

LODESTAR SERIES

Lodestar

Acoustic Doppler Velocity Meter (ADVM)

Fixed-site index-velocity monitoring with bidirectional flow measurement

KEY FEATURES

- ✓ Depth rating: 100 m
- ✓ Operating Frequency: 1.7 MHz
- ✓ Maximum Velocity: ± 10 m/s (max 20 m/s)
- ✓ Bidirectional (forward and reverse) velocity measurement
- ✓ Seamless integration with HyFlow data analysis software
- ✓ Low-power DSP technology for extended deployments

MODEL VARIANTS & MOUNTING

Lodestar-B	Bed mount (slant-face integrated housing)
Lodestar-S	Surface mount (high-velocity surface configuration)
Lodestar-U	Universal (cylindrical housing, any orientation)

RANGE & DEPTH SPECIFICATIONS

Transducer Type	Single-Beam
Acoustic Measurement Range	0.05–20 m
Minimum Cell Size	0.025 m; 0.05 m in Long Broadband mode
Blanking Distance	0.05 m
Operating Temperature	-10°C to 60°C

Specifications subject to change without notice. Contact HyFlow Inc. for latest product information and pricing.

© 2026 HyFlow Inc. All rights reserved | Document Version 1.0

Cupertino, California | www.hyflow.ai | info@hyflow.ai

VELOCITY SPECIFICATIONS	
Velocity Accuracy	0.5% ± 2.0 mm/s
Cell Size	Broadband 0.025 m (Long Broadband 0.05 m optional); Narrowband 0.25–2 m
Maximum Velocity	±10 m/s (max 20 m/s)
Number of Cells	87 (Narrowband mode); 86 (Long Broadband mode)
Maximum Ping Rate	Up to 10 pings/s
Beamwidth	1.4°
Velocity Output	Vertical-line mean velocity; per-cell velocities with direction; per-cell signal strength and signal confidence
Flow Direction	Bidirectional (forward and reverse); transducer may be installed in either orientation

MEASUREMENT MODES & DISCHARGE COMPUTATION	
Measurement Modes	Horizontal, slanted, and vertical measurement modes
Depth Measurement	External input from any stable, reliable water-level sensor
Channel Cross-Sections	Rectangular, trapezoidal, circular, and user-defined channel sections
Discharge Computation	Onboard discharge output from external water level; raw velocity output for external processing
Computation Models	Index-velocity method

STANDARD SENSOR SPECIFICATIONS	
Temperature Range	-10°C to 60°C
Temperature Accuracy	±0.4°C
Temperature Resolution	0.01°C
3-D Compass / Attitude (Optional)	Tilt: ±0.5° accuracy, ±85° range; compass: 2° accuracy, 0 - 360° range

PHYSICAL SPECIFICATIONS	
Depth Rating (Standard)	100 m
Weight in Air	1.2 kg
Dimensions	240 mm length × 75 mm diameter (standard configuration)
Housing Material	Anodized aluminum or engineering plastic

Specifications subject to change without notice. Contact HyFlow Inc. for latest product information and pricing.

© 2026 HyFlow Inc. All rights reserved | Document Version 1.0

Cupertino, California | www.hyflow.ai | info@hyflow.ai

POWER & COMMUNICATION SPECIFICATIONS

Input Voltage	+12 VDC
Sampling Power	2 W
Communications	RS232 or RS485
Protection	Lightning protection on power and signal lines

APPLICATIONS

- ✓ Continuous fixed-site flow monitoring in rivers and canals
- ✓ Index-velocity station installation and rating development
- ✓ Bidirectional flow measurement at backwater-affected and tidally influenced sites
- ✓ Irrigation and water-delivery channel monitoring with onboard discharge output
- ✓ Remote monitoring stations with RS232 or RS485 data output

HYFLOW SOFTWARE ECOSYSTEM

Every Lodestar system integrates seamlessly with HyFlow software, delivering a complete workflow from field data collection to processed discharge results.

- ✓ Cross-platform ADVN data analysis software (Windows and Linux)
- ✓ Discharge computation and measurement review on the desktop
- ✓ Structured data exports for reporting and archival