

Samsung Galaxy S20 Ultra vs. Google Pixel 4: A camera comparison

The S20 Ultra has some crazy camera specs. How does it stack up against Google's flagship phone?

The Samsung Galaxy S20 Ultra isn't for everyone. A fantastically expensive device, it's easier for us to recommend the S20 and S20 Plus phones. But for those willing to splash \$1,399, the S20 Ultra has one *hell* of a camera setup, at least on paper. A 108-megapixel main shooter, a 48-megapixel telephoto lens, a 12-megapixel ultrawide angle camera and a time-of-flight sensor for depth perception.



Yep, that's a whole lot of megapixels.

But as extravagant as this quad-camera family is, Google has continuously proven that more cameras and megapixels don't automatically mean better photos. The Pixel 4 was the tech giant's first phone to rock dual cameras -- a 12.2-megapixel and 16-megapixel telephoto combo -- yet Pixel devices have been photography standouts each year.

There's no question: Samsung's S20 Ultra has a more feature rich camera. It's got an 108-megapixel mode and at this point the Pixel's lack of an ultrawide-angle camera is scandalous. But what about standard photography, zoom, low-light shots and portraits?

Got the #GalaxyS20Ultra camera update and it actually seems like it's made the AF issues worse than before? Now it won't even adjust focus in video, it's locked to infinity <https://t.co/XSpu8S3nG3>
— Lexy Savvides (@lexysavvides) March 27, 2020

The Pixel 4, which starts at \$799, does an admirable job at keeping up with a newer phone that's nearly twice the price. And despite its considerable price, the S20 Ultra suffers from autofocus issues that Samsung is trying to patch with software updates. (I haven't got that update, but CNET's Lexy Savvides did -- and notes that it may have only exacerbated the autofocus issues).

But despite all that, the S20 Ultra wins this race. While the Pixel is more consistent, ultimately it's the S20 Ultra that takes better photos.

Portraits

Let's start with bokeh-style portrait shots. Which phone will shoot you a better Facebook profile picture? Broadly speaking, this is a tie. Which you prefer will come down to personal preference. The S20 Ultra implements light beautification, even with the "skin smoothness" function turned off. As a result, "live focus" portraits it takes end up looking lightly brushed. The Pixel 4's retain more detail, but can sometimes look harsh in comparison.

Take this shot of Ian, one of CNET's video wizards. As you'll see, both phones performed superbly. The differences take a closer look to spot, but they're there. The S20 Ultra's softening affect makes Ian's stubble look less prickly and his skin smoother. But there's also a loss of detail, as you can see clearly in his hair to the left of his fringe.



You can see a similar effect in these photos of my housemate. Esther herself preferred the shot taken on the S20 Ultra and the Pixel almost looks unusually detailed in comparison -- like it's been put through Instagram with the "structure" slider cranked up. You'll see that the line between foreground and background is a little jarring in the Pixel shot by her hair, too. But the Pixel also has a more accurate white balance, with the S20 Ultra photo having an artificially cool hue.

Still, I'd give the portrait advantage to the Pixel. Though you may prefer the portraits taken by the S20 Ultra above, the phone struggles more in non-ideal lighting conditions. True, the Pixel portrait of Hugh here does compensate for lower light with some extra contrast and shadows. But it does a better job than the S20 Ultra's live focus shot, which looks flatter and more washed out.



This difference is compounded in low-light conditions. In these shots of Rachael, the S20 Ultra's portrait has much more visible noise and grain than does the Pixel 4's.

This trend extends to the front camera. In the first photo below with decent light, where I was standing in my kitchen facing a window, the two selfies look fairly similar. The Pixel's shot is sharper, but the colors in the S20 Ultra are better. But take a look at the selfie below *that* and you'll see the S20 Ultra's is way overexposed. This was a reliable problem when taking selfies in imperfect light conditions.

Bread and butter

In previous camera comparisons I've taken Huawei flagships -- the P30 Pro and Mate 30 Pro -- and compared them to the iPhone 11 Pro. The constant theme there was that Huawei phones shot more striking, but at the expense of detail. The Samsung S20 Ultra has a remarkable ability to avoid this trap: Its photos are typically more rich and lively than the Pixel's, but rarely to the detriment of detail.



You'll see above that the photo quality is similar, but that upon examination, images captured by the S20 Ultra reliably pop more. Pixel 4 photos can look comparably undersaturated. But there are still some occasions where Google's phone gets an edge.

Due to autofocus issues with the S20 Ultra -- which Samsung is on track to patch -- the Pixel tends to shoot more consistent photos. I often needed wrangle the S20 Ultra to get the focus just right, but the Pixel's consistency also bleeds into features such as white balance. You'll see in the below shot of jars that the S20 Ultra has an off-putting warmth to it. Below that, you'll see a close-up of a flower where the Pixel 4, while less dynamic, has shot more detail.

It's another close one, but the S20 Ultra is slightly ahead of the Pixel for standard photography.

Night King

The area where the two phones are closest is when night falls. Both phones feature excellent low-light photography, bolstered by the S20 Ultra's Night mode and the Pixel's Night Sight setting.

Each phone scores some advantages. It's something of a reverse from standard photography, as here it's the Pixel that takes more arresting shots, but the S20 Ultra that often retains more detail. Overall it's too close to definitively call either device stronger than the other here.

In the above shot, you'll see the greens captured by the Pixel are much richer. But the S20 Ultra's night shot is also slightly more detailed -- see the shrubbery at the bottom center -- and has a more natural-looking hue. Also note, though, that with Night mode and Night Sight turned off, the S20 Ultra performed much better.

In the below photo of a looming tree, with both device's night modes on, the S20 Ultra captured more detail, as you can see by looking closely at the leaves on the left side, which are more blurry and noisy on the Pixel 4.

Both phones deal with night-time white balance differently. The S20 Ultra tends to be warmer and the Pixel 4 cooler. You can see this most clearly in the photo above (the difference was mostly not as noticeable as it is here).

In this case -- and unlike the first photo in this section -- it's the Pixel that looks more natural, because the S20 Ultra warmth looks artificial on the leaves. Look to the background though and the Pixel's shot looks too blue. The S20 Ultra's shot is sharper, though.

The Pixel scores a clean win in this picture below of Garrett, though. The S20 Ultra's shot is flatter and duller. The Pixel's is sharper and, due to better contrast, more vivid.

This one's a tie. The Pixel 4 more consistent, but the S20 Ultra often captures more detail and its non-Night mode photography is better than the Pixel 4's non-Night Sight photography.

Zoom

Until now, the two phones have been fairly evenly matched. But when it comes to zoom, Samsung's Galaxy S20 Ultra is the clear victor. That makes sense. One of the phone's most marketed features is "Space Zoom" -- its ability to reach 100x magnification. That's technically impressive, but more novel than useful. What's more practical is its 4x optical zoom, which means you can shoot up to 4x magnification with minimal detail loss.

The Pixel is no slouch here. When it launched, Google lauded its telephoto lens. Like the iPhone 11 Pro phones, it can shoot 2x optical zoom. The Pixel can go up to 8x zoom, which is less than a tenth of the S20 Ultra's capability but probably as much as you'll need. In practice, what matters most is how these magnification levels look on each phone. This is the S20 Ultra's specialty.

At 3x zoom, above, you'll see the S20 Ultra's shot is more saturated (a little too saturated, perhaps), but also sharper. Not a huge gulf, but still impressive. The difference between phones expands the more you zoom in.

Below is a 5x zoom picture of the University of Sydney's main hall, famous for being Sydney's only dignified-looking building. The Pixel 4's shot definitely doesn't look bad. But the more you compare the two photo -- the texture of the bricks, the deeper blue of the windows and the overall clarity -- the more you'll appreciate the S20 Ultra's prowess.

Next, here's an 8x zoom of the University of Technology, Sydney, a significantly more depressing building and also the one in which I got my tertiary education. Good times. Below that is another 8x zoom of some street art atop a neighborhood shop. In both cases, the S20 Ultra magnificently retains color richness and detail, while the Pixel's products look drab in comparison.



S20 Ultra is feature rich

Below are some shots taken on the S20 Ultra's ultrawide-angle lens. I can't compare them to the Pixel 4 because Google's phone doesn't have an ultrawide-angle camera. That was a painful omission when it launched last October and it hurts more with every flagship a competitor releases. (Even many budget and midrange phones have them.)



Then there's the 108 megapixel mode. It's a sensational-sounding feature, but it's more a nice touch than groundbreaking. The benefit of 108 megapixel mode isn't that photos become more detailed at a glance. Rather, it's that zooming in on a photo after it's been taken reduces in significantly less detail loss. Here's a thorough examination of 108 megapixel mode.

Between more vivid shots and a deeper photographic toolbox, it's fair to say the Samsung Galaxy S20 Ultra has a better camera than the Google Pixel 4. With such a price difference though, you'd expect that to be the case.

The Pixel 4 still performs admirably; it's still a fantastic cameraphone. But between its lack of an ultrawide-angle lens and the S20 Ultra's exceptional zoom skills, the Pixel can no longer lay claim to being Android's camera king.

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