

A Micro-Displacement Measurement Based on the Shadow Technique

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Materials

Name	Company	Catalog Number	Comments
Aperture diaphragm	Processed by high precision grinding		The diameter of the aperture is 0.7 mm.
Camera	Canon	EOS80D	The pixel size and the resolution of the camera are about 3.72 μm and 4000 \times 6000, respectively.
HALCON	MVTec Software GmbH	18.11	MVTec HALCON is the comprehensive standard software for machine vision with an integrated development environment (HDevelop) that is used worldwide.
Motorized linear stage	Zolix	TSA50-C	Resolution 0.625 μm
Parallel light source	Oriental Technology (Shanghai) Co, Ltd.	BTPL-50G	The peak wavelength is 523 nm.
Polydimethylsiloxane (PDMS)	Dow Corning	Sylgard 184	PDMS is a transparent silicon-based crosslinked polymer.
Vacuum pump	SHANGHAI LICHEN-BX INSTRUMENT TECHNOLOGY CO.,Ltd	2XZ-6B	The pumping rate is 6 L/s.The ultimate vacuum is ≤ 1 Pa
Vertical precision positioner	PI	P-620.ZCD	The resolution is 0.2 nm in the range of 50 μm .
Workbench with three rigid cylindrical legs	Processed by high precision grinding		The diameter of legs is 0.5 mm. The legs are distributed on the trisection points of a circle with a radius of 14 mm