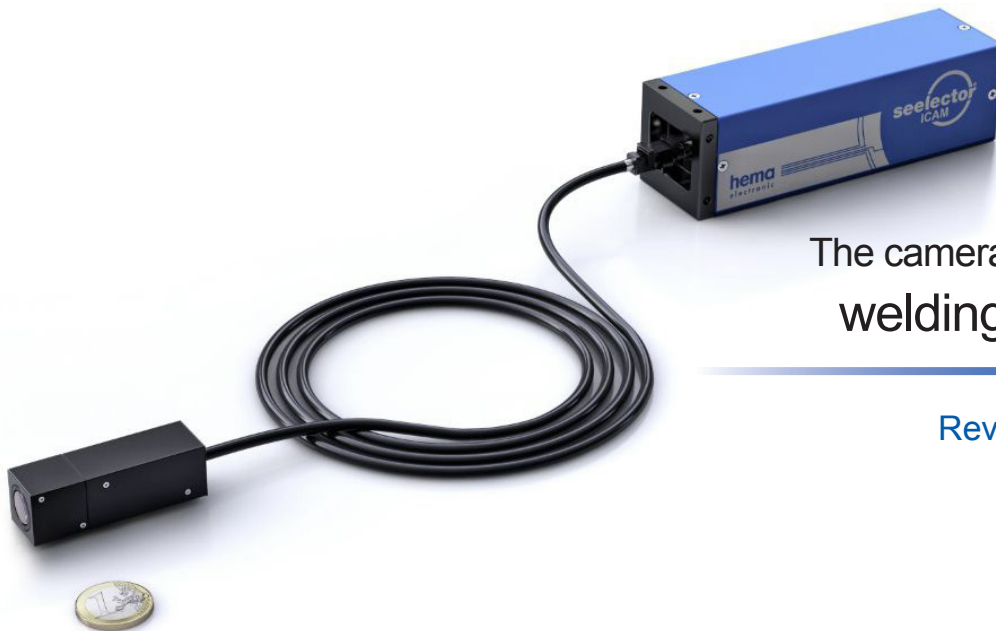




seelector/ICAM weld
process-setup - monitoring - evaluating your welding process



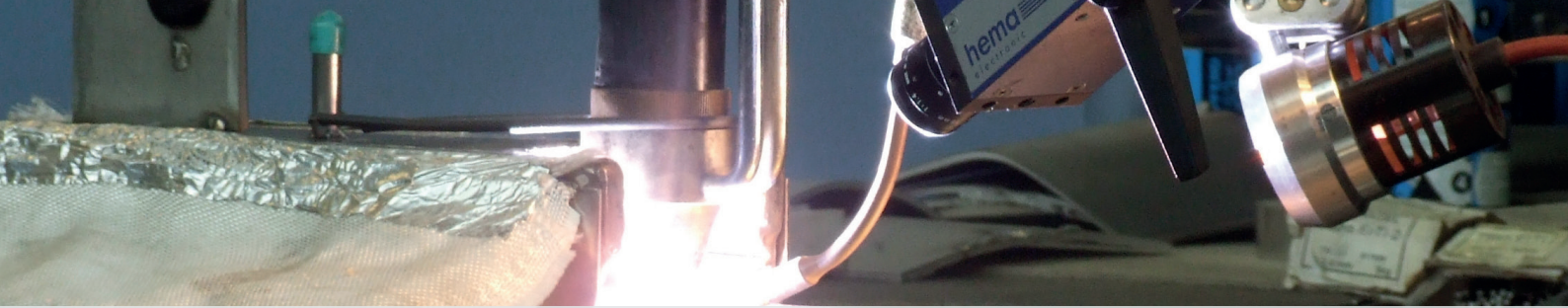
The camera solution for your
welding applications

Reveal what your eyes
cannot see!

Now available as a compact model!



leading
technologies



welding process

Your task:

Premium welding results...

...our service: World class pictures
down to the smallest detail!

Each image shows all the details and their surroundings:

- welding arc
- electrode
- weld pool
- welding seam
- welding gap
- solidifying melt

With **seelector/ICAM weld** you can monitor welding processes even in areas that are difficult to access. The monitoring takes place comfortably on a display attached for instance at the control station. You can create video recordings of the welding process and use them for trainings, QA documentation, tests and commissioning.

Properties:

- brightness dynamics up to 170 dB
- image rate up to 30 images per second
- no blooming due to HDRC®-sensor
- stand-alone system - evaluation inside the camera
- direct VGA connection - only camera and monitor
- network connection via ethernet
- digital I/O
- optional profibus, CAN-bus, etc.

Software tool ICAM view...

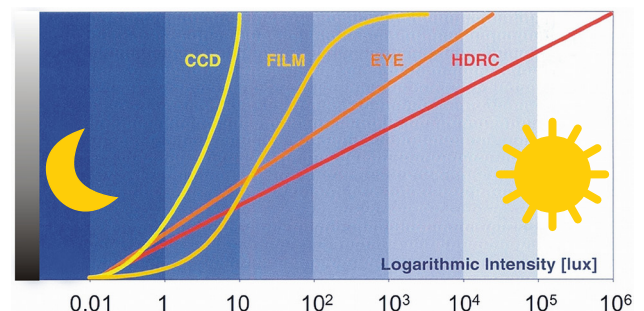
...easy to operate and effective!

The Software tool **ICAM view** shows the image on the monitor and allows you to analyse it and display various types of information.

- defined brightness range with automatic switching
- automatical brightness adaptation
- adapting camera resolution
- image transformation vertical and horizontal
- overlay a reticle
- adaptable region of interest
- change of contrast dependet on scene
- image storage and analysis functions
- single images and video streaming
- video playback

HDRC®-characteristics:

High Dynamic Range shows more!



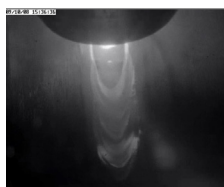


High Dynamic Range can see even more!

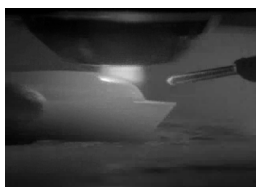
specifications	seelector/CAM HD1	seelector/CAM HD2	seelector/CAM HD4
sensor technology	CMOS HDRC®	CMOS HDRC®	CMOS HDRC®
scanning	progressive	progressive	progressive
optical format	2/3"	2/3"	2/3"
resolution	768 x 496	768 x 496	768 x 496
pixel size	10 µm x 10 µm	10 µm x 10 µm	10 µm x 10 µm
image rate	30 fps	30 fps	30 fps
exposure time	not applicable	not applicable	not applicable
shutter	rolling	global	global
dynamic range	170 dB	140 dB	140 dB
sensitivity	0,001 lux	0,001 lux	0,001 lux
data format	10-bit	10-bit	10-bit
trigger mode	external, internal, free run, single shot	external, internal, free run, single shot	external, internal, free run, single shot
video output	SVGA (800x600) 60 Hz	SVGA (800x600) 60 Hz	SVGA (800x600) 60 Hz
temperature range	0 °C to + 55 °C	0 °C to + 55 °C	0 °C to + 55 °C
version	monochrome	monochrome	monochrome
size	50 x 50 x 200 mm	50 x 50 x 200 mm	head: 20 x 20 x 99 mm main unit: 50 x 50 x 160 mm sensor cable LVDS

Outstanding brightness dynamics in action:

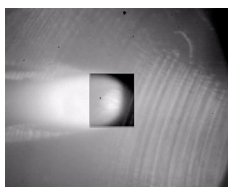
seelector/CAM weld is a camera with unique brightness dynamics, that never lets you down:



plasma keyhole
welding



microplasma
coating



electron beam
welding



plasma powder
cladding

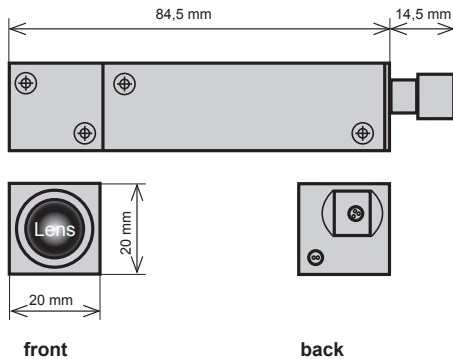


MAG
welding

Videos of various welding processes on hema.de

High-dynamic video image processing fast and intelligent

dimensions sensorhead



KUKA Systems GmbH



Your partner for video based development.
For your customized version we offer leading edge hardware and software design.

Highlights:

Extremely small!

seelector/CAM HD4

The miniaturized sensor head has room everywhere. It is small, lightweight and is mounted meters away from the camera main unit - ideal for robots or narrow space!

seelector/CAM is a robust system suited for industrial usage. It offers a wide range of software functions and is easy to operate.

suited for industrial use:

- compact and robust
- extended temperature range
- low power consumption
- real-time capability

flexible:

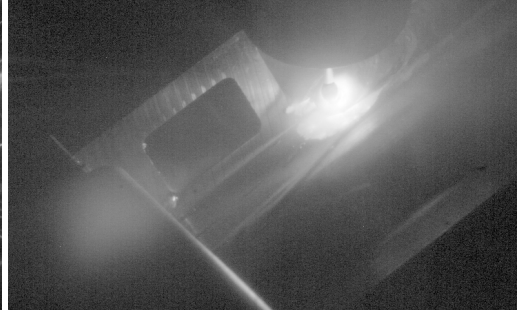
- intelligent with onboard computer
- sensitive even in the infrared range
- easy to operate
- extension to autonomous QA-system with image analysis algorithms on-board

versatile:

- image compression in real-time
- picture overlay of camera data, watermarks, etc.
- comfortable user interface
- comprehensive software options

Do you need a camera for another purpose?

Let us talk about your application!
sales@hema.de



Fast and reliable analyzing of high dynamic video imaging

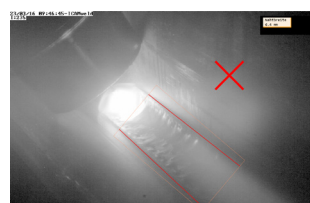
We develop intelligent electronics for the smart factory!

Online welding process monitoring

Professional image processing as key technology for industrial automation.

Continuous monitoring of welding processes is a challenging task.

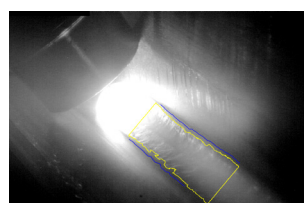
The intelligent camera **seelector/CAM weld** allows a consistent observation. Exceptional high dynamic range shows all details around the welding spot.



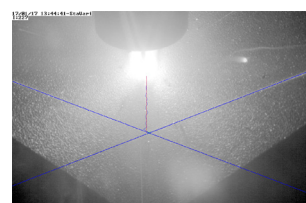
weld width NOK



weld width OK



seam detection



edge detection



The new **seelector/CAM weld** with **GiGE**-Vision and image processing software enables the measurement as well as the analysis of properties of the process. With the acquired image data the weldseam can be evaluated manual or automated:

- gap and edge detection
- welding width
- welding-torch positioning

The desired additional information will be available live on screen and facilitate control.

Process-relevant information such as welding width, size or location of the weld gap, etc. are available as data and can be used by image processing algorithms based on **HALCON** standards. This provides the basis for your customer-specific requirements for an automated process control.



Do you need a camera for another purpose?

Let us talk about your application!
sales@hema.de



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73431 Aalen, Germany

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E-Mail: info@hema.de
Web: www.hema.de

seelector/CAM weld 06/17 en
Subject to technical alterations!
Errors excepted!