## 261

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Title:Comparison between 2.52 THz off-axis digital holography and focal-plane imaging

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Abstract:Performance of focal-plane imaging and off-axis digital holography is studied by the way of the resolution measurement and imaging of watermark and words in pencil with the built 2.52 THz focal-plane imaging and off-axis digital holographic devices. The results validate that the common focal-plane imaging can not achieve relatively high resolution because of the long wavelength of terahertz. The imaging quality is determined by the placed position. Terahertz off-axis digital hologram can improve the resolution of the imaging system; however, the imaging object size is limited by the system resolution. It can be inferred that the focal-plane imaging is more suitable for large object and low resolution imaging.

Number of references:15

Main heading:Image resolution

Controlled terms:Computer generated holography - Digital devices - Holograms - Imaging systems

Uncontrolled terms:Digital holograms - Digital holography - Focal planes - High resolution -Imaging objects - Imaging quality - Long wavelength - Low resolution - Off-axis - Resolution measurements - System resolution - Tera Hertz - Terahertz imaging

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