

DHM-3LED

DIGITAL HOLOGRAPHIC MICROSCOPE



Main Features

DHM is a microscope that uses coherent light to acquire three-dimensional information about objects.

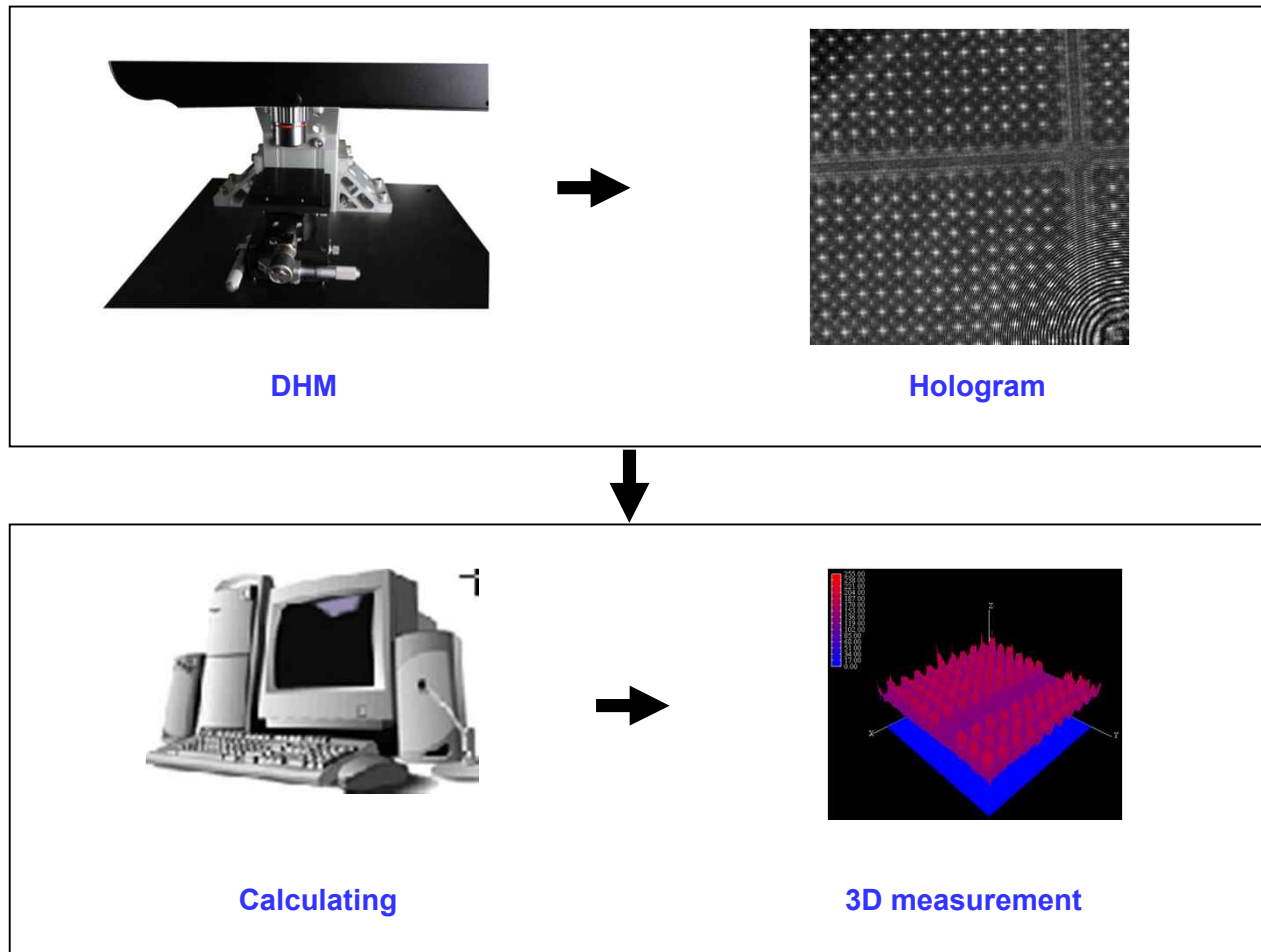
Main features.

- Three-dimensional information.
- Real-time measurement.
- Negligible vibration effect.
- Measurement without fluorescent materials
- Non-invasive observation
- Various field applications: biological tissues, semiconductors, display industry, optical devices, etc.

Specifications

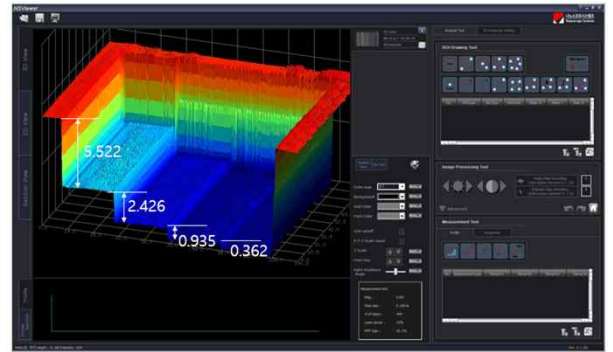
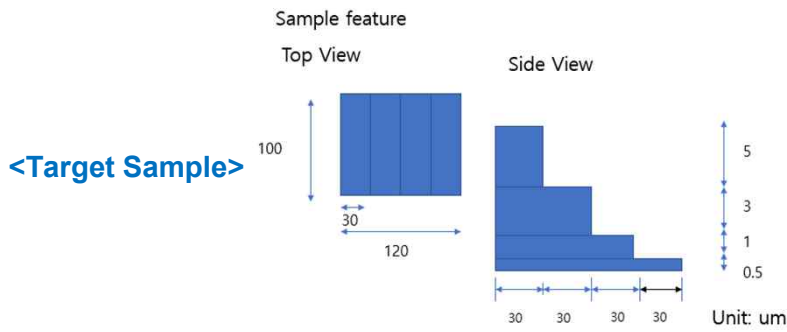
Item		Specification				
Objective Lens Magnification		5X	10X	20X	50X	100X
Observation Measurement Rang	Horizontal (μm)	1413	706	353	141	70
	Vertical (μm)	± 50	± 40	± 30	± 10	± 5
Height Measurement (20X Standard)	Measurement Range	100 μm (Step 40 μm)				
	Accuracy	0.158 μm				
	Repeatability (2 σ)	0.158 μm				
Width Measurement	Accuracy	3 μm (5X n.a = 0.1 Standard)				
	Repeatability (2 σ)	3 μm				
Camera	Sensor Size	2048 x 2048 (pixel size: 3.45 μm x 3.45 μm)				
Frame Memory	Monochrome	8 bit				
Frame Through-put	Monochrome (Through-put)	1 Frame/GPU 1ea/1sec (Result)				
Measurement Laser Light Source	Wavelength	RED 3ea				
	Output	50mW				

How It Works

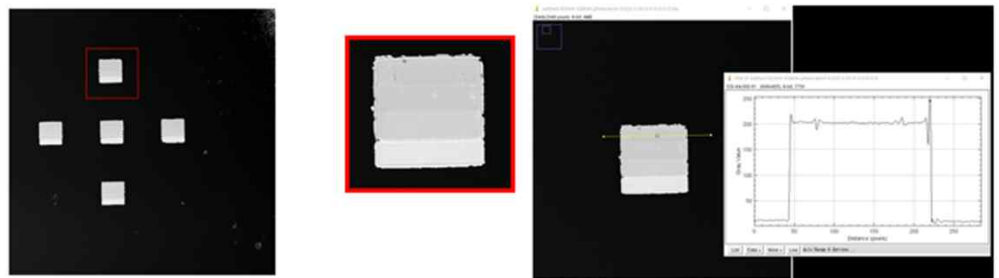


DHM is a microscope that uses coherent light to acquire three-dimensional information about objects. General optical microscopes are limited in acquiring three-dimensional surface information of objects, but DHM can obtain 3D surface information of small objects on the micro-scale. The basic principles of DHM are as follows.

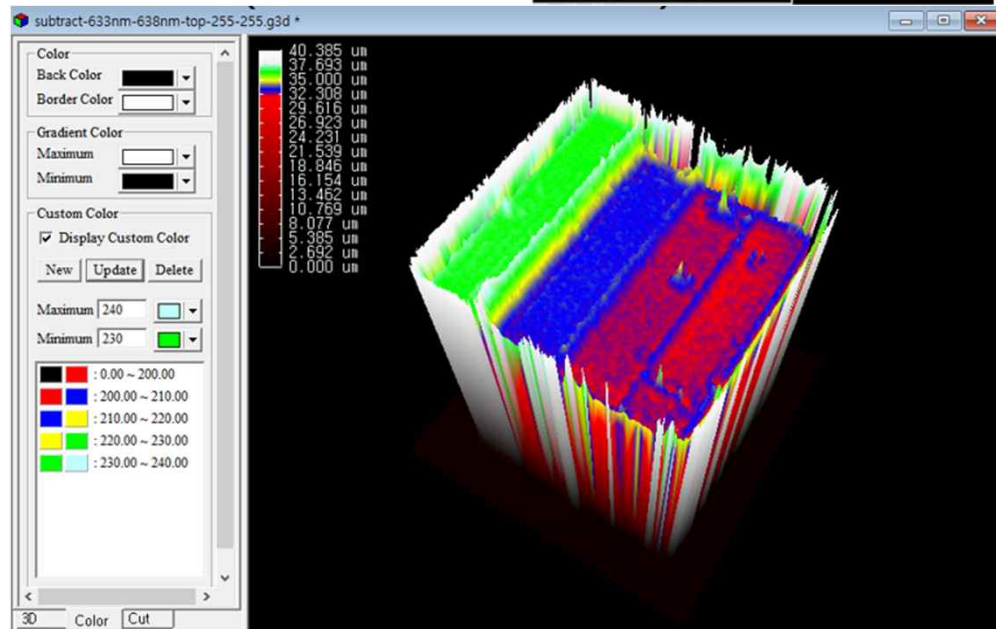
1. illuminate the object with coherent light.
2. The light diffracted from the object and the reference light interfere to form a hologram.
3. Take a picture of the hologram with a camera.
4. Numerically reconstruct the captured hologram.
5. Obtain three-dimensional information of the object from the reconstructed data.



<Sample Measurement Result with DHM-3LED>

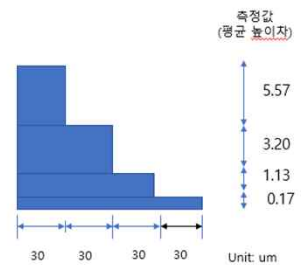
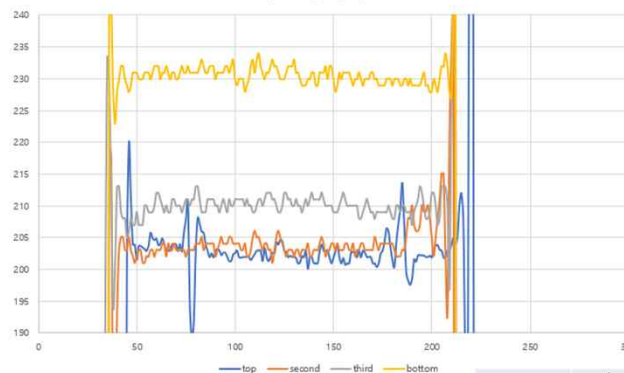


<3D display measurement result of sample with DHM-3LED>



1gray level = 0.158um
255gray level = 40.385um

step4 height(gray level)



<Measurement Result Analyzing>

Ground height = 11(gray level)

	ground	top	first	second	bottom	ground-bottom
height	266	202.32	203.41	210.57	230.82	
height difference	42.1271	32.04193	32.21456	33.34851	36.55555	
			0.172626	1.133947	3.207044	5.571546275

*100-150구간 평균값을 취함