Xiaomi Mi 10 camera and Galaxy S20 Ultra camera: which 108MP camera is better?

Priced at half the price of the Galaxy S20 Ultra, will Xiaomi Mi 10 show how it will compete against Samsung's super-heavy rival?

As two of the few smartphone devices that are equipped with today's most powerful cameras: 108MP, both Xiaomi Mi 10 and Galaxy S20 Ultra offer certain advantages with such high resolution, especially. is when the application in some cases requires extremely high levels of detail.

However, there are terrible resolution camera just stop at the hardware specifications, the decision to see if photos taken from 108MP camera is really quality or not will depend on the software and image processing algorithms. Own photos of each manufacturer.

For the purpose of this article, we will try to compare the 108MP camera of Xiaomi Mi 10 smartphones (standard version) and Galaxy S20 Ultra to see if which device will produce better and better photos. when shooting with a 108MP camera. Of course the article is for reference only based on the camera hardware of the cheeks, so other factors will not be mentioned.

For those of you who don't know, Samsung is the only manufacturer on the market that offers 108MP camera sensors for smartphones. With Xiaomi Mi 10, the device uses a Samsung ISOCELL Bright HMX 108 MP sensor, which is "pristine" from the Mi Note 10 series, while the Galaxy S20 Ultra is equipped with a higher-end Bright HM1 sensor, which is Next generation HMX sensor on Mi 10.

108MP

Of course, this will be the first shooting mode that we compare between the Xiaomi Mi 10 and Galaxy S20 Ultra. For a more intuitive look, please read some of the pictures taken in 108MP mode of both machines. In every image, we zoom in at 200% to "examine" the details of the image.

The image of Xiaomi Mi 10 will be on the left and the image of Galaxy S20 Ultra will be on the right.

The 108MP photo of the Mi 10 with a 200% zoom is a bit sharper than the GAlaxy S20 Ultra


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SHOT ON MI 10 5G
108MP QUAD CAMERA
GENK
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In this photo, it looks like the photos taken from both cameras are quite similar


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SHOT ON MI 10 5G
108MP QUAD CAMERA
GENK
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At this point, the detail of the 108MP image on Mi 10 continues to outstrip the Galaxy S20 Ultra

As we can see, if only in terms of detail, it seems that Xiaomi Mi 10 gives a slightly more detailed image, although both have the same resolution (about 12000 x 9000) and even the 108MP sensor of the S20 Ultra is more advanced than that of the Mi 10. In some areas where text is available, it is easier to read on the 108MP image of Xiaomi Mi 10, but also to photos from the Galaxy S20 Ultra, quite hard to recognize such small lines.

The reason for this is probably because Xiaomi has a better image processing algorithm than Samsung, so the 108MP image has a higher level of detail. Anyway, Xiaomi has had experience writing 108MP image processing software since the Mi Note 10 / Mi CC9, so this will be a good advantage of Xiaomi before rival Samsung.

What about other modes?

To be fair and overall, we will also compare the camera performance of both Mi 10 and S20 Ultra smartphones when shooting in different modes.

The first is to try HDR photography in Auto mode, if compared, the Xiaomi Mi 10 often produces images with more vibrant colors and higher brightness, while the Galaxy S20 Ultra, the images tend to appear darker. and more realistic colors (both have AI enabled and contextual optimization enabled).

Xiaomi Mi 10 tends to push the colors and brightness of the photos to look more eye-catching, while the Galaxy S20 Ultra retains the image fidelity


SHOT ON MI 10 5G
AI QUAD CAMERA
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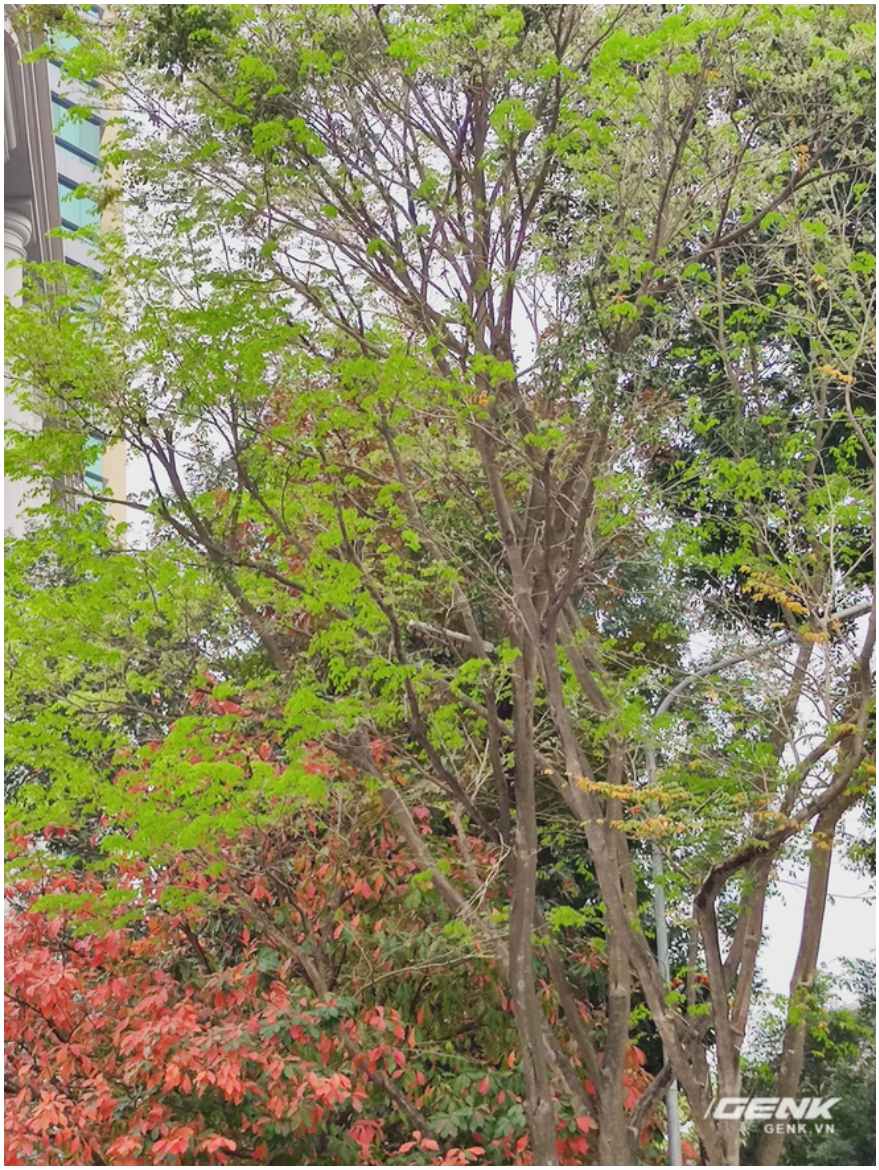
The same thing happens when shooting in super wide angle mode

The advantage of Galaxy S20 Ultra compared to Xiaomi Mi 10 is that it is equipped with a 4x telephoto camera, while with Mi 10, users can only zoom electronically, thereby reducing image quality many times.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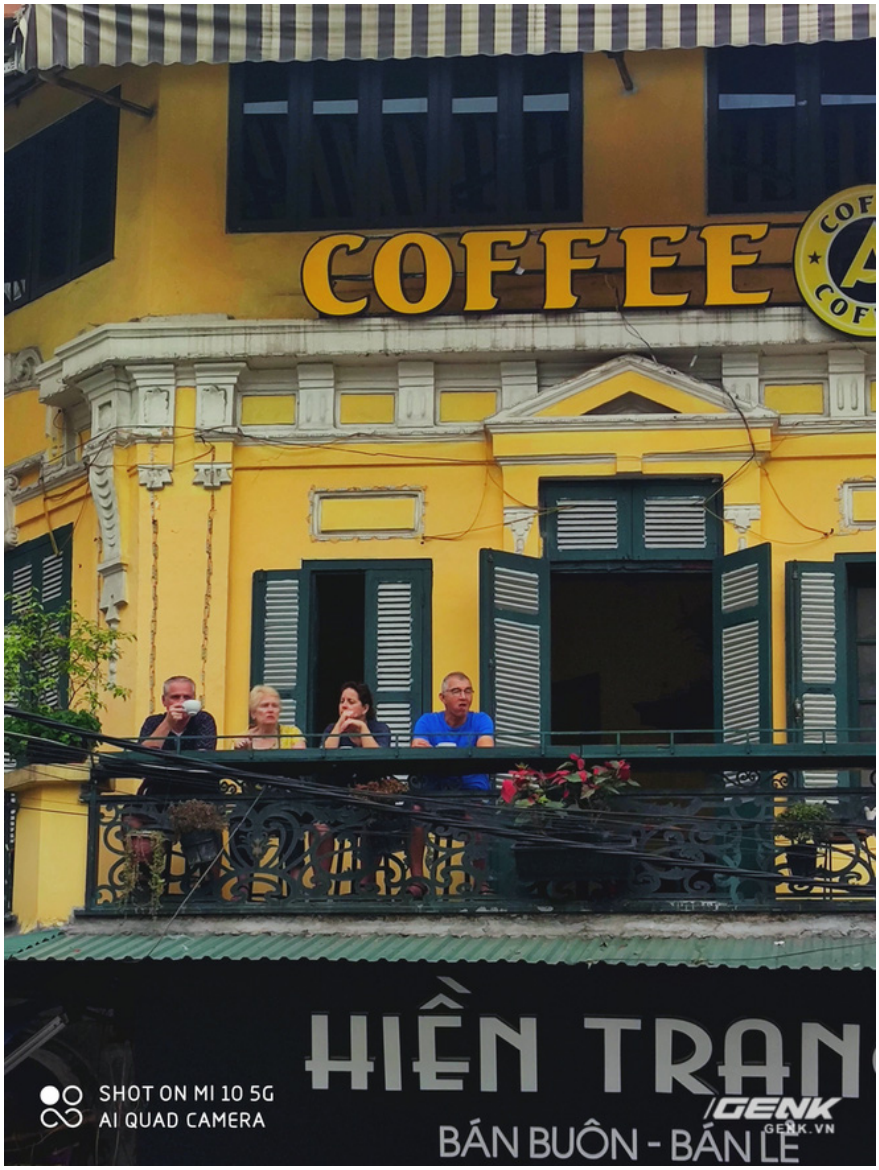
With the advantage of 4x telephoto lens, the images from Galaxy S20 Ultra have more detail than Mi 10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SHOT ON MI 10 5G
AI QUAD CAMERA
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Another example of the ability to take 4x zoom photos between Mi 10 and Galaxy S20 Ultra


SHOT ON MI 10 5G
AI QUAD CAMERA
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Details of the 4x zoom image on Xiaomi Mi 10 are far behind the Galaxy S20 Ultra


SHOT ON MI 10 5G
AI QUAD CAMERA
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However, if you only consider 2x zoom (both cameras are electronic zoom), in some cases the images from Mi 10 are more detailed and sharper than the Galaxy S20 Ultra. This seems to be due to the image resolution, as the Mi 10 only interpolates 4 pixels to produce a higher resolution image than the 9 pixels interpolation on the Galaxy S20 Ultra.

Next is the ability to take portraits, due to the disadvantage of the lens, the Galaxy S20 Ultra is capable of capturing portraits that look better with telephoto cameras, while Mi 10 uses the wide-angle main camera. to take a photo. Regarding the ability to remove fonts, both machines perform very well with the separated background not being too much into the subject.


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Focus effect makes Galaxy S20 Ultra portrait photos look more real and beautiful

Due to the large 108MP sensor, both Xiaomi Mi 10 and Galaxy S20 Ultra are capable of taking close-up background shots well without using algorithms. However, during the experience, we noticed that the Galaxy S20 Ultra had trouble focusing. With the image of a leaf below (2x zoom), Mi 10 can take a shot right away with the blurred background quite well, the Galaxy S20 Ultra takes several times to be able to produce a satisfactory image. (most will be out of focus).


SHOT ON MI 10 5G
AI QUAD CAMERA
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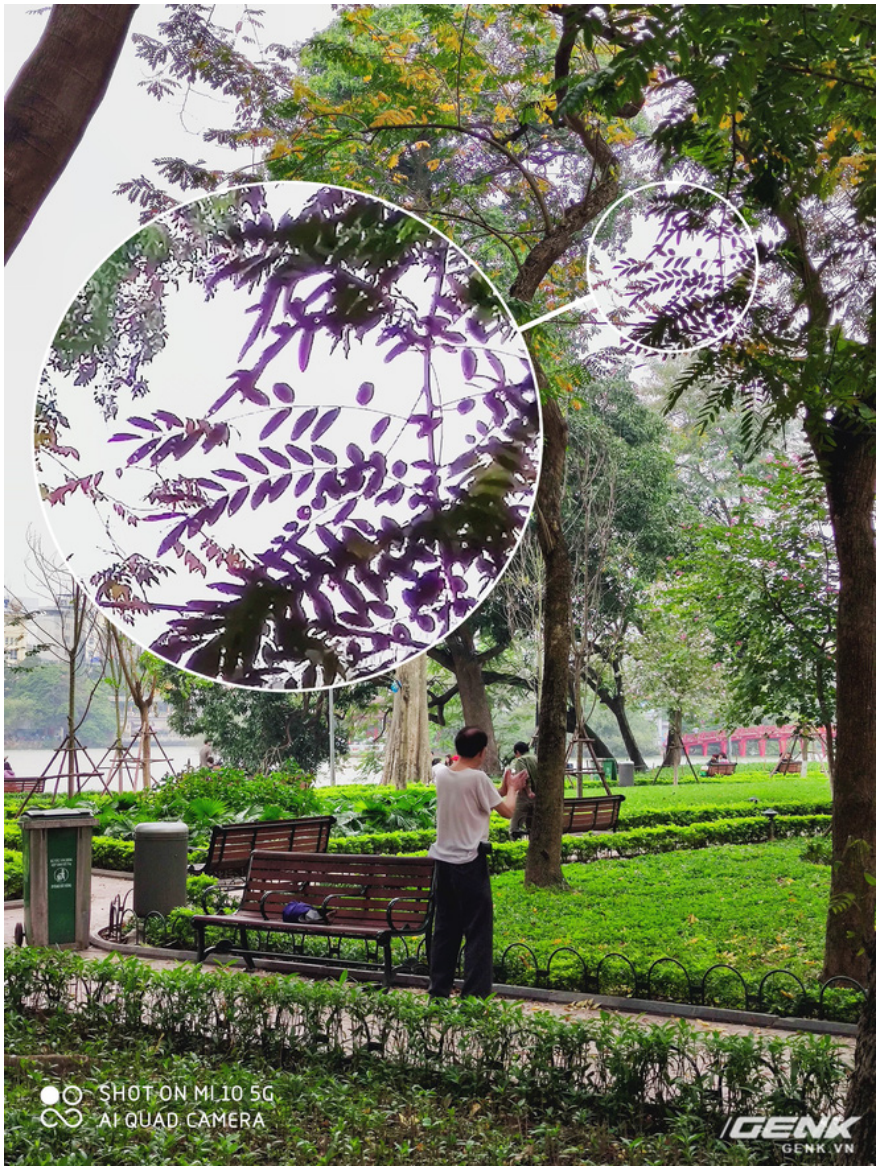
The background behind the image of Mi 10 has a more beautiful round bokeh than photos taken from the Galaxy S20 Ultra

Galaxy S20 Ultra has a pretty serious problem with focus

A major problem of Xiaomi Mi 10 is that the camera lens quality is not really good. In many cases, due to poor lens quality, photos taken from the Mi 10 experience a lot of purple fringing, appearing much in strong light areas. Xiaomi says the Mi 10 has a 7P lens (7 layers of plastic combined) and the Pro version has an 8P lens, we hope this purple border phenomenon will be overcome by Samsung on the Pro version by correcting the aberration required. It requires specialized software such as Photoshop or Lightroom. As for the Galaxy S20 Ultra, we have never seen any purple border in any photo.


SHOT ON MI 10 5G
AI QUAD CAMERA
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It can be seen that the camera on Xiaomi Mi 10 has heavy purple border (aberration), Galaxy S20 Ultra is not

Finally, a comparison of low-light performance. In this section, we will compare in all 3 modes: Auto shooting, 108MP shooting and night mode shooting. The result is quite unexpected.


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This is the Auto shooting mode of both cameras (with AI enabled and context-optimized), resulting in images from the Mi 10 that have a bright and well-lit area that is better and more uniform than the Galaxy S20 Ultra's image.


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Go to low light mode at 108MP resolution, photos from Mi 10 have superior detail compared to Galaxy S20 Ultra


LOTTE
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Finally, Night Mode, Xiaomi Mi 10 began to show weaknesses when the photos were too bright, plus the areas with the lights all burnt out.


LOTTE
/GENK
GENK.VN

Another example of Night Mode photos, Mi 10 continues to handle overly bright colors and can't handle highlights and shadows.

So from the comparison above, we can see that the Galaxy S20 Ultra has a better camera sensor and the price difference is quite different from Xiaomi Mi 10, but not in any case. Galaxy S20 Ultra also outperforms rivals from Xiaomi.

Xiaomi has very good image processing software, but still needs a lot of improvement in some aspects (such as night mode), and with Galaxy S20 Ultra, Samsung can also optimize image quality with software, which allows images to have higher definition and detail, because the HM1 sensor on the Galaxy S20 Ultra is nonetheless a more "genuine" sensor than the HMX sensor on Xiaomi Mi 10.