zygo®

verifire XL

Specifications

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
Measurement Technique	QPSI™ mechanical phase-shifting and traditional mechanical phase-shifting interferometry (PSI)
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticle
QFAS Field of View	±1 deg
Measurement Uncertainty(1)	< 30 nm (λ/20 @ 633 nm)
Test Beam Diameter	300 mm (12 in.)
Laser Source	High power stabilized HeNe, Class IIIa
System Laser Class	Class I output at instrument aperture
Wavelength	633 nm
Frequency Stabilization	< 0.0001 nm
Coherence Length	> 100 m
Camera Resolution	1024 x 1024
Camera Frame Rate	75 Hz
Shutter Time	200 µs – 10 ms (QPSI)
Acquisition Time	130 - 300 ms
Digitization	8 bits
Magnification	1x – 6x continuous zoom (1-50x digital)
Polarization	Nominally circular (1.2:1 or better)
Computer and Software	High-performance Dell PC with 27 in. monitor, Windows 7 64 bit, Mx™ software
Footprint	See figure on next page
Weight	2560 lb (1160 kg)
Power	100 to 240 VAC, 50/60 Hz

REFERENCE OPTIC	
Diameter	315 mm
Clear Aperture	300 mm
Surface Quality(2)	λ/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	Specular @ 633 nm
Reflectivity(3)	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. Assumes use of included full area calibration file. With calibration file reference quality is < λ/40. The reference with calibration file enables system-level metrology to < λ/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.

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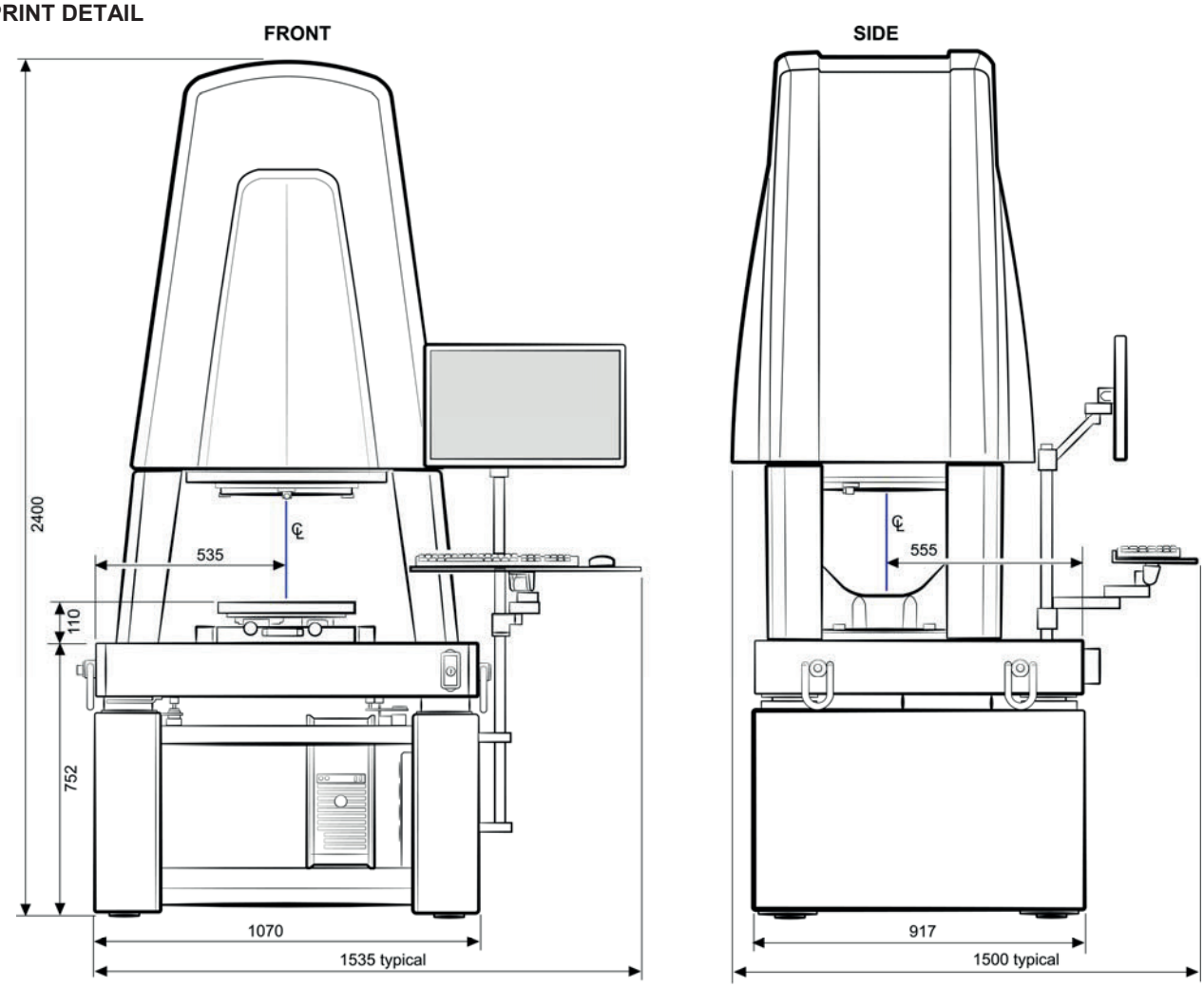
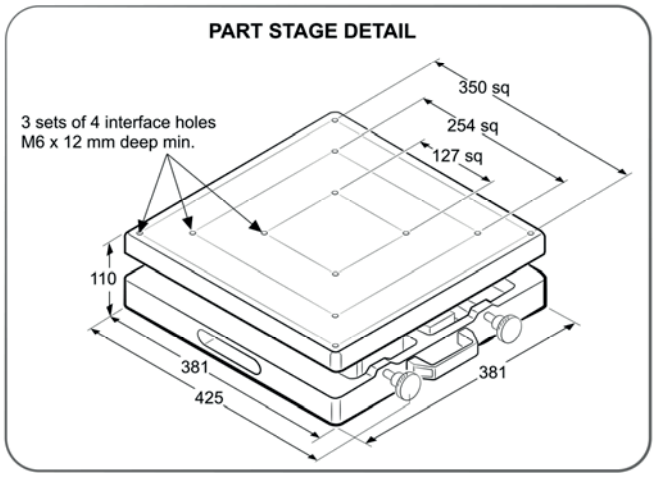
FOOTPRINT DETAIL





Dimensions in mm

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