

LABORATORY ANNULAR FLUME AND ANCILLARIES
Flume

Annular channel	0.15m to 0.3 m wide
Channel height	0.5 m (miniflume) to 1.2 m
Outer diameter	0.5m; 2 m
Inner diameter	0.2m (miniflume); 1.4m
Material	Commercial grade transparent cast acrylic plate (PLEXIGLAS XT 20070 / 29070)
Rack	AISI 316 stainless steel (height must be determined upon ordering).
Base	8 mm casted acrylic plate, drain plug
Stand	Not provided
Flow recirculation	8 equidistantly spaced on lid platform, stainless steel or plastic paddles; specially shaped to reduce secondary circulations; vertical adjustment.
Motor	230V AC/1500 W, single phase gear motor; with ABB frequency convertor; software control of paddle rotation rate.
Paddle rotation speed	0 to 1.0 m/s.
Ports	Ports for 3 of OBS, 1 of DO; water sampler flush mount, syringe sampler; acrylic moulds, double sealed.
Flow measurement	Nortek Vectrino 3D acoustic velocimeter, with special dog-leg probe stem
In situ camera mount	1 of slim tubular bracket, 3D swivel, locking nut; streamline side bars; multiple fixing heights.
Maximum applied stress	2N m ⁻²
Shipping	Palletted
Manual	

Datalogger & Sensors

DataLogger	1 of Data Acquisition System (basic OEM package). Microprocessor; power supply; 8 Hz totally synchronous sampling; sampling regimes include burst modes, delay starts, and conditional sampling. 16Mbyte memory and communication boards in frame with wiring loom. Housing with RS232 cable, operating manual and software. Windows compatible customer interface (programmable).
Turbidity Sensor	3 of turbidity sensors bulkhead mounted. Calibration pot. Interface for turbidity sensor (remote type); calibrated pcb (FTU); Subconn bulkhead connector and flylead termination.
Dissolved Oxygen	1 of Oxygen Optode sensor fitted with MCIL8M connector for remote use c/w interface cable and mounting bracket. RS232/0-5V output.
Flow sensor	1 of 10 MHz Nortek Vectrino 6 mm sampling volume 0.05 m from the sensor head; Velocity range $\pm 0.03, 0.1, 0.3, 1, 2.5, 4$ m/s (software-selectable), accuracy $\pm 0.5\%$ of measured value ± 1 mm/s, sampling rate (output) 1-25 Hz (Std firmware), 1-200 Hz (Plus firmware). Deployment planning, instrument configuration, data retrieval and conversion software (for Windows®). Power 12-48 v DC input.

Ancillary Components

1. Subconn MCIL6M on 50cm lead
2. Locking ring for MCILXM/F
3. Sub Connector
4. Mini housing
5. 7/16 Lock Nut (Subconn)
6. Deployment Frame for DAS Acetal
7. Battery Pack Assembled, 151mm Black Acetal
8. Macartney 98008020 MCOM16F/DLSAF 5m MCOM16M/DLSAM
9. Sub Connector
10. Locking ring for MCILXM/F
11. Bulkhead connector
12. 4m "Y" lead, instrument to PC/Power supply
13. Interface To AADI 4831F Optode DO Sensor
14. Hyperterminal programme
15. Sensor calibration certificates

In Situ Underwater Camera

Camera	1 of GoPro Mini Hero 6 Black 12MP stills; 4K60 and 1080p240 video; slow-motion playback; advanced image stabilization; waterproof without a housing down to 33ft (10m); SD Card 32GB SanDisk Extreme.
Mount	1 of slim tubular bracket, 3D swivel, locking nut; streamline side bars; multiple fixing heights.
External Lamps	TopElek LE001BUK LED Desk Lamp, Energy Saving Dimmable Eye-protection Gooseneck Desk Lamp

External Camera

Custom Ancillary.

The flume is made of transparent materials and so the best means of recording sediment movement is by using a high definition digital camera external to the flume channel which views the sediment bed vertically or obliquely.

