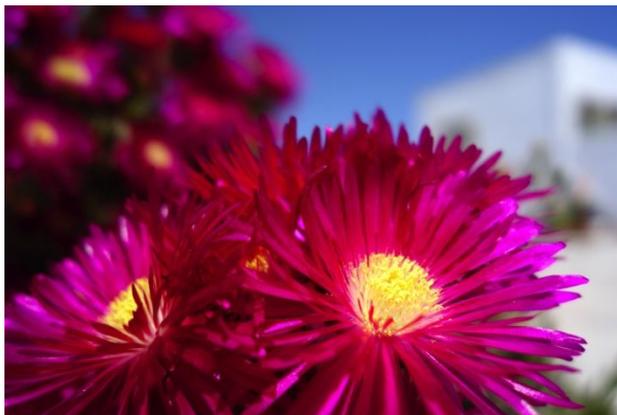


Outstanding background blur puts DSC-RX100 in a totally different class than conventional compact cameras.

Just looking at the specs excites me. I'm curious to know the capabilities of a 1.0 type Exmor CMOS sensor combined with an F1.8 lens.



Outstanding background blur puts DSC-RX100 in a different class than conventional compact cameras.

Kureishi (Product Planning)

At the beginning of the project we made a mock-up of the product brochure to clearly define what features and value we wanted to provide. The mock-up showcased three features: background blur, high resolution and low noise. Of course we knew we could never obtain the quality of a full-size sensor DSLR with a prime lens. However, the sensor we eventually developed delivers sensitivity and resolution more than equal to that of compact interchangeable-lens cameras and compact cameras equipped with similarly sized sensors. In addition, the Carl Zeiss Vario-Sonnar T* lens, which was developed specifically for DSC-RX100, also enhances image quality thanks to its outstanding optical performance and ability to produce lovely background blur.

Amemiya (Project Leader)

Right. Since the lens allows you to easily blur backgrounds, it lends photos a nice sense of depth. The first photo I took with the prototype was of a coffee cup on my desk. It was still early in the development stage, but I remember how impressed I was by the artful depiction of an everyday object. This compact camera's increased ISO sensitivity, noise reduction technology and reproduction technology make for dramatically better photos compared to earlier Cyber-shots.

Kaimi (Product Design)

With the first prototype I took some shots using midrange ISO sensitivity between 800 and 1600. Even then I could clearly see that DSC-RX100 surpassed conventional compact cameras in terms of image quality. Because this was an early prototype, I wondered what the finished product would be like. I field-tested it for days.

Ueda (Image Quality Design)

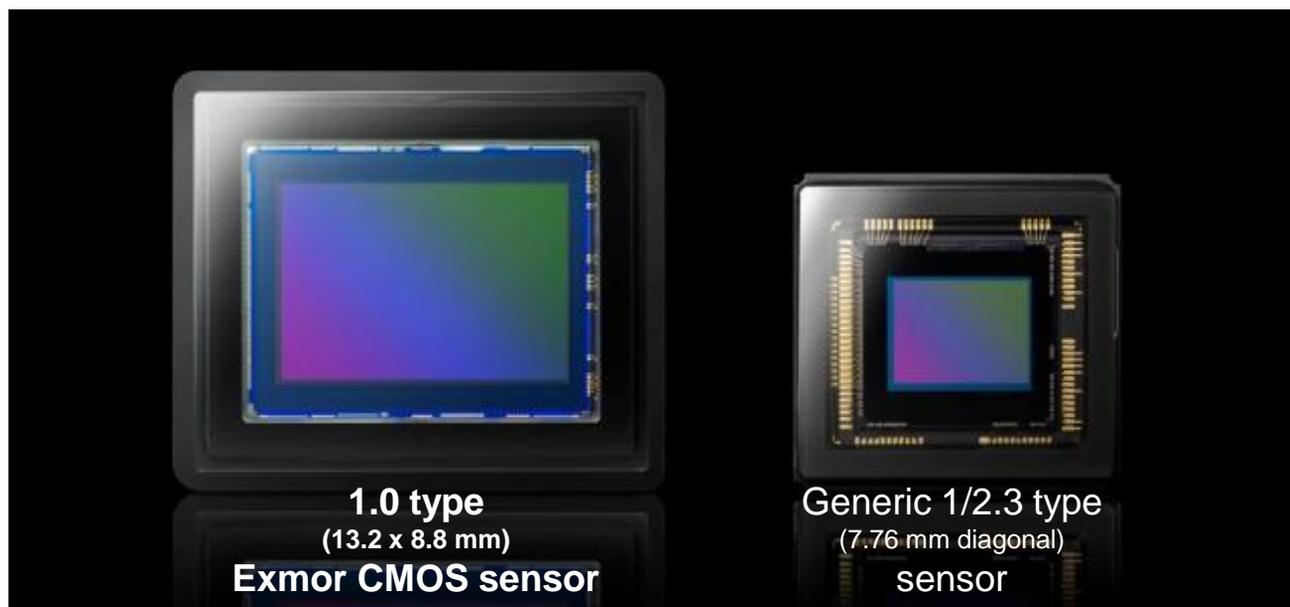
What we have is first-rate background blur that far exceeds the kind produced by conventional compact cameras. I shot video in low-light environments and was very impressed with the soft, beautiful blur and very low noise levels. This is due to the large sensor, which handles high-sensitivity shooting extremely well, and the bright F1.8 lens that makes it possible to keep ISO sensitivity down.



Kazushige Amemiya
(Project Leader)

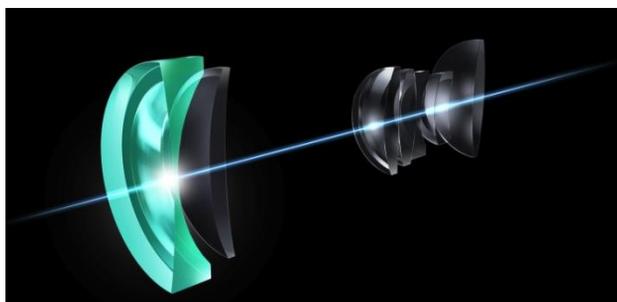
The reason for using a 1.0 type CMOS sensor with approximately 20.2 effective megapixels.

Undoubtedly, the sensor and the lens are responsible for the amazing image quality. How did you decide on a 1.0 type CMOS sensor?



Ueda (Image Quality Design)

We wanted to exploit the ability of the bright F1.8 lens to create background blur. We felt that the 1/2.3 type sensor found in many conventional compact cameras — and even the 1/1.7 type sensor in premium compact cameras — wouldn't suffice. But if the sensor was too big, we would have to increase the size of the lens, which in turn would make the DSC-RX100 larger. Thus, we settled on a 1.0 type sensor; large enough for producing great background blur yet small enough to keep the camera compact.



Lens design required exacting precision to achieve high performance.

Kato (Lens Design)

If the image sensor is large, obviously the lens will have to be large, too. Also, the brighter the lens, the larger it becomes. I don't want to brag but it was quite a feat to keep the bright F1.8 lens this small (laughs). We developed it specifically for this compact camera. It's a short, large-diameter AA (Advanced Aspherical) lens, small and with increased performance.

The lens has seven elements in six groups and features optical image stabilisation. If we had employed a conventional optical system, the lens would have been considerably larger. To further reduce size, the stabilisation mechanism drives only the essential lens group. This, however, caused the optical axis to deviate. Solving the problem required exacting precision in the lens design.



Kihachiro Ueda
(Image Quality Design)

Why did you want a 20.2-megapixel sensor? I heard that this incredibly high pixel count would negatively impact noise levels, thereby decreasing image quality at high ISO settings.

Ueda (Image Quality Design)

It's true that increasing pixel count increases noise. But since we manufacture our own sensors, we can easily tweak sensor specs to suit specific needs. This allowed us to craft a totally new sensor that delivers superbly detailed images with low noise. For high-sensitivity shooting we managed to reduce noise levels below those of existing Cyber-shots by combining technologies from Cyber-shot and α Series. As a result, we can shoot at up to ISO 6400 for normal photos and up to ISO 25600 when using Multi Frame NR.

Furthermore, we really beefed up BIONZ™ for markedly faster image processing than other Cyber-shots. For example, DSC-RX100 can shoot 20.2-megapixel images at 10 fps. And the faster processor also means faster AF — a mere 0.13 second at its fastest*. AF is also more accurate than on conventional models.

* Approximate. Based on Sony testing. Results may vary depending on shooting conditions such as brightness.



Richly detailed images and ultra compactness make DSC-RX100 the ideal travel camera.



Toshiyuki Kaimi
(Product Design)

Kaimi (Product Design)

Some compact cameras keep noise down with lower pixel counts. But there are users who really want super-fine images, which require a high pixel count. But if the higher pixel count leads to unacceptable noise levels that the noise reduction system can't reduce without affecting image quality, it is essentially self-defeating. Our new sensor achieves both super-fine images and low noise so even distant landscapes shot at telephoto focal lengths show great detail. People are going to love this compact camera for travel photography.

What kinds of photos is the camera especially well suited for?

Ueda (Image Quality design)

Thanks to a close-focus distance of only 5 cm when shooting at the minimum focal length, I would say close-ups due to the fact that you can get really nice background blur when shooting wide open. It's also great for distant subjects. The lens is a big factor in the camera's exceptional image quality.

Rediscovering lens quality largely forgotten in the digital age.

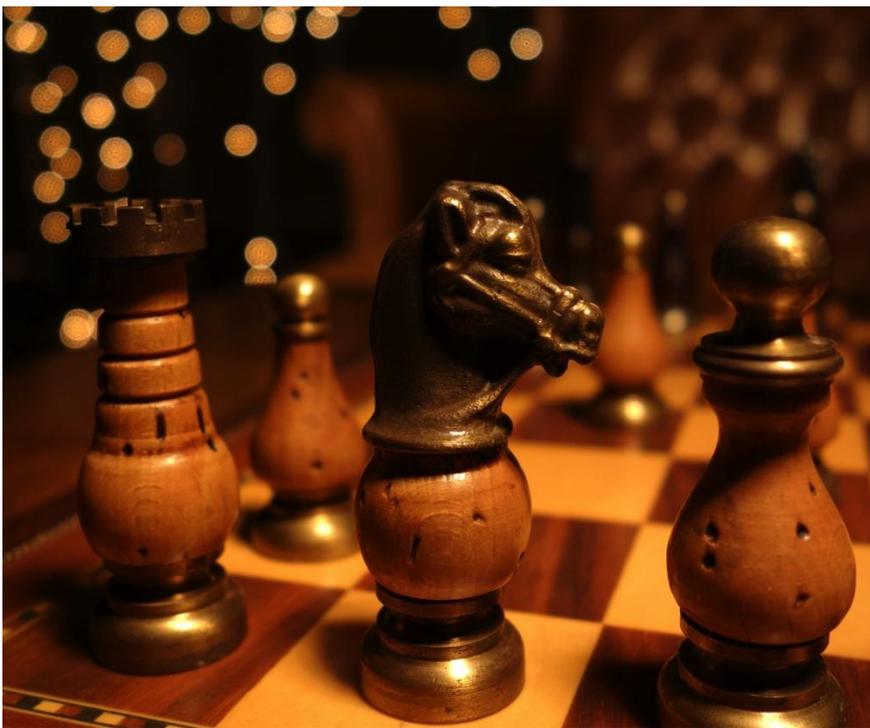
What did you focus on when developing the lens?

Kato (Lens Design)

We wanted people to start appreciating the different looks that different lenses give you; something that we feel has been forgotten in the digital age. I've been involved in development of α Series lenses, which enjoy a sterling reputation thanks to an optical design that takes into account the importance of background blur. This new lens lets users create beautiful background blur when shooting wide open and record excellent detail when stopped down.



Takashi Kato
(Lens Design)



The lens also features circular aperture blades that produce nice background blur.



Rediscovering lens quality largely forgotten in the digital age.

Did you do anything special to realise beautiful blur?

Kato (Lens design)

Yes. Most attention is given to the maximum aperture of F1.8, but the lens also features circular aperture blades that produce nice background blur even when the lens is stopped down. Generally, a lens aperture is perfectly round when wide open but changes to a polygon as it is stopped down. This results in polygonal blur from point light sources when shooting at anything but the maximum aperture. But the blades in our new lens form a nearly circular aperture even at F2.8 — a two-stop decrease from the maximum aperture. This makes for natural background blur that is very appealing. We also employed a seven-blade aperture due mainly to our expertise in developing lenses with an odd-number of aperture blades.