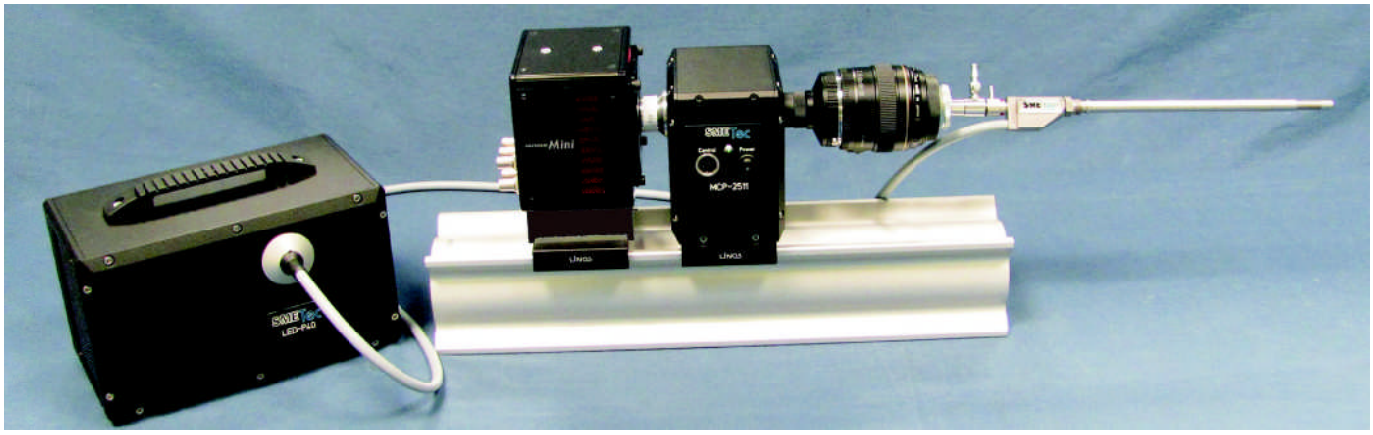
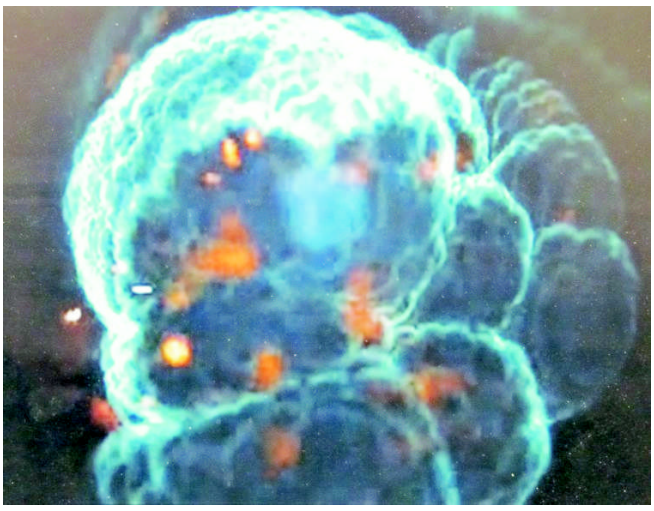
SME Tec Focus Engine

CMOS-CAM High Speed Camera System



SMETEC Imaging Systems (SIS) are designed for high performance applications. Especially the CMOS-Cam reflects this philosophy. All components are designed for examinations in combustion chambers. The goal in each examination is to record the fast events in combustion engines within a few milliseconds. The CMOS CAM is the perfect tool to examine injection processes. To illuminate the combustion chamber the light source LED-P40 is used, which offers an unprecedented illumination even at shortest shutter times. The use of bore scopes allows examinations in very compact combustion chambers. No secondary drilling is necessary with the use of the SMETEC All-In-One probe. Optionally SMETEC offers an image intensifier (MCP-2511) for the examination of combustion processes. The MCP-2511 amplifies and transforms non visible light into visible light and enables examinations of Flame propagations in SI-engines. For these examinations SMETEC offers UV Scopes for UV- and visible light.



Movie captured by Photron with camera SA-1

Compenents

• High speed camera	Photron AX100
	Photron AX200
	all Photron Cams
• Intensifier	SMETEC MCP 2511
• Light guide source	SMETEC LED-P40
• Borescope	SMETEC D4/6/8
• Optical windows	SMETEC All-In-One
• Data Acquisition	SMETEC COMBI
• Software	SMETEC COMBI SIS

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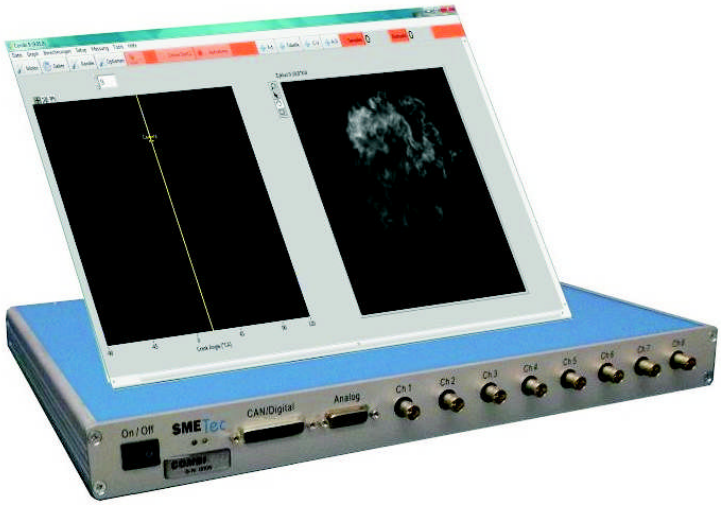
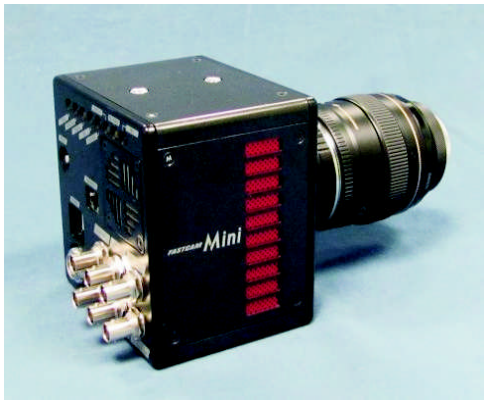
CMOS-CAM High Speed Camera System



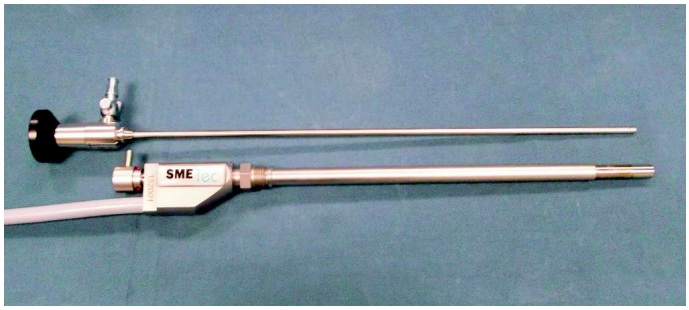
Every SIS component is controlled by the state of the art combustion analyzer COMBI. The images from the combustion chamber are measured synchronously to the conventional combustion indication acquisition. Therefore no time consuming and error prone synchronization between different systems is necessary. Image data and pressure data are displayed together on one screen. Additionally all pressure relevant data and statistical values are available for each picture cycle.

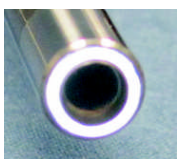


High speed camera
AX100/AX200
- 3600 fps @1024x1024
- 13600 fps @ 512x512
- 37500 fps @ 256x256
- ISO 40000 monochrome
- ISO 16000 coloured

Image Intensifier
MCP-2511
- Multi channel plate
- Plate diameter: 25 mm
- sensitiv in UV and VIS
- amplification: 10^7
- controller: COMBI

LED light guide source
LED-P40
- highest Lumen output on market
- max. 18000 lm (for green LED)
- continuous, pulse or single shot
- 10 µs - 1000 µs pulse length
- manually controlled or via ethernet





Optical windows
Borescope / All-In-One probe
- Aircooled borescope
- Borescope diameter:
  4 mm, 6 mm, 8 mm
- optical fiber ring illumination
- separate light path
- min. probe diameter: 8.5 mm

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