Mitutoyo

Mitutoyo Quality

CNC Coordinate Measuring Machine
MICROCORD

CRYSTA-Apex S Series

COORDINATE MEASURING MACHINES

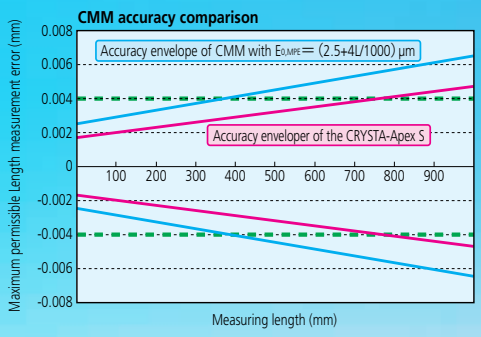
Mitutoyo

CNC Coordinate Measuring Machine

High accuracy in the 1.7 µm class

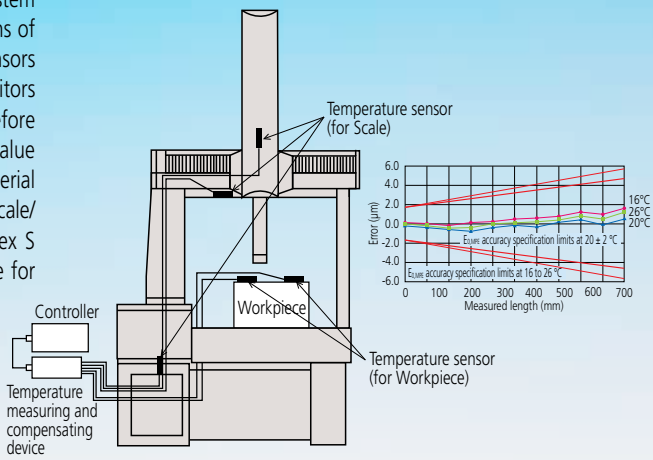
The CRYSTA-Apex S is a high-accuracy CNC coordinate measuring machine that guarantees a maximum permissible length measurement error of $E_{0,MPE}$=(1.7+3L/1000) µm [500/700/900 Series].

Let's compare the CRYSTA-Apex S with CMMs offering $E_{0,MPE}$ of approximately (2.5+4L/1000) µm. If, for example, the required tolerance on a dimension is ±0.02 mm, then the measuring machine uncertainty should be no more than one-fifth (ideally one-tenth) of that, i.e. 4µm. This means that with a general-purpose CMM, when the measured length exceeds 375 mm, machine uncertainty exceeds one-fifth of the dimension tolerance in this case. In contrast, as shown in the figure on the right, with the CRYSTA-Apex S the measurement uncertainty remains within one-fifth of the dimension tolerance up to 766 mm. The higher accuracy specification of the CRYSTA-Apex S therefore gives it more than double the effective measuring range in terms of accuracy-guarantee capability in this case.



Temperature compensation system

The CRYSTA-Apex S comes equipped with a temperature compensation system that guarantees the accuracy of measurement under temperature conditions of 16 to 26 °C. This system, based on permanently installed temperature sensors on each scale working together with sensors placed on the workpiece, monitors scale and workpiece temperatures and, monitors the temperature and, before outputting the measurement result to the controller, corrects it to the value that would be measured at 20 °C, taking into account the workpiece material expansion coefficient as well as the CMM's characteristics. The combined scale/workpiece temperature compensation scheme used on the CRYSTA-Apex S gives markedly superior results compared to systems that only compensate for scale temperature.



500 Series

CRYSTA-Apex S 544

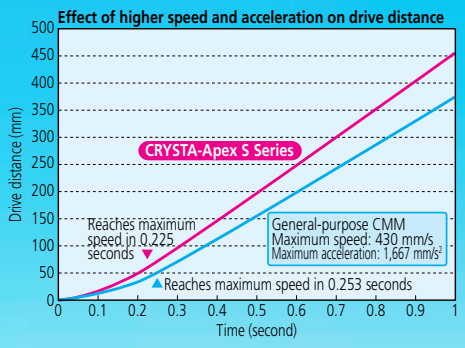
700 Series

CRYSTA-Apex S 776

CRYSTA-Apex S Series

High-speed, high-acceleration drive

The CRYSTA-Apex S Series offers a maximum drive speed of 519 mm/s and a maximum acceleration of 2,309 mm/s^2 [500/700/900 Series], resulting in an increase of almost 100 mm in drive distance in one second, when compared with general-purpose CNC coordinate measuring machines (with a maximum speed of 430 mm/s and a maximum acceleration of 1,667 mm/s^2). Furthermore, with a maximum measuring speed (i.e., the speed with which the stylus traces over the workpiece) of 8 mm/s, the CRYSTA-Apex S produces measurements much more quickly than ordinary CMMs (with a maximum measuring speed of 5 mm/s). Combining high speed and high acceleration, the CRYSTA-Apex S dramatically reduces measuring time, with the difference between the CRYSTA-Apex S and ordinary CMMs only increasing as the number of measuring points increases, resulting in a significant reduction in measuring cost.



Designed for high rigidity

As is the case with Mitutoyo's conventional CMMs, various structures are employed in the CRYSTA-Apex S in order to give the body higher rigidity. The Y-axis guide rail, which is attached to one side of the granite surface plate, shows very little deterioration with use, and thus promises to maintain high accuracy for a long time. The air bearings located on the bottom face, in addition to those at the front, rear, and upper surfaces of the slider unit of the X-axis, minimize vibration even during high-speed, high-acceleration movement, thus ensuring stable linear motion.

900 Series

CRYSTA-Apex S 9106

1200 Series

CRYSTA-Apex S 122010

CRYSTA-Apex S 500 Series

CRYSTA-Apex S 500 Series Specifications

Model No.		CRYSTA-Apex S 544	CRYSTA-Apex S 574
Measuring range	X axis	500 mm	
	Y axis	400 mm	700 mm
	Z axis	400 mm	
Resolution		0.0001 mm (0.1 µm)	
Guide method		Air bearings on each axis	
Drive speed		8-300 mm/s (CNC mode), max. speed: 519 mm/s 0 - 80 mm/s (J/S Mode: High Speed) 0 - 3 mm/s (J/S Mode: Low Speed) 0.05 mm/s (J/S Mode: Fine Speed)	
Max. measuring speed		8 mm/s	
Max. drive acceleration		Each axis: 1,333 mm/s², max. combined acceleration: 2,309 mm/s²	
Workpiece	Maximum height	545 mm	
	Maximum mass	180 kg	
Mass (including the control device and installation platform)		515 kg	625 kg
Air supply	Pressure	0.4 MPa	
	Consumption	50 L/min under normal conditions (air source: 100 L/min)	

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

CRYSTA-Apex S 500 Series Accuracy

unit: µm

Probe used	Max. permissible length measurement error*1*2 ISO 10360-2: 2009	Repeatability range of E_0	Max. permissible single stylus form error ISO 10360-5: 2010
SP25M/ SP600Q	$E_{0,MPE}$=1.7+3L/1000 (Temperature environment 1) $E_{150,MPE}$=1.7+3L/1000 (Temperature environment 1) $E_{0,MPE}$=1.7+4L/1000 (Temperature environment 2) $E_{150,MPE}$=1.7+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.3	$P_{FTU,MPE}$=1.7
TP200	$E_{0,MPE}$=1.9+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.4+3L/1000 (Temperature environment 1) $E_{0,MPE}$=1.9+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.4+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.5	$P_{FTU,MPE}$=1.9
TP20	$E_{0,MPE}$=2.2+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.7+3L/1000 (Temperature environment 1) $E_{0,MPE}$=2.2+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.7+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.8	$P_{FTU,MPE}$=2.2

*1: L = Measuring length (unit: mm)
*2: Table at left defines temperature environments 1 and 2

CRYSTA-Apex S 500 Series Installation Temperature

		Temperature environment 1	Temperature environment 2
Limits within which accuracy is guaranteed	Temperature Range	20±2 °C	16 - 26 °C
	Rate of change	2 °C per hour or less 2 °C in 24 hours or less	2 °C per hour or less 5 °C in 24 hours or less
	Gradient	1 °C per hour or less	1 °C per hour or less

Note: This machine incorporates a main unit Startup system (relocation detection system), which disables operation when an unexpected vibration is applied or the machine is relocated. Be sure to contact your nearest Mitutoyo Sales Office prior to relocating this machine after initial installation.

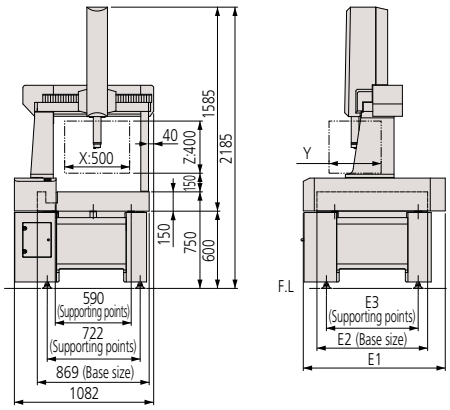
CRYSTA-Apex S 500 Series Accuracy

unit: µm

Probe used	Max. permissible scanning probing error (MPE_{THP}) ISO 10360-4: 2000
SP25M (Stylus: ø4 X 50 mm)	2.3 (50s)

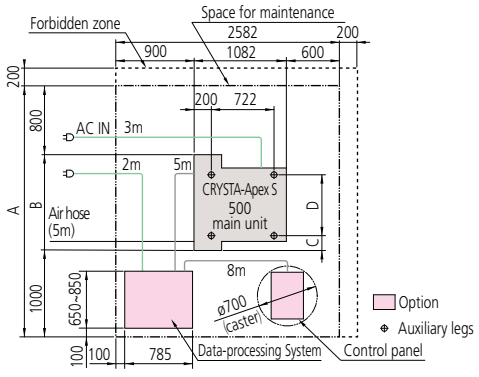
CRYSTA-Apex S 500 Series Dimensions

(unit: mm)



Installation floor space

(unit: mm)



Model No.	A	B	C	D	E1	E2	E3	Y
CRYSTA-Apex S 544	2922	1191	173.5	713	1191	860	713	400
CRYSTA-Apex S 574	3260	1548	220.5	1013	1548	1160	1013	700

CRYSTA-Apex S 700 Series

CRYSTA-Apex S 700 Series Specifications

Model No.		CRYSTA-Apex S 776	CRYSTA-Apex S 7106
Measuring range	X axis	700 mm	
	Y axis	700 mm	1000 mm
	Z axis	600 mm	
Resolution		0.0001 mm (0.1 µm)	
Guide method		Air bearings on each axis	
Drive speed		8-300 mm/s (CNC mode), max. speed: 519 mm/s 0 - 80 mm/s (J/S Mode: High Speed) 0 - 3 mm/s (J/S Mode: Low Speed) 0.05 mm/s (J/S Mode: Fine Speed)	
Max. measuring speed		8 mm/s	
Max. drive acceleration		Each axis: 1,333 mm/s², max. combined acceleration: 2,309 mm/s²	
Workpiece	Maximum height	800 mm	
	Maximum mass	800 kg	1000 kg
Mass (including the control device and installation platform)		1675 kg	1951 kg
Air supply	Pressure	0.4 MPa	
	Consumption	60 L/min under normal conditions (air source: 120 L/min)	

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

CRYSTA-Apex S 700 Series Accuracy

unit: µm

Probe used	Max. permissible length measurement error*1*2 ISO 10360-2: 2009	Repeatability range of E_0	Max. permissible single stylus form error ISO 10360-5: 2010
SP25M/ MPP310Q/ SP80	$E_{0,MPE}$=1.7+3L/1000 (Temperature environment 1) $E_{150,MPE}$=1.7+3L/1000 (Temperature environment 1)	$R_{0,MPL}$=1.3	$P_{FTU,MPE}$=1.7
	$E_{0,MPE}$=1.7+4L/1000 (Temperature environment 2) $E_{150,MPE}$=1.7+4L/1000 (Temperature environment 2)		
TP200	$E_{0,MPE}$=1.9+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.4+3L/1000 (Temperature environment 1)	$R_{0,MPL}$=1.9	$P_{FTU,MPE}$=1.9
	$E_{0,MPE}$=1.9+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.4+4L/1000 (Temperature environment 2)		
TP20	$E_{0,MPE}$=2.2+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.7+3L/1000 (Temperature environment 1)	$R_{0,MPL}$=2.2	$P_{FTU,MPE}$=2.2
	$E_{0,MPE}$=2.2+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.7+4L/1000 (Temperature environment 2)		

*1: L = Measuring length (unit: mm)
*2: Table at left defines temperature environments 1 and 2

CRYSTA-Apex S 700 Series Installation Temperature

		Temperature environment 1	Temperature environment 2
Limits within which accuracy is guaranteed	Temperature Range	20±2 °C	16 - 26 °C
	Rate of change	2 °C per hour or less 2 °C in 24 hours or less	2 °C per hour or less 5 °C in 24 hours or less
	Gradient	1 °C per hour or less	1 °C per hour or less

Note: This machine incorporates a main unit Startup system (relocation detection system), which disables operation when an unexpected vibration is applied or the machine is relocated. Be sure to contact your nearest Mitutoyo Sales Office prior to relocating this machine after initial installation.

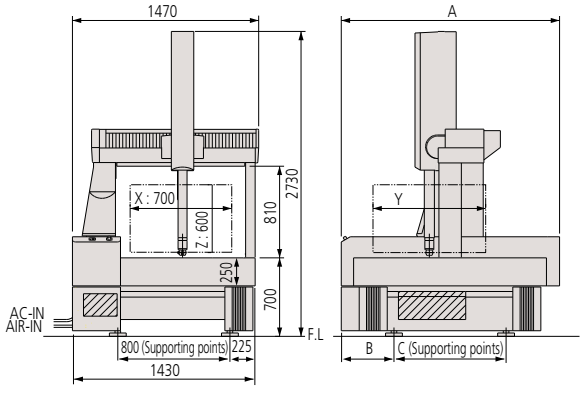
CRYSTA-Apex S 700 Series Accuracy

unit: µm

Probe used	Max. permissible scanning probing error (MPE_{THP}) ISO 10360-4: 2000
SP25M (Stylus: ø4 X 50 mm)	2.3 (50s)
MPP310Q (Stylus: ø4 X 18 mm)	1.8 (80s)
SP80 (Stylus: ø4 X 50 mm)	2.0 (50s)

CRYSTA-Apex S 700 Series Dimensions

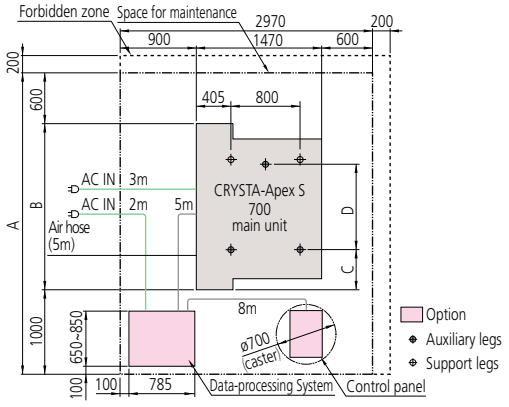
(unit: mm)



Model No.	A	B	C	Y
CRYSTA-Apex S 776	1700	420	800	700
CRYSTA-Apex S 7106	2000	470	1000	1000

Installation floor space

(unit: mm)



Model No.	A	B	C	D
CRYSTA-Apex S 776	3250	1700	420	800
CRYSTA-Apex S 7106	3550	2000	470	1000

CRYSTA-Apex S 900 Series

CRYSTA-Apex S 900 Series Specifications

Model No.		CRYSTA-Apex S 9106 (Z600)/9108 (Z800)	CRYSTA-Apex S 9166 (Z600)/9168 (Z800)	CRYSTA-Apex S 9206 (Z600)/9208 (Z800)
Measuring range	X axis	900 mm		
	Y axis	1000 mm	1600 mm	2000 mm
	Z axis	600 mm / 800 mm		
Resolution		0.0001 mm (0.1 µm)		
Guide method		Air bearings on each axis		
Drive speed		8 - 300 mm/s (CNC mode), max. speed: 519 mm/s 0 - 80 mm/s (J/S Mode: High Speed) 0 - 3 mm/s (J/S Mode: Low Speed) 0.05 mm/s (J/S Mode: Fine Speed)		
Max. measuring speed		8 mm/s (3 mm/s for Type Z800)		
Max. drive acceleration		Each axis: 1,333 mm/s² (1,000 mm/s² Type Z800), max. combined acceleration 2,309 mm/s² (1,732 mm/s² Type Z800)		
Workpiece	Maximum height	800 mm (Z=600 mm) / 1000 mm (Z=800 mm)		
	Maximum mass	1200 kg	1500 kg	1800 kg
Mass (including the control device and installation platform)		2231 kg (Z=600 mm)	2868 kg (Z=600 mm)	3912 kg (Z=600 mm)
		2261 kg (Z=800 mm)	2898 kg (Z=800 mm)	3942 kg (Z=800 mm)
Air supply	Pressure	0.4 MPa		
	Consumption	60 L/min under normal conditions (air source: 120 L/min)		

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

CRYSTA-Apex S 900 Series Installation Temperature

		Temperature environment 1	Temperature environment 2
Limits within which accuracy is guaranteed	Temperature Range	20±2 °C	16 - 26 °C
	Rate of change	2 °C per hour or less 2 °C in 24 hours or less	2 °C per hour or less 5 °C in 24 hours or less
	Gradient	1 °C per hour or less	1 °C per hour or less

Note: This machine incorporates a main unit Startup system (relocation detection system), which disables operation when an unexpected vibration is applied or the machine is relocated. Be sure to contact your nearest Mitutoyo Sales Office prior to relocating this machine after initial installation.

CRYSTA-Apex S 900 Series Accuracy

unit: µm

Probe used	Max. permissible length measurement error*1*2 ISO 10360-2: 2009	Repeatability range of E_0	Max. permissible single stylus form error ISO 10360-5: 2010
SP25M/ MPP310Q/ SP80	$E_{0,MPE}$=1.7+3L/1000 (Temperature environment 1) $E_{150,MPE}$=1.7+3L/1000 (Temperature environment 1) $E_{0,MPE}$=1.7+4L/1000 (Temperature environment 2) $E_{150,MPE}$=1.7+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.3	$P_{FTU,MPE}$=1.7
TP200	$E_{0,MPE}$=1.9+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.4+3L/1000 (Temperature environment 1) $E_{0,MPE}$=1.9+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.4+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.9	$P_{FTU,MPE}$=1.9
TP20	$E_{0,MPE}$=2.2+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.7+3L/1000 (Temperature environment 1) $E_{0,MPE}$=2.2+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.7+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=2.2	$P_{FTU,MPE}$=2.2

*1: L = Measuring length (unit: mm)
*2: Table at left defines temperature environments 1 and 2

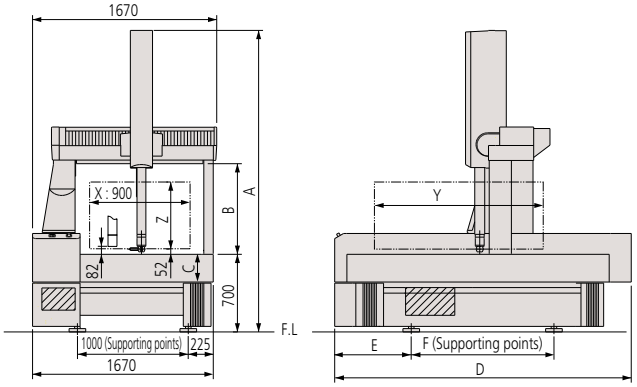
CRYSTA-Apex S 900 Series Accuracy

unit: µm

Probe used	Max. permissible scanning probing error (MPE_{THP}) ISO 10360-4: 2000
SP25M (Stylus: ø4 X 50 mm)	2.3 (50s) [2.3 (60s) for Z800 model]
MPP310Q (Stylus: ø4 X 18 mm)	1.8 (80s)
SP80 (Stylus: ø4 X 50 mm)	2.0 (50s) [2.3 (60s) for Z800 model]

CRYSTA-Apex S 900 Series Dimensions

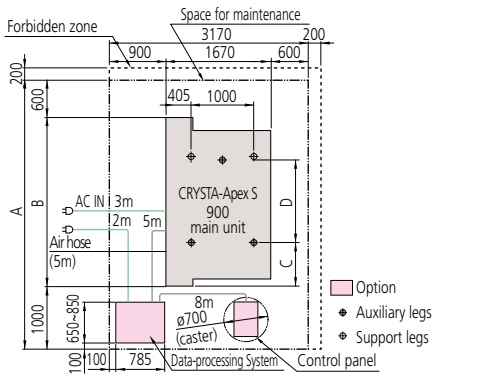
(unit: mm)



Model No.	A	B	C	D	E	F	Y	Z
CRYSTA-Apex S 9106	2730	810	250	2000	470	1000	1000	600
CRYSTA-Apex S 9166			250	2740	700	1320	1600	
CRYSTA-Apex S 9206			300	3220	830	1500	2000	
CRYSTA-Apex S 9108	3130	1000	250	2000	470	1000	1000	800
CRYSTA-Apex S 9168			250	2740	700	1320	1600	
CRYSTA-Apex S 9208			300	3220	830	1500	2000	

Installation floor space

(unit: mm)



Model No.	A	B	C	D
CRYSTA-Apex S 9106/9108	3550	2000	470	1000
CRYSTA-Apex S 9166/9168	4290	2740	700	1320
CRYSTA-Apex S 9206/9208	4770	3220	830	1500

CRYSTA-Apex S 1200 Series

CRYSTA-Apex S 1200 Series Specifications

Model No.		CRYSTA-Apex S 121210	CRYSTA-Apex S 122010	CRYSTA-Apex S 123010
Measuring range	X axis	1200mm		
	Y axis	1200mm	2000mm	3000mm
	Z axis	1000mm		
Resolution		0.0001mm (0.1µm)		
Guide method		Air bearings on each axis		
Drive speed		8 - 400 mm/s (CNC mode), max. speed: 693 mm/s 0 - 80 mm/s (J/S Mode: High Speed) 0 - 3 mm/s (J/S Mode: Low Speed) 0.05 mm/s (J/S Mode: Fine Speed)		
Max. measuring speed		5mm/s		
Max. drive acceleration		Each axis: 1,000 mm/s², max. combined acceleration 1,732 mm/s²		
Workpiece	Maximum height	1200 mm		
	Maximum mass	2000 kg	2500 kg	3000 kg
Mass (including the control device and installation platform)		4050 kg	6150 kg	9110 kg
Air supply	Pressure	0.4MPa		
	Consumption	100 L/min under normal conditions (air source: 150 L/min)		

Note: While the appearance of the natural stone measuring table varies according to the source, the high stability for which this material is known can always be relied upon.

CRYSTA-Apex S 1200 Series Accuracy

unit: µm

Probe used	Max. permissible length measurement error*1*2 ISO 10360-2: 2009	Repeatability range of E_0	Max. permissible single stylus form error ISO 10360-5: 2010
SP25M/ MPP310Q/ SP80	$E_{0,MPE}$=2.3+3L/1000 (Temperature environment 1) $E_{150,MPE}$=2.3+3L/1000 (Temperature environment 1) $E_{0,MPE}$=2.3+4L/1000 (Temperature environment 2) $E_{150,MPE}$=2.3+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=1.9	$P_{FTU,MPE}$=2.0
TP200	$E_{0,MPE}$=2.5+3L/1000 (Temperature environment 1) $E_{150,MPE}$=3.0+3L/1000 (Temperature environment 1) $E_{0,MPE}$=2.5+4L/1000 (Temperature environment 2) $E_{150,MPE}$=3.0+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=2.0	$P_{FTU,MPE}$=2.2
TP20	$E_{0,MPE}$=2.8+3L/1000 (Temperature environment 1) $E_{150,MPE}$=3.3+3L/1000 (Temperature environment 1) $E_{0,MPE}$=2.8+4L/1000 (Temperature environment 2) $E_{150,MPE}$=3.3+4L/1000 (Temperature environment 2)	$R_{0,MPL}$=2.4	$P_{FTU,MPE}$=2.6

*1: L = Measuring length (unit: mm)
*2: Table at left defines temperature environments 1 and 2

CRYSTA-Apex S 1200 Series Installation Temperature

		Temperature environment 1	Temperature environment 2
Limits within which accuracy is guaranteed	Temperature Range	20±2 °C	16 - 26 °C
	Rate of change	2 °C per hour or less 2 °C in 24 hours or less	2 °C per hour or less 5 °C in 24 hours or less
	Gradient	1 °C per hour or less	1 °C per hour or less

Note: This machine incorporates a main unit Startup system (relocation detection system), which disables operation when an unexpected vibration is applied or the machine is relocated. Be sure to contact your nearest Mitutoyo Sales Office prior to relocating this machine after initial installation.

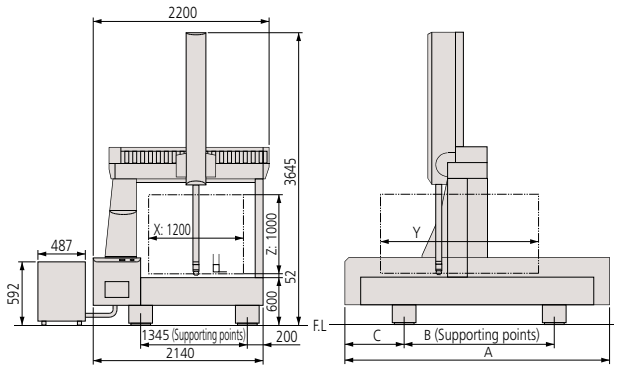
CRYSTA-Apex S 1200 Series Accuracy

unit: µm

Probe used	Max. permissible scanning probing error (MPE_{THP}) ISO 10360-4: 2000
SP25M (Stylus: ø4 X 50 mm)	2.8 (50s)
MPP310Q (Stylus: ø4 X 18 mm)	2.3 (80s)
SP80 (Stylus: ø4 X 50 mm)	2.5 (50s)

CRYSTA-Apex S 1200 Series Dimensions

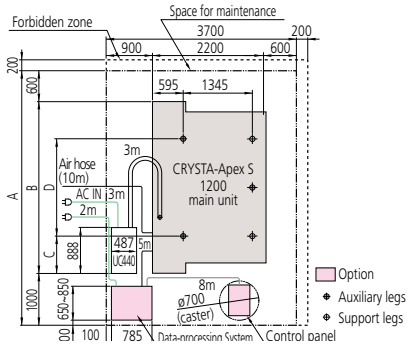
(unit: mm)



Model No.	A	B	C	Y
CRYSTA-Apex S 121210	2595	1700	420	1200
CRYSTA-Apex S 122010	3395	1890	725	2000
CRYSTA-Apex S 123010	4395	2500	920	3000

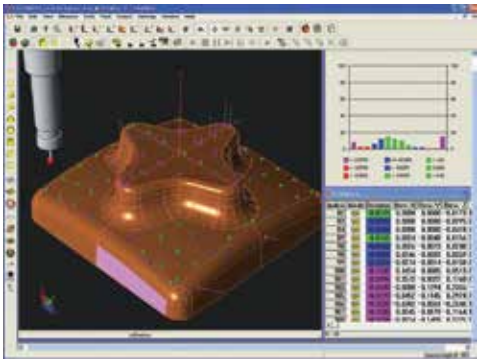
Installation floor space

(unit: mm)



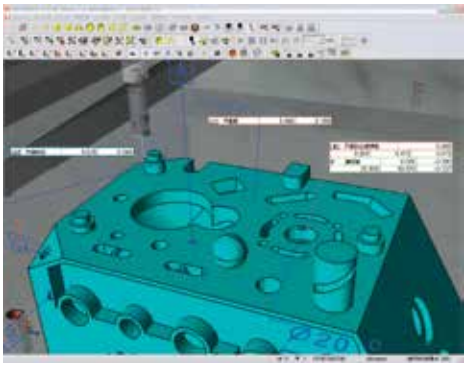
Model No.	A	B	C	D
CRYSTA-Apex S 121210	4145	2595	420	1700
CRYSTA-Apex S 122010	4945	3395	725	1890
CRYSTA-Apex S 123010	5945	4395	920	2500

Group of options that enable various kinds of measurements



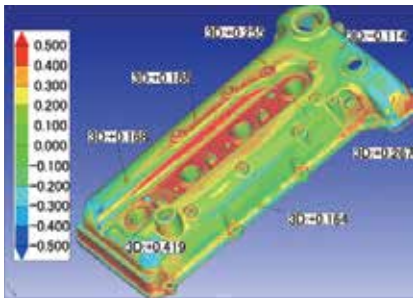
CAT1000S
(freeform surface evaluation program)

Checks and compares the workpiece with the CAD data containing freeform surfaces and directly outputs the results in the form of CAD data in various formats. Software to directly convert from/to various types of CAD data is available as an option.



CAT1000P (off-line teaching program)

This module enables the user to use CAD data and on-screen simulation to create parts programs for making automated measurements (off-line teaching). This module allows the user to begin creating a parts program as soon as the design data has been finalized, shortening the entire process.

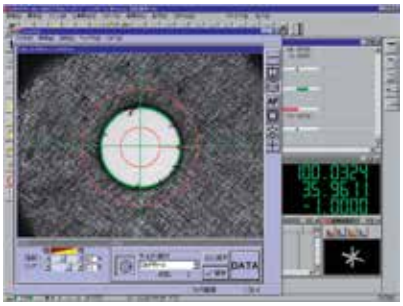


MSURF
(non-contact laser measurement and evaluation program)

MSURF-S is used for obtaining measured point cloud data with the SurfaceMeasure (non-contact laser probe), while MSURF-I is used for comparing this data with the master model data, and for making dimensional measurements. Furthermore, MSURF-G for offline teaching allows the user to create a measurement macro even without the actual workpiece, improving the measuring machine's uptime.

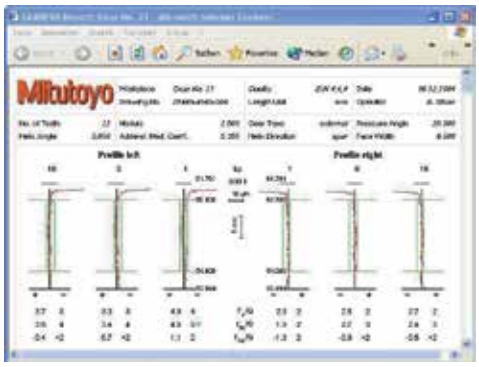
GEOPAK (high-functionality general-purpose measurement program)

This module is the heart of the MCOSMOS software system and is used to measure and analyze geometric elements. All the functions are provided by icons or pull-down menus, so even novices can promptly select desired functions. Its main features include easier viewing of measuring procedures and results such as realtime graphic display of measurement results and a function for direct call-up of elements from results graphics.



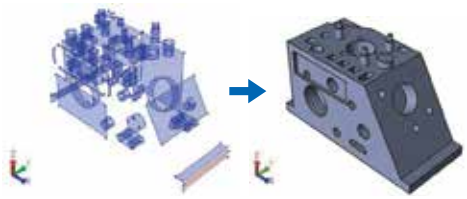
VISIONPAK (vision measurement program)

This program controls QVP and performs various computational analyses on captured images.



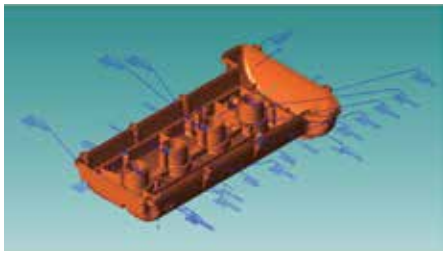
GEARPAK (gear evaluation program)

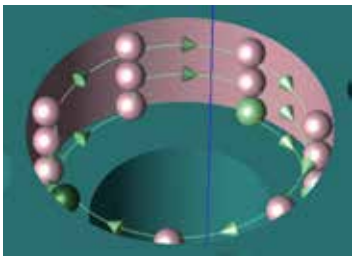
For evaluating the most types of involute gears.



Solid Model Developer

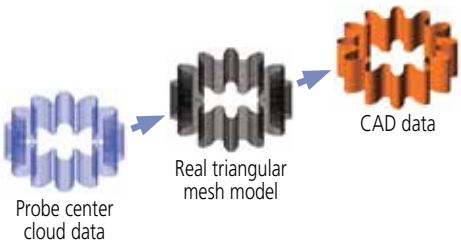
This program generates CAD data from data measured using MCOSMOS.





MiCAT Planner (Automatic measurement program generation software)

Identifies tolerance information included in 3D models with Product and Manufacturing Information (PMI), defines measurement locations and creates a measurement program fully automatically.
Also, even with the 3D CAD model without tolerance information, the measurement program can be created automatically only by adding tolerance information on the MiCAT Planner. It is more efficient than the conventional teaching model.

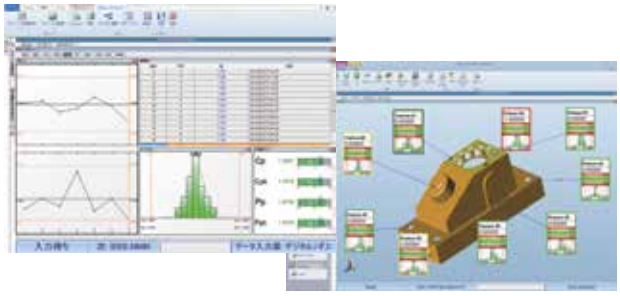


SurfaceDeveloper

This program generates free-form surface models from multi-sectional contour data.

SCANPAK (contour measurement program)

Software for scanning and evaluating workpiece contours (2D). Evaluates contour tolerance between measurement data and design data, and performs various types of element and inter-element calculations based on a desired range of measurement data specified by the user.



MeasurLink Real Time Professional (statistical-processing and process-controlling program)

Performs various types of statistical computations using measurement results. In addition, by displaying a control diagram on a real-time basis, this program allows defects that may occur in the future (e.g., wearing or damaging of cutting tools) to be discovered early on. This program can also be linked to a higher-level network environment to build a central control system.

Group of options that enable various kinds of measurements

SurfaceMeasure 403 / 606 / 610 / 1010 / 606T (non-contact laser probe)

A lightweight, high-performance, non-contact probe developed for CNC coordinate measuring machines. Powder spray-less measurement has been achieved through automatic setting of appropriate laser intensity and camera sensitivity according to environment or material, providing a simpler and more comfortable laser scanning environment.

SurfaceMeasure 403 / 606 / 610 / 1010

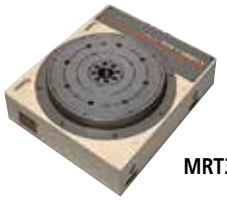
SurfaceMeasure 606T

SURFTEST PROBE (Probe for surface roughness measurement)

SURFTEST PROBE is a probe for measuring surface roughness that can be equipped with a CNC coordinate measuring machine. With auto-probe change system, it can automatically exchange with a touch trigger probe or a scanning probe (SP25M). This provides ability to perform combined automatic measurement of dimension, form, and surface roughness measurement.
Mitutoyo will meet various kinds of requests for measurement by providing dedicated software and wide range of optional detectors.

MPP-310Q (scanning probe)

Probe that collects coordinate values (point cloud data) at high accuracy by moving at speeds of up to of 120 mm/s while in contact with the workpiece. Because MPP-310Q can also be used with the rotary table (MRT320) for synchronous scanning, it is effective for measuring gears, blades, ball screws, cylindrical cams, etc.



MRT320

SP25M (compact high-accuracy scanning probe)

This is a compact, high-accuracy, multi-function scanning probe with a 25-mm outside diameter that makes scanning measurements, high-accuracy point measurements, and centripetal point measurements (optional function). The SP25M is used with the PH10MQ/10M auto probe head to provide a high degree of measurement freedom.

UMAP-CMM

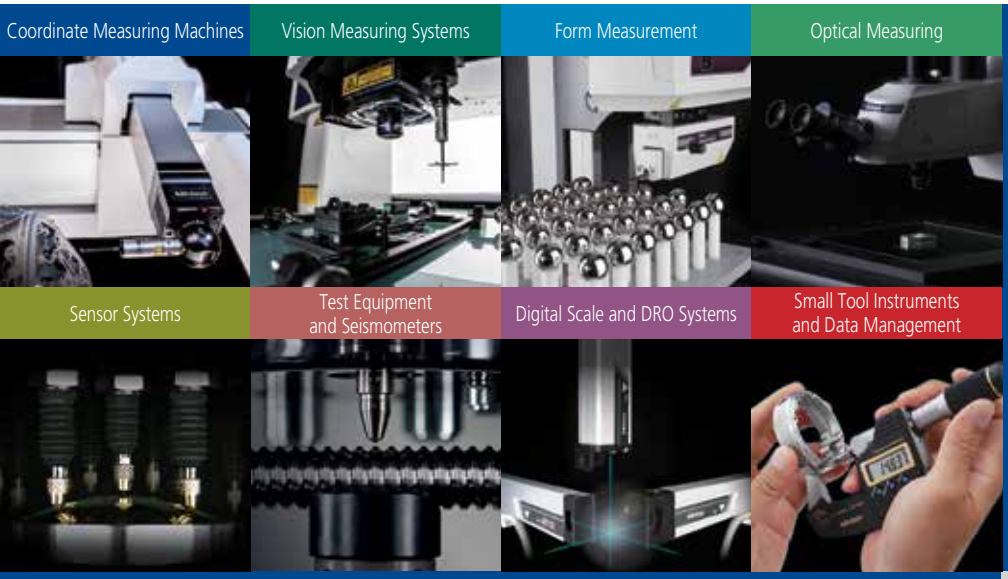
This head makes it possible to use an ultra-small diameter stylus (0.1- or 0.3-mm diameter). It can be installed on PH10MQ to measure the shape and dimensions of microfabricated products from multiple directions.

QVP (vision probe)

This probe automatically detects edges from image data of the workpiece magnified by a CCD camera. It is extremely useful for measuring microfabricated products that cannot be measured using a contact-type probe and soft objects that cannot be subjected to any measurement force. The QVP can also be used for measuring height based on autofocusing.

MPP-10 (probe for effective screw depth measurement)

The probe that made it possible for a coordinate measuring machine to measure effective screw depth for the first time in the world. The introduction of the auto probe changing system allows normal dimensional measurements as well as effective screw depth measurements to be made automatically.



Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

Mitutoyo

Mitutoyo Asia Pacific Pte. Ltd.
Company Reg No. 197800892N
24 Kallang Avenue, Mitutoyo Building, Singapore 339415
Tel: (65) 6294 2211 Fax: (65) 6299 6666
E-mail: mapsg@mitutoyo.com.sg

www.mitutoyo.com.sg | www.mitutoyo.com.my
www.mitutoyo.co.th | www.mitutoyo.co.id
www.mitutoyo.com.vn | www.mitutoyo.com.ph

Mitutoyo (Malaysia) Sdn. Bhd.
Mah Sing Integrated Industrial Park,
4, Jalan Utarid U5/14, Section U5,
40150 Shah Alam, Selangor, Malaysia
Tel: (60) 3-7845 9318
Fax: (60) 3-7845 9346
E-mail: mmsb@mitutoyo.com.my
Penang Branch
Tel: (60) 4641 1998 Fax: (60) 4641 2998
Johor Branch
Tel: (60) 7352 1626 Fax: (60) 7352 1628

Mitutoyo (Thailand) Co., Ltd.
76/3-5, Chaengwattana Road, Kwaeng
Anusaowaree, Khet Bangkaen,
Bangkok 10220, Thailand
Tel: (66) 2080 3500
Fax: (66) 2521 6136
E-mail: office@mitutoyo.co.th
Chonburi Branch
Tel: (66) 2080 3563 Fax: (66) 3834 5788
Amata Nakorn Branch
Tel: (66) 2080 3565 Fax: (66) 3846 8978

PT. Mitutoyo Indonesia
Jalan Sriwijaya No.26
Desa cibatu
Kec. Cikarang Selatan
Kab. Bekasi 17530, Indonesia
Tel: (62) 21-2962 8600
Fax: (62) 21-2962 8604
E-mail: ptmi@mitutoyo.co.id

Mitutoyo Vietnam Co., Ltd.
No. 07-TT4, My Dinh - Me Tri Urban Zone,
My Dinh 1 Ward, Nam Tu Liem District,
Hanoi, Vietnam
Tel: (84) 4-3768 8963
Fax: (84) 4-3768 8960
E-mail: mvc@mitutoyo.com.vn
Ho Chi Minh City Branch
Tel: (84) 8-3840 3489
Fax: (84) 8-3840 3498

Mitutoyo Philippines, Inc.
Unit 2103, GMV Building 2,
107 North Main Avenue,
Laguna Technopark, Biñan,
Laguna 4024, Philippines
Tel: (63) 4-9544 0272
Fax: (63) 4-9544 0272
E-mail: mpi@mitutoyo.com.ph