

Epson's R-D1 digital M-fit rangefinder

Ever since Nikon launched the D1 five years ago, Leicaphiles have been wringing their hands in anguish over Leica's procrastination in launching a digital rangefinder camera. The company has issued proclamations; first about how making such an artifact was not possible, then possibly, that it might be, and finally, that they will. We will have to wait at least another two years before the first Leica M-Digital hits the market in any sort of numbers, though a prototype has been promised for March 2006.

In the meantime, Epson have done it and it's here now.

It's not a Leica. But you can fit Leica lenses to it. And, it makes a pretty good picture.

The key question for people like me who use Leicas a lot was simply, how good is the image out of an R-D1? And, if the answer was favourable, can it maintain the quality using any old Leica objective dating back as far, almost, as Leica history will permit?

The R-D1 is a joint project between Seiko Epson and Cosina in Japan. Cosina are responsible for designing and manufacturing the now firmly established Voigtlander lenses and Bessa L and R 35 film cameras. Epson are best known for ink-jet printers and scanners as well as a range of indifferent image quality consumer digital cameras. Cosina is now also manufacturing the new Zeiss 35mm rangefinder announced at *photokina 2004* together with a selection of new Z M bayonet mount lenses.

Better built

My first observation about the R-D1 is that its build quality is two or three steps above the level I have associated previously with the Bessa cameras. The R-D1 is solid and heavy with well finished details. The second observation was that to all intents and purpose, it looks and feels like a film camera, complete with wind-on lever and re-wind knob. Both these components serve different purposes on the digital camera; the first to charge the electro-magnetically controlled

A camera design from the past gets a digital afterlife. Leica expert Jonathan Eastland looks at the first M-mount CCD body.



The R-D1 is based on a Cosina Voigtlander body and accepts Leica M lenses.



The LCD viewing screen can flip round and seats home like a Leica film camera back panel.

outer ring of the dial and dropping it on the preferred choice. A manual focal length frame switch is placed between the eyepiece ocular and accessory shoe. This switch is a carry over from 1950s Canon rangefinder designs, but it should be on the front face of the body where it can be finger controlled without removing the camera from the eye. Finally, we come to what looks like an analog watch face dial nestling between the shutter speed dial and the raised portion of the top plate.

This device, the components of which are made by Epson for Seiko, permits the camera user to see at a glance the settings for white balance, image quality, battery state and the number of frame spaces remaining on the SD storage card, counting down from 500. The back of the camera features a 235,000 pixel two inch screen with a single array of press-button switches all mounted on a hinged panel that can be turned over to protect the monitor screen. A nice touch.

Oddly, the R-D1 has no USB or Firewire connection and there are no plans to feature either on the next model. Users must plug the SD card into a reader to upload images to a computer or printer. The card itself is housed in the usual slot arrangement behind a slim door flicked open with a thumbnail on the right end of the body. The door is hung on a sprung hinge and I have visions of this being snagged open and snapped off in the rough and tumble of a photojournalist's life. It needs a discreet but solid lock.

A short throw of the power switch located under the hub of the lever wind advance soon has the camera up and running and from then on in it's all fairly intuitive, though a thorough reading of the manual is advised in order to overcome the inevitable frustration at not being able to instantly figure out what this or that does.

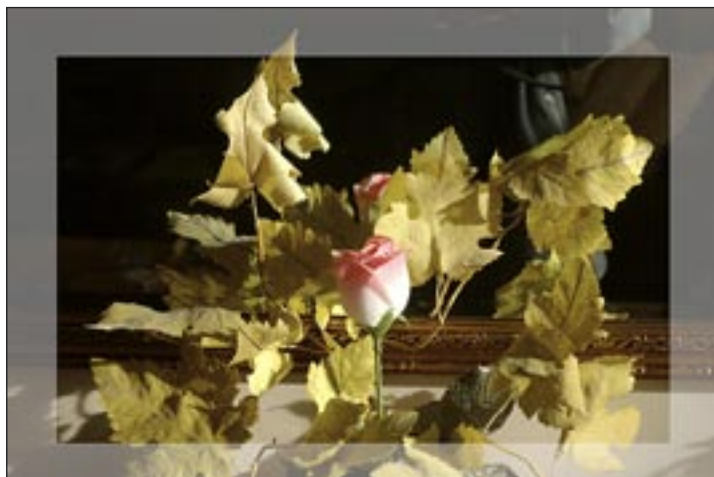
My R-D1 review sample arrived with the recommended but scarce Voigtlander *f1.2 35mm Aspherical* lens, itself a substantial lump of glass and metal styled in the manner of Nikon's old scallop milled F lenses from the 1950s and 60s.

vertical run multi blade shutter and the second, a sort of primary control device for a range of functions.

The top-plate layout is standard film camera fare with the exception of one item. A shutter speed control dial does what it says on the tin and is easily finger controlled with the camera to the eye. Effective ISO speeds are changed by raising the



Above: no colour fringe defects – 15mm f4.5 Voigtlander Heliar with 21mm Leitz Finder. Metering in-camera from centre of field. Note vignetting in corners, not especially intrusive for some compositions. Reproduced maximum size for 300 dpi original file.



Left: what you see is not what you get...

R-D1, Leica Summilux 50mm f1.4. JPEG/Fine/Auto WB. ISO 400, 'Low everything'. The greyed out area shows the extra area obtained in the file but not viewed within the bright line frame of the viewfinder. It's a little disconcerting when you are used to the accuracy of a Leica M6.

Top left: 5.30pm miserable January evening. Leica Summilux-M (non aspheric) 50mm f1.4. ISO 1600, 1/30th sec at f5.6. Colour out of the box. No adjustments. This is typical of the sort of shot the Leica-M is often used for; the R-D1 does it just as well. Focus point is the blond boy's head.

Centre left: ISO 400, Auto WB, Nikkor SC 55mm f1.2, exposure 1/60th sec at f4, levels adjusted 10% for black, Image cropped 15% from file to obtain 85% observed viewfinder field. I can't fault this image for its quality of detail or the way Auto WB handles the mixed lighting on the shop; all this from a lens 35 years old!



Indeed, the milling is such a close match to that on several old Nikkor lenses, it reminded me of a rumour currently circulating that Cosina is manufacturing some of the Nikon film camera products. Further examination of the multi blade shutter unit revealed similarities to the one used in the Nikonos IV and V which has only a grey metering strip on one of its blades, whereas the R-D1 has two grey and one off white.

I shot the first card full of images using the supplied lens and my own f4.5 15mm Cosina/Voigtlander Heliar on a cold but bright windy day in Portsmouth Dockyard while researching a project on Nelson's flagship HMS Victory (due to be in the news a big way this year). The first thing I found was that using the R-D1 really did feel a lot like one of my Leica-M rangefinder cameras; working with it was much faster than using the Nikon D1. The rangefinder is bright; the focal length frames are

clear but not desperately accurate. Only about 85% of the image obtained is framed in the viewfinder. Once you get used to it, it's possible to make hit or miss adjustments, but it desperately needs modifying.

Two exposure measurement modes, AE and Manual, are set-up using the shutter speed dial, providing more convincing evidence of the similarity of function layout and electro mechanical arrangement between the R-D1 and the last two Nikonos camera, exposure measurement, mode function and shutter unit of which was developed from the Nikon FG. Even the viewfinder data of the R-D1 is identical in layout and function and I found you need to have your eye right in the ocular to properly see the display.

A standard APS-C type CCD sensor (23.7mm x 15.6mm) is used with a Bayer RGB and lo-pass filter generating 6.1mp, or 17.2 megabyte image files that can be captured in

RAW, JPEG Fine and JPEG Normal formats. Epson supplies its own RAW manipulation software, but to be frank, I have not had time to fully investigate this or the quality of RAW files. Fine JPEGs from the camera are more than adequate for the vast majority of needs, including 12 sheet bill board publication, so I have no doubts that whatever improvements can be seen with the eye when selecting the RAW option, they are not going to be of a significant improvement on the more convenient, and quicker, operating option.

The camera LCD monitor held high hopes for the quality and colour of the images made and this was soon confirmed on the Mac. Of all the colour spaces in all the many different models tried and tested so far, the R-D1 comes closest to what is generically called 'Kodacolor', that early, vibrant and saturated colour film space analogous to 1940s -70s film. I felt a twinge of

excitement that perhaps at long last, here was something that might be usable straight out of the box.

I asked Eiichiro Kawai of Seiko Epson Corporation to elaborate.

"The color space in the R-D1 is sRGB (sYCC). When we developed our color space, we did not target any particular ICC profile. We tried to make the best ICC profile that can reproduce the color space naturally and as a result our color space became very close to Kodak's profile."

Signal processing draws on Epson's printer business technology and is manifest in a very filmy look, closer to modern chromes than negatives and more especially when shooting at the higher ISO speeds. At its highest setting of 1600 ISO, I had the distinct impression of images looking more like they had been shot on 3M's 1980s high speed tungsten film but with better defined edges and more refined granular structures.

Of course, the effect is simulated



Left to right: Voigtlander Asph f1.2, Leica Summicron f2, Summicron f2 Asph. The interesting feature of this strip is the different colour of the 4th version Summicron f2. The other two are closely matched, the Leica having a barely perceptible sharpness edge. The standard f2 Summicron (non asph) produced closest real life to file colour match. Exposure 1/500th @ f8-11 in all cases.



and processed out of pure electrical noise, but it works well and obtains a higher level of image quality than would be obtained with film at these speeds. Lower down the scale at 200, it is difficult to detect unsightly artifacts on screen, or, where it might be more easily seen perhaps, in prints and reproduction.

Three film settings provide five settings of contrast, sharpness, hue, saturation, tone and noise levels. I set all to low as this gives the widest gamut for computer post processing. None of the images supplied for this feature have been edge sharpened (*but receive the same standard USM as all illustrations for litho printing – Ed*).

What is more interesting perhaps, in comparison to Nikon D1 images opened with Lino Color Elite (colour space NTSC), was that R-D1 images opened with the same application (input profile set to sRGB), shifted only marginally when auto corrections for exposure, hue, chroma, shadow and highlight were applied, compared to the Nikon's more dramatic corrections.

Once I had established the R-D1 image files obtained in camera needed little or no post processing, I had a fairly clear idea of what to expect once I started using Leitz and Leica lenses. I reckoned that for several older lenses of different type and length, image contrast would remain the same or drop compared to the Voigtlander f1.2, 35mm and in theory, the modern Leica Asphericals, would perform as well as the Voigtlander or better, manifesting the same or higher contrast.

By the time I had mounted an uncoated 1930s f2,5cm Summar, I had made dozens of frames of the same subject with twenty or so Leica and a few older Nikkor lenses (using Novoflex adapters). There is still some way to go before this process is fully exhausted, but what is readily apparent is that for subjects requiring a particular look and feel, almost any objective you can get to

fit via an adapter or straight to the R-D1 M mount will produce its own distinctive look and feel and will be quite close to what you might expect say, from a Nikkor, a Takumar or a Leica lens when used with film.

There has been some adverse comment about the R-D1's tendency for its CCD sensor to vignette images – a problem that can be partially corrected with the supplied software when shooting in RAW. My experience of the problem has so far only been really noticeable when using the 15mm Heliar, a lens of moderate cost designed for use with film cameras five years ago and which vignettes inherently to one degree or another

Nikkor 28mm f3.5 with Novoflex Leinik-M adaptor. Exposure 1/30th sec @ f3.5. No obvious vignetting. Image is typically 1960s Nikon, pin sharp over 60% of the centre softening toward the edges.



at all apertures. Leica's f2.8 15mm R type lens has no such faults, but needs an adapter to be used on the M mount. The forthcoming Zeiss ZM 15mm will doubtless also be an excellent performer – at a price.

None of the Leica-M focal lengths used matching the bright line frames of the R-D1 (50-28-35) have so far shown any tendency to unsightly vignetting, though there was some expected and obtained from an old Nikkor-H 28mm f3.5 when set to its maximum aperture. The problem stems from peripheral light rays exiting the rear pupil of rangefinder lenses striking the extreme edge of CCD photo diodes at a greater

angle than at its centre, compared to the more moderate angle of SLR types, thus diminishing the light charge received and causing the edge darkening phenomena.

There are six custom light settings including auto white but no custom white on the R-D1. Auto white works perfectly for all daylight situations and for a mix of twilight and fluorescent, the most difficult of mixed lighting for signal processors to analyse and arrive at some sort of acceptable interpretation. Switching from colour to monochrome is simply a matter of pulling up the main menu and twiddling the primary wheel (re-wind knob) to set the feature. There is an option of shooting in standard no-filter mode or applying one of five coloured filter effects from yellow through red to green.

Finally, the camera is powered by an Epson Li-ion battery type EU 85 3.7v 1500mh which on a full charge and using the five minute power save option lasted most of the day I spent in Portsmouth. A Fuji NP 80 battery designed for older compact digitals will also work in an emergency; it's the same voltage but lower capacity and available from Hama or other battery suppliers in an own label version.

At the outset of this review, having previously heard or read of some aspects of disquiet regarding the R-D1, I expected to be sceptical of its performance. Until Leica can get around to solving the problem of how to make a parabolic sensor and fit it in a rangefinder camera that can produce a result as good as or better than the R-D1, I can only say that from my perspective as a professional user of the camera type, I would have no hesitation in adding it to the kit now. It's well built, handles some of the finest lenses ever made for 35mm use without batting an eyelid and turns in an image with the kind of aesthetic and quality that more than satisfy my needs.

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