ARAMIS 3D CAMERA

Industrial strain and deformation sensor

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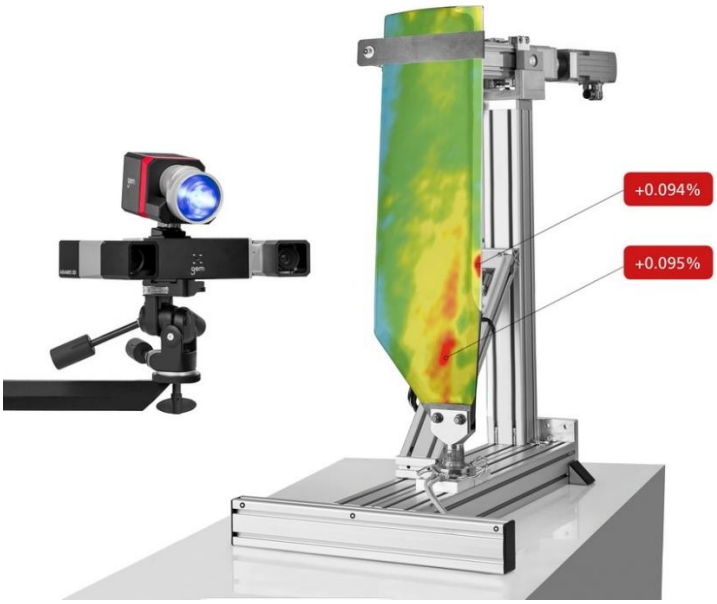
The ARAMIS 3D Camera is the most advanced 3D optical sensor in the world. It is capable of measuring 3D displacements, 6 degrees of freedom motion, strain field and modal response in a single measurement. Based on 3D Digital Image Correlation (DIC) and 3D Point Tracking technologies, the ARAMIS 3D Camera is equipped with a fixed camera frame for industrial use. The robust yet flexible sensor design can measure full-field strain and displacement maps, equivalent to thousands of strain gages, extensometers, LVDTs, string pots or accelerometers.



Features

- Non-contact strain and displacement measurements
- Industrial Fixed Base sensor
- Easy setup and calibration
- Integrated Blue light technology

Applications

- Materials testing
- Component testing
- Dynamic testing
- FEA validation
- Vibration analysis

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ZEISS Certified Metrology Partner

V240422

FIXED BASE SENSORS

			12M	SRX8	
Typical Application			**Structural Testing**	**Dynamic Testing**	
Camera Sensor			CMOS	CMOS	
Camera Resolution			12MPx 4,096 × 3,000 Pixels	12MPx 4,096 x 3,068 Pixels	
Internal RAM			—	—	8Gb per camera
Frame Rate			25 fps @ full resolution 43 fps @ 5Mpx (2,496 x 2,096) 75 fps @ 1/3 image height 100 fps @ binning 2x2 150 fps @ 1/6 image height	75 fps @ full resolution 115 fps @ 2/3 height 230 fps @ 1/3 height 480 fps @ 1/6 height 490 fps @ HD 1080p	335 fps @ full resolution 500 fps @ 2/3 height 1000 fps @ 1/3 height 2000 fps @ 1/6 height 1000 fps @ HD 1080p
Camera frame [mm]: **Working distance [mm]** With Light Projector			**F150:** 350 | **F300:** 700	**F180:** 400 | **F300:** 700	
Camera frame [mm]: **Working distance [mm]** With Tracking Spots			**F600:** 1400 | **F1200:** 2700 | **F1600:** 4500	**F600:** 1400 | **F1200:** 2700 | **F1600:** 4500	
Measuring Areas [mm]			**F150:** 35 | 70 | 120 | 180 **F300:** 110 | 170 | 260 | 400 | 550 **F600:** 750 | 1500 **F1200:** 1500 | 3000 **F1600:** 5000	**F180:** 70 | 130 | 200 | 300 **F300:** 170 | 260 | 400 | 550 **F600:** 600 | 1200 | 1300 HD **F1200:** 1150 | 2300 | 2500 HD **F1600:** 3900 | 4200 HD	
Spatial Resolution*	Field of view	50 mm	0.2 mm	0.2 mm	
		100 mm	0.4 mm	0.4 mm	
		300 mm	1.2 mm	1.2 mm	
		1 m	4 mm	4 mm	
Displacement Sensitivity*	Field of view	50 mm	0.15 – 0.5 µm	0.15 – 0.5 µm	
		100 mm	0.3 – 0.8 µm	0.3 – 0.8 µm	
		300 mm	0.7 – 2 µm	0.7 – 2 µm	
		1 m	3 – 8 µm	3 – 8 µm	

Control and integration

ARAMIS Controller
8-channel analog input: 16bit, 200kHz
Triggering TTL, light gate, via analog input
Complex triggering: measuring sequence
4-channel analog output: 16 but, 500Hz
Measurement synchronization

Computers
Portable Laptop
Desktop Workstation
Rugged 19" Rack-mount Workstation

Sensor stands
Standard or Lightweight tripod
Stable sensor stand

Measurement and sensitivity

Illumination
Blue light technology:
Light Projector (Frames 150 | 300)
Tracking Spots (Frames 600 | 1200 | 1600)
LED Light panel

Resolution & sensitivity
*Table values are average examples

Strain Measuring Range
0.005 % up to > 2000 %

Strain Resolution
typically 0.005 % depending on gage length

Specimen Temperature
typ. -100 °C up to +1500 °C

ZEISS INSPECT Correlate configurations

Correlate Professional Line
Integrated acquisition and analysis
Scripting, templates, custom math
Live processing

Correlate
ARAMIS Sensor Driver: acquisition
Correlate: 2d freeware and
3d analysis & processing

Physical and environmental

Sensor Size [mm]
Frame 150/180: approx. 260 × 330 × 300
Frame 1600: approx. 1700 × 230 × 130

Sensor Weight [kg]
Frame 150/300: 4.7/5.3 (incl. Light Projector)
Frame 600: 4.9 (incl. Tracking Spots)
Frame 1200/1600: 7/4/8.3 (incl. Tracking Spots)

Ambient Conditions
+5 °C to +40 °C (non-condensing)

Voltage Range (typical)
100 – 240 V AC, 50 – 60 Hz

Power Consumption
typically 15 W (with Light Projector)
typically 30 W (with Tracking Spots)
maximum 100 W

Cable Length
10 m
30 m

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