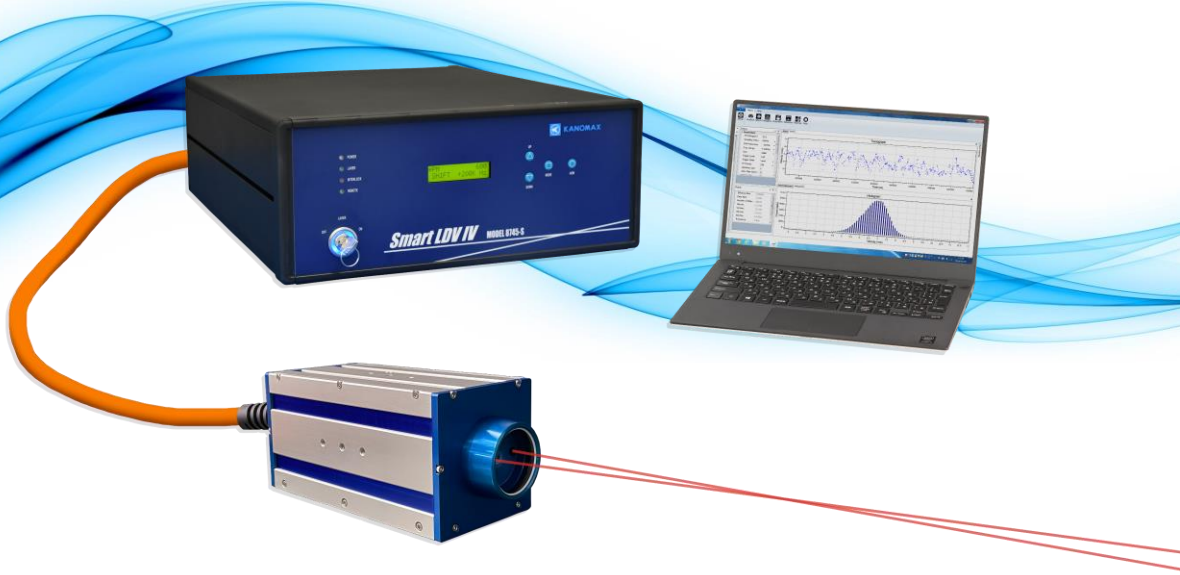




Advanced to More Reliable and a High Data Rate !!

Smart LDV IV

Model 8745-S



Features:

- Enhanced receiving sensitivity enabling high data-rate measurement
- Up to 120,000 velocity data/sec.
- High-speed data transfer by USB3.0
- Probe designed as all-in-one, no alignment necessary

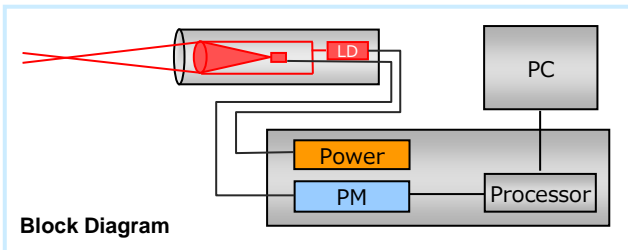
Applications:

- Aerodynamic and hydraulic property measurement
- Measurement requiring high time-resolution
- Comparison with CFD
- PIV accuracy tests

Specifications

Flow velocity range	-40m/s ~ 260m/s (f=400mm)
Optical System	
Laser	LD $\lambda=660\text{nm}$, 60mW
Focal length	150mm, 200mm, 250mm, 300mm, 350mm, 400mm (to be selected)
Measurement volume size	0.13mm x 1.3mm (f=200mm)
Measurement method	Back scatter / Forward scatter(Optional)
Probe size	104mm x 104mm x 239mm (incl. lens)
Shift frequency	0.01 ~ 10MHz
Power supply	AC100 ~ 240V
Signal Processor	
Signal processing	8bit FFT (1024, 512, 256, 128points)
Frequency band	1kHz ~ 40MHz (8 ranges)
Max data rate	120,000 velocity data/sec*
Validation	Burst spectrum ratio
Interface	USB3.0
Software	
Max. number of data	100,000
Real time monitor	Burst waveform, Burst spectrum Velocity histogram
Analysis function	Mean flow velocity, Turbulent intensity, Skewness factor, Flatness factor Velocity histogram, Time-series display
Data output	CSV format
Supported Operating System	Windows 10 / 11 (64bit only) Japanese / English

*depending on measurement condition



Block Diagram

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Information, data and specifications in this brochure are subject to change without notice.



Options

Traverse System

Automated Traverse System for positioning the optical system

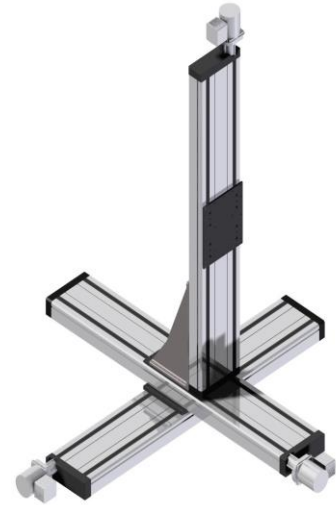
Easy measurements without the hassle of changing the measurement location manually.

- Automatic measurements from the LDV software
- Moves between each measurement point with high positioning accuracy
- Operable also in manual mode

Moving axis	X, Y, Z axis *
Stroke	500 mm *
Positioning accuracy	±0.02 mm (X axis) **
Drive system	Stepping motor
Controller	LDV Software (traverse-compatible version)

* Reference examples

** Positioning accuracy for Y and Z axis varies depending on the load



Corner Cube Mirror

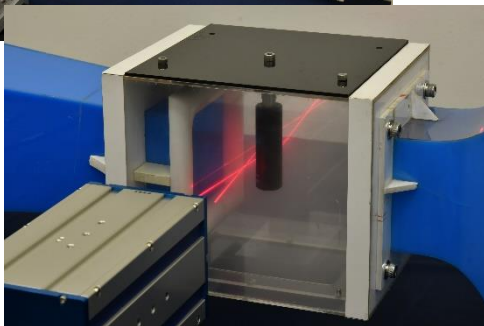
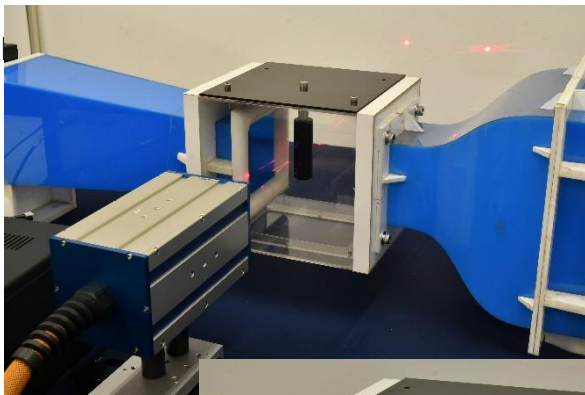
Corner cube Mirror for better SNR of data

Designed to be placed at the opposite side of the laser to reflect strong front scattering light to the optical receiver in order to improve the signal-to-noise ratio.

Focal length	200 mm, 250 mm, 300 mm, 350 mm, 400 mm
Effective diameter	Dia. 50 mm



Application Example: Cylinder Wake Measurement



Measurement Condition

Tracer particle:	Approx. dia. 5.0 μm
Focal length of probe:	200 mm
Frequency shifter:	Available
Measurement point:	Cylinder wake

Result

