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Focus On: NAS

By Christian Eberle

We've reviewed a lot of professional-class monitors, NEC's PA272W may be the most accurate and capable one ever to hit the Tom's Hardware lab. At almost $1300, it's expensive for a 27-inch QHD screen. But there are features here you won't find elsewhere.

Regardless of what your computer is used for, it's hard to imagine a monitor with too much resolution. Sure, you might discover that your graphics card isn't fast enough to drive a 4K screen at its native 3840x2160 in your favorite shooter. But once you step up from FHD (1920x1080) to QHD (2560x1440) and then to UHD, it's really, really hard to go back.

We looked at a lot of QHD monitors over the past 12 months, each step of the way lamenting that prices simply refuse to budge. Full HD screens are a dime a dozen. Quad HD will still cost you $600 or more (potentially a *lot* more), though. For that reason, most vendors are reserving the high-res stuff for their professional monitor families.

Of course, Tom's Hardware readers know that it takes more than just high pixel density for a display to be a true professional-grade tool. Accurate color, and a high degree of flexibility and adjustability are important too. I believe that a wide-gamut option is mandatory, and many screens do indeed have this feature. Only a tiny few, however, include the ability to select multiple color gamuts, white points, and gamma curves (and then fully adjust them).

Today we're reviewing NEC's PA272W 27-inch QHD monitor. It's part of the company's Color Accurate line, aimed squarely at users needing reference-level accuracy and the functionality to work with multiple imaging standards.

Brand	NEC
Model	PA272W
MSRP	$1299
Panel Type	AH-IPS
Backlight	GB-r LED, edge array
Screen Size	27-inch
Max Resolution	2560x1440
Max Refresh Rate	60 Hz

Aspect Ratio	16:9
Native Color Depth	10-bit (8-bit w/FRC) 14-bit internal LUT
Native Gamut	Adobe RGB
Response Time (GTG)	6 ms
Brightness	340 cd/m2
Speakers	-
VGA	-
DVI	1
DisplayPort v1.2	1 mini, 1 standard
HDMI 1.4	1
Audio In	-
Headphone	-
USB	v2.0 - 2 up, 3 down
Media Card Reader	-
Panel Dimensions W x H x D	25.2 x 15.6-21.5 x 9.3 in 640 x 396-546 x 236 mm
Panel Thickness	3.3 in / 85 mm
Bezel Width	.8 in / 20 mm
Weight	28.4 lbs / 12.9 kg
Warranty	Four years

The latest wide-gamut monitors all pretty much use a GB-r-LED backlight, rather than the more common white LED. Its spectral properties make it ideal for this application because red, green, and blue wavelengths are produced with equal intensity. Consequently, far less internal processing is required to produce a large and accurate color gamut on-screen.

Of course, when a monitor has a native Adobe RGB gamut, it should be able to produce any gamut that falls within those parameters. To that end, NEC includes a Digital Cinema preset, which is something we haven't seen or talked about before now. **The Digital Cinema Initiative is a set of parameters that specify not only color, but also resolution, light intensity, audio, and a whole host of other guidelines for digital movie presentation in commercial theaters.** For our purposes, we'll just talk about the color gamut, grayscale, and gamma specs.

The DCI color gamut lies between Rec.709/sRGB and Adobe RGB. Theoretically, a wide-gamut display should have no trouble rendering it, and the PA272W can. The color temperature spec is decidedly green in hue and intended to compensate for the spectral properties of the high-powered Xenon lamps used in commercial projectors. Finally, the gamma value is a good deal higher (2.6 instead of 2.2).

After a little research, I discovered that the only other desktop display capable of meeting DCI specs is Dolby's PRM-4220. It's a 42-inch reference monitor with FHD resolution and a very exotic full-array RGB-LED backlight incorporating 1500 diodes. It sells for an astounding $40,000. You might see a few of them in Hollywood post-production facilities. But most of us need something a little more down-to-earth.

Photographers looking for a color-critical display will certainly be attracted to this panel's 10-bit native color and 14-bit internal LUT. You need a 10-bit signal path to take full advantage, but the bandwidth is there for those who need it.

Other features we'll look at closely are the PA272W's factory calibration, comprehensive OSD, and SpectraView software, which gives the user full control over all image parameters and interfaces with popular meters from Datacolor and X-Rite.