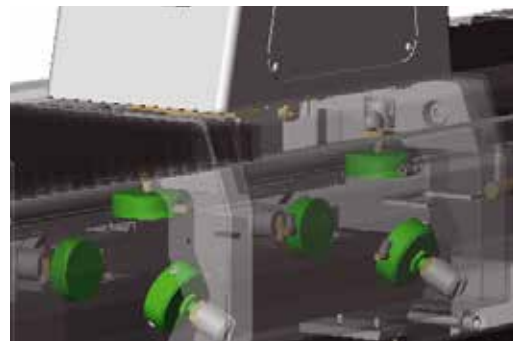
### Enduring accuracy

Ultra-stable ceramic bridge and spindle guideway with high resolution 0.05  $\mu\text{m}$  optical scales result in volumetric accuracies as low as 1.5  $\mu\text{m}$  + L/375.



### Precise motion

Granite dove-tail table guideway with unique single orifice grooved pre-loaded air bearings for precise motion control at high speeds.



# AND IN THE FUTURE...



## Anti-vibration

Superior pneumatic self-levelling vibration isolation for optimum performance in areas subject to high levels of low frequency vibration.



## Shop floor ready

Ready for harsh shop floor environments, the ALTERA range features thermally resistant ceramic bridge and guideways protected from airborne dust or oil contaminants.



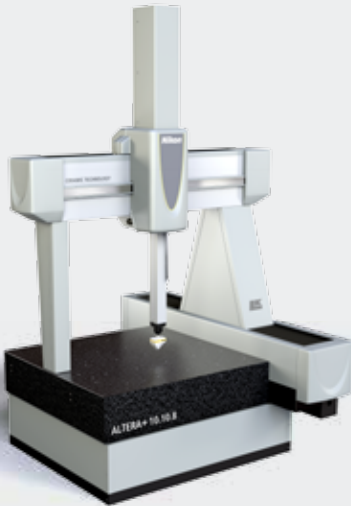
# THE ALTERA FAMILY: SIZE IS NO ISSUE



## ALTERA

ALTERA is a versatile CMM platform with a wide range of standard sizes and choice of probing technology to suit every application and budget.

The proven bridge design combines more than 50 years metrology experience with the latest advances in CMM technology to define a new generation of CMM for quality and production use.



## ALTERA+

Produced to the most rigorous standards for the highest level of accuracy, ALTERA+ is ideal for inspection of function or performance critical components manufactured to the tightest of tolerances.

## Applications

- Machined and pressed parts
- Plastic moldings
- Casting and forgings
- Touch trigger and non-contact inspection
- Digitizing, scanning and reverse engineering

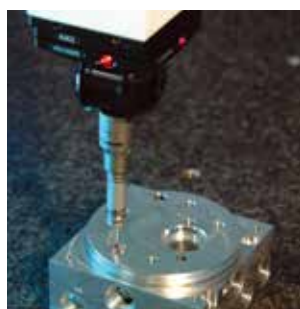
ALTERA								ALTERA+	
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	<i>20.7.6</i>	<b>20.10.8</b>	<b>25.12.10</b>	<b>30.15.10</b>	<b>35.15.12</b>	<b>35.15.15</b>	<b>40.20.15</b>		<b>25.10.8</b>
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Full CMM specifications available on request, contact Nikon Metrology for more information.  
CMM sizes printed in bold font are standard sizes. CMM sizes in italics are available on request.



# PROBING OPTIONS

ALTERA multi-sensor CMMs provide manufacturers with great measurement flexibility and a better understanding of product conformance while increasing CMM throughput.



High accuracy TP200 touch trigger probe


















High speed SP25 scanning probe



High accuracy LC15Dx laser scanner



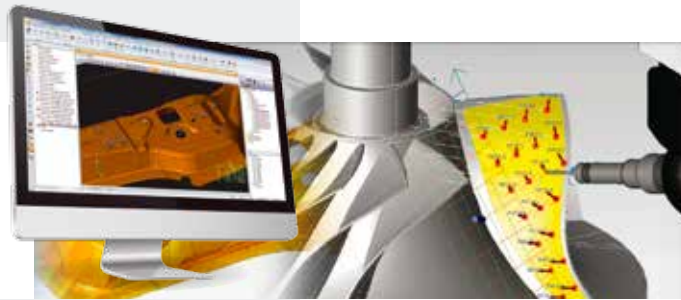
REVO 5-axis measurement system

Contact measuring systems					Non-contact measuring systems
Manual			Motorized	Dynamic	Single and multi-stripe laser
Manual probe heads with integral TP20 probe systems	Manual probe head with autojoint connection	Fixed position probe head with autojoint connection	Motorized probe heads with 720 positions available	Infinite positioning probe head	Motorized probe heads and complete range of digital technology laser scanners
<div>MH20i MH20</div>  <div>PH6M PH6M</div> 	<div>MIH</div>  <div>TP20 TP200</div> 	<div>PH6M</div>  <div>TP20 TP200</div>  <div>SP25M</div> 	<div>PH10T PLUS PH10M PLUS</div>  <div>TP20 SP25M</div>  <div>TP200 TP7M</div> 	<div>PH20</div>  <div>REVO-2</div> 	<div>PH10M PLUS</div>  <div>InSight L100 LC15Dx</div>  <div>LC60Dx XC65Dx / XC65Dx-LS</div> 

# ALTERA SOFTWARE

Two software options, CMM-MANAGER or CAMIO, lets you choose the software package which best suits your needs. CMM-MANAGER is an easy to use software package with productivity focused intelligence and CAMIO is a powerful multi-sensor software package with advanced capability.

## **CAMIO8** Multi-sensor metrology software



CAMIO is a comprehensive CMM software package, with advanced integrated multi-sensor capability for touch probes, scanning probes and laser scanning. Inspection programs and reports can be created for a wide range of common or specialist applications, both online or offline, using any popular CAD format.

- Industry standard DMIS inspection programs
- Inspect geometric features and full freeform surfaces
- Supports popular CMMs and probe systems via I++ protocol
- Intuitive workflows and powerful ribbon-style interface
- Touch probe, scanning probe and laser scanner integration
- Graphical reporting with SPC and Q-DAS link
- Gear and blade application software
- Production line automation

## Easy to use productivity

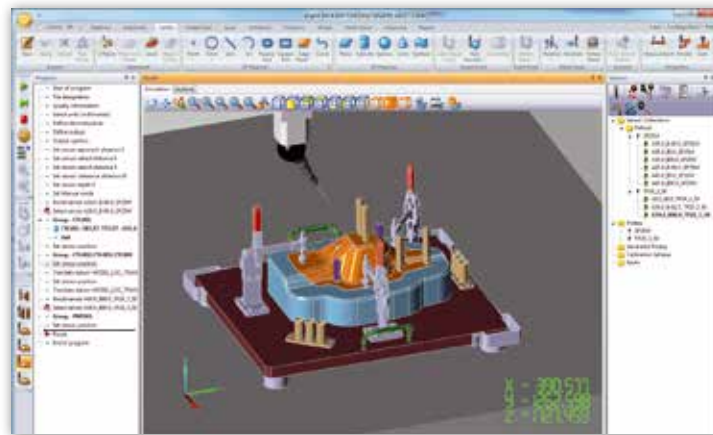
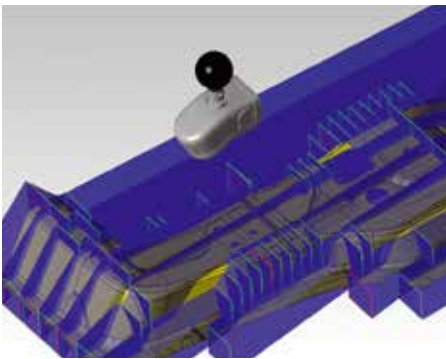
## **CMM-MANAGER** Metrology software for CNC, manual and portable CMM



CMM-MANAGER has been developed to make every step of CMM measurement and reporting as streamlined as possible.

- Walk in, measure and report quick start dimensional checks
- Optimized measurement and probe selection using a single click
- Intelligent graphical reporting with easy-to-understand output formats
- Real-time work piece and probe simulation with smart collision avoidance
- Web-ready reporting for convenient report distribution to a wider audience

# CMM software

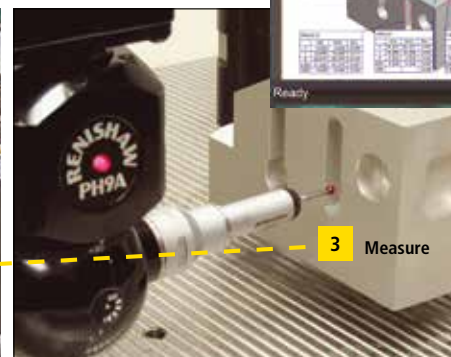
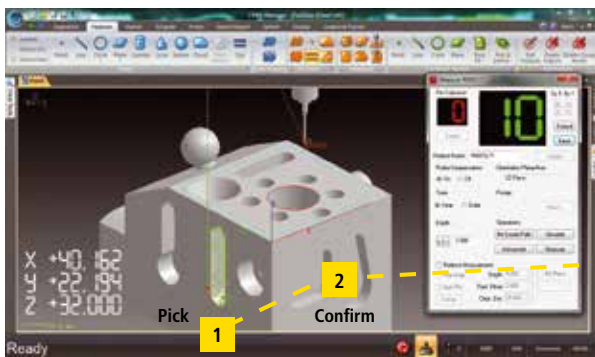


## Virtual simulation

CAMIO's powerful CMM programming environment provides full simulation for CMM, work piece and sensor. CMM programs can be optimized and verified for maximum efficiency before the arrival of work piece samples. Reports can be prepared and customized to meet customer specific formats ahead of time for maximum CMM uptime.



# focused CMM software



## Click-and-measure

Using CMM-Manager's click-and-measure capability, the operator is able to pick any feature on the CAD model.. The software automatically selects the proper probing angle and generates a collision-free path. After the operator confirms the selection, the CMM automatically measures the feature.

# SPECIFICATIONS



	ALTERA	ALTERA+
Volumetric accuracy	from 1.8 $\mu\text{m}$ + L/400	from 1.5 $\mu\text{m}$ + L/375
Repeatability	from 1.7 $\mu\text{m}$	from 1.5 $\mu\text{m}$
Velocity	up to 762 mm/s	up to 833 mm/s
Acceleration	up to 2,303 mm/s <sup>2</sup>	up to 2,514 mm/s <sup>2</sup>

Full CMM specifications available on request, contact Nikon Metrology for more information.



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