

SURFACE PROFILE MEASUREMENTS OF HIGHLY WARPED SAMPLES**ABSTRACT**

A metrology tool may include an illumination source to generate an illumination beam, a beam shaper including adjustable optical elements to direct the illumination beam to a sample, and at least one measurement channel to generate a shearing interferogram based on reflected light from the sample, where the reflected light is in a collimated state when the adjustable optical elements are in a default configuration and a top surface of the sample is orthogonal to an optical axis of the beam shaper. The metrology tool may further include a controller to adjust the configuration of the adjustable optical elements to provide a selected angular profile of the illumination beam on the sample to at least partially compensate for deviations of the reflected light from the collimated state and generate an output surface profile measurement of the top surface of the sample based on the one or more shearing interferograms.