NewView™ 6300 Specifications

System	
Measurement Technique	Non-contact, three-dimensional, scanning white light and optical phase-shifting interferometry
Scanner	Closed-loop piezo-based, with highly linear capacitive sensors
Objectives	Infinite conjugate interferometric objectives; 1X, 2.5X, 5X, 10X, 20X, 50X, 100X; see Objective Chart
Objective Mounting Options	• Single objective dovetail • Manual 6-position turret • Motorized 6-position turret
Field Zoom Lenses	High-quality discrete zoom lenses; 0.5X, 0.75X, 1.0X, 1.5X, 2.0X
Image Zoom	Motorized 3-position zoom turret
Field of View	From 0.04 to ∅21.9 mm; larger area imaged with field stitching; objective and zoom dependent
Illuminator	Long-life LED filtered white light with selectable coherence
Controls	Filter Tray, Aperture Stop, and Field Stop
Measurement Array	Selectable, includes standard- 640x480, 320x240, 160x120; optional- 992 x 1004 (1K)
Part Viewing	Secondary 15-inch LCD monitor
Focus	Motorized manual and auto focus
Z-Drive (Focus) Stage	DC brushless microstepper motor with leadscrew drive, 4 in. range, and 0.1 µm resolution.
Part Stage Options	• 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
Computer	High-performance Dell PC with 17-inch LCD monitor
Software	ZYGO MetroPro software running under Microsoft Windows XP

Physical	
Dimensions (H x W x D)	Overall System: 62 x 52 x 35 in. (157 x 132 x 89 cm) NewView: 32 x 23 x 16 in. (81 x 58 x 41 cm) Vibration Isolation Table: 30 x 24 x 24 in. (76 x 61 x 61 cm) Workstation Table: 33.5 x 52 x 35 in. (85 x 132 x 89 cm)
Weight	System: ≈ 950 lb (430 kg) NewView: ≈ 200 lb (90 kg) Vibration Isolation Table: ≈ 600 lb (272 kg)

Performance	
Vertical Scan Range	150 µm (5906 µin) Optional up to 15 mm (0.59 in.)
Vertical Res.	Up to 0.1 nm (0.004 µin)
Lateral Res.	0.43 to 11.6 µm; objective dependent
Data Scan Rate	14 µm/sec; optional to 85 µm/sec sampling array dependent
Maximum Data Points	307,200; 995,668 (optional) sampling array dependent
RMS Repeatability	< 0.1 nm RMS
Step Height	Accuracy ≤ 0.75% Repeatability ≤ 0.1% @ 1σ

Test Part Characteristics	
Material	Various surfaces: opaque, transparent, coated, uncoated, specular, and nonspecular
Maximum Size (H x W x D)	3.5 x 8 x 8 in. (89 x 203 x 203 mm); larger sample sizes possible
Reflectivity	1-100%

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

Utility Requirements	
Input Voltage	100 to 240 VAC, 50/60 Hz
Compressed Air	60 to 80 psi (4.1 to 5.5 bar); dry and filtered source; 1/4 in. input

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INTERFEROMETRIC OBJECTIVE SPECIFICATIONS

Power	Type	Design	NA	WD (mm)	LRes (µm)	Turret Mount	Parfocal Dist (mm)	ZYGO P/N
1X	LWD	Michelson	0.03	8.3	11.6	No	122.8	6300-0316-01
1X	LWD	Michelson	0.03	8.3	11.6	Yes	122.8	6300-0318-01
1X	SLWD	Michelson	0.03	40.0	11.6	No	181.5	6300-0307-01
2X	LWD	Michelson	0.055	20.5	6.32	No	101.0	6300-0245-01
2.5X	STD	Michelson	0.075	10.3	4.64	Yes	80.1	6300-0192-01
2.5X	LR	Michelson	0.075	10.3	4.64	Yes	80.1	6300-0192-02
2.5X	SLWD	Michelson	0.075	40.0	4.64	No	139.0	6300-0320-01
5X	STD	Michelson	0.13	9.3	2.67	Yes	56.5	6300-0193-01
5X	LR	Michelson	0.13	9.3	2.67	Yes	56.5	6300-0193-02
5X	LWD	Michelson	0.14	20.5	2.48	No	101.0	6300-0249-01
5X	SLWD	Michelson	0.12	40.0	2.90	No	111.7	6300-0325-01
10X	STD	Mirau	0.30	7.4	1.16	Yes	56.5	6300-0194-01
10X	LWD	Michelson	0.28	18.8	1.24	No	125.1	6300-0263-01
10X	SLWD	Linnik	0.23	38.9	1.51	No	161.8	6300-0397-01
20X	STD	Mirau	0.40	4.7	0.87	Yes	56.5	6300-0195-01
50X	STD	Mirau	0.55	3.4	0.63	Yes	56.5	6300-0196-01
50X	TC	Mirau	0.55	3.4	0.63	Yes	56.5	6300-0198-01
100X	STD	Mirau	0.80	0.55	0.43	Yes	56.5	6300-0248-01

Specifications with Field Zoom Lens with 640x480 camera

Obj	*with 0.5X ZOOM*		*with 0.75X ZOOM*		*with 1X ZOOM*		*with 1.5X ZOOM*		*with 2X ZOOM*	
	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)
1X	14.14 x 10.60	22.09	9.38 x 7.03	14.65	7.02 x 5.26	10.96	4.69 x 3.52	7.33	3.53 x 2.65	5.52
2.5X	5.65 x 4.24	8.84	3.75 x 2.81	5.86	2.81 x 2.10	4.39	1.88 x 1.41	2.93	1.41 x 1.06	2.21
5X	2.83 x 2.12	4.42	1.88 x 1.41	2.93	1.40 x 1.05	2.19	0.94 x 0.70	1.47	0.71 x 0.53	1.10
10X	1.41 x 1.06	2.21	0.94 x 0.70	1.47	0.70 x 0.53	1.10	0.47 x 0.35	0.73	0.35 x 0.27	0.55
20X	0.71 x 0.53	1.10	0.47 x 0.35	0.73	0.35 x 0.26	0.55	0.23 x 0.18	0.37	0.18 x 0.13	0.28
50X	0.28 x 0.21	0.44	0.19 x 0.14	0.29	0.14 x 0.11	0.22	0.09 x 0.07	0.15	0.07 x 0.05	0.11
100X	0.14 x 0.11	0.22	0.09 x 0.07	0.15	0.07 x 0.05	0.11	0.05 x 0.04	0.07	0.04 x 0.03	0.06

Specifications with Field Zoom Lens with 992x1004 (1K) camera

Obj	*with 0.5X ZOOM*		*with 0.75X ZOOM*		*with 1X ZOOM*		*with 1.5X ZOOM*		*with 2X ZOOM*	
	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)	HVFOV (mm)	Samp (µm)
1X	∅21.91	22.09	14.54 x 14.71	14.65	10.88 x 11.01	10.96	7.27 x 7.36	7.33	5.48 x 5.54	5.52
2.5X	∅8.77	8.84	5.81 x 5.88	5.86	4.35 x 4.40	4.39	2.91 x 2.94	2.93	2.19 x 2.22	2.21
5X	∅4.38	4.42	2.91 x 2.94	2.93	2.18 x 2.20	2.19	1.45 x 1.47	1.47	1.10 x 1.11	1.10
10X	∅2.19	2.21	1.45 x 1.47	1.47	1.09 x 1.10	1.10	0.73 x 0.74	0.73	0.55 x 0.55	0.55
20X	∅1.10	1.10	0.73 x 0.74	0.73	0.54 x 0.55	0.55	0.36 x 0.37	0.37	0.27 x 0.28	0.28
50X	∅0.44	0.44	0.29 x 0.29	0.29	0.22 x 0.22	0.22	0.15 x 0.15	0.15	0.11 x 0.11	0.11
100X	∅0.22	0.22	0.15 x 0.15	0.15	0.11 x 0.11	0.11	0.07 x 0.07	0.07	0.05 x 0.06	0.06

Objective Terminology

Power Magnifying power of the objective.

Type STD=Standard Working Distance, LWD=Long Working Distance, SLWD=Super Long Working Distance, LR= Low Reflectivity, TC=Temperature Compensated.

Design Interferometer type of objective.

NA Numerical aperture, the sine of the half-angle of the objective acceptance cone.

WD Working distance, distance from the end of the objective to the test surface when focused.

LRes Lateral resolution, optical resolution of the imaging system. Ralyeigh Criteria = 0.61λ/NA, λ = 570 nm.

Turret Mount Indicates if objective can be turret mounted. No means single objective mount only.

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.

HVFOV Horizontal x Vertical Field of View. The size of imaged area of the test part, based on 640 x480 pixels.

Samp Spatial sampling. Pixel size on the sample, based on the pixel size divided by the system magnification.

Specifications subject to change without prior notice.

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