Raspberry Pi launches camera with interchangeable lens system for $50

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Attention tinkerers: Raspberry Pi has released a new camera for its tiny single-board computers. The “Raspberry Pi High Quality Camera” is on sale now for $50, and it will be sold alongside the older Raspberry Pi Camera Module V2, which will still be the usual $25. This is a for-real camera system, so that $50 won’t get you a ready-out-of-the-box Raspberry Pi camera, you’ll also need to buy a lens for the—get this—*interchangeable lens system* that the high-quality camera supports.

Both cameras plug into the Raspberry Pi computer’s camera serial interface using a ribbon cable, but the High Quality Camera looks like a massive upgrade, both in size and (hopefully) in image quality. While the $25 Camera Module V2 uses an ancient, low-end smartphone camera sensor with a microscopic lens, the High Quality Camera is a different class of product entirely. It’s *not* a newer smartphone sensor, which is what I assumed when I first saw the news, but instead it’s something that was originally intended for camcorders. It’s a 12.3MP Sony IMX477 sensor with pretty huge 1.55 µm pixels and a 7.81 mm diagonal (1/2.3″-type). That’s about double the sensor area of the Camera Module V2.

As the Raspberry Pi foundation puts it in the blog post, “There are limitations to mobile phone-type fixed-focus

modules. The sensors themselves are relatively small, which translates into a lower signal-to-noise ratio and poorer low-light performance; and of course there is no option to replace the lens assembly with a more expensive one, or one with different optical properties. These are the shortcomings that the High Quality Camera is designed to address."

The specs are in the same ballpark as a modern smartphone camera sensor, but the lenses for the High Quality Camera will blow your phone camera out of the water. There is an interchangeable lens system with support for off-the-shelf C- and CS-mount lenses and a back focus adjustment ring for swapping between lenses. This mount isn't as big as a DSLR lens—it's a smaller size that frequently gets used for 16mm CCTV video cameras. In addition to the native C-mount lenses out there, there are also plenty of adapters, and you can easily jump up to a real DSLR size like an EF Canon mount.



With an adapter, you can also attach, much, much bigger

lenses.
The lens system unlocks a whole world of photography for the tiny Pi computer. The Raspberry Pi Foundation is already taking the mount system to the extreme with a picture of a beefy telephoto zoom lens—what looks to be a Canon EF 70-200mm f/2.8L IS II USM—that absolutely dwarfs the tiny camera body. That's a $2,500 lens for your $50 sensor. For less ambitious photography tasks, entry-level C-Mount lenses can be had on Amazon for about $30. Raspberry Pi resellers will be stocking two lens options for people getting started: a 6 mm CS-mount lens for $25 and a 16 mm C-mount lens for $50.

As usual for a Raspberry Pi product, there is just enough here to get up-and-running while keeping costs to a minimum. The circuit board has four mounting holes on the corners, and in the future there will no doubt be millions of aftermarket cases and 3D printable designs to protect the exposed board. It sounds like a lot of attention was paid to the C lens mount, which was milled out of aluminum to securely hold your lens. The one luxury is a standard 1/4-inch tripod mount on the bottom.

Raspberry Pis frequently get turned into video cameras, so this seems like a great idea. The tiny computers are perfect for making time lapses, motion-activated video, or for constantly recorded surveillance. With Wi-Fi and Ethernet, the video can be viewed remotely, or with USB storage or an SD card, you can store a ton of video right where you're recording it. The Pi is a great solution for a small, flexible video recording package. Previously, the most practical option for better video quality was some kind of USB webcam, but this with a good lens should be a big upgrade.

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