

Just the Numbers, Please: Digital Depth Sounders

The Raymarine ST40 and ST60 shine in our test of nine sounders. Smaller—and less expensive—units from Norcross and Uniden deserve consideration, too.

If you don't fish, why spend money on a fishfinder? If all you need is a number—the depth of the water—you might want to consider a digital depth sounder instead. They're cheaper, smaller, easier to install, and a cinch to operate.

Diehard fishermen could find a digital sounder useful as well. For example, you've got your expensive fishfinder at the helm but no depth information up at the tower station. Solution: Install a digital depth sounder in the tower and link it to your fishfinder. Or if you want a backup to your fishfinder, install a digital depth sounder with its own transducer.

What We Tested

Now that we've given you the reasons why you need one of these things, we'll tell you which ones we've evaluated. We tested nine digital display depth sounders from six different manufacturers in what we consider two different categories: those with large displays and those with small displays.

We looked at four "small" sounders, which have round bezels and will fit a standard 2-1/8" instrument hole: the Lowrance 3500, the Teleflex TFX IDD, the Norcross Hawkeye and the Uniden QT206. Ranging in price from \$89 to \$149, these four units are far less expensive than the other five large units that range from \$179 to \$399. Raymarine supplied both its ST40 and ST60 displays. Standard Horizon shipped us three units: the DS35, DS45 and DS150.

Each unit was tested with its tran-



Above: We took these nine digital depth sounders out on our 25-foot Contender and checked their readings for accuracy at various depths until we obtained a maximum depth reading. We also rated how easy they were to read under the Florida sun.

som-mounted transducer, which was mounted to a board that was submerged alongside our test boat.

How We Tested

Our test began by flush mounting each unit onto a simulated instrument panel (a sheet of plywood). (Optional mounting brackets are either supplied by or available from the manufacturer for situations where flush mounting is not an option.) The panel we constructed was capable of holding all units side by side for easy "viewability" evaluations. We temporarily fixed the panel to our Contender

25 for performance testing.

Each unit was rated for ease of installation for the display unit only. We did not rate the installation of each transducer or individual unit wiring to a power source, as this would be nearly identical for each unit.

We gave each sounder a rating for how easy the display was to see during the day, as well as at night. We also gave each unit an on-the-water performance rating. A unit earned a "good" if it displayed a steady, reliable reading. If a unit read erratically or its screen went blank for no reason, it was rated poorly.



Lowrance 3500



Norcross Hawkeye



**Teleflex TFX IDD/
Humminbird HDR 600**

To confirm depth claims made by manufacturers, we took all units to shallow water to get a minimum depth reading. Then we headed deep, and tested the units at various depths (out to a maximum of 400 feet) to find each unit's maximum depth reading. Back at the dock, we compared our numbers to the manufacturers' claimed maximum depth capabilities.

Lowrance 3500

The Lowrance is one of the four small round units sized to fit into a standard 2-1/8" instrument panel cutout. Installation required cutting a hole in our test panel using a power drill with a proper size hole saw in the chuck. The unit is then pushed in from the front, and two "wings" are deployed from the rear to lock into the panel. Tightening is accomplished with front-mounted screws. The alarm horn is a separate unit that must be mounted and wired. This additional step is what generated the "fair" installation rating for this unit.

Like all of the small units, the 3500 has a rectangular display in the center of its round bezel that shows the digital depth reading. The Lowrance and the Teleflex have the smallest display numbers: only 7/16" high.

The 3500 read to a minimum depth of 3 feet and a maximum of just over 100 feet. Lowrance makes no depth range claims for this unit.

This unit scored a "fair" in our water tests due to its erratic readings. As an example, while sitting static with the transducer in 15 feet of water, the unit's reading constantly

changed from 13 to 17 feet.

The unit will read in feet or meters, has a 1-year warranty, and a white backlight that can be turned on or off, but it requires a user-installed switch to do so.

Bottom Line: We think there are better choices than this unit, which is priced at least 50% more than comparable units and displayed sometimes-erratic readings

Norcross Hawkeye

Installation of the Norcross Marine Hawkeye, model number DF1000D, is similar to the 3500 but requires the transducer cables to be crimp-connected. If you don't have a crimping tool, this can be a real pain. (See next month's story on stripping and crimping tools.)

Display numbers on the Hawkeye are 9/16" high and easy to see day or night. A green backlight is on at all times. During on-the-water testing, the unit gave steady, accurate readings with a minimum depth reading of 2.7 feet and a maximum of 130 feet. Norcross claims a depth capability of 2 to 200 feet. It reads in feet or meters and has a 2-year warranty.

Bottom Line: A good choice for the small boat owner. Inexpensive and accurate.

Ray ST40

Raymarine's ST40 has a display head measuring 5" wide by 2 3/4" high, with the actual screen taking up the bulk of this space. Installation requires a single 2-1/4" hole. This cutout must be precise, as the mount-

ing bracket allows little room for error. Its large, 1-1/16"-high numbers are easy to read. The display is rated excellent for both day and night viewing; it is easily read even at extreme angles with polarized sunglasses. The green backlight is bright and has three levels of adjustment for both brightness and contrast.

Although Ray claims the ST40 will read from 0 to 400 feet, we were only able to get a reading of 3.5 feet on the shallow end, however it did read to 400 feet.

The unit gave steady, reliable readings during testing. Features include a trend indicator (which appears when the depth consistently rises or falls), display dampening (adjusts the repeat rate of the depth reading displayed), keel offset, and a 2-year warranty.

The ST40 can display depth in feet, meters or fathoms. Communication with other instruments is accomplished via Raymarine's proprietary Seataalk or the standard NMEA 0183 protocol. Either will require the purchase of additional cabling or a junction box.

Accessing all the features of the ST40 does require reference to the owner's handbook. A very useful quick reference card is provided, however.

Bottom line: The unit has nearly all the features of the ST60 for \$150 less. We like its easy-to-read screen. Our top pick.

Ray ST60

The ST60 uses a square portion of panel space measuring approximately 4-1/2". Installation requires a 3-1/2" hole, plus

Value Guide: Digital Sounders

Manufacturer	Model	Price	Depth Units Available	Min. Depth (ft.)	Max Depth (ft.)
Lowrance	3500	\$149	Feet/Meters	3	100
Norcross Marine	DF1000D/ Hawkeye	\$99	Feet/Meters	2.7	130
Raymarine	ST40	\$249	Feet/Meters/Fathoms	3.5	400
Raymarine	ST60	\$399	Feet/Meters/Fathoms	3	400
Standard Horizon	DS35	\$179	Feet/Meters/Fathoms	3	300
Standard Horizon	DS45	\$299	Feet/Meters/Fathoms	3	400
Standard Horizon	DS150	\$249	Feet/Meters/Fathoms	3	200
Teleflex/Humminbird	TFX IDD/ HDR 600	\$99	Feet/Meters/Fathoms	2.5	400
Uniden	QT206	\$89	Feet	2.5	190

two smaller holes for mounting screws. It has all the features of the smaller ST40, plus a couple extra, like backlit buttons. Screen quality and performance are equal to or slightly better than the ST40. We did have some trouble programming the ST60's shallow alarm even though we followed the procedures outlined in the manual. However, after several tries, we were able to get it to work. This unit is the most complicated to use of all tested. Raymarine claims the ST60 will read up to 400 feet deep and it did so during testing.

Bottom Line: It's a great unit, but we don't think its features and capa-

bilities justify the higher cost, for most people.

Standard DS35

Measuring 2" high and 5" wide, the DS35 is the smallest unit from Standard that we tested. Installation requires a square cutout and the use of a rather complex bracket system.

Numbers on its display measure 3/4" high and were easy to see in daylight. But, viewed through polarized sunglasses, the screen blanked while viewing at angles greater than 45 degrees.

Its white backlighting has three levels of adjustment, but even on

the "high" setting it is not bright enough for good night viewing.

The DS35 does give steady, accurate depth readings to a minimum of 3 feet and a maximum of 300 feet. Features include a trend arrow, display dampening, keel offset, and a 1-year warranty. Available units of measure are feet, meters or fathoms.

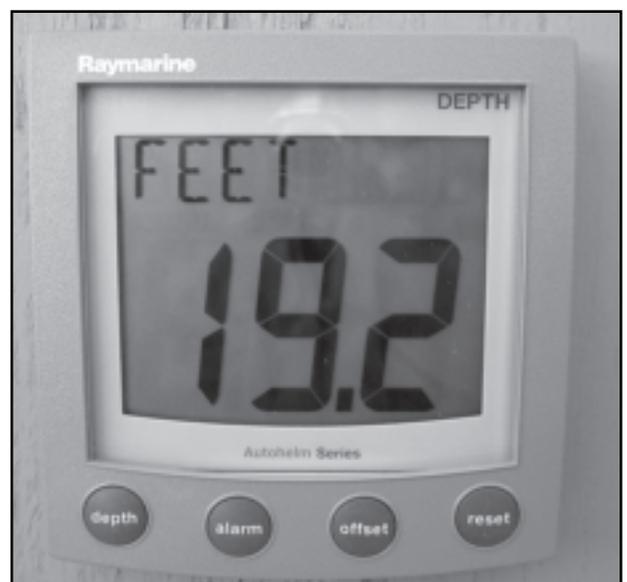
Bottom Line: Although the DS35 is the least expensive of the large displays, it lacks NMEA support and has weak backlighting.

Standard DS45

The DS45 is a large round instrument measuring 5" in diameter. The actual



Above: With its large numbers and effective backlighting, the Raymarine ST40, our top choice, can be seen easily in daylight or at night. **Right:** The Raymarine ST60 comes with a few more features but costs \$150 more.



Communication Ability	Warranty	Trend Indicator	Display Dampening	Backlighting Capability	Keel Offset
N/A	1 year	No	No	Off/On*	No
N/A	2 years	No	No	On	No
Seataalk/NMEA	2 years	Yes	Yes	Off - 3 On	Yes
Seataalk/NMEA	2 years	Yes	Yes	Off - 3 On	Yes
N/A	1 year	Yes	Yes	Off - 3 On	Yes
N/A	1 year	Yes	Yes	Off - 3 On	Yes
NMEA	1 year	Yes	Yes	Off or On	Yes
N/A	1 year	No	No	On	Yes
N/A	1 year	No	No	On	No

screen is about 1" by 3", and display numbers are 3/4" high.

We were easily able to make the 4" round cutout needed to install the unit with a power saber saw. DS35 comments on day viewing, night viewing, backlighting, performance, and features all apply to the DS45.

The exceptions: The DS45 backlight is red rather than white, and it read to a maximum depth of 400 feet.

Bottom Line: This unit's ratio of displayed information to panel space used is unbalanced.

It takes up too much space, costs too much, and seems to us like older technology.

Standard DS150

At 4 1/2", the display head on the DS150 is about the same size as the big Raymarine ST60. However, the actual

screen size is smaller, as are the display numbers (height is 1-1/4"). Installation on the DS150 is simple: drill a single 1-1/4" hole and tighten one plastic nut to hold the display tight. Again, DS35 comments on day viewing, night viewing, and features all apply to the DS150.

Unlike the two other Standard units, the DS150 can communicate via the standard NMEA protocol. This unit has no backlighting increments—just ON or OFF.

Like the other two, it needs to be brighter.

Maximum depth capability was only 200 feet, and it seemed to take a long time to lock onto the bottom.

One programming issue on the DS150 we don't like is that it only takes one push of a button (the arrow key) to change from feet to fathoms or meters. An operator could get into trouble if he switches the mode unintentionally. On all other units tested, you have to push a button twice, which limits an accidental switch.

Digital Sounders: Ratings

Manufacturer	Day View Rating	Night View Rating	On-Water Performance	Ease of Use	Ease of Installation
Lowrance 3500	3	3	2	4	2
Norcross Hawkeye	3	3	3	4	2
Raymarine ST40	4	4	3	3	3
Raymarine ST60	4	4	3	2	2
Standard Horizon DS35	3	2	3	3	2
Standard Horizon DS45	3	2	3	3	3
Standard Horizon DS150	3	2	3	3	4
Teleflex/Humminbird	2	3	2	4	3
Uniden QT206	3	3	3	4	3

1=poor, 2=fair, 3=good, 4=excellent

Bottom Line: Installation is very simple but the unit is hard to see with polarized sunglasses, has weak backlighting, was slow to lock the bottom and reads to only 200 feet.

Teleflex TFX IDD

The Teleflex TFX IDD, one of the four in the small category, is also marketed by Humminbird as the HDR 600. They are identical. Installation is similar to other small units, requiring a 2-1/8" cutout and mounting a separate horn. The unit is held fast with a single bolt bracket.

The display numbers match the smallest tested at a height of 7/16". Viewed through polarized sunglasses, the display of the TFX was somewhat less readable, even straight on. Without the glasses it's clear. Night viewing is good with an always-on red backlight. Teleflex makes a depth capability claim of 0 to 600 feet. We only tested to 400 feet, and the Teleflex read to that depth. The minimum depth reading we obtained was 2.5 feet. Performance of this unit is not as strong as most others. The display jumps around even when the boat remains relatively still. The TFX will read in feet, meters or fathoms and has a 1-year warranty.

Bottom Line: We'd steer clear of the TFX due to its obstructed view when wearing polarized sunglasses and sometimes-erratic reading.

Uniden QT206

The last of our small sounders is the QT206 from Uniden. Installation is standard, using a 2-1/8" hole and single bolt metal bracket. Display numbers are equal to the Norcross Hawkeye at a height of 9/16". Both day and night viewing were good. Performance on the water was steady and accurate. Uniden claims a depth capability of 2 to 199 feet. We were able to read 2.5 feet shallow and 190 feet deep. It only reads in feet, and carries a 1-year warranty.

Bottom Line: In the small category, it's a toss up between this unit and the Hawkeye. The QT206 can be found for ten bucks less and reads somewhat deeper, but carries a shorter warranty.

Conclusion

We found the overall performance of the two Raymarine units superior to all others tested. We selected the ST40 as our top pick because we don't think the bigger ST60 has \$150 worth of extra features.

Those looking for a less expensive unit simply to display depth should consider the Norcross Hawkeye or the Uniden QT206. They both do the job—and do it accurately.

One observation we made while testing is applicable to all units and can lead to trouble for those unaware. All units tested have at least one type of depth alarm; we programmed and operated at least one on every unit. What we found was that they all worked as advertised but not to our satisfaction.

In our opinion, they simply cannot be counted on to get your attention. None of the alarm horns could be heard easily while in an operating boat, though you might be able to hear one on a quiet anchored vessel—we wouldn't count on it. ■

The Standard Horizon units scored on the low side in our viewability tests. With brighter backlighting, those scores would probably be better.

Contacts

www.garmin.com, 800/800-1020.

www.teleflex.com, 941/907-1000.

www.standardhorizon.com, 800/366-8431.

www.raymarine.com, 800/539-5539.

www.norcrossmarine.com, 888/NORCROSS.

www.lowrance.com, 800/324-1356.

www.uniden.com, 800/297-1023.



Standard DS45



Standard DS150



Standard DS35

Reprinted from *Powerboat Reports* Copyright © 2003 Belvoir Publications, Inc. *Powerboat Reports* is published monthly (12 issues) by Belvoir Publications, Inc., 75 Holly Hill Lane, Box 2626, Greenwich, CT 06836-2626. 800-829-9086. Subscriptions are \$29 annually. www.powerboat-reports.com.