

# One 15-inch or two 12-inch?

One deep sub, no size limit, on a SPA500DSP plate amp

MY SUGGESTION

For 22 to 26 Hz in a 5.5 x 4 m room, I'd go with **one Dayton Audio RSS390HF-4 15-inch sub** in about 120 L, on a **Dayton Audio SPA500DSP** plate amp. Two 12s are about 2 dB louder at 24 Hz, but they need a box about two and a half times the size.

112 dB

one 15 at 24 Hz, 1 m, in your room

114 dB

two 830845 12s, same

120 L

box for the 15 (the 12s: 300 L)

\$764.95

the 15 (the pair of 12s: \$789.90)

|                    | One 15-inch                                | Two 12-inch                                |
|--------------------|--------------------------------------------|--------------------------------------------|
| Driver             | <a href="#">RSS390HF-4</a>                 | <a href="#">830845</a>                     |
| Box (net)          | 120 L, one driver                          | 300 L, two drivers, same box               |
| Vent               | 280 x 50 mm slot, about 692 mm long, 21 Hz | 280 x 50 mm slot, about 288 mm long, 19 Hz |
| Power used per sub | about 463 W                                | about 330 W                                |
| 20 Hz in room      | 106 dB                                     | 110 dB                                     |
| 40 Hz in room      | 117 dB                                     | 119 dB                                     |
| 80 Hz in room      | 116 dB                                     | 118 dB                                     |
| Drivers to buy     | 1 x \$764.95 = \$764.95                    | 2 x \$394.95 = \$789.90                    |

Each turned up as far as it can go before the amp, the cone or the vent runs out, no EQ, one sub at 1 m, with my room estimate. Also modelled: One 15-inch: MX15-22 (115 dB at 40 Hz), UMII15-22 (115 dB at 40 Hz), DCS385-4 (114 dB at 40 Hz); Two 12-inch: 835017 (116 dB at 40 Hz), SB34NRX75-6 (116 dB at 40 Hz), DCS305-4 (114 dB at 40 Hz).

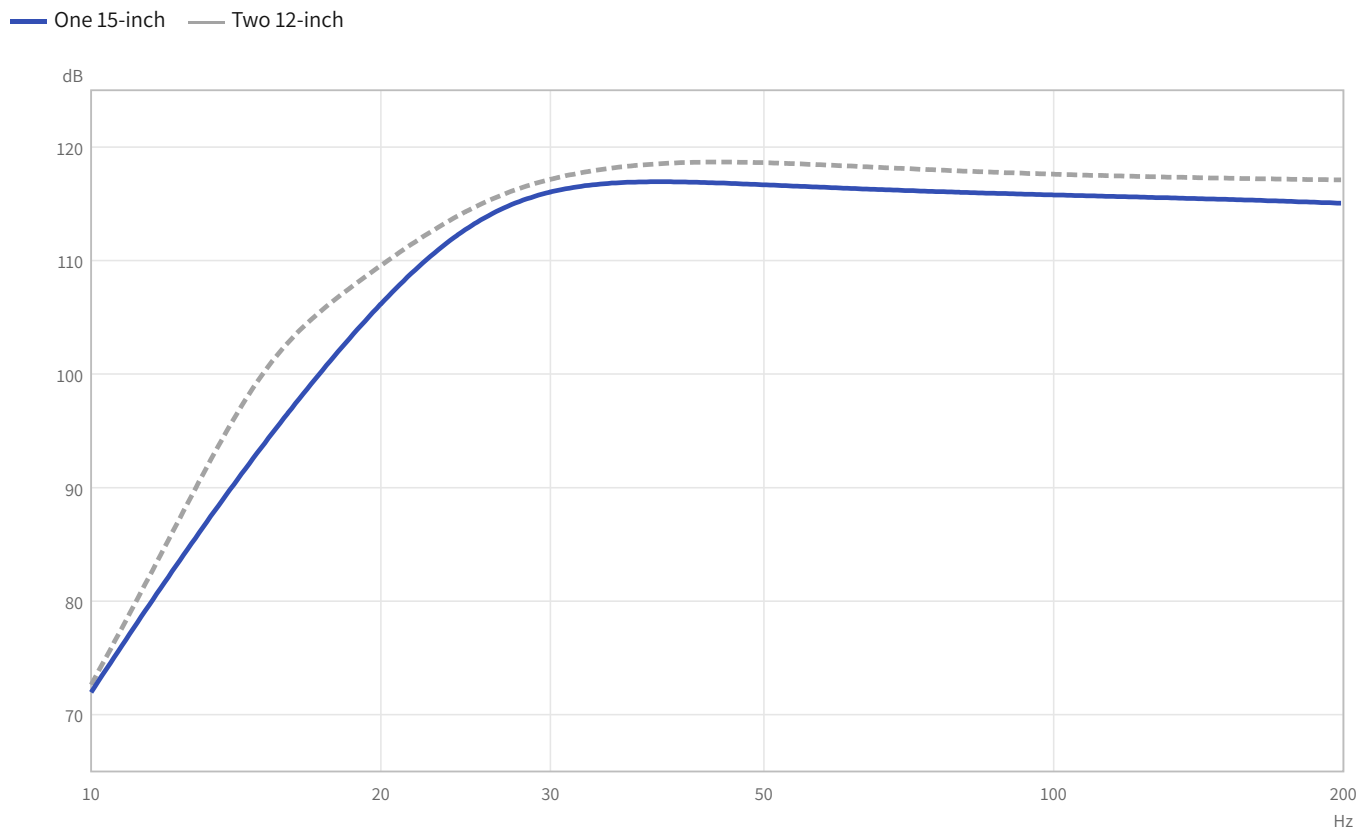
**How close each gets to your band.** One 15-inch: it gets into your 22 to 26 Hz band; in this box the bass holds down to about 24 Hz before it starts to fade, so the bottom few hertz of the band are a little softer. Two 12-inch: it gets into your 22 to 26 Hz band; in this box the bass holds down to about 24 Hz before it starts to fade, so the bottom few hertz of the band are a little softer. Your room adds depth at your seat on top of this.

Words in this report

**Max SPL:** the loudest it can play before the cone, the vent, the amp or the power rating runs out. **Tuning:** the note the vent is set to. Below it the cone unloads, so a subsonic filter helps. **Xmax:** how far the cone can move cleanly. Run out of it and the bass distorts.

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# The two setups on one chart



One sub at 1 m, turned up as far as each setup allows, no EQ, with my room estimate.

## Your box

- You didn't say the board, so I've assumed 18 mm MDF. Each setup is in its own best box: about 120 L for the 15, 300 L for the pair of 12s.
- You weren't sure about sealed or ported: at 22 to 26 Hz a vent gets more level from the same driver, so I've modelled both ported. Sealed would be smaller, and quieter down low.

## What the difference comes to

- At 24 Hz the two 12s are about 2 dB louder: 114 dB against 112 dB. You'd hear it, but it isn't night and day.
- The 15 needs about 120 L; the two 12s want about 300 L, a big box in a 5.5 x 4 m room.
- Both cost about the same. The SPA500DSP's subsonic filter and room EQ suit either, and it's worth having on a sub this deep.

## Parts list

| Part                                                                                           | Qty | Each     | Total             |
|------------------------------------------------------------------------------------------------|-----|----------|-------------------|
| <a href="#">Dayton Audio - 15" Reference Series HF Subwoofer - RSS390HF-4</a><br>My suggestion | 1   | \$764.95 | \$764.95          |
| <a href="#">Dayton Audio - 500W DSP Plate Amplifier - SPA500DSP</a><br>Plate amp               | 1   | \$954.95 | \$954.95          |
| <b>From the store, 24 October 2026</b>                                                         |     |          | <b>\$1,719.90</b> |

You supply: the board (MDF or ply), glue and screws, damping and gasket tape (the store has those too); the slot vent (280 x 50 mm, about 692 mm long), cut from the same board.

### How I made this report

This report comes from the design tool I use alongside the NB Speaker Builder. It uses the same enclosure simulation engine as the builder and the store's driver database, which holds each maker's published specifications. First it checked every 15-inch subwoofer or woofer in stock, with no size limit: all 15 could be used. It simulated all of them cleanly in a box sized for each, ranked for reaching 22 to 26 Hz, then I compared four of them in detail: my pick, a value option and two more from the top of the list. A total of 15 drivers were considered and 7,505 simulations were run. The tool does the number crunching; I went through the results and picked what I'd use. The setups: One 15-inch: one RSS390HF-4 in 120 litres (of four compared), vented; Two 12-inch: two 830845 in 300 litres (of four compared), vented.

What it doesn't cover: the simulations use the maker's figures at 1 m in half space and leave out differences between individual drivers, and the room is only an estimate, so read the numbers as a fair comparison rather than a promise. Prices are the store's on 24 October 2026. For the two 12s I went through the 12-inch subs in stock the same way. This is a sample report from a made-up enquiry. Prices as at 24 Oct 2026; check the store for today's.

## About me



I'm Jeshua (Jesh) Miller. NB stands for No Bullsh\*t: it started in 2018 as NB Speaker Cables, and building cables led to building speakers, subwoofers first, until I'd built my own 7.2.4 home theatre. NB Audio has sold parts for people who build their own speakers since 2024, and since January 2026 it's been my main focus. I won't tell you a part is the 'best'. I'll tell you what it does, what it suits and what it doesn't.

More on [who's behind NB Audio](#) and [how I think about sound](#).

## Guides for your build

- [Why I don't tune subs 'flat to 20 Hz'](#)
- [Sealed vs ported vs passive radiator: which box?](#)
- [DIY subwoofer: build or buy?](#)
- [Building the cabinet: MDF vs ply, bracing, damping, ports and sealing](#)
- [Planning the enclosure: check the box on paper before you cut](#)
- New to building? The 8-part [Beginner Guide](#), every part also a [free PDF book](#). [All the guides](#).

## Free tools and advice

- Every driver and amp in this report links to its page in the store, with the price on 24 October 2026.
- The [Driver Fit Finder](#) shows which drivers fit a cabinet you already have.
- The [Port Designer](#) gives you push-fit flares and a port tube, sized to your box, as free STL and STEP files to print.
- Coming soon: the [NB Speaker Builder](#), to design a speaker box around the drivers in the store and see how it'll play before you cut any wood.
- Questions about this report, or your next build? Advice on choosing parts is free: email [sales@nbaudio.com.au](mailto:sales@nbaudio.com.au).

**Let me know if you have any questions, or if you'd like to go ahead with either.**