

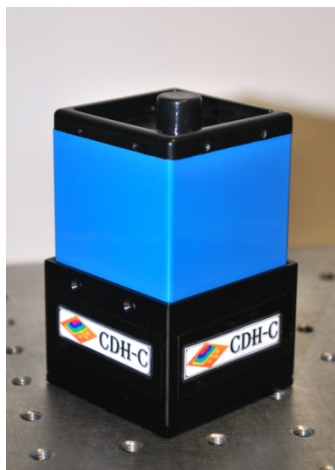
Introduction

Simple, compact and powerful digital lensless microscopy system for MEMS, Microsystems, and micro-fabrication process inspection and characterization with nanometer depth/height resolution. The novel features are full field and real-time 3D imaging and measurements of samples in non-contact mode.

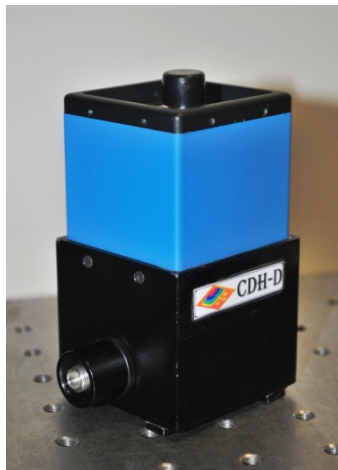
Attractive Features:

- ◆ Nanometric depth\height resolution
- ◆ Full field analysis
- ◆ Real-time measurement
- ◆ Non-contact and non-invasive
- ◆ Interactive software

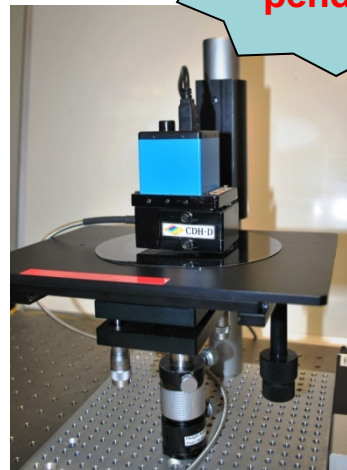
Patent pending



CDH-C



CDH-D



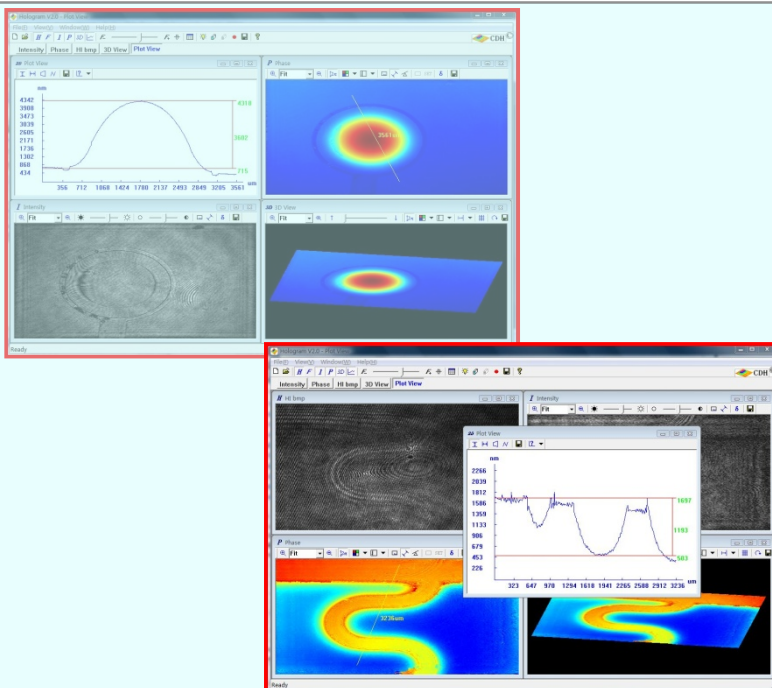
CDH with stage

Specifications

Model	CDH-C	CDH-D	CDH with stage
Field of view	4 mm	2 mm	User defined
Lateral resolution	10 μ m	6 μ m	System dependent
Axial resolution	10 nm	10 nm	10 nm
Dynamic characterization	1 MHz vibration frequency	1 MHz vibration frequency	1 MHz vibration frequency
Deformation sensitivity	1 nm	1 nm	1 nm
Dimensions (L×W× H)	55 mm×75mm×125mm	55 mm×75mm×125mm	Stage size dependent
Weight	400gm	400gm	Stage weight dependent
Sample requirement	Good reflective sample surfaces with sample surface < 300nm		

Software Features

- ◆ User friendly
- ◆ Real time: Capture live hologram and reconstruct amplitude, phase and 3D image in real time.
- ◆ Quantitative Phase analysis robust unwrapping, line profile analysis, color maps.
- ◆ 3D plot of sample and height/depth analysis.
- ◆ Interferometric analysis – static and dynamic.



Applications

❖ MEMS/Microsystems characterization

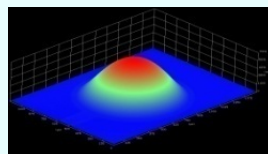
- 3D Inspection
- Static and dynamic characterization
- On line process monitoring
- Surface roughness measurement

❖ Characterization of Si wafers

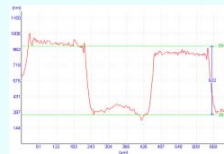
- Warpage measurement
- Defect analysis
- Non-destructive testing and inspection

❖ Micro-mechanics

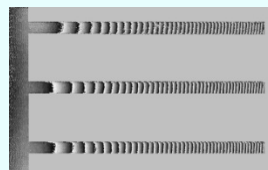
- Static and dynamic deformation analysis
- Residual stress measurement
- Micromechanics design and characterization



3D profiling



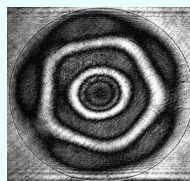
Deposition height measurement



Dynamic characterization of micro-cantilevers



Micro device 3D inspection



Micro-membrane dynamics



Deformation of micro-heater

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