Cavitar Welding Camera

FOR

DEMANDING WELDING

PROCESSES

CAVITAR
VALUE IN SIGHT

CAVITAR WELDING CAMERA

Value in Sight

We at Cavitar are here to bring you Value in Sight with our diode-laser based illumination systems and welding cameras that reveal your application and processes with the level of clarity and detail you have never seen before.

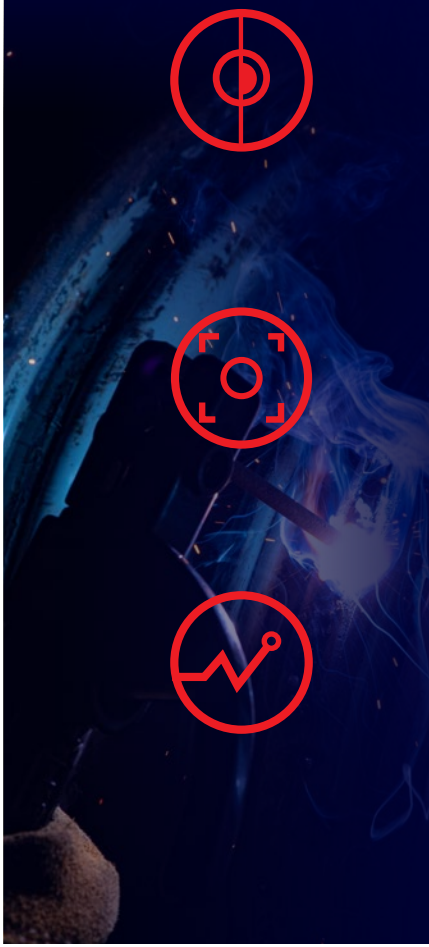
For visualization of various welding techniques

• ARC WELDING • LASER WELDING
• HYBRID WELDING • PLASMA WELDING
• ROBOT WELDING • COLUMN AND BOOM WELDING • ADDITIVE MANUFACTURING

We offer versatile products, systems and solutions for industrial visual process monitoring and R&D, as well as for scientific research, for integrators, OEM manufacturers, and end-users alike. In addition to our high-performance CAVILUX systems and Cavitar Welding Cameras, we also offer customized solutions.

CAVITAR

BENEFITS



See through the blinding welding arc

- High-quality visualization of welding processes in real-time
- Clear view with all details without disturbing process light
- Reveals the details of the welding process core at once (e.g. melt pool, keyhole, defects)

Better quality control through real-time view

- Detection of problems and defects early in the process
- Alignment of the welding torch to the gap, observe melt pool behavior, see the filler material, etc.
- Process documentation for quality assurance

Save time and resources - Less scrap and higher yield

- Early defect detection for immediate process corrections
- Savings in materials, time and work
- Improved manufacturing repeatability and traceability
- Savings in process set-up and problem-solving time
- Minimized downtime or lost production time

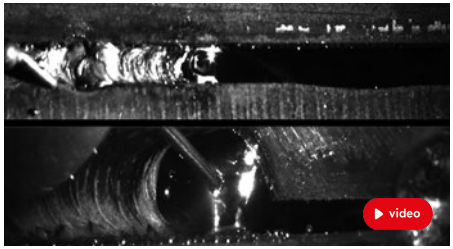
Designed, Engineered and Manufactured in Finland

Improved ergonomics and safety

- Better ergonomics for the operator - manage and view the welding process without being forced into uncomfortable, far-reaching or dangerous positions
- Remote process monitoring – avoid exposure to arc and toxic welding fumes
- Improved overall employee health and safety

For welding education and training

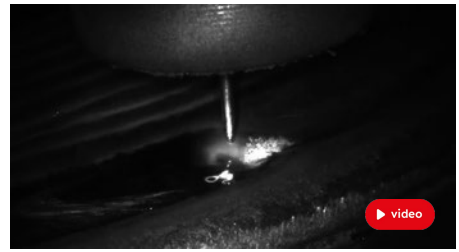
- Novel way of teaching, demonstrating and learning how high-quality welds are achieved
- Sharing welder's view on a large screen (possible also over remote connections)
- Recording of welding sessions for further learning, practicing, feedback and examination purposes
- Experienced welders can benefit from the camera in perfecting their skills
- Can be used for welders' qualification and certification purposes



FACE AND ROOT SIDE OF TIG WELDING
(SAKKY FINLAND)

NARROW GROOVE WELDING
(SAKKY FINLAND)

MIG/MAG WELDING (HT LASER)



WAAM (RAMLAB)

For Ultimate Real-Time Process Visualization

Features

CAVITAR WELDING CAMERA

MODEL	C400	C300
Description	4th generation compact welding camera for demanding environments with integrated illumination and cooling channels	3rd generation compact welding camera for demanding environments with integrated illumination and cooling channels
Main applications	GMAW, TIG, Plasma, Robotic, Additive Manufacturing	GMAW, TIG, Plasma, Robotic, Additive Manufacturing
Camera unit		
Max resolution (pixel)	1440 x 1080	1440 x 1080
Max frame rate (fps) [1]	70 [2]	70 [2]
Working distance (mm)	150...300	150...300
Field of view (mm²)		
@ working distance 150 mm	28 x 21	28 x 21
@ working distance 200 mm	40 x 30	40 x 30
@ working distance 250 mm	51 x 38	51 x 38
@ working distance 300 mm	62 x 47	62 x 47
Size (WxHxL, mm³)	38 x 48 x 99	30 x 45 x 99
Weight (g)	350	200
Laser wavelength (nm)	640	640
Laser class	3R	3R
Camera interface	Gigabit Ethernet	Gigabit Ethernet
Gigabit Ethernet connector	M12, X-coded	M12, X-coded
Power & IO connector	M12	M8
Cooling options	Passive: heatsink, heat conduction Active: air, liquid	Passive: heatsink, heat conduction Active: air, liquid

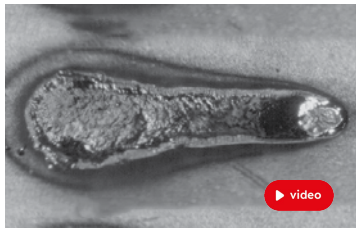
1. At full resolution, dependent on computer performance
2. Up to 500 fps with reduced resolution (720 x 540 pixels) with high-speed version having USB3 interface
3. All values are approximate values, design working distance is 200 mm.

Custom solutions are possible.

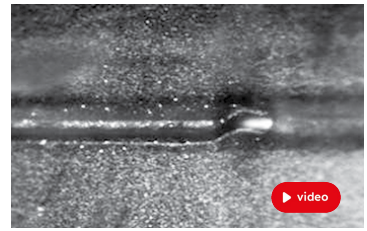
Cavitar Welding Camera – Compact solution with big vision

- High-performance camera sensor with active illumination
- Designed for 24/7 use in harsh industrial environments, robust with spatter protection and optional air-knife
- Up to 500 fps (with reduced resolution)
- Plug-and-play for easy use and set-up
- Easy adjustment of working distance
- Various active and passive cooling options
- Easily integrated to tight, hard-to-reach places
- Camera platform for AI based process control

Application images

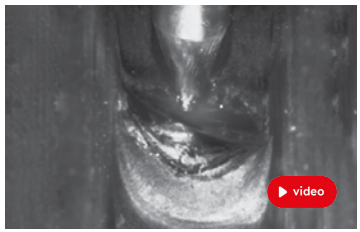


YAG LASER WELDING

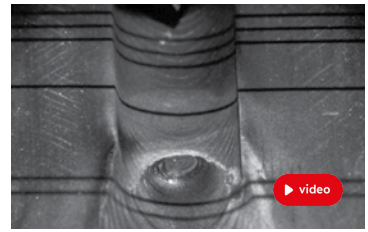


LASER WELDING, INSIDE TUBE
MONITORING OF THE ROOT SIDE

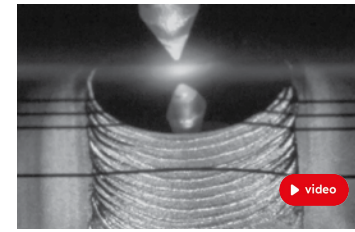
MIG WELDING, LONGITUDINAL



TIG WELDING, NARROW GROOVE,
ORBITAL



TIG WELDING, STRUCTURED LIGHT,
INCOMPLETE WELD



TIG WELDING, STRUCTURED LIGHT,
COMPLETE WELD

Evolution of Cavitar Welding Camera

– Since 2012


CAVITAR
VALUE IN SIGHT
TECHIMAGING
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PRICING AND AVAILABILITY
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