LFI
4/2005
MAY
LEICA FOTOGRAFIE INTERNATIONAL

FRITZ BLOCK
REDISCOVERED:
AN AUTODIDACT IN
NEW OBJECTIVITY

DIGITAL MODULE R
WE TESTED IT:
THE DIGITAL BACK
FOR THE LEICA R8/R9

NEW FAMILY MEMBER
APO-SUMMICRON-M 75 MM
F/2 ASPH: SMALL TELE,
GREAT PERFORMANCE

4 194043 106501 04

PERFECT SYMBIOSIS

Film or digital? How about both? With the Digital Module R, owners of a Leica R8 or R9 can choose. The long awaited digital back unit is finally ready for shipping – LFI presents first test results.

BY HOLGER SPARR AND MICHAEL J. HUSSMANN

The Leica R community has been anticipating this moment for eight months, and now it is here: the very first models of Leica's Digital Module R are on their way. Up until the very last moment, Solms and development partner Imacon in Copenhagen had been adding finishing touches to the new firmware version of the digital back for the R8 and R9, which, hardware-wise, has already been rearing to go for quite some time; and it took a fair amount of negotiation skill to wrest our test unit from Leica in early April.

Initially, the release date had been set for December 2004. Time and again the many pre-orderers' hopes were raised only to be disappointed by Leica's understandable – if sometimes frustrating – drive for perfection. To a certain extent, fine tuning firmware is comparable to the lens development process, where the object is to find the right compromise between numerous possibilities. For instance, lowering the degree of noise may, in some way or other, decrease sharpness, and so on and so forth. To pinpoint the compromise that generates the best pictures from Kodak's 10 mega-pixel sensor, Leica took as long as was necessary until they arrived at their in-house standards.

In other words, we had to perform our lab and field test with a not-quite-final firmware version. But this was a minor letdown, as our test results (see page 28), as well as photographs – taken by Hamburg advertising photographer Joerg Schwalfenberg – demonstrate on these pages. In addition to film, Schwalfenberg has been working with all kinds of professional digital cameras and medium format back units since 1996. We handed him our test item for an extensive experiment in the context of his daily professional activity, and he says: "I've been expecting my Digital Module R for ages, but obviously it was worth the wait."

CONVERSION, FIRST CONTACT

A major aspect to Leica's digital solution is that the photographer can independently mount the Digital Module R with a few simple snaps and always transform the R8 or R9 back to film (see page 26).

The back unit comes with a padded bag enabling you to securely transform the camera en route. One key advantage over all small-format digital cameras is that the DMR sensor has a protective layer and, therefore, allows careful cleaning with a simple lens cloth. This alone might make owners of other system cameras jealous; dust is a serious problem, and cleaning unprotected sensors is a risky and sometimes expensive undertaking. When transforming the camera for the first time, the standard focusing screen is replaced by a type with an

This prototype of the Digital Module R is almost final – only the leather is missing

Unlike many other digital cameras, the Digital Module R's sensor has a protective layer that can be cleaned with a standard lens cloth

The 512 megabyte SD Card, included in the delivery package, provides space for 24 Raw images. DMR users are best off having plenty of these cards in stock

additional frame for the slightly reduced picture of the CCD sensor. The standard DMR delivery package includes the universal screen with grid divisions and micro prism ring; meanwhile, except the rarely demanded clear glass screen with crosshairs, Leica offer all R focusing screens with these borderlines. Should you prefer the focusing screen with grid it might be a good idea to place it with your order.

Next up is understanding and operating the control elements. As one would expect from Leica, you can play around with the various functions without even opening your manual, at least if you have a basic understanding of digital cameras. Important parameters, such as sensitivity, white balance and compression rate are accessed with a function selector on the bottom left, activated with the 'Set' key and altered by rotating the corresponding wheel with your right thumb. The large status display concisely indicates all settings and information, such as remaining capacity and exposure modifications. Only rarely needed functions, such as sharpening the picture or selecting the colour mode, draw you into the menu. The control monitor is fairly small but apt for picture evaluation; you intuitively zoom into the picture with the related wheel and move across the picture with the direction pads.

CONDUCT

A digital R9 is anything but inconspicuous. If you were to attach the ultra-compact Summicron-R 50 mm f/2 lens, for example, the two would make for a rather amusing picture. Still, even with the DMR mounted, the camera remains handy. Same as the motor drive, which is comparable in size and weight, the DMR has a hand strap and two conveniently placed exposure buttons. The protruded control display should not be a problem – even for eyeglass wearers –, though half of the time it is likely to be smudged; but this is no different from most digital cameras.

The Digital Module R requires a little reorientation due to its comparatively moderate crop factor of 1.37. For technical reasons, the sensor's light-sensitive surface, which sits in the 24 by 36 mm film window, does not fill the entire format. Consequently, in digital operation your existing lenses are no longer what you thought they were. Rule of thumb: add a good third to the nominal focal length. A 50 mm thus becomes a lens with the perspective of a 68 mm and a 35 mm turns into a standard 50 mm. The involuntary perspective magnification is only really bitter when it comes to wide angle photography, where a potent 19 mm lens is little more than a well-behaved 26 mm. In the field of tele lenses, however, the slight 'extension' is most welcome.

In our test, the transition to this new perspective was positive and smooth. In fact, the 'digital frame' in the viewfinder has certain advantages: like the Leica M, there is now an extra piece of motif around the actual frame, which is not a bad thing when trying to get a precise composition.

In addition to the simple fact that a full-format sensor could not, technically, be realised in an R8/R9 retrofit solution, Leica explained the crop factor with the aspect of vignetting. Unlike

Transformed in a jiffy – after removing the film unit, the Digital Module R is installed in its place

Next, the synthetic cover is removed from the sensor; if necessary, the sensor is cleaned; then the back unit is closed

Finally, the power supply unit is connected, the battery and the storage card are inserted – voilà! the digital R8/R9

www.LEICABEIMEISTER.com

Leica World readers elected us as the best Leica dealer.

Germany's largest Leica dealer 2003/2004.

Leica Digital Module R base.

Instant cash purchase of any Leica camera.

Specialist for dissolving of collections.

Leica's complete new price list online.

Massive second-hand bargains with 12 months guarantee.

We stick to what others promise!

Eppendorfer Landstrasse 64 – 20249 Hamburg, Germany – phone +49 (0)40-46 77 77 55 – fax +49 (0)40-46 77 77 57

info@LEICAbeiMEISTER.com

PICTURE QUALITY: NOISE AND COLOUR REPRODUCTION

Definitive test results will have to wait until we can get our hands on a serial model. However, an initial lab test with a premature firmware version already shows that Leica and Imacon are on the right track. We used Tiff files as a basis, instead of manually optimised Raw pictures, so as to reproduce the test results with more efficiency. The resolution – approx. 1720 lines per picture height – meets the sensor standards of this mega pixel category. Since every sensor pixel registers only the light of one of the three colour channels, red, green and blue, and the two remaining colour components have to be interpolated from adjacent pixel information, three pixels are required to resolve two clean lines. With a picture format of 3872 by 2567 pixels, that would be 1717 lines.

Our test model's firmware was very efficient at suppressing the noise generated by the sensor. Throughout the entire sensitivity range – all the way up to ISO 1600 – the brightness noise factor remained lower than in the case of Canon and Nikon's top performers. The visually less attractive aspect of colour noise – i.e., pixel colour randomly deviating from the nominal value – is perhaps more severe, but already reaches good values at up to ISO 800 and, according to Leica, will be noticeably better in the final version. Since this noise is particularly fine-grained, it will be visible on screen when viewing the picture at 100 percent but, thanks to the sensor's high resolution, invisible in print.

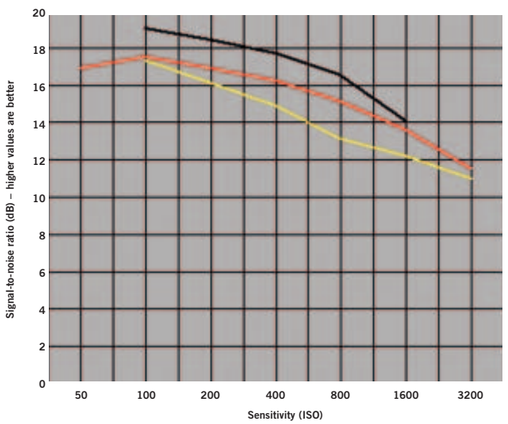
JPEGs and Tiffs only employ 80 percent of the available tonal range, but this conservative behaviour is typical of digital SLR cameras of this class. Should you choose to store your pictures in DNG Raw format, you can always optimise the reproduction of tonal values at a later point. The automatic white balance is remarkably precise, almost impeccable in daylight; it will even eliminate the colour tinge of halogen light, almost entirely. Selecting a preset for artificial light or preparing an individualised white balance by means of grey card will only improve this result to a negligible degree.

FIELD TEST

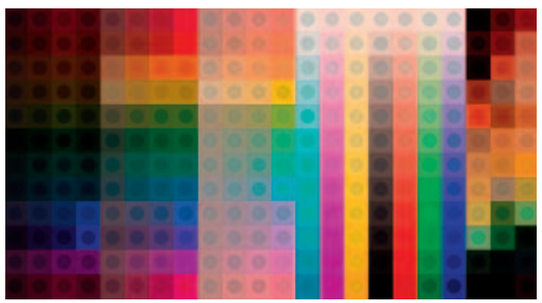
Photographer Joerg Schwalfenberg has personal experience with many competing products, and he was highly impressed with the quality delivered by the DMR. Above all, he appreciated the well-defined reproduction of colour in more delicate areas, like skin tones. For the most part, these passed the test without further modifications. Kodak, Imacon and Leica were right to choose expensive, first-class colour filters. It really pays off.

Complex subjects like the feathers in the picture on page 32 are particularly subjected to moiré. In spite of the missing antialiasing filter, DNG format helped keep this effect to a minimum and it was easily corrected in Photoshop. The regulator for the reduction of colour falsifications, located in Photoshop's Raw Import filter, handles this job – it operates similarly to the camera's software moiré filter and can be applied with great precision.

Signal-to-noise ratio: Leica versus Canon and Nikon



Left: The Digital Module R has less brightness noise than Canon's EOS 1Ds Mark II and Nikon's D2X. Below: Tiff and JPEG mode only use 80 percent of the available colour depth for the reproduction of registered tonal values. The squares represent the ideal, the circles the actual condition



film, the micro lenses and filter layers of image sensors have little tolerance for lateral light, which results in darkened patches, especially towards the edges of the picture. Many digital cameras with full format chips experience this problem. When experimenting with focal lengths 19 to 100 mm, Joerg Schwalfenberg was absolutely delighted with every lens run in conjunction with the DMR. However, wide angle lenses demand accurate focus. Because there is no low-pass or antialiasing filter, the DMR reacts extremely sensitively to imprecise focusing – but rewards meticulous photographers with ultra-sharp exposures. In this respect, one should always make sure that the sensor is immaculately clean.

MOIRÉ

These days most digital cameras feature antialiasing filters. They are there to assure that, by means of targeted blur effects, the sensor ignores infinitesimal structures that exceed its resolution power. This often leads to incorrect detail detection and, therefore, colourful patterns in the picture. Leica rejected this type of filter for two reasons: it simply would not fit onto the chip without colliding with the shutter blind and an artificial soft focus does not fit Leica's policy of maximum sharpness exploitation.

On the other hand, Leica did opt for software-supported moiré suppression. However, this software filter is optional and only affects the parts of the picture that contain strong moiré structures. For the DMR's moiré filter to work, your pictures have to be stored in JPEG or Tiff mode. It has no effect on Raw files – where moiré reduction will have to take place on your computer, which provides more options and control. In reality, the moiré phenomenon is hard to get a grip on, as it can be quite unpredictable. The effect can certainly be provoked by photographing a newspaper from a distance, for example. The sensor is overloaded with tiny letters and detects multi-coloured patterns. Finer tree branches and twigs, brick walls

NEW AT THE LFI BOOK SHOP

WOMEN – PHOTOGRAPHS BY STEFAN MAY

With an experienced eye for the contours of the human body, Stefan May presents his sensual black & white photographs of women and womanly curves from unusual perspectives. An impressive collection of feminine forms.

128 pp.; hardcover with jacket;
120 duotone photos; text in English, German, French, Italian and Spanish; 45.00 €

WOMEN – COLLECTOR'S EDITION

Now available: an attractive slip-cased limited edition with signed photo print.

Size: 10 1/2 x 14 3/4 in.; 128 pp.; hardcover with jacket, linen slipcase, 120 duotone photographs and signed photo print; 200 €

ORDER FORM

LEICA FOTOGRAFIE INTERNATIONAL
Buchservice
Hammerbrookstr. 93
D-20097 Hamburg
Germany

or send a fax ++49 (0)40 28086830

I hereby order the following items (price plus shipping and handling)

☐ STEFAN MAY, WOMEN (45 €)
☐ WOMEN – COLLECTOR'S EDITION (200 €)
☐ I want to pay by credit card

Mastercard ☐ Visa ☐ Amex ☐ Diners Club ☐

CARDNUMBER EXPIRY DATE

FULL NAME
STREET, NO.
POST CODE, AREA
DATE, SIGNATURE

DISCOVER MORE INTERESTING BOOKS AT WWW.LFI-ONLINE.COM

Both of these exposures illustrate the different analogue and digital characteristics using the Leica R. They also emphasise that choosing film or digital is not a question of quality but of taste. The photograph on the left was taken on Kodak Ultra 100 with the Summicron-R 90 mm f/2

Combined with the DMR, more or less the same section was covered with the Macro-Elmarit-R 60 mm f/2.8 (right). The exposure on film contains a little more picture information, which sure enough is overlayed with film grain. The digital image, on the other hand, gives a more ‘harmonious’ overall impression

and other textures may also rouse this unwanted effect. The software filter is effective but not excessive; in many ways, it acts like a lens filter in how it influences the respective parts of the picture. Other than a slight decolourisation of these areas, the camera deliberately reduces the sharpness so that, as a result, the picture is a little softer. There may still be moiré residue, but consider it a little sacrifice that enables your sensor to acquire vastly finer detail than the chips of many other cameras inhibited by antialiasing.

PICTURE FORMATS

The moiré filter played a minor role in our studio test, as Joerg Schwalfenberg preferred to employ his customary Raw format. We only ever worked with Tiffs and JPEGs for the sake of rounding off our experiment. In terms of Raw format, Leica did well to go with 'Digital Negative' (DNG), as suggested by Photoshop developer Adobe. DNG is still in its start-up phase; together with Hasselblad, however, Leica are pioneering the establishment of this format as the universal Raw standard. While most manufacturers go for own developments, a unified format would in fact provide the end-customer with numerous advantages. For instance, it ensures that you can still process your digital negatives years later and, most likely, with vastly improved software. In terms of data conversion, it would also grant access to scores of quality programs. Photoshop users can get the current Camera Raw Filter off Adobe's website, which is what we did. Alternatively, Imacon's free software FlexColor, DNG compatible since version 4, is ready for download on their site.

In our test, the other picture formats scored markedly below DNG. On a positive note, however, the DMR does not exaggerate sharpness and contrast when run in Tiff or JPEG mode – and a quick JPEG will still be a reasonable starting position for moderate post modifications. We noticed that both JPEG versions are highly compressed. Even when set to 'JPEG Fine', the files are never bigger than four megabytes, and, occasionally, one finds peculiar patches of digital artefacts amongst the finer details.

At roughly 30 megabytes a piece, Tiff files are uncompressed but extremely large. However, unlike DNG you cannot fully exploit colour depth nor influence the formation of the picture in post production.

A DNG picture occupies about 20 megabytes of storage. Therefore, the 512 megabyte SD Card, included in the package, holds 24 pictures. DMR owners are best off having an ample amount of these cards in stock. Using fast cards such as the included SanDisk Ultra II, the DMR stores Raw files quicker than JPEGs or Tiffs, as the data is merely written and not manipulated. The DMR can expose two frames per second. According to the datasheet, the camera can perform a sequence of ten, but our interim model only ever made it to nine.

CONCLUSION

The Digital Module R made a great impression. Should your main focus be on DNG Format, you will have to put some work into the post production of the pictures. Once this learning curve is overcome, the DMR catapults you into the premiership of digital photography. What we found particularly fascinating is that it only takes two or three simple clicks to convert one and the same system from film to digital and back again. For critics and non-believers, who find Leica's digital retrofit solution, as opposed to a 'real' digital SLR, a little half-hearted, we recommend giving the DMR a try. The image quality deserves virtually no criticism. Other cameras generate more pixels, but certainly not a technically superior picture.

The Digital Module R is a true master at reproducing skin tones, something many other digital cameras struggle with. The automatic white balance is also very precise

Fine structures such as the white feathers are a challenge for every sensor. In spite of the missing low-pass filter, the DMR reproduced this motif with almost no moiré

Enlargement: 180 percent

Enlargement: 180 percent

When moiré occurs, like in this black piece of fabric, it is easily removed without data loss with the error reduction filter of the Raw Import

TECH SPECS

Image sensor	CCD Sensor with 26.4 x 17.6 mm active surface
Resolution	2872 x 2576 pixels (10 mega pixels), adjustable: 2576 x 1712, 1936 x 1280, 1280 x 848 pixels
Crop factor	1.37
Sensitivity	ISO 100 to 1600
Status screen	displays image counter, ISO, exposure correction, battery, timer, compression, resolution, moiré correction, white balance
Control display	1.8 inch colour LCD, 130338 pixels
Storage medium	SD Card
File size	Raw (DNG): 21 MB, Tiff (24/48 Bit): 30 MB/60 MB
Serial exposures	2 pictures/sec, maximum 10 image sequence
Power supply	Li-Ion battery 7,4 V, 1800 mAh
Delivery package	Battery, charger, FireWire cable, tools to remove back unit, CCD cover, 512 MB SD Ultra II Card, universal focusing screen with additional frame, Adobe Photoshop Elements 3
Price/availability	4500 euros, available from May

Photography:
Joerg Schwalfenberg,
www.j-s-foto.de
Concept and supervision:
Julia K. Schawe
Hair/Make-up:
Yasemin Balci, www.y-balci.de
Fashion design and styling:
Andrea Schelling,
www.andreaschelling.com,
Studio Berlin, www.moogreen.de
Model:
Evelin Cestari, www.modelwerk.de

Shop | Gallery
FOTO HOBBY Rahn SEIT 1910 GMBH
Europe's largest display of
Leica Cameras, Lenses & Accessories
SPECIAL SPRING OFFER
Leica D-Lux Digital € 449,–
incl. carrying case

Am Salzhaus 2 | 60311 Frankfurt | Tel: +49 (0) 69-920 70 70
www.foto-hobby.de | info@foto-hobby.de
à la carte | Academy