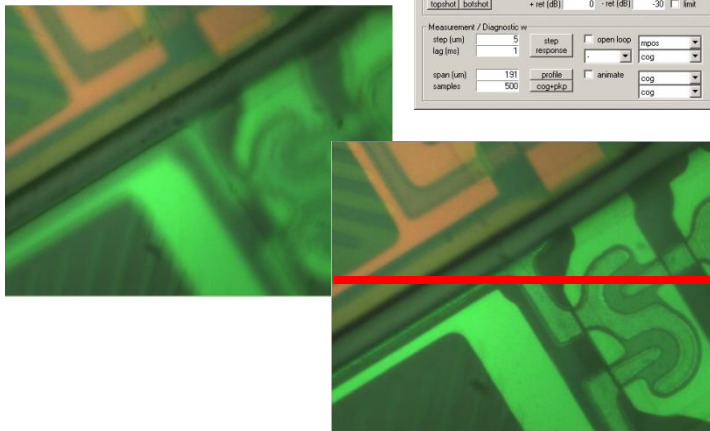
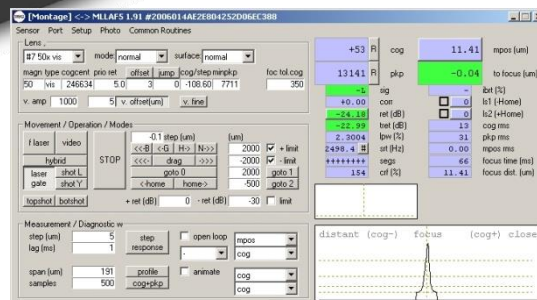


LAF5-Hybrid 2.0

Laser & Image Auto Focus & Tracking System



- Combines Line Laser & Image Auto Focus & Tracking for industrial microscopes and AOI systems
- The MSG Image Auto Focus performs as a real tracking focus and not like typical best contrast image focus.
- Extreme robust focus results by automated selection of best focus method depending on surface
- Applicable to LWD Plan Apo lenses 2x-100x, VIS, NIR, NUV, DUV
- UI interface and software library
- Motor control with pulse output for stepper and servo drives .
- Motor Control with 2 x high power isolated LED supplies

Our technology enables auto focus on:

- Patterned surfaces with high contrast changes
- Smallest structures with high magnification lenses
- Materials with varying refractive index like sandwiched/layered substrates

3 different operation modes.

- Laser Auto Focus mode with ultra high speed and high working range
- Image Auto Focus mode for increased precision
- Hybrid-Auto Focus mode with smart selection of laser or image focus to optimize speed and accuracy to nearly eliminate the laser bad spot problem while still tracking with precision

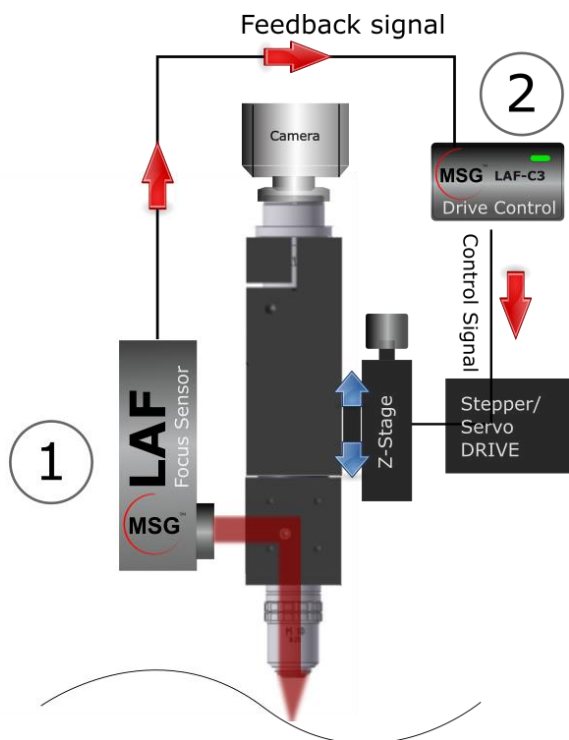
The system features a complete Z axis closed loop system with sensor and motor control. It comes with a software interface for easy setup, use and diagnostics for all necessary sensor and motor parameters. Easy integration into an existing software architecture.

LAF5-Hybrid Performance Data

	Referenced to APO Plan Infinite Microscope Objectives (example)				
Magnification	5x	10x	20x	50x	100x
DOF	14µm	3.5µm	1.6µm	0.9µm	0.6µm
Sample rate Laser	5kHz max.				
Sample rate Video	250 frames/sec. Max., continuous				
Working Range Laser	±12000µm	±4000µm	±1500µm	±500µm	±150µm
Working Range Video	±5000µm	±1000µm	±400µm	±100µm	±20µm
Accuracy*	Laser mode: 0.5 of Lens DOF, video 0.25 of Lens DOF,				
Laser	Diode Laser 660nm, class IIIR <2mW at front lens				
Operation Temperature	+ 5°C to + 50°C				
Beam Shape	45 ° tilted laser line				
Weight Sensor + cable			400gr		
Weight Interface			400gr		
Recommended BS	50/50				
Laser AF Cycle time			0.1s		Auto Tracking
Image AF Cycle time			0.4s		Auto Tracking
Hybrid AF Cycle time			0.2s		Auto Tracking
Power	In	+12V DC sensor only, 24-48V with controller LAF-C			
Optional Distance Output	Analog	0- 10V & -10 +10V & via RS232			
Signal Quality Output	Analog	0- 10V & via RS232			
Communication	Digital	RS232			
Laser ON/OFF	In	TTL	& via RS232		
Camera Sync	In	TTL			

*All data refer to measurement on plain glass for laser and standard pattern for video

Table 1



LAF5-CH HYBRID sensor & LAF-C3 stepper/ servo drive controller with 2 channel high power isolated LED supplies

