



High Quality, High Performance, Compact Laser Doppler Velocimeter

Smart LDV III

Model 8743/8743-S



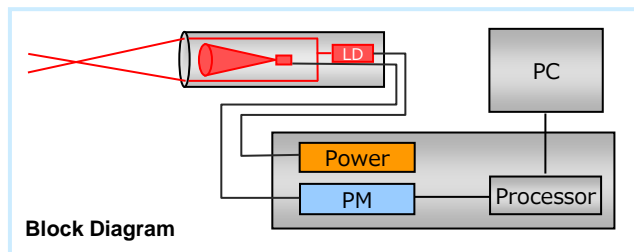
Specifications

Flow velocity range	-40m/s~264m/s (f=400mm, Model 8743-S)
Optical System	
Laser	LD $\lambda=660\text{nm}$, 60mW
Focal length	150mm, 200mm, 250mm, 300mm, 350mm, 400mm
Measurement volume size	0.13mm \times 1.3mm (f=200mm)
Measurement method	Backscatter/Forward scatter (Option)
Probe size / Weight	61mm ϕ \times 345mm / Approx. 3.5kg
Shift frequency	Model 8743 : Without Frequency Shifter Model 8743-S : 0.01 – 10MHz
Power supply	AC100 – 240V
Photoelectric conversion element	Photomultiplier
Option	Corner Cube Mirror
Signal Processor	
Signal processing	8bit FFT (512,256,128point)
Frequency band	1kHz~40MHz (8 ranges)
Max data rate	60,000 speed data/sec*
Validation	Burst spectrum ratio
I/F	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	Windows7,8 (Japanese / English)

*Depending on measurement condition

- 60,000 velocity data / sec. acquired by introducing a photomultiplier
- User-friendly system is easy to configure
- Useful for PIV accuracy tests, academic experiments and various fluid measurements

[Configuration]
 • Smart LDV III
 • LDV Software
 • Corner Cube Mirror (Options)
 *PC must be purchased separately



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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	100mm, 200mm, 300mm
Positioning accuracy	0.025mm (X axis) *
Max moving speed	80mm/sec
Load capacity	7kg
Drive system	Stepping motor
Control	LDV Software (compatible version with traverse)

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



Corner Cube Mirror

Corner cube Mirror for better SNR of data

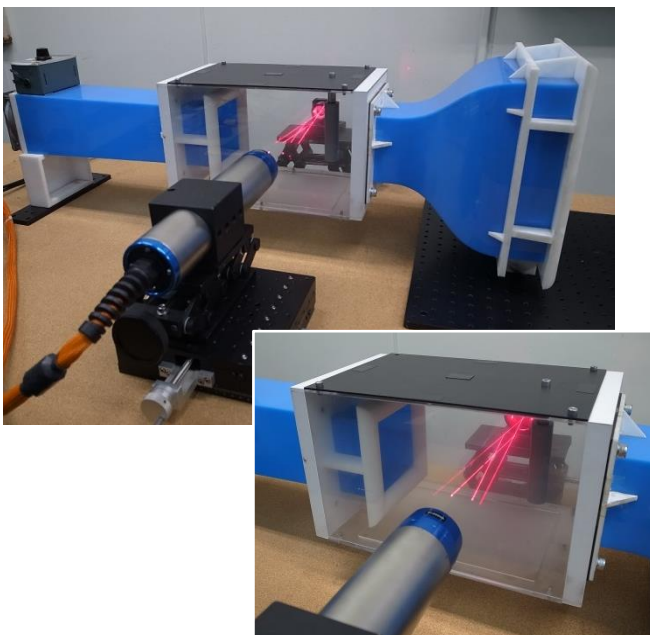
This is designed to be placed at the opposite side of the laser to reflect strong front scattering light to the optical receiver.

Focal length	200mm
Effective diameter	φ 50mm



Application example: Cylinder Wake Measurement

Instrument Set-up



Measurement Condition

Traceable particle	5.0 μm
LDV focal point	f=200 mm
Frequency shifter	Yes
Measurement point	Cylinder wake

Result

