SPECIAL 2027 IMAGING AWARDS ISSUE

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CAMERA



REVEALED INSIDE

THE 2027 CAMERA MAGAZINE IMAGING AWARDS WINNERS





A MIGHTIER PEN?

Is The New OM System Model The Best Ever?



LOCAL HEROES

Spirit Of The Bush Photo Competition



CELEBRATING 23 YEARS OF PENTAX K SERIES DSLRS... BUT WHAT'S NEXT?



A BEGINNER'S GUIDE TO THE PRO-LEVEL DIGITAL CINEMA CAMERA

FUTURE

ISSUE 439

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NIKKOR Z



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NIKKOR Z 70-200mm f/2.8 VR S II
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* As of February 24, 2026, among 70-200mm f/2.8 interchangeable lenses for full-frame mirrorless cameras available.
^ As of August 22, 2025, among 24–70mm f/2.8 interchangeable lenses for full-frame/FX-format mirrorless cameras.
Statements based on Nikon research.

Nikon

AUSTRALIAN CAMERA
INSPIRE YOUR PHOTOGRAPHY

ISSUE 439

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IT'S JUST THE BEGINNING

After a very quiet mid-year in terms of new camera releases, there's been a bit of a flurry of activity over the last month or so, but to be honest, with now being the buy-in time for retailers preparing for the busy Christmas and New Year period, more activity might have been expected. Nevertheless, the recent newcomers are very interesting in terms of the different ways that their makers are tackling a challenging market situation.

Both the OM System PEN (pictured above) and the Nikon Z5IIC are different takes on how to convince smartphone users of the benefits of actual cameras, beyond it just being fashionable. So far, it's the fixed lens compact camera that's made all the running here, offering the benefits of a much bigger sensor, but still being comparatively small and so still easy to carry around all time. Panasonic's Lumix L10 has upped the ante by packing all its mirrorless camera tech into fixed lens package that's bigger and more expensive, but hugely capable so its appeal extends to more experienced photographers. The new PEN has a similarly broader appeal, but with the added flexibility of interchangeable lenses. However, with its kit zoom, it's pretty close in size to the L10 and also quasi-retro in its looks which is important because real cameras have to look like real cameras and that means at least a hint of a more classical styling. The L10 is quite a bit more expensive than the PEN kit, but it's a better featured camera, especially when it comes to shooting video, but both cameras are targeting first-time users.

The more left-field offering here is the Nikon Z5IIC which is aiming to slot first-timers straight into a full frame camera, and a very well-featured one at that. Under the skin it's mostly the Z5II – the best-selling Z mount mirrorless body at the moment – but there's no EVF and only a single memory card slot. However, ditching the 'finder makes the Z5IIC smaller, lighter and cheaper; plus Nikon has added a set of subject/scene modes to enhance its appeal as a high-end point-and-shoot. None of this is random, of course. The much-underrated 'APS-C' format Z30 has found a niche as a better-featured compact camera so Nikon thinks a full frame model could do the same… the Z5IIC is as much designed for photographers as videographers, but the emphasis is on it being easy-to-use or, as we were told at the press preview, a "super fun" camera. And, funnily enough, it sort of is. It still looks a bit on the serious side, but it handles beautifully and with the subject mode AE and subject recognition AF, works brilliantly at a push of the shutter button. It's still expensive in compact camera terms, but Nikon also sees the Z5IIC as being a longer-term investment with users able to grow with it as they gain experience. Much will depend on how it's marketed, but the Z5IIC makes a whole more sense than you might first imagine. In fact, it's actually rather clever. And, if you really want an EVF, there's always the Z5II isn't there?

There have always been so-called entry-level interchangeable-lens cameras to attract first-timers, but promoting the idea that you're getting something less hasn't really ever seemed like a great idea. Anyone graduating from a smartphone wants to get more serious about photography so they're looking at a camera that's going to help them do that. They probably won't ever use all the features of cameras like the L10, the PEN or the Z5IIC, but they really want to have them… and maybe a big sensor too. Well, why not?

It's encouraging that we're seeing some innovative approaches to designing cameras that are more attractive to beginners, but that aren't the old-school, pared-down, yesterday's tech models. Thanks mainly to the smartphone, the market is now much more visually literate and savvy – which is why more users want to move to a real camera – and, notably, price isn't everything. These newbies want the latest and greatest in capabilities and are prepared to pay for them, so it's more about how they're packaged and presented. For camera designers, this is about thinking outside the square and maybe breaking with established conventions to appeal to a whole new category of potential buyer… the advanced beginner. And it could be good for all of us.



Paul Burrows, Editor.

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42 2026 SPIRIT OF THE BUSH

The many challenges and rewards of rural life in Australia are celebrated in this year's edition of the Spirit of the Bush photography competition which is run by the charity Rural Aid. Since launching in 2020, the Spirit of the Bush competition has built up a powerful visual archive of rural life – capturing the resilience, humour, hardship, pride and beauty that define the bush.

Image by Mardi Harrison © 2026

REGULARS

6 WHAT'S NEW

Christmas is coming which means a bit of a flurry of new product releases to tempt you, or to add to your wish list. The new OM System PEN revives the famous name on a compact M43 format mirrorless camera which has a viewfinder, in-body image stabilisation and weather-proofing to enhance its carry-anywhere credentials (it's on test in this issue). Nikon's interesting Z5IIC is a full frame Z mount mirrorless camera targeting first-time users with an extensive feature list, but easier operation. Canon's entry-level full frame EOS R8 gets a Mark II refresh with a new retro-styled body and a host of new features including in-body stabilisation. Cine cameras are making a few headlines at the moment and from Sony comes a new FX series model, the FX5, with internal RAW video recording, 'open gate' framing flexibility, in-body image stabilisation and provision for fitting an EVF. Also from Sony is a pair of more compact – and more affordable – FE mount 400mm f/4.5 and 600mm f/6.3 supertelephoto primes. There's also a new compact supertele prime for Fujifilm X mount mirrorless camera users – a 400mm f/4.5 that's equivalent to 609mm. And for the L mount systems, Panasonic has introduced a Lumix S 20mm f/2.5 ultra-wide prime that weighs a mere 142 grams.

Page 14: Sony FX5



18 LIGHT WORK

These pictorial features are designed to help you better appreciate how successful photographers deal with different subjects and situations to create a memorable photograph. In this issue, we tell the story behind the remarkable picture which won the 2026 International Aerial Photograph Of The Year award for Russian photographer Vitaly Golovatyuk.

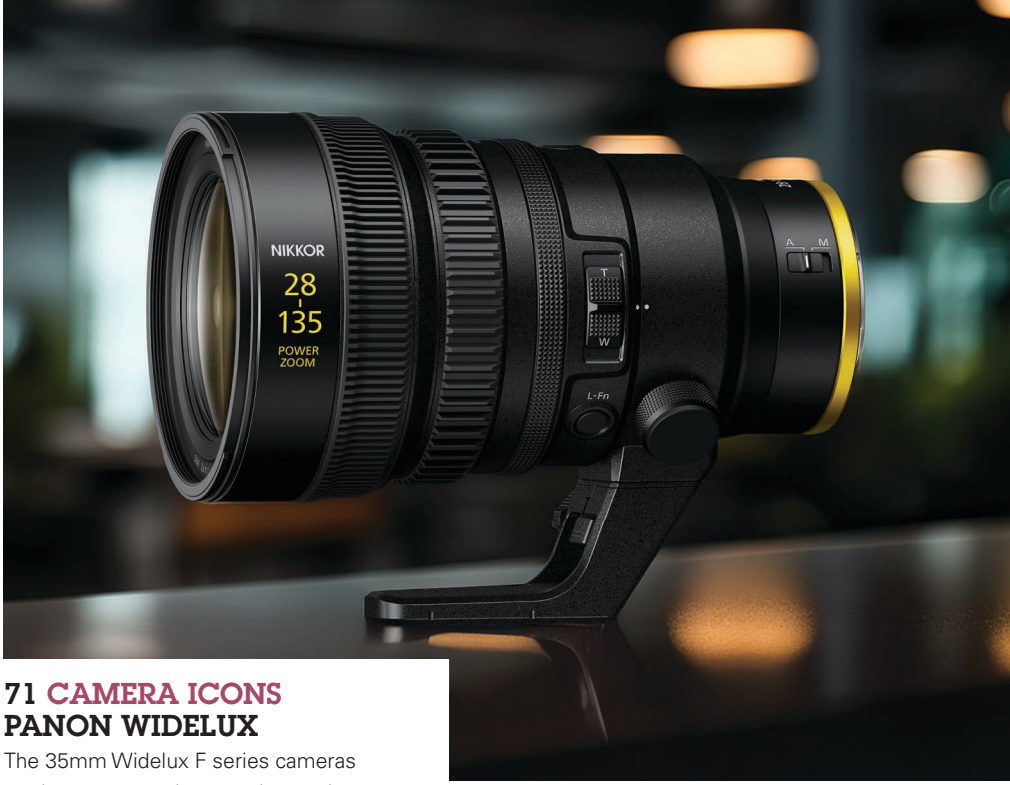
78 SIGMA SHOWCASE 2026

Our Showcase competition sponsor, Sigma lenses – via the Australian distributor, C.R. Kennedy Photo Imaging – is providing the grand prize of a lens – your choice of model and mount – valued at up to $1000. It's easy to be in the running for the 2026 competition's grand prize, and there's still two rounds to go. Submit your entries online at camera@futurenet.com

80 CAMERA BUYER'S CHECKLISTS – MIRRORLESS CAMERAS, DIGITAL RF CAMERAS AND DSLRS

In the market for a new camera? Our buyer's checklists for all the current mirrorless cameras, DSLRs and the digital RF models allow you to directly compare all the key specifications and features at all the main price points. As you'll read elsewhere in this issue, it's the end of the line for the Pentax K series DSLRs, but we've kept in the two models that we could still find for sale at various outlets in Australia. They won't last long, so then our DSLR listing will look very sad indeed.

➤ **Page 16:** Nikkor Z 28-135mm f/4.0 PZ



FEATURES

20 SPECIAL FEATURE
2027 CAMERA MAGAZINE IMAGING AWARDS

Higher oil prices due to the conflict in the Middle East and the ravenous consumption of memory by the recent explosion in AI data centres has had a huge impact on many industries, including consumer imaging. Consequently, the last 12 months have been quieter – in terms of new product releases – than we've seen for quite a while so there's a few less categories in this year's Camera Magazine Imaging Awards. Nevertheless, there was still plenty of competition across the board and, in the end, some very fine winners'



50 A BEGINNER'S GUIDE TO THE PRO-LEVEL DIGITAL CINEMA CAMERA

We're pretty certain that most of you won't be rushing out to buy Fujifilm's $26,000 GFX Eterna 55 cine camera with the $8500 GF 19-35mm T3.5 power zoom, but you may well be interested in what you get for this money. Higher-end cine cameras – especially as more of the traditionally photographic companies, like Fujifilm, get involved in this sector – so we're taking a look at what makes them different from a video camera designed for, say, content creators or vloggers?

55 WHAT'S NEXT FOR THE ONCE-MIGHTY PENTAX?

With the news that Ricoh Imaging is ceasing the production of all Pentax K series DSLRs, a long and illustrious era comes to an end. It's not clear what comes next – if anything – but Pentax was last man standing in DSLRs, with an even more glorious heritage in 35mm SLRs. While we wait to see how Ricoh's promise of "an entirely new concept" for a Pentax DSLR turns out, here's a look at some of the many and varied K mount models from the last 23 years.

71 CAMERA ICONS
PANON WIDELUX

The 35mm Widelux F series cameras made panorama photography much more accessible, but they were temperamental and, consequently, frustrating. However, this hasn't stopped A-lister actor Jeff Bridges, putting a lot of time and resources into reviving the design.

72 CAMERA HOUSE PHOTOGRAPHY COMPETITION 2026

The people who work at the Camera House stores all around Australia are encouraged to take pictures and actually use the equipment that they're selling. Many are very keen photographers and here they show off their talents in the nine categories of the annual Camera House Photography Competition.



ON TRIAL

32 ON TRIAL
OM SYSTEM PEN

The PEN name is back, appearing for the first time on an OM System era mirrorless camera which continues the tradition of being a very compact camera that's also highly capable. The great news is that the new PEN model has an EVF, IBIS and, for the very first time in the history of the digital camera series, weather-proofing.

60 ON TRIAL – NIKKOR Z 28-135mm f/4.0 PZ

We missed Nikon's 28-135mm f/4.0 Z mount power zoom when it was first introduced, ▶ but when one came along on the ZR camera body we tested in the last issue, we thought it was well worth a closer look. It's primarily designed as a cine lens, but there's lots to like about it when shooting still as well.

66 ON TRIAL – FUJINON XF 400mm f/4.5 R LM OIS WR

Following the XF 500mm f/5.6, the new 400mm f/4.5 supertelephoto prime for Fujifilm's X mount mirrorless cameras is a more manageable size and – with an effective focal length of 600mm – quite a bit more flexible too. It's surprisingly comfortable and easy to use hand held, and delivers an outstanding optical performance.



OUR FRONT COVER:
This issue's front cover features the winning products in our annual Camera Magazine Imaging Awards. Our special feature starts on page 20. The two images from this year's Spirit Of The Bush photo competition are by Jessica Osmond and Hannah Perkins. For more winning photographs turn to page 42.



NIKON REPACKAGES THE Z5II TO CREATE A FULL FRAME COMPACT ILC

NIKON IS TARGETING camera first-timers with its new Z5IIC, giving them a compact entrée into its full frame Z mount mirrorless system. The 'C' apparently stands for "casual" (but it could be for "compact" or maybe "creative") rather than "cinema" even though the Z5IIC looks a bit like the video-first DX format Z30… and will, indeed, work pretty well as a content creator's camera having inherited much of the Z5II's video feature suite.

The size reduction compared to the Z5II (and a cheaper price tag) mostly comes from the deleting the EVF which has been done because most potential buyers of the Z5IIC are more accustomed to using a monitor screen rather than a viewfinder. Another clue to the intended audience for this camera is the provision of subject/scene modes – a total of 15 of them – and a first on an FX (i.e. full frame) format Z mount body. They're directly accessed via the camera's main mode dial. However, the Z5IIC has pretty much all the advanced capabilities and specifications of the Z5II so Nikon sees it has not just capturing new users, but then enabling them to grow with it. At the press preview, the Z5IIC was described as a camera "…for people who love to take pictures". More notably, it's being targeted at photographers – despite lacking an EVF – as well as videographers.





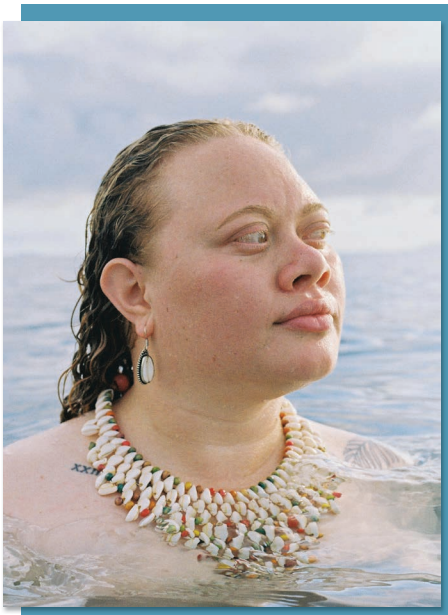
The Z5IIC is built around the same 24.5 megapixels BSI-type CMOS sensor as the Z5II (that's also used in the Zf and Z6II models) which is mated with Nikon's latest-gen 'EXPEED 7' processor. Continuous shooting using the focal plane shutter is at up to 14 fps and JPEG capture is possible at up to 30 fps with the sensor-based shutter and with the option of 'Pre-Release Capture' buffering. The sensitivity range is equivalent to ISO 100 to 64,000 with extensions all the way up to ISO 204,800. There's five-axis sensor-shifting image stabilisation which gives up to 7.5 stops of correction for image shake at the centre of the frame and up to 6.0 stops at the edges. 'Focus Point VR' is provided and centres the image stabilisation on active AF point or area.

The Z5IIC has the same 273-points hybrid autofocusing system as the Z5II, but the number of AI-based subject recognition modes is increased to ten with the addition of one for fish. Interestingly, the ZR's simpler form factor has made it popular for underwater photographer in a housing and Nikon anticipates that it will be the same with the Z5IIC – a number of housings are apparently in development from third-party manufactures – hence the addition of fishy recognition. There's a host of AF area modes – including custom-defined ones – and the Z5IIC has '3D Tracking AF' mode for the more reliable tracking of subjects not covered by the recognition modes. It also has the 'AF-A' auto switching between the single-shot and continuous AF modes and the low-light sensitivity now extends down to -10 EV (at ISO 100 and f/1.2).

The Z5IIC has 4K UHD recording at 25/30 fps with the choice of 10-bit 4:2:2 recording in the H.265 codec plus 12-bit N-RAW. There's also the N-Log profile for more flexibility with post-production colour grading or, alternatively nine Nikon 'Imaging Recipes' – cinema-style colour profiles that mimic RED LUTs – can be downloaded to create a custom 'Picture Control' profile for both video and JPEGs (or HEIFs). A 1.5x crop applies when shooting 4K UHD at 50/60 fps. Full HD footage can be recorded at up to 100/120 fps (using the 8-bit H.264 codec) for slowmo effects. However, unlike the Z5II, the C version only has a single memory card slot for SD devices, but it does provide UHS-II speed support. The Z5IIC has the 'Film Grain' function originally introduced on the Zf and with a choice of three grain sizes and six levels of intensity.

The camera's construction comprises magnesium alloy covers over a GRP chassis with sealing against moisture and dust. The 8.1 cm TFT LCD monitor is fully articulated and has a resolution of 1.04 megadots along with touch screen controls.

The Nikon Z5IIC is available now in either all-black or with a silver top panel and priced at $2399 for the body only. There are several kit options available – priced at $2949 with the Nikkor Z 24-50mm f/4.0-6.3, $2899 with the Nikkor Z 40mm f/2.0, $3699 with the Nikkor Z 24-200mm f/4.0-6.3 VR and $3049 with the Nikkor Z 24-105mm f/4.0-7.1. Nikon Australia provides a two-year warranty for Nikon cameras and lenses purchased from an authorised reseller. For more information visit **www.nikon.com.au**



Blak & Bare, 2025 by Tiarni Majid-Loban
National Photographic Portrait Prize
2026 Finalist © 2026

PHOTOGRAPHY EXHIBITIONS & EVENTS

Current to 11 October: Exhibition. *National Photographic Portrait Prize 2026.* Winners and finalists on show at the National Portrait Gallery, King Edward Terrace, Parkes, ACT 2600. Entry is $15 for adults with concessions available. Gallery hours are 10.00am to 5.00pm daily (closed Christmas Day). For more information or to book tickets online visit **www.portrait.gov.au**

Current to 7 February 2027: Exhibition. *Mervyn Bishop: Close Up.* Mervyn Bishop is one of Australia's most important photographers and this exhibition is drawn for the archive of over 200,000 images held in the State Library Of NSW's collection. At the Exhibition Galleries, State Library Of NSW, Macquarie Street, Sydney, NSW 2000. Entry is free. Exhibition hours are 9.00am to 8.00pm Monday to Thursday, 9.00am to 5.00pm on Friday and 10.00am to 5.00pm on weekends. For more information visit **www.sl.nsw.gov.au/exhibitions**

Current to 14 February 2027: Exhibition. *2026 Australian Geographic Photographer Of The Year.* Winning and finalist images from this year's competition captured in Australia, New Zealand, Antarctica and New Guinea. At the Australian Museum, 1 William Street, Sydney, NSW 2000. Entry is free. Museum hours are 10.00am to 5.00pm daily (closed Christmas Day). For more information visit **https://australian.museum**

Current to 18 July 2027: Exhibition. *Definitive Dupain.* The first major retrospective to explore Dupain's complete body of work, and including almost 200 photographs, both iconic and lesser known. At the Exhibition Galleries, State Library Of NSW, Macquarie Street, Sydney, NSW 2000. Entry is free. Exhibition hours are 9.00am to 8.00pm Monday to Thursday, 9.00am to 5.00pm on Friday and 10.00am to 5.00pm on weekends. For more information visit **www.sl.nsw.gov.au/exhibitions**

Current to 31 October 2027: Exhibition. *Lorrie Graham: Photojournalist.* This exhibition covers five decades of extraordinary photography by one of Australia's most important and influential photojournalists. The library recently acquired Lorrie's entire archive. At the Exhibition Galleries, State Library Of NSW, Macquarie Street, Sydney, NSW 2000. Entry is free. Exhibition hours are 9.00am to 8.00pm Monday to Thursday, 9.00am to 5.00pm on Friday and 10.00am to 5.00pm on weekends.
For more information visit **www.sl.nsw.gov.au/exhibitions**

6 – 29 November: Head On Photo Festival. At various venues around Sydney. The festival includes exhibitions, talks and events, alongside the Head On Photo Awards. More info when the program is announced. Visit **www.headon.org.au** for more details.

21 November to 16 January 2027: Exhibition. *National Photographic Portrait Prize 2026.* Winners and finalists on show at Warwick Art Gallery, 49 Albion Street, Warwick, Queensland 4370. Entry is free. Gallery hours 10.00am to 4.00pm Tuesday to Friday, 10.00am to 12.00pm on Saturday (closed public holidays). For more information visit **www.warwickartgallery.com.au**

30 January to 3 April 2027: Exhibition. *Max Dupain And Ansel Adams: In Search Of Perfection.* A total of 63 works which place Dupain's architectural photographs and Adams's iconic landscapes of the American West in conversation for the first time. At the Logan Art Gallery, Wembley Road and Jacaranda Avenue, Logan Central, Queensland 4114. Entry is free. Gallery hours are 10.00am to 4.00pm Tuesday to Saturday. For more information visit **www.loganarts.com.au**

6 February to 28 March 2027: Exhibition. *National Photographic Portrait Prize 2026.* Winners and finalists on show at the Glasshouse Regional Gallery Port Macquarie, 30-42 Clarence Street, Port Macquarie, NSW 2444. Gallery hours are 10.00am to 4.00pm Tuesday to Friday, 10.00am to 2.00pm on weekends, 10.00am to 2.00pm on public holidays. For more information visit **www.glasshouse.org.au/Gallery**

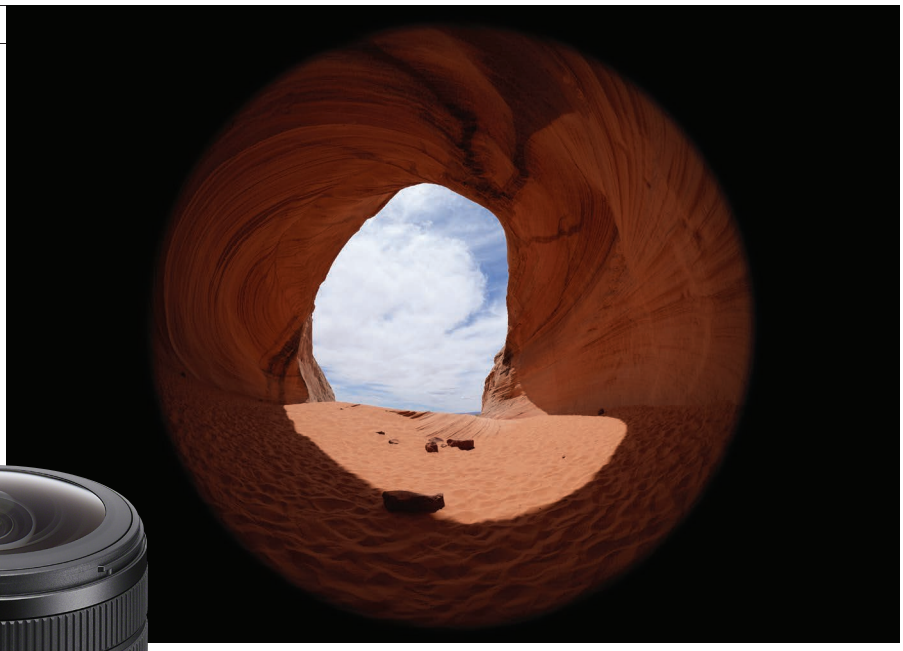
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SONY'S FISHEYE ZOOM IS WIDEST FE LENS EVER



WE'VE ALREADY SEEN Canon's recently released RF 7-14mm f/2.8-3.5 fisheye zoom, but now Sony FE system users have the FE 8-14mm f/3.5 Fisheye G which also offers a 180-degree circular fisheye view and a full frame diagonal fish-eye view… still with a 180-degree angle-of-view. Like the Canon lens, the Sony 8-14mm has filter holder at the rear although this is for cut sheet filters rather than a drop-in holder for screwthread types. A lens hood is supplied, but also as with the Canon model, can only be used at the 14mm focal length as, otherwise, it will intrude into the frame.



Weighing in at just 314 grams, the Sony fisheye zoom's optical construction comprises 16 elements in 13 groups which includes three aspherical types and five with extra-low dispersion ('ED') characteristics – one of which is also an aspherical – to counter chromatic aberrations. Focusing is performed internally (as is zooming) and the minimum focusing distance is 15 centimetres which is maintained across the full zooming range. This gives a maximum magnification ratio of 1:4.5 at the 14mm end. Autofocusing is performed via dual linear motors for speed, precision and quiet operation. It's able to keep up with AF/AE adjustment at 120 fps as is the case with the A9 III body. Sony says that focus 'breathing' – the small changes in the image size as the focusing distance changes – is effectively suppressed by the optical design.

The zoom's external construction is weather sealed and there's a fluorine coating on the front element to help repel moisture and grease. The FE 8-14mm has a manual aperture control which can be switched between click-stopped operation – in one-third stop increments – and seamless adjustments. The minimum aperture is f/22 and the diaphragm employs seven blades. The on-barrel controls comprise a zoom lock which acts at 8mm and 14mm, a multi-functional button and an AF/MF switch with a third 'FH' position which selects the focus hold function for the button.

The Sony FE 8-14mm f/3.5 Fisheye G is priced at $2299 and available now. Sony Australia provides a two-year warranty for Sony Alpha system cameras and lenses purchased in Australia from an authorised reseller. For more information visit **www.sony.com.au**

PANASONIC ADDS ULTRA-COMPACT ULTRA-WIDE TO LUMIX S SYSTEM

WEIGHING IN AT a mere 142 grams and only 40.9 millimetres in length, Panasonic's new L mount 20mm f/2.5 ultra-wide prime is tiny so it works well on compact Lumix S full frame camera bodies such as the S9. With video shooters in mind, the new 20mm has a very similar form factor to other compact Lumix S primes such as the 40mm f/2.0, making it easier to swap lenses without altering the balance on a gimbal or in a cage.

It's available in either black or light silver finished and features a weather-sealed construction which is also insulated to allow for shooting in subzero temperatures down to -10 degrees Celsius. Additionally, there's a fluorine coating on the front element's exposed surface to help repel moisture and grease while also making it easier to clean.

The optical construction comprises 11 elements in nine groups which includes three aspherical types and three with extra-low dispersion characteristics to help minimise chromatic aberrations. The minimum focusing distance is 18 centimetres which gives a maximum magnification ratio of 1:6.6.

The lens's single control ring serves as the manual focus control when autofocusing is switched off, and it can be switched between linear and non-linear focus adjustment. Alternatively, it serves as a multi-function command ring for other operations such as manual aperture setting or applying exposure compensation. For video shooters, there's micro-step aperture control – in roughly 1/6 stop increments – for finer and smoother exposure adjustments and Panasonic says the optical design provides effective suppression of focus 'breathing'. There's also a customisable 'Lens Fn' button on the barrel which defaults as a focus hold button, but can be set to a range of other functions including Panasonic's 'Crop Zoom' which is a means of obtaining an effective increase in the focal length by cropping the image (but using only the centre of frame to help maintain image quality).



The diaphragm has seven blades to help create smoother out-of-focus effects and the minimum aperture setting is f/22. The screwthread filter fitting is 62 millimetres which is the same as the 40mm f/2.0 lens.

The Panasonic Lumix S 20mm f/2.5 sells for $849 and is available now. Panasonic Australia offers an extended five-year warranty (two year standard warranty plus an additional three years) on Lumix S system camera bodies and lenses sold by an authorised Panasonic Australia reseller. For more information visit **www.panasonic.com.au**

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CANON'S MARK II EOS R8 HAS A NEW LOOK AND MANY NEW FEATURES

SPORTING A MUCH squarer styling than we've seen on previous Canon R mount mirrorless models, the new EOS R8 Mark II also gets some important new features, most notably in-body image stabilisation, but also a joystick-type controller and longer continuous shooting burst lengths. In terms of its looks, the EOS R8 Mark II is a bit reminiscent of the T80 35mm SLR from 1985 – which, unfortunately, wasn't a big success – but there also a hint of the earliest EOS SLRs too such the EOS 650. It features sharper lines throughout and looks a little chunky in the illustrations but is actually quite compact and has a deeper grip to enhance handling. The body weighs 546 grams with a battery and memory card loaded. The external control layout is still based around a main mode dial with front and rear input wheels, but now with a joystick 'multi-controller' on the rear panel.

The new camera's 24.2 megapixels CMOS sensor is inherited from the previous model – which stays in the line-up at a lower price point – with the new IBIS providing up to 7.5 stops of correction for camera shake at the centre of the frame, and 7.0 stops at the edges. The sensor is mated with Canon's 'DIGIC X' processor which enables continuous shooting at 40 fps – with the sensor shutter – but now with the option of pre-release buffering for half a second. Quoted burst lengths have increased to 73 frames with RAW capture and 190 JPEGs. The R8 II can also shoot 10-bit HEIFs and has a single memory card slot for SD devices and which provides UHS-II speed support. It now has its own compartment in the side of the handgrip, rather than sharing the battery's compartment in the base.

The new camera continues Canon's well-proven 'Dual Pixel CMOS AF II' hybrid autofocusing system – using 4638 measuring points – with AI-based subject recognition for people (eye/face/head/body), dogs, cats, birds, horses, motorsports, aircraft and trains for stills (people, animals and vehicles for video). You also get the 'Register People Priority' option for storing up to ten faces (or up to 100 in ten groups of ten stored on a memory card). Low light sensitivity now extends down to EV -7.5 at ISO 100 (compared to -6.5 EV previously, and the AF measuring points cover the entire frame area. The focal plane shutter – technically only an electronic first curtain shutter – has a speed range is 30-1/4000 second and the full sensor shutter extends the top speed to 1/16,000 second. The exposure control options include 'Scene Intelligent Auto' with 'Creative Assist' and a total of 14 manually selected subject/scene modes as well as the standard 'PASM' modes. There's a set of 16 'Colour Filter' effects that can be applied to JPEGs (and video) which include two new additions called Negative Filmtone and Positive Filmtone which are variable and there's a real-time preview to help gauge the final look.



The EVF is an OLED panel with a resolution of 2.36 megadots, a magnification of 0.70x and a refresh rate of 120 fps. The monitor is a 7.62 LCD touch screen with a resolution of 1.62 megadots and adjustable for both tilt and swing. The camera's GRP bodyshell is sealed against the intrusion of moisture or dust.

The EOS R8 II records 4K UHD video – oversampled from 6K – and at up to 50/60 fps without cropping. Full HD video can be recorded at up to 150/180 fps. There's the choice of the XF-HEVC S and XF-AVS C codecs (Canon's versions of H.265 and H.264 respectively) with either 8-bit 4:2:0 or 10-bit 4:2:2 colour and LongGOP compression. There's the option of recording in the C-Log3/Cinema Gamut profile for post-camera colour grading or, alternatively, the camera allows for LUTs to be imported and applied to the log footage for in-camera grading. 'Movie Digital IS' adds electronic stabilisation to the IBIS to give extra stability when shooting handheld. New is a 'Video Defocus' function which enables smooth transitions from in-focus to blur to be performed at the touch of a button and with a choice of ten speeds and five level of blur. For audio, the R8 II has built-in stereo microphones plus a stereo audio input, and an audio output for connecting monitoring headphones. Additionally, the camera has Canon's multi-function power/data communications shoe for attaching dedicated accessories such as microphones, enabling four-channel audio recording.

Available now, the Canon EOS R8 Mark II sells for $2529 body only and for $2859 when packaged with the RF 24-50mm f/4.5-6.3 IS STM zoom lens. Canon Australia provides a five-year warranty for cameras and lenses purchased from an authorised Australian reseller. For more information visit **www.canon.com.au.**



BYE BYE PENTAX K SERIES DSLRS... FOR NOW AT LEAST



What's next for Pentax DSLRs? Well, no more K series models apparently.

MUCH LIKE CAR-MAKER Jaguar did in 2024 with its entire existing model line-up, Ricoh Imaging has announced production of all K-mount DSLRs has ended full stop. However, unlike Jaguar which has a new model line in the offing – motoring journalists have been recently testing a high-performance EV, although how this car will finally look has been disguised – Ricoh Imaging is a bit vague about what will come next beyond that it is transitioning to a "new stage". However, the company says it will be building a new series Pentax-badged DSLRs in the future, but that they will be "…based on an entirely new concept".

Additionally, it states, "While it will take time for these products to come to life, we will leverage the K-mount legacy that was built over more than half a century". Whether this means the long-lived K mount – introduced in 1975 – will still be used is unclear, but being able to fit just about any K mount lens to a K series DSLR (and the earlier *ist D models) has been a selling point. And what might a "new concept" DSLR look like given that an optical viewfinder – and hence also a reflex mirror – are the key components that largely dictate the external design. Sony briefly flirted with an EVF in its SLT – Single Lens Translucent – series bodies, but they weren't hugely popular as the optical finder is the main reason any photographers still like the DSLR.

Frankly, the Pentax brand deserves better given its significance in the history of the 35mm SLR and various contributions – some more successful than others – to the development of the DSLR.

The wording of Ricoh Imaging's press release doesn't suggest anything is going to happen soon and although Pentax aficionados are well pretty rusted on, their resolve has already been sorely tested and you'd have to think that a break of any significant duration may convince them to start looking elsewhere.



INSTA360 LAUNCHES X6 FLAGSHIP 8K 360° CAMERA

INSTA360 HAS LAUNCHED a new flagship 360-degree camera which can shoot 8K video at up to 50/60 fps. The new X6 uses a pair of 1/1.1-inch square sensors, developed by Sony exclusively for Insta360.

The sensors are matched with an upgraded proprietary 'Triple AI Chip System' which employs two dedicated imaging processors which are designed to significantly reduce image noise. A new low-light mode adds two ambient light sensors to cut flicker and enhance night shooting. 'AdaptiveTone 2.0' meters each lens separately and captures two exposures per frame to give a wider dynamic range.

The X6 is also the first 360 camera with native in-camera Dolby Vision and '10-Bit Colour Depth For 360 Cameras', designed to optimise the image quality straight out of the camera. Dynamic metadata is analysed frame-by-frame to set contrast and brightness for every shot with no extra colour grading required.

The X6 has three interchangeable modes for 360 recording, unlimited gimbal camera, and wide-angle action shooting… and these can be switched at the tap of a finger. Updated 'InstaFrame 2.0' offers improved daily recording with smart tracking for people, pets or objects. It delivers flat video in 4K at 30 fps with no post-shooting framing required so the X6 operates as a fully unlimited gimbal camera. You can also switch to single-lens operation in which case the X6 shoots like a traditional actioncam and at up to 5K at 50/60 fps or as a wide-angle camera - up to 170 degrees angle-of-view – at 5K and 25/30 fps. There's also 4K at 100/120fps for slow motion effects.



Launched along with the X6 is Insta360's self-developed 360 AI model, called PanoMind, which powers a set of brand-new auto-editing functions that make 360-degree footage editing simpler and more intelligent. PanoMind was built in-house and trained on more than 10,000 hours of footage across over 30 common scenarios – including travel, daily vlogs, skiing, motorcycling, diving and cycling – and is the first 360-native AI model to understand a full spherical scene rather than a flat frame. The all-new 'AI Director' enables the X6 to automatically analyse footage, filter highlights and edit custom daily vlogs while idling charging. Once the finished clip is complete, it will be pushed directly to the Insta360 App. Furthermore, secondary editing can be completed at any time.

The new X6 is powered by a 2600 mAh battery which gives up to 140 minutes of running time with 8K shooting at 30 fps and supports fast charging.

The Insta360 X6 is priced at $1500 for the 'Standard Bundle' kit and is available from the Insta360 store or selected retailers. For more information visit **http://www.insta360.com**

FUJIFILM X MOUNT USERS GAIN 400MM SUPERTELEPHOTO PRIME

WITH AN EFFECTIVE focal length of 609mm, the new Fujinon XF400mm f/4.5 R LM OIS WR super-telephoto prime lens for the Fujifilm X mount series 'APS-C' mirrorless cameras is well suited to wildlife and birds, sports, adventure and aviation photography. It joins the existing XF500mm f/5.6 R LM OIS WR model (equivalent to 762mm) in X mount system with the attraction of being faster, more compact and lighter (at 1245 grams) while still having a long telephoto reach. However, the new 400mm f/4.5 is compatible with the Fujinon Teleconverter XF1.4X TC WR and the XF2X TC WR which, respectively, increase the focal length to 560mm (effectively 853mm) and 800mm (effectively 1219mm).

The optical construction employs 21 elements in 14 groups which includes two 'Super ED' types and four 'ED' types. The extra-low dispersion characteristics of these special elements helps minimise chromatic aberrations, otherwise a common issue with long telephoto lenses. Focusing is performed internally with the focusing group driven by a high-speed linear motor to enhance responsiveness and significantly reduce noise. The minimum focusing distance is 2.75 metres, but there's also a focus limiter switch which extends this to 5.0 metres to speed up autofocusing subjects are further away. There's a 'Focus Preset' button to store a predetermined focusing distance for instant recall. Additionally, the lens has a 'Focus Control Button' positioned near the front of barrel and which can be pre-assigned a function, including focus lock and focus preset recall.

The XF400mm f/4.5 has optical image stabilisation which gives 5.5 stops of correction for camera shake, enhancing the scope to use this lens for hand-held shooting. The external construction is weather sealed at total of 20 points to prevent the intrusion of water and dust. The lens is also insulated so it can be used in subzero temperatures down to -10 degrees Celsius. Additionally, the front element has a fluorine coating to help repel moisture and grease and also assist with easier cleaning. The screwthread filter fitting is 95 millimetres.

The Fujinon XF400mm f/4.5 R LM OIS WR super-telephoto prime is priced at $4949 and is available in Australia now. Fujifilm Australia provides a three-year warranty when X mount system products are purchased from an authorised reseller. Our full review of this lens is in this issue or, for more information, visit **www.fujifilm.com.au**





OM SYSTEM REVIVES PEN NAME ON COMPACT MIRRORLESS CAMERA

THERE HAVE BEEN many PEN series cameras, both film and digital, during the Olympus era, but OM Digital Solutions is keen to emphasis this PEN is the first *OM System* model. Hence, it's simply called the PEN and it arrives with a new Mark III version of the M.Zuiko Digital ED 14-42mm f/3.5-5.6 compact 'kit' zoom. The emphasis is very much on the small size of the new PEN so it will compete with fixed lens compact, but offer the extra versatility of interchangeable lenses.

The styling has elements of the previous Olympus E-PL series models with the external controls based around a main mode dial with front and rear input wheels. Importantly, the OM System PEN has a built-in EVF – something only the Olympus PEN F model from 2016 had previously – and it's the very first PEN series camera with weather proofing (along with freeze-proofing) which enhances its 'carry anywhere' capabilities. The sensor and processor are from the OM-5 Mark II so the effective resolution is 20.37 megapixels and the PEN can shoot continuously at up to 30 fps, but with the AF, AE and white balance all locked to the first frame. 'Pro Capture H' pre-release buffering is available and records up to 12 frames at 30 fps prior to shutter release (i.e. when the shutter button is at the half-way metering/autofocusing position). There's also a 'Pro Capture' mode which also buffers up to 12 frames, but operates at 8.0 fps.

The PEN employs sensor shifting to provide in-body image stabilisation which gives up to 5.5 stops of correction for camera shake. Sensor shifting also drives a 'High Res Shot' capture function which has both hand-held and tripod modes with the latter generating an 80 megapixels files with RAW capture and either 50 or 25 MP with JPEGs. The multiple frames are combined in-camera. The PEN also has the same 'Computational Photography' multi-shot capture modes as the OM-5 II which include the 'Live ND' 'virtual' ND filters, focus stacking, HDR and a multiple exposure facility. Additionally, there's a choice of eight Picture Mode' presets (plus a user-defined Custom option) and 16 'Art Filter' special effects plus four colour film profiles and four B&W. These are essentially the same as Fujifilm's 'Film Simulation' profiles and have a number of adjustable parameters. The colour options are called Film Rich Colour, Film Vivid and Film Soft Tone. The monochrome offerings are Standard, Film B&W, Film IR and Film Low Contrast.

The autofocusing system is also largely borrowed from the OM-5 II, but with the addition of subject recognition for humans and animals which includes cats and dogs.

The PEN's video capabilities are reasonably basic with only 8-bit 4:2:0 colour and frame rates limited to 25/30 fps with 4K shooting. There is the option of the 17:9 4K DCI framing, but only at 24 fps. Full HD is available at up to 100/120 fps, and with the choice of All-Intra compression at 24/25/30 fps.

The OM System PEN is priced at $1499 body only and is available in either silver or black. Packaged with the M.Zuiko Digital ED 14-42mm f/3.5-5.6 III zoom lens, the price is $1799. OM Digital Solutions provides a two-year warranty for OM System cameras and lenses purchased from an authorised Australian reseller. Our full review of the PEN is in this issue. For more information visit **https://explore.omsystem.com/au/en/**

LUMIX L10

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Some cameras are built around specs.
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SONY FX5 DELIVERS 5K/60P WITH NEW INTERNAL RAW RECORDING



WITH THE COMPETITION hotting up in compact cine cameras – notably from Canon's Cinema EOS C50 and Nikon's ZR – Sony has responded with the Cinema Line FX5 which is a full frame FE mount model with 5K video at up to 50/60 fps, 4.5K at 100/120 fps and internal 16-bit compressed RAW capture. Sony is calling this codec 'X-OCN' which is short for 'Extended Tonal Range Original Camera Negative'… with the FX5 using the X-OCN LT (Light), C1 and C2 versions (with progressively low bit rates to reduce the file size). RAW footage can be recorded at up to 5K res and 50/60 fps.

Also, for the first time on a Sony FX series camera, the FX5 allows for 'open gate' recording using the full sensor frame at the 3:2 aspect ratio and 5K at up to 50/60 fps, but with many other framing options derivable from this footage. A future firmware upgrade – planned for August 2027 – will boost the maximum frame rates with RAW recording up to 100/120 fps for 5K and 200/240 fps for 4K.

The FX5 has a new 'Exmor RS' stacked BSI-CMOS sensor – its faster read-outs enabling the faster frame rates – with an effective resolution of 16.6 megapixels and a sensitivity range equivalent to ISO 320 to 409,600. It has a 'Dual Gain' mode to increase the dynamic range by combining the high-gain (i.e. low noise) and low-gain read-outs from the sensor, and there are three base ISO settings at ISO 800, 4000 and 12,800 – with the S-Log3 curve – to maintain a lower noise level at the higher sensitivities (i.e. when shooting in lower light levels). Sony claims "15+" stops of dynamic range. The sensor is mated with Sony's 'Bionz XR2' processor with integrated AI processing for subject recognition autofocusing and tracking, and scene lighting recognition for more accurate white balance control. Sony calls this 'Auto Tracing White Balance'.

The FX5 offers three S-Log3 shooting modes – Cine EI, Cine EI Quick and Flexible ISO – along with the S-Cinetone profile for in-camera cinematic colour processing. Additionally, a total of 16 custom LUTs can be loaded into the camera.

The camera has in-body image stabilisation with five-axis movements and enhanced roll-direction compensation. The 'Dynamic Active Mode' adds electronic image stabilisation – i.e. shifting the image on the sensor – to enable smoother handheld shooting and this data can be used in post-production.

There's a new TFT LCD monitor display which is 8.8 cm in size and in the 16:9 aspect. It has a resolution of 2.76 megadots and is adjustable for tilt and swing. An optional EVF is now available – the DVF-EL1 – with a tilting eyepiece and an OLED panel with a resolution of 7.07 megadots, 2500 nits brightness and a colour gamut equivalent to DCI-P3. Displays include a waveform monitor, a vectorscope, a real-time histogram, a false colour overlay and a focus map. Additionally, Sony has adopted its CineAlta-style menus for the FX5 which are from the Burano pro cinema camera. Incidentally, it's worth noting here, that the FX5 isn't a hybrid camera, it's strictly video only.

The FX5 has dual memory card slots, both compatible with CFexpress Type A or SDXC UHS-II devices. Proxy recording is supported.

The FX5 is powered by Sony's NP-SA100 2670 mAh battery pack which is claimed to enable 170 minutes of recording in 5K at 24 fps. Active cooling – along with an independent air chamber – effectively eliminates overheating even when recording at 5K and 50/60 fps. Another key optional accessory is the XLR-H2 top handle which features two XLR/TRS combo inputs, a 3.5mm audio input, higher resolution 96 kHz sampling and 32-bit float recording to prevent clipping with very high sound levels.

The Sony Cinema Line FX5 is priced at $7849 body only and available now, but high demand globally is currently affecting supply so the camera often on back order at the moment. Sony Australia provides a two-year warranty on Cinema Line camera bodies sold by an authorised Australian reseller. For more information visit **www.sony.com.au**

2027 WORLD FOOD PHOTOGRAPHY AWARDS OPEN FOR ENTRIES

THE 2027 COMPETITION marks the 16th running of the World Food Photography Awards sponsored by Brocollini®, and entry is now open to both professional and amateur photographers. With over 25 categories and prizes, the competition covers the topic of food in every context – from growing and harvesting to cooking, eating, celebrating and surviving.

Categories range from Bring Home The Harvest and Food For Sale to Food Portraiture and World of Drinks. For the first time, the winner of the Award for Innovation category will receive a bursary of £1400 and a four-week residency at the Hugo Burge Foundation. Also new for the 2027 edition is a one-year-only category called Feast Of Flowers to mark the competition coinciding with the RHS Chelsea Flower Show in London. Photographers are invited to submit evocative and creative images exploring the relationship between food and flowers, from flourishing kitchen gardens to floral still life studies, from chefs using edible petals to cakes with floral decoration, or fields where crops and flowers grow side-by-side.

"Food photography is about so much more than a pretty picture of food on a plate," says Caroline Kenyon, founder of the Awards. "It tells stories of people, places, cultures and the world we live in – from celebration and community to hardship and survival. The very best images make us feel, they touch our hearts, educate us, make us laugh, show us the familiar with fresh eyes. That's why food photography matters and why we care so much about celebrating these exceptional visual storytellers."

The 2027 judging panel is chaired by David Loftus, one of the most widely published food photographers in the world. His fellow judges include chef Ian Kittichai; restaurateur, author and television host, Tom Athron, the CEO of Fortnum & Mason; Javier and Sergio Torres, three-Michelin-starred chefs; Rein Skullerud, senior photographer and photo editor, World Food Programme; and Simon David, publisher at Hardie Grant.

Photographers from Australia achieved record success in the 2026 competition. Of the nearly 9000 entries submitted from over 50 countries around the world, Australians produced a total of 12 finalist images, including an impressive four category winners (the second highest number of category winners from a single country). The deadline for submissions is 7 February 2027 and for more information – or to enter – visit **worldfoodphotographyawards.com**


Photo credit | 'Incoming!' by Camera House Photography Competition multi-award winner Andrew Murrell from Camera House Erina. Andrew captured this striking image using a Nikon Z 6II camera paired with the Laowa 15mm f2.0 lens | Image details 3-image panoramic stitch | ISO 50 | f/8.0 | 1/2 sec
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NEW SONY FE SUPERTELEPHOTO PRIMES ARE GOOD TO GO

SONY RARELY SEEMS to pause for breath with its FE lens program and now there's a new fisheye zoom at one end of the focal range (see separate news item) and a pair of compact supertelephoto primes at the other.

The FE 400mm f/4.5 GM OSS and FE 600mm f/6.3 GM OSS are both claimed to be the lightest models in their respective categories, both weighing in at a shade under a kilogram… which is quite an achievement in optical engineering. Opting for a slightly slower maximum aperture – as well as the size and weight savings possible with lenses specifically designed for mirrorless cameras – has helped Sony come up with much more compact and affordable 400mm and 600mm primes. The two new lenses share the same barrel designs and are very similar in size and weight… the 600mm being only 21 millimetres longer than the 400mm and a mere gram heavier. Sony's existing 400mm f/2.8 and 600mm f/4.0 models are both substantially bulkier and very much more expensive.

Notably though, the new lenses are also G Master standard models which means a pro-level physical construction and high-performance optics. Both employ magnesium alloy barrel tubes and inner sleeves with extensive weather sealing using silicone rubber gaskets. The exposed surface of the front element has a fluorine coating to help repel both moisture and grease.

A key feature of the optical designs is the use of only a single large-diameter element at the front (rather than a multi-element group) which helps move the centre-of-gravity back towards the camera body for better balanced handling. The 400mm model's optical construction comprises 22 elements in 16 groups while the 600mm has 24 elements in 17 groups. With both lenses, the optical design includes four special elements – one extra-low dispersion (ED) and three with 'Super ED' characteristics – all designed to help minimise chromatic aberrations. Sony's 'Nano AR Coating II' anti-reflection multi-coating is use to reduce flare and ghosting. Both models have an 11-blade diaphragm for more rounded and smoother out-of-focus effects, and both lenses have a minimum aperture of f/32. Both also have the same screwthread filter fitting of 95 millimetres.

◀ Sony FE 400mm f/4.5 GM OSS.

Focusing is performed internally via two focusing groups which are driven by Sony's 'XD' (eXtreme Dynamic) linear motors. Sony says both can support continuous AF adjustment at up to 120 fps (as on the A9 III body) and also maintain subject tracking when shooting 4K vide at 120 fps. The minimum focusing distance is 2.5 metres for both models, but obviously gives a different maximum magnification ratio – 1:5.5 for the 400mm and 1:4 (i.e. one quarter life size) for the 600mm.

The optical image stabilisation has a panning mode and a 'Dynamic Focus' mode which prioritises stabilisation at the moment of shutter release rather than continually steadying the viewfinder's live view image. The idea here is that it's then easier to track erratic fast-moving subjects when the viewfinder isn't laggy or jumpy as a by-product of being stabilised.

The new supertelephoto primes can be used with Sony's 1.4x and 2.0x teleconverters. The FE 400mm f/4.5 becomes a 560mm f/6.3 with the 1.4x converter and an 800mm f/9.0 with the 2.0x converter. The FE 600mm f/6.3 becomes, respectively, an 840mm f/9.0 and a 1200mm f/13.

The Sony FE 400mm f/4.5 GM OSS is priced at $3999 and the FE 600mm f/6.3 GM OSS at $5599. Both lenses are available now. Sony Australia provides a two-year warranty for Sony Alpha system cameras and lenses purchased in Australia from an authorised reseller. For more information visit **www.sony.com.au**



▶ Sony FE 600mm f/6.3 GM OSS.



LOMOGRAPHY OFFERS BONKERS BOKEH WITH NEW PETZVAL MÉTAMORPHOSE LENS

AVAILABLE FOR THE Canon RF, Nikon Z and Sony FE mounts, the new Joseph Petzval Métamorphose 35mm f/1.8 wide-angle prime lens from Lomography enables the characteristic Petzval swirl-like bokeh to be adjusted into a dramatic vortex-like effect. The look can be varying over seven levels with further adjustments possible with the aperture setting and the focusing focus distance.

Designed for both photography and video-making, the Métamorphose is based on the Single Gaussian lens design from 1817 which exhibited significant coma and astigmatism – then considered optical flaws but now considered creative background effects. It's priced at around $930 – depending on exchange rates – and for more information visit **https://www.lomography.com**



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DOWN IN THE CLOUDS

The Story

Titled *Birdie In The Sky*, this remarkable image is by Vitaly Golovatyuk who is from the Russian Federation, and it won the 2026 International Aerial Photograph Of The Year award. The second running of the International Aerial Photographer Of The Year competition attracted total of 1587 entries from all around the world as was open to both amateur and professional photographers. The Aerial Photograph Of The Year prize is awarded for a single outstanding image.

The Photographer

Vitaly Golovatyuk is a professional cinematographer and photographer with over 15 years of experience, including 11 years dedicated to aerial imaging. In 2020 – after being based in Shanghai, China,



Photograph by Vitaly Golovatyuk, 2026 International Aerial Photograph Of The Year. Copyright 2026.

for ten years –he moved back to Russia in 2020, and works on assignments all over the world.

"My journey began in video, but the rise of social media in 2011 drew me into still photography, where I found inspiration in collaborating with the creative community."

Vitaly currently uses a DJI Mavic 4 Pro drone and a Sony Cinema Line FX2 compact cine camera.

"Over the years, I've tried many different cameras and drones, but I'm happy with my current set-up. I'm not a big fan of bulky camera bags, so I usually carry a more comfortable bag where I put my cameras.

"Aerial photography has fundamentally expanded my creative vision, pushing me to seek unconventional angles and compositions that stand out in an increasingly saturated visual landscape. I prioritise capturing the 'money shot' in-camera, treating editing in Lightroom and Photoshop as a supplementary step rather than a crutch."

The Photograph

Vitaly's winning image was taken at Elk Park, outside Dongtai City in the Zhejiang Province of China.

"After several days exploring the area during sunrise and sunset, I photographed this bird on a tiny lake surrounded by red grass. The clarity of the sky's reflection creates a striking illusion, as if the bird is suspended weightlessly in the air."

To see more of Vitaly Golovatyuk's work, visit **www.panvelvet.com**

To see all the winning and finalist pictures in the 2026 International Aerial Photographer Of The Year competition visit **internationalaerialphotographer.com**

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2027 CAMERA MAGAZINE IMAGING AWARDS

After promising signs of recovery in 2025, the camera industry has again faced a challenging year – as have many others – and mostly all due to external circumstances too. However, in quite a lean last 12 months, there have been some definite highlights which suggest there's still a strong underlying faith in the market.

Report by *Australian Camera* editor **Paul Burrows.**

Everything was going so well until things weren't going too well in the Middle East and the ripple effect – mostly related to the rising price of oil – has spread globally, creating economic pressures in a great many countries, including here in Australia. The continued reliance on oil-based fuels in so many aspects of commerce from manufacturing to transport means the impacts of higher prices are widespread and inflict multiple hits on the daily cost of living for everybody. Then, for any industry reliant on memory devices and semiconductors, a global supply shortage – also leading to higher prices – is throwing new model programs into disarray. This is because demand for AI data processing has seen many chip-makers switch their production emphasis to high-bandwidth memory and server-grade SDRAM, and away from traditional flash memory products. This isn't a situation that's likely to change any time soon so, if you're a camera-maker, for example, you're dealing with delayed new product launches at a time when they're just what's needed to stimulate consumer interest. Of course, many existing models – especially among the ranks of the higher-end mirrorless bodies – don't need replacement just yet, but we'll like continue to see some prioritisation in terms of which new models are considered essential… or like to be more profitable right now.

It's not all gloom and doom though. The compact camera rival continues to generate strong sales in the fixed-lens category and, what's more, it's slowly developing into a wider variety of models arriving to tempt smartphone users. There's still an emphasis on being relatively compact and lightweight, but also on easier usability – maybe with some similarities to how smartphone cameras work – while also promoting more advanced capabilities for both photography and video. Panasonic's Lumix L10 takes the fixed-lens zoom compact to a higher level, in the process broadening its appeal to include enthusiast-level photographers who want something really compact, but really capable too. The OM System PEN is also appealing to both newcomers to cameras, but also more advanced shooters, and throws interchangeable lenses into the mix. It's likely many PEN buyers will stick with the standard 'kit' zoom – now updated to be weather sealed – but many will also like the idea of being able to fit something else as their interest and experience grow. This is very much the philosophy behind Nikon's Z5IIC which, under the skin, is a well-featured full frame mirrorless camera, but designed to be more attractive – in terms of both its looks and operation – to first-time users. Nikon considers that the Z5IIC is a camera that users will be able to grow with as their photography skills develop and they want to explore beyond automation. On the other hand, it can function as essentially a point-and-shoot camera, but with the promise of superior results thanks to its advanced automation such as AI-driven subject recognition. There's certainly also elements of this approach in Canon's EOS R8 Mark II with its more classical 35mm SLR-like styling which may well resonate with people who used cameras like the T70 or T50 in the 1980s, or an EOS model in the 1990s, but then switched to using a smartphone and hasn't purchased another camera since.

So can the camera industry finally claw back some of the ground lost to the smartphone over the last two decades? Certainly, there's now generation of smartphone users who have never owned a camera, and who are now starting to look at them either as simply something different – a new experience – or because they're now aware that they can be superior in some areas… particularly in terms of sensor size. We've seen some weird and wacky attempts to attract these users – notably Fujifilm's X Half and the Pentax 17 – but it seems to be that what they really want is a more mainstream camera that's suited to applications such as vlogging, but also has some scope for creative experimentation via image 'recipes' or LUTs.

"These awards are not just about helping you make buying decisions, but also rewarding those whose efforts in R&D, product planning, design departments and engineering labs have all helped create something special."

Video Is The Star

The requirements of single-operator video productions have also clearly been considerations for camera-makers over the last year or so, resulting in models such as the Canon EOS R6V and Nikon's ZR. The ZR also has higher-end aspirations, but certainly works for content creators as indeed does the Z5IIC even though it's essentially designed to be more of a hybrid mirrorless camera (despite not having an EVF).

It can be argued that, as more and more video is being shot for a wide variety of applications – and by people who mostly aren't professional videographers – this will become more of a priority for camera manufacturers over the demands of photographers. Canon, for example, already has a number V series cameras which merge into its Cinema EOS line with models such as the C50. Nikon is likely to follow suit while, ironically, both Panasonic and Sony have essentially über-hybrid mirrorless models – such as the former's Lumix S1R II – and then dedicated compact cinema cameras – such as the latter's recently-released FX5 (which still uses the FE mount). Regardless of how each brand goes about servicing this sector, video will likely be a key influencer in future model line-ups. As of now, only Hasselblad and Leica have mirrorless cameras that are exclusively for photography and, while the photography purists would undoubtedly like the idea of similar models from Canon and Nikon, the reality is that they probably wouldn't be economically viable any more. Consequently, the same can also said to be true of film cameras and just whether we'll see any new models beyond basic compacts or single-use cameras is starting to look increasingly uncertain. It's unlikely we'll see anything else from Ricoh following the commercial failure of the Pentax 17 – with hindsight, the right timing, but the wrong camera – and it's hard to see Canon, Nikon or OM System (its Olympus roots meaning it also has a 'photo tradition') being bothered now as all have bigger fish to fry. If an affordable new 35mm SLR comes at all, it'll come from China. But again, it's more likely that we'll start seeing Chinese brand mirrorless cameras – in fact, it's probably only a matter of time – given how many lens brands now come out of this country… at last count, it was over 20.

Optimising Optics

Logically, following what's been happening in mirrorless cameras, there's also been a growing emphasis on lenses specifically designed for the technical requirements of shooting video. This is now progressing beyond just 'hybrid' lenses – essentially models for photography with some design tweaks for video – to fully-fledged cine lenses with features such as geared control collars, T stops instead of f-stops, quieter autofocus operation and optical designs which minimise both focus breathing and, with zooms, focus shift.

Cine lenses have always been around, of course, but now many more of the traditional manufacturers of photo lenses are getting involved such as Sigma, Tokina, Samyang and Leica. Nikon, for example, already has the Nikkor Z 28-135mm f/4.0 PZ which is primarily designed as a cine lens, but it's also planning a nine model line-up of Z Cinema lenses using the Z mount as it continues to leverage its acquisition of pro cine camera-maker RED. Again, it's a case of new markets presenting more potential for improved profitability.

With lenses more generally, we continue to see more 'exotic' models made possible by the design freedoms afforded by the mirrorless camera configuration, as well as revised versions of earlier models that can now be made more compact, lighter weight and better performing. Good examples

are the fisheye zooms from Canon and Sony – the RF 7-14mm f/2.8-3.5L Fisheye STM and FE 8-14mm f/3.5 Fisheye G – the significantly more compact 400mm f/4.5 and 600mm f/6.3 FE mount supertelephoto primes from Sony, Sigma's remarkable 135mm f/1.4 DG Art and 85mm f/1.2 DG Art fast short telephotos, and Tamron's 12-20mm f/2.8 ultra-wide zoom currently available in the Sony FE and Nikon Z mounts.

What Makes A Winner?

Apart from new features or extended specifications, what else are we looking for in a Camera Magazine Imaging Awards winner? Well, of course, it also has to actually work as promised and, in the process, deliver operational benefits or performance enhancements… ideally both. Beyond these all-important objective aspects, there are the more subjective elements of a product's design to consider, especially a camera because it's a device that we'll work with very closely. Additionally, there are the emotional – and even psychological – aspects of taking photographs or recording video, as they are often tied up with memories, celebrations or important events in life.

Styling is important because there are many ways we respond to the way something looks whether it's about well-balanced proportions – a key aspect of good design in everything from cars to cameras – or there are elements which resonate with past experiences. The latter is certainly an aspect of the appeal of retro-inspired styling, although this can also be about the desire for a different experience as much as being a return to the familiar. Like the steering wheel, the classic camera dial is hard to replace in terms its positive action and the immediate confirmation of making a setting. However, as we become and more accustomed to touch screen interfaces, controllability and operation is all about how well menus are organised and how efficiently and seamlessly they integrate with external controls. As we've seen with the Hasselblad X2D II 100C and, more recently, the Nikon ZR, a well-designed screen-based user interface can work as effectively as a good control layout.

In practice, ergonomics are critical – be they physical controls or a GUI – because these are how users interact with a camera so it not only has to be intuitive, but logical so the operational process enables the smooth achievement of both technical and creative objectives.

Not surprisingly, these highly subjective aspects of, in particular, camera design are harder to judge because personal opinions come into play derived from numerous influences and ideas (just check out the online comments that follow any new product announcement). That said, it's generally obvious when a design works well and facilitates the desired objectives, if not effortlessly then with optimum efficacy and efficiency.

Obviously, we also consider prices, but more in the context of the value proposition and in relation to what rival models are offering for a similar outlay.

Certainly in technical terms at least, there really is no longer such a thing as a bad camera, only varying degrees of good. And while there are definitely questionable decisions relating to design and functionality, modern cameras, lenses and other imaging products all work as they should… and it's the exceptional that stands out. Consequently, the winning margins can be very fine indeed and getting there is quite an achievement. These awards are not just about helping you make buying decisions, but also rewarding those whose efforts in R&D, product planning, design departments and engineering labs have all helped create something special.

Times For Change

As a result of the state of the market currently, this year's line-up of categories has been revised to better reflect what's happening. Firstly, there isn't a medium format camera winner this year because, quite simply, there weren't any new medium format cameras. This is also the case with our Professional Mirrorless Camera – Cropped Frame category, but it's likely that this won't be returning and we'll have just one category for all professional-level mirrorless cameras regardless of sensor size (except for medium format models, of course).

We've renamed the Hybrid Mirrorless Camera category as Video/Cinema Camera which allows us to consider models launch in, for example, Canon's Cinema EOS line or Sony's FX range, and which could be exclusively video – such as the new Sony FX3 – rather than hybrid. However, hybrid mirrorless cameras that are essentially more video-orientated will still be included in this category.

Finally, as we mentioned last year was likely on the cards, we've introduced a specific category for cinema lenses, in recognition that the design requirements here are quite different from photo lenses or, indeed, those considered to be 'hybrid'. At this stage, both primes and zooms are included in the one category, but again, we may consider separating them in the future, especially as zoom lenses are now widely used at most levels of video production. There's still a preference for primes in high-end cinematography, but even this is changing as contemporary materials and manufacturing techniques enable much smaller, lighter and less expensive cine zooms. As always, change is the only constant in the world of digital imaging, with both photography and video.



ABOUT THE CAMERA MAGAZINE IMAGING AWARDS

The first awards were run in 1981 when the magazine was called *Camera Craft*, and there was just one category – The Australian Camera of the Year (for the record, won by the Olympus OM-10 35mm SLR). Subsequently, the number of categories has grown to reflect developments in the industry and the arrival of new technologies. The categories are also revised on occasions as new product sectors emerge (such as mirrorless cameras) or others decline (notably DSLRs).

This year the period of eligibility for the 2027 Camera Magazine Imaging Awards ran from 1 October 2025 to 30 September 2026, and extended to any product within each of the categories that was released onto the mainstream Australian market during this time.

Another key requirement for eligibility is that a new product must be available for purchase by the time we announce the winners. This means being physically available at retail outlets in all the country's major metropolitan centres as well as from online sellers.

We spend the whole year compiling long lists of potential winners and these are fine-tuned as we go along, including after we've been involved with the annual TIPA World Awards judging earlier in the year. All the eligible products in each category are evaluated on a number of design, operational and performance criteria. The key consideration is just how effectively has the design brief been met and whether the product delivers everything that's promised, including in all performance areas. Additionally, being a member of the Technical Image Press Association, we also access all the performance data from the Testlab facility in Cologne, Germany, which conducts TIPA's fully independent camera tests.



CONSUMER MIRRORLESS CAMERA
OM SYSTEM PEN

For nearly seven decades the PEN name has been a significant one in, first photography and then, later, digital imaging. It has been synonymous with compact cameras designed to make photography more accessible and, in the early days at least, more affordable. The legendary camera designer Yoshihisa Maitani created the first PEN model for Olympus in 1959, adopting the half-frame 35mm format to make a camera that could be as easy to carry around and use as a pen. This philosophy has informed every camera that's worn the name since, including a trio of innovative half-frame SLRs and Olympus's first digital mirrorless camera, the PEN E-P1, introduced in 2009 and the first in a long line of models.

For enthusiasts, the highlight of this era was the PEN-F from 2016 with its classical styling and, for the first time in a digital Olympus PEN model, an EVF. It's this camera that has largely inspired the first OM System PEN which, ten years later, is actually a lot more affordable and incorporates some key styling elements of the E-P and E-PL (known as PEN Lite) lines. Importantly too, it has in-body image stabilisation and a weather-sealed bodyshell to enhance its credentials as a carry-anywhere, go-anywhere compact camera. It arrives at a time when compact fixed-lens cameras are back in vogue, but the OM System PEN offers the added flexibility of interchangeable lenses while still staying competitively small if you stick with the standard kit zoom (equivalent to 28-84mm) that's now also weather-sealed. Importantly though, the PEN is pretty much the OM-5 II under the skin – same sensor and processor – so it has comparable capabilities and performance, including continuous shooting at 30 fps. Its AF system is essentially the same too, but with the addition of AI-driven subject recognition for humans and animals. The scope for tweaking the look of images (and video) is almost endless and also includes the film profiles – four each for colour and B&W – from the OM-3.

Notably too, the new PEN has the OM System era menus which are more logically arranged than those from the Olympus days and much easier to navigate. The whole handling experience is a good one with, of course, the viewfinder being a big attraction for enthusiast-level shooters looking for a compact alternative for the times when a bigger kit is just going to get in the way. As has been the case through the history of the PEN name, the OM System camera will attract first-time users – at this point in time, most likely converts from smartphones – but its appeal is broader than this. In fact, it's also broader than the 'Consumer' definition of this category, but given its affordability, this is where it fits best… and wins easily.

ENTHUSIAST MIRRORLESS CAMERA
CANON EOS R6 MARK III



As mirrorless cameras continue to shift upmarket in terms of features and specifications (and, inevitably as a result, price), this category is becoming steadily more hotly-contested. This year there were the most finalists of all the camera categories so Canon's EOS R6 Mark III had to stand out to beat the pack… and it did on a number of levels. For starters, it very much follows in the Canon tradition – right from the 35mm SLRs days – of raising the bar to redefine what's on offer at this level. The previous model was already one of the most accomplished mid-range full frame mirrorless camera on the market, but the third-generation EOS R6 goes a lot further to significantly enhance both its capabilities and performance… and compared to the competition too.

In a nutshell, its steps up to a higher-res, 32.5 megapixels (effective) sensor, 7K RAW video recording internally and upgrades to both its autofocusing and in-body image stabilisation. The former gets the handy 'Registered People Priority' function and the latter's effectiveness is increased to 8.5 stops of correction for camera shake. Despite the increase in resolution, the top continuous shooting speed stays at 40 fps and, what's more, with extended burst lengths. And 40 fps still comes with full AF/AE adjustment between the frames. There's still dual memory card slots, but one of them is now for the faster CFexpress Type B devices to make the most of the camera's speed for stills and high bit rates for video. And talking of video, the R6 III isn't a world away from the Cinema EOS line's C50 in its recording capabilities which include a 7K 'open gate' option using the whole sensor frame so many other framing options can then be derived from a master file. The 7K RAW recording is at up to 50/60 fps (with a Light option for smaller files) while 4K DCI/UHD is at up to 100/120 fps and 2K DCI/FHD at up to 180/150 fps. There's a lot of flexibility with codecs, compression and colour subsampling – so you can better tailor the output to the application – and host of higher-end video features so the R6 III is much more of a hybrid camera than its predecessor. It's quite a bit pricier than its predecessor too, but then you get a lot more for your money too. As we concluded in our review, the EOS R6 Mark III is good at everything and it's hard to pick any flaws.

"Once again, Canon packs its mid-range full frame ILC with all the essential ingredients seasoned with a liberal serving of tasty extras."



PROFESSIONAL MIRRORLESS CAMERA FULL FRAME
SONY ALPHA A7R VI

Over the last couple of years Sony really hasn't let its mirrorless camera rivals get their breath back such as been the pace of its new model program… it's pretty unrelenting and backed by an even busier schedule of new FE mount lenses to create a system that's now the biggest and the most diverse. What's more, the camera upgrades aren't just a bit of a tweak here and a bit of a tickle up there, they're major and they make a difference.

Check out the sixth-generation A7R's key specs… an effective resolution of 66.8 megapixels with 30 fps continuous shooting – even with 14-bit RAW capture – which maintains full AF/AE adjustment and blackout-free viewfinding. The burst lengths at 30 fps are good too… up to 215 fine-quality JPEGs or 150 RAW files The sensor's total pixel count, by the way, is 72.6 million and it's an all-new 'Exmor RS' stacked BSI-type CMOS imager matched with Sony's latest 'Bionz XR2' engine which incorporates an AI processing unit. Interestingly, the stacked sensor's design is different from what we've seen previously from Sony in that the additional layer isn't a buffer memory, but now processes the dual-gain outputs – low-gain for enhanced sensitivity and a high-gain for lower noise – to enhance the dynamic range across the entire native sensitivity range. The quoted dynamic range is 16 stops and there's yet more impressive numbers from the A7R VI… for example, up to 8.5 stops of stabilisation correction and, also via sensor shifting, high-res multi-shot capture which generates a 270 megapixels RAW image.

The Mark VI's autofocusing upgrades to 'Real-Time Recognition AF+' with the plus symbol indication that the AI-analysed subject recognition now includes skeletal-based human pose estimation for the more reliable tracking of people using their entire bodies. This will be particularly beneficial when shooting subjects such as fast-moving athletes. The A7R VI also now has an auto subject recognition option which will find any selected subject. AI analysis now also drives the automatic white balance control which uses both visible light and IR sensors to better determine the most accurate colour rendition in a wider variety of lighting situations (especially with a mixture of source types).

Not surprisingly, there's another very nice set of numbers when it comes to the A7R VI's video capabilities, starting with 8K resolution (oversampled from 8.2K) at 24, 25 or 30 fps and 10-bit 4:2:2 colour which comes with a small 1.2x crop. There's 4K UHD recording (oversampled from 5K) at up to 50/60 fps without a crop or at 100/120 fps with a slight 1.1x crop, both again with the option of 10-bit 4:2:2 colour. If you engage 'Field Of View Priority', 4K is available at the higher speeds without a crop, but with the loss of noise reduction. The camera's video tool box includes S-Log2 and S-Log3, the S-Cinetone profile, LUT uploading, auto framing, proxy recording, 'Dynamic Active' electronic image stabilisation, USB streaming, a front tally lamp and 32-bit 'float' audio recording internally when using the optional XLR-A4 XLR adaptor. Notably, dual-gain processing is now available for video – for the first time on an Alpha series camera – to give an increased dynamic range when shooting in 4K UHD.

The 9.44 megadots OLED EVF now covers the wider DCI-P3 colour space and has a 3.0x increase in brightness to allow for HDR previewing. A new, higher-capacity battery gives around 600 shots when using the EVF or 710 shots with the monitor screen.

Brilliant numbers all round then, but perhaps the best for the Sony A7R VI is being number one in this prestigious category.

"What's more, the camera upgrades aren't just a bit of a tweak here and a bit of a tickle up there, they're major and they make a difference."





CAMERA MAGAZINE AUSTRALIA IMAGING AWARDS 2027 SPONSORED BY CameraHouse WINNER

FIXED LENS CAMERA

PANASONIC LUMIX DC-L10

Much of the recent activity driving the compact camera resurgence has been in lower-end point-and-shoot models which tells you a little about the type of buyer that's currently driving the trend. But it's the higher-end models such as Canon's evergreen PowerShot G7X Mark III that have been the catalyst, packing a lot of capabilities into a small and highly portable form factor and representing a logical progression from the smartphone. Panasonic's contribution here is the Lumix TZ300, a reboot of its hugely popular 'Travel Zoom' line which also packs a lot into a pocket-sized casing, but a bit surprisingly, doesn't have a viewfinder… surprising because the previous TZ200 model did.

While it's likely that a good proportion of today's buyers of compacts ate buying their first actual camera, we've been reminded that compacts were once popular with enthusiast-level photographers too. They still are… there just hasn't been a whole lot of choice, especially if you want all the extra flexibility of a zoom lens along with, of course, an EVF plus some of the latest tech we've been seeing in mirrorless cameras. Panasonic has read our minds and given us the Lumix L10 which essentially ticks all the 'must-have' boxes for the more serious shooter who has been looking for something to use when the big camera kit should be left at home. The L10 isn't an especially compact compact – it's pretty close in size overall to the Fujifilm X100VI – but it's still small enough and light enough to stick in a jacket pocket and, probably more importantly these days, look innocuous enough when in use. Even more importantly though, it's a big camera on the inside with many of the features and systems of Panasonic's mid-range mirrorless bodies… so you get AI-driven subject recognition for autofocusing, 30 fps continuous shooting with pre-capture buffering, 10-bit HEIF and 14-bit RAW modes, 5.6K 'open gate' video recording and 4K at up to 100/120 fps, downloadable custom-made LUTs, and a largely all-metal construction based on a diecast aluminium chassis.

The sensor is a BSI-type CMOS – also used in the Lumix GH7 – with an effective resolution of 20.4 megapixels and Panasonic's multi-aspect arrangement to maintain the same angle-of-view at 4:3, 3:2 and 16:9. Up front, is a Leica DC Vario Summilux 10.9-34mm f/1.7-2.8 zoom lens that's equivalent to 24-75mm and uses the same 'Phase Hybrid AF' system as the latest Lumix S mirrorless camera bodies. The list of AI-learned recognition subjects is the same too, including the latest Urban Sports mode for activities such as skateboarding, break dancing or BMX biking.

The styling is retro-inspired and the L10 looks great from any angle and in any colour, although the special edition Titanium Gold versions is especially classy. The control layout is also a lift from the mirrorless bodies, being based on a main mode dial with front and rear input wheels along with a four-way navigator keypad on the back panel. It feels familiar and works very efficiently, especially via the customisable 'Quick Menu' touch screen.

Quite simply then, it's hard to fault the Lumix L10 – except for the absence of weather protection – and it backs everything up with a solid imaging performance across its ISO range and very slick AF operation. It was up against some heavy-hitters in this category – Sony's mega RX10 Mark V being one of them – but the L10 was unbeatable for its combination of style, portability, functionality and desirability.





VIDEO/CINEMA CAMERA
NIKON ZR

If we were giving out prizes for surprise packages, the Nikon ZR would win by a country mile. It's not so much about it being Nikon's first compact cinema camera – this was probably bound to happen after its acquisition of RED – but more about how it's been packaged… definitely a surprise package. We all know that a cleaner shape – which basically means no EVF 'hump' – is more desirable for a camera that might be used in a video cage, but Nikon has gone full-on with an RF-style look for the ZR. It's not simply a Z6III with its viewfinder removed, but a whole new body with very crisp, uncluttered lines. Consequently, it's much more compact that the Z6III – the mirrorless camera on which it's based – and also smaller than rival compact cine cameras such as Canon's C50. An interesting spin-off from the ZR's design is that it's gaining a following among marine photographers because it's also a lot easier to accommodate in an underwater housing (there are already four available).

Along with the different body, the ZR also has a very different control layout and user interface to the Z6III. It transfers quite a bit of its operability to its very large – and bright – touch screen monitor and a customisable 'i-menu'. It may look different – and feel different too – compared to any of the more photo-orientated Z mount cameras – but it's exceptionally efficient and almost effortlessly logical. The monitor itself is a 10 cm TFT LCD panel with a resolution 3.07 megadots resolution and, as you'd expect, full articulation for flexible positioning. It supports the wider DCI-P3 colour space and has a brightness of 1000 nits. Consequently, it's a real beauty – colourful, contrasty and super sharp – which really spoils you for anything less.

Not any surprise, of course, are the ZR's pro-level video capabilities – which include Nikon, Apple ProRes or RED 12-bit RAW internal recording options at 6K and up to 50/60 fps – but it is a little surprising that the ZR is comparatively inexpensive for what it can do. For example, you can load up both Nikon and RED LUTs for N-Log recording, and the ZR is the first camera to have 32-bit 'float' levels adjustment for audio built-in. Additionally, there are three built-in microphones with a choice of five pick-up patterns. Put simply, there's a lot built into the ZR which enables to perform exceedingly well without needing any add-ons that would compromise its compactness… or its ability to be used very effectively hand held.

On the photo side, the ZR has all the key features and functions of the Z6III with the exception, of course, of an EVF but also a physical shutter. However, its 'partially-stacked' sensor design enables a faster read-out which allows for flash photography with the sensor shutter at sync speeds of up to 1/60 second (just like in the good old days). There's AI-driven subject recognition for AF (nine in all), up to 60 fps continuous shooting for JPEGs (120 fps in the 'APS-C' format), IBIS that's good for 7.5 stops of compensation, pixel-shifting for ultra-high-res capture at 96 megapixels and everything else you'd expect with a higher-end Nikon Z mount body.

The ZR may be a video camera on the outside, but it's pure hybrid on the inside and, perhaps, the biggest surprise of all is how well it works as stills camera… especially in terms of its handling and operation. However, it's an unmatched balance of portability, performance and affordability that make it an absolute winner as a compact cine camera.



PRIME LENS – FULL FRAME
SIGMA 135mm f/1.4 DG ART



Mirrorless cameras are allowing lens designers to push the envelope with what's now possible without compromising optical performance… or ending up with an astronomical price tag. Sigma's 135mm f/1.4 DG Art series short telephoto prime is a brilliant example. It's the first autofocus 135mm prime with a super-fast aperture of f/1.4, trumping the f/1.8 speed models that are available from Canon, Nikon and Sony. More importantly, though, the Sigma lens also delivers an exceptional optical performance in terms of sharpness across the entire frame and very effective corrections for distortion and chromatic aberrations.

In creative terms, combining the 135mm focal length with a maximum aperture of f/1.4 means a sliver of depth-of-field and so lots of scope for using selective focus to tell a story. What's more, the lens's 13-blade diaphragm renders backgrounds into beautifully smooth and clean-looking blurriness, ensuring subjects stand out very distinctly which creates a very convincing feeling of depth. This works particularly effectively for portraiture, but the 135mm focal length is actually a lot more versatile in practice than might be expected… thanks to that shallow depth-of-field.

Inevitably, the Sigma 135mm f/1.4 isn't a small lens – the fitting of a tripod mounting collar tells you something – and at a shade under $4000, it isn't cheap either, but it's such an optical tour-de-force, it's truly worth the effort and the investment. At work inside are 17 elements arranged in 13 groups and which include four of Sigma's 'FLD' types and two aspherical types. The 'FLD' glass elements – a Sigma speciality – have the extra-low dispersion characteristics of fluorite-type elements, but without the very high cost. It's these that enable a very high degree of correction for longitudinal (or axial) chromatic aberration, but they also have a very high transmission index which also helps to optimise sharpness.

Focusing is performed internally via a 'floating' focus system – which employs two focus groups – with autofocusing via Sigma's 'HLA' (High-Response Linear Actuator) motors which enable both speed and precision despite driving heavier large-diameter elements. The minimum focusing distance is 110 centimetres which gives a maximum magnification ratio of 1:6.9. The external construction is weather-sealed and there's a moisture-repelling coating on the exposed surface of the front element. The barrel tubes are all metal alloy so this is a well-built lens too, and at around 1.4 kilograms, not nearly as heavy to use in practice as its might look… and the tripod mounting collar can be entirely detached if desired.

Sigma's ongoing adventures in optical design not only continually demonstrate what it's capable of achieving – optical performance is always the priority – but give us lenses we could only dreamed about not so long ago. The 135mm f/1.4 DG Art promises much on paper and delivers emphatically in practice.

PRIME LENS – CROPPED FRAME
NIKKOR Z DX MC 35mm f/1.7



It could be said that perhaps Nikon hasn't given its 'APS-C' (a.k.a. DX) mirrorless camera system quite as much love as it should, but then along comes a new lens like the Nikkor Z DX MC 35mm f/1.7 macro. It was launched along with the Nikkor Z DX 16-50mm f/2.8 VR zoom which is also a very interesting lens, but it's the 35mm macro that adds something really useful to the Z DX mirrorless system.

As it's designed for the crop-sensor size, it's exceptionally compact and measures only 72 millimetres in length while weighing just 220 grams. The effective focal length is 52.2mm and the minimum focusing distance is 16 centimetres which gives a maximum magnification ratio of 1:1.5… which is roughly two-thirds life size, but in terms of framing, equivalent to 1:1 – i.e. life size – with the full frame format. The f/1.7 maximum aperture ensures a shallow depth-of-field, although at the lens's minimum focusing distance the maximum aperture is f/3.2 (but then the depth-of-field is reduced anyway). The optical construction comprises eight elements in seven groups which includes one with extra-low dispersion (ED) characteristics to help minimise chromatic aberrations. Autofocusing is via a stepper-type motor (STM) for responsiveness, speed and near-silent operation. Focusing is performed internally so there's no change to the lens's physical dimensions – important with a macro lens – and the nine-blade diaphragm gives nicely smooth out-of-focus effects – also important here. The external construction comprises GRP barrel tubes – hence the overall lightness – but with a stainless steel lens mount and Nikon's "drip and dust resistant" sealing… which basically means that it has enough protection for everyday shooting.

For what is actually quite a simple optical design, the performance is excellent in terms of sharpness and contrast, aided by effective correction for chromatic aberrations and flare. Affordability is a big plus and, as this is a lens suited to a number of other applications other than close-ups (portraiture, for example), it represents exceptional value for money.



ZOOM LENS – CROPPED FRAME

OM SYSTEM M.ZUIKO DIGITAL ED 50-200mm f/2.8 IS PRO

The 50-200mm f/2.8 is another telezoom in the OM System lens line-up that makes a compelling case for enhanced portability that's made possible by the Micro Four Thirds sensor size. It leverages the near-doubling, in effect, of the focal length while maintaining significantly more compact dimensions and a lighter weight. It's a very desirable combination if you're spending a lot of time carrying your equipment around which is often the case when shooting wildlife, birds, adventure or sports.

The effective focal length is 100-400mm and with a constant aperture of f/2.8 that isn't on offer in any other mirrorless system in any other sensor format. Being one of OM System's PRO grade lenses, it's a step up in both the optical and physical constructions to enhance performance and ruggedness.

"The optical construction employs 21 elements in 13 groups which includes a total of nine special types to provide a very high degree of correction for aberrations and distortion while also optimising sharpness and contrast."

The design includes both internal focusing and internal zooming which involves a fairly complex mechanism, but it greatly benefits the handling and the balance as the barrel length always remains the same. It also enhances the integrity of the protection against the intrusion of moisture or dust particles so, consequently, the 50-200mm's weather sealing is to the higher IP53 rating and it's also insulated for shooting in subzero temperatures – matching OM System bodies such as the OM-1 II and OM-3.

The optical construction employs 21 elements in 13 groups which includes a total of nine special types to provide a very high degree of correction for aberrations and distortion while also optimising sharpness and contrast. It's an exceptional piece of optical design which ensures the 50-200mm performs consistently across its focal range and also at the widest aperture. In a nutshell, this is an incredibly sharp lens, including when shooting at the shortest focusing distances, and highly corrected either optically or via the OM System in-camera processing.

With its rugged external construction and robust environmental sealing, this is a lens very much designed to cope with the challenges of working in all weather conditions and the inevitable wear-and-tear when capturing the action is the overriding priority. It's very easy to use hand held – being similar in size and weight to many full frame system 70-200mm f/2.8 zooms – and the combined OIS/IBIS gives up to seven stops of correction for camera shake, along with the constant maximum aperture of f/2.8, there's plenty of leeway when shooting in low-light situations.



With its VCM focusing drive able to operate at 50 fps, the 50-200mm autofocusing is able to keep up with fast-moving objects and maintain the extremely reliable tracking that's possible with AI-based subject recognition.

In practice, the 100-400mm focal range is actually suited to a much wider range of applications, but especially so with the OM System 50-200mm zoom given that's so much more compact and lighter in weight. What's more, its faster constant aperture of f/2.8 and excellent close-up focusing capabilities (giving a maximum magnification ratio of 1:2 which is half life size) add even more versatility. Backing all this up is the near faultless optical performance for a telezoom, so it's a winner not just for OM System, but the Micro Four Thirds format.

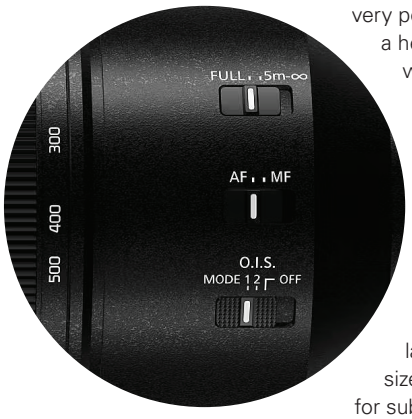


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ZOOM LENS – FULL FRAME
PANASONIC LUMIX S 100-500mm f/5.0-7.1 OIS

What's better than a 100-400mm telezoom? A 100-500mm telezoom, obviously, and what's more a 100-500mm that's a similar size and weight to the full frame 100-400mm models… so you get 20 percent more 'fire power' for no extra effort and, it should be noted, a similar outlay.

Panasonic's Lumix S 100-500mm f/5.0-7.1 zoom is another excellent example of the size reductions – and the enhanced optical performance – that are now achievable thanks to the mirrorless camera configuration. It's also surprisingly versatile, working as well as an 'every day' lens as one more specialised for subjects such as sports or wildlife.



It's still a reasonably big lens, of course, but Panasonic has done a lot to make it more manageable in terms of its weight which is around 1.3 kilograms… such as using mostly high-grade polycarbonate barrel components in the external construction. While it has a tripod-mounting collar fitted, the Lumix S 100-500mm isn't hard to use hand held especially as its optical image stabilisation gives a total of seven stops of correction when working alongside the IBIS in the Lumix S camera bodies. The focusing is internal, but the zooming is telescopic so the lens increases in length by a total of about 80 centimetres, but this doesn't unduly upset the balance. Autofocusing is via Panasonic's 'Dual Phase Linear Motor' which is very powerful so it can drive a heavier focusing group while still being fast and precise. The minimum focusing distance is 80 centimetres at 100mm and 1.5 metres at 500mm which gives a maximum magnification ratio of 2.7:1 or just a little larger than one-third life size. This is potentially great for subjects such as birds or small animals as you're going to be far enough away not to disturb them.

The optical construction employs 19 elements in 12 groups with a total of six special type to minimise chromatic aberrations – both transverse and axial – and also spherical aberrations. Of course, the Lumix S camera bodies perform various in-camera lens corrections, but the100-500mm is designed achieve as much as is practicable with optical correction to provide the best possible starting point for any software processing.

Importantly, it remains exceptionally sharp at its longest focal lengths and also at its closest focusing distances which means these capabilities are actually usable and not just making the specs sheet look impressive. An 11-blade diaphragm gives beautifully rounded and smooth-looking out-of-focus effects so, as the depth-of-field progressively diminishes at the longer focal lengths, backgrounds are rendered as soft colours or tones… important with subjects such as wildlife.

What makes the Lumix S 100-500mm f/5.0-7.1 OIS zoom a winner is that is represents a workable balance of many things… its longer focal range, a manageable size and weight, comfortable handling assisted by OIS, excellent close-up capabilities, an impressive optical performance overall and, in the light of all this, a price tag that represents very good value indeed.

"It's still a reasonably big lens, of course, but Panasonic has done a lot to make it more manageable in terms of its weight which is around 1.3 kilograms..."



CINE LENS

FUJINON GF19-35mm t3.5 PZ OIS WR

Fujifilm is putting a bit of effort into building the cinematography side of its GFX digital medium format system which is based on the GFX Eterna 55 large format pro-level cine camera. It's based on the same 102 megapixels sensor as the GFX 100 series mirrorless cameras, but in the cine world, this size of imager is called large format… just so you know. As with the lenses for the hybrid mirrorless cameras, it places some serious demands on the lenses that are being made for it, including a large imaging circle. In particular, the GFX Eterna 55 allows 'open gate' recording which uses the full area of its "44x33" sensor and that's taller than any other pro-level cine camera so its demands on lenses is unique.

So far, there's only two, and the latest is the Fujinon GF19-35mm T3.5 PZ OIS WR. It isn't exclusively a cine lens, but it's been designed with this application primarily in mind and, of course, it's a power zoom. The focal range is equivalent to 15-28mm and the optical construction employs 23 elements in 15 groups which includes a total of seven special types. These comprise four elements made from optical glass with extra-low dispersion (ED) characteristics and three that are aspherical. Collectively, they correct for chromatic aberrations and distortion while Fujifilm's 'Nano GI' anti-reflection multi-coatings minimise flare and ghosting. The built-in optical image stabilisation is a big plus because, unlike the GFX mirrorless bodies, the GFX Eterna 55 doesn't have IBIS.

> "Importantly when shooting video, the optical design minimises focus 'breathing' which is the slight change in the angle-of-view (i.e. the image size) that can occur as the focusing distance changes."

Fujifilm describes the GF19-35mm T3.5 as being "a compact and lightweight design" which it is in terms of high-performance cine lenses, but it weighs in at 2.1 kilograms and is 22.2 centimetres in length so it's quite a handful. Of course, hand held shooting isn't really how it's intended to be used, least of all when attached to the GFX Eterna 55. There are manual control rings for focus, zoom and iris (cine speak for aperture) and each is geared with the standard 0.8 MOD gear pitch ensuring compatibility with industry-standard accessories such as follow focus systems and lens motors. Of course, because this is a power zoom, an external drive isn't needed here, and there's a handy rocker switch at the rear of the barrel for control (although this can also be done from the GFX Eterna 55 body or its top handle). The 19-35mm is also an autofocus lens so there may be situations where you don't need a follow-focus set-up either.

However, when you do, the manual focus ring has a wide 200-degree rotation angle to enable precise focusing even in shallow depth-of-field scenarios. In this regard, the diaphragm has 13 blades to give uniformly circular and very smooth out-of-focus effects. Although it's an electronic 'fly-by-wire' control, the focus collar has end stops.

Both zooming and focusing are performed internally so there's no change in the lens's overall length during either operation. Importantly when shooting video, the optical design minimises focus 'breathing' which is the slight change in the angle-of-view (i.e. the image size) that can occur as the focusing distance changes.

The other on-barrel controls comprise selectors for switching between auto or manual zooming or focus operation, an aperture lock switch and an on/off switch for the lens's optical image stabilisation. The zoom's external construction is fully weather-sealed and the barrel tubes are metal alloy so it feels extremely solidly built indeed. There's a 3/8 screwthread mount on the base of the lens to enable direct coupling to whatever support arrangement is being used.

Importantly for higher-end video and cinematography applications, the 19-35mm has the same physical dimensions, geared control ring locations and operating characteristics as the earlier GF 32-90mm T3.5 PZ OIS WR model – which is also a power zoom – so they can be quickly and easily swapped over without needing to rebalance a gimbal or to reconfigure a camera cage.

The optical performance has a cinematic feel to it, so the corners have a slightly creamy softness to them when shooting wide-open at 4:3 (less so at 16:9), but the whole frame is very sharp after stopping down to around T5.6. There's some subtle ghosting and flaring happening too, and with motion pictures, this is often considered atmospheric rather than a fault. Importantly, the GF19-35mm T3.5 certainly has the resolution to match the 102 megapixels of the GFX 100 mirrorless bodies, and 'open gate' at 8K whenever it comes to a GFX Eterna series cine camera.



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OM SYSTEM PEN

REPORT BY PAUL BURROWS



PEN FRIEND

The digital PEN is back, this time under the OM System branding, but with plenty of Olympus DNA still in evidence. It's another serious contender if you're looking a compact, but capable carry-anywhere camera.

So we need to get our PENs all organised here. We're not talking about the half frame 35mm models because that's a whole different genealogy, but the digital PENs, of which the OM System PEN is the latest. The key here is that it's an *OM System* PEN, as opposed to all the Olympus-badged digital models which started with the E-P1 back in July 2009. This was Olympus's first mirrorless camera – Micro Four Thirds format, of course – but the rangefinder-style E-P series became something of a secondary line when the first of the OM-D models arrived in 2012. With the cache of the 'OM' badging, theses camera got all the love, especially as none of the E-P and the longer-lived E-PL (a.k.a. PEN Lite) models had an EVF. This omission was fixed with the more classically-styled PEN-F (2016) which was very much a homage to the half frame 35mm PEN F (no hyphen, by the way), but chronically underrated. It was a real gem of a camera, and much more highly appreciated today than it was back in 2016, although it was pretty pricey at the time. With limited resources at its disposal, Olympus axed the PEN-F after only a couple of years, but it has subsequently gained its own cult following.

Not surprisingly then, as rumours of a new PEN camera being on the way gathered strength, it was assumed it would be a PEN-F Mark II. Is that what we've got with the OM System PEN? Well, yes and no. The styling is a mix of the PEN-F and the later PEN E-P series models such as the E-P7… chunkier than the latter, but not as overtly retro as the former. However, the big deal is that, unlike the E-P and E-PL cameras, the PEN has a built-in EVF – hence the extra bulk – and unlike any previous digital PEN model, it has weather-proofing to the IPX1 standard… and, notably, also freeze-proofing. Additionally, the new camera is affordably priced, either as a body-only purchased or packaged with a new Mark III version of the M.Zuiko Digital ED 14-42mm f/3.5-5.6 'kit' zoom which, importantly, is now also weather sealed (again to the IPX1 level).

Interestingly, in terms of both its size and looks, the OM System PEN is pretty close to Panasonic's Lumix L10 with the obvious difference being that it allows you to swap lenses, but both would have to be in consideration if you were looking for a higher-end compact camera with a decent-sized sensor, a contemporary feature set and flexible functionality. So, like the L10, it's not really pocket-sized, but it is smaller overall than any SLR-styled M43 camera so it's got street photography cred as well as having great potential for travel and trekking. Of course, the idea of the PEN series – even in the film days – was that it was as convenient to carry and use as a writing pen… in other words, an "everyday" camera.

On the inside, the PEN is a lot of the OM-5 Mark II with a bit of the OM-3 thrown



▲Available in silver or black, the OM System PEN isn't quite as retro-looking as the old Olympus-era PEN-F, but it's still a great looking camera and, most importantly, compact.

in as well along with a sprinkle of PEN-F. What this means is that it's also a mix of some older tech – the sensor, for example – and some more recent tech such as the hybrid AF system with AI-based subject recognition. OM Digital Solutions is certainly making as much of what it's already got on the parts shelf as possible while upgrading where it's most important… which is what we've seen with the OM-5 II and it's certainly a nicely workable package.

The 'Live MOS' sensor has an effective pixel count of 20.37 megapixels

(21.8 million in total) and a native sensitivity range equivalent to ISO 200 to 6400 with extensions down to ISO 64 and 100, and up to ISO 12,800 and 25,600. The maximum image size is 5184x3888 pixels for both RAW and JPEG capture, but perhaps not so surprisingly, there's no 10-bit HEIF capture option. This sensor doesn't have a BSI-type design hence the limited high ISO range, but it does go without an optical low-pass filter to help make the most of its resolution.

The quad-core 'TruPic IX' processor is of a similar vintage to the sensor, but has a bit more to do here – especially in terms of the upgraded autofocusing – so will have undoubtedly been given new control algorithms. Additionally, this new PEN is the fastest model to date with a top continuous shooting speed of 30 fps in conjunction with its sensor-based shutter. At 30 fps, the AF, AE and white balance are all locked to the first frame – as is the case with the slower settings of 15 fps and 20 fps – but continuous adjustment is available at 8.0 fps.

There's 'Pro Capture H' pre-release buffering which records up to 12 frames at 30 fps prior to shutter release (i.e. when the shutter button is at the half-way metering/autofocusing position). There's also a 'Pro Capture' mode which also buffers up to 12 frames, but operates at 8.0 fps. As with the OM-5 II, the burst lengths are pretty short when shooting at 30 fps – just 20 Large/Fine JPEGs or RAW files – and don't extend significantly at the slower speeds either so, at 8.0 fps, you'll get around 48 LF JPEGs and 23 RAW files. That said, the PEN clearly isn't intended to be a sports camera, so these numbers will probably

Using the camera's focal plane shutter, the top shooting speed is 5.0 fps which comes with continuous adjustment of the autofocusing, exposure and white balance (plus, of course, longer burst lengths again, especially for JPEGs.

THE STYLING IS A MIX OF THE PEN-F AND THE LATER PEN E-P SERIES MODELS SUCH AS THE E-P7… CHUNKIER THAN THE LATTER, BUT NOT AS OVERTLY RETRO AS THE FORMER."

SHIFTING UP

Like the PEN-F and all the PEN E-P series models, the PEN has sensor-shifting image stabilisation which, here, operates over five axes to give up to 5.5 stops of correction for camera shake at the centre of the frame (and 4.5 stops at the corners). However, the camera does not support the 'Sync I.S.' tie-up with the OIS-equipped M.Zuiko lenses which extends the correction range on cameras like the OM-5 II.

Also as with the PEN-F, sensor shifting also drives a 'High Res Shot' capture function which has both hand-held and tripod modes and captures eight frames with half-pixel shifts. The hand-held mode generates a 50 megapixels file at 8160x6120 pixels or a 25 MP one at 5760x4320 pixels with JPEG capture, along with a JPEG+RAW option. RAW capture is at 50 MP only. In the tripod mode, the maximum resolution bumps up to 80 megapixels and 10368x7776 pixels with RAW capture, and again there's the choice of either the 50 MP or 25 MP resolutions for JPEGs and JPEG+RAW. The multiple frames are combined in-camera with an added benefit being that the resulting single image also exhibits a two-stop reduction in noise.

'High Res Shot' is just one of the PEN's 'Computational Photography' modes which are all essentially multi-shot capture functions in one way or another (and previously known as 'Advanced Photo' modes). Since the OM System/Olympus OM-1, they have had their own menu page so this little bit of organisation is new to the PEN line (as, in fact, is the entire menu system redesign of the OMDS era). Also



▲ New PEN has a selector on the front panel for engaging the camera's colour and B&W film profiles.



▲ On/off lever incorporates the photo/video switch and also a setting for the Slow&Quick video mode frame rates.



▲ Main mode dial has position for the PEN's subject/scene modes and 'Art Filter' effects (and is freed up from having a video setting).

included on this page are 'Live ND', focus stacking, HDR and a multiple exposure facility… which is actually still only for double exposures.

The 'Live ND' neutral density filter works by capturing a progressively greater number of short exposures – depending on the setting – which has the effect of creating the motion blur normally produced a single long exposure... as would be the case when a neutral density filter was fitted to the lens. Because image stabilisation is again operating continuously (and each of the multiple exposures is very short), you can still shoot handheld, even when the 'effective' exposure time equates to one second. In other words, 'Live ND' allows you to in increase the exposure time without needing to use a tripod, and you don't need to use small aperture settings either. The PEN has settings for up to ND16 which represents a four-stop reduction in the exposure.

The focus stacking function can be set for up to eight frames with the focus adjustment step ranging from one to ten. Conveniently, again these multiple images are combined in-camera.

There are two auto HDR modes – which capture four frames to give either "high contrast" or "super-high contrast" effects – or it can be set manually to make +/-2.0 EV adjustments over three, five or seven frames; or +/-3.0 EV variations over either three or five frames. This delivers either a composited JPEG or a set of RAW files for post-camera processing.

In the same menu chapter – but listed under the 'Other Shooting Functions' tab – is the 'Live Composite' function that has been on the Olympus PEN models since the E-P7 and E-PL7. It's designed for low-light photography and combines a reference background exposure with subsequent multiple exposures that only add any bright light sources (such as stars) thereby avoiding any overexposure. It can run for up to six hours, and the 'Live' bit means it can be monitored in real-time in the monitor or the EVF; likewise also the other Live Bulb/Time shooting modes. Image stabilisation is available with 'Live Composite' shooting so you can also use it hand-held (within reason, of course).



▲ Rear panel control layout is centred around a four-way keypad which includes defaults for ISO and white balance settings.

Auto bracketing is available for exposure, white balance, flash, sensitivity, the 'Art Filter' effects and focusing. The focus bracketing can be set to capture up to 999 frames – should you ever actually need this many in a sequence – with the focus adjustment step ranging from one (narrow) to ten (wide). However, unlike with the focus stacking function, these frames have to be combined post-camera.

The in-camera processing options for JPEGs are largely the same as what's available with the OM-5 II, starting with a set of eight 'Picture Mode' presets plus a user-defined Custom option. There are 16 'Art Filter' special effects which, if you count all the possible variations available, expands that list to 32. Additionally, there are up to nine 'Art Effects' – which can variously be added to a selected 'Art Filter' (not all are always available). Then you can also add in a 'Colour Creator' function – as per the PEN-F and E-P7 – which is a nifty in-camera method of adjusting hue and/or saturation using the front and rear input wheels. There's a total of 30 hues and eight levels of saturation applied via colour wheel display. Should you ever feel the need, it's then possible to include all the presets (including the Custom option) along with the effects and their variations in an 'Art Filter' bracketing sequence, giving a total of 40 different versions of an image captured with one press of the shutter button. Make that 48 if you add in the camera's eight film-like profiles. Incidentally, the OM Image Share app (OI.Share) has 31 'Art Filters' with eight effects so images can be edited with these via your smartphone (along with the 'Colour Creator' and 'Highlight & Shadow' adjustments).

As revived on the OM-3, but originally introduced on the PEN-F (and later available on the E-P7), the PEN has a set of four colour film profiles and four for B&W. Like on the E-P7, these are directly accessible via a dedicated selector switch on the front panel. Although the eight profiles are the same as those offered on the OM-3, there's been a slight revision to the naming so the world "Chrome" is dropped from the colour profiles and the word "Classic' from the B&W ones. So, on the PEN, the colour



▲ Front input wheel encompasses the shutter release and shares navigation duties with the rear input control.



▲ Rear input wheel and the 'CP' button which allows for direct access to the 'Computational Photography' multi-shot capture functions.



▲ Pay attention now… yes, there have been PEN models before, but OM Digital Solutions is keen to emphasise that this is the first OM System PEN.

profiles are labelled Standard/Natural, Film Rich Colour, Film Vivid and Film Soft Tone. The monochrome offerings are Standard, Film B&W, Film IR and Film Low Contrast. Like the camera's standard 'Picture Modes', these profiles have adjustable parameters for contrast, sharpness and shading effect plus the 'Colour Creator' wheel for the colour options and a 'Film Grain Effect' adjustment for the B&W ones. There are also B&W contrast control filters (adjustable for strength) and a selection of toning effects.

Both the mono and colour profiles also have the 'Highlight & Shadow Control' – again also available for the 'Picture Modes' – which works like Photoshop's Curves to adjust the highlights, shadows, and mid-tones. Back in 2016, Fujifilm was wowing the camera world with its 'Film Simulation' profiles so Olympus was on the ball with the PEN-F's offerings, but curiously didn't go on with it beyond the PEN E-P7.

The in-camera corrections comprise flicker detection and correction, 'Shading Compensation' which corrects for vignetting, noise reduction for both high ISO settings and long exposures, and 'Keystone Compensation' which provides in-camera perspective control (in both the vertical and horizontal planes).

When making long exposures and/or using long telephoto lenses, the PEN's 'Anti Shock' mode switches it to the 'electronic first curtain shutter' – the hybrid sensor and focal plane shutter operation – and enables a delay time to be set (from between 1/8 second to 30 seconds) to allow all physical vibrations to die away before the exposure commences. Finally, 'Fisheye Compensation' has three settings for correcting the extreme distortion when shooting with the M.Zuiko Digital ED 8mm f/1.8 Fisheye PRO lens.

STAYING FOCUSED

It's worth remembering that Olympus was first with AI-based subject recognition when it was pioneered in the E-M1X in January 2019, but it's yet to trickle down to the lower-end OM mirrorless models such the OM-5 Mark II. However, the PEN has a basic version with automatic detection for humans – using faces and eyes – and for animals which includes cats and dogs. Stand-alone eye and face detection for humans is now only available when shooting video.

Aside from this extra capability, the PEN's autofocusing is pretty much the same as on the OM-5 II with hybrid contrast/phase-detection AF employing 121 measuring points for each, all of which are all cross type arrays. Frame coverage is 80 percent horizontal and 75 percent vertical with a selection of 'Target Mode' area settings which range in size from All to Single Small. In between, you can have five-, nine-, or 25-point clusters or zones (labelled Cross, Middle or Large). Additionally, you can create a 'Custom AF Target' area which is adjustable for size – from the full array of 11x11 points down to just one and with any square or rectangular shape variation in between. Up to four 'Custom AF Target' areas can then be stored for recall when shooting, for example, a particular type of subject.

> "THE BIG DEAL IS THAT, UNLIKE THE E-P AND E-PL CAMERAS, THE OM SYSTEM PEN HAS A BUILT-IN EVF AND, UNLIKE *ANY* PREVIOUS DIGITAL PEN MODEL, IT HAS WEATHER-PROOFING."

The PEN also has the 'Starry Sky AF' mode which essentially focuses the lens at infinity (and adjusts the AF scanning when shooting at night) with the options of Speed or Accuracy settings for hand-held or tripod-mounted shooting respectively. Low light sensitivity extends down to -3.5 EV at f/2.8 and ISO 100.

The manual focusing assists comprise a magnified image (up to 14x and also available with autofocusing) and/or a focus

MAKING MOVIES

The OM System PEN is definitely primarily a camera for photography and, as with the OM-5 Mark II, its video capabilities are a little constrained by its sensor and processor, but it still has enough if you want to occasionally shoot video clips either for fun, vlogging or other social media applications.

There's 4K DCI (i.e. 17:9 aspect) recording, but at 24 fps only and 4K UHD at 30, 25 or 24 fps, but only with 8-bit 4:2:0 colour both internally and externally. Nevertheless, 4K DCI at 24 fps gives a very decent bit rate of 237 Mbps. The 4K video recording is with inter-frame LongGOP compression only, but intraframe (ALL-I) compression is available with Full HD recording at 24/25/30 fps and represents a maximum bit rate of 202 Mbps. The faster FHD frame rates are with LongGOP compression as is FHD at 100/120 fps which the sole high speed frame rate setting. Time lapse video recording is possible in both 2K and 4K and delivers a Motion JPEG AVI file. There's a choice of 'S&Q' frame rates from 1.0 to 120 fps.

The HDMI output delivers uncompressed 8-bit 4:2:2 colour with both 4K and 2K video (8-bit 4:2:0 colour is recorded internally, but is upsampled to 4:2:2 when recording simultaneously).

There's the option of recording high-quality sound with 24-bit quantisation with sampling at 96 kHz. However, there's only a stereo audio input and no output for connecting headphones. Sound levels can be adjusted manually and there's a built-in attenuator for shooting in locations with lots of ambient noise. Additionally, there a wind-cut filter which can be set to Low, Standard or High.

As with the OM-5 II, there's a front tally lamp, a red image frame which appears in the finder/monitor when recording, and a couple of video-centric colour profiles. OM Cinema 1 and OM Cinema 2 are borrowed from the OM-3 and create cinematic looks straight out of the camera. In a nutshell, Cinema 1 is primarily designed for landscapes and natural scenes as it mainly enhances the blues in the shadows and the yellows in the highlights, while Cinema 2 lowers the overall contrast – but not as much as the Flat profile – while also adding some cyan to give, and we quote, a "soft expression". Both are said to have the same highlights range as the OM-Log400 profile which remains if you want to deal with colour and contrast in post-production. The PEN also allows for shooting video with vertical framing (i.e. 9:16 aspect) for social media and has a Webcam streaming capability over USB C (albeit only at 720p res). There are no time limits imposed on clip durations beyond, of course, those imposed by the battery or high operating temperatures.

Additional electronic stabilisation is available when shooting video and enables remarkably smooth hand-held shooting, but it results in a small crop of 1.18x because the image is shifted electronically on the sensor. However, using the up-graded IBIS is equally effective when shooting video

The PEN's video functionality includes time-coding, flicker reduction, continuous AF with face/eye tracking, the 'PASM' exposure modes, the 'Picture Mode' presets (with the Muted setting delivering a flatter colour rendition), most of the photographic 'Art Filter' effects, the Highlight/Shadow control, lens vignetting correction, the grid guides, the real-time histogram display and the focus peaking display. Touch controls are available for AF point selection, pull focusing, exposure adjustment, audio recording levels and power zooming.








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4
7
6
5
PLATFORM
No.1
BLACKHEATH -MEDLOW BATH
KATOOMBA-LEURA
WENTWORTH FALLS-BULLABURRA
LAWSON-HAZELBROOK
WOODFORD-LINDEN
FAULCONBRIDGE-SPRINGWOOD

THE NEW PEN A MIX OF SOME OLDER TECH – THE SENSOR, FOR EXAMPLE – AND SOME MORE RECENT TECH SUCH AS THE HYBRID AF SYSTEM WITH AI-BASED SUBJECT RECOGNITION."

peaking display which can be set to red, yellow, black or white; with the choice of low, normal or high intensities.

Exposure control is based on 324-point 'Digital ESP' multi-zone metering with alternative measurement patterns for centre-weighted average and spot, the latter with option of being adjusted to emphasise either the highlights or the shadows.

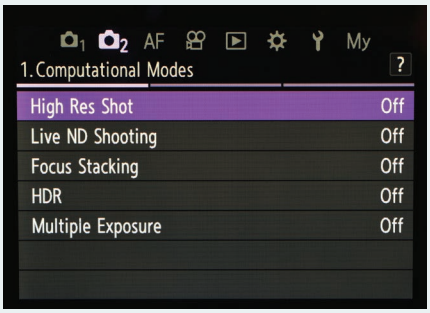
There's the standard set of 'PASM' exposure control modes with the auto overrides comprising an AE lock, up to +/-5.0 EV of compensation and auto bracketing which can be applied over sequences of two, three or five frames with adjustments of up to +/-1.0 EV, or over seven frames with a variation of up to +/-0.7 EV. Fully automatic shooting is available via the camera's 'Auto' mode which includes automatic subject/scene selection. Alternatively, you can switch to the 'SCN' setting on the main mode dial and manually select one of 32 subject/scene modes which are grouped into six main categories – People, Motion, Indoors, Nightscapes and Light Trails, Scenery and Close-Ups. All these modes are fully automatic too, but in the full auto mode there's a selection of manual overrides for colour saturation, colour balance, brightness, background blur and freeze/blur motion. These are accessed via a touch tab in the monitor's display and adjusted via slider-type controls on-screen. Here too, you can access a set of 'Shooting Tips' for a variety of subjects.

The PEN's focal plane shutter has a speed range of 60-1/4000 second with flash sync up 1/250 second and a 'B' timer for up to 30 minutes. The sensor shutter has a speed range of 60-1/32,000 second, but due to the sensor's read-out speed, flash sync is only up to 1/50 second. The hybrid 'electronic first curtain shutter' (EFCS)



◀ Test images captured as JPEG/large/superfine files and using the M.Zuiko Digital ED 14-42mm f/3.5-5.6 II and the 8-25mm f/4.0 PRO zoom lenses. Shutter-priority auto exposure control, multi-zone metering, Vivid 'Picture Mode' preset and ISO settings from 200 to 1600.

▲ The OM System PEN's native sensitivity range is equivalent to ISO 200-6400 with extensions down to ISO 100 and 64, and up to ISO 12,800 and 25,600. Noise is very well controlled across the entire native sensitivity range and both definition and saturation still hold up well at ISO 12,800. The ISO 25,600 setting is still usable provided you aren't planning to make big enlargements. These test images are JPEG/large/superfine files taken in the aperture-priority auto exposure mode with the aperture set to f/11 so the exposure time varies to compensate for the ISO adjustments. Noise Reduction processing and the Noise Filter are switched off. OM System M.Zuiko Digital ED 14-42mm f/3.5-5.6 III.

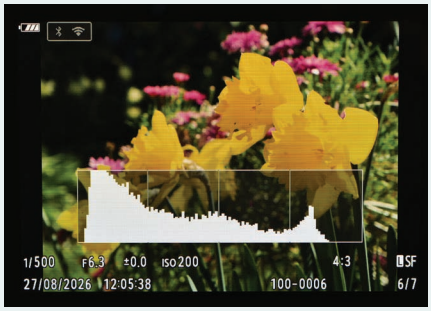


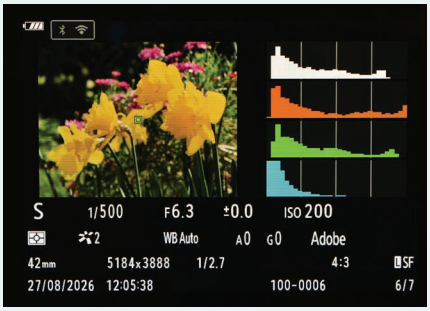
▲ Menu design is from the current OM series bodies so well-organised and easy to navigate.

▲ The multi-shot 'Computational Photography' modes have their own colour-coded menu page.

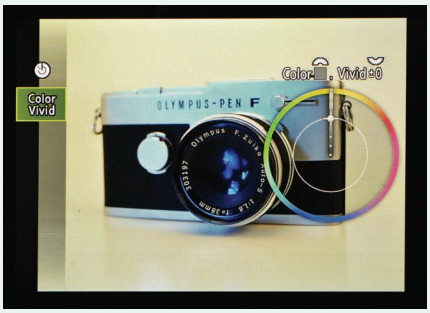


▲ Live view display can be configured with a real-time histogram, dual-axis level indicator, both highlight and shadow warnings, and a guide grid with a choice of line colours.





▲ Review/replay screens include a brightness histogram superimposed over the image or a set of RGB histograms with a thumbnail which shows the active focus point or zone.

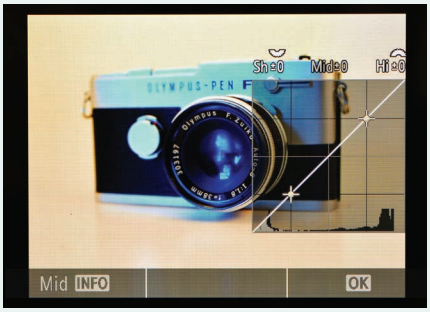


▲ 'Colour Creator' function works in a similar way to Photoshop's Saturation/Hue tool. It has 30 hues, each with eight levels of adjustment for saturation.





▲ The PEN has four colour film profiles and four for B&W. Adjustable parameters for include the 'Highlight & Shadow' control. 'Colour Level' adjustment for the B&W profiles applies contrast control filter effects.



▲ 'Highlight & Shadow' control enables the brightness of the highlights and/or the shadows to be adjusted around a central point in a similar fashion to Photoshop's Curves tool.





▲ Many of the 'Art Filter' effects have fine-tuning and can be combined with a selection of 'Art Effects' which can number up to nine (but vary according to the type of 'Art Filter')



▲ Monitor-based 'Super Control Panel' provides a comprehensive set of read-outs and function settings with the option of quick access via the touch screen. There's also the option of a 'LV Super Control Panel' superimposed over the live view image.

– which, as noted earlier, automatically engaged for the 'Anti-Shock' shooting – has a speed range of 60-1/320 second, the camera will switch to the FP shutter if faster speeds are required.

The white balance control options comprise two auto modes (the second being the 'Keep Warm Colour' variation), seven lighting type presets (including one for shooting underwater) and provisions for storing up to four custom measurements. As already noted, there's auto bracketing for white balance which operates over three frames. All have fine-tuning which is set via slider-type controls in the monitor screen. Manual colour temperatures can be selected over a range of 2000 up to 14,000 degrees Kelvin.

IN THE HAND

The PEN-F's magnesium alloy body was a thing of real beauty, and it had more of a classical look and feel than the OM System camera which has a mix of GRP covers with aluminium top and bottom plates and a magnesium alloy chassis. More importantly though, as noted earlier, it's sealed against the intrusion of moisture or dust, and is also



▲The PEN follows the PEN-F in having a built-in viewfinder which employs an OLED panel with high-res eyepiece optics.

able to operate in subzero temperatures down -10 degrees Celsius. And there's no question it's still a very good-looking camera with both its main mode dial and the front input wheel being knurled metal controls. The PEN-F's exposure compensation dial is gone, replaced by a neat little on/off lever which, as on the OM-3, switches between the photo and video modes and also the latter's 'Slow & Quick' framing speeds.

Similar to the OM-5 II, the shutter release is located within the front input wheel and there's a dedicated button for directly accessing the 'Computational Photography' modes (actually introduced with the OM-3). It's used along with the rear input wheel – i.e. you have to keep the 'CP' button pressed while turning the wheel which needs a bit of dexterity given how close these two controls are on the PEN – and brings up a ribbon-style menu along the lower edge of the monitor screen. This displays all the 'Computational Photography' menu's items and, after that, a longer press of the 'CP' button will take you the respective set-up menus.

The rear panel layout is centred around a four-way keypad with an 'OK' button at its centre, plus there's a small collection of dedicated function keys. The keypad's four quadrant defaults are for ISO, white balance, AF area modes and the drive/self-timer options so all the important stuff is right there at your fingertips.

As always, there's plenty of customisation options with four buttons that can be re-assigned along with the keypad's quadrants and the 'L-Fn' button that's provided on some M.Zuiko Digital lenses. Additionally, the twin input wheels are also customisable depending on the exposure mode in use (i.e. for apertures, shutter speeds and exposure compensation).

Being a new OM System camera, the PEN has the same menu system that was introduced with the OM-1 and is huge improvement on any of the Olympus PENs. The layout is clean and the organisation logical using colour coding for the function chapters and easy navigation using the 'OK' button to progress through to submenus and settings. The main menus are now included in the touch screen implementation which is handy. Alternatively, there's a monitor-based 'Super Control Panel' which is available as a stand-alone display or superimposed over the live view image (when it's called 'Live Control'). These cover everything you're likely to need to access when shooting and with the convenience of touch control. The other touch screen operations include focusing point/zone selection – with or without automatic shutter release – and a touchpad facility (which OMDS calls the "AF Targeting Pad") for use with the EVF. It's also available in review/replay for functions such as browsing and zooming.

The viewfinder is the same OLED display as was used in the PEN-F with a resolution of 2.36 megadots, a magnification of 0.62x (35mm equivalent) and a refresh rate of 60 fps. Ten years later these EVF specs look pretty tame compared to what's on offer elsewhere, but in practice, the PEN's finder still does the job terms of its sharpness, colour and contrast. The monitor is as used on the OM-5 II so it's a 7.62 cm LCD TFT monitor panel with 1.037 megadots resolution and tilt/swing adjustments.

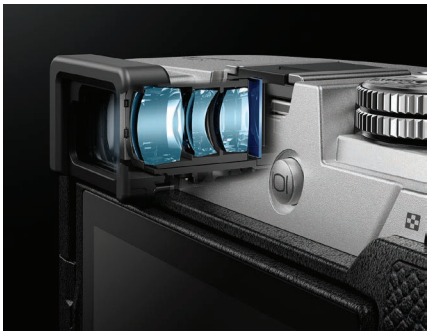
Both the viewfinder and the monitor are adjustable for brightness and colour balance plus there's a choice of three display styles for the former. Two of these essentially replicate the read-out arrangements of film-era viewfinders (Style 1 replicating the 35mm OM-4's smart-looking white-on-blue display) while the third mimics the monitor's display.

The live view screen can be customised with a real-time histogram, dual-axis level indicator, both highlight and shadow warnings (in red and blue respectively) and a superimposed grid (selected from a choice of six, and with a choice of colours too). The highlight and shadow warnings have adjustable thresholds and – carried over from the Olympus days – the real-time histogram display includes an internal section – shown in green – which indicates the brightness values within the selected focusing point or cluster of points.

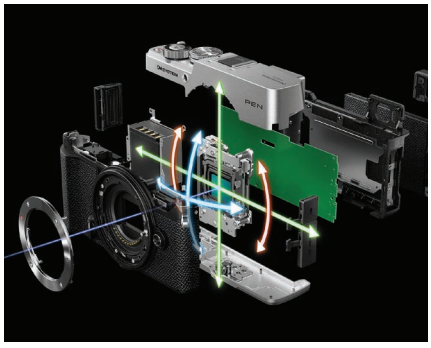
Borrowed from the digital OM series models is a 'Night Vision' mode which modifies the image display's brightness to maintain viewing in very low light or at night, but without unduly compromising your night vision. An 'Anti-Flicker LV' facility reduces the flickering on the live view display when shooting under artificial lighting. It can be set to 50/60 Hz depending on the country you're in, or to Auto.

The review/replay screens can also be configured to include a thumbnail image along with a full set of histograms (i.e. brightness and the RGB channels), a larger brightness histogram superimposed over the image, and both highlight and shadow warnings. The thumbnail shows the focus point or area zone used at capture. The in-camera editing functions are standard OM System fare and comprise Shadow Adjust (i.e. for dynamic range expansion), Trim, Aspect, B&W, Sepia, Saturation, Resize, 'e-Portrait' processing and RAW-to-JPEG conversion.

The PEN's interfaces comprise USB Type C, micro HDMI (i.e. Type D), a stereo audio input (3.5 mm minijack) and a PC standard flash hotshoe. The wireless connectivity options are WiFi (using the 2.4 GHz band) and Bluetooth LE (version 5.2). The OM Image Share app allows for remote camera control as well as wireless file sharing and remote shooting. The PEN can operate as a UVC/UAC compatible webcam via its USB C connection.



▲The PEN follows the PEN-F in having a built-in viewfinder which employs an OLED panel with high-res eyepiece optics.



▲The PEN's five-axis in-body image stabilization gives up to 5.5 stops of correction for camera shake.



There's a new, higher-capacity lithium-ion battery – called the BLS-7 – with 1285 mAh on tap which is good for a quoted 410 shots per charge (but there are economy settings which will extend this further). In camera recharging via USB C is supported, as is power delivery. Commendably, the memory card slot is separate from the battery compartment and located on the side of the camera, but it only supports UHS-I speed SD devices.

SPEED AND PERFORMANCE

Loaded with a Sony Tough 64 GB SDXC UHS-II memory card and using the sensor shutter, the OM System PEN captured a burst of 46 JPEG/large/superfine frames in 1.56 seconds which represents a shooting speed of 29.48 fps. Switching to the focal plane shutter, a burst of 53 best-quality JPEGs was recorded in 10.284 seconds which represents a shooting speed of 5.15 fps. The test files were typically 13.8 MB in size. You'll note that we did these tests with Super Fine quality JPEGs and the shooting speeds were pretty much the same as OMDS quotes for the Fine quality, but the cost of using SF is shorter burst lengths. In terms of file size, the difference is around 3.0 to 3.5 MB between Fine and Super Fine (depending on the image content), so in any situations where you don't need continuous burst, it's going to be worth shooting at the highest JPEG quality.

There may be other legacy elements of the PEN, but the autofocusing performance is very much up-to-date. Being hybrid contrast/phase-detection (the PEN-F was contrast measurements only) it's responsive, fast and precise with the subject recognition for humans and animals enhancing the tracking reliability when shooting these subjects. The AF performance improvements over the last of the Olympus-era PEN models are many and marked, but compared to the OM-5 II – which doesn't have subject recognition – the OM System PEN's AF is better able to stay locked onto subjects that smaller in the frame or are moving more erratically. It can also cope if a human subject looks away briefly, but will lose track if this interruption is much longer than a second or two. For other subjects, the tracking with the C-AF+Tracking mode – which registers your selected target and then stays with it wherever it moves within the frame – is also very reliable and stays locked even when there's quite rapid changes in direction or speed.

Not surprisingly, the imaging performance is on a par with that of the OM-5 II so, out of the camera, the superfine-quality JPEGs exhibit plenty of detailing and nicely smooth tonal gradations with accurate colour renditions across the spectrum. However, of course, there are a myriad ways of tweaking colour and contrast. The dynamic range is also good and, subjectively, looks to be on a par with the higher-end models and their stacked sensors. The dynamic range also makes for more flexibility with RAW capture, giving plenty of scope for post-camera exposure adjustments for the highlights and shadows.

Noise reduction is well managed – in terms of maintaining both definition and saturation – up to ISO 6400. At the higher sensitivity settings there's some softening of the finer detailing, but the colour rendition holds up well to ISO 25,600. An M43 sensor is never going to quite match a full frame image for either dynamic range or high ISO performance, the OM System Pen still does pretty well with both. Besides, there's multi-shot HDR capture if you need more dynamic range, 'High Res Shot' if you more detailing and IBIS if you want to keep shooting at a lower ISO for longer in low light.

THE VERDICT

One good way that the OM System PEN isn't a direct revival of the PEN-F is in its pricing. Affordability is a big attraction given it nevertheless has the key features of the Olympus-era camera – notably an EVF and IBIS – plus the provision of weather sealing to enhance its go-anywhere credentials. Both IBIS and/or weather proofing come at a higher price from the rival brands. Additionally, the OM System camera looks fabulous, handles nicely and is very efficient operationally especially now that the main menus can also be navigated from the touch screen. And while it's compact, it's not so small that the ergonomics are compromised by fiddly controls.

Overall, the PEN is a great little package even if there's a bit of an impression that OM Digital Solutions is still working with fairly tight development budgets. Fortunately, this doesn't detract from the user experience or, indeed, the results, so the PEN meets the brief in terms of being highly portable while still delivering the level of performance expected by higher-end shooters. There's a bit of competition in this sector now – especially from the latest fixed-lens models such as the Lumix L10 – but the OM System PEN has the extra flexibility of interchangeable lenses. The famous PEN name is back under new branding, but the spirit and intent of original concept has again been faithfully reprised in another small camera with a big appeal.

> "THE FAMOUS PEN NAME IS BACK UNDER NEW BRANDING, BUT THE SPIRIT AND INTENT OF ORIGINAL CONCEPT HAS AGAIN BEEN FAITHFULLY REPRISED IN ANOTHER SMALL CAMERA WITH A BIG APPEAL."

VITAL STATISTICS



OM SYSTEM PEN $1499

body only, maximum recommended retail price

Type: Enthusiast-level interchangeable lens digital mirrorless camera with Micro Four Thirds System bayonet lens mount.

Focusing: Automatic hybrid system using contrast-detection and phase-difference detection measurements via the imaging sensor with 121 focusing points for each (all cross types). Focus points may be selected manually or automatically by the camera. Focus area modes are All, Single Target Normal, Single Target Small, Cross Target (five points cluster), Middle Target (nine points cluster), Large Target (25 points cluster), Custom Target (adjustable for shape and size, four custom settings can be stored). 'Starry Sky AF' with Speed Priority (handheld) and Accuracy Priority (tripod) modes. Intelligent Subject Detection AF' tracking modes for humans (faces and eyes) and animals (cats and dogs). C-AF tracking sensitivity adjustable over five steps. Focus bracketing and focus stacking functions (the latter requires a supporting lens). Manual switching between one-shot and continuous ▸

VITAL STATISTICS



AF modes. Continuous manual override available with single-shot mode. Low light sensitivity down to -3.5 EV at f/2.8 and ISO 100. Low light/contrast assist via built-in illuminator. Focus assist via magnified image (3x/5x/7x/10x/14x) and focus peaking display (Red, Yellow, White or Black with High, Normal or Low intensity).

Metering: 324-point 'Digital ESP' (i.e. multi-zone), centre-weighted average, spot (2.0%) with highlight/shadow bias, and TTL flash. Metering range is EV -2.0 to 20 (ISO 100 and f/2.8).

Exposure Modes: Continuously-variable program with shift, shutter-priority auto, aperture-priority auto, metered manual, TTL auto flash and TTL flash. Plus 24 subject/scene modes. Automatic subject/scene detection in 'Auto' mode.

Shutter: Electronic, vertical travel, metal blades, 60-1/4000 second plus 'B' (up to 30 minutes) and 'T'. Flash sync to 1/250 second. Sensor shutter has a speed range of 60-32,000 second with flash sync up to 1/50 second. Electronic first curtain shutter (EFCS) has a speed range of 60-1/320 second. Exposure compensation up to +/-5.0 EV in 1/3, ½ or full stop increments.

Viewfinder: OLED EVF with 2.36 megadots resolution, 100 percent coverage and 0.62x magnification (35mm equivalent). 60 fps refresh rate. Adjustable for brightness and colour balance. 7.62 cm LCD TFT monitor panel with 1.037 megadots resolution, tilt/swing adjustments and touch screen controls. Adjustable for brightness and colour balance. Auto/manual switching between EVF and monitor screen.

Flash: No built-in flash. External flash units connect via hotshoe.

Additional Features: GRP bodyshell with aluminium top and bottom plates over a magnesium alloy chassis and sealed against dust and moisture (IPX1 standard) with subzero temperature protection, AE/AF lock, auto exposure bracketing (over two, three, five or seven frames), depth-of-field preview, programmable self-timer (2 and 12 second delays, 1 to 10 frames, variable interval times), audible signals, auto power-off, hard-wired remote triggering.

DIGITAL SECTION

Sensor: 20.37 million (effective) pixels Live MOS (CMOS) with 17.4x13.0 mm imaging area and 4:3 aspect ratio. No optical low-pass filter. Sensitivity equivalent to ISO 200-6400 (extendable to ISO 64, 100, 12,800 and 25,600).

Focal Length Magnification: 1.97x.

Formats/Resolution: Three JPEG compression settings (Superfine, Fine and Normal), RAW output (12-bit RGB colour with lossless compression) and RAW+JPEG capture. Five resolution settings at 4:3 aspect ratio; 5184x3888, 3200x2400, 1920x1440, 1280x960 and 1024x768 pixels. Five resolution settings at 3:2 aspect ratio; 5184x3456, 3216x2144, 1920x1280, 1296x864 and 1008x672 pixels. Five resolution settings (four available at any one time) at 16:9 aspect ratio; 5184x2920, 3200x1800, 2560x1440, 1920x1080, 1536x864, 1280x720 and 1024x576 pixels. Five resolution settings at 1:1 aspect ratio; 3888x3888, 2400x2400, 1440x1440, 960x960 and 768x768 pixels. Five resolution settings at 3:4 aspect ratio; 2912x3888, 1824x2432, 1104x1472, 720x960 and 576x768 pixels. 24-bit RGB colour for JPEGs, 36-bit RGB colour for RAW files. RAW files captured at 5184x3888 pixels.

Video Recording: MOV format (MPEG-4 AVC H.264 codec, 8-bit 4:2:0 colour, IPB compression) – 4K DCI at 4096x2160 pixels, 24 fps and 17:9 aspect ratio (237 Mbps). 4K UHD at 3840x2160 pixels; 30, 25 or 24 fps and 16:9 aspect ratio (up to 102 Mbps). Full HD at 1920x1080 pixels; 30, 25 or 24 fps and 16:9 aspect ratio (up to 202 Mbps with ALL-I compression, up to 30 Mbps with LongGOP compression); Superfine, Fine and Normal image quality modes. Full HD at 1920x1080 pixels; 60 or 50 fps and 16:9 aspect ratio (up to 52 Mbps with LongGOP compression); Superfine, Fine and Normal image quality modes. Full HD at 1920x1080 pixels and 120 or 100 fps; 16:9 aspect ratio. No clip length limits.

Built-in stereo microphones with auto/manual adjustable levels, wind filter and attenuator. Stereo audio input (with plug-in power). Standard 16-bit audio recording samples at 48 kHz, high resolution 24-bit audio recording mode samples at 96 kHz (requires a supporting external microphone).

Video Features: Hybrid IBIS and electronic image stabilisation, flicker scan, time lapse movie recording (4K or FHD), S&Q Movies (from 1.0 to 120 fps frame rates), front tally lamp, red image frame when recording, vertical video recording, OM-Log 400 colour profile; Flat, OM-Cinema1 and OM-Cinema2 'Picture Modes', time code support (rec run, free run, drop frame, non-drop frame), grid lines (choice of six), focus peaking display (Red, Yellow, White or Black; High, Normal or Low intensity). Webcam video/audio streaming via USB C (UVC/UAC support).

HDMI Output: 4K DCI 17:9 at up to 30 fps, 4K UHD 16:9 at up to 30 fps, Full HD 16:9 at up to 60 fps.

Recording Media: Single slot for SD/SDHC/SDXC memory cards with UHS-I speed support.

Continuous Still Shooting: Up to 154 JPEG/large/fine frames at 5.0 fps and up to 29 RAW frames with the focal plane shutter and continuous AF/AE adjustment. Up to 48 JPEG/large/fine frames or up to 18 RAW frames at 30 fps with the sensor shutter. Up to 10 fps with the sensor shutter and continuous AF/AE adjustment. 'Pro Capture High' mode pre-captures 12 frames at up to 15, 20, 30 fps prior to full shutter release, 'Pro Capture Low' pre-captures 12 frames at up to 8.0 fps.

White Balance: TTL measurement via image sensor. Auto measurement, auto warm, seven presets and four custom settings. White balance compensation (amber-to-blue and/or green-to-magenta) in all presets plus white balance bracketing over three frames. Manual colour temperature setting from 2000 to 14,000 degrees Kelvin.

Interfaces: USB Type C (USB 2.0 speed), HDMI Type D, 3.5 mm stereo audio input (supports plug-in power).

Additional Digital Features: Five-axis sensor-shift image stabilisation with up to 5.5 stops of correction for camera shake (up to 6.5 stops with 'Sync IS' and supporting lenses), multi-shot 'High Res Shot' capture via pixel shift with in-camera processing (Handheld Mode = 25 MP or 50 MP resolution, JPEG or JPEG+RAW, 50 MP RAW; Tripod Mode = 25 or 50 MP resolution, JPEG or JPEG+RAW, 80 MP RAW), 'Live ND' built-in ND filter effects (equivalent to ND2, 4, 8 or 16), Adobe RGB or sRGB colour spaces, flicker detection and correction, 'Flicker Scan' for high-frequency light sources, long exposure noise reduction (Auto, On, Off), high ISO noise filter (Off, Low, Standard, High), 'Keystone Compensation' digital perspective control, 'Fisheye Compensation', eight 'Picture Modes' (i-Enhance, Vivid, Natural, Muted, Portrait, Monochrome, e-Portrait, Underwater), one user-defined custom 'Picture Mode', adjustable 'Picture Mode' adjustments (Contrast, Sharpness, Saturation and Gradation – Auto, Normal, Low-Key, High-Key), Monochrome mode has four contrast filters and four toning effects, 'Colour Creator' function (30 colours, eight saturation levels), 'Highlight/Shadow Control' function, 16 'Art Filter' adjustable effects applied at capture (Pop Art I/II, Soft Focus, Pale & Light Colour I/II, Light Tone, Grainy Film I/II, Pin Hole I/II/III, Diorama I/II, Cross Process I/II, Gentle Sepia, Dramatic Tone I/II, Key Line I/II, Watercolour I/II, Vintage I/II/III, Partial Colour I/II/II [18 colours], Bleach Bypass I/II, Instant Film), up to nine 'Art Effects' depending on the selected 'Art Filter' (Soft Focus, Pin Hole, White Edge, Frame, Star Light, Blur – Top And Bottom, Blur – Left And Right. Shade – Top And Bottom, Shade – Left And Right), fine-tuning over plus/minus five steps for selected 'Art Filter' effects, four 'Colour Profile' presets (Standard/Natural, Film Rich Colour, Film Vivid and Film Soft Tone), 'Colour Profile Control' (12 colours individually or all adjustable for saturation, Sharpness, Contrast, Highlight/Shadow Control and Shading Effect – to customise the Colour 1/2/3/4 profiles), four 'Monochrome Profile' presets (Standard Monotone, Film B&W, Film IR and Film Low Contrast), 'Mono Profile Control' (eight Colour Filter effects, Shading Effect, Film Grain Effect, Tone Effect, four Monochrome Colour effects, Highlight/Shadow Control, Sharpness, Contrast – to customise the Mono 1/2/3/4 profiles), 'Live Composite' function, 'Live Bulb/Live Time' modes, anti-shock shooting, intervalometer (up to 9999 frames), multi-shot HDR capture with in-camera compositing (Auto = HDR1 or HDR2. Manual = +/-2.0 EV over three, five or seven frames; +/-3.0EV over three or five frames), auto bracketing modes (AE, WB, ISO, flash, focus and 'Art Filters'), focus stacking, Fisheye Compensation, 'Super Control Panel' screen, real-time histogram display, guide grids (choice of six and adjustable for colour), 'Night Vision' mode, dual-axis level indicator, highlight and shadow alerts (adjustable thresholds via histogram), adjustable image display time, auto image rotation, slide show (with a choice of music and transitions), playback zoom (up to 14x), 4/9/25/100/Calendar thumbnail displays (also available in slide show mode), 'Lightbox' side-by-side comparison display, in-camera editing functions (Shadow Adjust, Red-Eye Fix, Trim, Aspect, B&W, Sepia, Saturation, Resize and e-Portrait), in-camera RAW-to-JPEG conversion, in-camera RAW image overlay, copyright info, silent shooting, DPOF support, built-in WiFi 2.4 GHz and Bluetooth LE 5.2 wireless connectivity.

Power: 7.74 volt/1285 mAh rechargeable lithium-ion battery pack (BLS-7 type). In-camera battery charging possible via USB C.

Dimensions (WxHxD): 125.8x74.5x43.3 mm body only.

Weight: 344 grams body only (without battery pack and memory card).

Price: $1499 body only. Silver or black finishes. $1799 with M.Zuiko Digital ED 14-42mm f/3.5-5.6 III zoom lens. OM Digital Solutions provides a two-year warranty for OM System cameras and lenses purchased from an authorised Australian reseller.

Distributor: OM Digital Solutions Australia, telephone 1300 659 678, or visit https://explore.omsystem.com/au/en/



Loading The Sheep At Sunset by Mardi Harrison, Kyneton, Victoria.

THE SPIRIT OF THE BUSH 2026

The challenges and rewards of rural life in Australia are celebrated in this year's edition of the Spirit of the Bush photography competition run by charity Rural Aid.

All Things Rural by Donna Hodgson, Quilpie, Queensland.



Rural Aid has announced the 12 winners of its 2026 Spirit of the Bush photography competition which celebrates the people, landscapes, resilience and everyday moments that capture the true spirit of rural and regional Australia. Rural Aid is Australia's leading charity supporting farmers, their families and rural communities. It provides assistance during droughts, floods, bush fires and other disasters with the objective of helping farming families stay on the land and protect their livelihoods.

Since launching in 2020, the Spirit of the Bush competition has built up a powerful visual archive of rural life – capturing the resilience, humour, hardship, pride and beauty that define the bush.

This year, photographers were encouraged to submit images reflecting the challenges, determination, people and natural beauty of rural and regional Australia – and in the process help to bring the country to the city through the power of photography.

Each of the 12 winning photographers receives a $250 prepaid Visa card, with their winning images also featuring in Rural Aid's 2027 Spirit of the Bush calendar.

Rural Aid's CEO, John Warlters, says the competition provides an important opportunity to showcase the people and places that make rural and regional Australia so special.

"The Spirit of the Bush competition gives us a wonderful window into rural and regional Australia, the people, the landscapes, the challenges and the moments of joy that make life in the bush so unique.

> "The Spirit of the Bush competition gives us a wonderful window into rural and regional Australia, the people, the landscapes, the challenges and the moments of joy that make life in the bush so unique."
>
> **– John Warlters,** CEO, Rural Aid

"These photographs tell stories that deserve to be seen and celebrated. They remind us of the strength, resilience, humour and connection that exists across our rural communities, and help share those stories with people right across Australia.

"Congratulations to all of our winners and to everyone who entered this year's competition. The quality and variety of the images made selecting the winners a difficult task, and we're proud to help share these snapshots of life in the bush."

For one of the winners, Catherine Philips from Middlemount in Queensland, the competition provided an opportunity to celebrate the families who live and work in rural communities.

"As a teacher who has raised her family in the bush, I think it's so important to remind the country of all the families out here playing a vital role by living and working on the land," Catherine comments.

"I'm thrilled that my image was selected as a winner of the competition. I really hope it helps highlight and celebrate the people of the bush, their lives and the passion they have for life on the land."

Fellow winner Mardi Harrison from Kyneton in Victoria, says the competition captured the values that underpin life in rural communities.

"To me, the spirit of the bush is about resilience, friendship and looking out for one another. It's the quiet strength of farming families, working through good seasons and the tough ones," she states.

"It's neighbours lending a hand without being asked, communities pulling together when times are difficult, and a deep connection to the land. Above all, it's about mateship, belonging and never having to face the challenges alone."

All this year's winning photographs are featured in Rural Aid's 2027 Spirit of the Bush calendar, which will be available to purchase online later this year from shop.ruralaid.org.au.

To find out more about Rural Aid visit www.ruralaid.org.au

Shooting The Breeze
by Catherine Phillips,
Middlemount, Queensland'

Clouds Rolling In by Jessica Osmond, Hay, NSW.

Dry Times by Felicity Thomas, Mulwala, NSW.



At The Sheep Yards by Hannah Perkins, Bairnsdale, Victoria.

The Days Never Done... The Distance! by Jaymee Chape, Carinda, NSW.



Fire In The Sky by Philip Down, Speed, Victoria.



Got To Last The Distance by Michelle Peters, Molong, NSW.

Might Have To Duck! by Richard Poulish, Lower King, West Australia.





Above: *Saleo! Saleo! Saleo!* by Richard Poulish, Lower King, West Australia.

Below: *A Moment Of Quiet Trust Between Friends* by Sandie Read, Mundubbera, Queensland.

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FUTURE



A BEGINNER'S GUIDE TO THE PRO-LEVEL DIGITAL CINEMA CAMERA

We know very few you are likely to be rushing out to buy a pro cine camera, but given in involvement of the 'traditional' photo brands in this area, we thought it would be interesting to look at the typical feature set to see what's important to these users. We've picked Fujifilm's GFX Eterna 55 because it has the same lens mount and 102 megapixel sensor as the GFX series mirrorless cameras.

Report by **Paul Burrows.**

Fujifilm's GFX Eterna 55 – its first professional digital cinema camera – built around a dedicated version of 'GFX 102MP CMOS II HS' medium format sensor and the 'X Processor 5' engine that are used in the GFX series medium format mirrorless cameras. In the cine camera world, this sensor is considered "large format" and, with its imaging area of 43.8x33.9 mm, it's the tallest sensor available in this type of camera. This makes the GFX Eterna 55 both extremely flexible in terms of aspect ratios and, of course, also capable of an extremely high image quality. By the way, the '55' refers to the diagonal measurement in millimetres of the sensor which is also the imaging circle diameter. This sensor uses a standard Bayer-pattern RGGB array and incorporates an optical low-pass filter.



▲ The view from behind gives an even better impression of the size of the camera… and this is just a basic set-up without, for example, a V-mount battery pack fitted to the rear. You'll definitely need one of these higher-capacity power sources when shooting in the field.

◀ The GFX Eterna 55 shown here with the supplied monitor screen and top handle fitted, along with the Fujinon GF19-35mm T3.5 power zoom. Obviously, this is a camera designed to be used with some type of support – tripod, shoulder rig or gimbal.

You'll be familiar with the Eterna name as one of video-orientated 'Film Simulation' profiles available in the X mount and G mount mirrorless cameras, but it was also the name of Fujifilm's movie film stocks. Fujifilm has had a long history in building film and TV lenses so, while it's new to the category in which the GFX Eterna 55 competes – against the likes of established brands ARRI, Blackmagic, Panasonic, Sony and RED – the company has a long history in the cinema business.

The camera can record in one of five formats based on the lens mount fitting – GF (i.e. 4:3 aspect medium format or 'open gate' using Fujinon G mount lenses), Premista (using the ARRI PL mount), full frame 35mm, Super 35 (which is close to 'APS-C' in size) and anamorphic 35mm – and in resolutions up to 8K DCI at 8192x4320 pixels and the 17:9 aspect. The 4:3 aspect 'open gate' recording makes the large sensor's entire imaging area – and full resolution – available for exceptional flexibility in post-production as you can select multiple aspect ratio frames from the one master recording.

> You'll be familiar with the Eterna name as one of video-orientated 'Film Simulation' profiles available in the X mount and G mount mirrorless cameras, but it was also the name of Fujifilm's movie film stocks.

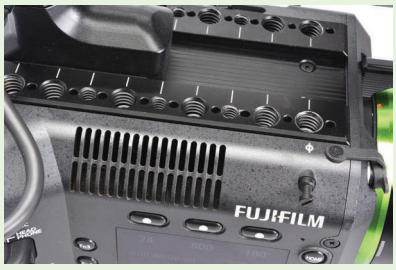
The native lens mount is Fujifilm G with a removable adapter for the PL fitting. The frame rates at 8K are 24, 25 or 30 fps. The other options are 5.8K at up to 30 fps, 4K UHD and DCI at up to 50/60 fps, and Full HD and up to 100/120 fps (but there are variations according to the selected format). The codec options for internal recording are Apple ProRes 422/422LT/422HQ and H.265 with 10-bit 4:2:2 colour. A 12-bit RAW output or an uncompressed 10-bit 4:2:2 output is available for external recording over the HDMI or SDI outputs (but curiously for a camera of this calibre, there's no internal RAW recording). The sensor has the same dual-gain output circuitry as the mirrorless cameras with the base levels set at ISO 800

▼ Monitor screen is in the 16:9 aspect ratio and has a resolution of 6.22 megadots, brightness up to 2000 nits and touch screen controls. The mounting bracket allows for extensive adjustment. The power/data/video connection is a proprietary multi-pin fitting with a dedicated port on the side of the camera. The supplied hood is another essential when shooting outdoors in very bright conditions.





▲ You can see why it's called the V-mount. It's designed to provide a very secure physical coupling, but with easy interchanging. The electrical connection are at the base. V-mount – also known as V-lock – batteries are designed to cope with the high continuous current draws of pro-level cinema cameras.



▲ Multiple mounting points – both 3/8-16 and 1/4-20 thread pitches – are provided on both the main body and the top handle for adding various accessories. Use the one that helps best preserve the camera set-up's overall balance.



▲ Connections at the rear of the camera and individually protected by tethered rubber caps as part of the camera's weather protection measures. The SDI (Serial Digital Interface) and port shown uncapped here can be used to attach an alternative monitor or an external recorder via a co-axial cable and a locking BNC-type connector.



▲ There's an internal battery compartment for Fujifilm's NP-W235 type battery pack (as used in the GFX mirror cameras and several X mount models), but the camera heavy power demand mean it is of limited real-world usage. The main benefit is allowing for the V-mount batteries to be hot-swapped by serving as a back-up power source (i.e. so recording can continue uninterrupted).



▲ The memory card slots are for CFexpress Type A and SDXC UHS-II devices.



▲ Monitor module has two multi-function buttons and a third for switching the information display on or off. The Fn buttons' defaults are the waveform and vectorscope displays (Fn6), and the focus peaking display (Fn7). There's a huge list of alternative functions.



▲▼ Side panel controls and display screens are replicated on each side of the camera. The dual screen arrangement is useful for the times when an assistant is monitoring the camera settings… and can easily make adjustments from that side of the camera.



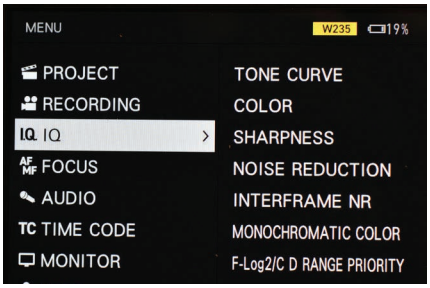


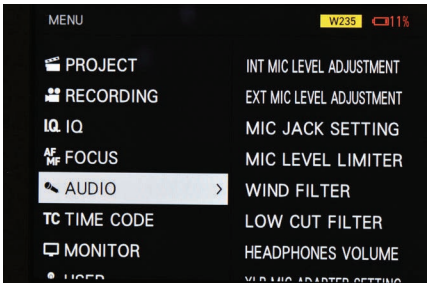
▲ The GFX Eterna 55 has dual cooling fans to deal with the considerable heat generated by continuous high-resolution recording. It can be set to low or high speed, or there's a choice of two Auto modes which will engage the fan as the camera temperature rises… one running only at low speed, the other switching from low to high speed as required.

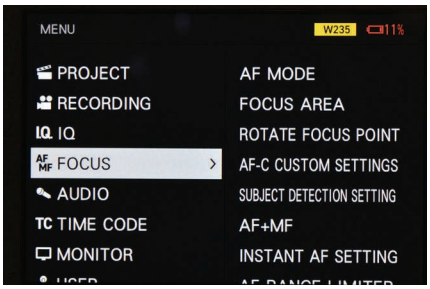


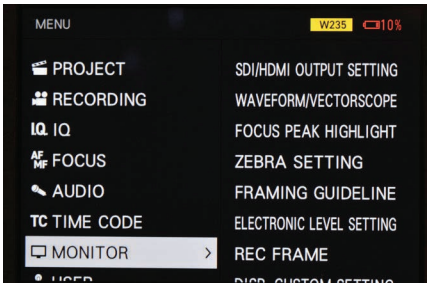
▲ Main shooting info display in the side monitors looks a bit daunting but tells you everything you need to know about the camera's video and audio set-up. 'Clear', incidentally, means no ND setting is selected. 'Look' and 'Clean' refer to whether a LUT is applied to Log profile recording or not.

▼ Menu layout is a little different to that on the Fujifilm GFX mirrorless cameras, but simple enough to navigate. Section headings on the left, settings on the right; both can be scrolled up and down. Shown here (from left to right) are the menus for image quality, focus, audio settings and the monitor's display elements.











▶ Recently announced Fujinon GF19-35mm T3.5 PZ OIS WR power zoom (equivalent to 15-28mm) designed for the "44x33" format sensor used in the GFX Eterna 55 and the GFX series medium format mirrorless hybrid cameras.

▶ The GF19-35mm has a power zoom rocker switch on its barrel. Digital focus compensation operates during zooming to create the effect of a parfocal design. It weighs in at around 2.1 kilograms.

and 3200. Fujifilm claims a dynamic range of "over" 14 stops (with the F-Log2 C profile – developed specifically for this camera – and the F-Gamut C profile). Up to 16 custom '3D LUT's can be uploaded to accompany the 20 baked-in 'Film Simulation' profiles which is the same set as is currently provided on the GFX and X series mirrorless cameras. Additionally, new downloadable LUTs have been developed for ten selected 'Film Simulations' for F-Log2/F-Log2 C recording and these include Eterna, Eterna Bleach Bypass, Classic Chrome, Classic Neg, ACROS, Velvia, Provia and Astia.

The format flexibility includes anamorphic lens options up to 8K at 8192x2968 pixels (i.e. the wider 2.76:1 aspect ratio) or 8080x3380 pixels (2.39:1 aspect) with real-time de-squeeze monitoring. The camera also features a built-in variable ND filter – a digitally-generated effect rather than a physical filter – which gives up to seven stops of exposure reduction with very fine control in just 0.015-stops increments over a range of ND0.6 to ND2.1 (i.e. ND4 to ND128).

Controls And Connections

The Eterna 55 has dual memory card slots – one for CFexpress Type B devices and one for SD types which can be used for proxy recording (Apple ProRes proxy or H.265 proxy). There are three info displays – an external 12.7 cm LCD variable-angle touch screen preview monitor with a resolution of 6.22 megadots, a 16:9 aspect ratio and





▲ There are six programmable short-cut buttons (called Screen Button 1-6) – three below the info display and three above – for frequently-used adjustments, by-passing the main menus. Control knob – which can be locked out to prevent accidental activation – is for navigating the main menus. It's pressed to make a selection.



▲ Top handle incorporates a number of controls including a power zoom rocker switch, video start/stop button and multi-directional joystick-type controller. It's mounted on a sliding base so it can be moved backwards or forwards to adjust the camera's balance. Note the hotshoe which is used for mounting accessories such as the TASCAM CA-XLR2d-F XLR Microphone Adapter or a wireless audio receiver.



▲ Dial on the top handle can be switched to adjust the focus, zooming, iris (video-speak for the aperture) or the ND filter setting (from 0.6 to 2.1 ND). The same control is also on the front of the camera if you're shooting without the top handle fitted.



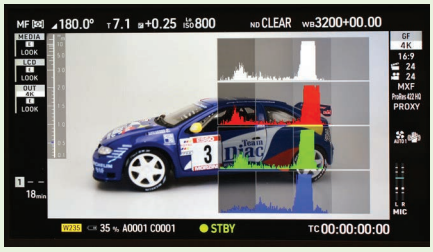
▲ The GF19-35mm has manual control rings for focus, zoom and iris (i.e. aperture) and each is geared with the standard 0.8M gear pitch ensuring compatibility with industry-standard accessories such as follow-focus systems and lens motors.

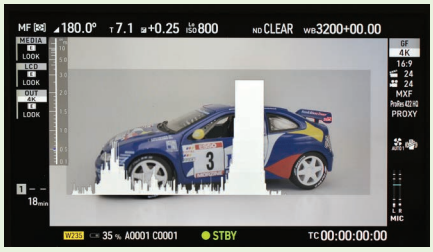


▲ Lens mount has a lock for added security. Just about anything that attaches to the camera can be locked on in one way or another. Cinema cameras often take a beating in the field.

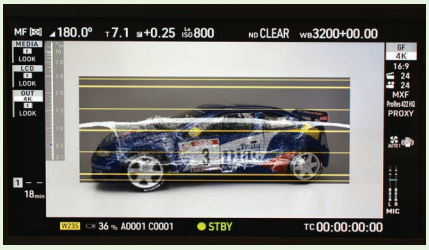


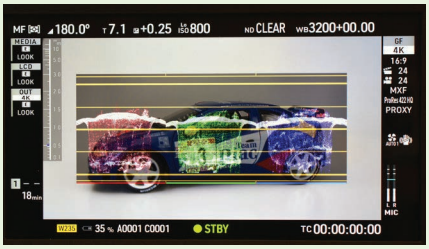
▲ Main monitor display includes the key recording info from the side displays (which can be customised or switched off entirely), a dual-axis level indicator, focus area, focus distance scale and a focusing peaking display (just visible in red on the end of the model car's rear wing). The image area frame can be set in a variety of colours and line thicknesses plus a centre marker can be selected.





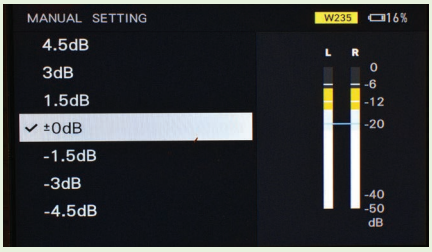
▲ Real-time histogram displays are either an RGB channels graph or a brightness levels overlay. Zebra patterns can be selected to show overexposed areas and are adjustable for threshold.



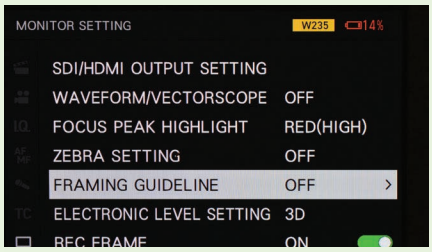




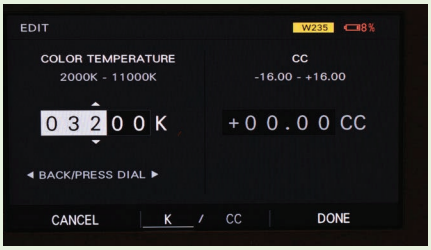
▲ Real-time video-assist displays (from left) include a luminance waveform for monitoring exposure across the frame, an RGB parade scope which separates the RGB colour waveforms to help with setting the white balance and determining the cause of colour casts, and a vectorscope for measuring chrominance (colour saturation and hue).



▲ Audio recording levels can be set manually over a range of -30 dB to plus 6.0 dB in 1.5 dB increments.



▲ The image area frame shows the selected aspect ratio (there's a choice of seven) and can be set in a variety of colours and line thicknesses plus a centre marker can be selected. If needed, you can create a custom aspect ratio.



▲ The white balance setting options include very precise adjustment of the colour temperature from 2000 to 11,000 degrees Kelvin and the provision of a CC (colour correction) tint bias adjustment over the magenta-to-green range. The 5600 K (i.e. daylight) and 3200 K (tungsten lighting) settings are available as quick-access presets.

a brightness of 2000 nits. On each side of the camera body is a 7.62 cm, 3:2 aspect colour touch screen with a resolution of 1.04 megadots. Both show identical displays. Key controls are also provided on both sides of the camera. A recently announced accessory is the VF-GFXC2 EVF which has a 4:3 aspect OLED display (to match the 'open gate' full frame view) with 3.2 megadots resolution and a brightness of up to 1000 nits.

Other notable features of the camera are the hybrid AF system (with all the same AI-based subject recognition modes as the mirrorless models), dual built-in cooling fans, and both WiFi and Bluetooth LE wireless connectivity. There are also wireless and wired LAN connections plus the GFX Eterna 55 provides Frame.io Camera-to-Cloud support so video can be directly uploaded as it's recorded or, alternatively, when it's played back.

There are connections galore; including BNC for time code in/out, GenLock, HDMI Type A and USB 3.2 Type C ports; an RJ-45 LAN terminal, 12G SDI output, 12-pin lens port, 3.5 mm stereo audio input and output, and DC power input and output. The GFX Externa 55 supports a TASCAM XLR microphone adapter (via a hotshoe mount on the camera's top handle), Atomos AirGlu wireless timecode syncing and Adobe Frame.io Camera-to-Cloud data transfer. The bodyshell employs magnesium alloy covers with sealing against dust and moisture. The camera body alone weighs in at 2.0 kilograms, but obviously when a lens, the top handle, monitor and a bigger battery are added, the total weight will be a lot heavier. Both the main body and the top handle have various sets of mounting points for fitting a wide range of accessories. The idea is that you pick the mounting position that will help maintain the weight distribution and balance of the whole camera set-up.

Power can come from a DC input or an external battery pack coupled via the widely-used V-mount plate, but a NP-W235 type battery pack (as used in the GFX mirrorless cameras and some X mount models) can also installed in the camera to enable 'hot swaps' of the V-mount battery or to provide up to 30 minutes of filming by itself (handy if you want to reduce the overall weight for some shooting situations).

The Fujifilm GFX Eterna 55 is priced at close to $26,000 for the body only, which comes with the external monitor and a hood, the top handle, an AC power adaptor, a NP-W235 battery pack and the PL lens mount adaptor. This looks like a lot of money compared even to the GFX series mirrorless cameras, but it's not especially expensive for a high-end cinema camera. Of course, you've still got to add a lens and Fujifilm currently offers two dedicated cine lenses, both autofocus power zooms, for the Eterna 55 – the Fujinon GF 32-90mm T3.5 PZ OIS WR which is equivalent to 25-71mm and was released alongside the camera, and the newer Fujinon GF19-35mm T3.5 PZ OIS WR, equivalent to 15-28mm. Both are priced at $8499.

Pentax's first DSLR was also the most compact available when it launched in 2003 at pretty much the same time as Canon's EOS 300D. Shown here is the later ***ist DS** model which was introduced at the end of 2004.

The Pentax K100D (2006) was the first Pentax DSLR with in-body image stabilisation (IBIS), making the feature available at a lower price point than previously.

The Pentax K10D (late 2006) wasn't the first DSLR with Adobe DNG RAW capture – that was Hasselblad's medium format H2D – but it was first to offer both DNG and a proprietary RAW format (in this case, Pentax's PEF).



THE END... OR A NEW BEGINNING?

WHAT'S NEXT FOR THE ONCE-MIGHTY PENTAX?

Ricoh Imaging has ended the production of K series Pentax DSLRs with no immediate replacements on the horizon. While the future is very unclear for the Pentax brand, we can at least celebrate the past and 23 years of clever DSLR features, lots of body colours and a rare monochrome model.

Report by **Paul Burrows.**

While, in all honesty, Ricoh calling time on its Pentax-branded DSLRs comes as no real surprise, it's still a disappointing development. While the company says it's planning to develop a new series of DSLRs based on a "an entirely new concept", the reality is that the sort of investment needed for such a program isn't something the parent company will want to spend. Firstly, despite there still being a great many dedicated users, the DSLR's decline is almost complete, and even the leading brands are channelling all their resources into mirrorless systems. Secondly, the limited – well, actually virtually non-existent – development of Pentax DSLRs over the last few years has severely diminished the brand. When there was the opportunity to establish Pentax as the last bastion of the DSLR by producing models there were competitive with mirrorless cameras, nothing happened. This says something about how little Ricoh has been prepared to invest in the Pentax brand in recent years and, after the failure commercially of the Pentax 17 film camera, it's likely there's even less of an appetite for dabbling in costly experiments… such as a "new concept" DSLR. In comparison, the GR series digital compacts have been hugely successful and so they're going to be the focus from now on because they do actually contribute something to Ricoh's bottom line.

Consequently, despite the best intentions in the world, a new Pentax DSLR of any sort seems highly unlikely. It would be an uphill battle for any camera manufacturer to make such a project profitable and, for Ricoh, cameras now represent a very small part of its business. Nothing adds up here so what's most likely to happen is that the Pentax brand will be licensed – as we've seen with many other of the great names in photography such as Kodak, Agfa, Rollei and Yashica – and that probably means no more Pentax interchangeable lens cameras… reflex or mirrorless. Of course, it's the reflex configuration that made Pentax a great name in photography, starting all the way back in 1952 with the Asahiflex – the first Japanese 35mm SLR – which wasn't actually badged a Pentax, but set the course for what was to come. Introduced in 1957, the Asahi Pentax pretty much established the formula for all 35mm SLRs that followed – a pentaprism viewfinder (from which the *Pentax* name was derived), an instant return reflex mirror, a microprism collar focusing screen, a rapid-wind film advance lever (rather than a knob) and a fold-away crank-handle for rewinding the film.

The legendary Spotmatics, starting in 1964, really made the Pentax name, and the famous K bayonet lens mount was introduced in 1975. The K series 35mm line was short-lived – with the exception of the entry-level K1000 which was exceptionally long-lived – because Pentax had the more compact M series ready to go with Olympus's OM line in its sights.

In its glory days, Pentax was one of the 'Big Five' camera makers along with Canon, Minolta, Nikon and Olympus. The K mount was retained when autofocusing came along – albeit modified and called KAF – and Pentax's first model with body-integrated autofocusing, the SFX (1987), was also the first AF 35mm SLR with a built-in flash giving TTL exposure control. There was subsequently a long line of AF 35mm SLRs from entry-level to enthusiast-level and an occasional flirt with the professional end of the market, most notably with the MZ-S

Like the K10D, the later **K20D (2008)** was co-developed with Samsung and also released as the Samsung GX-20. It marked a switch from CCD sensors to CMOS types.

Pentax K-5 (2010). The K-5 typified the Pentax philosophy of putting higher-end features in lower-priced cameras. It had a magnesium alloy bodyshell with weather sealing, IBIS and 7.0 fps continuous shooting.

Pentax K-m (2010). Even the entry-level Pentax DSLRs were well-featured. The compact K-m still had IBIS. It was powered by four AA batteries for the convenience of easy replacement. Pentax offered the option of using AA batteries with its entry-level models – later in an optional adapter tray – up to 2013 and the K-500.



(2001). However, Pentax was already in the pro camera business with its 6x4.5cm and 6x7cm SLR systems, the latter being particularly successful.

As it happens, the MZ-S was the basis for Pentax's first foray into digital SLRs, being the basis for the MZ-D which employed a six megapixels full frame CCD sensor and was shown in prototype form at the 2000 Photokina. Had it progressed to production, it would have been the first full frame DSLR on the market, 18 months ahead of Canon's EOS-1Ds. Instead, the Contax N Digital – using the same sensor as the MZ-D – achieved this accolade, launching in early 2002 after much delay as it also made its debut at the 2000 Photokina. Most of this was related to issues with the Philips-made sensor which was also hugely expensive to manufacture, prompting Pentax to abandon the idea citing that a very pricy MZ-D would have been "outside our target market". Certainly, affordability – or value-for-money – had been a key aspect of Pentax's 35mm SLRs and, what's more, the N Digital's very high price tag was one factor in its early demise after just a year on sale.

Pentax's decision ultimately didn't hurt its entry into DSLRs as the much more compact – and affordable – *ist D arrived in 2003 almost at virtually the same time as Canon's EOS 300D, both representing the first true consumer-level models. The *ist D had an 'APS-C' format CCD sensor and retained the K mount – in the KAF2 iteration – and was the smallest and lightest DSLR available at the time. There were four more *ist D models before the K100D and K10D were launched in 2006, the former being Pentax's first DSLR with in-body image stabilisation. IBIS in DSLRs was only ever offered by Pentax, Olympus and Sony. It was further refined for enhanced efficacy on the K10D which also had weather sealing – at the time a rarity at the price level – and Adobe DNG RAW capture alongside Pentax's own PEF format.

"The legendary Spotmatics, starting in 1964, really made the Pentax name, and the famous K bayonet lens mount was introduced in 1975."

All The Right Moves

Pentax became a bit of a fan of sensor shifting, developing the technology to drive a number of other interesting features. In 2009, the K-7 introduced three-axis IBIS, adding roll compensation via sensor rotation to the vertical and horizontal shifts. Consequently, it had a novel feature called 'Composition Adjustment' which allowed the framing – when using live view obviously – to be manually adjusted by shifting or tilting the sensor with a range of up to +/-1.5 millimetres for the former and up to +/-2.0 degrees for the latter. In 2010, the K-5 went further with 'Auto Horizon Correction' which automatically tilted the sensor – again by up to +/-2.0 degrees – with image stabilisation switched off – in order to level the horizon in-camera.

Launched in 2013, the K-3's 'APS-C' sensor didn't have an optical low-pass filter – a.k.a. an anti-aliasing (AA) filter – in order to optimise sharpness. Instead, Pentax offered an 'AA Filter Simulator' which, in essence, worked in the reverse to image stabilisation… in other words, the sensor was shifted fractionally in order to introduce the slight blurring or 'filtering' needed to counter moiré patterns. On the K-3 II (2015) camera 'Pixel Shift Resolution' – another first for a DSLR – which captured four shots with one-pixel shifts up, down, left and right to optimise sharpness and colour reproduction, [redacted] final image (in fact, no Pentax DSLR used pixel-shifting for upscaling the resolution). The K-3 II also had an even quirkier feature called 'AstroTracer' which used a built-in GPS receiver and an electronic compass along with accelerometers – which combined to determine the camera's position and angle – so the image sensor could be moved in order to track the stars, matching the earth's rotation during exposures of up to five minutes (depending on the focal length of the lens) to ensure sharp points of light. This eliminated the need for a separate celestial mount for tracking and was actually available many earlier Pentax DSLR models – from around 2010 onwards – in conjunction with the O-GPS1 accessory GPS receiver and compass.

The Pentax K-1, launched in 2016 was the first DSLR with five-axis IBIS and also Pentax's first full frame model. The K-1 models were unique in the DSLR world in combining a full frame sensor with in-body image stabilisation. The first K-1 model also introduced an unusual 'Cross-Tilt' arrangement for its LCD monitor screen which employed four titanium stays on its cradle so it could be freely angled while keeping it centred on the optical axis and then adjusted for tilt – either vertically or horizontally – or even swivelled. It looked fragile, but actually wasn't. Another interesting feature was a set of white LEDs which could illuminate the camera's controls when shooting at night – one shone onto the lens mount and four lit the rear controls (these located on the back of monitor's cradle) – while both the battery compartment and memory card slot had internal illumination. All were individually adjustable for brightness. Of course, all this carried over into the Mark II upgrade – introduced in early 2016 – with the addition

Pentax K-5 II (2012). At one time Pentax DSLR upgrades were frequent, especially with the entry-level and mid-range models. The Mark II K-5 got better autofocusing and a new air-gapless LCD monitor screen.

Pentax K-50 (2013). Weather-sealed and insulated body, proper pentaprism viewfinder, stainless steel chassis and IBIS… not bad for a budget-friendly mid-range DSLR.

Pentax K-3 (2013). The K-3 introduced Pentax's flagship 'APS-C' DSLR line and was very highly featured. The sensor omitted an optical low-pass filter and so, to counter moiré patterns, Pentax devised the 'AA Filter Simulator' which shifted the sensor fractionally in order to introduce the very slight blurring.



of 'Dynamic Pixel Shift Resolution' for hand-held shooting, a sensitivity range that extends to ISO 819,200 and enhanced noise reduction processing. Along with the K3 III, the K-1 II are the last of the K mount DSLRs and very possibly the last of a line of reflex cameras that's goes back to 1975.

Pick A Colour… Any Colour

A notable feature of the Pentax DSLRs was coloured bodies, and not just the entry-level models either. It started with the K-x which was introduced in 2009 and initially available in black, red, white and metallic navy blue, but then somebody got carried away and the choice expanded to 20 body colours which could be paired with five handgrip colours… which made 100 possible colour variations. This mix-and-match choice was limited to the Japanese market (where coloured cameras have always been a hit), but North American buyers got the K-x in green, purple, orange and a lighter shade of blue. In Europe, there was a choice of hot pink, chocolate, a lighter brown, olive green, and metallic finishes in fuchsia (a pink-purple shade), turquoise and dark grey.

With the 2010 K-r model – a level up from the K-x – the Japanese market customisation extended to 120 colour combinations; 12 body choices and ten grip options. Export markets got yellow, pink, blue, purple and metallic chocolate, alongside the standard colours of black, red and white. Things got wilder with the K-30 (2012) which was available in choice of 15 colours and two finishes called "Crystal" which was glossy and "Silky" which was matte. The K-50 (2013) continued the custom body/grip combos, again numbering 120, but now comprising 20 body colours with six grip. Things got a bit more sophisticated with the mid-range K-S1 from 2014 which not only boasted a very compact body with all-new styling – quite funky in itself – but a couple of new palettes of colours. These were called the 'Fabric Collection' (comprising cotton beige, linen brown, denim blue and tweed grey) and the 'Night Sky' collection (which offered the choice of sunset orange, dusk gold, moon silver, midnight black and dawn purple). What's more, the K-S1 had a set of five green LEDs at the front of the handgrip along with LED illumination for the power switch, the top panel control dial and the 'OK' button on the camera's rear. The power switch illumination changed to red when the camera was set to video mode, and the grip LEDs flashed during the self-timer countdown, then progressively extinguished with the final five seconds. Even niftier, when shooting with face-detection AF, the number of grip LEDs illuminated indicated how many faces the camera has found.



▶ The K-r colour options totalled 120 – created from 12 body colours and ten grip colours.

High-end cameras are, of course, more serious so the flagship K-1 II was given some more 'grown up' colour schemes over its lifetime. These came under the banner of 'J Limited 01 Edition' and the choices were Black And Gold (very classy looking with a matte black body, gold markings and a

▼ **Pentax K-r (2010).** Pentax took camera body colours to a whole new level firstly with the K-x in 2009 and then the K-r in 2010. There was a choice of standard colours and then numerous custom options, although these were mostly limited to the Japanese market.



Pentax K-70 (2016). Pentax's 'APS-C' DSLR offerings were numerous and all represented excellent value for money compared to rivals from Canon and Nikon. The K-70 had 'Pixel Shift Resolution', the 'AA Filter Simulator' and the 'AstroTracer' capability when fitted with an optional GPS receiver.

Pentax didn't offer a full frame DSLR until 2016 while Nikon's first model was in 2007 (the D3) and Canon's even further back in 2002 (the EOS-1Ds). While the **K-1** was an exceptional camera, it was at least five years too late in terms of Pentax being competitive with Canon and Nikon.

Pentax KP (2017). Mid-range KP had five-axis IBIS, a top shutter speed of 1/6000 second, tilt-adjustable monitor and a sensitivity range extending all the way up to ISO 819,200.



glossy red wooden handgrip), Scarlet Rouge (a red body with a black wooden handgrip), Viridian (which changed its shade of green depending on how the light was falling on it) and LX75 Metallic (a titanium-look metallic finish, again with a black wooden handgrip). These limited edition models were built to order.

Amid all this colour, let's not forget the only monochrome model in the modern history of the DSLR. While there were a number of Kodak monochrome DSLRs in the very early days (most built in small numbers), the Pentax K3 III Monochrome – introduced in 2023 –

was only model widely available and, of course, utilising all of the K3 series tech including IBIS and 'AstroTracer' star tracking. A B&W-only DSLR may seem a little bit weird because the optical viewfinder is still 'seeing' in real life colour, but this was always the case when shooting B&W film, but the K3 III Monochrome delivered superb image quality (a benefit of not having the colour filter array on the sensor) and it was all about the experience.

Testing The Reflexes

With such a remarkable array of models over the 23 years of Pentax K mount DSLRs, what went wrong? Hanging on to the DSLR when the rest of the ILC world has gone mirrorless was potentially a viable strategy in terms simply doing something different, but only if there was plenty happening in the model line up to create an appealing alternative. At the time when this most mattered – i.e. the last five or six years – Ricoh Imaging did very little with its Pentax DSLRs beyond tinkering with cosmetics and minor upgrades. Versus the pizazz of what's been happening in mirrorless cameras, there just hasn't been enough going on with the Pentax brand to keep buyers interested or engaged. Even devoted Pentax fans have been frustrated. While the K-1 and K-1 II certainly represented advanced DSLR design, there was still room for improvement in areas such as the autofocusing and, in particular, video.

Of course, it's true that the scope for significant future developments in DSLRs was becoming more limited compared to mirrorless cameras, so why didn't Pentax/Ricoh do more with mirrorless? Limited resources may well have had something to do with it, but it's worth remembering that Pentax had the Q system at a time when it was thought that mirrorless would be mostly all about very compact ILCs. Nikon had the same idea with its 1 Nikon system, but when it became clear that bigger sensors would be the future, began developing its Z mount full frame system… which required a lot of time and money.

Then there was the Pentax K-01 (2012) which was a very costly commercial flop. The idea was a mirrorless camera that retained the K mount which was good in theory, but largely pointless in practice. What's more, form took precedence over function so it wasn't especially nice to use

▼ **Pentax K-S1 (2014).** The K-S1 had a completely new – and very compact –bodyshell – with a novel arrangement of indicator LEDs set into the front of the handgrip. The colour blitz continued with the K-S1 which was available in two sets of colour palettes called the 'Fabric Collection' and the 'Night Sky' collection.



Pentax K-3 III (2021). The K-3 III represents peak Pentax 'APS-C' format DSLR. It has a BSI-type CMOS sensor, 12 fps continuous shooting, 5.5 stops of image stabilisation and a top ISO setting of 1,600,000 (which, of course, in practice is just a number).

Pentax K-3 III silver Premium Edition (2021). Premium Edition K3 III – available in either silver or black – was part of a kit that included a battery grip, leather strap and a special presentation box. Just 1000 examples of each colour were built.

Pentax K-3 III Monochrome (2023). The only mainstream, modern-era monochrome DSLR and already a very collectible camera.









▲ The Pentax K-1 employed an unusual mounting system for its monitor screen, using four titanium rods to allow for a myriad of positions while keeping it centred on the lens's optical axis.

and was further compromised by lacking an EVF. Flawed in both concept and execution, the K-01 appears to have put Pentax off the mirrorless camera for good, but sticking with the K mount – versus a new fitting to make the most of the shorter back focus distance – was always going to be problematic anyway no matter how good any future camera bodies may have been. What's more, developing a whole new lens system was probably well out of the question financially… although this was really what was needed at that point.

It also has to be questioned whether continuing with its digital medium format SLR program was a good use of resources when there were other, more pressing priorities, namely a full frame body. When it was launched in mid-2010, the Pentax 645D looked like a brilliant idea, making digital medium format photography more accessible and affordable. The follow-up 645Z appeared in 2014, by which time Sony's A7R full frame mirrorless camera – with 36.4 megapixels resolution – was suggesting that this design configuration and sensor size would be a big part of the future in high IQ ILCs. Then came Canon's 50 megapixels EOS 5DS/R full frame DSLRs and, more crushingly for the Pentax 645Z, Fujifilm's mirrorless GFX50S – also with 50 MP res – which was cheaper, more compact and faster.

Changes… Not Necessarily For The Better

It has to be said that everything becomes more difficult when corporate changes lead to shifts in philosophies, priorities and, most significantly, the allocation of resources. Pentax's problems mostly began when it was sold to Hoya in 2007. Although involved in the photography industry via its well-known filter lines, Hoya was more interested in Pentax's medical imaging business (primarily endoscopy systems) than its camera lines and so investment here suffered. Pentax Medical, incidentally, is still going strong.

In 2011, Hoya sold the Pentax imaging business to Ricoh which then had an extensive line of digital compact cameras and the quirky GXR modular camera system, but no DSLRs. Another good idea – but not ultimately good enough as 'conventional' mirrorless cameras continued to gain popularity – the Ricoh GXR system was phased out from 2013 and probably at about the same time as the Pentax K-01 was also looking like a big mistake. Perhaps not so surprisingly then, Ricoh would have been wary of any future risk-taking so sticking with the tried-and-true DSLR was the safest option financially… but only in the short term. In the longer term, such conservatism has got Pentax to where it is now which, at the moment, is nowhere.

Given the current circumstances – both with Ricoh Imaging in particular and the camera business in general – it's hard to be optimistic about an all-new Pentax DSLR concept ever becoming a reality. Like it or not, the DSLR's day is done and it would take something truly fantastical to convince buyers otherwise… especially in the numbers to make such a project viable. Given the Pentax 17 experience, it now seems extremely unlikely Ricoh would consider a 35mm SLR – even if a revived Pentax K1000 or something similarly back-to-basics still looks appealing – and anything else is going to demand an investment that, recently history tells us, there's neither the will nor, in all likelihood, the wherewithal.

So if this is the end for Pentax reflex cameras, let's at least celebrate the great many achievements along the way which have, for millions of photographers, enhanced their involvement in their passion and, most importantly, their enjoyment. Whatever happens, such an important contribution to photography over such a long time ensures that the Pentax name will live on regardless.

If you hurry, there are still a few examples of the K-1 II and the K3 II in stock at various retailers in Australia. As this article was being compiled, we noted one or other was still listed by Digital Camera Warehouse, Camera House and Camera Electronic in Perth.

NIKKOR
Z 28-135mm f/4.0 PZ



POWER RANGER

Nikon has built its 28-135mm power zoom with video-makers primarily in mind, but the focal range, optical performance and its visual look all make it appealing for photography too.

It would be remiss to start this review by not first talking abotut another lens. If you like the idea of a moderately wide-angle to moderately telephoto zoom for your Z mount mirrorless camera, there's the Nikkor Z 24-120mm f/4.0 S. It's an S series lens so it performs exceedingly well optically, it's comparatively compact and it's yours for around $1600 to $1800 depending on where you shop. The Nikkor Z 28-135mm f/4.0 isn't quite as wide-angle, but goes longer at the telephoto end – so it's really just as versatile in terms of its many applications – and it also has a constant aperture of f/4.0. The price tag, however, is north of $3000 and it's substantially bulkier than the 24-120mm… like close to 500 grams heavier. So why might you contemplate the 28-135mm over the 24-120mm?

Well, if you're shooting lots of video and maybe are even considering buying a more video-orientated Z mount body like the ZR, the 28-135mm makes sense because many aspects of its design – both physically and optically – are designed for this usage. And, here's the thing, in terms of zoom lenses intended for video and big sensors, it's actually on the more compact and lighter weight side.

However, despite it being primarily promoted as a cine lens, a number of aspects of the 28-135mm's optical design, in particular, are beneficial whether you're shooting moving pictures or still frames. Notably too, the it has internal zooming so the length of the barrel always stays the same which is important if it's part of a video rig or mounted on a gimbal. And, of course, there's the option of power zooming which is traditionally thought of as a video feature, but it's surprising how quickly you get used to having it when shooting stills as well. It allows for a lot more precise adjustments when fine-tuning framing, and there's a choice of 11

zooming speeds so you can go faster when the subject matter demands it (i.e. sports action). Both lenses have internal focusing.

OPTICAL DESIGN

There's some similarities in the optical designs of these two zooms – the 28-135mm employs 18 elements in 13 groups while the 24-120mm has 16 elements in 13 groups which includes seven special types. The 28-135mm has eight comprising four aspherical types, three with extra-low dispersion (ED) characteristics and one aspherical element that's made from ED glass. Collectively, all help enhance sharpness across the frame while the aspherical elements also correct for distortion, spherical aberrations and coma. The ED glass primarily helps minimise chromatic aberrations.

The anti-reflection multi-coating uses Nikon's latest 'Meso-Amorphous Coat' technology which is said to more effectively reduce both diagonal and vertical incident light reflections to significantly reduce flare and ghosting. Importantly for video shooters, the optical design minimises focus 'breathing' which manifests itself as a slight variation in image size as the focusing distance changes. It's much less of an issue when shooting stills, of course. Nikon says that the 28-135mm's optical design is parfocal – which means the focus doesn't shift during zooming. This is certainly true with small adjustments in the focal length, but if you zoom all the way from 28mm to 135mm in one hit, there is a slight shift in the focus which will be visible in video and will need you to refocus when shooting stills and using manual focus (otherwise the AF should theoretically compensate). However, focus shift when adjusting the aperture is eliminated thanks to the precision of the electromagnetic diaphragm and the use of internal focusing.

The zoom's AF drive uses a stepping motor (STM) for responsiveness, speed and reduced noise. The minimum focusing distance is 34 centimetres at 28mm, extending to 57 centimetres at 135mm which gives a maximum magnification ratio of 1:4 (i.e. quarter lifesize) from 55mm to 135mm. The diaphragm employs nine blades to give more rounded out-of-focus effects and the minimum aperture setting is f/22.



▶ Nikon's first full frame cine lens is big by still photography standards, but actually quite compact for a high-end power zoom for videography. It's built tough with an all-metal external construction and weather sealing.

IN THE HAND

There's no question that the 28-135mm power zoom is a big lens for this focal range – in comparison with similar lenses that are primarily designed for photography – and if you're contemplating using it for hand held shooting. However, as we noted at the start of this review, it's actually quite compact for a high-end cine zoom and, as such, actually considered feasible for hand held filming or mounting on a gimbal. It's all relative.

Photographers will likely also think it's a heavy lens. It weighs in at over at just over 1.2 kilogram which can be reduced slightly by taking the Arca-Swiss foot off the tripod mounting collar. However, the fact that a tripod mount is provided probably tells you something. That said, it's all about balance when shooting video and so a mount on a lens of this size and weight is essential, but it doesn't mean hand held shooting is out of the question. We used the 28-135mm hand held on the ZR, Zf and Z6II bodies – which are all reasonably compact and lightweight – and it felt comfortably balanced and easy to handle. You might, though, contemplate a monopod if you're going to have the camera with this lens up to your eye for longer periods of time.

One contributor to the weight is an all-metal (aluminium) external construction using magnesium alloy barrel tubes and inner sleeves with sealing against moisture and dust. Additionally, the exposed surface of the front element has a fluorine coating to help repel water and grease while also allowing for easier cleaning. It's a large expanse of glass, and if you want to really protect it from the elements – or worse – the screwthread filter fitting is 95 millimetres… so filters of any sort will be pricey, but especially a circular polariser or adjustable ND. Video shooters will likely use a matte box for square or rectangular filters. A filter holder system – for 100 mm wide slot-in filters – looks like a better solution economically for photographers too.

The 24-120mm, by the way, has a 77 millimetres diameter fitting.

The barrel has three control rings for manual zooming, manual focusing and for assigning a variety of functions. The multi-function control ring's default is for manual apertures; and the alternatives are exposure compensation, ISO settings or white balance settings. You can power zoom via a rocker switch on the lens barrel or via the zooming collar which is 'fly-by-wire' (i.e. electronic) and linked to the power zoom's drive (which, by the way, is another stepping motor). It's possible to customise the collar's direction of rotation and sensitivity (i.e. the rotation angle). With manual zooming, the collar has the same slightly disconnected feel as an f-by-w focus ring and, similarly, no hard stops to mark either end of the adjustment range. However, it operates in much the same way as a direct-drive coupling with the zooming speed



▲ Gold band around the lens mount is Nikon's new cosmetic signature to indicate a lens primarily designed for video and cinema applications.



▲ There are two 'L.Fn' buttons which, as their default setting, serve as focus hold buttons, but can also be used to store a zooming position for instant recall.



▲ Both the zooming and focusing collars are geared for coupling to follow-focus set-ups in a video rig.





TEST IMAGES

Test photographs taken when shooting handheld with the Nikkor Z 28-135mm f/4.0 PZ on the Nikon Zf and Z6II camera bodies. JPEG/large/fine files captured in shutter-priority auto mode with the Vivid 'Picture Control' profile and ISO 400 or 800 sensitivities settings. 'Vignette Control' set to Normal and 'Diffraction Compensation' switched on. 'Auto Distortion Control' operates behind the scenes continuously when this lens is fitted to a Z mount body and can't be disabled. Consequently, there's no distortion to speak of. Centre sharpness is excellent across the entire focal range. Lateral chromatic aberrations are well suppressed as is flare and ghosting, but the supplied lens hood is very effective and makes a difference too.







matching the speed of your twisting action (i.e. 'zoom-by-wire' operation).

With power zooming, you can adjust the zooming speed and also preset a zoom position via the 'L-Fn' buttons (there are two) for instant recall. The ZR body has its own power zoom lever – located around the shutter release – but you can customise the other multi-function controls (such as the plus/minus playback zoom buttons) on the supporting Z mount bodies to do the same thing. Zooming can also be controlled remotely from a smartphone (or tablet) using the Nikon NX Field app. Another remote control option is to use Nikon's MC-N10 remote control video grip.

The pro-level hybrid bodies, the ZR and the Z6III provide an additional feature called 'Hi-Res Zoom' which enables a seamless transition – from the end of the optical zooming range – to digital 'zooming' up to an effective 270mm while maintaining the 4K video resolution with the 8K cameras, and up to 189mm with the 6K ZR and Z6III. You can go even longer again when shooting Full HD (i.e. 2K) video.

It's possible to switch the focusing collar's operation between non-linear or linear adjustment. With non-linear adjustment, the amount of focus shift is governed by the rotational speed of the focusing collar… in other words, as with the zooming ring, if you turn it quickly, you'll make big adjustments, but turning it slowly allows for more precise control thanks to the smaller degrees of change. With the linear-type adjustment, the focus is shifted at a constant speed according to the rotational angle of the focus ring which can be set between 90 and 720 degrees or to 'Max'. The latter allows for more uniformity of adjustment – i.e. more linear – which is something video-makers often require when using focusing creatively. Again, if preferred, the direction of rotation can be reversed. The focusing collar has standard 0.8-pitch gearing for compatibility with follow focus systems. The zooming collar is also geared should you want to transfer the manual zooming control to a side-mounted knob.



◀ The supplied rectangular lens hood is huge and very effective at shading the front of the lens.

The pair of 'L.Fn' buttons are positioned 90 degrees apart on the barrel so one is easily accessible when shooting either horizontally or vertically. They default as focus hold buttons, again from a camera's 'Controls' submenu, they can be assigned to virtually anything you want (the list runs to over 40 functions). Logically, both buttons will have the same selected function. Usefully, there's an AF/MF switch on the lens barrel so you don't have to go near the camera menus to make this change.

Incidentally, the gold band around the lens mount is Nikon's signature for its cine lenses.

IN THE FIELD

We've already talked a little about how the 28-135mm f/4.0 handles given its size and weight, but in practice it really isn't a cumbersome to use hand held as it might look. It may also look front-heavy, but it isn't at all even with the smaller Z mount bodies. The heavy-duty construction certainly makes it more suited to the wear-and-tear that comes with shooting subjects such as sports action or wildlife. Cine work can also be very hard on gear which is why this lens is very much stronger physically than the 24-120mm f/4.0 S with its largely plastic construction (even if this is high-grade polycarbonate).

Notably, the 28-135mm lacks optical stabilisation, but IBIS is a feature of all the higher-end Z mount mirrorless cameras as well as the cine-orientated ZR. In this body, for example, it can provide up to 7.5 stops of correction for camera shake and, in practical terms with the 28-135mm zoom, you get around five stops of leeway which certainly helps with both hand held shooting in general and low-light work in particular. The constant aperture of f/4.0 helps to some extent too – especially when shooting at 135mm – but it's probably a bit of a compromise between side-stepping too many additional optical challenges by having a wider opening – at least at the wide-angle end – avoiding any more bulk and weight, and maintaining uniformity of brightness when zooming… which is a preference when shooting video. In terms of depth-of-field, f/4.0 on the full frame sensor still allows for you to play around with selective focus – whether shooting stills or video – and have nicely blurred backgrounds. Furthermore, the out-of-focus effects (a.k.a.



▲ Second 'L.Fn' button is positioned for easy operation when shooting in the vertical orientation. Tripod mounting collar locking knob is alongside. The collar has index marks at 90-degree intervals.



▲ Hood has a window to allow for the adjusting of circular polariser and variable ND filters. Filters for this lens will be pricey… the screwthread fitting size is a monster 95 millimetres.



▲ Zoom rocker switch on the lens barrel can be set to one of 11 power zooming speeds.

> OPERATIONALLY, EVERYTHING WORKS COMFORTABLY AND EFFICIENTLY WITH BOTH THE FLY-BY-WIRE CONTROL RINGS BEING VERY RESPONSIVE."

the bokeh) created by this lens are uniformly smooth and soft while the transition from in-focus to out-of-focus looks very natural, creating a convincing impression of three-dimensional depth. It's certainly quite cinematic in its look here.

Operationally, everything works comfortably and efficiently with both the fly-by-wire control rings being very responsive with an instant start and stop that just isn't possible with mechanical controls. An obvious question is why have both the zooming collar and the rocker switch? Well, certainly for shooting video, the rocker is the better option as, for starters, it's easier to reach when working from behind the camera and it's also even more responsive, but most notably, you can only assign the different zooming speeds to this control.

Using the multi-functional ring to manually set the apertures is really no substitute for a proper aperture collar, but then this is the way Nikon does things with all its Z mount lenses. The stepless adjustment will be familiar to video shooters, but there's no option for switching to 'virtual' click-stops. For many Z camera users, it's going to be more convenient to stick with manual aperture control from the camera body.

PERFORMANCE

There can be different performance considerations for cine lenses compared to those for lenses specifically designed for still photography. Most notably, overall sharpness isn't such a critical consideration when the frames are flashing past you at 24, 25 or 50 fps, and so some other aspects of a cine lens may take priority – for example, minimising focus breathing via a more complex optical design which, in turn, can result in reduced corner sharpness. So, given video shooting is clearly the priority with this lens, is its performance when taking photographs been compromised in any way?

As it happens, it's in terms of overall sharpness that the 28-135mm essentially does its best work. Put simply, it's very sharp lens even when shooting at the minimum focusing distance and wide-open at f/4.0. As is to be expected, centre-to-corner uniformity varies a little across the focal range with some fall-off towards the corners at 28mm and f/4.0, but which is entirely eliminated by stopping down to around f/8.0. The corners sharpness steadily improves towards 50mm and, from then on, is excellent. Only the effects of diffraction – most notable at f/16 and f/22 – cause some reduction in sharpness, but you can fix this in-camera via the 'Diffraction Compensation' processing.

Longitudinal chromatic aberration is mostly very well-suppressed and largely non-existent between 35mm and around 90mm, but even where it's evident in tests, it's still not an issue with real-world shooting. The Nikon Z cameras automatically correct for lateral chromatic aberration. Some distortion is evident with slight barrel-type bending at the wide-angle end and more pronounced pincushion-type bending at the telephoto end. However, both are completely eliminated by the 'Auto Distortion Control' processing on the Nikon Z series bodies. Both ghosting and flare are very well suppressed even with strong side lighting, but the supplied hood – a huge rectangular shade – is very effective at preventing light falling across the wide expanse of front element.

There's some vignetting – the brightness fall-off towards the corners of the frame – and it's most evident at 28mm and f/4.0, but it's not excessive and is almost entirely gone by f/5.6 or at the longer focal lengths. Of course, the Nikon Z bodies also allow for vignetting correction to be set at Low, Normal or High.

The autofocusing performance with the lens on the ZR body was responsive, fast and completely reliable when keeping up with this camera's 120 fps calculations speed for subject tracking.

THE VERDICT

There's no question that the Nikkor Z 28-135mm f/4.0 PZ is a super lens for video applications all the way up to pro-level cinematography. In this sphere, it balances performance and portability very well – especially when used on the compact ZR – so it works well on a gimbal, in a rig or on a tripod and with hand held shooting. The versatile power zoom functionality, effective correction for focus breathing, the negligible focus shift when changing the aperture, and the handling balance benefits of having both internal zooming and focusing tick all the right boxes for videographers.

The appeal for photographers is perhaps little less clear cut, especially if you don't shoot much video or, indeed, don't shoot any at all. The presence of the 24-120mm f/4.0 S in the Nikkor Z lens system – and which, incidentally, is quite similar in optical performance – means it's the no-brainer choice because the difference in price will easily buy you another lens… maybe even two. Nonetheless, the 28-135mm does have its attractions for stills photography… it's solidly (literally) pro-level in its construction, the power zoom is strangely addictive, the handling balance works as well here as with video, the cinema-tuned bokeh is beautiful and the focal range is still very versatile. Beyond all this, the Nikkor Z 28-135mm PZ is a classically excellent Nikon lens, but leveraging all the contemporary performance benefits of the mirrorless camera configuration. Best of all though, it's a real pleasure to use and surprisingly involving despite having no mechanical control rings and an emphasis on remote control set-ups. By any measure though, it's a very fine lens indeed.

VITAL STATISTICS

NIKKOR Z 28-135mm f/4.0 PZ

$3399

Estimated average street price

Format: Full frame.

Angle-of-View: 75 to 18.1 degrees (diagonal on full frame).

Construction: 18 elements/13 groups. Eight special elements – four aspherical types, three with extra-low dispersion (ED) characteristics, one aspherical ED type.

Minimum Focus: 34 centimetres at 28mm. 57 centimetres at 135mm.

Maximum Reproduction Ratio: 1:4 at 55mm to 135mm.

Aperture Range: f/4.0 to f/22.

Overall Length: 177.5 millimetres.

Maximum Diameter: 105.0 millimetres.

Filter Diameter: 95 millimetres.

Weight: 1120 grams (without the tripod mounting collar's foot).

Lens Mount(s): Nikkor Z.

Features: Power zoom with 11 zooming speeds, internal zooming, weather-sealed external construction, fluorine coating on the front element, nine-blade diaphragm, 'Meso-Amorphous Coat' multi-coating, stepping motor (STM) AF drive, internal focusing, geared focus collar, two multi-function 'L-Fn' buttons, power zoom rocker switch, multi-function control ring, tripod mounting collar with detachable foot. Bayonet-fit lens hood supplied. Remote zooming control possible via the Nikon MC-N10 Remote Grip.

Price: $3399. Nikon products purchased from an authorised Nikon Australia reseller are covered by a two year warranty.

Distributor: Nikon Australia, telephone 1300 366 499 or visit www.nikon.com.au

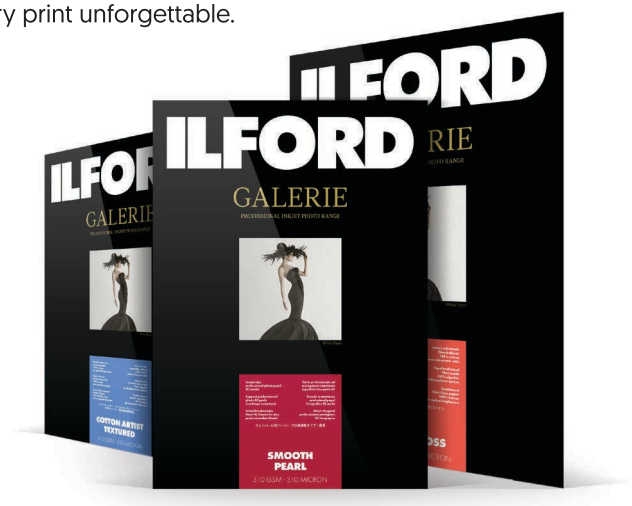


Photo: Seiichi Nakamura

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REPORT BY PAUL BURROWS

FUJINON
XF 400mm f/4.5 R LM OIS WR



The XF 400mm f/4.5 is very similar in design to the longer XF 500mm f/5.6 model, but not surprisingly is a little smaller and lighter.

GO LONG, GO EASY

If the Fujinon XF 200mm f/2.0 is too short – and possibly too expensive – and the XF 500mm f/5.6 is too long… how about the 'Goldilocks' 400mm f/4.5 then? The price could be right too.

With the many fantastical supertelephoto zooms now available thanks to the design freedoms made possible by the mirrorless camera configuration, has the supertelephoto prime lost its shine? For a long time, the supertele classics for SLRs and DSLRs – such as the 300mm f/2.8, 400mm f/4.0 and 600mm f/4.0 – were essentials in the sports or wildlife photographer's armory and highly desirable for just about everybody else. Now with mirrorless cameras, the supertelephoto zoom can be made smaller, lighter, faster (in zoom lens terms) and cheaper – the current 100-500mm models are great examples, but there's also Canon's RF 200-800mm, Sony's FE 400-800mm and Fujifilm's XF 150-600mm which is equivalent to 229-914mm!

Of course, smaller-lighter-faster-cheaper is also happening with new supertelephoto primes – Sony's recent GM series 400mm f/4.5 and 600mm f/6.3 both being dubbed as the world's lightest models at these focal lengths – and there still remain all the traditional plusses of a prime lens over a zoom… mostly derived from having a less complex optical design employing fewer elements.

Fujifilm X mount users now get their own 400mm f/4.5 supertelphoto prime, except on the 'APS-C' size sensor, it's equivalent to 609mm. So, this is essentially a 600mm f/4.0 lens – admittedly a fraction slower – that's just under 240 millimetres in length and weighs a very manageable 1245 grams without its tripod mounting shoe fitted. And it's priced at just under $5000. For comparison with full frame 600mm f/4.0 lenses, Sony's FE model is 449 millimetres in length and tips the scales at 3.0 kilos. It'll cost you $21,999. Canon's RF 600mm f/4.0L IS USM measures 472 millimetres in length and weighs nearly 3.1 kilograms. It'll cost you $22,799. When it comes to longer lenses, the cropped sensor mirrorless

systems start to make quite a bit of sense… and 'APS-C' is good middle ground between M43 and full frame, balancing the sensor size with aspects such as dynamic range and low-light performance. Quite a number of the current X mount mirrorless cameras use the 40.2 megapixels 'X-Trans CMOS 5 HR' sensor which has 'dual conversion gain' output circuits to enhance the high ISO performance. This resolution delivers excellent detailing and definition along with super-smooth tonal gradations. As we've noted on a number of occasions when reviewing these cameras, the imaging performance is on a par with comparable full frame models and we'd challenge anybody to be able to pick any differences at all… even at the highest native ISO settings.

Fujifilm already has the XF 500mm f/5.6 R LM OIS WR in its X mount system and which is equivalent to 762mm which makes it even more specialised. Then there's the gorgeous XF 200mm f/2.0 R LM OIS WR which is equivalent to 305mm, making it exceptionally desirable, but it's perhaps not long enough for some applications (although there is a dedicated, and included, 1.4x teleconverter which gets you to an effective 427mm with the maximum aperture at f/2.8). However, you'd have to want it quite a lot because it's at least $2000 more than the new 400mm f/4.5, depending on where you shop (and the RRP is actually over $3000 more).

If you think that 600mm might actually be a too long, you'd be surprised at how useful it can be. It's pretty much the staple focal length for motorsports – helping to overcome the access issues on some tracks and rally stages – as well as being needed for many types of wildlife and birds. It's also great for many other sports, of course, and for aviation subjects. The tight framing works in a lot of other applications too, even for landscapes when you really want to isolate a feature or the way the light may be falling on a more distant scene.

OK, so now that we've made the case for the new Fujinon XF 400mm f/4.5 R LM OIS WR, what do you get? Physically, it's

WHEN IT COMES TO LONGER LENSES, THE CROPPED SENSOR MIRRORLESS SYSTEMS START TO MAKE QUITE A BIT OF SENSE… AND 'APS-C' IS GOOD MIDDLE GROUND BETWEEN M43 AND FULL FRAME."

very similar in looks to the 500mm f/5.6, but a little shorter by around 15 millimetres and lighter by 90 grams. It has the same silvery off-white finish, the same control arrangements on the barrel and shares a 95 millimetre screwthread filter fitting. The pale barrel colour is, of course, all about reflecting sunlight to avoid too much of a heat build-up inside a bigger lens like this… and especially one that will likely be used outdoors for longer periods of time. High temperatures inside a lens can affect precision as construction materials will expand very slightly.

OPTICAL DESIGN

The XF 400mm f/4.5 has a similar optical construction to its 500mm sibling, but it's not quite the same. The layout still comprises 24 elements in 14 groups, but six of these are special types (compared to the longer lens's seven), comprising four with extra-low dispersion (ED) characteristics and two that are 'Super ED' extra-low dispersion types. All are designed to help minimise chromatic aberrations, but the 'Super ED' types are even more effective. The ED elements also make a contribution to overall sharpness and help enhance contrast.

Fujifilm's X mount bodies automatically correct in-camera for distortion, vignetting and also chromatic aberrations. Additionally, there's a 'Lens Modulation Optimiser' (LMO) function which corrects for diffraction and actually reconstructs some of the lost edge data. LMO also corrects for any sharpness fall-off in the corners of the frame, but it is the only manually-selectable in-camera lens correction (and even then it can only be switched on or off). With RAW capture, and depending on which converter you use, Fujifilm's lens correction profiles will be applied automatically (such as in Lightroom or Capture One) or available to be applied manually.

Focusing is performed internally so the lens doesn't increase in physical length and the front doesn't rotate. The AF drive uses a linear stepping motor (STM) for faster responsiveness, increased speed and minimal noise. The minimum focusing distance is 2.75 metres which is the same as the 500mm, but obviously gives a lower magnification ratio of 1:6.25 compared to the longer lens's 1:5.

The 400mm f/4.5 is compatible with the two Fujinon XF series teleconverters with the 1.4x giving 560mm with a maximum aperture of f/6.3 and the 2.0x producing 800mm at f/9.0. The full frame equivalents are 853mm and 1219mm respectively.

The built-in optical image stabiliser gives 5.5 stops of correction for camera shake over the yaw and pitch movements by itself, but when combined with an IBIS-equipped X-T or X-H series body, there's full five-axis movements. The two systems co-ordinate automatically, but there's no extension of the correction range and, incidentally, no panning mode so you'll need to switch off IBIS for this.

As with the 500mm, the 400mm's external construction employs a combination of magnesium alloy and polycarbonate components and is weather sealed – there's 20 sealing points in all, including a substantial gasket around the lens mount. The lens is also insulated to enable shooting in subzero temperatures down to -10 degree Celsius, matching the capabilities of X mount bodies such as the X-T5 and the X-H2 duo. Additionally, the exposed surface of the front element has been given a hydrophobic anti-smudge fluorine coating to help repel



▲ Weather protection measures include a substantial gasket around the lens mount. The 400mm is also able to operate in subzero temperatures down to -10 degrees Celsius.

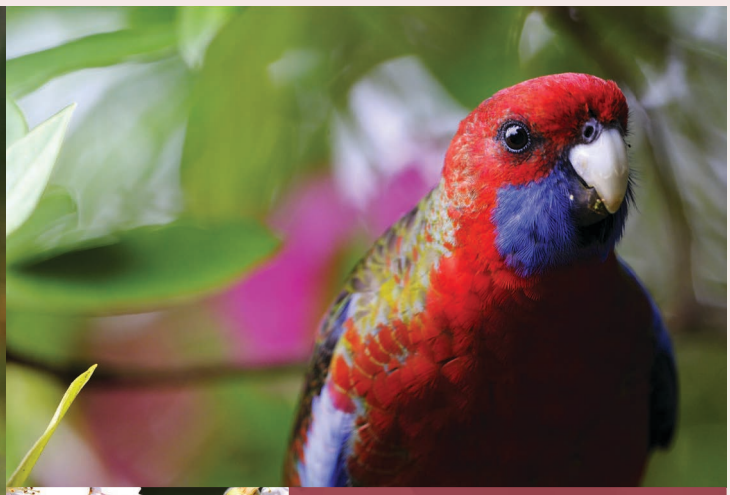


▲ Manual aperture collar allows for adjustments in one-third stop increments.



▲ The aperture collar locks at its 'A' setting for auto aperture control.







TEST IMAGES

Test images captured as JPEG/large/fine files with the Fujifilm X-H2S and X-T5 bodies using shutter-priority auto exposure control and the Vivid/Velvia 'Film Simulation' preset. The uniformity of sharpness across the frame is excellent even at f/4.5 and there's negligible distortion or longitudinal chromatic aberration. There's no vignetting either. The transition from in-focus to out-of-focus is linearly smooth, rendering natural-looking soft backgrounds.







moisture and grease, as well as making cleaning easier.

IN THE HAND

Like the 500mm model, the XF 400mm is quite easy to use hand held and, again, the optical design promotes an even balance so you aren't fighting gravity all the time. Weighing in at around 1.2 kilograms, it's obviously not an especially lightweight lens – and you're handling close to 1.8 kilos when a higher-end X mount body is being used – but it does handle very comfortably even when shooting for longer periods of time.

A bank of controls at the rear of the barrel comprises a focus limiter switch, an on/off switch for the optical stabilisation, a three-position selector for the AF functionality and a button that's marked 'Set'. These last two controls relate to four buttons that are located at 90-degree intervals around the front of the lens. These can serve as conventional focus hold buttons or can be assigned a particular focusing distance when the three-way selector is set to 'Preset'. Pressing the 'Set' button then locks in the desired distance which can be instantly recalled via any of the four function buttons. Logically, once they're assigned, they all do the same thing. The third function is as an 'AF On' button.

The focus limiter only has two settings for either the full range or for a small reduction which reduces the minimum focusing distance to five metres. It's not a big difference, but it will make for speedier focusing if you don't need to get any closer to a subject.

Like all the Fujinon XF series lenses, the 400mm f/4.5 has a manual aperture collar which has one-third stop adjustments from f/4.5 to f/22 and locks on its 'A' setting for auto aperture control. However, it doesn't have a de-click option for seamless exposure adjustment when shooting video.

The manual focusing collar is, not surprisingly, an electronic 'fly-by-wire' control so there are no end stops, but overall, the operation is quite precise.



Silvery off-white finish looks very smart, but it's more about the practicality of reflecting light to prevent heat building up internally.

IN THE FIELD

The XF 400mm f/4.5 feels extremely well-built and with its various protections against the elements, it'll cope with the demands of working in all weathers and environmental conditions along with the inevitable wear-and-tear of application such as sports photography. When capturing the action is the priority, with all the best intentions in the world, your gear can still take a bit of a hammering.

The lens's size and weight certainly helps reduce the wear-and-tear on the photographer, and it really is quite easy to carry around and use, even for hours on end. Of course, there are going to be times when you need to use a tripod and the 400mm's mounting collar rotates through 360 degrees with index marks at 0 and 90 degrees (i.e. for vertical shooting), but no detents for doing it by feel. The foot – which is an Arca-Swiss rail mount – detaches which saves a bit of weight when shooting hand-held. Actually, it's more like the foot and most of its leg detach so there's only a small stub left which doesn't get in the way of the handling. Mind you, the mount can actually serve as a handy grip and assist with steadying the lens when you're shooting hand held.

As when using any long telephoto lens, a monopod can be a good compromise in many situations, providing some addition support – which takes the weight of you – without unduly compromising either manoeuvrability or mobility.

With both sports and wildlife photography, fast shutter speeds are often needed to freeze movement and, consequently, camera shake won't always be an issue. The f/4.5 maximum constant aperture also helps here – assuming that you aren't chasing as much depth-of-field as possible – allowing you to hang onto faster shutter speeds for longer without having to resort to using higher ISO settings. Even with the inherently deeper depth-of-field of the 'APS-C' sensor (because of the focal magnification factor), the depth-of-field is still quite shallow at 400mm and f/4.5 – due to the combination of the f-stop ratio and the compression caused by the higher magnification – so backgrounds become nicely blurred and the in-focus subject is more prominent. There is some scope playing around with selective focusing here, even if the long focal length will effectively limit how much you can vary the subject distance to vary the background blur.

As noted earlier, the screwthread filter



▲ Tripod mounting foot is detachable for hand held shooting. The fitting has Arca-Swiss rails so you don't a separate quick-release plate on the tripod.



▲ Front element has a fluorine 'anti-smudge' coating to help repel water and grease. If you want to fit a protective filter instead, the screwthread fitting is 95 millimetres.



▲ Focusing collar is 'fly-by-wire' and has a good-sized grip.



▲ On-barrel control panel has focus limiter switch, OIS on/off and a three-position selector for the AF functionality with its 'Set' button. These last two controls enable preset focusing distances to be assigned to the lens's four multifunctional buttons.



▲ Four customisable multifunction buttons located at 90 degree intervals around the front of the lens. The default is for focus hold.

fitting is 95 millimetres in diameter – and there isn't a holder at the rear – so buying a circular polariser or a variable ND, for example, won't be a cheap exercise. A plus point, however, is that the supplied hood has small sliding hatch at its rear for directly accessing these filters to make adjustments.

PERFORMANCE

We tested the Fujinon XF 400mm f/4.5 on both an X-T5 body – for the 40 megapixels resolution – and an X-H2S – for the 40 fps continuous shooting speed.

With both cameras, the autofocusing is both responsive and fast enough to keep up with the AI-based subject recognition and the speedy AF tracking in the X-H2S which is performed at 120 fps. The AF operation is also very quiet and certainly won't be heard by even a sharp-eared wildlife subject.

The optical performance is exceptional with great uniformity of sharpness across the frame even at the widest aperture of f/4.5. This is maintained up to f/11 after which diffraction comes into play if you don't have the LMO processing activated in the camera.

In terms of its superb sharpness, the XF 400mm is certainly able to exploit the resolution available from 40.2 megapixels 'X-Trans CMOS 5 HR' sensor that's currently widely used in the Fujifilm X mount range from the X-T50 and X-E5 upwards. The optics are nicely contrast too, so the overall clarity and definition ensures fine detailing is very accurately reproduced. However, shooting over longer distances can mean issues with atmospheric haze which reduces contrast and is why investing in a UV filter is a good idea. It will also serve as protection to the large expanse of front element if you're shooting without the lens hood fitted. A quick look online showed that a 95 millimetres UV filter costs around $70 to $90 (depending on the brand) so it's not a lot to pay for the peace-of-mind alone.

There's no vignetting – i.e. brightness fall-off at the corners of the frame – and negligible distortion beyond the merest hint of pincushion-bending which you just won't see with real-life shooting. Longitudinal (or axial) chromatic aberration is very effectively minimised even at the edges of the frame, and this is the case across the full aperture range.

Flare and ghosting are also very well suppressed thanks to Fujifilm's 'Electron Beam Coating' (EBC) anti-reflection multi-coating. As with the 500mm, you can actually shoot straight into the sun without flare or ghosting occurring. However, the hood is good for situations where there's strong light coming in from the side and potentially bouncing across the front of the lens which will also reduce contrast.

The nine-blade diaphragm creates uniformly rounded and clean-looking out-of-focus effects giving softly-textured backgrounds. Consequently, as noted earlier, in-focus subjects really stand out strongly. The transition from sharp to blur is also nicely smooth and progressive too, so it looks natural and creates a convincing impression of depth.

THE VERDICT

As we noted at the start, the XF400mm f/4.5 is a little less specialised than the longer XF500mm f/5.3 lens, and it's effective focal length of 609mm brings it into play with a wider range of subjects beyond just the obvious ones of sports and wildlife. In the field, it handles beautifully and is both compact and light enough to be comfortably used hand held without quickly becoming a chore. The f/4.5 speed allows for a more compact and affordable lens while still giving some room to play around with depth-of-field. It's a very well-built lens too, with all the protection needed to keep on shooting no matter what the weather does. On top of all this is an outstanding optical performance – exceptional sharpness and contrast with a soft bokeh to make the blurred look beautiful too. With no distortion or chromatic aberrations to speak of, this is pretty much as good as it gets for a supertelephoto prime. Quite simply, it's super.

VITAL STATISTICS

FUJINON XF 400mm f/4.5 R LM OIS WR

$4949

Estimated average street price

Format: 'APS-C' digital sensors. Effective focal length is equivalent to 609mm.

Angle-of-View: 4.1 degrees (diagonal on the 'APS-C' format).

Construction: 24 elements/14 groups. Six special elements – four extra-low dispersion (ED) types and two 'Super ED' extra-low dispersion types.

Minimum Focus: 275 centimetres.

Maximum Reproduction Ratio: 1:6.25.

Aperture Range: f/4.5 to f/22.

Overall Length: 239.5 millimetres.

Maximum Diameter: 104.5 millimetres.

Filter Diameter: 95 millimetres.

Weight: 1245 grams (without the tripod mounting foot).

Lens Mount: Fujifilm X.

Features: Weather-sealed external construction including insulation for operation in subzero temperatures down to -10 degrees Celsius, fluorine coating on front element, optical image stabilisation (up to 5.5 stops of correction for camera shake), internal focusing, high-speed linear AF motor, 'Focus Preset' button, four 'Focus Control' buttons (for AF-on, focus hold or recall focus distance preset), focus range selector/limiter (full range or 5.0 metres to infinity), built-in tripod collar with detachable foot (Arca-Swiss plate), Fujifilm 'Super Electron Beam Coating' (EBC) anti-reflection multi-coating, nine-blade diaphragm. Bayonet-fit lens hood and carry pouch supplied. Supports the Fujinon Teleconverter XF 1.4X TC WR and Teleconverter XF 2.0X TC WR.

Price: $4949. Fujifilm Australia provides a three-year warranty for X series mirrorless cameras and lenses purchased in Australia from an authorised reseller. For more information visit www.fujifilm.com.au

Distributor: Fujifilm Australia, telephone 1800 226 355 or visit www.fujifilm.com.au



PANON WIDELUX F SERIES

These are the cameras that, in one way or another, had a significant influence on photographers and photography. The 35mm Wideluxes enabled panorama photography with a relatively compact and easy-to-use camera, making the wide format more accessible. The portability was particularly welcomed by landscape photographers trekking into remote locations, but the Widelux F models found... ahem... wider applications too.

Panoramic photography was a practice almost from the very start of photography, with the wide angle-of-view initially achieved by taking a series of pictures with views that slightly overlapped and then putting them together to create a single image. Soon, however, the challenge became capturing an ultra-wide view in a single exposure and, by the 1860s, there were a couple of approaches. One was a physically wide camera fitted with an extremely wide-angle lens recording a frame onto a glass plate, but the optical issues – notably curvature of field and chromatic aberrations – created problems with sharpness. This was partially cured by having a curved glass plate, but even better results were achieved by using a longer focal length lens – i.e. wide-angle rather than ultra-wide – that swung around its rear nodal point, essentially scanning the scene via a vertical slit which served as the shutter.

The concept really came into its own with the invention of flexible roll film which was easier to hold in a curve with a radius that matches – or mirrors – the arc of the lens's rotation. This arrangement – pioneered by Kodak's Panoram in 1899 – allowed for shorter exposure times and, more importantly, consistent sharpness across the frame. However, a consistent exposure relied on the lens's rotation being at a uniform speed – if it varied even fractionally, the result would be visible banding. It was a challenge taken up by a small camera company called Panon Camera Shoko, established in Tokyo in 1952. Initially it built a 120 rollfilm swing-lens camera – called the Panon – but then set about developing a more compact 35mm model for which it adopted the name Widelux. The first Widelux model – the F1 – was introduced in 1958 and had a 26mm f/2.8 lens which rotated to give a 140 degrees angle-of-view – essentially the same as our view – and a frame size of 24x59 mm. This meant 21 frames from a 36-exposure length. The 'shutter' speeds – created by varying the speed of rotation – were 1/5, 1/50 and 1/200 second. The aperture could be set from f/2.8 to f/11, but for obvious reasons, there was no built-in metering and the focus was fixed. Subsequent models embodied various improvements – mainly to the precision of the lens gearing – but from the F6B onward, the shutter speed settings became 1/15, 1/125 and 1/250 second. Production ended with the F8 which was introduced in 1988 and finished in the mid-1990s after the company suffered a devastating fire which destroyed most of its tooling and all of its records. Enough F8s were already built to enables sales to continue for a while, but Panon Camera Shoko finally closed down in 2005.

▲ Widelux F7 (1979). This particular example has great provenance having been the first panorama camera owned by landscape photographer Mark Lang who pioneering using the wide format in Australian landscape photography.

It's estimated around 20,000 units were built in total, but the small size and comparatively easy operation – which made hand held shooting feasible – meant the Widelux 35mm cameras became popular with panorama photography enthusiasts. But despite being solidly built externally, the camera's spring-loaded gear train – i.e. clockwork – that rotated the lens turret and relied on tiny flyweights to maintain a steady speed became less reliable over time. Banding was a constant issue for many users – although problematic with all swing-lens types – and many serious photographers eventually turned to wide view fixed lens cameras such as the Linhof Technorama or Fujifilm G617… modern optical designs having solved all the problems that plagued the earliest examples.

Nevertheless, the Widelux F series still has plenty of fans among them the actor Jeff Bridges – along with his photographer wife Susan – who have put a lot of effort and money into reviving the last-of-the-line F8 as the WideluxX F10. Hand-built in Germany, it's a near-exact reproduction both physically and in terms of the key specifications, but, crucially, with upgrades to the problematic lens gear train which has been redesigned and strengthened. Prototypes have been tested and pre-orders are being taken – the Australian price tag is currently around $6100 – so an icon is reborn.



▲ Photo by Ben Faulkner, Bentleys Camera House, Robina, Queensland. Winner of the Action category.



▲ Photo by Jamee Van Den Brink, Toowoomba Camera House, Queensland. Second in the Action category.

CAMERA HOUSE PHOTOGRAPHY COMPETITION 2026

Camera House employees don't just sell photo gear, many of them are dedicated photo enthusiasts and they're encouraged by regular in-house competitions and the annual Camera House Photography Competition.



The Camera House group of photo retailers currently has over 50 stores located all around Australia. Established in 1983 by a group of independent photographic retailers, Camera House has grown into the largest speciality photographic and video retail chain in Australia. Most of these stores are individually owned and operated, and have shares in the brand that is Camera House nationally.

The Camera House stores like to hire sales staff who are keen photography enthusiasts which means they have lots of background knowledge and also a better understanding of the products that they're selling… because they actually use them.

The Camera House Photography Competition is held annually and designed to showcase the photographic talents of Camera House employees from around the country.

This year the competition comprised nine categories – Action, Aerial, Animal, Architecture, Astrophotography, Landscape, People, Street and Macro.

To find the Camera House store nearest to you visit **www.camerahouse.com.au**

◀ Photo by Michael Offe, Bentleys Camera House, Robina, Queensland. Third in the Action category.



▲ Photo by Andrew Murrell, John Ralph's Camera House, Erina, NSW. Winner of the Astrophotographycategory.



▲ Photo by Simon Gregory, Stallard's Camera House, Hobart, NSW. Second in the Astrophotography category.



▲ Photo by Joel Frankham, The New Camera House, Lismore, NSW. Third in the Astrophotography category.



▲ Photo by Andrew Murrell, John Ralph's Camera House, Erina, NSW. Second in the Landscape category.

▼ Photo by Lisa Frost, Bentleys Camera House, Broadbeach, Queensland. Third in the Landscape category.



▲ Photo by Jamee Van Den Brink, Toowoomba Camera House, Queensland. Winner of the Landscape category.

▼ Photo by Kylie Williams, Bunbury Camera House, Western Australia. Second in the Macro category.







▲ Photo by Michelle Kennedy, John Ralph's Camera House, Erina, NSW. Winner of the Macro category.



▲ Photo by Jamee Van Den Brink, Toowoomba Camera House, Queensland. Third in the Macro category.



▲ Photo by Jared van Deventer, Bentleys Camera House, Robina, Queensland. Second in the Street Photography category.



▲ Photo by Dani Webb, Croydon Camera House, Victoria. First in the Street Photography category.

▼ Photo by Jong Kim, Launceston Camera House, Tasmania. Third in the Street Photography category.



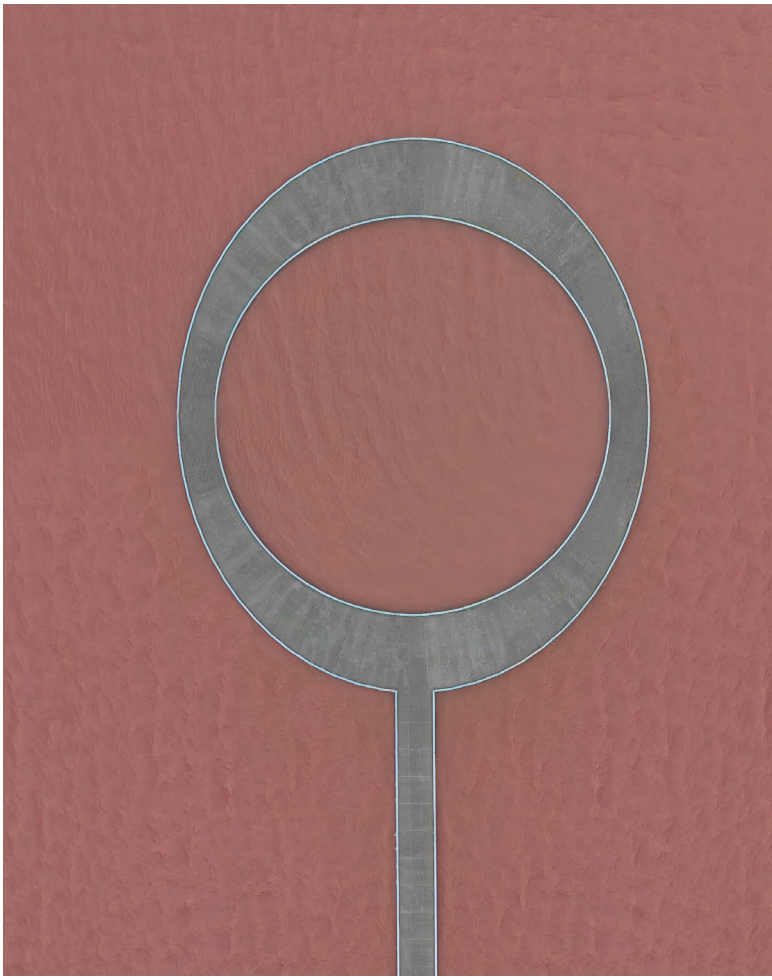


▲ Photo by Christian Byrt, Bunbury Camera House, Western Australia. First in the Aerial Photography category.



▲ Photo by Simon Gregory, Hobart Camera House, Tasmania. Third in the Aerial Photography category.





▲ Photo by Sue Wilson, Sale Camera House, Victoria. Second in the Aerial Photography category.

◀ Photo by Michelle Kennedy, John Ralph's Camera House, Erina, NSW. Winner of the Animal category.



▲ Photo by Joel Frankham, The New Camera House, Lismore, NSW. Second in the Animal category.



▲ Photo by Brandon Durham, Launceston Camera House, Tasmania. Third in the Animal category.

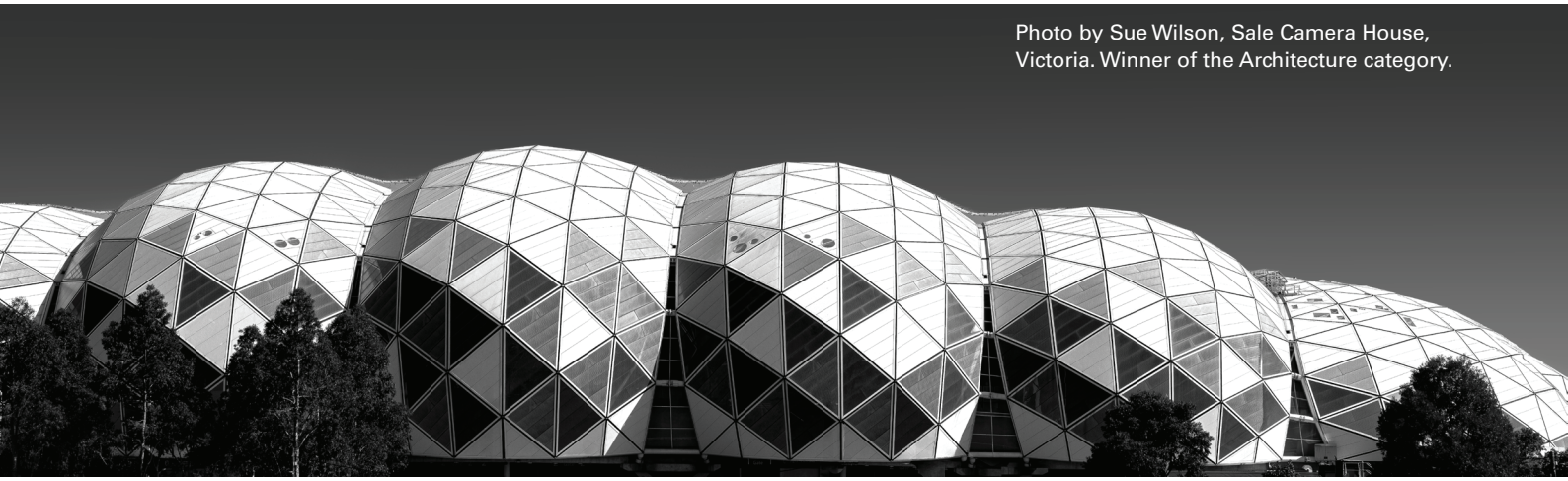
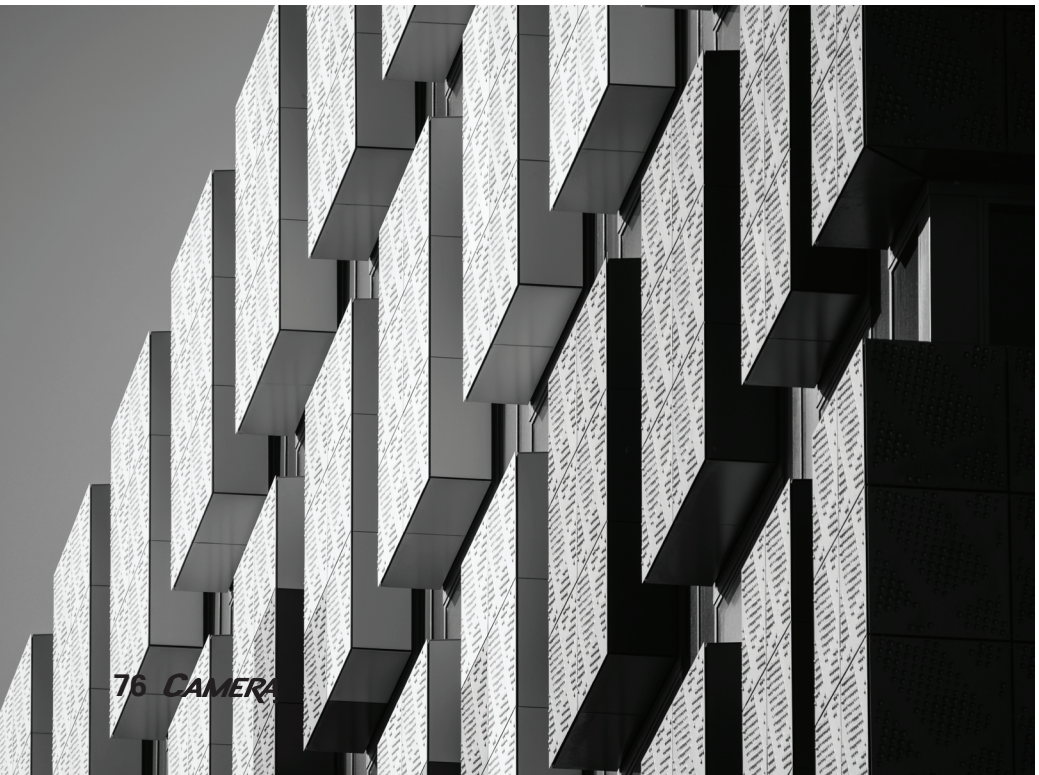


Photo by Sue Wilson, Sale Camera House, Victoria. Winner of the Architecture category.

▼ Photo by Jong Kim, Launceston Camera House, Tasmania. Third in the Architecture category.



▼ Photo by Jonathan Ormandy, Launceston Camera House, Tasmania. Second in the Architecture category.





▲ Photo by Matthew Kidd, Bendigo Camera House, Victoria. Winner of the People category.



▲ Photo by Jared van Deventer, Bentleys Camera House, Robina, Queensland. Third in the People category.



▲ Photo by Shaun Watson, Garricks Camera House, Bundaberg, Queensland. Second in the People category.



2026 SIGMA SHOWCASE

Sigma lenses is the sponsor for our Showcase competition, made possible through the generosity of the Australian distributor, C.R. Kennedy & Company Pty Ltd. The grand prize for the 2026 Sigma Showcase is a Sigma lens to the value of $1000 and the winner can pick the model and the mount that they'd like.

Additionally, the winner of each round receives a complimentary six-issue subscription to *Australian Camera* magazine. If you already subscribe, your prize subscription will commence upon the expiry of your existing paid one. You can enter the Sigma Showcase as many times as you like during the year, submitting up to four photographs each time. The entries received after the 2025 competition's closing date of 31 December 2026 will be automatically entered in the 2027 Sigma Showcase which kicks off on 1 January 2027.

Note that it is not a requirement that entries to the Sigma Showcase be taken with a Sigma camera or lens. Read the accompanying rules carefully and get snapping.

ENTRY GUIDELINES

You can enter the Sigma Showcase by emailing your entries as attachments to camera@futurenet.com. Please note that we are no longer accepting physical entries.

The requirements for submitting digital files are as follows.

300 dpi resolution, and at a file size which enables a reproduction of up to 20x15 cm. Please avoid submitting overly large file sizes, especially when emailing the images. Up to 2.0 MB in file size is more than sufficient.

- Digital retouching and manipulation is permitted, but the judges will continue to reward good in-camera techniques.
- Full details of the camera, lens and any retouching must be supplied with the image. Images can be titled if you wish, but this isn't essential.
- Up to four images may be permitted per entry.

What We Need To Know: We'd like to know a bit about your entries, so supplying the details below will help the judges better assess your images. Please feel free to add any other information that you feel is important.

- Title (optional)
- Camera
- Lens
- Exposure - shutter speed, aperture and ISO
- Location and/or situation
- Post camera processing (if any)
- Additional Comments
- Your mailing address



2026 SIGMA SHOWCASE – FOURTH ROUND WINNERS

WINNER

A fabulous composition by **Chris Carter** using the railway as a classic leading line with the reward for the viewer being the perfectly captured Milky Way. Chris used a Nikon Zf with a Sigma 16mm f/1.4 prime lens (equivalent to 24mm with the Zf switched to the DX format). The exposure was 25 seconds at f/1.8 and ISO 2500. The white balance was set to the tungsten lighting preset… and the railway track was illuminated by a burning tissue!

HIGHLY COMMENDED

Paul Watson was in the right place at the right time to capture this rainbow over a field of yellow rapeseed (in fact, it was nearly a double rainbow), composing so only part of the arc is the frame – along with the lone eucalypt – makes for a very dramatic image. Paul used a Fujifilm X-T2 with a Fujinon XF 18-135mm f/3.5-5.6 R LM OIS WR zoom. The exposure was 1/25 second at f/18.



Tell us how you did it! When you enter the Sigma Showcase, remember to explain any tips and techniques you used to achieve the result. Also, let us know the type of camera and lens. Enter by email (see next page).

1. Title _____ Camera _____ Lens _____

2. Title _____ Camera _____ Lens _____

3. Title _____ Camera _____ Lens _____

4. Title _____ Camera _____ Lens _____

Name _____ Telephone _____

Address _____ State _____ Postcode _____

Email to: camera@futurenet.com

DIGITAL SLR CAMERAS BUYER'S CHECK LIST

CameraHouse

THIS CHECKLIST is designed to allow direct comparisons between different camera models, listed here in price order within each brand. The published prices are mostly supplied by the distributors as recommended retail prices (RRPs). However, some distributors no longer supply RRPs to the media, so it has become necessary to determine an 'estimated street price' derived from the range of prices for a model published by retailers. Where this has been necessary, the letter 'E' appears at the start of the entry.

A dot appearing in a column indicates that the feature is available on the camera model listed. Where a specification or product detail hasn't yet been published or confirmed, the letters TBA (to be announced) or TBC (to be confirmed) are used. If a feature is irrelevant to a particular model – such as mirror lock-up for compact system cameras – then n/a (not applicable) is used. Every effort is made to ensure accuracy; please send any corrections to **camera@futurenet.com.**

				Sensor Size			Sensor Type			File Formats			Memory Cards									Exposure Modes						Features													
	Model	Price (Body Only Unless Noted With Asterisk *)	Megapixels (Effective)	Full-Frame	APS/DX	Four-Thirds	CCD	CMOS	Foveon	RAW	TIFF	JPEG	CF/XQD/Cfast	Memory Stick	SD/SDHC/SDXC	Continuous Shooting Speed (fps)	Buffer Length (U=Unlimited) Max. Resolution	Autofocus Points	Metering Pixels/Zones	Program	Subject Programs	Aperture Priority	Shutter Priority	Manual	Shutter Speeds	Built-in Flash	Anti-Dust	FHD Video	4K Video	Anti-Shake In Body	Wi-Fi	Live View	Weather Proofing	Monitor Size (cm)	Weight (Body Only)	Review Issue
	Canon EOS 1500D*	$849	24.1		•			•		•		•			•	3	150	9	63	•	•	•	•	•	30-1/4000	•		•			•	•		7.62	475	Jul/Aug '18
	Canon EOS 5D Mark IV	$3,699	30.4	•				•		•		•	•		•	7	U	61	150K	•		•	•	•	30-1/8000		•	•	•		•	•	•	8.1	890	Jan/Feb '17
	Nikon D7500	$1,599	20.9		•			•		•		•			•	8	100	51	180K	•	•	•	•	•	30-1/8000	•	•	•	•		•	•	•	8.1	640	
	Nikon D780	$3,599	24.5	•				•		•		•			•	7	100	51	180k	•		•	•	•	900-1/8000		•	•	•		•	•	•	8.1	755	Jul/Aug '20
	Nikon D850	$4,599	45.7	•				•		•	•	•	•		•	7	200	153	180K	•		•	•	•	30-1/8000		•	•	•		•	•	•	8.1	915	Nov/Dec '17
	Pentax K-3 Mark III	$2,995	25.73		•			•		•		•			•	12	37	101	307K	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8.1	735	Issue 423
	Pentax K-1 Mark II	$3,399	36.4	•				•		•		•			•	4.4	70	33	86K	•		•	•	•	30-1/8000		•	•		•	•	•	•	8.1	925	
DIGITAL NON-TTL OVF/EVF INTERCHANGEABLE LENS CAMERAS																																							
	Leica M EV1	$14,200	60.3	•				•		•		•			•	4.5	100	MF	TBC			•		•	60 minutes - 1/16,000						•	•		7.5	413	Issue 435
	Leica M11	$16,500	60.3	•				•		•		•			•	4.5	100	MF/RF	TBC			•		•	60 minutes - 1/16,000						•	•		7.5	455	Mar/Apr '22
	Leica M11-P	$16,500	60.3	•				•		•		•			•	4.5	100	MF/RF	TBC			•		•	60 minutes - 1/16,000						•	•		7.5	455	Issue 425
	Leica M11-D	$17,300	60.3	•				•		•		•			•	4.5	100	MF/RF	TBC			•		•	60 minutes - 1/16,000						•				457	
	Leica M11 Monochrom	$17,500	60.3	•				•		•		•			•	4.5	100	MF/RF	TBC			•		•	60 minutes - 1/16,000						•	•		7.5	461	
MIRRORLESS CAMERAS																																							
	Canon EOS R100*	$1,099	24.1		•		•		•		•		•		•	6.5	97	3975	384	•	•	•	•	•	30-1/4000	•		•	•		•	•		7.5	309	
	Canon EOS R50*	$1,399	24.2		•		•		•		•		•		•	15	28	4503	384	•	•	•	•	•	30-1/8000	•		•	•		•	•		7.5	328	Issue 423
	Canon EOS R50 V	$1,169	24.2		•		•		•		•		•		•	15	28	4503	384	•	•	•	•	•	30-1/8000			•	•		•			7.5	323	
	Canon EOS R10*	$1,649	24.2		•		•		•		•		•		•	23	123	4503	384	•	•	•	•	•	30-1/4000	•	•	•	•		•	•		7.62	429	Issue 419
	Canon EOS RP	$1,819	26	•			•		•		•		•		•	5	U	4779	384	•	•	•	•	•	30-1/4000		•	•	•		•	•	•	7.62	440	May/June '19
	Canon EOS R8	$2,199	24.2	•			•		•		•		•		•	40	1000+	4897	384	•	•	•	•	•	30-1/16,000		•	•	•		•	•	•	7.5	414	Issue 423
	Canon EOS R7	$2,299	32.5		•		•		•		•		•		•	30	184	5915	384	•	•	•	•	•	30-1/8000		•	•	•	•	•	•	•	7.62	612	Jul/Aug '22
	Canon EOS R8 Mark II	$2,529	24.2	•			•		•		•		•		•	40	190	4368	384	•	•	•	•	•	30-1/16000		•	•	•	•	•	•	•	7.62	499	
	Canon EOS R6 Mark II	$3,299	24.2	•			•		•		•		•		•	40	190	4897	384	•	•	•	•	•	30-1/16,000		•	•	•	•	•	•	•	7.62	588	Issue 421
	Canon EOS R6 V	$3,599	32.5	•			•		•		•	•		•	40	330	6097	384	•	•	•	•	•	30-1/16,000		•	•	•	•	•		•	7.62	598	Issue 438
	Canon EOS R6 Mark III	$4,299	32.5	•			•		•		•	•		•	40	330	6097	384	•	•	•	•	•	30-1/16,000		•	•	•	•	•	•	•	7.62	609	Issue 437
	Canon EOS R5	$4,799	45	•			•		•		•	•		•	20	350	5940	384	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8.1	650	Sept/Oct '20
	Canon EOS R5 Mark II	$6,699	45	•			•		•		•	•		•	30	760	5850	6144	•		•	•		30-1/32,000		•	•	•	•	•	•	•	8.1	588	Issue 428
	Canon EOS R3	$8,199	24.1	•			•		•		•	•		•	30	540	4779	384	•		•	•	•	30-1/64,000		•	•	•	•	•	•	•	8.1	915	Jan/Feb '22
	Canon EOS R1	$10,999	24.2	•			•		•		•	•			40	500	4368	6144	•		•	•	•	30-1/64,000		•	•	•	•	•	•	•	8.1	920	
	Fujifilm X-T30 Mark III	$1,679	26.1		•		•		•		•		•		•	20	127	425	256	•		•	•	•	900-1/32,000	•	•	•	•	•	•	•		7.62	329	Issue 436
	Fujifilm X-M5	$1,449	26.1		•		•		•		•		•		•	20	127	425	256	•		•	•	•	900-1/32,000		•	•	•		•			7.62	307	Issue 430
	Fujifilm X-S20	$2,299	26.1		•		•		•		•		•		•	20	256	425	256	•		•	•	•	900-1/32,000	•	•	•	•	•	•	•		7.62	410	Issue 424
	Fujifilm X-T50	$2,399	40.2		•		•		•		•		•		•	20	168	425	256	•		•	•	•	900-1/180,000	•	•	•	•	•	•	•		7.62	389	Issue 428
	Fujifilm X-E5	$2,699	40.2		•		•		•	•	•		•		•	20	168	425	256	•		•	•	•	900-1/180,000		•	•	•	•	•	•		7.62	396	Issue 433
	Fujifilm X-T5	$2,899	40.2		•		•		•	•	•		•		•	15	119	425	256	•		•	•	•	900-1/180,000		•	•	•	•	•	•	•	7.62	476	Issue 422
	Fujifilm X-H2	$3,399	40.2		•		•		•	•	•	•	•		•	13	1000+	425	256	•		•	•	•	900-1/180,000		•	•	•	•	•	•	•	7.62	579	Issue 420
	Fujifilm X-H2S	$3,999	26.1		•		•		•	•	•	•	•		•	40	1000+	425	256	•		•	•	•	900-1/32,000		•	•	•	•	•	•	•	7.62	579	Jul/Aug '22
	Leica SL3-S	$9,300	24.6	•			•		•		•	•		•	30	175	779	TBC	•		•	•	•	1800-1/16,000		•	•	•	•	•	•	•	8.1	768	Issue 433
	Leica SL3-P	$10,500	44.3	•			•		•		•	•		•	40	80	819	TBC	•		•	•	•	1800-1/16,000		•	•	•	•	•	•	•	8.1	768	
	Leica SL3		60.3	•			•		•		•	•		•	15	70	315	TBC	•		•	•	•	3600-		•	•	•	•	•	•	•	8.1	769	Issue 429

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				Sensor Size			Sensor Type		File Formats			Memory Cards						Exposure Modes						Features													
Model * single lens kit ** twin lens kit	Price (Body Only Unless Noted With Asterisk*)	Megapixels (Effective)	Full-Frame	APS/DX	Four Thirds	CMOS	Foveon	RAW	TIFF	JPEG	Compact Flash	Memory Stick	SD/SDHC/SDXC * = microSD	Continuous Shooting Speed (fps)	Buffer Length (U=Unlimited) Max. Resolution	Autofocus Points	Metering Zones	Program	Subject Programs	Aperture Priority	Shutter Priority	Manual	Shutter Speeds	Built-In Flash	Anti-Dust	FHD Video	4K Video	Anti-Shake In Body	Wi-Fi	Built-In Viewfinder	Weather Proofing	Monitor Size (cm)	Weight (Body Only)	Review Issue
Leica SL3 Reporter		60.3	•			•		•		•	•		•	15	70	315	TBC	•		•	•	•	3600-		•	•	•	•	•	•	•	8.1	769	
Nikon Z30*	$1,549	20.9		•		•		•		•			•	11	71	209	TBC	•		•	•	•	30-1/4000	•		•	•		•			7.5	350	
Nikon Z50II	$1,599	20.9		•		•		•		•			•	30	200	231	TBC	•	•	•	•	•	900-1/4000	•		•	•		•	•		8.1	495	
Nikon Z5	$1,999	24.3	•			•		•		•			•	4.5	100	273	TBC	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8.1	590	Jan/Feb '21
Nikon Zfc*	$2,049	20.9		•		•		•		•			•	11	71	209	TBC	•	•	•	•	•	30-1/4000	•		•	•		•	•		7.5	390	Nov/Dec '21
Nikon Z5IIC	$2,399	24.5	•			•		•		•			•	30	120	273	TBC	•	•	•	•	•	900-1/8000		•	•	•	•	•			8.1	620	
Nikon Z5II	$2,699	24.5	•			•		•		•			•	30	120	273	TBC	•		•	•	•	900-1/8000		•	•	•	•	•	•	•	8.1	620	Issue 431
Nikon ZR	$3,499	24.5	•			•		•		•	•		•	60	1000+	273	TBC	•		•	•	•	900-1/16000		•	•	•	•	•		•	10	540	Issue 438
Nikon Z6II	$3,699	24.5	•			•		•	•	•	•		•	14	200	273	TBC	•		•	•	•	900-1/8000		•	•	•	•	•	•	•	8.1	615	May/June '21
Nikon Zf	$3,499	24.5	•			•		•	•	•			•	30	120	273	TBC	•		•	•	•	900-1/8000		•	•	•	•	•	•	•	8.1	630	Issue 425
Nikon Z6III	$4,499	24.5	•			•		•		•	•		•	60	1000+	273	TBC	•		•	•	•	900-1/16,000		•	•	•	•	•	•	•	8.1	660	Issue 429
Nikon Z7II	$5,549	45.7	•			•		•	•	•	•		•	10	200	493	TBC	•		•	•	•	900-1/8000		•	•	•	•	•	•	•	8.1	615	
Nikon Z8	$7,449	45.7	•			•		•	•	•	•		•	20	1000+	493	TBC	•		•	•	•	900-1/32,000		•	•	•	•	•	•	•	8.1	820	Issue 424
Nikon Z9	$9,899	45.7	•			•		•	•	•	•			30	1000+	493	TBC	•		•	•	•	900-1/32,000		•	•	•	•	•	•	•	8.1	1160	Jan/Feb '22
Olympus OM-D E-M10 IV	$949	20.3			•	•		•		•			•	15	49	121	324	•	•	•	•	•	60-1/16,000	•	•	•	•	•	•	•		7.62	335	Nov/Dec '20
OM System PEN	$1,499	20.4			•	•		•		•			•	30	48	121	324	•		•	•	•	60-1/32,000		•	•	•	•	•	•	•	7.62	344	Issue 439
OM System OM-3	$2,999	20.4			•	•		•		•			•	120	90	1053	324	•		•	•	•	60/1/32,000		•	•	•	•	•	•	•	7.62	413	Issue 430
OM System OM-3 ASTRO	$3,399	20.4			•	•		•		•			•	120	90	1053	324	•		•	•	•	60/1/32,000		•	•	•	•	•	•	•	7.62	413	Issue 430
OM System OM-1 Mark II	$3,499	20.4			•	•		•		•			•	120	219	1053	324	•		•	•	•	60-1/32,000		•	•	•	•	•	•	•	7.62	511	Issue 427
Panasonic Lumix G100D*	$1,299	20.3			•	•		•		•			•	10	480	49	1728	•	•	•	•	•	60-1/16,000	•	•	•	•	•	•	•		7.62	303	
Panasonic Lumix G97*	$1,599	20.3			•	•		•		•			•	9	300	49	1728	•	•	•	•	•	60-1/16,000	•	•	•	•	•	•	•	•	7.62	484	Nov/Dec '19
Panasonic Lumix GH5 II	$2,099	20.3			•	•		•		•			•	12	999	225	1728	•		•	•	•	60-1/16,000		•	•	•	•	•	•	•	7.5	647	Sept/Oct '21
Panasonic Lumix S9	$2,699	24.2	•			•		•		•			•	30	36	779	1728	•		•	•	•	60-1/8000		•	•	•	•	•			7.62	403	
Panasonic Lumix S5II	$3,199	24.2	•			•		•		•			•	30	300+	779	1728	•		•	•	•	60-1/8000		•	•	•	•	•	•	•	7.62	657	Issue 422
Panasonic Lumix G9 II	$3,299	25.2			•	•		•		•			•	75	225	779	1728	•		•	•	•	60-1/32,000		•	•	•	•	•	•	•	7.62	575	Issue 427
Panasonic Lumix S5IIX	$3,499	24.2	•			•		•		•			•	30	300+	779	1728	•		•	•	•	60-1/8000		•	•	•	•	•	•	•	7.62	657	
Panasonic Lumix GH7	$3,899	25.2			•	•		•		•	•		•	75	260	315	1728	•		•	•	•	60-1/32,000		•	•	•	•	•	•	•	7.5	721	
Panasonic Lumix S1 IIE	$4,199	24.1	•			•		•		•	•		•	30	300	779	1728	•		•	•	•	60-1/8000		•	•	•	•	•	•	•	7.62	712	
Panasonic Lumix S1 II	$5,299	24.1	•			•		•		•	•		•	70	300	779	1728	•		•	•	•	60-1/16,000		•	•	•	•	•	•	•	7.62	718	Issue 435
Panasonic Lumix S1R	$5,299	47.3	•			•		•		•	•		•	9	50	225	1728	•		•	•	•	60-1/8000		•	•	•	•	•	•	•	8.1	898	Sept/Oct '19
Panasonic Lumix S1R II	$5,499	44.3	•			•		•		•	•		•	40	80	779	1728	•		•	•	•	60-1/16,000		•	•	•	•	•	•	•	8.1	712	Issue 432
Panasonic Lumix S1H	$5,999	24.2	•			•		•		•			•	9	999	225	1728	•		•	•	•	60-1/8000		•	•	•	•	•	•	•	8.1	1052	Mar/Apr '20
Sigma BF	$3,995	24.2	•			•		•		•				8	1000	49	TBC	•		•	•	•	30-/25,600		•	•	•				•	8.1	388	Issue 431
Sigma fp L	$3,899	61.2	•			•		•		•			•	10	14	49	TBC	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8.1	375	
Sony Alpha ZV-E10	$849	24.2		•		•		•		•		•	•	11	99	425	1200	•	•	•	•	•	30-1/4000		•	•	•		•			7.5	343	
Sony Alpha 6400	$1,149	24.2		•		•		•		•		•	•	11	115	425	1200	•	•	•	•	•	30-1/4000	•	•	•	•	•	•	•	•	7.5	403	Sept/Oct '19
Sony Alpha ZV-E10 II	$1,499	26		•		•		•		•			•	11	1000+	759	1200	•	•	•	•	•	30-1/8000		•	•	•	•	•			7.5	292	
Sony Alpha 6700	$1,999	26		•		•		•		•			•	11	143	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	409	
Sony Alpha 7 III	$1,999	24.2	•			•		•		•		•	•	10	163	693	1200	•	•	•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	650	Sept/Oct '18
Sony Alpha ZV-E1	$2,699	12.1	•			•		•		•			•	10	1000+	759	1200	•	•	•	•	•	30-1/8000		•	•	•	•	•		•	7.5	400	
Sony Alpha 7C II	$2,499	33	•			•		•		•			•	10	88	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	429	
Sony Alpha 7 IV	$2,899	33	•			•		•		•	•		•	10	1000+	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	658	
Sony Alpha 7R IV	$3,799	61	•			•		•		•		•	•	10	68	567	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	665	Jan/Feb '20
Sony Alpha 7CR	$3,899	61	•			•		•		•			•	8	48	693	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	430	
Sony Alpha 7S III	$3,999	12.1	•			•		•		•	•		•	10	1000+	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	699	Mar/Apr '21
Sony Alpha 7R V	$4,499	61	•			•		•		•	•		•	10	1000+	693	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8	638	
Sony Alpha 7 V	$4,699	33	•			•		•		•	•		•	30	185	759	1200	•		•	•	•	30-1/16,000		•	•	•	•	•	•	•	8	610	
Sony Alpha 9 II	$5,790	24.2	•			•		•		•		•	•	20	361	693	1200	•		•	•	•	30-1/32,000		•	•	•	•	•	•	•	7.5	678	May/June '20
Sony Alpha 1	$6,499	50.1	•			•		•		•	•		•	30	165	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	7.5	725	
Sony Alpha 7R VI	$6,999	66.8	•			•		•		•	•		•	30	215	759	1200	•		•	•	•	30-1/8000		•	•	•	•	•	•	•	8	622	
Sony Alpha 9 III	$7,999	24.6	•			•		•		•	•		•	120	192	759	1200	•		•	•	•	30-1/80,000		•	•	•	•	•	•	•	8	617	
Sony Alpha 1 II	$8,999	50.1	•			•		•		•	•		•	30	400	759	1200	•		•	•	•	30-1/32,000		•	•	•	•	•	•	•	8	658	

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