Mitutoyo

Mitutoyo Quality

Coordinate Measuring Machines

5-axis CNC CMM
CRYSTA-Apex EX 1200R Series

Catalog No. E16015(4)

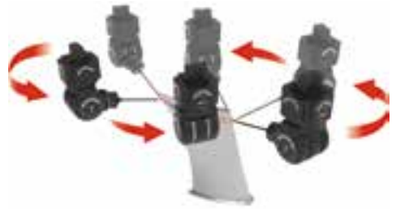
CRYSTA-Apex EX 1200R Series

Helical scan

Gasket scan

Sweep scan

Airfoil section scan



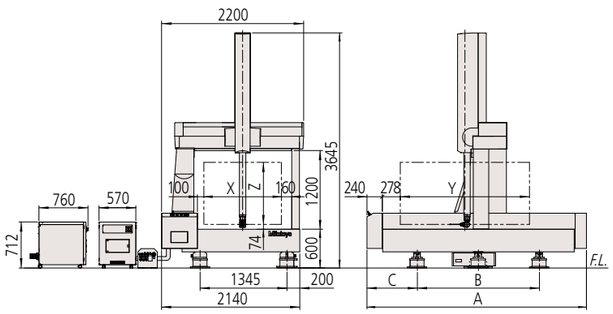
- **CRYSTA-Apex EX 1200R series** products are advanced CNC CMMs equipped with the REVO-2 5-axis scanning probe head.
- REVO-2 can be positioned at any angle, making it easy to measure even complex form workpieces. In addition, the synchronized 5-axis movement considerably reduces measurement times.
- REVO has laser sensing technology that ensures high accuracy measurement. This accuracy is maintained when using various lengths of styli (up to 500 mm*).

* Distance from probe rotation center to stylus tip.

- The RSP2 for 5-axis scanning, the RSP3 that allows use of a cranked stylus, and the SFP2 for surface roughness measurement are all probes that can be used to record various shape measurements. Automatic changeover of these probes is possible with an auto probe changer, enabling fully automatic measurement of parts with diverse shapes.
- After initial calibration, the infinite positioning of the RSP-2, means that any probe angle is available for measurement.

CRYSTA-Apex EX 123010R

CRYSTA-Apex EX 1200R Series DIMENSIONS (Unit: mm)



Dashed line: Measuring range

Model No.	X	Y	Z	A	B	C
CRYSTA-Apex EX 121210R	1200	1200	960	2595	1700	470
CRYSTA-Apex EX 122010R	1200	2000	960	3395	1890	775
CRYSTA-Apex EX 123010R	1200	3000	960	4395	2500	970

SPECIFICATIONS

Model No.		CRYSTA-Apex EX 121210R	CRYSTA-Apex EX 122010R	CRYSTA-Apex EX 123010R
Measuring range	X axis	1200 mm		
	Y axis		2000 mm	3000 mm
	Z axis	960 mm		
Drive speed	CNC MODE (Key selector switch: AUTO)	Drive speed each axis: Max. 300 mm/s		
		Measuring Speed 1 - 5 mm/s		
	J/S MODE	Max. 80 mm/s (J/S Mode: High Speed) Max. 3 mm/s (J/S Mode: Low Speed) Max. 3 mm/s (J/S Mode: Touch Speed)		
Drive acceleration		375 mm/s²		
Resolution		0.0001 mm		
Guide method		Air bearings on each axis		
Table loading	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	CMM: 0.4 MPa REVO: 0.5 MPa		
	Consumption	150 L/min under normal conditions (air source: 230 L/min or more), 0.6 MPa or more		

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 EX 121210R/122010R/123010R Series Accuracy (Unit: µm)

Probe used	Temperature environment	Maximum permissible error of length measurement ISO 10360-2:2009 (JIS B 7440-2:2013)
REVO+RSP2+RSH250	1	$E_{0,MPE}$ = 2.9+4L/1000 $E_{250,MPE}$ = 2.9+4L/1000
	2	$E_{0,MPE}$ = 2.9+5L/1000 $E_{250,MPE}$ = 2.9+5L/1000
REVO+RSP3-3+ RSH3	1	$E_{0,MPE}$ = 2.5+3L/1000 $E_{250,MPE}$ = 2.5+3L/1000
	2	$E_{0,MPE}$ = 2.5+4L/1000 $E_{250,MPE}$ = 2.5+4L/1000

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

CRYSTA-Apex EX 121210R/122010R/123010R Series Installation Temperature

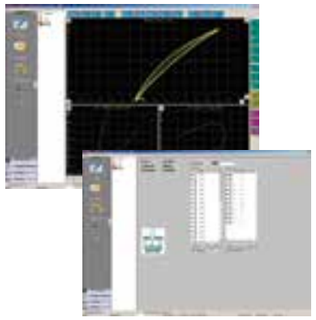
		Temperature environment 1	Temperature environment 2
Guaranteed accuracy temperature environment	Temperature Range	18 - 22 °C	16 - 26 °C
	Rate of change	2 °C or less per day	5 °C or less per day
	Gradient	1 °C or less per meter	1 °C or less per meter

Specification of REVO-2 Scanning Probe

Rotation angle (Pitch angle)	Vertical (A-axis)	-5° to +120° (0.08 sec)
	Horizontal (B-axis)	∞ (0.08 sec)
Maximum stylus length		500 mm (Distance from probe rotation center to stylus tip)

MAFIS Express [Blade measurement/Evaluation program]

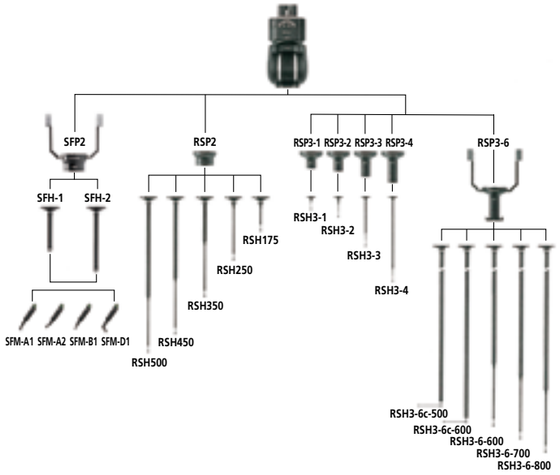
This software program enables creation of measurement programs and measurement and analysis of blades and blisks. A part program for measurement can be automatically created just by selecting required contents and evaluation conditions. The measurement results are displayed in a report including 2D graphics.



REVO-2 Probes

Automatic changeover of these probes is possible with an auto probe changer.

- **RSP2**
  Optimal for 5-axis scanning and touch-trigger measurement
  Stylus holder supports 175 mm, 250 mm, 350 mm, 450 mm, and 500 mm effective stylus length
- **RSP3-3**
  SP25 scanning probe, allowing the use of a cranked stylus
- **SFP2**
  Surface roughness probe



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Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Test Equipment

Digital Scale and DRO Systems

Small Tool Instruments and Data Management

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 measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

Find additional product literature and our product catalogue

https://www.mitutoyo.co.jp/global.html

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Do not commit an act, which could directly or indirectly, violate any law or regulation of Japan, your country or any other international treaty, relating to the export or re-export of any commodities.

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