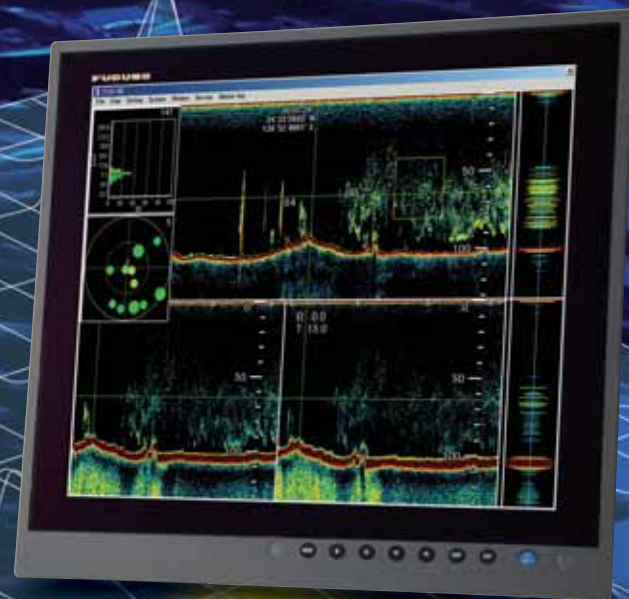


FURUNO

Multi directional detection, Split-Beam
COLOR VIDEO SOUNDER

FCV-30



19" color SXGA LCD
MU-190HD (option)



Trackball control unit

www.furuno.com

Optimize your fishing Multi-direction detection

- ▶ Frequency: 38 kHz; Output power : 4 kW
- ▶ Multi-beam system presents images received from up to five beams simultaneously
- ▶ Electronic beam stabilizer eliminates the loss of important targets due to ship's motion in rough seas (within up to 20 degrees)
- ▶ 7-degree sharp beamwidth gives a detailed echo image that is produced by high frequency beams
- ▶ Automatic range shift for continuous bottom acquisition and tracking

The FCV-30 is a high-performance echo sounder designed for variety of fishing applications. This echo sounder employs two new innovate techniques. One is "Multi-Beam" that facilitates multi directional and long-range fish detection. The other is "Split-Beam" which is commonly used in fish resource surveys. FURUNO's leading-edge signal processing technology makes the FCV-30 unparalleled in this class of sounder.

The FCV-30 provides a wide variety of presentation modes in high resolution SXGA or commonly used XGA resolution: Multi-Beam, Split-Beam, Zoom, and A-scope. Multi-Beam mode allows transmission in up to five directions simultaneously to show the location and distribution of a fish school around the vessel. The direction and tilt of each beam can be determined by the setting. This also helps understand the bottom composition, undulation and slope, allowing the operator to make an accurate judgment of best speed and course to trawl.

In the Split-beam mode, the FCV-30 has the unique functions called "Fish size assessment" and "Fish distribution". The former indicates the length of the target fish in the fish school by histogram. The later displays where the target fish is in the detected area and plots the detected fish's position.

The FCV-30 is of BlackBox configuration, consisting of a control, processor, transceiver units and a transducer.

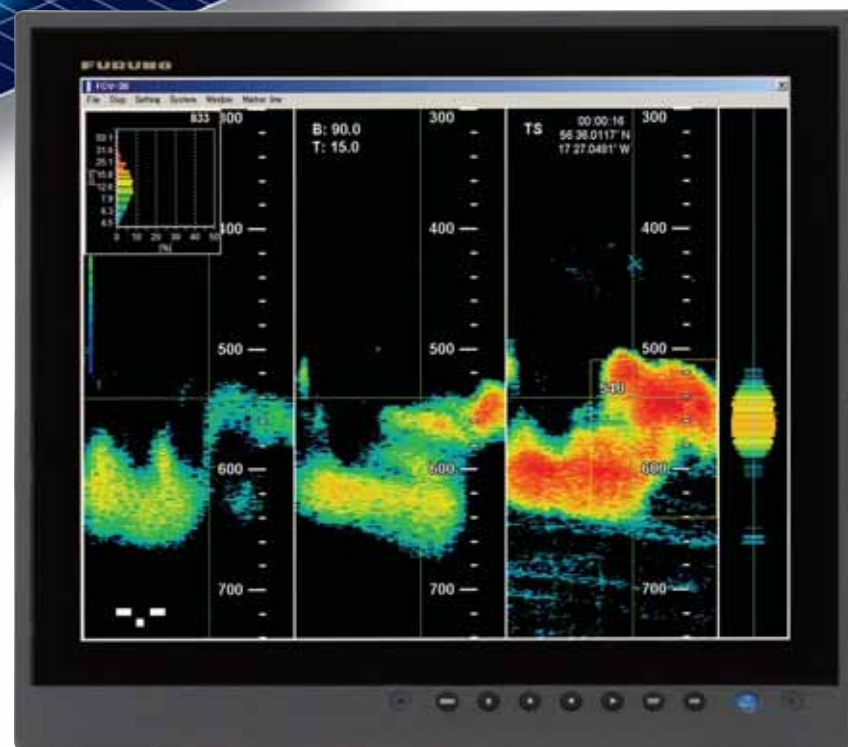
The control unit consists only of a trackball, thumbwheel and several soft keys. Designed for use in commercial fishing FURUNO LCD MU-190HD (19", SXGA), MU-150HD (15", XGA) or a PC monitor can be utilized as a display unit. Furthermore, any two monitors can work in a dual display setup.

The transducer employs highly sensitive transducer elements to achieve efficient energy conversion, which ensures long range detection with minimal output. This 38 kHz transducer features a narrow beamwidth (7°), which enables the detection of the shapes of fish, fish schools and fish distribution in minute detail.

With a built-in motion sensor, the beam stabilizer can be facilitated to eliminate the loss of important targets due to the ship's motion in rough seas. All beams are maintained at required tilt by compensating for ship's pitch and roll. FURUNO GPS satellite compass SC-50/110 detect ship's heave as well as pitch and roll. The satellite compass improves the echo presentation by compensating for echo ruffling caused by ship's heave. This gives an unwavering presentation of the echo images even in rough seas, and enhances the accuracy of the measurement for the fish size assessment display.

operation with and Split-beam technology

- ▶ Heaving compensation* provides unwavering echo images
 - * The GPS satellite compass SC-50 or SC-110 works as a heaving sensor
- ▶ Fish size assessment display indicates the length of selected fish in the targeted fish school
- ▶ BlackBox system works with conventional SXGA/XGA PC monitors
- ▶ Straightforward operation by use of a trackball control unit



19" Color SXGA LCD MU-190HD (option)



Transducer



Control Unit

SPECIFICATIONS OF FCV-30

DISPLAY
 Display Unit FURUNO 19" LCD MU-190HD,
 (Locally arranged) 15" LCD MU-150HD or commercial monitor
 Resolution 1024x768 (XGA), 1280x1024 (SXGA)
 Display Range
 Range: 10-5000 m
 Shift: 0-5000 m
 Zoom Range: 2-200 m
 Display Mode Split-beam, 3-beam, Split-beam + 2-beam, User1, User2, User3

Display Window
 Status, Temperature graph, Bottom discrimination graph, Fish size histogram, Target position graph, Bottom lock zoom, Bottom zoom, Marker zoom

Advance Speed Freeze, 1/8, 1/4, 1/2, 1/1, 2/1, 3/1, 4/1, 8/1
 Alarm Bottom, Fish, Bottom fish, Temperature
 A-scope Display Selectable among 1/6, 1/8 or 1/10 of screen width. Each transmission displayed on A-scope

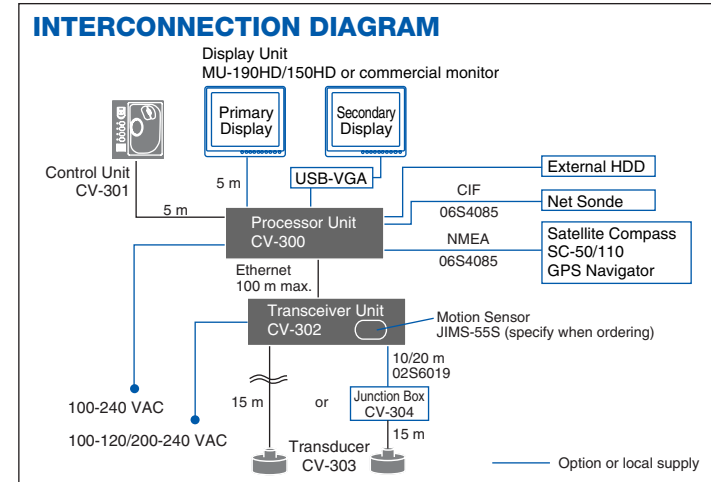
Record Raw data
 Others Auto range, Auto shift

TRANSCEIVER
 Output Power 4 kW
 TX Rate Max. 600 pulse/min
 Frequency 38 kHz
 Beam Control Range
 Direction: 0-360°
 Tilt: within 20°
 Stabilization
 Pitch/Roll: ±20° max.
 Heave*: ±100 m max.
 *Requires SC-50/110

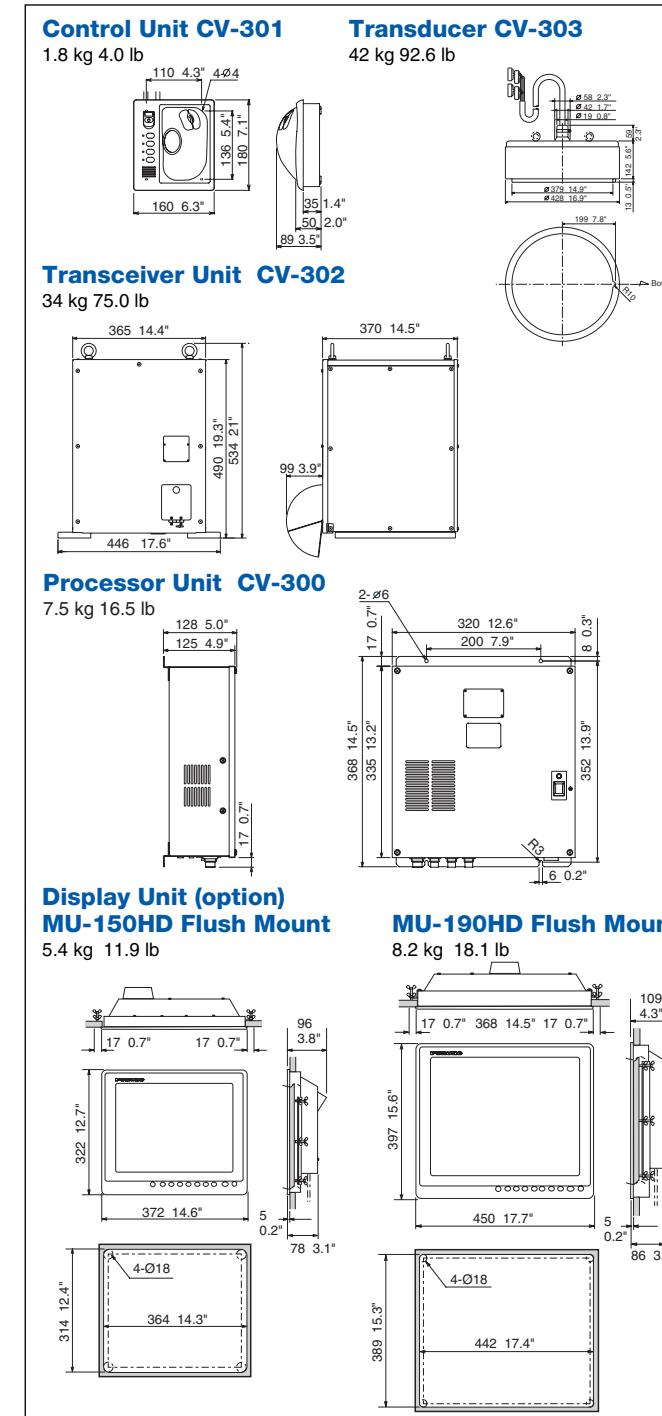
INTERFACE
 I/O Port NMEA, CIF, USB (2.0), LAN (10/100base-T)
 Input
 NMEA (IEC61162-1, NMEA0183 Ver. 1.5/2.0/3.0):
 att, BWC, GGA, GLC, GLL, GNS, GTD, HVE, MTW, RMA, RMB, RMC, VHW, VTG,ZDA
 CIF: Water temperature, Net depth
 Output (IEC61162-1, NMEA0183 Ver. 1.5/2.0/3.0)
 SDDBS, SDDBT, SDDPT, SDTLL, YCMTW, SDvrn, SDbtm

POWER SUPPLY
 Processor Unit 100-240 VAC, 3A-2A
 Transceiver Unit 100-120/200-240 VAC, 5A-3A

ENVIRONMENT
 Temperature
 Processor Unit: 0°C to +40°C (32°F to +104°F)
 Transducer: -5°C to +35°C (23°F to +95°F)
 Transceiver Unit
 • with Motion Sensor: -55°C to +45°C (5°F to +113°F)
 • without Motion Sensor: -15°C to +55°C (5°F to +131°F)
 Control Unit: -15°C to +55°C (5°F to +131°F)
 Waterproofing
 Control Unit: IP22 (front panel)



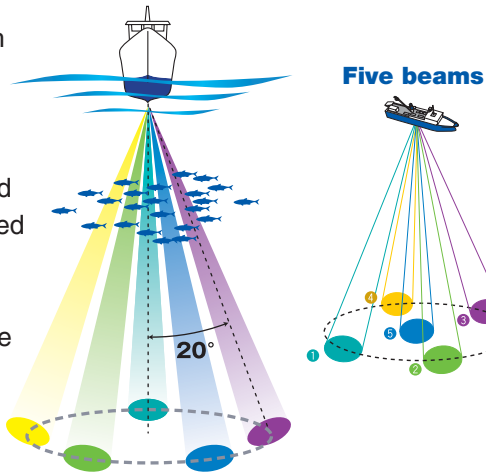
- EQUIPMENT LIST**
- Standard**
- | | |
|--|--------|
| 1. Control Unit CV-301 | 1 unit |
| 2. Processor Unit CV-300 | 1 unit |
| 3. Transceiver Unit CV-302 (Specify when ordering) | 1 unit |
| - Built-in Motion Sensor JIMS-55S | |
| - Without Motion Sensor | |
| 4. Transducer CV-303 with 15 m cable | 1 unit |
| 5. Thru-hull Pipe TFB-1600 | 1 pc. |
| 6. Installation Materials and Standard Spare Parts | 1 set |
- Option**
- Junction Box CV-304
 - Transducer Tank T-625



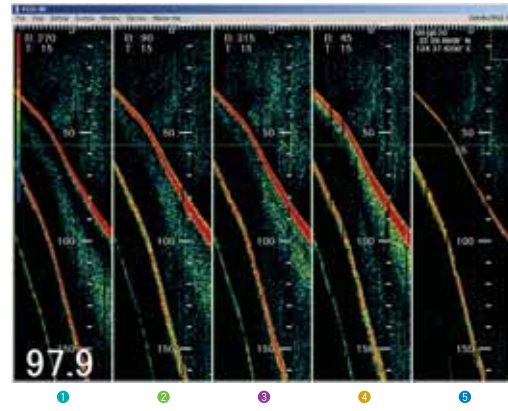
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 SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Multi-Beam

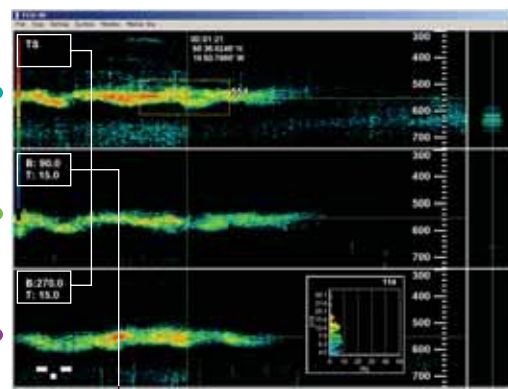
The FCV-30 detects fish schools in any five directions at the same time so that the location relative to the vessel and distribution of the targeted fish school can be recognized. The operator can set five beams at any direction within 20 degrees by menu settings.



Five-beam presentation



Three-beam presentation



Beam's direction and tilt

Beam setting window

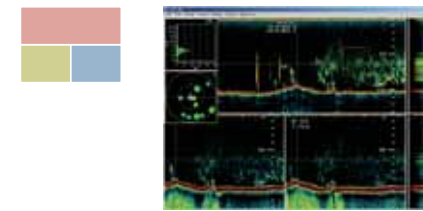


Direction and tilt of each echo beam can easily be set in this window.

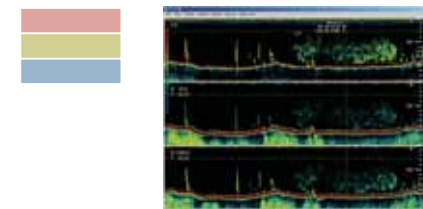
Flexible display setting

The FCV-30 features multi-beam presentation that displays echo images of up to five beams on one display. Arrangement of the display can be done from a menu window with just a few clicks of a button.

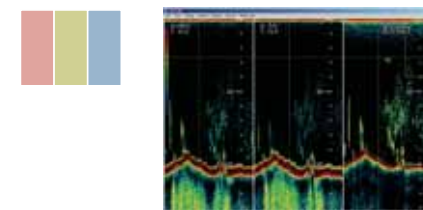
Multi split



Horizontal split



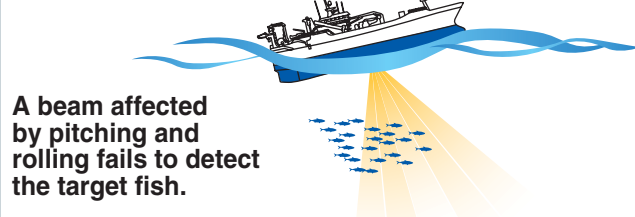
Vertical split



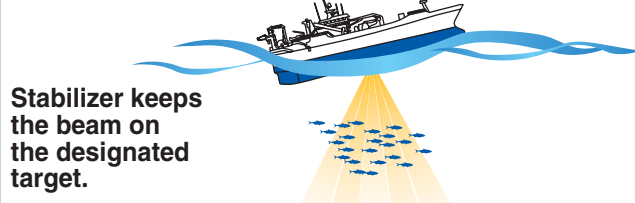
Why stabilizer is required!

Pitching and rolling produces adverse effect not only on the sounding image, but also on measurement of fish size. With FURUNO's exclusive Stabilizer Technology, the FCV-30 can stabilize both Tx and Rx beams independently so that unmatched accuracy is assured.

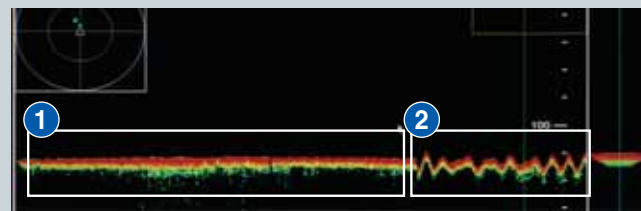
Stabilizer OFF



Stabilizer ON



Furuno's exclusive Heaving Compensation with SC-50/110



1 Heaving compensation ON

Even in rough sea conditions, the FCV-30 compensates for heaving, presenting a display without undulations.

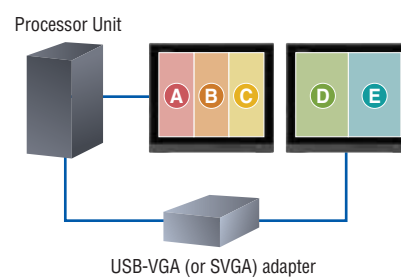
2 Heaving compensation OFF

The bottom and fish echoes are wavering due to heaving of the vessel even though the bottom is flat.

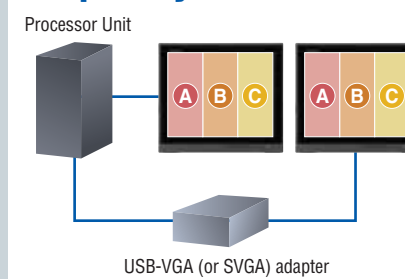
Increase the viewable sizes utilizing dual monitors

Dual monitors can be used by connecting a monitor to the USB port on the processor unit with an optional USB-VGA (or SVGA) adapter. Extending the screen sizes across dual monitors allows for viewing more information together at the same time.

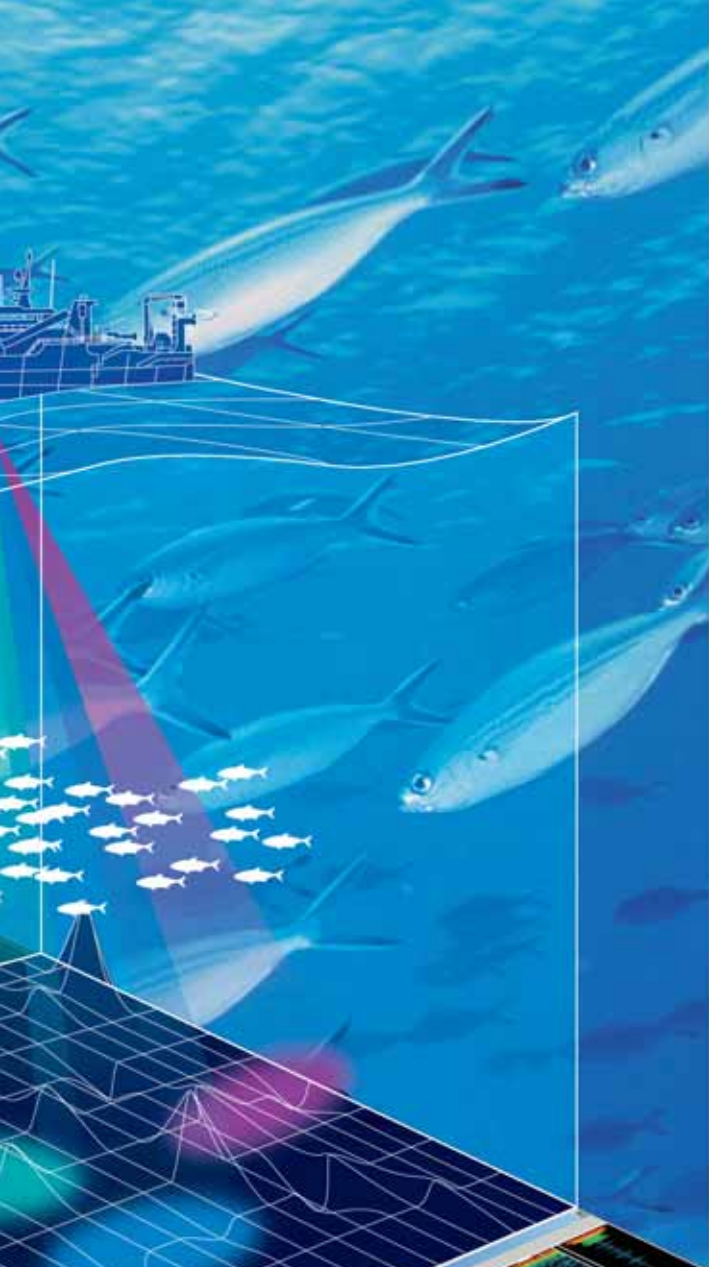
The whole screen spreads out between two monitors



Configured to clone the primary screen



**An Innovative Pr
with Split-bea**



Display window

There are nine display windows, which can be located anywhere on the screen. The background of these windows can be transparent or opaque allowing background images to be viewed.

- ▶ Status
- ▶ Temperature graph
- ▶ Bottom hardness chart (Bottom discrimination graph)
- ▶ Fish size assessment (Fish histogram)
- ▶ Fish distribution (Target position graph)
- ▶ Bottom lock
- ▶ Bottom zoom
- ▶ Marker zoom

Alarm	Picture Advance	Timer	Course	Heave		
OFF	1/1	00:10	275.0°	-32.77m		
Gain	Shift	Temperature	Speed	Roll	Pitch	
5.0	0 m	15.3 °C	17.8 kt	1.6°	2.1°	
Temperature (below surface)		Latitude	Range/Bearing			
40.6 m		34 21.5912' N	32.7m / 265.1°			
		Latitude	Time Difference			
		136 08.4732' E	13234.5 / 32234.7			

Status display

Split-Beam

The bottom characteristic

FCV-30 can plot bottom hardness with a line graph by analyzing the strength of returning echoes. This is useful for searching for a good fishing spot by finding bottom hardness. This chart indicates hardness on a scale of one to ten.

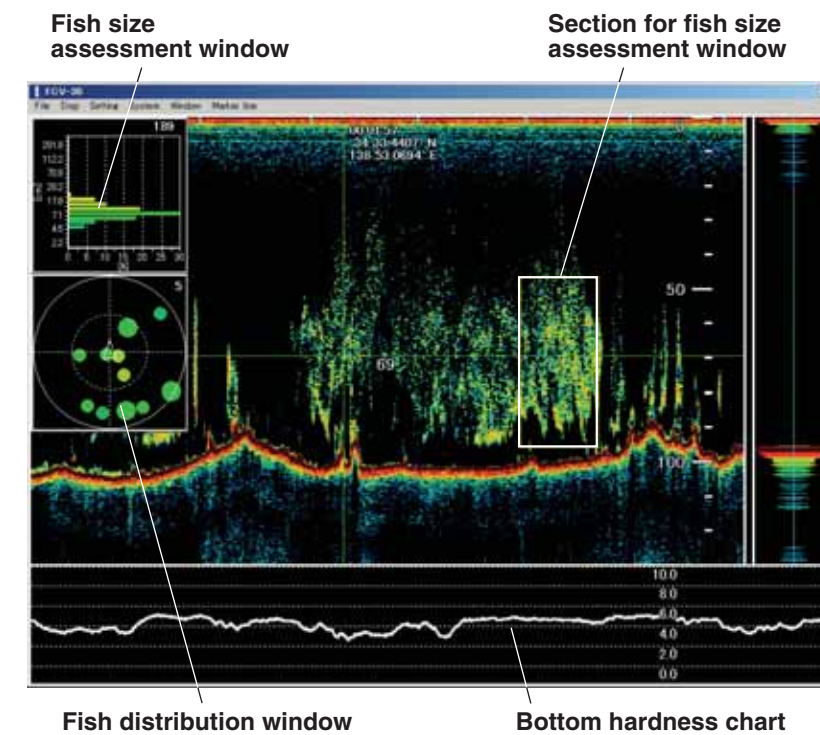


Split-Beam

Split-beam is an epoch-making technology for analyzing the size and distribution of a targeted fish school. Split-beam allows you to analyze a fish school before targeting it for to be catch.

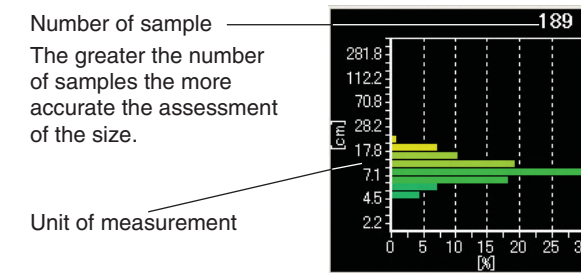
- How long is the target fish in the targeted fish school
- How the fish school moves

By analyzing the size, volume and movement of a targeted fish school, operators can easily decide what to catch and what not to catch. It is indispensable for deciding when to go for a catch and eliminates fish schools which are smaller than desired. Also, it greatly contributes to fishery resource management or fish resources survey.



Fish size assessment

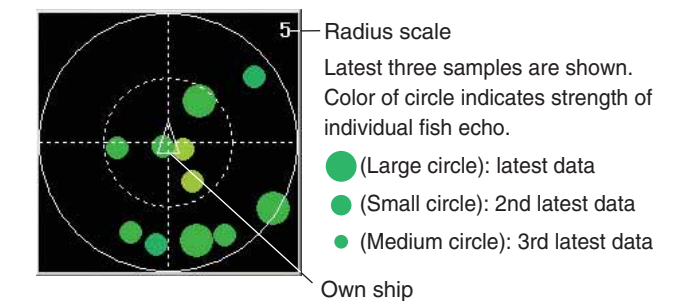
The fish size assessment feature shows fish size within a user-selected measuring area. The bar graph shows size and proportion of fish in the measuring area selected. The vertical axis shows fish length and the horizontal axis shows distribution.



Fish size assessment window

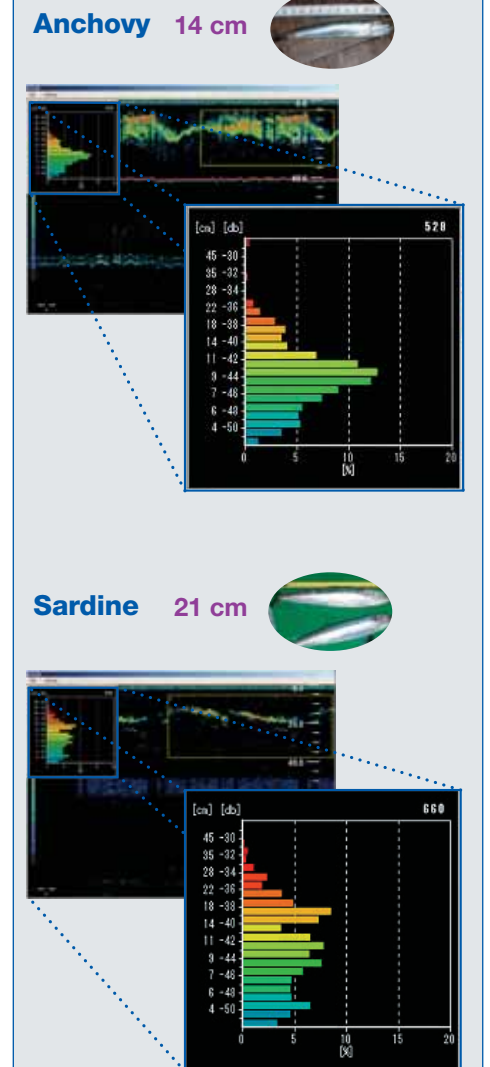
Fish distribution

The fish distribution display shows the targeted fish's position and movement. They are shown on the circle, whose scale is adjustable between ± 2 to 5 degrees under the vessel.



Fish distribution window

Sample Images



**recision Sounder
m Technology**