

⊕ OBJECTIVES

# Setting the Standard in White Light Interferometry

WLI Objective Lenses

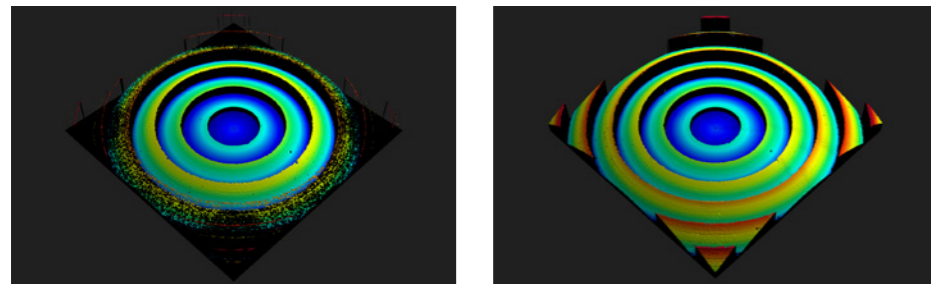
10X | 20X | 50X | 100X



# Confidence in Every Measurement

Our white light interferometric (WLI) Mirau objectives deliver reliable, high-resolution data capture for precise 3D surface measurements. Designed with the needs of original equipment manufacturers (OEMs) and researchers in mind, these optics support both in-line and off-line metrology across a wide range of applications in optical profilometry.

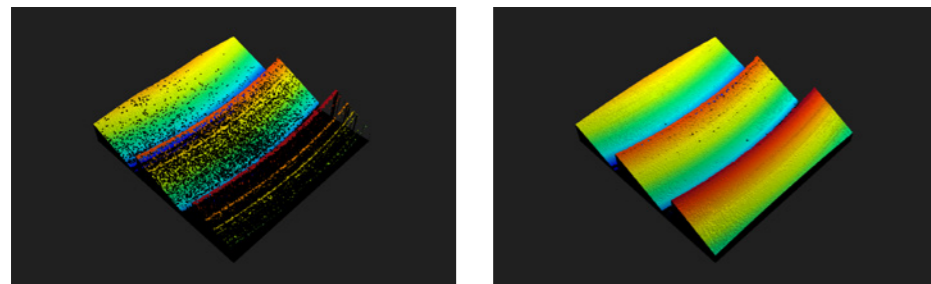
## Achieve Precise, Reliable Results Even on Complex Surfaces



Comparison images of a Fresnel lens sample taken with a conventional WLI 20X objective (NA 0.4) and Evident's 20X WLI objective (NA 0.6)

Precisely measuring steep slopes on smooth surfaces is a challenge for conventional, WLI, and confocal optics.

With higher NAs than most WLI objectives of equivalent magnifications, our Mirau-type optics capture more light and finer details.



Comparison images of a Fresnel lens sample taken with a conventional WLI 50X objective (NA 0.55) and Evident's 50X WLI objective (NA 0.8)

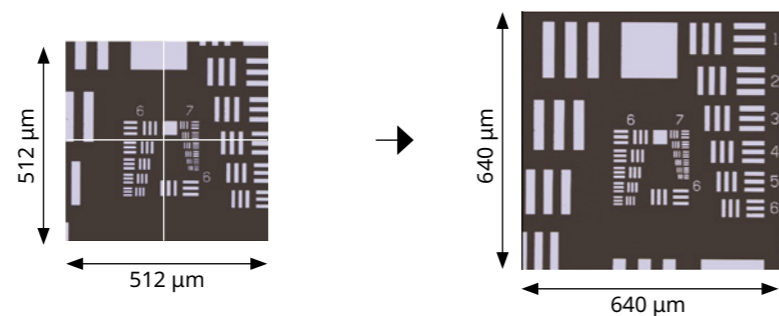
This higher NA enables optical profilometers to perform precise 3D geometrical measurements of surface variations and minute features.

### Increase Throughput Without Compromising Accuracy

Expand your high-precision measurement area in high resolution. Our high NA 20X and 50X models offer up to six times and four times the field of view of conventional 50X and 100X WLI objectives, respectively, with the same surface slope measurement capability and lateral resolution. This wider view reduces the need for image stitching and speeds up vertical scanning interferometry (VSI) and step height measurements.

#### Key Benefits

- Powerful measurement capability
- Efficient workflow with easy operation
- Reliable manufacturing performance



Conventional 50X objective (NA 0.55), 2x2 stitched image

Evident's 20X WLI objective (NA 0.6), single image

# Stay Ahead of Changing Conditions

Measurement accuracy can be affected by temperature-induced shifts in focus. Our integrated thermal compensation adjustment ring helps maintain interference fringe contrast, even with temperature fluctuations, supporting more precise, reliable, and sensitive surface measurements. Simply adjust the ring to the position with the highest fringe contrast possible to achieve consistent measurement results with ease.

## Maintain Precision Effortlessly

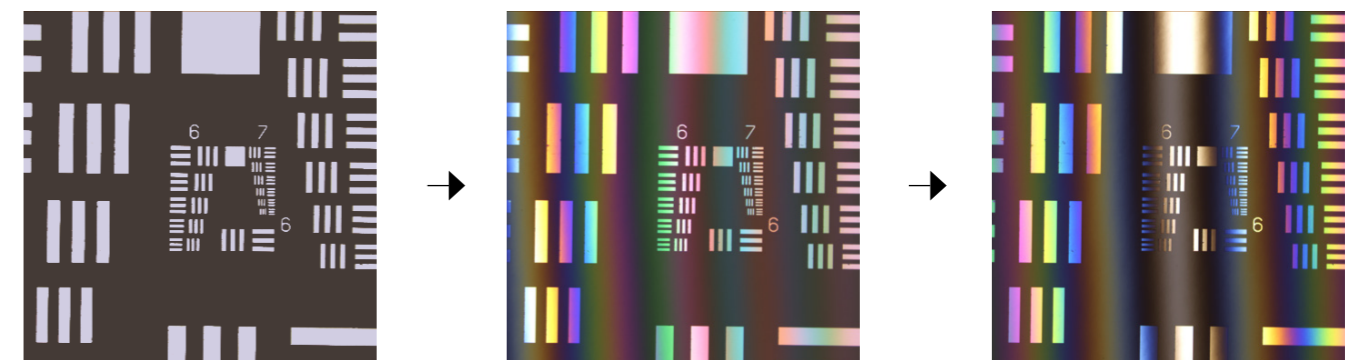
Work uninterrupted and frustration free—even when vibration is a factor. The adjustment ring of each objective is equipped with four fixing screws\* to secure its place, so you can focus on performing precise measurements instead of frequent fine tunings. Each screw is placed at a 90-degree interval, and any one can be used to secure the ring. Quickly tighten the outward one using a screwdriver—no need to remove adjacent objectives.

\*Fixing screws are currently available on the 10X, 20X, and 50X objectives.



Fixing screws

Adjustment ring mechanism



No fringes before adjusting for thermal changes

Fringe contrast generates as the ring is adjusted

Highest fringe contrast after ring adjustment

# Consistent Performance You Can Rely On

## Every Lens Tested to Meet Strict Optical Standards

Our WLI objectives are semi-apochromatic and incorporate a high-quality reference mirror for strong fringe contrast and minimal wavefront aberration. Each unit is thoroughly tested at our factory, with results provided in two data sheets: one detailing reference mirror quality, and one documenting wavefront performance.

### Mirau WLI Objective Lens Specifications

	WLI10XMRTC	WLI20XMRTC	WLI50XMRTC	WLI100XMRTC
<b>Correction</b>	Infinity-corrected	Infinity-corrected	Infinity-corrected	Infinity-corrected
<b>Magnification (with a Tube Lens of 180 mm Focal Length)</b>	10X	20X	50X	100X
<b>Numerical Aperture (NA)</b>	0.3	0.6	0.8	0.8
<b>Working Distance (WD) [mm]</b>	8.2	1.0	1.0	0.7
<b>Focal Length [mm]</b>	18	9.0	3.6	1.8
<b>Objective Field Number (OFN)</b>	22	22	22	22
<b>Immersion Medium</b>	Air/dry	Air/dry	Air/dry	Air/dry
<b>Spring Loaded</b>	N/A	N/A	N/A	N/A
<b>Thermal Compensation Adjustment Ring for Interferometry Pattern</b>	Yes	Yes	Yes	Yes
<b>Adjustment Ring Fixing Screw</b>	Yes	Yes	Yes	—
<b>Chromatic Aberration Correction Level</b>	Semi-apochromat (FL)	Semi-apochromat (FL)	Semi-apochromat (FL)	Semi-apochromat (FL)
<b>Parfocal Distance [mm]</b>	45	45	45	45
<b>Back Focal Plane (BFP) Position [mm]</b>	-3.2	-8.8	-4.8	-3.0
<b>Outer Dimensions (W × H)</b>	Φ 29.7 mm × 36.8 mm	Φ 29.8 mm × 44.0 mm	Φ 31.5 mm × 44.0 mm	Φ 29.0 mm × 44.3 mm
<b>Screw Thread Size</b>	W 20.32 mm × 0.706 mm (RMS)	W 20.32 mm × 0.706 mm (RMS)	W 20.32 mm × 0.706 mm (RMS)	W 20.32 mm × 0.706 mm (RMS)
<b>Guaranteed Measurement Temperature</b>	23 °C ±1 °C	23 °C ±1 °C	23 °C ±1 °C	23 °C ±1 °C
<b>Storage Temperature/Humidity (Noncondensing Environment)</b>	0 °C to 40 °C / 20%–80 %	0 °C to 40 °C / 20%–80%	0 °C to 40 °C / 20%–80%	0 °C to 40 °C / 20%–80%
<b>Usable Temperature</b>	15 °C to 30 °C	15 °C to 30 °C	15 °C to 30 °C	15 °C to 30 °C
<b>Intended Use</b>	Indoor use	Indoor use	Indoor use	Indoor use