

CRYSTA-Apex V500, 700, 900 Series

Specifications

Accuracy	E0, MPE from: (1,7+0,3L/100) µm
Max. drive speed	519 mm/s (3-axis)
Digital step	0,1 µm

Accuracy is specified for the following environmental conditions for the CMM:

Temperature range	18°C - 22°C	16°C - 26°C
Temperature change	2°K Per hour	2°K Per 24 hours
Temperature gradient	Vertical 1 K/m Horizontal 1 K/m	Vertical 1 K/m Horizontal 1 K/m



Mitutoyo eco-fix fixture kits:
 - flexible & quick setup
 - time & cost saving
 - easy adaption of product changes



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Optional joystick-box M2 with speed adjustment knob



CRYSTA-Apex V brochure on request



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CRYSTA-APEX V 500, 700 & 900 Series

The latest generation CRYSTA-Apex coordinate measuring machines, the new CRYSTA-Apex V Series, is packed with state of the art technology, necessary for performing very accurate measurements at high speed. All new, using Mitutoyo's world-renowned ABS scales, the CRYSTA-Apex V series has a high resistance to environmental conditions and does not require to perform homing upon start-up. SMS capability enables status and service monitoring, ready for use in a Smart Factory environment.

A future proof investment, the CRYSTA-Apex V is capable of tackling any task you might have in the future thanks to its ability to change or add probe systems and software with ease.

Main benefits:

- Proven lightweight bridge-type construction with high rigidity air-bearings on every axis
- High accuracy, high speed and high acceleration
- Temperature sensors for compensation of machine and workpiece from 16° to 26°C and monitoring of the environmental temperature.
- ABS linear scales provide high environmental resistance and saves time at start-up as homing is not necessary
- UC480 controller supporting Multi-sensor and SMS functionality (Smart Measuring System)



CRYSTA-Apex V9106

CRYSTA-Apex V Models:

No.	Model	Range [mm]	Comments
191-121	CRYSTA-Apex V544	500 x 400 x 400	Standard stand
191-122	CRYSTA-Apex V544	500 x 400 x 400	Anti vibration stand
191-125	CRYSTA-Apex V574	500 x 700 x 400	Standard stand
191-126	CRYSTA-Apex V574	500 x 700 x 400	Anti vibration stand
191-561	CRYSTA-Apex V776	700 x 700 x 600	Standard stand
191-562	CRYSTA-Apex V776	700 x 700 x 600	Anti vibration stand
191-565	CRYSTA-Apex V7106	700 x 1000 x 600	Standard stand
191-566	CRYSTA-Apex V7106	700 x 1000 x 600	Anti vibration stand
191-569	CRYSTA-Apex V9106	900 x 1000 x 600	Standard stand
191-571	CRYSTA-Apex V9106	900 x 1000 x 600	Anti vibration stand
191-574	CRYSTA-Apex V9166	900 x 1600 x 600	Standard stand
191-575	CRYSTA-Apex V9166	900 x 1600 x 600	Anti vibration stand
191-578	CRYSTA-Apex V9206	900 x 2000 x 600	Standard stand
191-579	CRYSTA-Apex V9206	900 x 2000 x 600	Anti vibration stand
191-583	CRYSTA-Apex V9108	900 x 1000 x 800	Standard stand
191-584	CRYSTA-Apex V9108	900 x 1000 x 800	Anti vibration stand
191-587	CRYSTA-Apex V9168	900 x 1600 x 800	Standard stand
191-588	CRYSTA-Apex V9168	900 x 1600 x 800	Anti vibration stand
191-592	CRYSTA-Apex V9208	900 x 2000 x 800	Standard stand
191-593	CRYSTA-Apex V9208	900 x 2000 x 800	Anti vibration stand

CRYSTA-Apex V1200 Series

Series 191 - Standard CNC CMM

The latest generation CRYSTA-Apex coordinate measuring machines, the new CRYSTA-Apex V Series, is packed with state of the art technology, necessary for performing very accurate measurements at high speed. All new, using Mitutoyo's world-renowned ABS scales, the CRYSTA-Apex V series has a high resistance to environmental conditions and does not require to perform homing upon start-up.

SMS capability enables status and service monitoring, ready for use in a Smart Factory environment.

A future proof investment, the CRYSTA-Apex V is capable of tackling any task you might have in the future thanks to its ability to change or add probe systems and software with ease.

Main benefits:

- Proven lightweight bridge-type construction with high rigidity air-bearings on every axis
- High accuracy, high speed and high acceleration
- Temperature sensors for compensation of machine and workpiece from 16° to 26°C and monitoring of the environmental temperature.
- ABS linear scales provide high environmental resistance and saves time at start-up as homing is not necessary
- UC480 controller supporting Multi-sensor and SMS functionality (Smart Measuring System)



CRYSTA-Apex V122010

CRYSTA-Apex V Models:

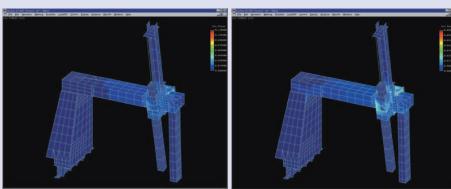
No.	Model	Range [mm]	Comments
191-481	CRYSTA-Apex V121210	1200 x 1200 x 1000	Standard stand
191-482	CRYSTA-Apex V121210	1200 x 1200 x 1000	Anti vibration stand
191-485	CRYSTA-Apex V122010	1200 x 2000 x 1000	Standard stand
191-486	CRYSTA-Apex V122010	1200 x 2000 x 1000	Anti vibration stand
191-489	CRYSTA-Apex V123010	1200 x 3000 x 1000	Standard stand
191-491	CRYSTA-Apex V123010	1200 x 3000 x 1000	Anti vibration stand

Specifications

Accuracy	E0, MPE from: (2,3+0,3L/100) µm
Max. drive speed	693 mm/s (3-axis)
Digital step	0,1 µm

Accuracy is specified for the following environmental conditions for the CMM:

Temperature range		18°C - 22°C	16°C - 26°C
Temperature change	Per hour	2°K	2°K
	Per 24 hours	2°K	5°K



The machine structure has been optimized using FEM (Finite-element Method) and modal analysis



Temperature compensation system (temperature sensors)



Mitutoyo offers you over 600 stylus plus highly specialised equipment for your measuring task - Refer to the small tool section of the catalogue for detailed information.



Joystick-box V2 with speed adjustment knob, standard accessory



CRYSTA-Apex V brochure on request



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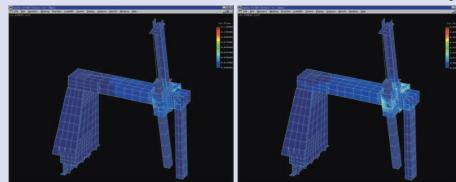
CRYSTA-Apex V1600 & 2000 Series

Specifications

Accuracy	E0, MPE from: (3,3+0,45L/100) µm
Max. drive speed	693 mm/s (3-axis)
Digital step	0,1 µm



Joystick-box V2 with speed adjustment knob, standard accessory.



The machine structure has been optimized using FEM (Finite-element Method) and modal analysis



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Series 191 - Standard CNC CMM

The CRYSTA-Apex V1600 & 2000 series offers you up to 12,8m³ measuring volume and still keeps an excellent 4,5 µm accuracy or better.

This series is developed for supporting quality evaluation of volumetric parts. This high performance, cost effective coordinate measuring machine, designed and constructed according to Mitutoyo's extensive experience in CNC CMM technology.

Ready for touch trigger probe, scanning probe, optical probe and laser scanner probe.

Main benefits:

- Proven lightweight bridge-type construction with high rigidity air-bearings on every axis
- High accuracy, high speed and high acceleration
- Temperature sensors for compensation of machine and workpiece from 16° to 24°C and monitoring of the environmental temperature.
- ABS linear scales provide high environmental resistance and saves time at start-up as homing is not necessary
- UC480 controller supporting Multi-sensor and SMS functionality (Smart Measuring System)



CRYSTA-Apex V162012

CRYSTA-Apex V Models:

No.	Model	Range [mm]	Comments
191-848	CRYSTA-Apex V 162012	1600 x 2000 x 1200	Standard stand
191-848H	CRYSTA-Apex V 162016	1600 x 2000 x 1600	Standard stand
191-849	CRYSTA-Apex V 162012	1600 x 2000 x 1200	Anti vibration stand
191-849H	CRYSTA-Apex V 162016	1600 x 2000 x 1600	Anti vibration stand
191-853	CRYSTA-Apex V 163012	1600 x 3000 x 1200	Standard stand
191-853H	CRYSTA-Apex V 163016	1600 x 3000 x 1600	Standard stand
191-854	CRYSTA-Apex V 163012	1600 x 3000 x 1200	Anti vibration stand
191-854H	CRYSTA-Apex V 163016	1600 x 3000 x 1600	Anti vibration stand
191-857	CRYSTA-Apex V 164012	1600 x 4000 x 1200	Standard stand
191-857H	CRYSTA-Apex V 164016	1600 x 4000 x 1600	Standard stand
191-858	CRYSTA-Apex V 164012	1600 x 4000 x 1200	Anti vibration stand
191-858H	CRYSTA-Apex V 164016	1600 x 4000 x 1600	Anti vibration stand
191-812H	CRYSTA-Apex V 203016	2000 x 3000 x 1600	Standard stand
191-813H	CRYSTA-Apex V203016	2000 x 3000 x 1600	Anti vibration stand
191-817H	CRYSTA-Apex V 204016	2000 x 4000 x 1600	Anti vibration stand

STRATO-Apex 500, 700 & 900 Series

Series 355 - High accuracy CNC CMM

The challenges for measurement equipment are rising. Products are continuously improving as a result the lifetime of products is increasing while their energy consumption is reduced. Additionally, the throughput of production is driven up. All these facts must be taken into account for your measuring equipment.

With the STRATO-Apex CMM, Mitutoyo offers you the opportunity to match both: precision and velocity.

This high accuracy CNC coordinate measuring machine that allows you to get accurate results at lightning speed.

Main benefits:

- High measurement accuracy and high-speed motion
- High-performance scanning
- Ultra high precision scales on each axis, resolution 0,02 µm
- Temperature sensors for monitoring of the environmental temperature and compensation of machine and workpiece
- Anti-vibration system reduces the impact of nearby vibration sources (optional for 574)
- Multi-sensors capability
- UC480 controller supporting Multi-sensor and SMS functionality (Smart Measuring System)



STRATO-Apex 9166

STRATO-Apex Models:

No.	Model	Range [mm]	Comments
355-701	STRATO-Apex 574	500 x 700 x 400	Standard stand
355-702	STRATO-Apex 574	500 x 700 x 400	Anti vibration stand
355-705-10	STRATO-Apex 776	700 x 700 x 600	Anti vibration stand
355-707-10	STRATO-Apex 7106	700 x 1000 x 600	Anti vibration stand
355-709-10	STRATO-Apex 9106	900 x 1000 x 600	Anti vibration stand
355-712-10	STRATO-Apex 9166	900 x 1600 x 600	Anti vibration stand

Specifications

Accuracy	E0, MPE from: (0,7+0,25L/100) µm
Max. drive speed	519 mm/s (3-axis)
Digital step	500: 0,05 µm 700/900: 0,02 µm

Accuracy is specified for the following environmental conditions for the CMM:

Temperature range	Series 500: 18°C - 22°C Series 700/900: 19°C - 21°C
Temperature change	Per hour Per 24 hours
Temperature gradient	Vertical 1 K/m Horizontal 1 K/m



Optional joystick-box M2 with speed adjustment knob

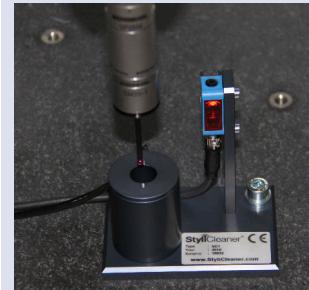


Mitutoyo eco-fix fixture kits:

- flexible & quick setup
- time & cost saving
- easy adaption of product changes



Refer to the STRATO-Apex brochure



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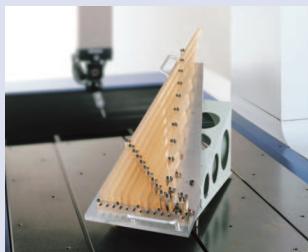
LEGEX Series

Specifications

Accuracy	E0, MPE from: (0,28+0,1L/100) µm
Max. drive speed	200 mm/s (3-axis)
Digital step	0,01 µm



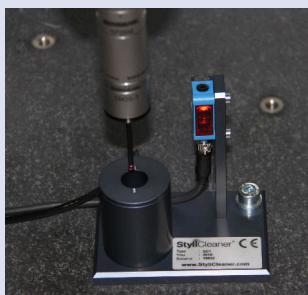
Optional joystick-box M2 with speed adjustment knob



CMM calibration using a virtually zero thermal expansion glass gauge



Mitutoyo offers you over 600 styli plus highly specialised equipment for your measuring task.



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Series 356 - Ultra-High Precision Premium CNC CMM

The LEGEX Series is an ultra-high precision CNC coordinate measuring machine.

A fixed bridge structure and precision air bearings running on highly rigid guideways, ensure superior motion stability and ultrahigh geometrical accuracy. Drive systems placed in the "Center of gravity" of the sliders, gives best possible dynamic performance. In addition, an active anti-vibration stand has been utilized to provide ultra-high accuracy.

The construction is designed for thermal stability, low expansion crystallized glass scales and temperature compensation, results in guaranteed high accuracy within a temperature range of 18 °C to 22 °C.

Main benefits:

- Rigorous analysis of all possible error-producing factors, and elimination or minimization of their effects, delivers unsurpassed accuracy of 0,28µm
- Ultra-high accuracy crystallized-glass scale with the ultra-low expansion coefficient of 0,01x10-6/K is used on each axis
- The fixed bridge structure and precision air bearings, running on highly rigid guideways, give you superior motion stability and ultra-high geometrical accuracy
- UC480 controller supporting Multi-sensor and SMS functionality (Smart Measuring System)
- You can use several different types of optional probe systems, including Mitutoyo's high precision MPP310Q scanning probe



LEGEX 9106

LEGEX Models:

No.	Model	Range [mm]	Comments
356-407	LEGEX574	500 x 700 x 450	Anti vibration stand
356-417	LEGEX774	700 x 700 x 450	Anti vibration stand
356-427	LEGEX776	700 x 700 x 600	Anti vibration stand
356-437	LEGEX9106	900 x 1000 x 600	Anti vibration stand

REVO-2, 5-axis scanning operation

5-axis operation reduces the time required for probe repositioning movements and allows more flexible positioning. This also facilitates access to complex workpieces and saves time during both programming and measurement.

The CRYSTA-Apex EX1200R series are equipped with the REVO-2 probe head which allows ultra high-speed 5-axis scanning (max. 500 mm/s), far surpassing conventional -axis control.

Support for high-speed sampling of up to 4 points per second allows acquisition of densely spaced measurement points, even during fast scanning.

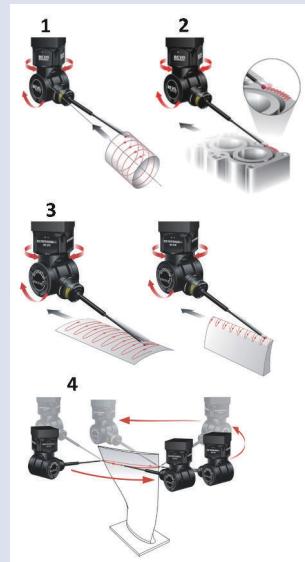
- Internal implementation of laser sensing technology ensures high-accuracy measurement, even with long styli (up to 500 mm*1).

*1 Distance from probe rotation center to stylus tip



Specifications

Accuracy	E0, MPE from: (2,9+4L/1000) µm
Max. drive speed	300 mm/s (3-axis)
Digital step	0,1 µm



Refer to the CRYSTA-Apex V brochure



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No.	Model	Range [mm]	Comments
191-481V	CRYSTA-Apex EX121210R	1200 x 1200 x 1000	Standard stand
191-482V	CRYSTA-Apex EX121210R	1200 x 1200 x 1000	Anti vibration stand
191-485V	CRYSTA-Apex EX122010R	1200 x 2000 x 1000	Standard stand
191-486V	CRYSTA-Apex EX122010R	1200 x 2000 x 1000	Anti vibration stand
191-489V	CRYSTA-Apex EX123010R	1200 x 3000 x 1000	Standard stand
191-491V	CRYSTA-Apex EX123010R	1200 x 3000 x 1000	Anti vibration stand