Can the Pixel 5 camera still compete using the same old aging sensor?

Google's new Pixel phones are here, as is the annual round of speculation over how their cameras will perform. The Pixel cameras have been in a weird spot for a couple of years; the Pixel 2 in 2017 was an incredible leap forward for smartphone photography, but features like Night Sight aside, the 3 and 4 were mostly evolutions on the same hardware and software formula, making what sometimes felt like subjective tweaks more than clear improvements to image quality. It's to Google's credit that they've still remained among the very best phone cameras you can buy.

It's impossible to pass real judgment on the Pixel 5 and Pixel 4A 5G, which share the same front and back cameras, until we're able to test them out for ourselves. From what Google's said so far, though, they do seem to be similarly evolutionary upgrades.

For one thing, Google is still using the same Sony IMX363 12.2-megapixel primary sensor as in the last few Pixel phones. Google told *The Verge* in a briefing that this continuity helps its Pixel camera team refine algorithms from generation to generation, and that there wasn't a part on the market that would have been better suited to the company's needs.

The importance of the sensor hardware itself has been downplayed by Marc Levoy, the former distinguished engineer at Google who led the team working on much of the Pixel camera software, including breakthrough features like HDR+. Last month in an interview with *Verge* editor-in-chief Nilay Patel, Levoy said "Because of the diminishing returns due to the laws of physics, I don't know that the basic sensors are that much

of a draw," pointing out that higher-resolution parts rely on de-mosaicing the input from much smaller pixels.

Those high-resolution phone camera sensors are also physically much larger than what Google has been using for the past four years, though, and I do have to wonder what the Pixel team could achieve with a 12-megapixel sensor of the same size as the 48-megapixel or 64-megapixel parts that are commonplace in phones today. Levoy recently left Google for Adobe, so Google has a decision to make about how long it can rely on the same hardware-software pipeline.



That said, we should still expect some improvements in the Pixel 5's basic image quality. In the announcement video, product manager Soniya Jobanputra said HDR+, the foundational technology behind the Pixel's computational photography, has gotten a "serious upgrade" in the new phones, blending Google's algorithms with techniques like exposure bracketing. There are also new features like the ability to take Night Sight portraits in low light, as well as an AI-powered portrait lighting editing tool. We'll have to see how the

results turn out, and whether Google has managed to wring out another generational upgrade out of the years-old sensor.

That’s not to say that nothing has changed with the hardware. For the first time, Google is including an ultrawide lens, replacing the Pixel 4’s telephoto. Google tells *The Verge* that this is because Pixel phones since the Pixel 3 have a Super Res Zoom feature to improve the resolution of digitally zoomed shots, while ultrawide lenses can capture whole new perspectives. That is… exactly why I thought the Pixel 4 should’ve included an ultrawide instead of a telephoto a year ago, but I’m at least glad that Google is making the right choice now.

(Though I will continue to point out that lots of phones just include both lenses.)

[embedded content]

One perennial flaw with the Pixel cameras is their video recording, which is never anywhere near as impressive as their still image quality. The iPhone in particular does a far better job capturing smooth footage with balanced exposure. This year, Google is introducing three new stabilization modes for Pixel video called Locked, Active, and Cinematic Pan. Google also tells *The Verge* that the Pixel team spent a lot of time optimizing the video recording capabilities based on feedback, so we’ll be looking at that with interest when we have the phones in hand.

What we can say now is that Google is continuing to put extraordinary faith in its software team to keep the Pixel’s pedestrian hardware at the front of the pack, even in the face of technically impressive competition from the likes of Huawei. And so far, that faith has not been misplaced. Even the $349 Pixel 4A is a fantastic phone camera that matched the Pixel 4 and easily holds its own against far more expensive devices today, so expectations for the Pixel 5 should still be

high. Stay tuned to *The Verge* to find out how it stands up to scrutiny.

https://www.theverge.com/21496686/pixel-5-camera-comparison-sensor-specs-features