



Monitor and adjust your process
in real time.

See through heat and blinding
brightness straight to **the core of**
your welding process.

Different levels of integration
depending on the application.

Take advantage of the
process information that was
impossible to see before.

Want to see what you have missed?

Cavitar Ltd is an expert in diode laser
illumination solutions and welding cameras.
We offer versatile solutions for integrators
of industrial monitoring systems and
manufacturing machinery and end users in
welding industry.

www.cavitar.com



Welding Camera

See through heat

CAVITAR Welding Camera

Small solutions for easy integration

- › Robust, compact and reliable – capable of fulfilling the toughest operational requirements
- › Easy to use and integrate
- › Different levels of integration depending on the application

See through heat and blinding brightness straight to the core of your welding process

- › Immune to surrounding light and vibrations
- › Visualization of weld position with respect to the object gap position (visual seam tracking)
- › Visualization of the presence of unwanted droplets

Monitor and adjust in real-time

- › Monitoring of the melt pool behavior (boundary, shape, size, stability)
- › Monitoring of filler material inside arc – adjust and optimize the welding device accordingly to get a stable process
- › Monitoring of the actual length of the free filler wire
- › Simple real-time measurements with image calibration and adjustable guidelines
- › High-quality live video that can be saved for documentation purposes

Far-reaching and safe to operate

- › Easy process monitoring by operator from a safe distance – avoid exposure to arc and welding fumes
- › Good ergonomics for the operator
- › Reaches the process even in difficult places – for welding behind corner, in limited spaces or in dangerous environment
- › Also for training purposes

For various levels of automation

- › Manual welding
- › Semi-automated welding
- › Automated welding
- › Robot welding

For various welding techniques

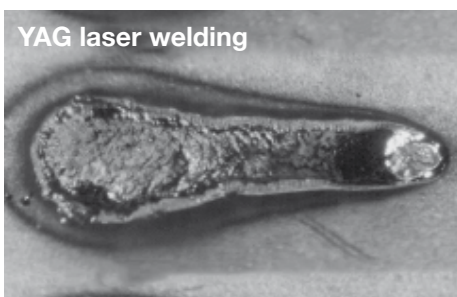
- › Arc welding (MIG, MAG, TIG)
- › Laser welding
- › Hybrid welding
- › Plasma welding

Effective and efficient

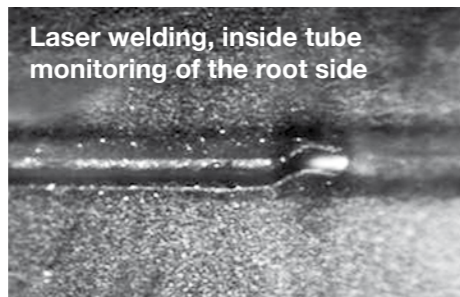
- › Excellent image and video quality
- › Improved quality and reliability
- › Higher process yield
- › Savings in process set-up and problem solving time
- › Reduces the need for laborious and expensive post-manufacturing checks

Cavitar Welding Camera Features

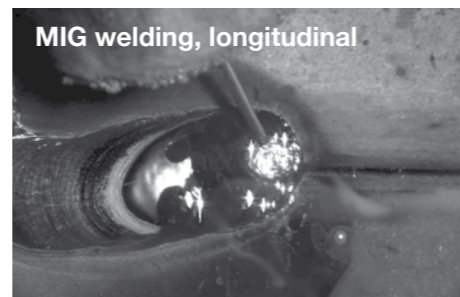
MODEL	C300	C200	C100
Characteristics	Highly compact and robust camera unit includes laser illumination and a case with integrated water or air cooling option. Designed for demanding environments.	Extremely compact camera unit includes integrated illumination optics.	Camera and laser illumination are separated for fully flexible setup. Suitable for special setups or development purposes.
Target applications	GMAW, TIG, Plasma	GMAW, TIG, Plasma	Laser welding, GMAW, TIG, Plasma
Camera unit			
Resolution (pixel)	1440 x 1080	1440 x 1080	Case specific
Max frame rate @ full resolution (fps)	70	70	Case specific
Max frame rate with laser illumination (fps)	100	100	Case specific
Field of view (mm²)	~ 32 x 42	~ 35 x 45	Case specific
Default working distance (mm)	200	200	Case specific
Size (WxHxL, mm³)	30 x 45 x 99	29 x 29 x 86	Case specific
Camera interface	GigE	GigE	GigE or USB3
Weight (g)	300	130	Case specific
Optional	Manual adjustable working distance option (150 - 300 mm) which allows for different field of view.		
Laser unit			
Wavelength (nm)	640	640	640 or 810
Laser class	3R	3R	3R or 3B depending on the setup
Size (WxHxL, mm³)	Integrated in camera	36 x 46 x 150	36 x 46 x 150
Weight (g)	Integrated in camera	430	430
Light delivery	Integrated in camera	Light guide	Light guide
Additional options			
	500 fps with reduced resolution and an USB3 port		



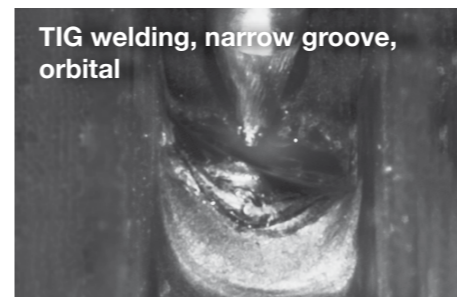
YAG laser welding



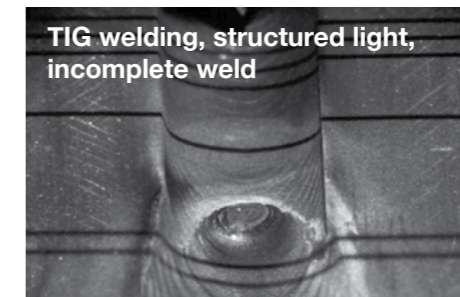
Laser welding, inside tube monitoring of the root side



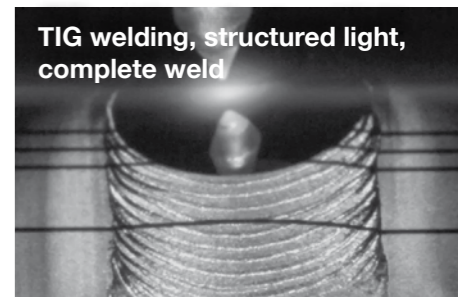
MIG welding, longitudinal



TIG welding, narrow groove, orbital



TIG welding, structured light, incomplete weld



TIG welding, structured light, complete weld