

Zeta 20

3D Profiler & Optical Imaging

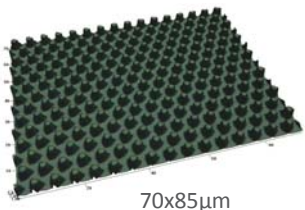
- True Color 3D Imaging
- Sub-micron Metrology:
Step height, linear & areal roughness,
angle, dimensions
- High Roughness and
Low Reflectivity samples
- Deep channels and other high-aspect
ratio features
- Transmissive (backlight) stage option
- Film thickness & DIC options
- Versatile application software



The Zeta-20 is a fully-integrated surface measurement system that provides advanced 3D imaging and metrology features in a flexible, cost-effective package. Zeta Instruments' proprietary ZDot™ technology enables rapid imaging of PSS, solar cells, fluid microchannels, and other surfaces that more costly

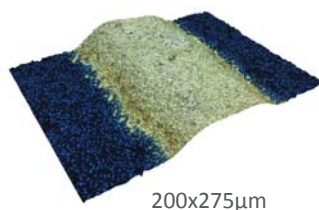
systems cannot easily handle. Since there is no sample contact and very little system maintenance, Zeta metrology systems deliver an unparalleled level of performance with minimal cost of ownership.

Zeta 20 Applications



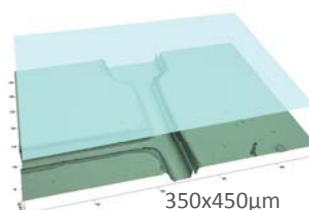
LED/PSS

Measure diameter, pitch and height of LED substrate features automatically; image pre-etch PR and post-etch cones/domes



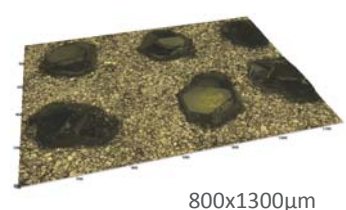
Solar Cell

Contact finger, width, height & volume. High dynamic range enables imaging of high-reflectance metal on low reflectance nitride; measure AR films as well as metal deposition



Bio-Tech/Microfluidics

High-aspect ratio, deep channels in bio-chips can be easily dimensioned and imaged over wide fields of view. Multiple surfaces such as cover glasses or transparent fluids can also be imaged



Precision Polishing

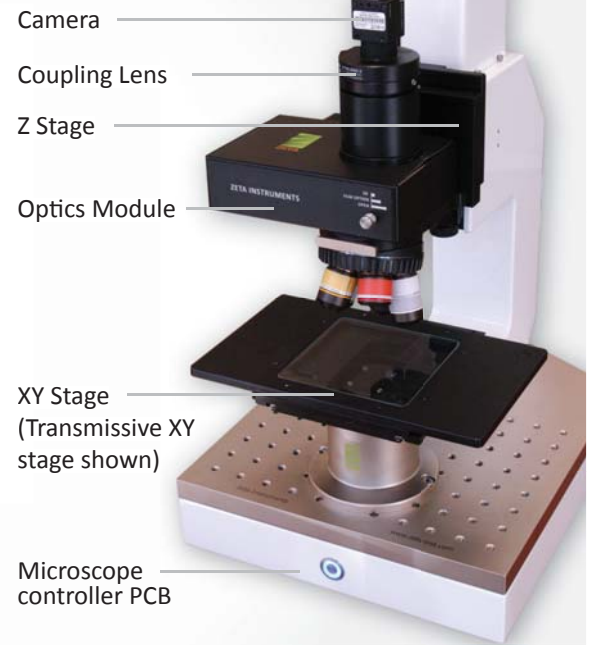
Extreme features and very high roughness surfaces like diamond conditioning discs can be easily imaged and measured

System Specifications

Optical Specifications					
	5x	10x	20x	50x	100x
Z res (μm)	5.90	1.50	0.50	0.10	0.07
N.A.	0.15	0.30	0.45	0.80	0.90
XY Res. (μm)	2.20	1.10	0.75	0.42	0.40
FOV (μm) ¹	1920x1440	960x720	480x360	192x144	96x72
FOV (μm) ²	5029x3771	2514x1886	1257x943	503x377	251x189
Accuracy	±2.5% ³				
Repeatability	Better than 1.5% (1σ/Mean) ³				

Dimensions (mm)
Microscope: 305 x 406 x 559
Computer: 381 x 457 x 102
Monitor: 559 x 406 x 127
Total Weight: 65 lbs/29.5 kg

Operating Specifications
Voltage: 100 - 230 VAC
Current: 2A
Op. Temp.: 18 - 30°C, non-condensing, ± 1°C per hour



Typical System Configuration

Microscope Sub-system

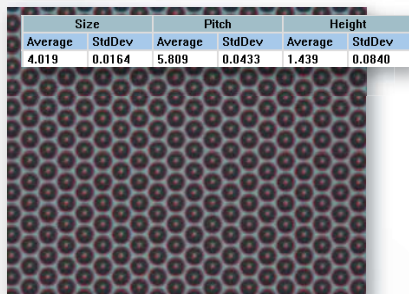
Light Source: High-brightness white LED
Objectives: 5x, 10x, 20x, 50x, 100x
Coupling Lens: 0.5x
Manual Stage: 100mm x 100mm XY travel
Z-Stage: 30mm total vertical travel
Camera: 1024 x 768, 1/3" CCD

Computer Control Sub-system

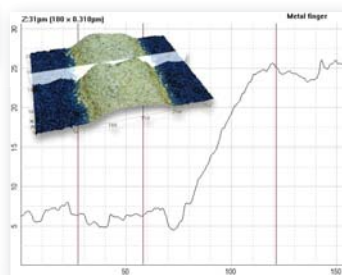
Processor: Intel Core2 Duo (2.5GHz minimum)
RAM: 3GB
HDD: 320GB
Display: 22" Widescreen LCD monitor (1680 x 1050)

Zeta 3D Measurement Software

Live video imaging
 Rapid data capture (<1 minute per site)
 3D surface visualization:
 Tilt, Rotation, Zoom, Filtering
 Feature volume calculation
 2D surface analysis:
 Feature size, diameter, area
 Pattern pitch, standard deviation
 Areal roughness
 Box height (areal avg step height)
 Profilometry
 Step height
 Roughness parameters
 Multiple cross-sections
 Averaging measurement cursors
 Point-to-point measurement markers
 Slope & waviness compensation



LED PSS Size & Pitch



Solar Finger Profile

¹ 1/3" CCD Camera with 0.5x Coupling Lens

² 2/3" CCD Camera with 0.35x Coupling Lens

³ Static repeatability/accuracy based on VLSI 8μm step height standard, 100x/0.9NA objective

Features and specifications subject to change without notice

Zeta Instruments
 1909 Concourse Drive
 San Jose, CA, 95131
 ☎ +1.408.577.1888
 FAX +1.408.577.0588



www.zeta-inst.com