
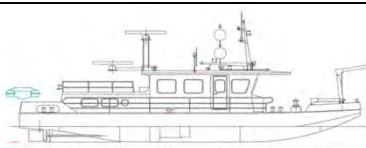
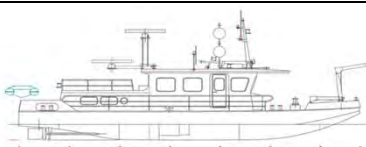

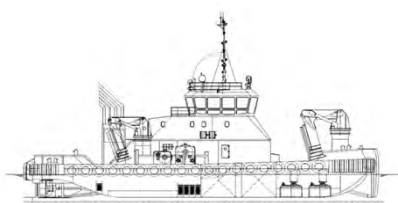





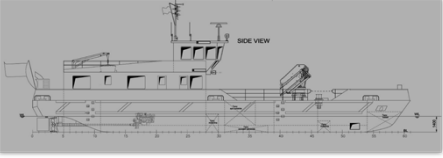


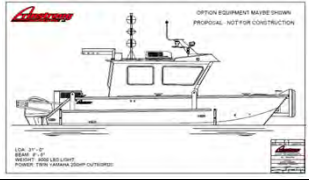










Multifunctional marking vessel


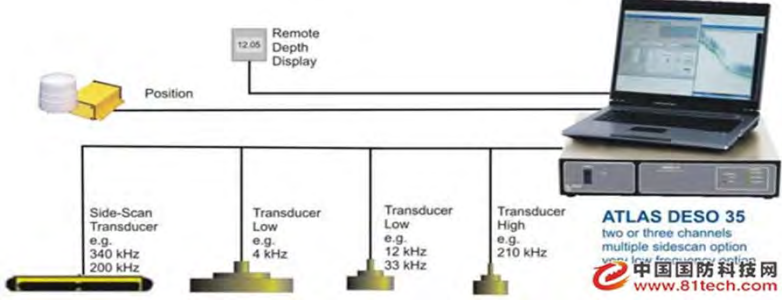

Name of the vessel	Producer	Vessel Type	Offers	Dimensions								Materials	Vessel Equipment							Engines	Pictures	Contact information				
	Name	Function	Price (€)	LOA (m)	Length (m)	Beam (m)	Width (m)	Height of the hull (m)	Draught (m)	Displacement (t)	Engine power (kw)	Type	Steering gear	Navigation means	Signaling Devices	Radar	AIS	ECDIS	MB	SB	Engines for propulsion	Transmission	Diesel Electric Generator	Name	Web address	
VESSEL FOR MARKING WATERWAYS	H2X Shipyard		920.000€	17.00	15.75	x	4.46	1.50	0.85	26.50	2x96	Steel	x	x	x	x	x	x	x	x	x	x	x			http://www.h2x.com/en/contacts/contacts.php
VESSEL FOR MARKING WATERWAYS	HERMANN BARTHEL GmbH SHIPYARD	Vessel for marking inland waterways	820.000€	17.00	15.75	x	4.46	1.50	0.85	26.50	2x96	?	x	x	x	x	x	x	x	x	x	x	x	PERKINS - SABRE		http://www.barthel-werft.de/de/sub/page6.html
VESSEL FOR MARKING WATERWAYS	SHIPYARD ROUSSE JSC	specialized vessels for monitoring and inland waterways marking	485.000€	17.00	15.75	x	4.46	1.50	0.85	26.50	2x96	?	x	x	x	x	x	x	x	x	x	x	x			corinna.barthel@barthel-werft.de
VESSEL FOR MARKING WATERWAYS	MTG DOLPHIN PLG	monitoring and inland waterways marking	?	?	?	?	?	?	?	?	?	?	?	?	x	x	x	x	x	x	?	?	?	?		www.dolphin1.bg
MULTI CAT@ 3713 "YN571673"	DAMEN SHIPYARDS	Anchor handling, dredger service, supply, towing, hose handling and survey	?	36.66	34.50	12.50	?	?	± 2.60	35ton (m)	1x Caterpillar C32 ACERT 746 bkW (bhp) at 1800 rpm	?	x	x	x	x	x	x	x	x	x	x	x			www.damenshipyardshardinxveld.nl
MULTI CAT@ 2712 Green Isle "YN 571674"	DAMEN SHIPYARDS	Anchor handling, dredger service, supply, towing,hose handling and survey	?	27.70	23.90	12.45	?	?	± 2.85	405ton (m)	2x Cat C32 TTA ACERT 1790 bkW at 1800 rpm	?	x	x	X	X	x	x	x	x	x	x	x			www.damenshipyardshardinxveld.nl
MULTI CAT@ 1908 Shallow Draft "KULAN"	DAMEN SHIPYARDS	Anchor handling, dredger service, supply, towing, hose handling and survey	?	19.38	?	8.50	?	?	1.00	145ton (m)	2x Caterpillar C12 TA B 574 bkW at 1800 rpm	?	x	x	x	x	x	x	x	x	x	x	x			www.damenshipyardshardinxveld.nl
MULTI CAT@ 1908 Shallow Draft "AGAT"	DAMEN SHIPYARDS	Anchor handling, dredger service, supply, towing, hose handling and survey	?	19.38	?	8.50	?	?	1.05	150ton (m)	2x Caterpillar C12 TA B 574 bkW at 1800 rpm	?	x	x	x	x	x	x	x	x	x	x	x			www.damenshipyardshardinxveld.nl


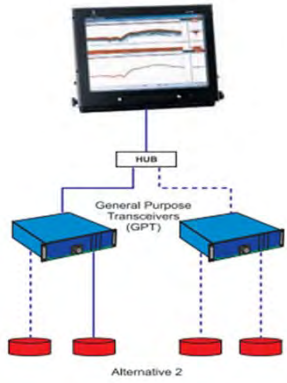
DAMEN MULTI CAT@ 3013 "MCS ELLY II"	DAMEN SHIPYARDS	Anchor handling, dredger service, supply, towing, hose handling and survey	?	30.14	28.00	12.50			± 2.60m	?	3x Caterpillar C32 TTA 2124 kW (2888 bhp) at 1600 rpm	?	x	x	x	x	x	x	x	x	x	x	x		www.damenshipyardshardinxveld.nl
WORK BOAT	SET SCHIFFBAU	ICE, WORK BOAT + MC	?	22.73	?				1.25 empty	?	?	Steel	x	x	x	x	x	x	x	x	x	x	x		http://www.set-schiffbau.de/
(AFDJ) MARKING VESSEL	?	intervention vessel for marking signalling	3.500.000€	30.50	?	?	9.00	?	1.40	?	2*350kW*2200rpm	Steel	x	x	x	x	x	x	x	x	x	x		?	
(EA EMDR) MARKING VESSEL	?	Vessel for marking inland waterways	3.200.000€	30.50	?	?	9.00	?	1.40	?	?	Steel	x	x	x	x	x	x	x	x	x	x		?	



Multifunctional marking vessel																									
Name of the vessel	Producer	Vessel Type	Offers	Dimensions							Materials	Vessel Equipment								Engines type		Pictures	Contact information	Annexes	
				LOA (m)	Beam (m)	Width (m)	Height of the hull (m)	Draught (m)	Displacement (t)	Engine power (hp)		Type	GNSS	MRU	SVP	MB	SB	ADCP	Radar	AIS	ECDIS				On-board
Hydrographic survey launches	ALU MARINE	hydrographic surveys	€	7.80	2.80	-	-	0.80	4.00	2*115 hp	v boat	x	?	?	?	x	?	x	x	x	x		http://www.alumarine-shipyard.com/	http://www.alumarine-shipyard.com/en/industry/230-vedettes-hydrographique-flleuve-congo.html	
26' Outboard Catamaran Survey Boat	ARMSTRONG MARINE INC	marine survey	€	7.90 - 9.50	-	2.59	-	1.20		2*220hp	KATAMARAN	x	x	x	x	?	?	x	x	x		x		http://armstrongmarine.com/	26 CAT - SURVEY - Bill Benson - PROPOSAL - Rev A.pdf
30 CAT AMI Survey	ARMSTRONG MARINE INC	hydrographic surveys	€	7.90 - 9.50	-	2.59	-	1.20		2*225hp	KATAMARAN	x	x	x	x	x	?	x	x	x		x		http://armstrongmarine.com/	http://armstrongmarine.com/i-16235981-30-outboard-catamaran-survey-boat.html
Hydro	HANTIERS ALLAIS SHIPYARD	hydrographic surveys	€	10.30		3.46	-	0.86		550hp	v boat	x	x	x	x	x	?	x	x	x	x		http://www.chantiersallais.fr/	http://www.chantiersallais.fr/portfolio-item/hydro-2/?lang=en	
VNF	HANTIERS ALLAIS SHIPYARD	hydrographic surveys	€	7.85		2.76		0.92		130hp	v boat	x	x	x	x	x	?		x	x	x		http://www.chantiersallais.fr/	http://www.chantiersallais.fr/portfolio-item/vnf-2/?lang=en	
7.9m Survey Catamaran 'Gallopier'	CHEETAH MARINE	hydrographic surveys	€	7.90	2.70	-		0.30		2*135hp	v boat	x	x	x	swat		x	x	x	x		x		http://www.cheetahmarine.co.uk/	http://www.cheetahmarine.co.uk/en/deliveries/7.9m-survey-catamaran-gallopier-leaps-through-her-sea-acceptance-trials
CREH Tracer 4	CHEETAH MARINE	hydrographic surveys	€	7.90	2.65	-		0.50		2*135hp	KATAMARAN	x	x	x	x	x		x	x	x		x		http://www.cheetahmarine.co.uk/	http://www.cheetahmarine.co.uk/en/deliveries/creh-tracer-4
Hydrographic Survey "CETUS"	CHEETAH MARINE	hydrographic surveys	€	6.20	2.40	-	-	0.25		2*50hp	KATAMARAN	x	x	x	x	?	x	x	x	x		x		http://www.cheetahmarine.co.uk/	http://www.cheetahmarine.co.uk/en/deliveries/hydrographic-survey-cheetah-in-northern-holland1



SURVEY CATAMARAN 1706 "LIDA"	DAMEN SHIPYARDS	hydrographic surveys	€	17.20	6.20	-	-	1.25		2xCaterpillar 3406E DI-TA 450 – 650 bkW	v boat	x	x	x	?	x	?	x	x	x	x		www.damenshipyardshardinxveld.nl	http://www.damenshipyardshardinxveld.nl/~media/DamenHardinxveld/Documents/Product%20sheets/Specials/Survey%20Catamaran%201706.ashx
STAN TENDER® 1504	DAMEN SHIPYARDS	hydrographic surveys		15.20	4.50	-	-	1.20		2x Volvo / Caterpillar 450 – 650 bkW	v boat	x	x	?	?	x	?	x	x	x	x		www.damenshipyardshardinxveld.nl	http://products.damen.com/~media/Products/Images/Clusters groups/High Speed Crafts/Stan Tender/Stan Tender 1504/Documents/Product_Sheet_Damen_Stan_Tender_1504_29062015.ashx
STAN TENDER® 1505	DAMEN SHIPYARDS	hydrographic surveys	€	15.32	4.37	-	-	1.10	x	MTU / MAN / Caterpillar	v boat	x	x	?	?	x	?	x	x	x	x		www.damenshipyardshardinxveld.nl	https://www.google.ro/imgsa=tmct=&ec=c=s&source=web&cd=1&cad=rja&uact=8&ved=OCB4QFjAAahUKEwjP1f-B7OTIAhVHWBQKHXRAFI&url=http%3A%2F%2Fproducts.damen.com%2F%2Fmedia%2FProducts%2FImages%2FCrafts%2520groups%2FHigh%2520Speed%2520QCrafts%2520Tender%2520Tender%2520Tender%25201505%2FDocuments%2FDamen_Stan_Tender_1505_Fast_Twin_Screw_Aluminium_Workboat.ashx&usq=AFQICNEM6Z6GM-7LeOE3R11aYzMTuc-2w&sig2=AVCR1477e8eAepRd4L5WFA&humb
STAN TENDER® 1504 "H 01"	DAMEN SHIPYARDS	hydrographic surveys	€	15.32	4.37	?	?	1.10		2 x MAN D2866 LXE 40 442 bkW	v boat	x	x	?	?	x	?	x	x	x	x		www.damenshipyardshardinxveld.nl	http://products.damen.com/en/ranges/stan-tender/stan-tender-1504/deliveries/ste-1504-h01
TRIDENT 720 CT	TRIDENT ALUMINIUM BOATS	hydrographic surveys	78.000 €	7.35	2.45	-	-	0.40		175 - 200 HP	v boat	?	?	?	?	?	?	?	?	?	?		http://www.tridentboats.ru/	http://www.tridentboats.ru/boats/en/b8-720-ct.html
MZB 750 Cabin	MEYER SHIPYARD	hydrographic surveys	150.000 € (vat excluded)	7.50	?	2.50	?	?	1.90	2*115 HP	v boat	x	x	x	?	x	?	x	x	x	x		office@bootswerft-meyer.at	http://www.bootswerft-meyer.at/media/files/Datenblatt%20MZB%20750%20Cabin.pdf
C690 Cabin	MS Boat	hydrographic surveys	70.000 €	7.25	2.35	2.35	-	0.45	1.70	up to 200 HP	v boat	?	?	?	?	?	?	?	?	?	?		http://msboat.com	http://msboat.com/product/c-690-19.html



	System	
Technical Specification	OHMEX Ltd – SONARMITE v4.0 MTX	TELEDYNE ODOM HYDROGRAPHIC – ECHOTRAC CV100
Pictures		
Sensor Type	echo sounder	echo sounder
Depth	0.30m to 75.00m (Software limited)	20cm - 300m
Frequency	235KHz Active Transducer	3.5kHz-50kHz / 100kHz-750kHz
Accuracy	+/-0.025m (RMS)	200kHz-0.01 m +/- 0.1% depth 33kHz-0.10 m +/- 0.1% depth
Resolution	0.01m	0.01m
Beam spacing	8 to 10 Degrees	-
Transducer Weight	0.75kg	5kg
Ping Rate	3 to 6 Hz (Depth dependent)	Up to 20Hz in shallow water (10m) range
External Sensors v1		
GPS	On request	?
MRU	?	?
SVP	?	?
Software	Hydrographic software package on request	Windows based software included: eChart Display
Cables	?	have
External Sensors v2		
GPS	On request	?
MRU	?	?
SVP	?	?
Computer	?	?
Software	?	?
Cables	?	?
Application	river	river
Price v1	3,100 € - only echo sounder	8,600.00 €
Price v2	Net 7,200 € - with Hydromagic and Getac V110	€

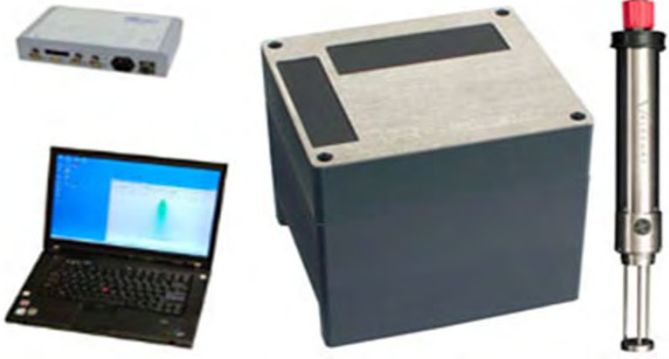

VALEPORT LIMITED – MIDAS Surveyor v2A	ATLAS HYDROGRAPHIC – ATLAS DESO 350 M	NEPTUNE SONAR Ltd. – T141 (Dual Frequency and Dual Beam)
		
echo sounder	echo sounder	echo sounder
0.3 - 100m , 1.8 - 100m (210kHz), (33kHz)	0.5 - 600 m @ 33 kHz / 0.2 - 600 m @ 210 kHz 24 – 50 kHz and 100 – 350 kHz	? 33 kHz - 210 kHz
greater of ±0.01m or ±0.02%	0.10 m ± 0.1% depth @ 33 kHz 0.01 m ± 0.1% depth @ 210 kHz	?
0.01m (210kHz), 0.04m (33kHz)	0.01 m	?
-	-	2 ⁰ -22 ⁰
18kg	13.8kg	?
6Hz	Up to 20 Hz	?
RS232	DGPS have	?
RS232	-	?
-	-	?
?	Hydrographic software package on request	?
?	have	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
?	?	?
	river	river
7,020.00 €	11,820.00 €	€
€	€	€



NEPTUNE SONAR Ltd. – 340 Series (Dual Frequency)	KONGSBERG – EA 440 Echosounder
	
echo sounder	echo sounder
?	0 - 350 m
24 kHz - 600 kHz	33 - 710 kHz
?	1cm @ 200kHz/710kHz
?	0.01° RMS
?	1.9°
?	8kg
?	Up to 20/sec
?	Seatex Seapath 20 dGPS compass
?	Seatex MRU
?	have
?	
?	
	Single beam System with Side Scan Sonar
?	Hemisphere A325 - Vector V330 wit 2 antennas
?	SMC IMU - 008
?	Valeport SWiFT SVP & Valeport TideMaster
?	Naval PC with 19" display
?	Haypack pachment
?	have
?	river
€	34.220 € - full pachment
€	63.500 € - full pachment


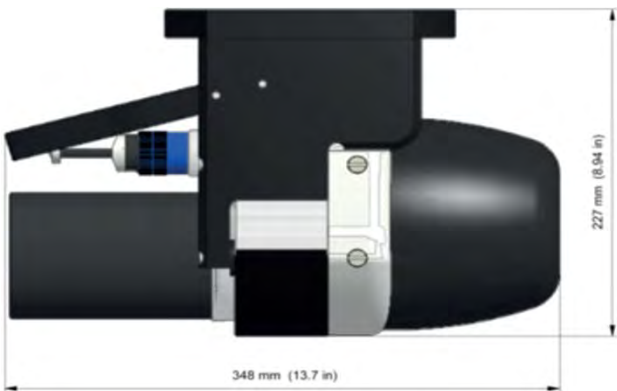
Technical Specification	KONGSBERG – EM 2040 Multibeam Echosounder	TELEDYNE - SeaBat T20-P
Pictures		
Sensor Type	echo sounder	swat
Depth	0.5 - 600 m	0.5 - 150 m / 0 - 375/575 m
Frequency	200 - 400 kHz in steps of 10 kHz	200 - 400 kHz
Beam width		1° x 1° at 400 kHz; 2°x2° at 200 kHz
Resolution	-	6mm
Max. coverage	Up to 130° (single head) / 200 ° (dual head)	165°
Max ping rate	50 Hz	50 ping/sec
Beam spacing	1 * 1° at 400 kHz	10 to 256 standard beams (optional 512)
Accuracy	-	
Transducer Weight	24 kg / 45 kg	-
max Update Rate		-
External Sensors V1	Kongsberg EM 2040 CD Dual Head, Single Swath	SeaBat T20-P HU
POSITION	Hemisphere VS330	POS MV 120 E Version RTK with titan IMU
GYRO	Hemisphere R330 reference station GNSS RTK	have
MRU	SMC IMU-108	have
SVS	Valeport SWiFT SVP	Sound Velocity Probes 70 Titan
SVP	Valeport TideMaster	SVP mini Valeport
Computer	Naval PC with 15" TFT monitor	have
External Sensors V2		
POSITION	Hemisphere VS330	POS MV 120 E Version RTK with titan IMU including 25m cables (option) suitable for river works
GYRO	Hemisphere R330 reference station GNSS RTK	
MRU	SMC IMU-108	
SVS	Valeport miniSVS	Sound Velocity Probe 70 Titan
SVP	SWiFT SVP & TideMaster	SVP mini Valeport
Computer	have	have
External Sensors V3		
POSITION	?	POS MV WM E version RTK with titan IMU including 25m cables (option) – suitable for dual head and in open sea operations.
GYRO	?	
MRU	?	
SVS	?	Sound Velocity Probe 70 Titan
SVP	?	SVP mini Valeport
COMPUTER	HAVE	HAVE
Software	HYPACK Inc.,	HYPACK® and HYSWEEP® Software / Teledyne RESON PDS2000 with CUBE
Cables	have	have
Training		
Application	sea	sea
Price v1	278,000 €	161,200 €
Price v2	328,000 €	184,200 €
Price v3	€	€



Kongsberg - GeoSwath Plus Compact	ATLAS HYDROGRAPHIC - ATLAS FANSWEEP 20
	
swat	echosounder
50 m	0.5 - 300m / 1.0 – 600 m
500 kHz	100 kHz - 200 kHz
0.5° x 0.5° at 500 kHz	1.3° / 1.5° down to <0.2°
1.5 mm	down to <0.2°
up to 12 x depths (240 degree up to 190m)	Up to 12 times water depth, operator selectable (180° in sidescan mode, 161° in bathymetry)
-	Up to 16 Hz
1.5 mm	0.5 - 0.10 m ± 0.2% depth for coverage up to 6 times water depth
16.8 kg	10 kg
30 per second (range dependant)	-
Kongsberg - GeoSwath Plus Compact HU	
Hemisphere V113 GPS Compass	Trimble DSM 232 / RTK SPS 750
Hemisphere V330 RTK GPS Compass	CSI Vector
RTK POS MV WaveMaster E RM IP68 T	Teledyne RDI DMS 05
Valeport Mini SVS	Atlas Hydrographic SVC 300
AML MicroX SVS	
ruggedised laptop PC	
GeoSwath Plus Compact – 500kHz RO	
Hemisphere VS330	Trimble DSM 232 / RTK SPS 750
Hemisphere R330 reference station GNSS RTK	CSI Vector
SMC IMU-108	Teledyne RDI DMS 05
Valeport SWiFT SVP	Atlas Hydrographic SVC 300
Valeport TideMaster	
Naval PC with 19" TFT monitor	?
GeoSwath Plus Compact – 500kHz	
Trimble Zephyr™ geodetic technology	?
	?
Applanix POS MV SurfMaster	?
Valeport SWiFT SVP	?
Valeport TideMaster	?
Naval PC with 19" TFT monitor	
GS+software license (+Geo Texture for sidescan in v3)	HYPACK® and HYSWEEP® Software
Combined Sensor Cable (10m)	have
Pair of Transducer Cables (2 cables - 10m)	
river	sea
206,400 €	€
157,500 €	€
~180,000 €	€
144,000 €	

IMAGENEX – IMAGENEX DT101 MULTIBEAM	L3 – ELAC Nautik – SeaBeam 1180 / 1185
	
echosounder	echosounder
0.5m - 75m - 300m	80mm - 300m / 600 m
240 kHz	180 kHz band
Narrow: 0.75° / Medium: 1.5° / Wide: 3°	1.5° x 1.5° at 180 kHz
0.02% of range	1.5° - 25 pings per second
Transmit: 120° x 3° Receive: 120° x 3°	max. swath coverage sector > 153°
20 Hz	12 kHz, 3 kHz, 1 kHz selectable
3°	Equiangular
-	?
4.2kg	183kg/system
-	126 beams
DT100 Sensor Interface Relay (DT100 SIR)	RS232
	RS232
Internally mounted OEM version of CDL MiniSense3	RS232
Internally mounted OEM version of AML Micro•X	RS232
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
DT101_SIR	ELAC HDP 4061, CARIS, COASTAL
	OCEANOGRAPHCS, EIVA, QPS, ROXAR, PDS 2000,
	CARAIBES, TEI
100 m (328⚡) on CAT5-e, longer cable runs possible with additional hardware	have
have	
sea	sea
€	€
€	€
€	€

R2SONIC - SONIC 2020	NORBIT – SEABED PS-120006-5
	
echosounder	compact echosounder
up to 75m / 500m	0.2-200m
200kHz-400kHz	360-440 kHz, 80kHz bandwidth
2° x 2° at 400 kHz; 4°x4° at 200 kHz	0.9° across track, 1.9° along track @400khz
10° to 130° (user selectable)	<10mm
10° - 160°	typically 140o (7-179o for spec. Applications)
60 Hz	up to 40hz, range dependent
256	256 EA/ED
?	0.02-0.1m (rtk)
4,4 kg	9.5kg (air) <6kg (water)

NORBIT – SEABED PS-140001-3	TELEDYNE ODOM HYDROGRAPHIC – Hydrolite MB1
	
echosounder	echo sounder
0.2-200m	240m
up to 40hz, range dependent	User-selectable, 170–220
0.9° across track, 1.9° along track @400khz	
typically 140o (7-179o for spec. Applications	
up to 40hz, range dependent	60Hz
256 EA/ED	User-selectable, 10°-120°
0.02-0.1m (rtk)	
9.5kg (air) <6kg (water) transducer only	10.2kg/22.5lbs transducer only ; 11.3kg/24.9lbs with Digibar V attached
	Hydrolite MB1 HU
?	SSVS 100 Inertial and Orientation System
?	?
?	?
?	Portable SVP
	Real-time sound velocimeter
?	have
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
	Hypack / Hysweep Package
?	have
?	
?	have
€	97,920 €
€	€
€	€

NORBIT – PS-120005-12	NORBIT – PS-120006-9
	
swat	swat
0.2-275M (160M TYPICAL)	0.2-275m
400KHZ W/ 80KHZ bandwidth (200-700KHZ POSSIBLE)	360-440kHz, 80kHz BANDWIDTH
0.9° ACROSS TRACK, 1.9° ALONG TRACK @400KHZ	0.9° ACROSS TRACK, 1.9° ALONG TRACK @400kHz
7-179° (140° NOMINAL)	
UP TO 50HZ, RANGE DEPENDENT 256-512 EA & ED	UP TO 50Hz 256 EA/ED
<4.5KG(AIR), 3KG(WATER)	9.5kg (AIR) <6kg (WATER)
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
?	?
140,000.00 €	€
€	€
€	€

TELEDYNE ODOM HYDROGRAPHIC – MB2	L3 – Klein – hydrochart 3500
	
echo sounder	swath
200m	0.5m - 50 m
User Selectable, 200KHz - 460KHz	455 kHz - 900 kHz
User Selectable, 10° - 140° / 2cm	0.4° Along-ship beam width - 5cm Across-ship beam width
	10 to 12 times water depth
60 Hz	25 Hz
User Selectable, 10 - 256	0.05° - 0.30°
12.5kg with digibar V attached	22.7kg in air
?	Hemisphere Vector True Heading RTK VS330 GNSS/GPS
?	
?	Integrated KMS-02, Ethernet or Serial
?	
?	
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?	?
	HYPACK/HYSWEEP software / Klein SonarPro Hypack Triton Caris QINSy OIC Chesapeake SeeByte
have	have
	river
~166000 €	€
€	€
€	€

EdgeTech - 6205



swat / SSS / echosounder

230 kHz - 550 kHz

6 mm - 10 mm - 30 mm

(200°) which amounts to 12 times water depth or more

Up to 60 Hz

1° x 0.7° - 1° x 0.5°

19.9 kg / 22.7kg

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Windows based software included EdgeTech's Discover Bathymetric Acquisition and Sonar Control




have




river



€


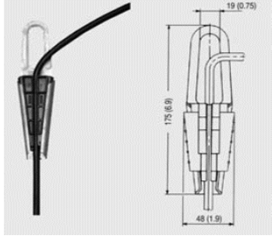


€

€







Technical Specification	SONTEK – RiverSurveyor M9	TELEDYNE – RiverRay ADCP	TELEDYNE RDI – StreamPro ADCP
Picture			
Sensor Type	Transducer	Transducer	transducer
Water Velocity Profiling			
Velocity range	+/- 20 m/s	±5m/s - ±20m/s max.	±5m/s ³
Profiling range	0.06m to 40m	0.4m ¹ to 60m ²	0.1m ¹ to 2m standard or 6m ² with upgrade
Accuracy	Up to +/- 0.25% of measured velocity; +/- 0.2cm/s	±0.25% of water velocity relative to ADCP, ±2mm/s	±1% of water velocity relative to ADCP, ±2mm/s
Resolution	0.001 m/s	1mm/s	1mm/s
Number of cells	Up to 128	25 typical, 200 max.	1–20 standard or 1–30 with upgrade
Cell size	0.02m to 4m	10cm min.	2cm to 10cm standard or 20cm with upgrade
Surface cell range	-	25cm ³	
Data output rate	-	1-2Hz	1Hz
Bottom Tracking			
Velocity range	-	±9m/s	-
Depth range	0.3m to 40m	0.4m 100m ²	0.1m–7m ²
Accuracy	-	±0.25% of bottom velocity relative to ADCP, ±2mm/s	±1.0% of bottom velocity relative to ADCP, ±2mm/s
Resolution	-	1mm/s	1mm/s
Depth measurements			
Range	0.20m to 80m	0.3m to 100m ²	0.1m–7m ²
Accuracy	1%	±1% (with uniform water temperature and salinity profile)	1% ⁴
Resolution	0.001m	1mm ⁴	1mm
Standard Sensors			
GPS	SBAS GPS	Integration with GPS (customer supplied) through RS-232 to RR data stream	
Software		<ul style="list-style-type: none"> • WinRiver II (standard) for moving-boat measurement • SxS Pro (optional) for stationary measurement; comes with an uncertainty model for in situ quality evaluation and control 	<ul style="list-style-type: none"> • StreamPro Software for Pocket PC • WinRiver II (included) for moving-boat measurement • SxS Pro (optional) for stationary measurement (i.e., under-ice); comes with an uncertainty model for in situ quality evaluation and control
Transducer Configuration	Nine (9) Transducers; Dual 4-Beam 3.0 MHz/1.0 MHz Janus at 25° Slant Angle;		
Additional Specifications			
Weight	- Weight in Air: 2.3 kg (5.0 lb) - Weight in Water: -0.6 kg (-1.3 lb)		Weight in air: 5.9 kg including electronics, transducer, float, and batteries
Price	€	21,700 €	36,300 €

	System		
Technical Specification	EDGETECH – 3200 High Penetration Sub-bottom Profiler	iXBlue – ECHOES 10000	KONGSBERG – GeoPulse Sub Bottom Profiler
Picture			
Frequency Range	4-24 kHz	5 – 15 kHz	2-14kHz
Vertical Resolution	4-8 cm	< 10cm	6 - 12 cm
Penetration		80m	
In coarse calcareous sand	2 meters	-	2 meters
In clay	40 meters	-	40 meters
Weight			
Weight in Air	45 kg	26 kg	73 kg
Weight in Water	18 kg	13 kg	-
Depth Rating	300 meters	-	30 meters
Sensors			
Type	SB-424, SB-216S, and SB-512i Tow Vehicles	7 Tonpilz transducers	
Rack Mount Processor	3200 Rack Mount processor	laptop PC / rugged rack	
Tow Cable	75-Meter Kevlar Reinforced Cable		30m
GPS		antenna	
CHRP System	yes	yes	yes
Price	€	€	€

	System	
Technical Specification	BOKU Sediment sampler – design plans by BfG (Koblenz)	HYDRO-BIOS – 437 332 Bottom Sampler acc. to Van Veen
Pictures		
Material	Stainless steel	Stainless steel
Grasping area	app. 1600 cm ²	1000 cm ²
Overall dimensions	app. 90x250x65 cm	approx. 35 x 42 x 90 (cm)
Weight	app. 200 kg	approx. 25 kg
Application	Measuring bottom sediment flux and collecting bedload material in rivers	river
Price	10.000 €	€

Technical Specification	System			
	AANDERAA DATA INSTRUMENTS AS – D401 SMARTGUARD	SIEMENS AG – SITRANS P MPS TRANSMITTER	CAMPBELL SCIENTIFIC LTD. – CS451 Pressure Transducer	OTT HYDROMET – OTT CBS - Compact Bubbler Sensor
Pictures				
Depth range	0 - 50 m	0 - 20 m	≤ 2.0 m - ≤ 102 m	0 - 15 / 30 m
Accuracy	±0.04% FSO	≤ 0.3%	±0.05% full-scale-range TEB2	±0.02 ft
Frequency	2Hz and 4Hz sampling frequency		simultaneous 50/60 Hz rejection and automatic calibration for each measurements	
Resolution	<0.0001% FSO		0.0035% FS	1 mm (0.01 ft)
Measuring time			< 1.5 s	1 min to 24 hr
Operating temperature	-40 to +60°C	-20 + 80 °C	0° to 60°C	-20 ... +60 °C
External Sensors				
Atmospheric sensors	AADI SR10 and VR22	?		?
Data Logger	AADI - SMARTGUARD	SIMATIC S7	CR6, CR200, CR850, CR800, CR1000, CR3000, CR5000	OTT IrDA
Radio Modem	have	SIMATIC Win CC		GSM
Compensating Unit	have	SIMATIC S7-1200		?
Tide Sensor	Vented Pressure 4425/4426/4427	?	A150-L Single Sensor Terminal Case, Vented with Desiccant	?
Software		SIMATIC Win CC (TIA portal)	Short Cut Program Generator (SCWin)	WBSLAO.exe
Price	€	850 € only transducer	956 € only transducer	9.10 €

(all equipment- including: OTT CBS water gauge; OTT measuring tube; OTT submersible probe for surface water (bubbles output); OTT DuoSens data logger with display and analog inputs; OTT PCU 12 power supply unit; OTT bracket for solar module; Solar modul ET-M (55 Wp); Battery Fiam 12V 42Ah; RITTAL cabinets 400x600x200, with fasteners for assembly; OTT IRDA adapter for PC; Transport; Infrastructure works

Technical Specification	Drones					
	DJI – PHANTOM 3	DJI – Inspire Pro 1	OneDrone SuperHero GEO X4/X8 RTF	SenseFly – eXom	Trimble ZX5	Trimble Navigation – UX5
Pictures						
Type	Rotary wing	multi-rotor systems	multi-rotor systems	multi-rotor systems	Rotary wing	Fixed wing
Dimensions	300 x 300 x 200 mm	438 x 451 x 301 mm	800 x 600 x 500 mm (case dimension)	V-shaped quadcopter	85 cm x 49 cm	100 x 65 x 10.5 cm
Camera	12 MP	16 MP	20 MP	38 MP	16 MP	24 MP mirrorless APSC
Operation					Stable in winds up to 36 km/h	60 km
Material	carbon fibre	carbon fibre	carbon fibre	carbon fibre	carbon fibre	EPP foam; carbon frame structure
Number of rotors	4	4	4 (optional 8)	4	6	1
Battery	1	1	1	1	2	1
Maximum take-off mass	1216 g	2900 g	5500 g	1800 g	5000 g	2500 g
Payload capability					2.3 kg	
Software	iOS 8.0 or later / Android 4.1.2 or later	iOS & Android	Windows		Microsoft® Windows® XP	
Flight Time	Approximately 25 minutes	18 min	28 min	Up to 22 min	Up to 25 min	50 min
Operating Temperature	0°C to 40°C	-10°C to 40°C		-10 to 40° C		
System components						
Plane	Multicopter	DJI Inspire 1 PRO Quadcopter	Sky Hero Spyder X4-850 GEO Edition	eXom drone	Multicopter UAS	Trimble Fixed wing
Camera	720P HD	Zenmuse X5 Camera 720p HD	Sony RX100 camera	Interactive ScreenFly controller	Olympus	
Controller		Transmitter for Inspire 1 Quadcopter	3DR Pixhawk flight Controller		PC or tablet	
Battery	PH3-4480 mAh-15.2 V	TB47B Intelligent Flight Battery for Inspire 1 (99.9Wh)	Gens Ace 16.000 mAh		2 x 6600 mAh 14.8 V	14.8 V, 6000 mAh
Navigation System	Built-in GPS	GPS-based	uBlox GPS module		GPS	CAD & Drafting Tools
Motor			Live FVP (videostream), safety parachute	4		
Mobile App	DJI GO	DJI GO				
Price	2,126 €	6,400 €	10,000 €	€	€	€

Price are net prices by transporter (NOT a fact Price are net prices by transporter (NOT a factory price) Price are net prices by transporter (NOT a factory price)