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Best Professional Monitors

by [Adam Overa](#) June 30, 2016 at 7:15 AM

Professional monitors always come at a premium price but for that extra coin you get multiple color gamut options, factory-certified calibration and often times the ability to create your own color presets with included software and instruments. When you need the absolute pinnacle of color accuracy, one of the screens can fulfill that need, usually without any initial adjustment.

June 2016 Updates

NEC surprised us with two new 16:10 monitors, the EA305Wmi and professional-grade PA302W. The latter turned out to be one of the best displays we've ever tested. If you're in the market for one of the most flexible professional monitors out there, check out the details below.

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Best Professional Monitors

BenQ PG2401PT

1920x1080



REVIEW >

\$749.99
Amazon

Screen Size

24-inch

Aspect Ratio

16:10

Panel Type

AH-IPS

Backlight Type

GB-r-LED

NEC EA244UHD

3840x2160



REVIEW >

\$889.00

Amazon

Screen Size

24-inch

Aspect Ratio

16:9

Panel Type

AH-IPS

Backlight Type

GB-r-LED

HP Z27x

2560x1440



REVIEW >

\$1,346.84
Amazon

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NEC PA272W

2560x1440



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BenQ SW2700PT

2560X1440



REVIEW >

\$624.99

Amazon

Screen Size

27-inch

Aspect Ratio

16:9

Panel Type

AHVA

Backlight Type

RB-LED

HP Z27q

5120x2880



REVIEW >

\$1,109.76
Amazon

Screen Size
27-inch

Aspect Ratio
16:9

Panel Type
AH-IPS

Backlight Type
W-LED

Dell UP2715K

5120x2880



REVIEW >

\$1,539.99
Amazon

Screen Size

27-inch

Aspect Ratio

16:9

Panel Type

AH-IPS

Backlight Type

W-LED

NEC PA302W

2560x1600



REVIEW >

\$2149.00

Newegg

Screen Size

30-inch

Aspect Ratio

16:10

Panel Type

AH-IPS

Backlight Type

GB-r-LED

NEC PA322UHD

3840x2160

[REVIEW >](#)

\$2960.45
Amazon

Screen Size

32-inch

Aspect Ratio

16:9

Panel Type

IGVO

Backlight Type

W-LED[SEE MORE DETAILS](#)

1920x1080 3840x2160 2560x1440 2560x1440 2560x1440 5120x2880 5120x2880 2560x1600 3840x2160

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Best 24-Inch Professional Monitors



BenQ PG2401PT

REVIEW >

\$749.99
Amazon

The bulk of professional monitors we review measure 27 inches or more in size and sport at least QHD (2560x1440) resolution. BenQ offers an alternative in the PG2401PT. It runs at 1920x1200 (yes, that is indeed 16:10), uses a high-quality 24-inch IPS panel with a GB-r-LED backlight and offers the Adobe RGB color gamut. The screen is designed primarily for the print industry with a few gamut options you won't find elsewhere like Illuminant A and D50, which simulate different lighting conditions.

In our tests, we found the best feature to be superb out-of-box accuracy. Although we performed a full calibration, the results were only altered by a tiny amount. Without adjustment, the PG2401PT's grayscale error was a mere 1.16 Delta E, returning a phenomenal gamut result of .6 Delta E. Even though most graphics pros calibrate their monitors, this BenQ product works just fine as it comes from the factory.

Even though native resolution is relatively low, its screen size translates to a pixel density of 94PPI, only 14 less than a 27-inch QHD display. A price tag of almost \$1000 is expensive, to be sure. But the PG2401PT's accuracy and performance are hard to beat.

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NEC EA244UHD

REVIEW >

\$889.00
Amazon

Even though the EA244UHD is part of NEC's business-class line, it has nearly every feature available in the high-end PA models. You get an Adobe RGB gamut option and SpectraView calibration, just like the PA line, along with amazing out-of-box accuracy. In fact, when we ran our tests, we were unable to improve any of the default results with calibration. Without making a single adjustment, this NEC is more accurate than most monitors after calibration.

At 184PPI, 24-inch UHD monitors represent the highest possible pixel density available right now. In Windows, this means fonts and icons are going to be super small if you don't use DPI scaling. Meanwhile, photos and other graphics look simply stunning. You cannot see the pixel structure, no matter how close you sit or how good your vision is. When Microsoft catches up in the scalability department, everything displayed on a monitor like this will be amazing to look at.

If you're looking for a luxury business-class screen that outperforms many professional displays, look no further. Priced around \$1300, this monitor has a fairly high buy-in. But the EA244UHD's build quality and accuracy have few equals. It works equally well for your daily tasks and higher-end graphics applications. Such a well-rounded showing earned our coveted Editors' Choice Award.

Best 27-Inch Professional Monitors



HP Z27x

REVIEW >

\$1,346.84
Amazon

Designed with input from elite post-production houses, the HP Z27x provides a real alternative to frightfully expensive professional mastering monitors that can cost upwards of \$15,000. For about a tenth of that, you can have spot-on color accuracy, superior image quality, and a neat internal calibration engine that can adjust itself in just a few minutes. Add to that remote control capabilities, support for every conceivable color gamut, and the ability to accept signals up to 4096x2160 pixels and you have a veritable Swiss Army knife. Anyone working on today's CGI-laden Hollywood films would do well to give this HP serious consideration.

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NEC PA272W

REVIEW >

\$1549.00

Amazon

NEC's PA272W won't calibrate itself like the HP. But thanks to a superb OSD and one of the best color management systems we've seen, it can be adjusted to perfection. If you don't have CalMAN, NEC offers an excellent auto-cal application called SpectraView that makes the procedure quick and painless.

The monitor also exposes multiple color gamuts that go all the way up to DCI, so it's suitable for Hollywood film CGI and post-production work. Our review sample measured just average for color and grayscale accuracy, but we're told by NEC that the issue was corrected at the manufacturing level. So, if you buy one today, it shouldn't need calibration unless you require ultimate accuracy.

Compared to special mastering monitors that can cost \$15,000 or more, NEC makes a serious statement with its latest PA-series display.

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REVIEW >

\$624.99

Amazon

Even though most graphics professionals and photographers have the equipment and know-how to calibrate their monitors, there's still a lot of value in a product that can be simply turned on, switched to a preset mode and used without further intervention. The BenQ SW2700PT is one of those rare monitors that's so good out of the box, we couldn't improve the results with a calibration. Even though there are a myriad of adjustments available like color management, gamma presets and grayscale control, its default performance exceeded many of the products we've reviewed after calibration.

It wasn't long ago that 27-inch QHD/IPS screens from the business class cost \$600. This BenQ offers all that along with a spot-on accurate Adobe RGB option and even a rigid light-blocking hood and a factory calibration for the same money. The wide gamut comes courtesy of an RB-LED backlight; a technology previously found only rarely in very expensive monitors. Its advanced spectral properties mean that no fancy engineering is necessary to achieve accurate color. Further professional cred comes from a 10-bit native color depth and an internal 14-bit look-up table for images completely free of banding artifacts.

We urge you to check out our benchmark test results from this phenomenal display. With no adjustments whatsoever it finished at or near the top in every metric. Its color gamut accuracy is especially impressive. Only BenQ's own PG2401PT was able to compete in that area. If you're looking for a reasonably-priced 27-inch proofing monitor, the SW2700PT is probably the last place you need to look; it's truly that good. So good that we gave our Tom's Editor's Choice Award.

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HP Z27q

REVIEW >

\$1,109.76

No sooner had we settled on 3840x2160 pixels as Ultra High-Definition then a 5K display crossed our threshold. At 5120x2880 pixels in 27 inches (218ppi) it looks like we're fresh out of adjectives. Dare we call this new standard Max HD?

Based on an AH-IPS panel part from LG, the HP Z27q represents the greatest pixel density currently available in a desktop monitor. Apple was the first one out the gate with its iMac 5K Retina display but HP and Dell have followed closely with their own versions. We'll be bringing you a review of the UP2715K shortly.

The Z27q is a professional product with an Adobe RGB gamut and preset modes that are factory-calibrated. Our tests revealed a few quirks but overall performance is solid and surprisingly, the price won't take your breath away. The first UHD screens sold for \$3000 but the HP's MSRP is a full third less at \$1999.

If you're considering one of these take careful note of the hardware requirements. Typical desktop graphics cards won't support the dual-DisplayPort connection required. HP lists Nvidia Quadro and AMD FirePro products that are certified to work and we found it also functioned when connected to our GeForce Titan X. We also suggest you run Windows 8.1 or later to take advantage of the better dpi scaling in that OS. 218ppi means fonts and icons are microscopic in their native sizes. We dialed in 150% and it looked fantastic.

Image quality is quite something when you can't see a visible pixel structure. Even with our noses on the screen we couldn't see a single dot. Digital imaging gets closer to reproducing high quality film photography with each new generation of technology. Monitors like the Z27q help raise the bar. We gave it our Tom's Editor Approved Award and we think it represents one of the better examples of first-gen display technology we've seen to-date.

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Dell UP2715K

REVIEW >

\$1,539.99
Amazon

After a bit of trial and error we managed to get a full 5120x2880 pixel image on the screen when we tested HP's Z27q 5k monitor. With Dell's UP2715K however, we saw the Windows desktop moments after booting up our GTX Titan X-based PC. Even though it's spec'd to run with high-end pro graphics cards with names like FirePro and Quadro, we found pixel density nirvana from the top-level GeForce.

Dell has placed the UP2715K firmly in the professional category with a factory calibration that's certified for both sRGB and Adobe RGB color gamuts. Our testing revealed no differences between the enclosed data sheets and our measured results. In fact, we improved things to perfection when we tried the slick calibration software that comes in the box. By plugging our i1Pro directly into the panel, we were able to achieve reference-level results without user intervention. After hanging the probe and checking a few options, we let the app do its thing. In about an hour we had ideal presets for both color gamuts stored in the monitor's firmware.

It's hard to describe the quality of a picture made up of over 14.7 million pixels. Needless to say, you won't see the dots, even if you put your nose close enough to the screen to leave a grease spot. With so many cameras already exceeding 14 mega-pixels, it's pretty amazing to see those pictures on a screen like this. There's no doubt that monitors will continue to increase their pixel counts. 5K is bleeding-edge technology today but by this time next year, it might even be commonplace. If you're in the market now though, the Dell UP2715K looks like the top choice in 5K screens for both price and performance.

Best 30-Inch Professional Monitors



NEC PA302W

REVIEW >

\$2149.00
Newegg

Professional screens usually come in large sizes, 27-inches and up, but are generally restricted to the same 16:9 aspect ratio as all other display categories. Once upon a time however, 16:10 was fairly common. That little bit of extra height can be a real boon to users working on large documents. And in portrait mode, you can fill the screen with things like musical scores or large posters.

NEC has answered user demands with a premium 30-inch IPS display, the PA302W. Like its EA-series counterpart, the EA305WMi, it sports an Adobe RGB color gamut. But as a member of the elite PA line, it also offers other gamut presets including DCI-P3 and sRGB/Rec.709. Whether you're a photographer or Hollywood CGI artist, this display can handle any graphics or video task you care to engage it in. The best part is that even though it has every conceivable image adjustment, both in the OSD and via software, it's ready to go right out of the box thanks to the production-line calibration of each individual monitor.

Like other PA-series screens, the 302W offers a five-level uniformity compensation feature. In the past, we've questioned the need for this option because of its negative impact on contrast. But it seems NEC has listened to our critiques because this new display makes far better use of it than any previous monitor we've tested. Not only does it visibly improve upon an already excellent panel, there is almost no change in contrast. And color uniformity is so good, it set a record at Tom's that is unlikely to ever be broken, a phenomenal .05 DeltaE.

If you're looking for a monitor that will last through years of daily use without breaking a sweat, look no further than the NEC PA302W. While no display will ever be "the last screen you ever buy,"

this superbly-engineered and ruggedly-built NEC comes pretty close.

Best 32-Inch Professional Monitors



NEC PA322UHD

REVIEW >

\$2960.45
Amazon

Every 32-inch UHD monitor (except the BenQ BL3201PT) is based on Sharp's IGZO parts. This IPS-type technology has the potential to offer faster pixel response and lower power consumption than traditional IPS by virtue of a new liquid crystal material, indium gallium oxide. Traditional LCDs use amorphous silicon which has 20-50 times less electron mobility.

The PA322UHD doesn't realize the possibilities of a super-fast panel but it does offers everything a professional photographer or video technician might need. In addition to the Adobe RGB gamut, there is an sRGB option plus an extensive calibration menu. You can control the color points with a traditional CMS or enter in the x & y coordinates for a super-precise setup. The monitor can also be calibrated with NEC's SpectraView software, or you can plug an instrument directly into the display's USB hub and calibrate it without a computer.

Our tests prove once again that NEC is devoted to accuracy and performance. It tops 1000:1 in almost all our contrast tests and posts an amazing 1015.2:1 result for the ANSI test. Grayscale numbers before calibration are only 1.14dE and 1.60dE for the sRGB and Adobe RGB modes respectively. After calibration they drop to a super-low .61dE and .46dE. Color gamut results are equally impressive with average errors of .82 for the sRGB mode and .91 for Adobe RGB. With numbers like that, it's hard to imagine better performance at any price.

The PA322UHD is most definitely a premium product but if you are looking for the ultimate color-accurate professional tool, this monitor has few equals.

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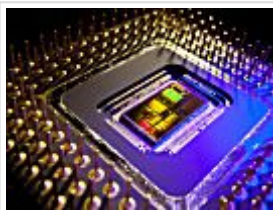
Adam Overa is the Managing Editor of Tom's Hardware US. He oversees editorial operations, content strategy, the lab, layout & translations.



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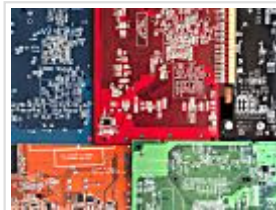
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