



FAC187					
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∅		0.01	0.03	0	
⊕	A   B   C	0	0.1	0	

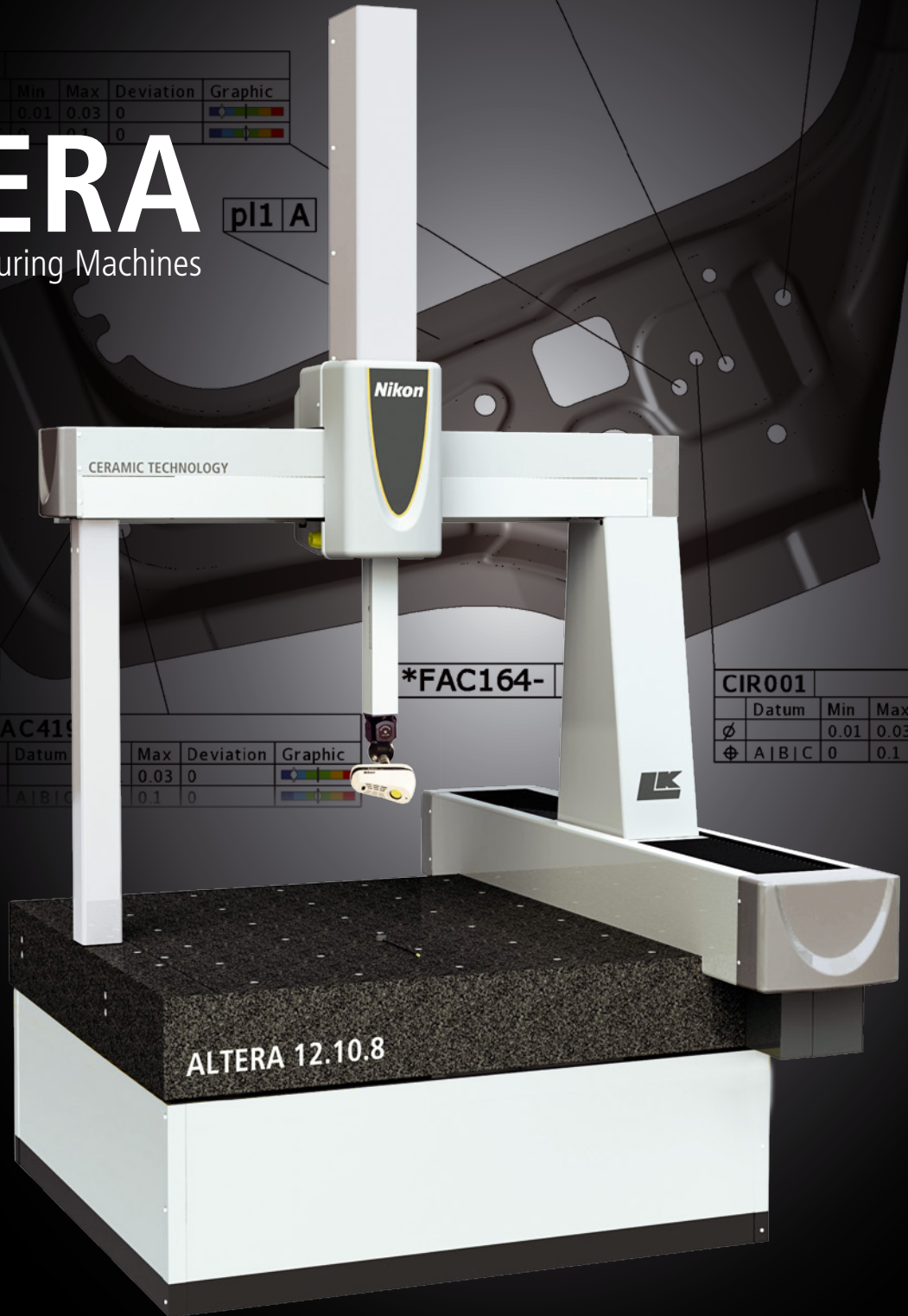
FAC388					
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002					
	Datum	Min	Max	Deviation	Graphic
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⊕	A   B   C	0	0.1	0	

# ALTERA

Coordinate Measuring Machines

pl1 A



\*FAC164-

FAC419				
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∅			0.03	0
⊕	A   B   C		0.1	0

CIR001				
	Datum	Min	Max	Deviation
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⊕	A   B   C	0	0.1	0

# ALTERA

# Excellence

## Coordinate Measuring Machines

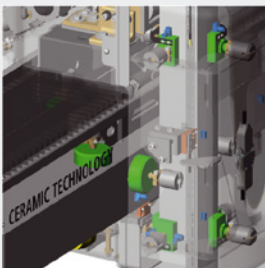
### Unique accuracy guarantee

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

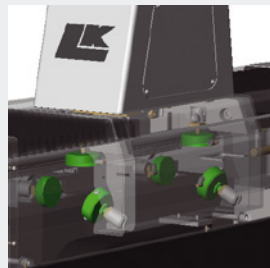
Should your Nikon Metrology ALTERA CMM not achieve its original accuracy specification at any time within 10 years from the date of purchase due to a structural failure, Nikon Metrology will repair or replace the system free of charge.

**10** YEAR  
ORIGINAL  
ACCURACY  
GUARANTEE

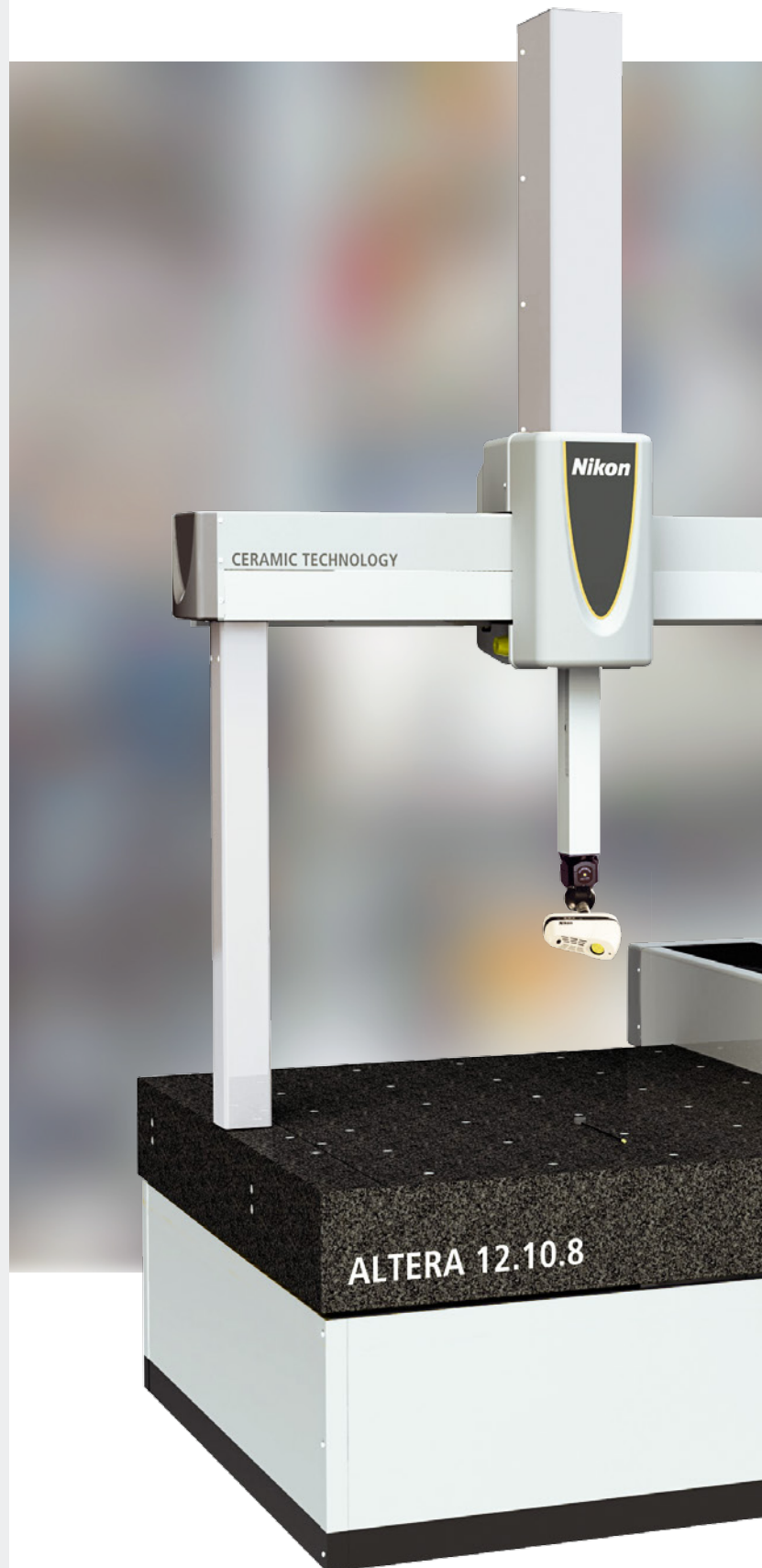
Conditions apply, see Nikon Metrology website for full details.



Ultra-stable ceramic bridge and spindle guideway with closed-loop stainless steel belt friction drive and high resolution 0.05 $\mu$ m optical scales for enduring accuracy.



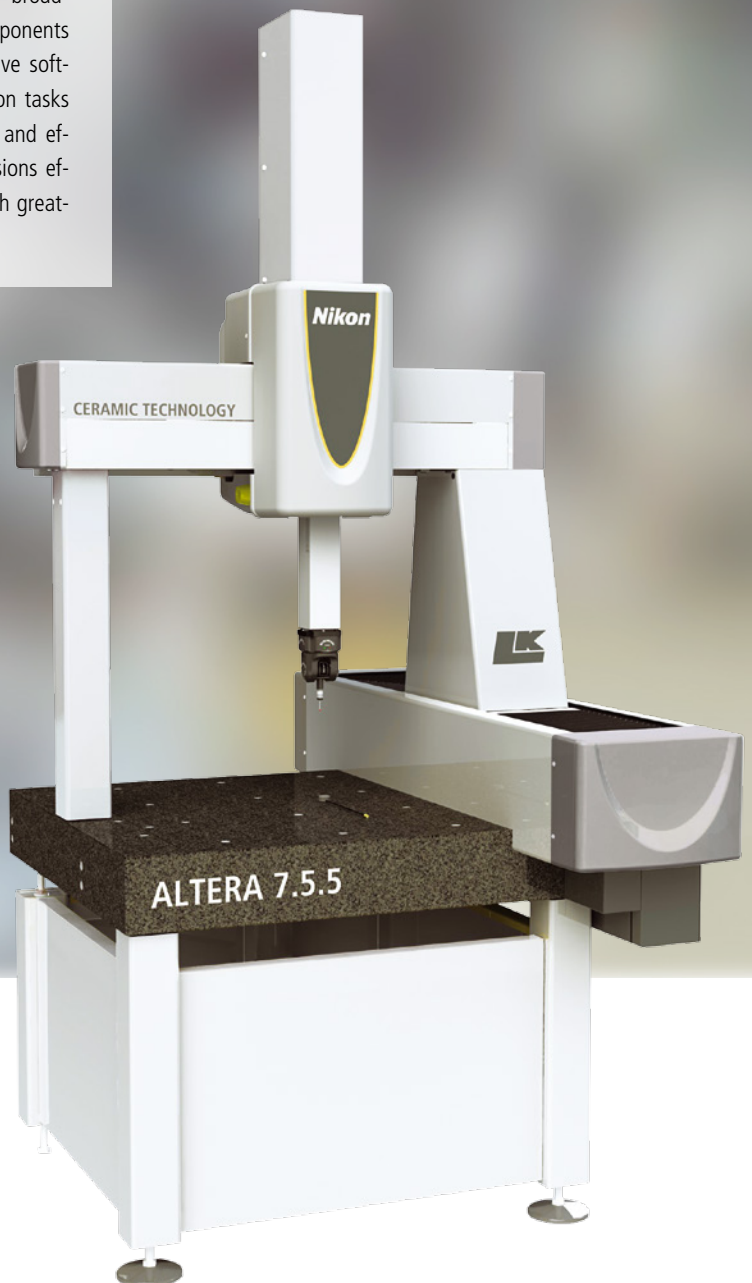
Precision dove-tail table guideway and unique single orifice grooved pre-loaded wrap-around air bearings for smooth and controlled high speed motion.



# now and in the future...

Nikon Metrology's range of premium quality ALTERA CMM's have been refined to 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 make light work of complex inspection tasks and boost productivity. Manufacturers gain a clear and efficient understanding of product conformance, decisions effecting product quality can be made sooner and with greater confidence.



# Sensors

Standard packages, ESSENTIAL Series, OPTIMUM Series or ULTIMATE Series, offer three levels of popular functionality to suit a broad range of metrology applications, with additional options available to tailor your ALTERA to your individual needs.



## series ESSENTIAL Touch trigger CMMs for general applications

The ALTERA ESSENTIAL Series of premium quality touch trigger probe CMMs are an efficient solution for a range of general measurement and inspection applications.

	PROBE HEAD	SENSOR	CHANGE RACK	SOFTWARE	ENVIRONMENT	MOTION	ACCESSORIES
<b>STANDARD</b>	PH10T PLUS	TP20	MCR20	CMM-Manager	18-22 deg C	Touch points Fly moves	Computer system Colour printer Hand box NCH10 Controller NMC100
<b>OPTIONAL</b>	MH20i	integrated TP20		CAMIO	16-26 deg C	Peck scanning PH fast	PC desk unit Pneumatic anti-vibration
	PH10M PLUS	TP200	SCR200				

## series OPTIMUM 5-axis CMMs for complex internal geometry


























The ALTERA OPTIMUM Series of 5-axis CMMs are optimized around four key requirements for measuring complex internal geometry; productivity, probe access, accuracy and best use of the CMM volume.

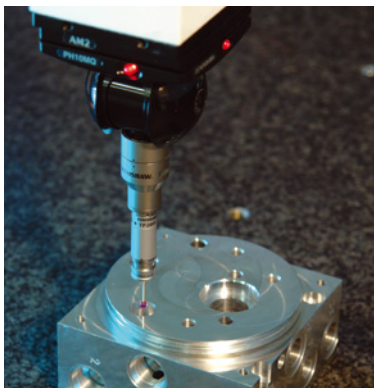
	PROBE HEAD	SENSOR	CHANGE RACK	SOFTWARE	ENVIRONMENT	MOTION	ACCESSORIES
<b>STANDARD</b>	PH20	integrated TP20	MCR20	CMM-Manager	18-22 deg C	Touch points Head touches Fly moves 5-axis moves	Computer system Colour printer Hand box MCU1 Controller UCC2 Controller cabinet
<b>OPTIONAL</b>							PC desk unit Pneumatic anti-vibration

## series ULTIMATE Multi-sensor CMMs for ultimate productivity

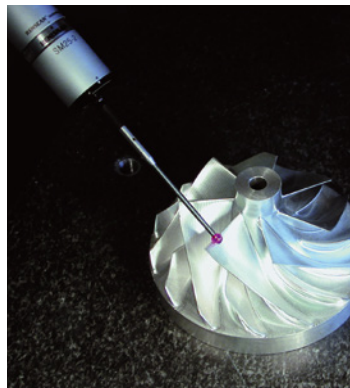
The ALTERA ULTIMATE Series of advanced multi-sensor ready CMM's provide the best combination of productivity and flexibility. As standard these CMMs are touch probe and scanning probe ready with the option to add non-contact laser scanning at any time without the need for additional wiring or controllers.

	PROBE HEAD	SENSOR	CHANGE RACK	SOFTWARE	ENVIRONMENT	MOTION	ACCESSORIES
<b>STANDARD</b>	PH10M PLUS	TP200	SCR200	CAMIO	18-22 deg C	Touch points Peck scanning Fly moves PH fast	Computer system Colour printer Hand box SOLO Controller NMC300 Controller cabinet
<b>OPTIONAL</b>		LC15Dx InSight L100 LC60Dx XC65Dx XC65Dx-LS	ACR3+MRS			Continuous laser scanning	PC desk unit Pneumatic anti-vibration Rotary/indexing table Automation I/O
		SP25	FCR25[+MRS]		16-26 deg C	Continuous tactile scanning	

Contact measuring systems				Non-contact measuring systems			
Manual			Motorized	5-Axis			
Manual probe heads with integral TP20 probe systems			Motorized probe heads with 720 positions available	Infinite positioning probe head with integral TP20 probe system			
MH20i	MH20	MIH	PH6M	PH10T PLUS	PH10M PLUS	PH20	PH10M PLUS
							
PH6M	PH6M	TP20	TP20	TP20	SP25M	TP20	TP200
							
		TP200	TP200	TP200	TP7M		
							
			SP25M				
							
MCR20	MCR20/SCR200/FCR25		MCR20/SCR200/FCR25/ MRS-ACR3		MCR20	MRS-ACR3	
						InSight L100	LC15Dx
							
						LC60Dx	XC65Dx / XC65Dx-LS
							



High accuracy TP200 touch trigger probe



High speed SP25 scanning probe

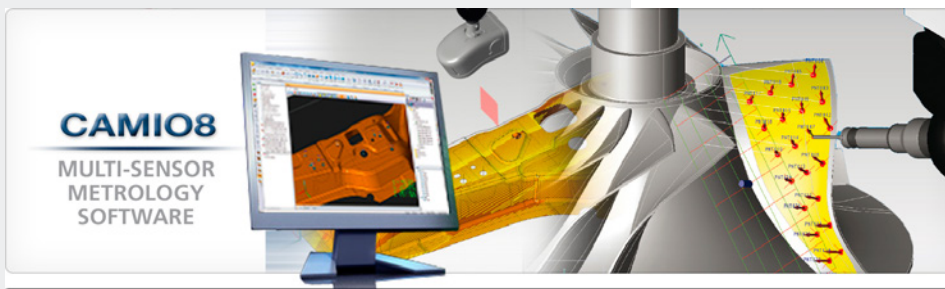


High accuracy LC15Dx laser scanner

# 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.

## Advanced multi-sensor



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

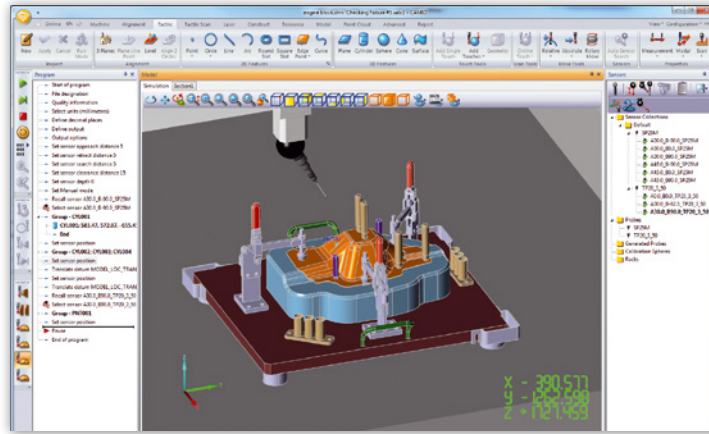
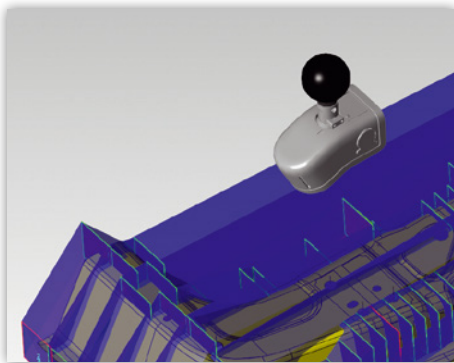
## Easy to use productivity



CMM-MANAGER has been developed to make every step of CMM measurement and reporting as streamline 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

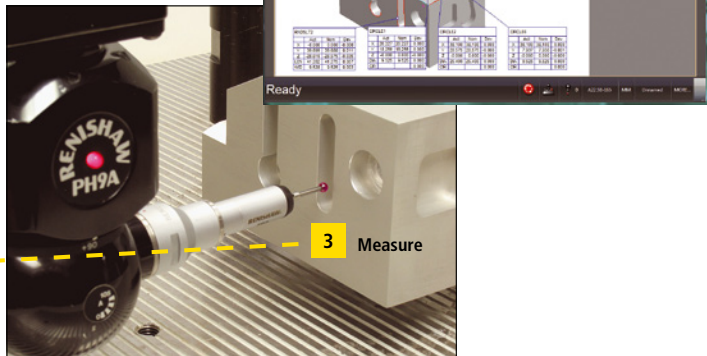
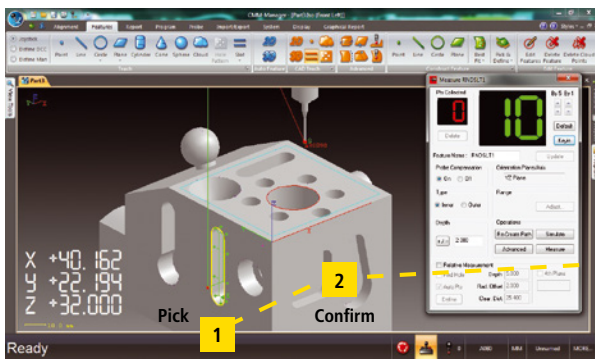


## Virtual Simulation

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 up time.



# focused CMM software



## Click-and-measure

Using CMM-Manager's click-and-measure capability, the operator is able to pick any feature on the screen display. 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

## Dependable quality



Model	Axis Stroke (mm)			Overall Size (mm)			Work piece Maximum Weight (kg)	CMM Weight* (kg)
	X	Y	Z	L	W	H		
ALTERA 7.5.5	711 (28")	508 (20")	508 (20")	1,573 (62")	1,257 (49")	2,505 (99")	256 (564 lbs)	636 (1402 lbs)
ALTERA 8.7.6	813 (32")	711 (28")	610 (24")	1,673 (66")	1,460 (57")	2,705 (106")	378 (833 lbs)	892 (1967 lbs)
ALTERA 10.7.6	1,016 (40")	711 (28")	600 (24")	1,876 (74")	1,460 (57")	2,705 (106")	514 (1133 lbs)	1,029 (2269 lbs)
ALTERA 15.7.6	1,524 (60")	711 (28")	600 (24")	2,384 (94")	1,460 (57")	2,575 (101")	1,027 (2264 lbs)	1,858 (4096 lbs)
ALTERA 10.10.8	1,016 (40")	1,016 (40")	813 (32")	1,876 (74")	1,765 (69")	2,985 (118")	819 (1806 lbs)	1,546 (3408 lbs)
ALTERA 12.10.8	1,220 (48")	1,016 (40")	813 (32")	2,080 (82")	1,765 (69")	2,985 (118")	1,040 (2293 lbs)	1,764 (3889 lbs)
ALTERA 15.10.8	1,524 (60")	1,016 (40")	813 (32")	2,384 (94")	1,765 (69")	2,985 (118")	1,380 (3042 lbs)	2,289 (5046 lbs)
ALTERA 20.10.8	2,032 (80")	1,016 (40")	813 (32")	2,892 (114")	1,765 (69")	2,985 (118")	1,681 (3706 lbs)	3,426 (7553 lbs)

\* Weight excludes work piece, desk, PC system and CMM controller.

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