

NewView Delta MPT™ Specifications



DESCRIPTION

The Delta MPT is designed to measure step height, flatness, or roughness. It provides a factory-friendly environmentally isolated chamber and a touchscreen interface

MODELS

NewView Delta MPT SA	Base model with single objective mount, high speed camera, and touchscreen interface
NewView Delta MPT DA	Base model plus shuttle for two customer-selected objectives

SYSTEM

Measurement Technique	Non-contact, three-dimensional, scanning white light interferometry
Objectives	Interferometric objectives, including super long working distance (SLWD) objectives and standard NewView objectives
Field of View	From 0.86 x 0.65 mm to 30 mm dia.; objective and zoom dependent
Part Viewing	On-screen live video image
Focus	Motorized with manual control
Illuminator	Long-life tungsten halogen lamp
Measurement Array	Selectable, 640x480 or 320x240
Part Fixturing	Customer or ZYGO supplied
Computer	Late-generation Dell PC configured with hard drive, CD-R/W, floppy drive, and 17-inch Touchscreen monitor; printers optional
Software	ZYGO MetroPro software running under Microsoft Windows XP

PHYSICAL

Dimensions (H x W x D)	Without monitor: 82 x 35.5 x 31.5 in. (208.3 x 90.2 x 80 cm) Width, including monitor: 47.5 in. (120.7 cm)
Weight	1000 lb (454 kg) (approximate)

PERFORMANCE

Scanner	Closed-loop piezo-based, with linear capacitive sensors
Vertical Scan Range	150 µm (5906 µin)
Vertical Resolution (1)	0.1 – 1.0 nm (0.004 – 0.039 µin)
Lateral Resolution	1.29 to 24 µm (50.79 to 944.88 µin); objective dependent
Data Scan Rate	up to 10.5 µm/sec (413.4 µin/sec); dependent upon sampling array
Maximum Data Points	307,200; dependent upon sampling array
Repeatability & Reproducibility (1)	0.01 – 0.5 µm (0.39 – 19.7 µin)

(1) varies with surface roughness

TEST PART CHARACTERISTICS

Material	Various; metals, ceramics, plastics, and glass
Preparation	None (typically); measurements are noncontact and nondestructive
Maximum Size (H x W x D)	Without stage: 8 x 10 x 10 in. (200 x 250 x 250 mm) With stage: 4 x 6 x 5 in. (100 x 152 x 127 mm)
Reflectivity	≥ 0.4%

ENVIRONMENTAL REQUIREMENTS

Temperature	15 to 30°C (59 to 86°F)
Rate of Temp. Change	<1.0°C per 15 min
Humidity	5 to 95% relative, noncondensing
Vibration Isolation	Required for vibration frequencies in the range of 1 Hz to 120 Hz (vibration isolation table included)

UTILITY REQUIREMENTS

Input Voltage	100 to 240 VAC, 50/60 Hz
Compressed Air	80 psi (5.5 bar); 1/4 in. input; dry and filtered source

ACCESSORIES

Objectives	See next page
Part Stage Options	<ul style="list-style-type: none"> Manual Tip/Tilt/X/Y with ±6° tip/tilt, ±2 in. x/y Motorized Tip/Tilt/X/Y with ±4° tip/tilt, ±3 in. x/y
50 mm SiC Reference Flat	Used when making system error files (required)
Lateral Calibration Std	Used for lateral calibration of objectives (recommended)
25 Micron Step Height Standard	Used to verify height accuracy (required)
NewView Objective Adapter	Allows standard NewView 5000 objectives to be used with the Delta

OBJECTIVE SPECIFICATIONS

Power	Type	Design	NA	WD (mm)	LRes (µm)	HVFOV (mm)	Samp (µm)	Turret Mount	Parfocal Dist (mm)	ZYGO P/N
0.5X	SLWD	Michelson	0.015	38.7	24.0	∅30	67.5	No	238	6300-0268-01
1X	SLWD	Michelson	0.03	40.0	12.0	21.6 x 16.2	33.7	No	238	6300-0299-01
2.5X	SLWD	Michelson	0.075	40.0	4.80	8.64 x 6.48	13.5	No	238	6300-0290-01
5X	SLWD	Michelson	0.13	40.0	3.00	4.32 x 3.24	6.75	No	238	6300-0284-01
10X	SLWD	Linnik	0.23	38.9	1.56	2.16 x 1.62	3.37	No	238	6300-0399-01
25X	LWD	Michelson	0.28	18.8	1.29	0.86 x 0.65	1.35	No	238	6300-0269-01

Objective Terminology

Power	Magnifying power of the objective.	LRes	Lateral resolution, optical resolution of the imaging system. Ralyeigh Criteria = $0.61\lambda/NA$, $\lambda = 570$ nm.
Type	STD=Standard Working Distance, LWD=Long Working Distance, SLWD=Super Long Working Distance, LR= Low Reflectivity, TC=Temperature Compensated.	HVFOV	Horizontal x Vertical Field of View. The size of imaged area of the test part, based on 640 x480 pixels.
Design	Interferometer type of objective.	Samp	Spatial sampling. Pixel size on the sample, based on the pixel size divided by the system magnification.
NA	Numerical aperture, the sine of the half-angle of the objective acceptance cone.	Turret Mount	Indicates if objective can be turret mounted. No means single objective mount only.
WD	Working distance, distance from the end of the objective to the test surface when focused.	Parfocal Dist	Distance from the objective shoulder to the objective focal plane. Objectives with the same parfocal distance can be interchanged with little or no refocusing.

Specifications subject to change without prior notice.



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