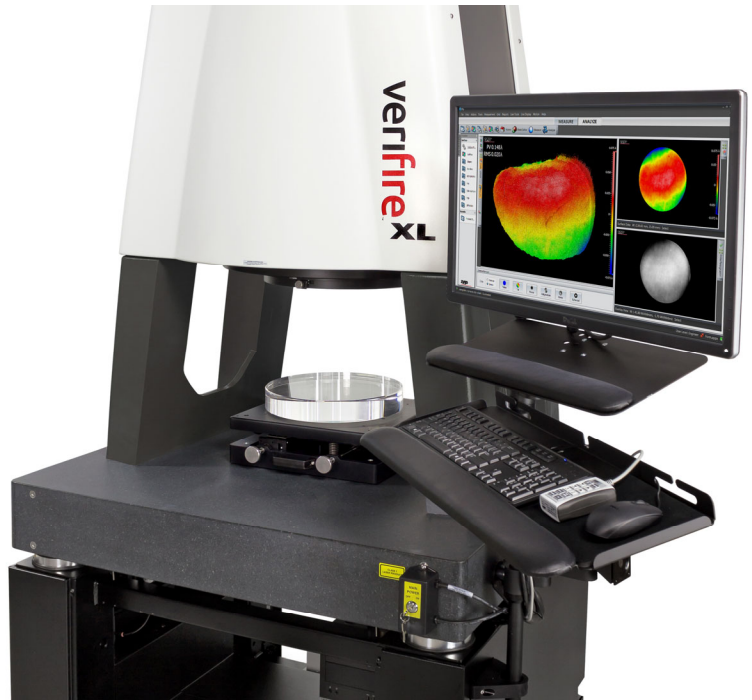


300 mm aperture Fizeau interferometer with patented QPSI™ acquisition for true on-axis surface form metrology in production environments



SYSTEM OVERVIEW

Measurement Capability	Measures surface form of reflective materials and optics
Data Acquisition Modes	PSI – temporal phase-shifting interferometry QPSI – vibration robust temporal phase-shifting interferometry DynaPhase™ – vibration insensitive instantaneous interferometry (option)
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticle
QFAS Field of View	±1 deg
Measurement Uncertainty ⁽¹⁾	<30 nm ($\lambda/20$ @ 633 nm)
Test Beam Diameter	12 in. (300 mm)
Camera Details	Resolution: 1200 x 1200 pixels Frame Rate: 160 Hz Digitization: 8 bit Shutter Time: 200 μ s – 10 ms (QPSI)
Acquisition Time	81 - 188 ms
Optical Zoom	1-5X encoded continuous (1-50x digital)
Polarization	Nominally circular (1.2:1 or better)
Computer and Software	High-performance Dell PC with 27 in. monitor, Windows 10 64 bit, Mx™ software
Footprint	See figure on next page
Weight	2560 lb (1160 kg)
Power	100 to 240 VAC, 50/60 Hz
Compressed Air	80 psi (5.5 bar); dry and filtered source (required for vibration isolation)

LASER DETAILS

Laser Source Class	High power stabilized HeNe, Class IIIa Class I output at instrument aperture
Wavelength	633 nm
Frequency Stabilization	<0.0001 nm
Coherence Length	>100 m

REFERENCE OPTIC

Diameter	315 mm
Clear Aperture	300 mm
Surface Quality ⁽²⁾	$\lambda/10$ PVr

PART STAGE

Dimensions	See figure on next page
Tilt Range	±3.5 deg, with manual adjustment knobs
Weight Capacity	30 kg; payload within 50 mm of stage center

TEST PART CHARACTERISTICS

Part Size	Up to 600 mm wide x 300 mm high
Surface Reflectivity ⁽³⁾	Specular @ 633 nm 1% to 40% @ 633 nm
Minimum Wedge	20 arc sec (for transparent material @ 633 nm)

OPERATIONAL ENVIRONMENT⁽⁴⁾

Temperature	15 to 30°C (59 to 86°F)
Rate of Temp. Change	<1.0°C per 15 min
Humidity	5 to 95% relative, non-condensing
Vibration Isolation	Included with system. QPSI enables metrology in environments with vibrations of a magnitude of up to ~150 nm.

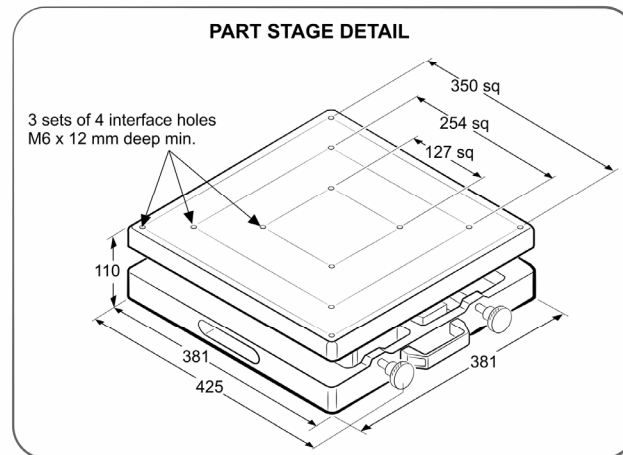
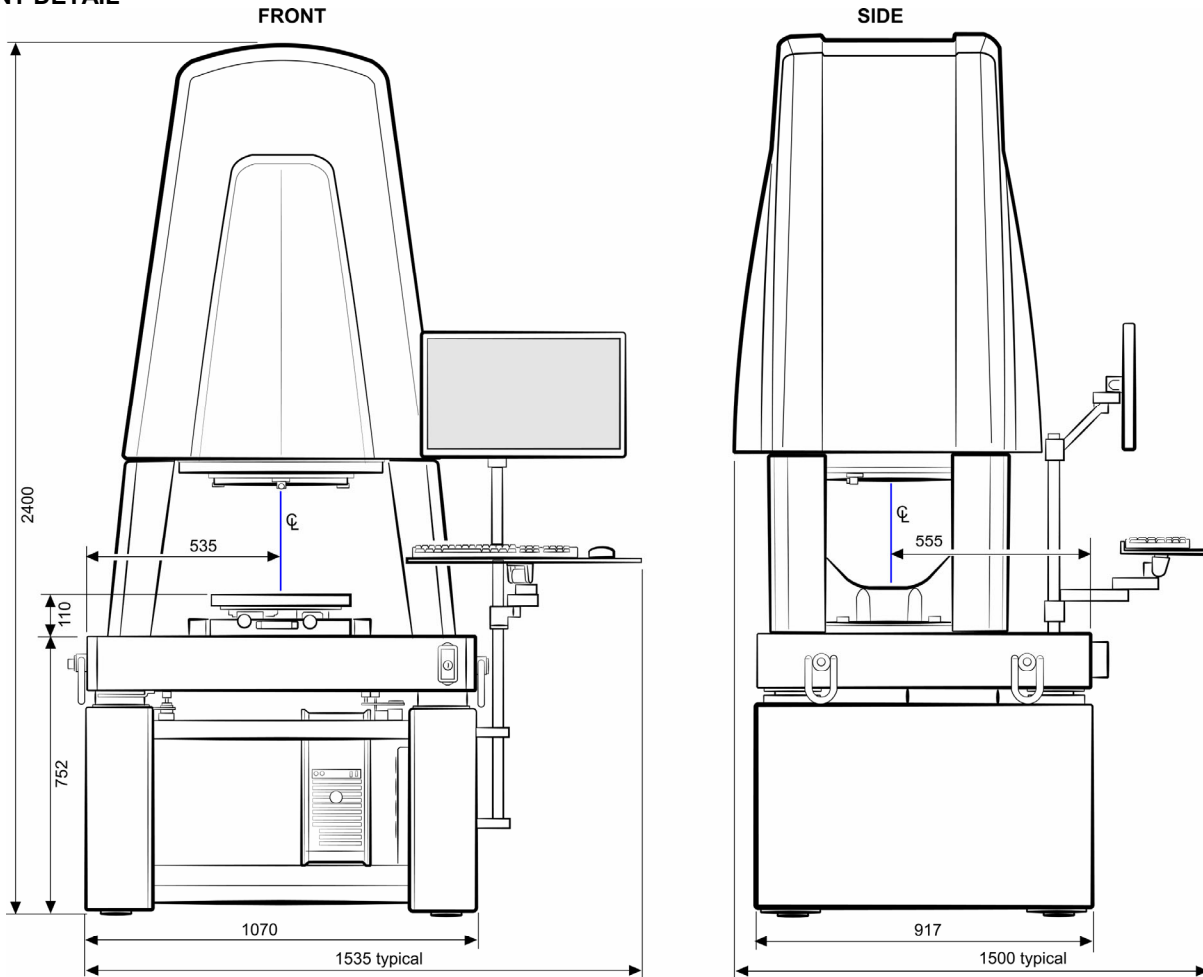
Notations

1. Instrument measurement uncertainty capability. Actual measurement uncertainty is a function of environment, the part being measured, the instrument, the operator, and other sources.
2. With calibration file reference quality is $< \lambda/40$. The reference with calibration file enables system-level metrology to $< \lambda/20$ with the exceptions noted in (1).
3. DynaFlect™ coated reference available for test part reflectivity from 4% to 100%.
4. These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.



Specifications subject to change without prior notice.

FOOTPRINT DETAIL



Dimensions in mm

Specifications subject to change without prior notice.