NEC Display Solutions NP-M352WS   pcmag.com

- **Pros**

Bright. WXGA (1,280-by-800) resolution. Short-throw lens for a big image from close to the screen. Excellent quality for data images.

- **Cons** Although 3D mode works with sources like Blu-ray players, using it is a little awkward, since you have to turn the mode on and off manually.
- **Bottom Line**

The NEC Display Solutions NP-M352WS projector delivers a bright-enough image for midsize rooms, a big image even in small rooms, and excellent quality for data images.

PCMAG.COM EDITORS' CHOICE

One way to think of the NEC Display Solutions NP-M352WS projector ($1,069) is as a DLP-based alternative to the LCD-based Editors' Choice NEC Display Solutions NP-M300WS. Rated at 3,500 lumens, it shares the same WXGA (1,280-by-800) resolution and the same benefit of a short-throw lens, letting you project a big image from close to the screen. Most important, the M352WS offers enough to make it our Editors' Choice for short-throw WXGA projectors for midsize rooms, sharing the honor with its LCD-based cousin.

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NEC is actually in the process of replacing the NEC M300WS with the M352WS. That said, the key differences between the two models, and the main reasons for choosing one over the other while both are still available, grow from the advantages and disadvantages of their engines.

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As a three-chip LCD projector, the NEC M300WS doesn't produce rainbow artifacts, the flashes of red, green, and blue that can be annoying, particularly to anyone who sees them easily. Another advantage is that it delivers the same white brightness and color brightness. With most

DLP projectors, including the M352WS, color brightness is lower than white brightness. That means color images won't be as bright as you would expect from the white brightness level. In addition, the difference can affect color quality. (For more on color brightness, see "Color Brightness: What It Is, Why It Matters".)

The key advantage for the M352WS is that, like most DLP projectors, it supports 3D, something that most LCD models, including the NEC M300WS, still don't offer. Even better, the M352WS supports projecting 3D content over an HDMI connection from video devices, like Blu-ray players. Unfortunately, the mode is a little clumsy to use, because you have to turn it on manually, and then turn it off when you're finished to regain control of other features in the menu system. If you use 3D very often, this can be bothersome, with 13 button presses needed for both turning it on and off. On the other hand, that's still a lot better than not having the feature at all.

Connections and Setup

NEC labels the M352WS on its site as a portable projector, and, indeed, at 3.9 by 13.4 by 10.1 inches (HWD) and 8 pounds 3 ounces, you could carry it with you if you want to. At that weight, however, it's more appropriate for permanent installation or room-to-room portability on a cart. Setup is mostly standard fare for a short-throw model, with manual focus and no zoom.

The back panel offers a reasonably full set of connectors: two HDMI ports, a VGA port, a composite video port, and a USB Type A port for reading files from a USB memory key. There's also a LAN port, which lets you send images and audio, as well as control the projector over a network, and a USB Type B port for connecting to a PC, both for direct USB display and for controlling the mouse from the projector remote. You can get an optional Wi-Fi dongle ($80 direct) for the USB Type A port, to let you connect to a network or connect directly to a PC to send images to the projector.

Brightness and Image Quality

Any comments about the M352WS's brightness are complicated by differences between its white brightness and color brightness. As a point of reference, using the Society of Motion Picture and Television Engineers (SMPTE) recommendations, and assuming a 1.0 gain screen, 3,500 lumens would be bright enough for roughly a 225- to 305-inch (diagonal) image at the M352WS's native resolution in theater-dark lighting. In moderate ambient light, it would be suitable for roughly a 150-inch (diagonal) screen.

For my tests, I used a 78-inch-wide (92-inch-diagonal) image. Not surprisingly, with the projector's brightest preset mode and brightest lamp setting, the image was easily bright enough to stand up to ambient light at that size, but too bright for comfortable viewing with the lights out. However, you can adjust the brightness to lower levels by switching to one of the Eco modes, picking one of the lower brightness preset modes, or both.

Image quality for data is excellent. On our standard suite of DisplayMate tests, yellow was a little mustard-colored in most preset modes and red was a little dark in the brightest mode, but that's expected for projectors with a big difference in white and color brightness. More generally, colors were well-saturated and suitably vibrant. More important for most data-related images, like word processing and graphics, the projector handled detail well. Black text on white was crisp and readable at sizes as small as 5.4 points, and white text on black was highly readable at 7.2 points.

It also helps that the M352WS shows rainbow artifacts with data images so infrequently that few, if any, people are likely to find them bothersome. Unfortunately, the same isn't true for video. Anyone in your audience who sees these red-green-blue flashes easily is likely to find them annoying. That said, most data projector applications don't need to show much video or show long clips, so this shouldn't be much of an issue.

The 20-watt mono speaker is easily strong enough for a midsize conference room or classroom, and it offers more-than-acceptable sound quality. For stereo, better quality, or higher volume, you can connect an external sound system to the stereo output.

NEC NP-M352WS

If you need a data projector that can also show long video clips without rainbow artifacts, and you don't need 3D, you'll certainly want to take a look at the NEC M300WS. Also, if you need a short-throw projector that's light enough to carry around easily, you might want to consider the ViewSonic PJD6683ws, which is our Editors' Choice for budget-priced, short-throw, WXGA projectors. If, however, you need a somewhat brighter image and 3D support, the NEC Display Solutions NP-M352WS is an excellent solution and our Editors' Choice for short-throw WXGA projectors for midsize rooms.

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