

Xiaomi's "Ultra" camera phone has a grip accessory, screw-on lens filters

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- The Xiaomi 13 Ultra in its full camera mode regalia.
- Here is just the phone body.
- See that shadow to the left of the camera bump? The whole phone gets thicker there.
- Look below the camera bump. The whole phone body gets thicker and sticks out below the device frame. It's a very unique design.
- Oh, there is also a screen on the front. Sometimes you can't be sure since nearly all press shots are of the back.
- It also comes in black and white, but Xiaomi is a big fan of the green model.
- Cooling copper.
- The top edge. Again we see a phone with a top edge speaker, instead of the usual earpiece speaker.
- The 50 W wireless charger is just here because I like the design.

Xiaomi's newest flagship smartphone is the 13 Ultra, and it wants to be the ultimate smartphone camera. There's a big 1-inch sensor, a dual-aperture lens, and a camera grip shutter button accessory. Along with the faux-camera-leather back and big, round camera bump, if you squint, this almost looks like

a point-and-shoot camera.

The headline feature is the 50 MP camera powered by a 1-inch Sony IMX989. We've seen this sensor make headlines before as the biggest, most powerful sensor on the market in phones like the non-Ultra Xiaomi 13, the Vivo X90 Pro Plus, the Sharp Aquos R7, and the Leica-rebrand of that Sharp phone, the Leitz Phone 2.

Xiaomi takes Sony's big sensor and adds a gimmick that we haven't seen since the Samsung Galaxy S9: a dual-aperture lens. Samsung's dual-aperture lens in 2018 could switch from f1.5 to f2.4. While that's technically interesting, that was not a big enough range to do much of anything. The goal of a smaller aperture on a real camera is to 1) take in less light if the environment is too bright, and 2) have a bigger depth of field so more things are in focus. None of that scales to a smartphone camera. First, the tiny lenses mean they can never get enough light, so a smaller aperture tends to be detrimental to your photos. Second, smartphone cameras don't have a big enough focal length to really do anything with depth-of-field effects.

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Professional camera lenses are big canisters for a reason, and that doesn't exactly scale down to a smartphone. Smartphones work around that with lots of software effects, but those are all just faking it. On the Galaxy S9, the barely there aperture change just made your pictures ever-so-slightly darker and uglier, and it was dropped in subsequent phones.

Xiaomi's dual-aperture lens, in both modes. You can see the two-blade iris in the right version.

Xiaomi's dual aperture has a slightly bigger range than Samsung's: it can switch from f1.9 to f4.0. Mechanically the iris looks identical to Samsung's implementation, with two blades: one is a C shape, and the other blade is smaller and completes the circle. For a DSLR, a mechanical ~12-blade iris gives you a variable aperture that you can adjust to whatever exacting degree you want—something like f1.4 to f22, and any microscopic step in between. These two-blade irises only have two states: the “open” f1.9 mode with the blades retracted and out of the way of the camera lens, and the ‘closed’ f4.0 mode with the blades extended to form a smaller circle. Just like on the Samsung phone, the physics don't entirely work here, so we wouldn't expect much actual benefit from the hardware. We're sure there will be plenty of software depth-of-field effects, though.

There are four rear camera lenses in total. The other three are all 50MP Sony IMX858 1/2.51-inch sensors. The lenses consist of an ultrawide, a 3.2x telephoto lens, and a 5x

telephoto lens. I could not tell you why there are two telephoto lenses. Packing all this camera hardware into a phone makes for an interesting camera bump design. Xiaomi's phone starts making room for the cameras at the halfway point of the phone, where the entire body starts to get thicker and sticks out beyond the metal frame of the phone. The black circular camera bump is stacked on top of that thicker body, giving the whole phone what looks like a big variance in thickness. Sadly Xiaomi only lists the phone with a single 9.06 mm measurement for the depth (we'll assume that is the thinnest part of the phone), but really you could get three different depth measurements depending on where you're measuring.

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- The camera grip gives you all of the bulk of a point-and-shoot camera without any of the benefits of a bigger lens.
- This two-stage shutter button with a zoom switch is pretty sweet, though.
- There are a ton of parts to this. The grip, a phone case, the 67 mm filter adapter, a lens cap, and lanyard. More phones should have lanyards.
- It's hard to tell since the phone and case look nearly identical, but the camera kit has a big green case.
- The grip just slides on overtop of the case.
- All the parts.

If you're serious about your size-compromised smartphone photography, Xiaomi has a pretty sweet-looking "Professional Camera Bundle" for RMB 799, or about \$116. There are two parts to this: first, it's a phone case that adds a 67 mm adapter ring around the camera bump. This lets you screw on standard-size lens filters like a circular polarizer or neutral density filter or attach the included lens cap. There's also the grip part, which, besides giving you a big handle to hold onto, includes a physical two-stage shutter button surrounded by a

rotating point-and-shoot style zoom switch, and a lanyard. Camera grips are usually also where a battery goes, and this includes the tiniest sprinkle of lithium-ion: You get an extra 330 mAh. Shoutout to the LG G5 modular disaster phone for doing this first. LG's camera grip had a 1200 mAh battery.

Under the big pile of camera features is a normal flagship 2023 smartphone. A 6.73-inch, 120 Hz, 3200×1440 OLED, a Snapdragon 8 Gen 2 SoC, 12GB of RAM, 256GB of storage, and a 5000 mAh battery. Xiaomi's charging tech sounds great, with a 90 W wired option and a 50 W wireless charger.

As always, none of the fun phones come to the US. This one is China-only for now and goes on sale on April 21 for RMB 5,999 (about \$872).

Listing image by Xiaomi

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