



Epibenthic Video Sledge

Sampling of small benthic epi- and infauna
in aquatic habitats

- Latest EBVS design acc. to Brenke 2005, modified 2012
- Operational depth 6000 m
- full ocean depth (10000 m) upon request
- Sturdy steel construction for all habitats and substrates
- Insusceptible opening-closing device
- Latest electro-optical technology

PROVEN DESIGN EBVS SYSTEM

The Epibenthic Video Sledge „EMMA“ is the last generation of Epibenthic Sledges based upon the design of Dr. Nils Brenke (Brenke 2005) and various improvements of this design (2012).

The construction of the Epibenthic-Video-Sledge is the latest improvement and an ideal tool for studies of sediment surface, marine geomorphology structures and patterns of benthic diversity.

The Sledge is constructed of stainless steel and divided in five sections: front section, centre section and rear section as well as two electronic carrier sections on each side. Offering various sections allows different configurations of equipment set-up and in case of damages the section concerned can be easily replaced.

The Epibenthic Sledge is equipped with two equal cone nets, both with a mesh size of 0,5 mm (material: Polyamide, PA). 2 net buckets are mounted in the rear section of the frame.

To accommodate video cameras and lights two side sections (electronic carrier) can be mounted and equipped with electro-optical devices.

The components forming the underwater electro-optical system are most innovative with proven results in underwater applications. Full HD video recording and full HD still camera pictures will become standard in scientific campaigns.

Same is true for the intelligent energy management systems. It is a must to use latest Lithium technology providing increased / improved durability, thermal stability and charge and discharge currents with best safety and steady performances. The proposed lighting system is based upon dimmable, non flickering light with LED power and adjustable colour temperature.

Clever interfaces and data logger are provided to control all cameras and sensors of the system. Depending on customer's requirements various sensors from different manufacturer can be interfaced.

The sensor data such as C,T,D, current, pH, oxygen, etc. are logged in the unit whereas the cameras provide own storage capacity allowing an easy read-out of files via USB cable.

For size comparison a dual leaser system is adapted to the video camera.

Technical Data

Dimensions (LxWxH): 3600 mm x 1300 mm (2020 mm with side sections) x 1162 mm

Weight: 360kg (without electronics and weights)

Opening: 100 x 33 cm

Net: length 3600 mm, mesh size 500 µm, net bucket: 300 µm

Camera and Light

Wide angle video camera eCAM600VR/SI with field of view angles of 170°, 127°, 90° and frame rates of 30Hz – 120Hz

Camera: 12 MP and full HD (1920 x 1080 pix) video recording

Operating depth: 6000 m

Material of system housing: Titanium grade 5 body with BK7 optical glass port

Wide angle (170°) subsea light modules, eLIGHT-75L, 75W LED power each

Individually adjustable intensity to vary color temperature between 3700K and 8300K

Protected against overtemperature and under voltage

Sensor Package

Sensors		Measuring Range	(Initial) Accuracy	Stability	Resolution
Conductivity		0 – 70 mS/cm	±0.002 mS/cm		0.001 mS/cm
Temperature		-5 – +36°C	±0.03°C	<0.01 K/Month	<0.01°C
Pressure		0 – 60000 kPa	±0.02% FSO	<0.002% FSO/Month	<0.0001% FSO
pH		1 .. 13 pH		<0.055 pH/Month	0.01 pH
Oxygen		0 – 500 µM/0 - 150%	<8 µM or 5% (calibrated between 0 -120%)		<1 µM
Curent Sensor	speed	0 – 300 cm/s	±0.15 cm/s	stable	0.1 mm/s
	direction	0 – 360° magnetic	±5° for 0 - 5° tilt	stable	0.01°

Drift of Conductivity and Oxygen sensors dependant on environmental conditions