

SEABAT SYSTEMS

SeaBat



**EXPEDITION
READY**

www.reson.com

RESON


10 years of SeaBat

Rough seas, rough handling, superb results



Low-risk sonar solution

SeaBat™ is more than an advanced multi-beam sonar solution; every unit is a finely calibrated precision instrument. And SeaBat sonar solutions are resilient. Not only do we engineer each SeaBat to withstand brutal handling and rough seas, we use only technology that has proven its worth. Thanks to our use of commercial off-the-shelf (COTS) components, you won't have to spend a fortune to expand or upgrade your RESON equipment. Today, nearly all of the 1,100 SeaBat units sold are still delivering accurate, reliable data in oceans and rivers all over the world.



Premium data-handling and signal processing

Working closely with professional hydrographers, dredgers and marine researchers, RESON has developed PDS2000, a one-stop software solution that interfaces with a wide range of survey sensors, not just SeaBat. PDS2000 software crunches raw data so fast you can view it as a moving image or data set in real time. Without switching applications, you can handle data acquisition, editing, chart production and volume calculation while you're still at sea. With close to real-time feedback, your team will make the right decisions every time, which simplifies your analysis and saves you valuable desk time.

Expedition-ready solution

At RESON, we talk about expedition-ready solutions. That means everything you need to get your expedition off the ground, keep it on track and return superb results time after time. Once you own a SeaBat, you don't just own a piece of quality gear. You own the full expedition-ready package, including highly qualified technical service, fast-response field support, a comprehensive inventory of spare parts, and quick-start training programmes for installation, operation, maintenance and service. Talk to us about your next survey, and we'll help you find an expedition-ready solution that's high on performance and low on cost of ownership. Our worldwide, 24/7 support team is only a phone call away.



I need to know exactly what's down there



Precision data for fast, efficient surveys

The **SeaBat 7101** is a must for any rental company; it never sits on the shelf for long. It'll handle almost any kind of survey – for offshore wind, the oil and gas industry, or harbour authorities – providing quality data to a typical survey depth of 475m. We get survey teams coming in expecting to rent two different systems, and they walk out with just a 7101. It's not a heavy piece of kit, so it's quick and easy to transfer between vessels, or fit on an ROV. And it'll take a few knocks, no problem. It's just right for small survey teams that need reliable gear for big jobs.

Where the 7101 shines

The SeaBat 7101 is a true all-rounder, able to deliver precision data in most surveys. With the same robust sonar head as the 8101, the 7101 system comes with a new processor that takes signal processing and data handling to new heights of speed and efficiency. You can switch between a 150° or 210° swath, and take advantage of real-time roll stabilisation and reliable seafloor detection in all acoustic environments. If you already own a SeaBat 8101, we have mapped out an easy upgrade path to the 7101: same head and cable, new processor – bringing a host of new features and a massive increase in efficiency.

“We chose the SeaBat because it’s the market leader and an excellent system that’s well ahead of the competition.”

DR Peter J. Ramsay

Director

Marine GeoSolutions (Pty) Ltd.



SEABAT 7101
SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
240kHz	1.5°	1.8°	40Hz	12.5mm	0.5m to 475m



one RESON to get the job done



From ocean floor to shallow water

We use our 7111 for inspecting oil and gas pipelines. These days, almost every inspection takes us off the continental shelf into seriously deep water. Our 7111 is quick to deploy and we can complete an entire pipe-run from ocean floor to continental shelf with just one piece of kit. It's great at picking up critical detail in dark water: the tiniest sign that a pipe or cable could fail. One of our challenges is to balance accurate data gathering with survey speed. Our 7111 certainly makes that easier.

Where the 7111 shines

RESON's **SeaBat 7111** is the only multi-beam sonar system with a typical depth of 1 to 900 metres. If your surveys are on or around a continental shelf, you'd expect to need a solution that uses two sonar devices to get your job done. Now, with the SeaBat 7111, you only need one. Despite its high performance across a wide range of applications, the SeaBat 7111 is easy to move from vessel to vessel, saving you the cost of a permanent installation.








SEABAT 7111

SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
100kHz	1.5°, 3°, 4.5°, 6°	1.9°	20Hz	30mm	1m–900m

eliminate the guesswork

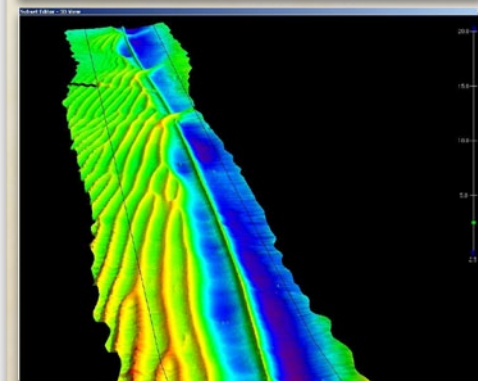
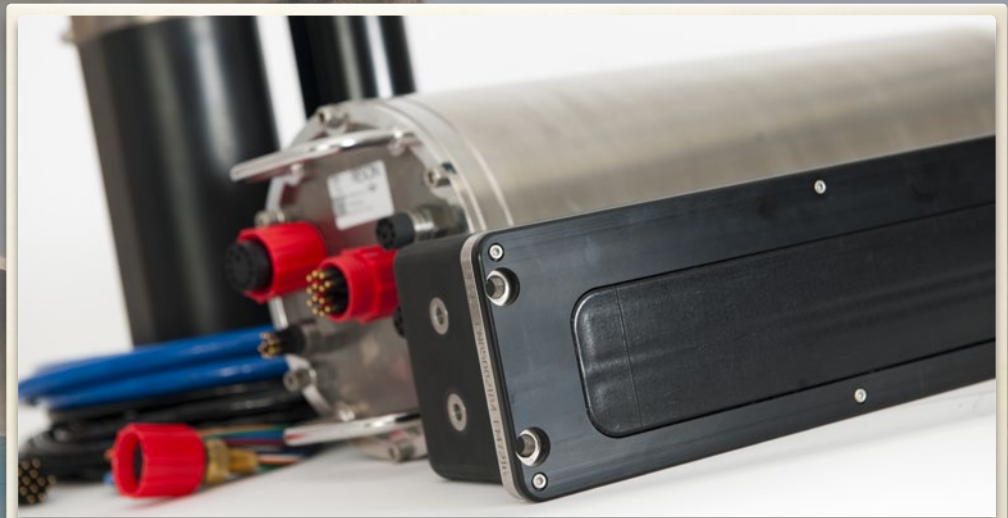


Precision instrument

This is one accurate SeaBat. And accuracy is what a dredging team gets paid for. Let's say you dredge a 10,000-square-metre industrial harbour down to 10 metres. Then the auditors say you're five centimetres out. Sounds small, but it could add up to tonnes of material. No good arguing with the auditor, you have to get out there and finish the job. My team's never had to do that. Not with the **SeaBat 7125** on board. She can detect a baseball in five metres of murky water and, in this line of work, that's accuracy you can trust.

Where the 7125 shines

With her high resolution and ease of set-up, the 7125 is popular with harbour masters, dredgers and any professional who doesn't have time to wait around for the right weather to complete an accurate survey. And for surveys where accuracy and resolution are paramount, the 7125's roll stabilisation and special modes for harbour wall surveys and pipeline inspection make sure you get high data quality under any conditions. Little wonder then, that this is the tool of choice for pipeline inspections in the North Sea, and way up north in the Norwegian oilfields. Configured for ROV, AUV or surface operations, each 7125 brings a unique feature set to the best multibeam sonar system in the world.



SEABAT 7125

SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
200kHz or 400kHz	2.2° @ 200kHz 1° @ 400kHz	1.1° @ 200kHz 0.54° @ 400kHz	50Hz	6mm	0.5m to 400m 0.5m to 150m

hi-res detective work



Recovering bodies in black waters

Just think how many of the world's major cities are on the coast. Our city has almost 300 kilometres of coastline and 900 square kilometres of inland waterways – and they are far from pristine aquatic environments. The scuba team I work for often has to work in black water to recover contraband, evidence for criminal investigations and even bodies. So, how do we find something as small as a handgun under these conditions? Simple: we use a **SeaBat 7128** forward-looking sonar system. Displaying the data set as a movie, the 7128 has a short and gentle learning curve. Our scuba team mastered it in just two days. And now, we can spot a small revolver in murky water.

Where the 7128 shines

The 7128 is a hi-res, forward-looking multibeam sonar system for detecting objects in the water column. For ROV or AUV installation, the 7128 can be depth-rated to 6,000 metres. And, because the system is unaffected by siltation in the water column, ROVs can manoeuvre with precision and fulfil their missions in zero visibility.

www.reson.com/products/seabat



“The SeaBat 7128 has proved its effectiveness in seabed small object detection. The portable system has excellent resolution that enables operational personnel to conduct their operations with confidence and effectiveness.”

Undisclosed military customer




SEABAT 7128

SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL RANGE
200kHz or 400kHz	27° @ 200kHz 31° @ 400kHz	1.1° @ 200kHz 0.54° @ 400kHz	50Hz	(range res) 25mm	500m 200m



when you're in deep



No compromise; no risk

When it comes to conducting pipeline route surveys for the oil and gas industry, there's no room for risk. We need a reliable, deep-water system we can trust. That's why we have a **SeaBat 7150**. Capable of returning mission critical data at a very high resolution, the SeaBat 7150 comes into its own in water deeper than 100 metres. As our survey company and the jobs we tackled got bigger, we added more 7150 modules to our lead vessel. Now we have even more performance and our route surveys take less time than ever.

Where the 7150 shines

Combining high resolution with deep-water capabilities, the SeaBat 7150 is ideal for conducting detailed route surveys for the offshore industry. The 7150's unique modular design makes your operations easy to scale up efficiently, so you can add extra performance to your system as your jobs get more demanding. With a proven 10-year track record and supported by global service agreements, the SeaBat 7150 is the low-risk choice for demanding expeditions.

“High resolutions... allowed us to obtain data previously not possible to obtain, which has improved our understanding of sediment transport in large sand bed rivers such as the Parana in Argentina and the Mississippi.”

Dr. Daniel Parsons
 School of Earth and Environment,
 University of Leeds



SEABAT 7150
 SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
12kHz or 24kHz	Variable depending on frequency & configuration	Variable depending on frequency & configuration	15Hz	Variable depending on depth	50m–6,000m 50m–3,000m



there's a RESON for this



Irresistible processing power

When the job really matters, we can count on our 8125-H to deliver. And clearing shipping lanes of mines is about as serious as it gets. Lives are at stake, so taking chances is simply not acceptable. Now we've upgraded to the 8125-H system, we have Q-route features including roll stabilisation, high density beam spacing and extremely high resolution. Now when we detect mines, we can even determine their type. There's no other solution like it for high-risk, high stakes work where we need to be 100% certain.

Where the 8125-H shines

The new 8125-H combines the 8125 head – for many years the benchmark for shallow water systems – with the new 7000 series processor. The first wide-sector, focused multi-beam sonar system on the market, the **SeaBat 8125** still delivers best-in-class performance to a depth resolution of 6mm. Now, the new SeaBat 8125-H delivers variable swath, real-time roll stabilisation and reliable seafloor detection in all underwater acoustic environments. If you already own a SeaBat 8125, you're on a fast upgrade path to higher resolution with the 8125-H: same head, new processor, higher resolution.

“We own models 8101-ER and 8125. They have performed excellently to our client’s requirement and specifications.”

Mohan Rajamohan
 Managing Director
 Geometra International Pte Ltd.

SEABAT 8125-H
 SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
455kHz	1°	0.5°	50Hz	6mm	0.5 to 100m



push your boundaries



Efficient surveys made EEZ-ee

Our EEZ mapping surveys build up a mosaic of sonar images as far as 200 nautical miles from the coast. That means we need a hi-res, reliable solution that's able to go down deep. The SeaBat 7150 is over-spec'd for our needs, and the 7111 doesn't quite go deep enough. With the **SeaBat 8160**, we can get accurate, detailed images of the sea floor down to 3,000 metres. Perfect. And with a solid service and support agreement from RESON, we're able to get the job done with minimum downtime.

Where the 8160 shines

Depth-rated to 1,500 metres, the 8160's dynamic, focused beam ensures hi-res images for accurate hydrographic surveys. Even at depths approaching 1,500 metres, the system's centre-of-energy and phase-zero crossing algorithms deliver sea-floor detection you can trust.

“Popularity, reliability and recognition by the industry – these are the reasons we chose SeaBat.”

Mohan Rajamohan
 Managing Director
 Geometra International Pte Ltd.

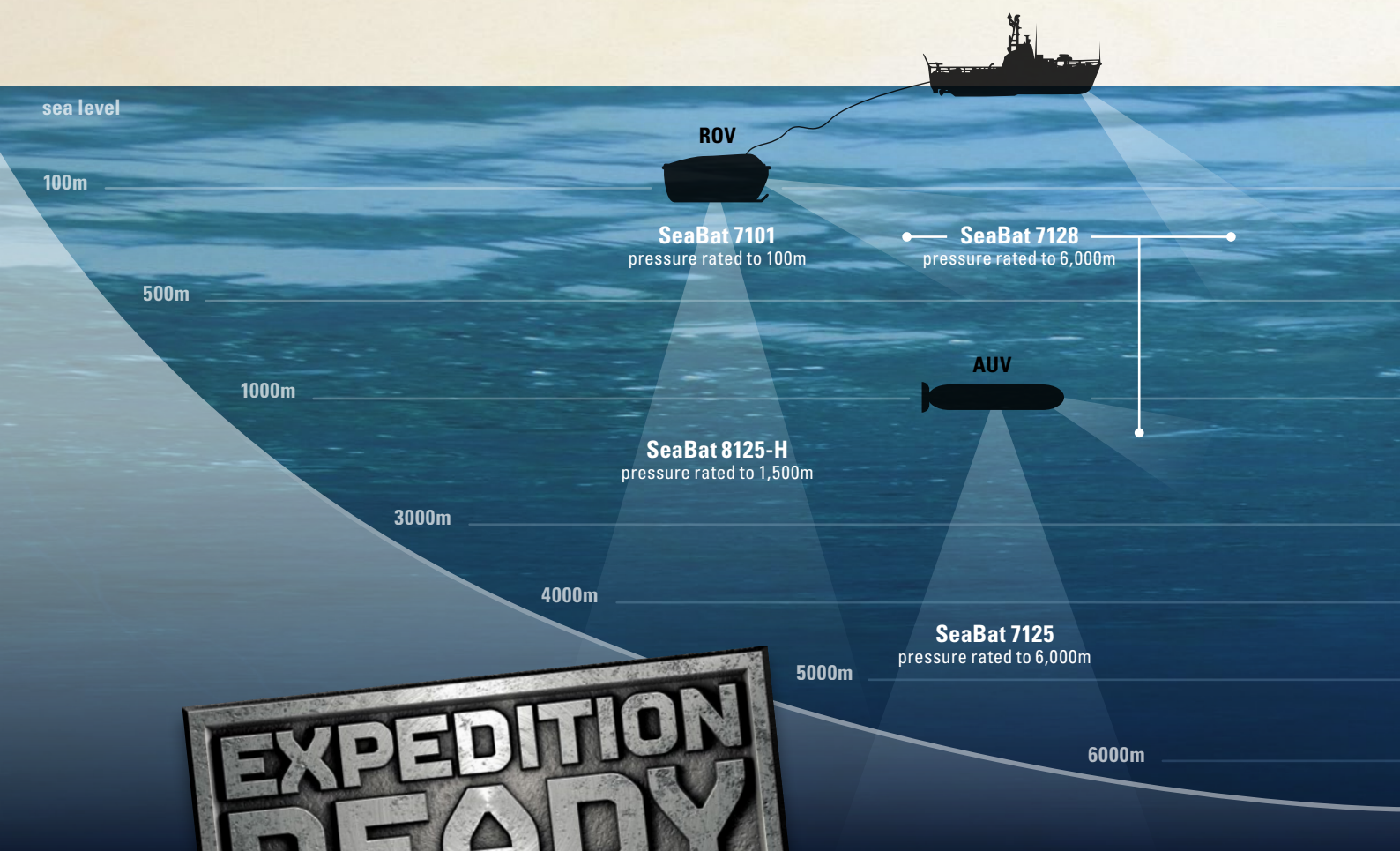


SEABAT 8160
 SYSTEM SPECIFICATIONS

FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
50kHz	1.5°, 3°, 4.5°, 6°	1.5°	15Hz	140mm–860mm	3m to 2,750m



what's your RESON?

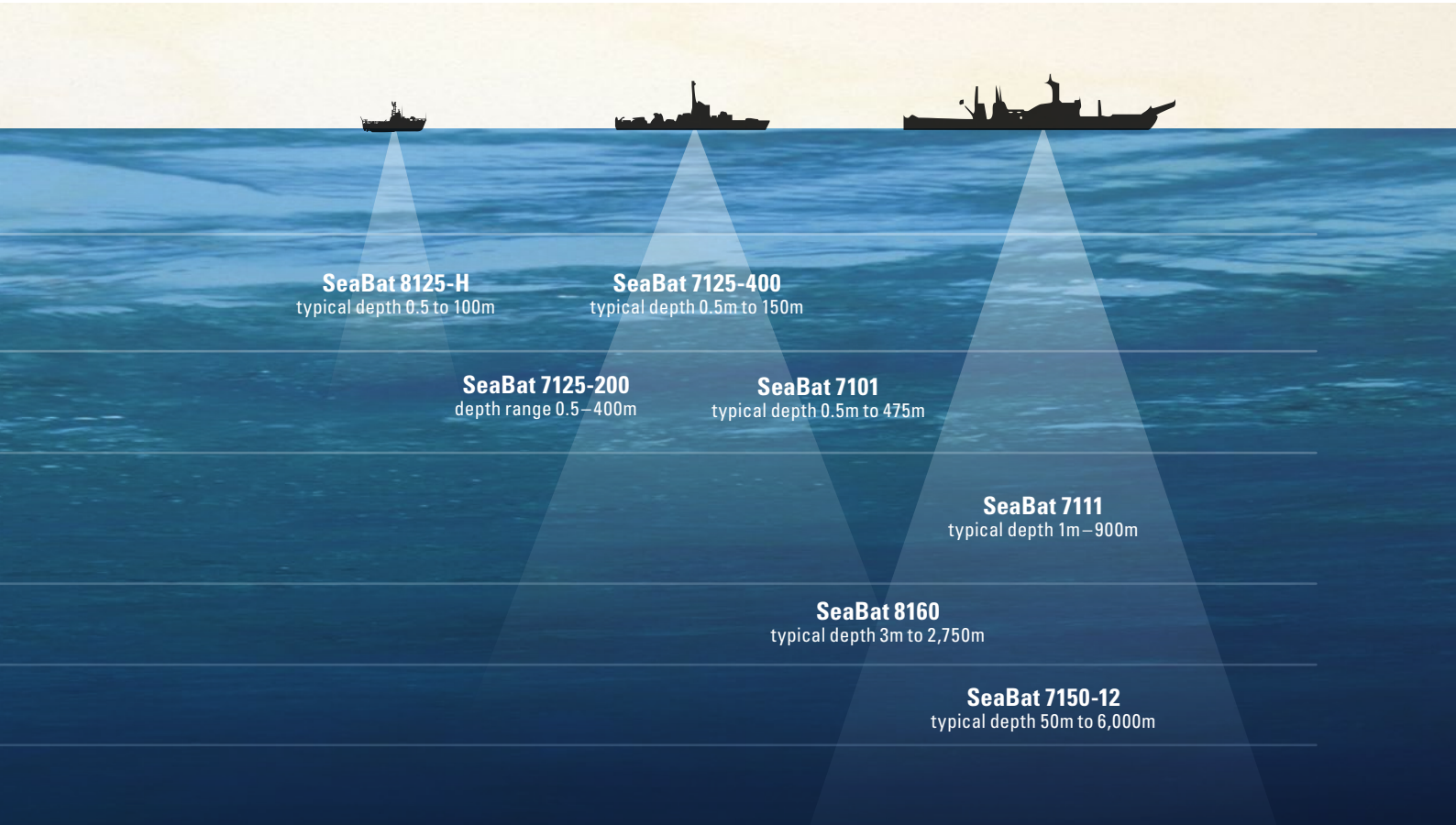


**EXPEDITION
READY**

Take a look at the market's most comprehensive range of sonar solutions and find the **SeaBat** that best supports your business.

Keep your SeaBat going strong

Today, more than one thousand SeaBat multi-beam echosounders are working hard for their owners all over the world. In part, this is down to the resilience of our gear. But it's also due to our unique services and support that cover every aspect of buying and successfully operating your RESON gear. Our customers rely on RESON to deliver full expedition-ready solutions, including highly qualified technical service, fast-response field support, a comprehensive inventory of spare parts, and quick-start training programmes for installation, operation, maintenance and service. Because, once you're at sea, there's no turning back.



SeaBat 8125-H
typical depth 0.5 to 100m

SeaBat 7125-400
typical depth 0.5m to 150m

SeaBat 7125-200
depth range 0.5–400m

SeaBat 7101
typical depth 0.5m to 475m

SeaBat 7111
typical depth 1m–900m

SeaBat 8160
typical depth 3m to 2,750m

SeaBat 7150-12
typical depth 50m to 6,000m

SeaBat SYSTEM SPECIFICATIONS



SEABAT SYSTEM	FREQUENCY	TRANSMIT BEAM WIDTH	RECEIVE BEAM WIDTH	MAX PING RATE	DEPTH RESOLUTION	TYPICAL SURVEY DEPTH
7101	240kHz	1.5°	1.8°	40Hz	12.5mm	0.5m to 475m
7111	100kHz	1.5°, 3°, 4.5°, 6°	1.9°	20Hz	30mm	1m–900m
7125	200kHz or 400kHz	2.2° @ 200kHz 1° @ 400kHz	1.1° @ 200kHz 0.54° @ 400kHz	50Hz	6mm	0.5m to 400m 0.5m to 150m
7128	200kHz or 400kHz	27° @ 200kHz 31° @ 400kHz	1.1° @ 200kHz 0.54° @ 400kHz	50Hz	(range res) 250mm	not applicable
7150	12kHz or 24kHz	Variable depending on frequency & configuration	Variable depending on frequency & configuration	15Hz	Variable depending on depth	50m–6,000m 50m–3,000m
8125-H	455kHz	1°	0.5°	50Hz	6mm	0.5 to 100m
8160	50kHz	1.5°, 3°, 4.5°, 6°	1.5°	15Hz	140mm–860mm	3m to 2,750m

about RESON



Since our beginnings in 1976, we have thrived on a passion for innovation and exploration. Today, with the world's most comprehensive range of high-resolution multibeam sonar systems, we are the first choice for leaders of expeditions and hydrographic surveys around the world.

Headquartered in Denmark, we have a global presence with six offices worldwide. Talk to us about your sonar needs, and we'll help you find a reliable, flexible system that's high on performance and low on cost of ownership.



For more details visit www.reson.com or contact your local RESON office.

RESON A/S
Denmark
Tel: +45 4738 0022
reson@reson.dk

RESON Inc.
USA
Tel: +1 805 964-6260
sales@reson.com

RESON OFFSHORE Ltd
Scotland, U.K.
Tel: +44 1224 709 900
sales@reson.co.uk

RESON GmbH
Germany
Tel: +49 431 720 7180
reson@reson-gmbh.de

RESON B.V.
The Netherlands
Tel: +31 (0)10 245 1500
info@reson.nl

RESON Pte. Ltd
Singapore
Tel: +65 6725 9851
singapore@reson.com