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FEATURES

- **4872 (H) x 3248 (V) active pixels**
- **Fast Gating to 10ns**
- **Integral 40mm Intensifier - High Gain/Sensitivity**
- **GigE interfacing**
- **Two sequential frames plus multiple exposure options.**
- **Optical viewfinder and capping shutter**
- **Programmable electrical triggering options**
- **Built-in velocity trap**
- **IVV Imprint PC software for control/analysis**
- **Compact, rugged design**
- **Standard Nikon F-mount**
- **Photocathode Options: S20 (UV biased, UV to Visible) or S25 (Visible biased, UV to NIR)**

CONFIGURE

TIMING

CAPTURE

ANALYSE
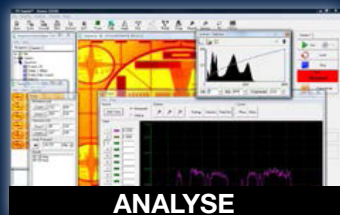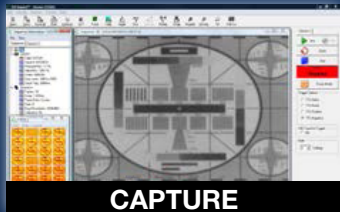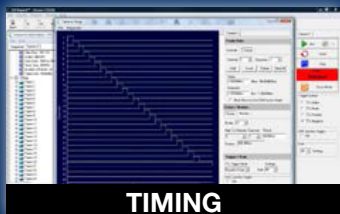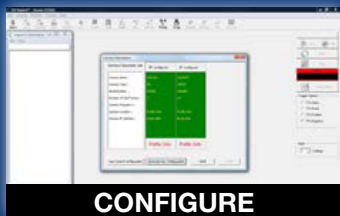
PiV Framing Camera
Ultra High Speed Framing Camera

Invisible vision ®

Making the invisible visible

The PiV Framing Camera
- 16 Mega Pixel Resolution
- Intensified Imaging
- Multiple Exposures
- Ultra Fast Shutter to 10ns

The Invisible® Vision PiV series of multi-frame cameras are designed to achieve ultra fast shuttering combined with zero frame to frame distortion – so essential for quantitative particle image velociometry applications in the analysis and scientific modelling of high speed events.

Camera options enable the user the maximum choice in optimizing a custom camera system for his/her application. Current system options include differing sensor arrangements from high speed video CMOS sensors through to ultra high resolution CCDs. Systems are also available with and without integral image intensification, the intensifier being chosen with a performance to match the sensor.

Spectral response can range from the UV to near IR (< 200nm to 1000nm).

Typical applications are in particle image velociometry (PIV) for fluid dynamics but the cameras also find excellent application in combustion, electric discharge, nano-technology, biomedical and ballistics as well as many other high speed and ultra high speed macroscopic imaging requirements.

PiV Model 40-16Mi-V
The PiV 40-16MIV camera system is the ultimate state-of-the-art camera system for ultra high speed shuttering with the maximum possible resolution. With two independent user programmed intensified frames, each with a minimum exposure of 20ns (10ns optional) and a 16 Mega-pixel CCD, the system can easily capture in great detail ultra high speed events over an extensive temporal (and illumination) range. In addition, each frame may be multiple exposed for even greater flexibility. An optical viewfinder is included as an option (-V) for aid in focus and system setup. The system is intrinsically both UV and visible sensitive but can be ordered either with an an S20 (UV bias) or S25 (visible bias) photo-cathode.

Synchronization is easily handled with positive, negative, make and break (self powered) input trigger signals and four user programmable output strobes (plus gate monitor) for the additional synchronization of external cameras, systems or strobes or even to trigger the experiment itself.

All PiV cameras are designed to be easy to use and come complete with IVV Imprint™ camera control, capture and analysis PC software – capable of operating mutliple cameras. Extremely compact and rugged, with easy GigE interfacing and simple power supply and operational requirements the units are designed for a long installed life with the minimum of service requirements.

PiV Framing Camera Model 40-16Mi-V

Intensifier.. 40mm MCP High Resolution

Input Window .... Quartz

Photocathode .... S20 or S25

Spectral range.. 200 to 800nm (standard – others upon request).

Output Window... Glass.

Phosphor .... P46 standard – others upon request.

Gain .... Up to 2,000 (P46)

Format 40mm

Gating .... 20ns Minimum (standard unit). 10ns upon request

Resolution... 35 lp/mm.

CCD

Pixels .... 4872 (h) x 3248 (v) with 7.4μm pixels.

Dynamic Range... 65dB - Digitized to 12 bit.

Optics

Input .... Nikon F – mount.

View-finder .... Automatic optical viewfinder / capping shutter.

System

System.. Double Imaging, Multiple Exposure.

Resolution... 16M pixels 4872 x 3248.

System dynamically resolves > 1300 TV lines per picture height.

Exposures .... 20ns to > 1ms in 5ns steps (10ns optional -10)

Delays... From input trigger 50ns to > 10ms in 10ns steps.

10us minimum between 1st – 2nd frame.

Gain Control .... User programmable 0 to 100% (12 bits).

Triggering .... TTL Positive, TTL Negative, Make / Break (self powered).

Velocity Trap - Measures velocity on-the-fly & automatically triggers.

Outputs... User Programmable TTL Gate monitor.

Four User Programmable TTL 'strobes'

Protection .... Built in mechanical capping shutter.

Interface .... Giganet Ethernet (GigE) direct to PC.

Environmental

Dimensions (approximate)................................. 105 x 85 x 366mm (excluding objective lens).

Weight .... 3.75 Kg.

Power.. 35W max (90-264VAC).

Temperature .... 0ºC to 40ºC, non-condensing humidity.

Construction .... Aluminium housing.

Mounting .... 2 x 3/8-16 UNC thread on base.

Documentation and Software............................ Supplied on CD.

Packaging .... Heavy duty IP65 flight box.

CE and RoHS (Pb free)

Software.. IVV Imprint™ PC software as standard. Software seamlessly allows for full multi-camera control, capture, image analysis and file export for all current IVV camera types.

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