

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



CRYSTA-Apex EX 1200R Series

Helical scan



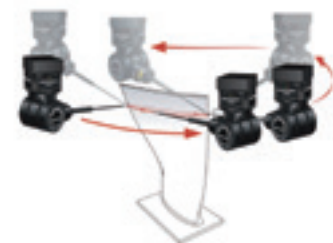
Gasket scan



Sweep scan



Airfoil section scan



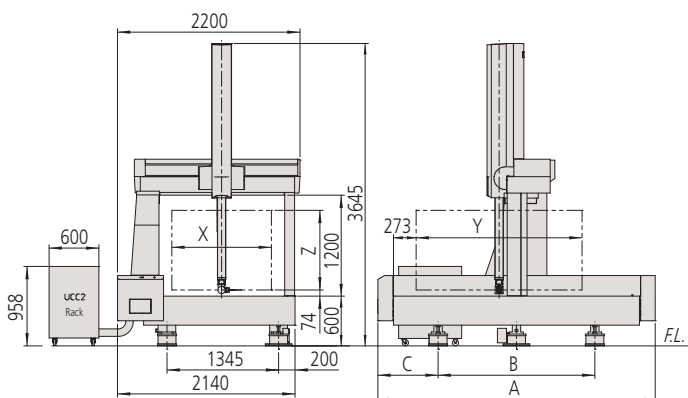
- **CRYSTA-Apex EX 1200R series** products are advanced CNC CMMs equipped with the REVO-2 5-axis scanning probe head.
 - Revo-2 can be positioned at any angle, making it easy to measure even complex form workpieces. In addition, the synchronized 5-axis movement considerably reduces measurement times.
 - Laser sensing technology ensures high accuracy measurement, even with long styli (up to 500 mm*).
- * Distance from probe rotation center to stylus tip

- In addition to the 5-axis scanning probe, the RSP-3 allows the use of cranked styli to support various applications. Automatic changeover of these probes with an auto probe changer is possible, enabling fully automated 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)



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	1200 mm	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	0 - 80 mm/s (J/S Mode: High Speed) 0 - 3 mm/s (J/S Mode: Low Speed) 0 - 3 mm/s (J/S Mode: Touch Speed)		
Drive acceleration		Each axis: 375 mm/s ² (Max. combined acceleration: 562 mm/s ²)		
Resolution		0.0001 mm		
Guide method		Air bearings on each axis		
Table loading	Maximum height	1160 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	Max. permissible length measurement error ISO 10360-2:2009 (JIS B 7440-2:2013)
REVO+RSP2+RSH250	$E_{0, MPE} = 2.9 + 4L/1000$ (Temperature environment1) $E_{250, MPE} = 2.9 + 4L/1000$ (Temperature environment1) $E_{0, MPE} = 2.9 + 5L/1000$ (Temperature environment2) $E_{250, MPE} = 2.9 + 5L/1000$ (Temperature environment2)
REVO+RSP3-3+ RSH3	$E_{0, MPE} = 2.5 + 3L/1000$ (Temperature environment1) $E_{150, MPE} = 2.5 + 3L/1000$ (Temperature environment1) $E_{0, MPE} = 2.5 + 4L/1000$ (Temperature environment2) $E_{150, MPE} = 2.5 + 4L/1000$ (Temperature environment2)

* L=Measuring length (unit: mm)

* Table below defines temperature environments 1 and 2

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

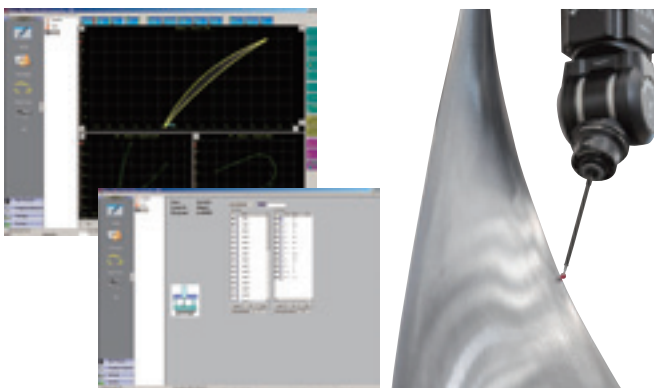
		Temperature environment 1	Temperature environment 2
Limits within which accuracy is guaranteed	Temperature Range	18 - 22 °C	16 - 26 °C
	Rate of change	2 °C in 24 hours or less	5 °C in 24 hours or less
	Gradient	1 °C or less per meter	1 °C or less per meter

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	500mm (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 Probe Optional accessory

• RSP2

Optimal for 5-axis scanning and touch-trigger measurement
Stylus holder* supports 175 mm, 250 mm, 350 mm, 450 mm, 500 mm effective stylus length

* Optional except for RSH250

• RSP3-3 (Optional)

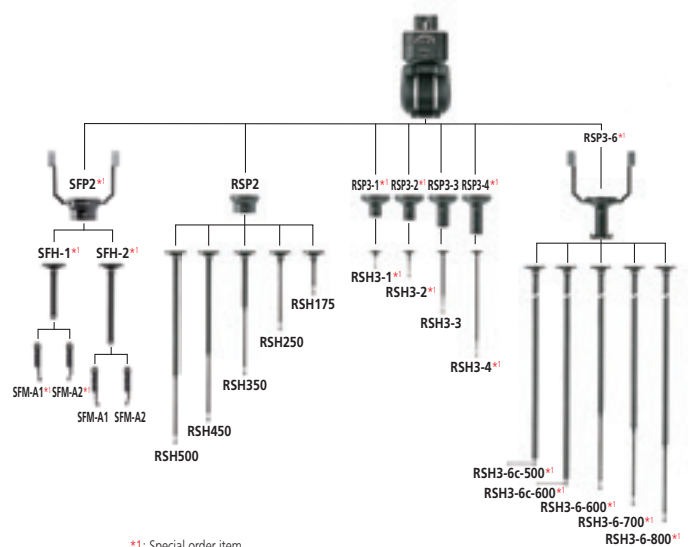
SP25 scanning probe
Supports use of cranked stylus

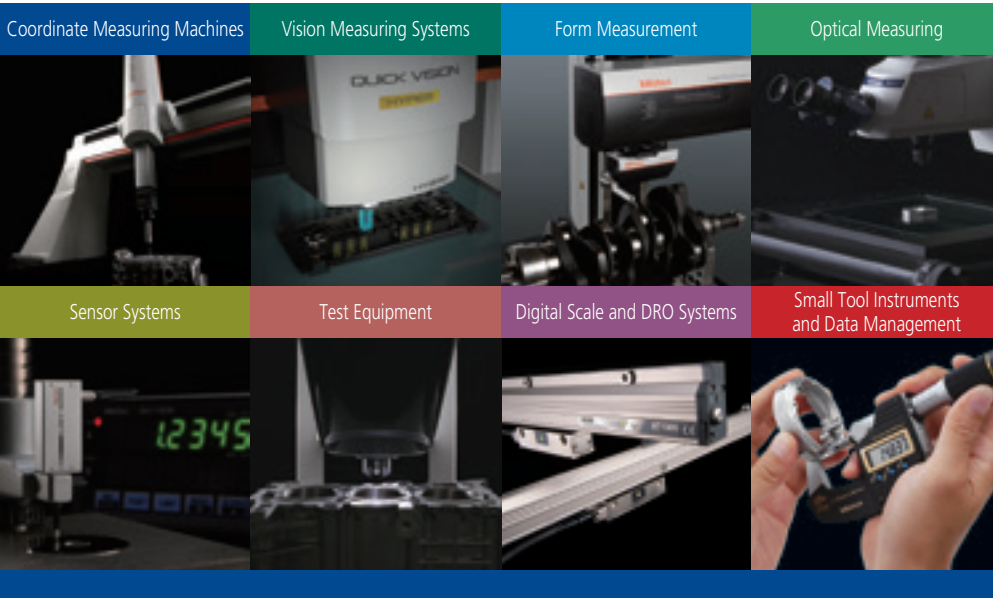
* Auto changer supported

Allows automatic changeover of probes (RSP2, RSP3) and stylus holders (RSH175, 250, 350, 450, 500).

• SFP2 (Optional)

Probe for Roughness Measuring





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>

Our products are classified as regulated items under Japanese Foreign Exchange and Foreign Trade Law. Please consult us in advance if you wish to export our products to any other country. If the purchased product is exported, even though it is not a regulated item (Catch-All controls item), the customer service available for that product may be affected. If you have any questions, please consult your local Mitutoyo sales office.

Note: Product illustrations are without obligation. Product descriptions, in particular any and all technical specifications, are only binding when explicitly agreed upon. MITUTOYO and MICAT are either registered trademarks or trademarks of Mitutoyo Corp. in Japan and/or other countries/regions. Other product, company and brand names mentioned herein are for identification purposes only and may be the trademarks of their respective holders.

Mitutoyo

Mitutoyo Corporation

20-1, Sakado 1-Chome,
Takatsu-ku, Kawasaki-shi,
Kanagawa 213-8533, Japan
T +81 (0) 44 813-8230
F +81 (0) 44 813-8231
<https://www.mitutoyo.co.jp>