

Putting it all together for sharper, cleaner images

The development team worked to achieve the highest image quality possible by employing a 35 mm full-frame image sensor and a non-interchangeable lens design. The key to success was precise integration of lens and camera body.



INTEGRATED DESIGN (IMAGE QUALITY)

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Image quality that only integrated-lens design can achieve

Kanetaka: As we noted, the full-frame sensor combined with Sonnar T* lens makes RX1 quite remarkable. To fully leverage the performance of this duo, we employed the concept of “integrated design and adjustment.” This is a method of achieving real-world optical performance that closely approaches theoretical limits by reducing variations in the manufacturing process.



Dramatically improving sharpness across the entire image was achieved by adjusting the position of the sensor surface to find the exact point at which image sharpness at the periphery increases without affecting sharpness at the center. These adjustments are in microns.

Amano: After a lot of back and forth regarding the integrated-lens design, we finally got something on paper. But our initial efforts did not come out quite as planned. You see, because components are not perfectly uniform, each camera differs slightly, which means the ideal lens and sensor positions differ from camera to camera.

Given this limitation, we needed to discern sweet spots in terms of lens and sensor positions. This required numerous prototypes and measurements in order to gather data and examine image quality — a process that continued until right before production.

But in the end, there are limits as to what mechanical design can do. So we required close cooperation with the factory during production, making slight adjustments to each part to ensure that the sensor and lens were optimally positioned.



Close cooperation with the factory ensures precise positioning of lens and sensor.