

Product Name :
Laser PIV System

Product Code :
Hydraulics0010

Description :

Laser PIV System

Technical Specification :

Laser PIV System

Specification of **Laser PIV System**

Laser:

- Solid-state air- cooled 200 mW, 660 nm laser diode (Class 3b).
- Standard optics produce a c. 3 mm thick, 45° light sheet (c. 200 mm wide at 250 mm).
- Interchangeable 20° light sheet optic available (item H41-3).
- Pulse separation (t) of between 100 µs - 5 s (in steps of 10 µs).
- Pulse width of between 10 µs - 32 ms (in steps of 10 µs).

Camera:

- Super-sensitive VGA CMOS sensor:
- 640 — 480, 6.0 µm pixels (1/3?? format);

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- ~50% quantum efficiency at 660 nm;
 - 75 - 110 dB dynamic range;
 - 4.8 V/lux-sec sensitivity.
 - Trigger input enables image pair acquisition to be synchronised with external events.
 - Accepts standard CS- or C-mount lenses (12.5mm f/1.4 lens supplied).
 - Camera exposure can be linked to the lasers pulsing, thereby enabling operation in a lit room.

Software Processing:

- Data
refresh and recording rate up to 16Hz (dependent on the computer speed, the selected acquisition and PIV analysis parameters and the recording taking place)
- Real-time, or offline, 2-component vector calculation.
- Single pass or adaptive multi-pass cross-correlation with 8, 12, 16, 24, 32 or 64 pixel window sizes.
- 0% or 50% window overlap (i.e. maps of up to 19,000 vectors).
- Optional vector interpolation and filtering

Based On:

- User-supplied velocity limits;
- RMS of neighbouring vectors values.
- Calculation of the following derived scalars:
 - Vector angle and magnitude;
 - Vorticity and swirl;
 - Time-averaged mean velocity;
 - RMS and turbulence intensity.
- Where applicable, vector component and statistical sample number are user-defined.

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