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Aussies Win Big In The 2026 World Food Photography Awards



Panasonic's Lumix S1 II Hybrid Mirrorless Is Good At Everything

Top Model **Jimmy Young-Whitforde**
On Working With Some Of
Fashion Photography's Greats



Record Superior Soundtracks
With Audio-Technica's New
ATV-SG1 Video Microphone

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Sony FE 100-400mm f/4.5 GM OSS | Panasonic Lumix S 40mm f/2.0
Nikkor Z 120-300mm f/2.8 TC VR S... and more

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and dress, \$7,849.
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POA. Jimmy wears
suspenders, \$85,
from The Vintage
Clothing Shop.



Image by Kara Baird © 2026

16 Competition – World Food Photography Awards 2026

Australian photographers had their best-ever success in this year's competition achieving a record total of 12 finalist images which subsequently produced an impressive four category winners – the second highest number from a single country. And, what's more, the overall standard of entries – nearly 9000 from all over the world – was higher than ever.

28 On Trial Panasonic Lumix S1 II

With its trio of next-generation Lumix S1 full frame hybrid flagship mirrorless models, Panasonic gives you the choice of high resolution, high speed or better affordability. However, if you want a truly competent all-rounder the S1 II is your best bet... even if you may not always need a top shooting speed of 70 fps!

32 Profile Jimmy Young-Whitforde

For this issue's profile, we've moved in front of the camera to talk to top Australian male model Jimmy Young-Whitforde about his career so far and his experiences working with some of the world's leading fashion photographers.

48 On Trial Audio-Technica ATV-SG1

Japanese professional audio company Audio-Technica is applying all its expertise to a new range of compact on-camera microphones for video-makers. The ATV-SG1 employs a number of clever features to enhance its useability, flexibility and performance... and it's very competitively priced too.



This issue's main cover photograph is by German photographer Lara Zeh who is the RPS Student Food Photographer Of The Year in the World Food Photography Awards 2026 sponsored by Broccolini®. To see more tasty winners from this year's running of the world's biggest competition dedicated to all aspects of food from production to consumption turn to page 16.

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The compact camera revival moves up a gear with the arrival of **Panasonic's** higher-end Lumix L10 which has a Micro Four Thirds sensor, an EVF and a whole lot of 'big camera' features... it's going to be a winner. **Sony** has unveiled its sixth-generation A7R high-res mirrorless body and it's got 66.8 megapixels under the bonnet, but amazingly, it can shoot at up to 30 fps which is no mean feat. Along with the A7R VI comes a new version of the FE 100-400mm telezoom, now with a constant maximum aperture of f/4.5 and an all-new optical design. **Canon** hones its full frame hybrid offerings with a third option aimed primarily for video content creators. Depending on what's your main application, you can now choose between the new EOS R6 V, the EOS R6 Mark III (on test in this issue) or the Cinema EOS C50. And there's the clever dual-action RF 20-50mm f/4.0L lens from Canon which has both powered or manual zooming control. Talking of interesting lenses, **Nikon** has revealed it's working on a Z mount 120-300mm telephoto zoom with a constant maximum aperture of f/2.8 and a built-in 1.4x teleconverter. It's going to be a beauty!

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FIRST FRAME
ISSUE 250, VOLUME 82 NO.2

AUSTRALIAN ProPhoto & video
Creating Your Professional Image

STAYING IN FASHION

Preparing Bruce Usher's profile of Australian male model Jimmy Young-Whitford for publication in this issue, I was struck by how fashion photography – and fashion photographers – have seemingly weathered all the storms that have battered professional photography over the last couple of decades. For starters, there's still a genre called 'fashion photography' – it's not really been diluted in any way – and it's as still as strong as ever. Many fashion photographers now shoot digital, but quite a number still shoot film... some even still using medium format rollfilm. Talk about creating filmic looks? Fashion photographers have always done it with film – this is where cross processing came from originally – and still are when shooting digital.

Fashion photographers still shoot on location – often 'exotic' places overseas – with a crew of stylists, hair and make-up artists and assistants of one type or another. As far as I can see, they still mostly call the shots creatively – while working within the brief – just like in the good old days for everybody. As long as the clothing and accessories are featured as briefed, it's up to the photographer to create the story, the allure and the magic. And, what's more, it looks like a lot of this work is still mostly camera-based... which makes sense given it's what's in front of the camera that is the essence of fashion photography. The location, lighting, models, styling and props are all woven together with composition, posing, exposure and depth-of-field while colour saturation or tonality can add a creative flourish. Notably, it still all has to look real – especially if accurate colour reproduction is required – so it seems to me that there's still a purity to fashion photography – the camera work and the lighting – that's mostly been smothered by far too much digital jiggy-pokery in other genres.

Of course, working with people demands a fair degree of reality and, by definition, so does fashion as it's essentially about the accurate depictions of apparel, shoes and accessories which still needs a human behind a camera to achieve... and a creatively clever human at that. You can say the same thing about portraiture and wedding photography, but the difference with fashion is that it's still a buoyant industry financially. Everybody has to wear clothes and plenty of people want to

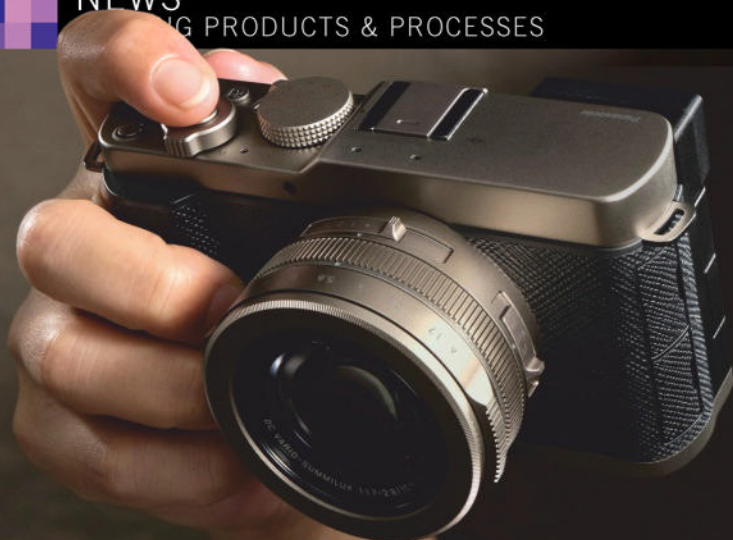
stay up to date with seasonal collections, new styles and labels that suddenly become... er... fashionable. So much so that there's now the issue of textile waste, but buying new clothes is big business in the developed world with the label-driven fashion industry at its premium end. The leading fashion magazine titles – such as *Vogue* (in its many editions around the world), *Harper's Bazaar*, *Marie Claire*, *ELLE* and *GQ* – still produce fabulously glossy issues that run to hundreds of pages and are packed with advertising for the high-end designer labels, beauty products and luxury goods. Ink-on-paper – and very high production values – definitely help sell the dream here, but other 'traditional' advertising media such as billboards also remain very much in play for the fashion industry... so photography continues to be at its core, key to the creation of imagery that subsequently drives everything post-camera. It's worth noting too, that fashion photographers are considered as much as part of the whole creative process as the designers, stylists and models, working collaboratively, but also expected to make significant contributions in terms of creating 'the look'. It's a role that's been somehow diminished elsewhere either because of technology, economics or, perhaps, a lack of the single-mindedness which seems to be an attribute of most successful fashion photographers. That, and a creative inventiveness that is continually adapting and changing.

To quote the Italian-American fashion photographer Mario Sorrenti, "You should be constantly asking yourself: What do I want to say next? What do I believe in? Who am I? What is my image? To be a successful photographer, you have to have a unique point of view otherwise you'll get lost in the mix."

And from UK fashion photographer Tim Walker, "Fashion photography seemed the only photography that allows you to express fantasy, romance, dreams and escapism. You think of photography as being a tool to tell the truth, but in fashion photography there is a different kind of honesty."

Whatever the magic ingredient, it just works.

Paul Burrows, Editor



Panasonic Launches High-End Compact With M43 Sensor

As the Lumix brand celebrates 25 years – where did all that time go? – Panasonic has unveiled the fixed-lens compact camera that many photographers have been dreaming about. If you've been disappointed that the new Lumix TZ300 doesn't have an EVF (see separate news piece), the Lumix L10 ticks this box and a whole lot of other important ones. It's essentially a successor to the much-loved LX100 II and, yes, you have seen this model designation before... on a Four Thirds format DSLR – full name the DMC-L10 – which was launched in late 2007, not long before Panasonic kicked the reflex mirror into touch with the world's first mirrorless ILC.

The all-new L10 – full name the DC-L10 – still uses the same format sensor, specifically the 20.4 megapixels (effective) BSI-type CMOS device that's also used in the Lumix GH7 and, here, mated with the same processor that drives the S1 II. Up front, there's a Leica DC Vario Summilux 10.9-34mm f/1.7-2.8 zoom which is equivalent to 24-75mm and employs 11 elements in six groups (with a total of eight aspherical surfaces). As the sensor is larger than the lens's imaging circle, the angle-of-view remains the same with the 4:3, 3:2 and 16:9 aspect ratios (but not at the 1:1 setting which involves a crop). The lens focuses down to just 3.0 centimetres at the 24mm end and 30 centimetres at 75mm. Notably, compared to the previous LX series models, the autofocus is now Panasonic's 'Phase Hybrid AF' system and uses phase detection measurements at a total of 779 points along with DFD (Depth-From-Defocus) contrast detection when needed. Additionally, there's AI-based subject recognition with the same selection

of modes as the S1 II; namely humans (eyes, faces and bodies), animals (dogs, cats and birds), cars, motorcycles and bicycles, aircraft, and trains plus Urban Sports which employs pose recognition for activities such as skateboarding, breaking dancing or BMX bikes.

Continuous shooting is at up to 30 fps with the camera's sensor-based shutter and up to 11 fps with its leaf shutter. Pre-capture buffering is available at 10, 20 or 30 fps when using the sensor shutter. The sensor shutter has a speed range of 60-1/32,000 second while the leaf shutter runs from 60-1/2000 second. Stills can be captured as JPEGs, 10-bit HEIFs or 14-bit RAW files. Data is stored on an SD memory card and the L10 supports UHS-II and Video Speed Class 90 devices.

Three new 'Photo Style' profiles are introduced with the L10, namely L.Classic, L.Classic Gold and L.Classic Neo which create various vintage film effects. Additionally, there's also the Leica Monochrome setting as per the latest G and S series mirrorless bodies and which pumps up the contrast with brighter highlights and deeper blacks. The camera also has Panasonic's Magic LUT feature which enable a look-up table (i.e. a picture profile) to be created directly from an image using AI-based colour analysis via the Lumix Lab app. It also supports downloadable custom-made 'Real Time LUTs' for both stills and video, and the camera has a dedicated LUT button for quicker switching between looks. Incidentally, Lumix Lab Version 3.0 now allows for the editing of RAW files.

The headline video spec is 5.6K 'open gate' recording at 24/25/30 fps with 10-bit 4:2:0 colour using the H.265 codec. There's

4K DCI and UHD at up to 100/120 fps and Full HD at up to 200/240 fps, all with 10-bit colour (all 4K footage is oversampled from 5.6K). The H.265 coding is with LongGOP compression, but All-Intra is available with H.264 with 10-bit 4:2:2 colour which pushes the bit rate up to 600 Mbps. In addition to the MOV and MP4 formats there's an MP4 Lite option to give smaller file sizes for social media applications. V-Log recording is also available.

The L10's styling is very similar to that of the LX100 II so there's a classic rangefinder camera look enhanced by the leather-look inserts. The construction comprises a diecast magnesium alloy chassis with aluminium top and bottom covers in either black or silver anodized finishes. The weight is a shade over 500 grams all-up so this camera has a substantial, solid feel. There isn't a built-in flash, but there is a Hotshoe so you can fit as much flash power as you want. The EVF is an OLED panel with a resolution of 2.36 mega dots and a magnification of 0.74x (35mm equivalent). The 7.62 cm touch screen monitor is fully-articulated – Panasonic calls it "free-angle" – and has a resolution of 1.84 mega dots. Power comes from the higher-capacity BLK-22 battery that's used in the latest GH series bodies and is good for around 420 shots using the monitor screen or 410 with the EVF. Wireless connectivity is via WiFi (either the 2.4 GHz or 5.0 GHz band) and Bluetooth LE 5.0, but the L10 can also be connected to a smartphone running Lumix Lab via its USB C port which will often be quicker and more reliable.

If you want something a bit more special, there's a special edition Titanium Gold version of the L10 – which will only be available directly from Panasonic Australia – with gold-coloured titanium top and bottom covers. There are few cosmetic changes – notably the 'Lumix' branding moves from the front to the back – plus the camera comes with some matching accessories, including a lens cap and a camera strap.

The Panasonic Lumix L10 is priced at \$2599 in the standard black and silver finishes and are available now. The Titanium Gold special edition is priced at \$2999 and will be available in July. For the first time, Panasonic Australia is applying its extended five-year warranty (two-year standard warranty plus an additional three years) on a Lumix compact camera. To qualify, the L10 must be sold by an authorised Panasonic Australia reseller.

For more information visit
www.panasonic.com.au



New Sony G Master 100-400mm Telezoom Has Constant Maximum Aperture

When Sony upgrades an FE mount lens, it doesn't do anything by halves. So, the replacement for the FE 100-400mm f/4.5-5.6 GM OSS telezoom not only has a completely new optical design, but it's a constant-aperture f/4.5 lens and the zooming is performed internally so there's no change in the physical length or, as a result, the handling balance. The new FE 100-400mm f/4.5 GM OSS gains some weight thanks to its design – now tipping the scales at 1840 grams – and there's a weightier price tag too, but usability is significantly enhanced and so is the optical performance. Additionally, the autofocus speed is increased by a factor of three compared to the previous model.

The optical construction now comprises 28 elements in 20 groups of which seven are special types, including an all-new 'ED XA' element. This stands for 'Extra-low Dispersion eXtreme Aspherical' so it's an advanced piece of optical engineering. There's also an

'XA' element (eXtreme Aspherical), two 'Super ED' types (Super Extra-Low Dispersion) and three 'ED' glass types. Collectively, these special elements correct for distortion and for multiple aberrations including chromatic and spherical to enhance sharpness across the frame at any focal length. Sony's 'Nano AR Coating II' antireflection multi-coating is employed to reduce ghosting and flare, and an 11-blade diaphragm gives smoother, more rounded out-of-focus effects. The new telezoom also supports in-camera correction of focus 'breathing' which automatically adjusts for small changes in the image size as the lens is focused.

Autofocusing – which is also performed internally via a 'floating' focus arrangement – is performed via a dedicated quartet of Sony's 'XD' (eXtreme Dynamic) linear motors which Sony says are fast enough to keep up with the 120fps continuous shooting speed of the A9 III. The minimum focusing distance is 64 centimetres at 100mm and 1.5 metres

at 400mm which maintains a maximum magnification of 1:4 throughout (i.e. one quarter life size).

The zoom's external construction employs magnesium alloy lens tubes with sealing against dust and moisture. There's also a fluorine coating on the front element to help repel water and grease while also assisting with easier cleaning. At the other end, there's a rear drop-in holder which takes filters with a 40.5 millimetres screw thread diameter (but 95 millimetres filters can also be fitted at the front).

On barrel controls include four focus hold buttons (which can be assigned to many other functions from the camera), a focus limiter switch and a selector for the optical image stabilisation's three modes – normal, horizontal panning, and both horizontal and vertical panning. The zooming collar's tensioning can be set between Tight and Smooth, while the manual focus ring also serves as a full-time override for the focusing (Sony calls it 'Direct Manual Focus'). There's also a third 'Function Ring' which can be set to one of three operations with the default being powered manual focusing. The alternatives are switching between the full frame and 'APS-C' formats (or Super 35 for video), or focus point presetting for instant recall. The zoom's tripod-mount collar can be set at 90-degree detents, but click-free (and hence silent) rotation is also available. It can also serve as a useful carry handle thanks to a padded top section on the mounting foot itself.

The new FE 100-400mm f/4.5 is compatible with Sony's SEL14TC 1.4x and SEL20TC 2.0x teleconverters which, respectively, give a 140-560mm f/6.3 or a 200-800mm f/9.0.

The Sony FE 100-400mm f/4.5 GM OSS is priced at \$7399 and is available in Australia now.

For more information visit www.sony.com.au

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Canon First With Dual Manual/Power Zoom Lens For FF Mirrorless

Launched along with the EOS R6 V, the RF 20-50mm f/4.0L IS USM PZ is clearly designed with video-makers mostly in mind, but it has an interesting feature that may well broaden its appeal. The 'PZ' designation tells you that this is a power zoom, but interestingly, it can be also zoomed manually. The same control collar is used for both operations which are changed by flicking a PZ/MZ switch in the same way that you switch between AF/MF control. The power zoom mode the collar is jogged left or right to change the focal length, and in the manual model it operates conventionally by twisting it left or right. The speed of the power zooming can be adjusted – over 15 levels – from an R mount camera body and, in the case of the R6 V, operated from a rocker switch the camera. It can also be remotely controlled via Canon's new BR-E2 Wireless Remote-

Control unit. The lens's two zooming groups are driven by individual 'Nano USM' motors while the focusing group is moved by a third. Both zooming and focusing are performed internally so the lens's physical length doesn't change.

Despite incorporating the zooming motors and also offering the ultra-wide focal length of 20mm – along with a constant aperture of f/4.0 – this lens is surprisingly compact and weighs in at 420 grams. It's just over 98 millimetres in length and accepts 67 millimetres diameter screw thread filters.

The optical construction employs 13 elements in 11 groups and includes two aspherical types and three made from ultra-low dispersion (UD) optical glass. Bring an L series lens, the 20-50mm PZ zoom has both Canon's 'ASC' (Air Sphere Coating) and

'Super Spectra' anti-reflection multi-coatings to minimise flare and ghosting.

The barrel construction is sealed against dust and moisture, and a fluorine coating is applied to the front element to help better repel water and grease. Optical image stabilisation gives up to six stops of correction for camera shake (at the centre of the frame) which increases to eight stops when working in conjunction with the in-body stabilisation in many of the later RF mount mirrorless bodies.

The Canon RF 20-50mm f/4.0L IS USM PZ sells for \$2199 and is available locally now. Canon Australia provides a five-year warranty for cameras and lenses purchased from an authorised reseller.

For more information visit
www.canon.com.au.



Make A Date Exhibitions | Events | Workshops | Seminars

Current to 19 July: Exhibition. *2026 World Press Photo Contest*. Finalists and category winners showcasing outstanding work from photojournalists and documentary photographers around the world. At the Galleries, State Library Of NSW, 1 Shakespeare Place, 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 7 August: Exhibition. *On The Street Where I Live: Viva Gibb's Portrait Of North And West Melbourne*. A landmark exhibition celebrating the work of Melbourne artist and social documentary Viva Jillian Gibbs (1945-2017). At the City Gallery, ground level, Melbourne Town Hall, 110 Swanston Street, Melbourne, Victoria 3000. Entry is free. Gallery hours are 8.30am to 5.00pm, Monday to Friday. For more information visit www.melbourne.vic.gov.au/city-gallery

Current to 6 September: Exhibition. *Trent Parke: The Christmas Tree Bucket*. A tender and darkly humorous portrayal of the photographer's extended family coming together to celebrate Christmas. At Gallery 14,

Level 1, National Gallery Of Australia, Parkes Place, Parkes, Canberra, ACT 2600. Entry is free. Gallery hours are 10.00am to 5.00pm daily. For more information visit nga.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

20 June to 30 August: Exhibition. *Max Dupain And Ansel Adams: In Search Of Perfection*. A total of 63 works which place Dupain's architectural photographs and Adams' iconic landscapes of the American West in conversation for the first time. At the Bayside Gallery, Brighton Town Hall, corner Wilson and Carpenter Streets, Brighton, Victoria 3186. Entry is free. Gallery hours are 11.00am to 5.00pm Wednesday to Friday, 1.00pm to 5.00pm on weekends. ▶

For more information visit
www.bayside.vic.gov.au/gallery

8 August to 12 September: Exhibition. *2026 World Press Photo Contest*. Finalists and category winners showcasing outstanding work from photojournalists and documentary photographers around the world. At the Art Gallery Of Ballarat, 40 Lydiard Street North, Ballarat, Victoria 3350. Note that the gallery is closed for upgrades during 2026 and 2027 and exhibitions during this time are being held at Backspace, 43 Mair Street, Ballarat Central. Check on the Website – www.artgalleryofballarat.com.au – for opening hours.

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' 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



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Sixth Gen Sony A7R Does 66.8 MP At 30 FPS!

Sony pumps up all the key specs of its latest high-resolution Alpha series full frame mirrorless camera, giving it some serious shooting power. At the heart of the A7R VI is an all-new 'Exmor RS' stacked BSI-type CMOS sensor and the 'Bionz XR2' engine which incorporates an AI processing unit. Sony says this latest version of the XR2 processor is 5.6x faster than the one in the A7R V. The stacked sensor's design is different from what we've seen previous 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. It's like Panasonic's 'Dynamic Range Boost' parallel processing but performed on the sensor. Sony is claiming a maximum dynamic range of 16 stops at the lower ISO settings.

The effective resolution of 66.8 megapixels isn't a big jump from the A7R V's 61 MP, but the really big deal is that the VI body can shoot at 30 fps with its sensor-based shutter and this is with 14-bit RAW files (compared to 7.0 fps with 12-bit RAWs previously), full AF/AE adjustment (which is actually performed at 60 fps) and blackout-free view finding. That's impressive. Pre-capture buffering is available for up to one second's worth of images but can be set to shorter durations down to just 0.03 seconds. Burst lengths are pretty good too, at up 215 fine-quality JPEGs or 150 RAW files. The A7R VI retains a focal plane shutter which gives a top shooting speed of 10 fps, but this now also with 14-bit RAW capture rather than 12-bit. The total pixel count is 72.6 million. The A7R VI has dual memory cards, each dual format for CFexpress Type A and SD UHS-I/II.

The in-body image stabilisation (IBIS) gets a boost to 8.5 stops of correction for camera shake at the centre of the frame and up to 7.0 stops at the edges. Sensor shifting is also used for multi-shot capture to create an ultra-high res 270 megapixels RAW image, but the compositing has to be done post-camera. The autofocus 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 fast-moving athletes. The A7R VI also now has an auto subject recognition option. There's a total of 759 PDAF measuring points giving close to full frame coverage and the sensitivity extends down to -6.0 EV (at ISO 100 and f/1.2).

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 given its high resolution, the A7R V delivers up to 8K video (oversampled from 8.2K) at 24, 25 or 30 fps and 10-bit 4:2:2 colour although this comes with a 1.2x crop. Nevertheless, 4K UHD comes (oversampled from 5K) at up to 50/60 fps without a crop or at 100/120 fps with a small 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 toolbox includes S-Log2 and S-Log3, the S-Cinetone profile, LUT uploading, auto framing, proxy recording, 'Dynamic Active' electronic image stabilisation (although this also involves a crop), 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, but it's limited to 4K UHD at up to 25/30 fps and a sensitivity range of ISO 200 to 3200 in S-Log.

In terms of design, the A7R VI's magnesium alloy body is a little bigger than its predecessor's and with a larger handgrip, but the control layout is similar although, handily, some function buttons are now back-illuminated. The EVF is a 1.6 cm OLED panel with 9.44 mega dots resolution as before, and but now covers the wider DCI-P3 colour space and has a 3.0x increase in brightness to allow for HDR previewing. The monitor screen is unchanged in size and resolution from the A7R V but now has four-way position adjustments. There are now dual USB C ports, one primarily for high-speed data transfer and one with USB Power Delivery support for in-camera battery recharging or for powering the camera. The new camera also gets a new battery – the NP-SA100 – with an increased 2670 mAh capacity which is enough to deliver around 600 shots when using the EVF or 710 with the monitor screen. Finally, the A7R VI supports Sony's Camera Authenticity Solution – including the C2PA standard – for verification that still images or videos were captured with a camera and not manipulated.

Sony's A7R VI is priced at \$6999 body only and available now.

For more information visit www.sony.com.au



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Canon's EOS R6 V Is Full Frame For Content Creators

Take your pick. Canon is now offering three camera bodies with its 32.5 megapixel full frame CMOS sensor and latest generation 'DIGIC' processors. Each has a specific target audience – the EOS R6 Mark III for photographers, the EOS C50 for videographers and the new EOS R6 V for content creators. That said there's a lot of commonality between the three – essentially all three can be said to be hybrid mirrorless cameras – but there are key differences in features which make them more suited to specific applications. In case you're wondering, the "content creator" label essentially refers to people making videos for online sharing and often working on their own. They may want to take stills from time to time, but don't need the more production-orientated capabilities of a higher-end video or cinema camera such as the C50. Time coding being a notable difference here. Thus, the R6 V gets well all the photography features of the R6 III but doesn't have an EVF or a mechanical shutter. It essentially arrives in the Canon R mount line-up as the full frame alternative to the 'APS-C' format R50 V.

Minus an EVF, the R6 V's magnesium alloy body is comparatively compact and similar in size and looks to the C50. Its 'Vari-Angle' monitor screen is adjustable so it can face forward which is an important requirement for vloggers and video content creators. It has in-body image stabilisation – giving up to 7.5 stops of correction for camera shake – and it's weather-sealed. The C50 has neither of these features, but it does have a built-in cooling fan as does the R6 V which allows for longer clip lengths



especially when shooting video at the very high bit rates that the new camera is capable of (up to 2600 Mbps). The video capabilities extend

up to 7K resolution (6960x4640 pixels) recorded internally at 24, 25 or 30 fps in 12-bit CRM RAW or up to 50/60 fps in RAW Light. A 7K 'open gate' mode (i.e. 3:2 aspect ratio) is also available with the RAW settings which provides a lot of flexibility with the final framing, including vertical. Both 4K DCI and UHD are recorded oversampled from 7K at up to 50/60 fps, or up to 100/120 fps without oversampling. Full HD and 2K DCI footage can be 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 either LongGOP or ALL-Intra compression. There's also Canon Log2 and Log3, HDR PQ and HDR HLG, a selection of cinematic 'Colour Mode' settings and provisions for uploading LUTs in the .CUBE file format from a memory card. There are dual memory card slots for CFexpress Type B and SD devices with UHS-II speed support. Simultaneous recording to both cards is also supported. The camera's full-size, Type A HDMI output supports up to 7K in Apple ProRes RAW. There's also UVC/UAC live streaming at up to 4K and 50/60 fps over USB C.

For audio, the R6 V has built-in stereo microphones plus a stereo audio input and an output for connection 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. Without a focal plane shutter, the R6 V can't be used with electronic flash (at least not yet, but it's promised for a future upgrade).

However, the sensor shutter allows for continuous stills shooting at up to 40 fps for up to 330 best-quality JPEGs or 150 14-bit RAW files, and there's pre-capture buffering too. There's also a 10-bit HEIF capture mode for stills with ten levels of compression (as is also the case for JPEGs). The R6 V has Canon's 'Dual Pixel CMOS AF II' hybrid autofocus system 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. The shutter speed range is 60-1/16,000 second and the exposure control options include 'Scene Intelligent Auto' as well as the standard 'PASM' modes. It's interesting to note that the R6 V is closer to the R6 III in its video capabilities than its stills shooting features but eliminating the EVF and the mechanical shutter obviously restrict in terms of the latter application. It is, however, around \$700 cheaper as a result (while the C50 is significantly more expensive).

The Canon EOS R6 V is priced at \$3599 body only and is available now. Canon Australia provides a five-year warranty for cameras and lenses purchased from an authorised reseller.

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Panasonic Revives Higher End 'Travel Zoom' Compact Camera

Panasonic is another camera maker that's kept a couple of fixed-lens compact cameras on its books despite the category's decline in popularity because of smartphones. But now that the compact is back, Panasonic has sprung into action and so here is the Lumix TZ300, the latest model in the long-lived 'Travel Zoom' line. It carries on the sleek, slimline styling of the previous TZ200 model (from back in 2018) so it's essentially pocket-sized, but it still packs a 15x optical zoom mated with a '1.0-type' BSI CMOS sensor with an effective resolution of 20.1 megapixels. The zoom's focal range is equivalent to 24-360mm which is going to cover everything you're likely to need when travelling, and there's also a macro mode which focuses down to just three centimetres.

Unlike the TZ200, the new camera doesn't have an EVF and, additionally, its 7.62 cm monitor screen is fixed so there's only one way to hold the camera for view finding and there could be issues when shooting in bright sunlight. Of course, if you want an EVF, there's now the Lumix L10.

However, the TZ300 still has a lot to offer compared to its main rivals because it has a much longer zoom than the Canon PowerShot G7X Mark III and is a lot more affordable than Sony's RX100 VI (which, however, does have an EVF and a tilt-adjustable monitor screen). Thanks to Panasonic's on-going alliance with Leica, the TZ300's superzoom has been breathed on by the legendary German marque to optimise its optical performance. The design comprises 13 elements in 11 groups and

includes five aspherical types, three with extra-low dispersion (ED) characteristics and one that's both aspherical and uses extra-low dispersion glass. The aspherical elements – a total of 11 surfaces are aspherical – correct for distortion while the ED types minimise chromatic aberrations so both help enhance sharpness. For normal shooting, the minimum focusing distance is 50 centimetres at 24mm and 100 centimetres at 360mm (incidentally, the zoom's actual focal range is 8.8-132mm). Autofocusing is via Panasonic's 'Depth From Defocus' (DFD) contrast-detection system – which is nevertheless still quite snappy – but you don't get any subject recognition modes beyond face- and eye-detection.

The TZ300's sensor has a sensitivity range equivalent to ISO 125 to 12,800 with extensions down to ISO 80 and up to ISO 26,000. Exposure control is based on multi-zone metering with the options of centre-weighted average or spot measurements. The standard 'PASM' exposure modes are supplemented by a whole host of subject/scene modes such as 'Romantic Sunset Glow', 'Backlit Softness' and 'Appetising Food'. There are also seven 'Photo Style' profiles (with adjustable parameters) and a set of 22 'Creative Control Mode' filter effects. Continuous shooting is at up to 10 fps with the AF/AE locked to the first frame and up to 6.0 fps with continuous AF/AE adjustment. However, there's also the '4K Photo' option which shoots JPEGs at 30 fps (with up to two seconds of pre-buffering if desired), but with the resolution reduced to 8.3 megapixels and a 1.4x crop. You can capture both JPEG



and RAW stills (along with RAW+JPEG), conveniently using a standard SD memory card. JPEGs can be recorded at one of three image sizes and in four aspect ratios. By the way, the monitor screen has a resolution of 1.84 mega dots and, of course, extensive touch controls.

The TZ300 can record 4K video at 24, 25 or 30 fps, but this also comes with the hefty 1.4x crop. Full HD video recording is, however, uncropped and at up to 100/120 fps and the camera has built-in stereo microphones. Five-axes 'Hybrid OIS' stabilisation – which combines optical and electronic corrections – operates with Full HD video recording while Panasonic's 'Power OIS' is available for stills and 4K video giving up to four stops of correction for camera shake.

What else do you get for your money? There's a built-in flash, in-camera battery recharging via USB C, focus stacking and post-focus functions, auto bracketing modes for exposure and white balance, WiFi 2.4 GHz and Bluetooth V5.0 wireless connectivity, a multi-mode self-timer and in-camera RAW processing.

The Panasonic Lumix TZ300 is priced at \$1599 and available now in either black or dark silver/grey colours.

■ For more information visit www.panasonic.com.au

Super Compact Lumix S 40mm f/2.0 Is Also A Tiny Price

Weighing in at just 144 grams and a mere 40.9 millimetres in length, Panasonic's L mount 40mm is still a full frame lens and it has a maximum aperture of f/2.0. It looks particularly at home on the compact Lumix S9 body, but there's likely to be many L mount shooters who like the idea of a small, fast and affordable semi-wide prime. In many ways, the 40mm focal length is more 'standard' than 50mm and it's arguably more versatile too.

The lens's external construction is weather-sealed while there's a full-strength stainless-steel lens mount rather than a reinforced plastic fitting that might be

expected at this price point. On the inside, the optical construction comprises seven elements in six groups with three elements being aspherical types. The minimum focusing distance is 30 centimetres and there's a focus hold button which is customisable. The lens's single control ring serves as the manual focus control when autofocus is switched off. 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 very fine exposure



adjustments and Panasonic says the optical design provides effective suppression of focus 'breathing'. The diaphragm has seven blades to help create smoother out-of-focus effects and the minimum aperture setting is f/22. The screw thread filter fitting is 62 millimetres.

Panasonic Lumix S 40mm f/2.0 is priced at \$699 and will be available locally in June in either black or light silver finishes. Panasonic Australia offers an extended five-year warranty (two-year standard warranty plus an additional three years) on Lumix lenses sold by an authorised Panasonic Australia reseller.

■ For more information visit www.panasonic.com.au



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WORLD FOOD PHOTOGRAPHY AWARDS 2026

Australian photographers won a record four categories in this year's running of the world's biggest photo competition dedicated to the many and varied aspects of food and achieved a further eight finalist images (including four category second or third places). Overall, the winning images once again highlighted the sheer diversity of the subject and the ability of photography to both celebrate and challenge.

16 ProPhoto&video

The annual World Food Photography Awards was launched back in 2011 and has steadily grown to attract many thousands of entries from all over the world. It is open to both amateur and professional photographers as well as students and children (in two age categories, sponsored by celebrity chef Jamie Oliver).

An essential part of life, food is a huge subject with a great many diverse aspects from production to presentation to consumption. This is reflected in the competition's many categories – 27 in all plus the new-for-2026 Bimi® Prize – which currently include Bring Home The Harvest, Food Portrait, Cream Of The Crop, Street Food, Politics Of Food, Food For The Family, World Of Drinks, Food Stylist Award and the Cake Award. There are also dedicated categories for winemaking which cover the people, places and products involved in



this industry, along with a category for wedding food photography.

The Claire Aho Award For Women Photographers category is named after a trail-blazing Finnish photographer. Claire Aho (1925-2015) was given her first camera at the age of ten, and she then worked as a commercial photographer from the late 1940s and at a time when almost no other women were practicing in this field.

The overall winner of the 2026 competition is British photographer Jo Kearney with a tender image she titled *A Woman Eats In The Canteen Of The Soviet-Era Sanatorium*. This photograph first won the Fortnum & Mason Food At The Table category (the overall winner is selected from all the category winners) and was taken at the Khoja Obi Garm sanatorium in the mountains of Tajikistan. The colossal concrete complex is built on radon-

 *A Woman Eats In The Canteen Of The Soviet-Era Sanatorium* by Jo Kearney (United Kingdom), overall winner of the World Food Photography Awards 2026 sponsored by Broccoliini®. This image first won the Fortnum & Mason Food At The Table category.

COMPETITION WORLD FOOD PHOTOGRAPHY AWARDS 2026



These Awards highlight the power of photography to tell food stories from around the world."

Dave Samuels, brand director, Tenderstem® Bimi® Broccoliini®

"With barely any space to stop, I raised the camera and captured a brief, unfiltered moment of the energy and intensity of the market at its busiest," says Kara.

Other successful Australian photographers this year were Therese Bourne (second in the Cream Of The Crop category), Kristyn Taylor (second in the World Food Programme Food For Life category and Highly Commended in the Politics Of Food category), Marie-Helene Clauzon (third in the MPB Award For Innovation category), Chee Kong Wong (Highly Commended in the Bring Home The Harvest category) and Sammy Jones (Highly Commended in the Fortnum & Mason Food At The Table category).

"These Awards highlight the power of photography to tell food stories from around the world," says Dave Samuels, brand director of Tenderstem® Bimi® Broccoliini® and the headline sponsor of the Awards. "The remarkable images remind us of the essential role food plays in communities across the globe – through growing, harvesting, cooking, eating, celebrating and surviving. Whatever changes the world goes through, food remains central to our lives."

This year's global judging panel was again chaired by legendary food photographer, David Loftus and included Kerrie McCallum (editorial director and editor-in-chief, *Delicious*), Chef Ian Kittichai (restaurateur, author and television host), Tom Athron (CEO of Fortnum & Mason, London), Jamie Oliver (chef, restaurateur and food campaigner), Rein Skullerud, senior photographer and photo editor, World Food Programme) and Australian chef and restaurateurs Josh and Julie Niland.

rich hot springs and dates back to the Soviet era. It remains one of the few such sanatoria still in operation, where guests follow prescribed treatments such as thermal bathing and steam therapy, and are served meals of nourishing food – soups, fruit, tea and traditional Tajik fare – in keeping with the sanatorium's restorative ethos. With a cost of about £25 per day for board, lodging and treatments, the sanatorium is immensely popular.

"There is so much to see and so much to feel in this image," comments Caroline Kenyon who is the founder of the World Food Photography Awards sponsored by Broccoliini®. "An old woman pours herself tea, but it's so much more than just that. The expression on her crevassed face is beautiful... it moved me to tears. She is alone, her simple breakfast on the table before her echoes the fruit in the painting on the wall behind. Against the parched colours of the scene through the window, the rich crimson chairs give a regal quality to the setting, and though humbly dressed, her dignified bearing is queenly too. She has seen much in life, we are sure, but holds her head high."

Record Australian Success

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).

Chris Elfes won the Louis Jadot Wine Photographer Of The Year – Places category with his sun-kissed capture of a vineyard in Pokolbin, NSW, as well as being awarded second place in the Wine Photographer Of The Year – Produce category. Danielle Marie won the Food Portraiture category with her stylish image called *Jelly With A Cherry*. Claudia Anton won the Cake Award with a mid-century-inspired image and scooped third place in this category with a second image titled *Buttercream Rose Adorned Cake On An Old Tapestry Chair*. Kara Baird won the Street Food category with a photo from the Nishiki Market in Kyoto, Japan.

To see all the finalists in the 2026 competition go to www.worldfoodphotographyawards.com

Entries for the 2027 edition of the World Food Photography Awards will open later this year in September.



■ *Early Morning Catch, Hooghly River* by Marco Rutten (Netherlands), winner of the Bring Home The Harvest Category

■ *Ine Fishing Village, Kyoto, Japan* by Albert Gonzalez (Spain), winner of the Cream Of The Crop category



In the Eye Of The Kvevri by Luke Carver (France/United Kingdom), winner of the Louis Jadot Wine Photographer of the Year – Produce

COMPETITION WORLD FOOD PHOTOGRAPHY AWARDS 2026



■ *A Mid-Century Man And His Cake* by Claudia Anton (Australia), winner of the Cake Award



■ *Noodles* by Maja Lewicz (Netherlands), winner of the Food Influencer category





COMPETITION
WORLD FOOD PHOTOGRAPHY AWARDS 2026



🇧🇪 *Irebero Miller* by Glenn Vanderbeke (Belgium),
winner of the Politics Of Food category

🇬🇧 *Chip 'n' Ladies Day Out* by Maggie Jary (United Kingdom),
winner of the On The Phone category





■ *In the Depths Of The Deposit* by Juan Miguel Ortuño Martinez (Spain), overall winner of the Louis Jadot Wine Photographer Of The Year award. This image first won the Louis Jadot Wine Photographer of the Year –People category

■ *The Festival Of Food Enthusiasts* by Pingyao Song (China), winner of the Champagne Taittinger Food For Celebration category

■ *Jelly With A Cherry* by Danielle Marie Schriever (Australia), winner of the Food Portraiture category





■ *Kyoto Street Vendor* by Kara Baird (Australia),
winner of the Street Food category

■ *Dust Journey* by Serkan Dogus (United Kingdom),
winner of the Food In The Field category





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Granny's Welcoming Gift Of Love
by Kellie Carter (USA), winner of
the Claire Aho Award For Women
Photographers category

■ *Campari Barmen* by Marie-Louise Moutafchieva (Canada/
Bulgaria), winner of the World Of Drinks category

■ *Red Cocktail* by Lara Zeh (Germany), RPS
Student Food Photographer Of The Year





■ *Edible Jewels* by Therese Bourne (Australia), second in the Cream Of The Crop category



■ *Served* by Sammy Jones (Australia), Highly Commended in the Fortnum & Mason Food At The Table category



■ *Miss Pirouette* by Marie-Helene Clauzon (Australia), third in the MPB Award For Innovation category

■ *Early Morning Coffee* by Kristyn Taylor (Australia), second in the World Food Programme Food For Life category





■ *Buttercream Rose Adorned Cake On An Old Tapestry Chair* by Claudia Anton (Australia), third in the Cake Award category

■ *Movement To Rhythm – Drying Parboiled Rice In Bangladesh* by Chee Kong Wong (Australia), Highly Commended in the Bring Home The Harvest category



■ *The Crush* by Chris Elfes (Australia), second in the Louis Jadot Wine Photographer of the Year – Produce category

■ *A Girl's Life* by Kristyn Taylor (Australia), Highly Commended in the Politics Of Food category



Photo: Seiichi Nakamura

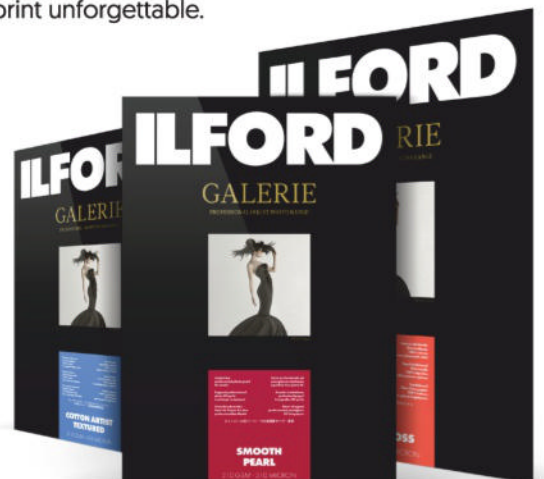
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Super Speed

PANASONIC LUMIX S1 II

With the Lumix S1 II and IIE joining the S1R II, Panasonic now offers a choice of high res, high speed or more affordable full-frame mirrorless flagships. All are great, but the S1 II is the consummate all-rounder.

REPORT BY
PAUL BURROWS

With the second generation of models, all the Lumix S1 series full frame mirrorless cameras are now full-on hybrid models with, as expected from Panasonic, impressive suites of video features. The choice is now whether you want high resolution with the S1R II, high speed with the S1 II or increased affordability with the S1 IIE. Each model's photo and video specs are dictated to some extent by their sensors, but the main shooting capabilities are pretty much the same across the board so all three can be considered high-end hybrids. Notably, the S1R II and S1 II are priced within a couple of hundred dollars of each other so it really is a case of whether you want the former's 44 megapix-

els stills and 8K video, or the latter's rapid-fire 70 fps continuous shooting at 24 megapixels and 4K video at up to 100/120 fps.

Otherwise, the Lumix S1R II and S1 II have quite a lot in common, but their sensor designs do deliver some key differences in performance which, depending on your priorities, will influence which one is right for your needs (see the Making Movies panel for a full rundown of the S1 II's video offerings).

Following Nikon's Z6III, the Lumix S1 II gets more speed – but not a much heftier price tag – by adopting a sensor architecture described as 'partially-stacked'. In fact, given the very similar specs, it's likely the

sensors in the Panasonic and the Nikon aren't a million miles away from being pretty much the same. A partially stacked sensor is cheaper to manufacture than a fully stacked (i.e. multi-layered) design but still delivers some significant performance enhancements due a much faster read-out than a conventional BSI-type CMOS imager.

The key design aspect of a partially-stacked sensor is that the read-out and analog-to-digital conversion circuitry – along with an integrated memory – are arranged along the top and bottom edges of the chip rather than in a completely separate layer. As Nikon also notes when comparing the Z6III sensor's read-out speed with that of the earlier Z6II's, Panasonic says the S1 II's imager is 3.5x faster than the standard 24 MP BSI-CMOS chip used elsewhere in its Lumix S line-up (including the S1 IIE). This allows for continuous shooting at up to 70 fps with 'Speed Priority' selected or at 60 fps with 'Image Priority'. Another benefit of the faster read-out is that rolling shutter distortion is greatly reduced. The faster shooting speed comes at the cost of a small reduction in image quality so, for example, 14-bit RAWs at 60 fps, but 12-bit RAWs at 70 fps. However, remarkably, even at 70 fps there's still continuous AF/AE adjustment and you can shoot full-size RAWs, JPEGs or HEIFs (a new capture mode on the S1 II). In comparison, Nikon limits the Z6III's fastest shooting speeds of 30 fps and 60 fps to JPEG capture only. The burst lengths are reasonably long too – up to 180 frames for RAWs or JPEGs (or, indeed, RAW+JPEG capture) and up to 170 frames for HEIFs and RAW+HEIF. Firmware Version 1.2 adds a 30 fps speed which plugs the previously big gap between 10 fps and 70 fps.

There's 'Pre-Burst' buffering at 60 fps or 70 fps – and now, sensibly, also at 30 fps – with the options of setting the recording period to 0.5, 1.0 or 1.5 seconds prior to full shutter release (i.e. when the shutter button is at the half-way position for metering and autofocus). These pre-release frames are included in the total burst



length so, for example, at 70 fps with the 1.5 seconds 'Pre-Burst' speed, you get 90 frames before and 90 frames after pressing the shutter button (or 90+80 frames with HEIF capture). Of course, all this is with the sensor-based shutter, but the S1 II's focal plane shutter delivers 10 fps along with an increase in the burst lengths although these are modest in all the capture modes except for JPEGs.

The S1 II's sensor is matched with Panasonic's latest 'L2 Technology' processor which is the product of its tech tie-up with Leica and also does its part in delivering the extra speed. The 10-bit HEIF capture uses the HLG (Hybrid Log Gamma) profile that's also applied to the HDR video recording mode and allows images to be viewed on SDR screens.

The various JPEG capture settings are also applied in the HEIF mode so there are two compression levels and four image sizes. Plus, there's a choice of six aspect ratios – 3:2, 4:3, 16:9 and 1:1 along with the panoramic 65:24 and 2:1 – but the latter are only available in the largest image size. Dual memory card slots are provided for data storage; one for CFexpress Type B and the other for SD devices with UHS-II and V90 speed support. Like the S1R II, the S1 II also allows for direct recording to an external SSD (solid state drive) via its USB C port which is particularly handy for the high bit-rate video recording modes (which, incidentally, top 4.0 Gbps).

The in-body image stabilisation (IBIS) has five-axis movements and corrects for up to eight stops at



Rear panel control layout includes a joystick controller and a control wheel with four-way navigational actions. Bodysell is magnesium alloy – covers and chassis – with weather sealing and insulation for shooting in subzero temperatures.

Dual memory card slots are for CFexpress Type B and SD UHS-II speed devices.

the centre of the frame and seven stops at the edges. In concert with an optically-stabilised lens – which Panasonic calls 'Dual IS 2' – the correction range is up to seven stops across the frame, but there's added efficacy in the adjustments for pitch and roll, and with longer focal length lenses.

As on all the recent Lumix S bodies, sensor shifting is also used to deliver multi-shot 'High Resolution' capture with the options of handheld or tripod modes. You can choose between 'LL' and 'XL' images sizes which, with the 3:2 aspect ratio, deliver 8496x5664 pixels (i.e. 48 MP) or 12000x8000 pixels (96 MP) respectively. The 4:3, 1:1 and 16:9 aspects are also available. In addition to the increased resolution, at 96 MP – which uses eight shots – full RGBG colour is recorded at each pixel point to enhance the accuracy of reproduction. A shutter release delay can be set from 1/8 second to 30 seconds. Conveniently, these frames are combined in-camera as either JPEGs or RAW files (or both). Motion blur processing is available to counter any slight subject movements, with the choice of two settings for prioritising either blur reduction or resolution (so some blurring will still occur with moving subjects

Remarkably, even at 70 fps there's still continuous AF/AE adjustment and you can shoot full-size RAWs, JPEGs or HEIFs."

such as water and which you might want to keep for effect).

Get The Look

The in-camera processing options start with a selection of 21 'Photo Style' presets with a total for seven for video, including three Cinelike profiles – designated A2, D2 and V2. The photo profiles include L.Classic Neo – which is similar to Fujifilm's Classic Neg – and L.Monochrome S which has less contrast than the earlier L.Monochrome or L.Monochrome D options. Conversely, the Leica Monochrome profile pumps up the contrast with brighter highlights and deeper blacks. There are provision for creating up to ten customised 'My Photo Style' presets with adjustable parameters for contrast, highlights and shadows, saturation, hue, sharpness and noise reduction. The B&W profiles have specific adjustments for colour tone, contrast filters and grain effect.

Also included in the 'Photo Style' menu is the 'Real Time LUT'. LUTs (look-up tables) are used to create a particular 'look' in cinematography,



ON TRIAL PANASONIC LUMIX S1 II

but they're now finding their way into photography as an expansion of the more traditional film-based profiles which tend to be more pictorial than cinematic. Essentially, with the LUTs, the sky is the limit in terms of moods and magic that you can create. The S1 II allows for a total of 39 to be uploaded to the camera from a memory card and sourced from the Lumix Lab app (although there are others such as Panasonic's Creator's LUT Website). With titles such as Faded Summer, Vintage Vibe, Gritty Cinema and Leafy Greens you can start get an idea of what can be created visually... think of them as more sophisticated filter effects. These LUTs are also adjustable in-camera for parameters such as sharpness and noise reduction. With video, a LUT is applied during V.Log recording so the grading for colour and contrast is performed in-camera rather than being applied in post-production which can represent big savings in both time and money with pro-level projects.

The camera's corrective measures include long exposure noise reduction and 'i.Dynamic Range' processing with the choice of auto or three manual settings while the lens corrections are for vignetting, diffraction and colour shading.

There's an intervalometer for shooting time-lapse sequences of up to 9999 frames and with exposure levelling. It can also be used to create stop-motion video clips. A multiple exposure facility allows for up to four

images to be overlaid with an 'Auto Gain' function to adjust the overall exposure. Auto bracketing modes are available for exposure, aperture, focus, white balance and colour temperature settings. The exposure bracketing sequences can be set to three, five or seven frames, while aperture bracketing is performed over three or five frames or you can select 'All' which then captures a shot at every one of the attached lens's full-stop settings. The focus bracketing is adjustable for the amount of shift (from one to ten steps) over sequences of up to 999 frames which, of course, is likely beyond what you'll ever want. Focus stacking is now performed in-camera provided the camera has been updated with Firmware Version 1.1.

The S1 II also has the 'Live View Composite' function which is designed for low-light photography and has been on Olympus/OM System cameras for a very long time (where it's called 'Live Composite'). It combines a reference background

Look at those lovely big dials. Control layout is busy, but well organised and promotes efficient operation.

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 three hours, and the 'Live' bit means it can be monitored in real-time in the monitor or the EVF. You can also use this procedure as a noise reduction measure when shooting with slow shutter speeds in very low light situations, and the multiple frames are subsequently merged in-camera.

Additionally, the S1 II has the 'Crop Zoom' and 'Hybrid Zoom' functions. These are a way of obtaining an effective increase in focal length – with both stills and video – by cropping the image progressively down to the medium, small and extra-small sizes at 1.4x, 2.0x and 3.1x respectively. However, it's not just a straight crop because interpolation and scaling are used to maintain resolution...which makes the feature quite useful. 'Crop Zoom' works with prime lenses while the 'Hybrid Zoom' combines optical

“Essentially, with LUTs, the sky is the limit in terms of moods and magic that you can create. The S1 II allows for a total of 39 to be uploaded to the camera.”

IN DETAIL



■ Trio of 'Holy Trinity' function buttons – for white balance, ISO and exposure compensation – is perfectly sited for quick access when shooting.



■ Main mode dial is lockable via its central button. Note the five 'C' positions for storing customised camera set-ups.



■ Drive mode dial also engages the self-timer and the multi-shot 'High Resolution' capture function.



and digital zooming into a single continuous action. After the end of the lens's optical focal range is reached, the digital 'zoom' automatically takes over.

Staying On Track

The S1 II employs Panasonic's 'Phase Hybrid AF' autofocus and, as per the S1R II, there are 779 measuring points for phase-detection measurement complemented by 315 points for contrast-detection. The latter uses Panasonic's 'Depth-From-Defocus' (DFD) methodology, which is actually quite fast, but not as fast as PDAF which is what's needed for reliable subject tracking at the higher shooting speeds. The measuring points cover virtually the entire frame.

AI-based subject recognition is for humans, animals, cars, motorcycles and bicycles, aircraft, and trains. The detection for humans can recognise eyes, faces and bodies – or it can be fine-tuned to look for only eyes and faces – plus there's a new 'Urban Sports' setting which employs pose recognition for activities such as skateboarding, break dancing or BMX bikes. The animal detection works with dogs, cats and birds; with the options of either eye detection or eye/body.

The low-light sensitivity extends down to -6.0 EV at ISO 100 and f/1.4. There's a big choice of area modes ranging in size from Pinpoint to Zone, the latter with the choice of vertical, horizontal, square or oval-shaped clusters of points which can be moved around the frame as desired. Additionally, the size of the Zones can be changed so, in the case of the oval-shaped pattern for example, it can be adjusted from just five points up to 97 points. Alternatively, a custom AF area shape can be created

and up to four can be stored for future recall. The full set of 779 points is available with automatic point selection, but if you opt to do it manually, there's the choice of 1-Area or 1-Area+ modes, the latter enabling automatic point switching if the subject moves. Additionally, both the 1-Area modes can be adjusted to one of eight sizes to vary the selectivity.

When not using the subject-based tracking, an 'AF Custom Setting' menu enables fine-tuning of the tracking to suit the nature of the subject movement (i.e. speed, direction, etc.). It offers four scenarios (Set 1 to Set 4) with three adjustable parameters – AF Sensitivity, AF Area Switching Sensitivity and Moving Subject Prediction.

Manual focusing is assisted by a magnified image, a simple distance scale or a focus peaking display which has been expanded to offer a choice of ten colours and five levels of intensity. The magnified image is shown either full-screen (at up to 6.0x) or as a picture-in-picture inset panel (again up to 6.0x) and it's also available for focus confirmation when using the autofocus. Finally, 'AF+MF' operation provides a full-time manual override along with whatever means of assistance you've selected.

With supporting Lumix S lenses, the operation of the manual focusing collar can be switched between linear or non-linear. With non-linear adjustment, the amount of focus shift is governed by the rotation speed of the focus collar... in other words, if you turn it quickly, you'll make big adjustments, but turning it slowly allows for more precise control thanks to smaller degrees of adjustment. With the linear setting, the focus is shifted at a constant speed according

to the rotational angle of the focus ring. In this mode, the sensitivity (i.e. the amount of focus shift per the rotational angle of the focusing collar) can be adjusted from 90 to 1080 degrees (in 30-degree increments up to 360 degrees) or set to 'Maximum'. In a nutshell, the latter allows for more uniformity of adjustment which is something video makers often require when using focusing creatively.

As across the entire Lumix S range, exposure control is driven by sensor-based metering which has 1728 measuring points with the choice of multi-zone, centre-weighted average, highlight-weighted average and spot measurements. The standard set of 'PASM' exposure control modes are supplemented by a fully automatic 'Intelligent Auto' mode which performs automatic scene detection for portraits, portraits with pets, landscapes, close-ups, night portraits, night scenery, food, sunsets and low-light situations.

The focal plane shutter has a speed range of 60-1/8000 with flash sync up to 1/250 second and a 'B' bulb setting for long exposures of up to 30 minutes. The sensor-based shutter extends the fastest speed to 1/16,000 second and enables totally silent and vibration-free operation. As always, there's the hybrid 'Electronic First Curtain Shutter' which starts the exposure electronically and finishes it with the FP shutter's second curtain. The fastest available speed with EFCS is 1/2000 second, but it permits the use of electronic flash. Compared to using the FP shutter alone, it will also reduce both noise and vibration, but not completely. External units sync via a hotshoe only.

The white balance correction options

IN DETAIL



As introduced on the S1R II, there's a dedicated switch for selecting the photo, video and 'Slow & Quick' (variable video frame rate) modes.



Focus mode switch incorporates a button to select the AF area. 'AF On' button does what it says on the label.

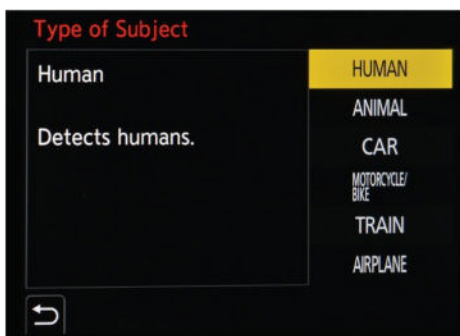


Front tally lamp and self-timer countdown indicator (which also serves as the AF assist lamp) are situated above the model number badging.

THE MENUS



- For the first time on a Lumix S model, the capture format options are expanded to include 10-bit HEIF files (using the HLG profile).



- AI-based subject detection covers six main categories, but many can multi-task. Animals, for example, covers dogs, cats and birds.



- 'Quick Menu' is fully customisable in terms of the 12 function tiles displayed.



- Monitor-based control panel is extensive and has the convenience of touch control. Video mode has its own set of read-outs and function icons.



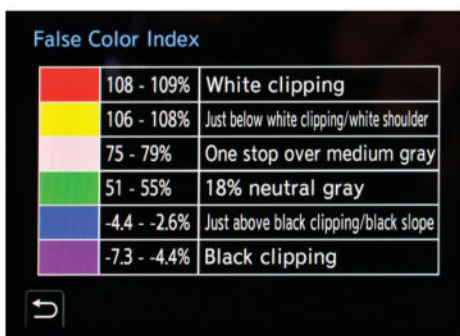
- Live view display is extensively customisable with elements such as a guide grid, level indicator, real-time histogram and Panasonic's 'I.S. Status Scope' which shows the degree of camera shake (the green dot is shown centred here because the camera is mounted on a tripod).



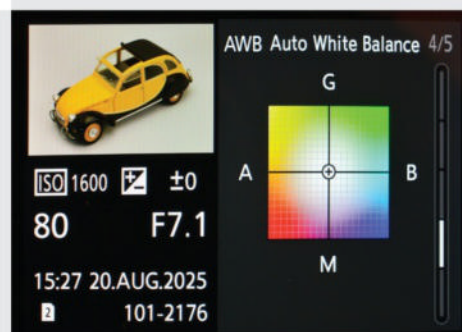
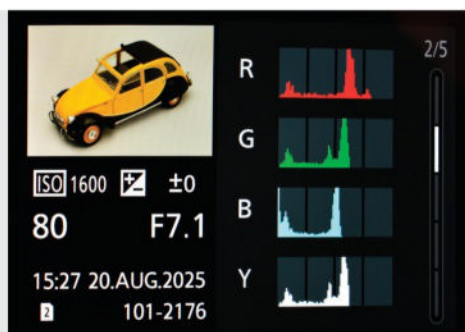
- 'Quick Menu' is fully customisable in terms of the 12 function tiles displayed.



- As on the S1R II, a false colour display uses colours to represent the luminance levels in a scene and is another method of determining the best exposures. It can be used with both stills and video. Guide Index shows what the colours represent.

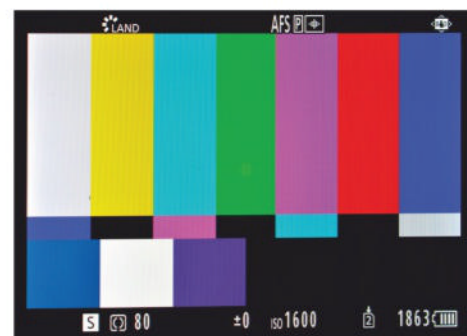
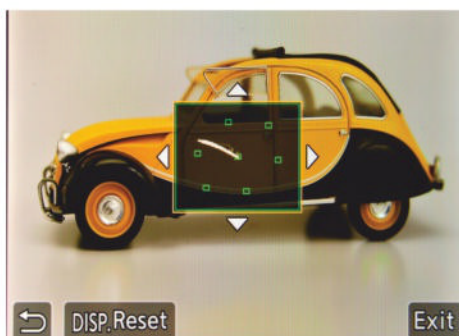


- Review/replay screen cycles through various sets of info in a panel at the right, including a full set of histograms, the JPEG processing settings, white balance adjustments and lens data.





THE MENUS – VIDEO



Video displays include (from left) a waveform monitor which shows luminance values, a vectorscope which measures colour information, and a set of colour bars which are accompanied by a 1.0 kHz test tone.

start with a choice three auto settings called AWB, AWBc and AWBw. The latter two either, respectively, reduce or maintain the warmer tones when shooting under incandescent lighting. Alternatively, there are five lighting presets, provisions for creating up to four custom WB measurements and also for storing up to four colour temperature settings, selected from an adjustment range of 2000 to 10,000 degrees Kelvin. Fine-tuning is available for all WB settings and, as noted earlier, there is auto bracketing for both white balance and colour temperature. New to the S1 II is AI-assisted auto white balance control for RAW files processed in-camera (i.e. to JPEGs or HEIFs) which, in particular, is designed to ensure more accurate colours in scenes with mixed lighting sources.

In The Hand

The next-gen Lumix S1 models all share the same smaller and lighter weight body than the previous series – closer now to the S5 II duo in size – but you still wouldn't call them

compact. That said, they're certainly not the beefiest full frame mirrorless cameras on the market, and a bit of extra real estate works well in terms of both a well-spaced control layout and the handling with longer, heavier lenses. There's a well-sized handgrip which is very comfortable to hold and enables good manoeuvrability. All the dials and control wheels are a good size too, as are the main function buttons which, to Panasonic's credit, are also all well marked so you aren't left wondering – or, indeed, struggling to remember – what does what?

The control layout is organised for optimum functionality and efficiency whether using the dials and buttons, the touch screens or a combination of both. As on all the S1 models, directly behind the shutter release is the all-important 'Holy Trinity' of function buttons for white balance, ISO and exposure compensation. They're perfectly placed for speedy on-the-fly adjustments as are both the front and rear input wheels. Video start/stop is via a dedicated button

with an anodised red finish, and there's another one on the camera's front panel.

The top panel's main dials are for selecting the exposure modes and the drive modes which includes the self-timer options and the multi-shot high-res mode. Around the base of the latter is the selector – introduced with the S1R II – for quick switching between the photo and video modes and with a third setting for the 'S&Q' (Slow & Quick) variable frame rate video shooting... for slowmo or overspeed

“There's a new 'Urban Sports' autofocus setting which employs pose recognition for activities such as skateboarding, break dancing or BMX bikes.”

wide 'Cinemascope' aspect ratio. There's the same choice of codecs – i.e. H.264, H.265 and ProRes 422/422HQ – plus internal 12-bit ProRes RAW/RAW HQ recording. The 4K DCI/UHD frame rates also max at 50/60 fps, but for Full HD, the fastest speed for slowmo effects is 100/120 fps. The

Firmware Version 1.1 upgrades for the S1 II are also available for the S1 IIE.

The price difference is quite significant so it's going to be worth carefully considering what you really need – versus what just might be nice to have – if you're looking at Panasonic's new full frame L mount offerings. The Panasonic Lumix S1IIE sells for \$4199 body only

No Need For Speed? Try The Lumix S1 IIE

If you like pretty well all the features and functions that are on offer in the Lumix S1II, but really don't need 70 fps continuous shooting or the very high video bit rates, then take a look at the S1 IIE. The 'E' apparently stands for 'Essentials', but it could also stand for 'Economy' as you'll save over a grand on this model versus the S1 II. It has exactly the same bodyshell, rugged all-metal construction and control layout, but the sensor is a conventional BSI-type CMOS rather than a 'partially stacked' imager. The effective resolution is 24.2 megapixels – so high-res pixel-shifting capture still gives you a 96 MP file – but the top shooting speed is now 'only' 30 fps. That's still plenty quick

enough for a great many applications and it's available with full AF/AE adjustment and with RAW capture too. The S1 IIE also gets the 10-bit HIEF capture mode and the additional 'Urban Sports' AF subject recognition mode.

On the video side, you don't really lose out on too much with the top spec still being 6K 'open gate' recording at 6000x4000 pixels and 24/25/30 fps with 10-bit 4:2:0 colour. Again, up to 50/60 fps is possible with the 5.8K/5.9K cropped aspects and the S1 IIE also gets the extra-





ON TRIAL
PANASONIC LUMIX S1 II



TEST IMAGES

Test images captured as JPEG/large fine files, shutter-priority automatic exposure control, the Vivid 'Picture Style', Leica Monochrome and Real Time LUT (Like709 profile) presets, and ISO settings between 100 and 800. Lumix S 24-60mm f/2.8 and Lumix S 100-500mm f/5.0-7.1 OIS zooms.

The out-of-the-camera JPEGs exhibit accurate colours with good neutrality across the spectrum, including in the skin tones and the more subtle shades. Great definition ensures crisply rendered fine details and the tonal gradations are very smooth from the brighter highlights through to the darker shadows. The dynamic range is excellent and maintained at the higher ISO settings by the sensor's 'Dual Native ISO' circuitry

sequences. Both these dials can be locked at their various setting positions.

The real panel controls are also mostly oversized and include a joystick-type controller – now eight-way in its operation rather than just four-way – and a combined control wheel/keypad. The focusing mode selector is another good-sized control has the AF area selector button set in the middle.

This being a Panasonic mirrorless camera, the customisation options are extensive with dedicated control set-ups for both capture and playback (and stills and video). A total of 20 external controls – or their various actions such as in the case of the multi-directional joystick and Control Dial – are customisable plus there's a set of five customisable 'Touch Tabs' located down the right-hand edge of the monitor screen. In most cases, the choice of user-assignable functions is extensive and it can all look a bit of a challenge at first, but most of the changes – if you make any at all – will be set-and-forget.

The monitor-based 'Quick Menu' is also extensively customisable with the 12 assignable function tiles again populated from a very long list of options. There are dedicated 'Quick Menus' for photo and video, plus the display style can either be full screen or combined with the live view image. The customisable 'My Menu' can be up to three pages (giving a total of 24 items), and five custom camera set-ups can be assigned to the C1-C5 positions on the main mode dial.

Furthermore, both the viewfinder and monitor displays can be customised with several elements, including a dual-axis level gauge, a real-time histogram, a grid guide

(selected from a choice of three), a blinking highlight warning, zebra patterns for the same thing and Panasonic's 'I.S. Status Scope' display. This comprises two concentric circles in the middle of the screen within which a green dot jumps around to show just how much the camera is deviating from the lens's optical axis. Even when you think that you're holding the camera absolutely steady, you'll be surprised at how much the green dot is still moving around. There are also dedicated video displays including a waveform monitor, a vectorscope, colour bars a false colour image which is another way of determining exposure levels for video, but can be equally useful when shooting stills.

A 'Night Mode' setting dims both the EVF and monitor displays by applying a red filter over everything so that your night vision isn't compromised. To achieve exactly the opposite, a 'Live View Boost' function brightens the monitor display so it's easier to see when shooting in very low light situations.

The touch screen implementation includes the 'Quick Menu' tiles, the main menus, the replay/review functions, and various autofocus operations, including direct point/zone selection and 'Touch Pad AF' to enable the same when using the EVF. This can be set to either Exact or Offset; the latter with a choice of seven settings enabling the AF point/zone to be moved via a dragging action within a prescribed area on the touch screen.

The monitor itself is a 7.62 cm TFT LCD panel with a resolution of 1.84 megadots and it's adjustable for both tilt and swing when flipped out from the camera back, but can also be tilted up and down on the camera back. The display is adjustable for Brightness, Contrast, Saturation, Red Tint and Blue Tint. You can also manually adjust the backlighting or set it to Auto so it will adjust itself according to the ambient light levels.

The EVF which is a 1.0 cm OLED panel with 5.76 megadots resolution and 0.78x magnification (with a 50mm lens). The refresh rate can be switched between 60 fps or 120 fps, but black-out free viewing is only available at shooting speeds up to 10 fps.

The review/replay displays include a split screen showing a thumbnail along with basic capture info on one side, and a set of five scrollable info panels on the other. These cycle through additional capture data (such as the white balance, image format and 'Photo Style' preset), a set of RGB and

brightness histograms, the 'Photo Style' parameters, the white balance mode with any fine-tuning settings, and the lens details including any manually applied in-camera corrections.

Importantly for video users, the S1 II has a full-size (i.e. Type A) HDMI connection and a 10 Gbps-speed USB Type C port. Power comes from the 2200 mAh DMW-BLK22 battery pack (that's also used in the S5 II models) and which here is good for around 350 shots per charge. In-camera battery charging – and powering – via USB C is available, and the S1 II is compatible with DMW-BG2 battery grip which was introduced with the S1R II. This adds a second battery pack which can be 'hot swapped' as the camera will automatically switch to its battery.

The wireless connectivity options comprise both the 2.4 and 5.0 GHz WiFi bandwidths, and Bluetooth LE version 5.0; with the Lumix Lab app allowing for remote camera control from a smartphone or tablet as well as file transfers and now the post-camera application of LUTs. Additionally, the S1 II also supports the 'Frame.io Camera to Cloud' cloud service so high-res images and video clips can be directly and immediately uploaded to Adobe's Frame.io software platform (but you'll need to create an account first).

Tethered shooting via USB C is enabled with the Lumix Tether app, but as with the S1R II, it's also possible using the Capture One image editing software which is a big plus for studio shooters in terms of a more efficient workflow. Via the Firmware Version 1.1 upgrade, tethering can also be wirelessly via WiFi or a USB-LAN adapter.

The sturdy body construction employs diecast magnesium alloy front and rear frames with sealing against dust or moisture, and insulation for shooting in subzero temperatures down to -10 degrees Celsius. And, as far as overheating is concerned, Panasonic taking no chances with its high-bit-rate hybrids, so the S1 II also has a built-in fan for sensor cooling during long video

 Importantly for video users, the S1 II has a full-size (i.e. Type A) HDMI connection and a 10 Gbps-speed USB Type C port.

sessions. Similar to both the S1R II and S5 II, the fan is located in front of the EVF housing with the inlet vent located above the lens mount and the outlet vents on either side.

Another commendable preventative measure enables the shutter to be set to automatically close over the sensor when

the S1 II is switched off. This greatly reduces the likelihood of issues with dust getting into the camera body when you're changing lenses.

Speed And Performance

Loaded with a SanDisk Extreme Pro 128 GB

CFexpress Type B memory card and using the focal plane shutter, the S1 II captured a burst of 120 JPEG/large/fine frames in 11.3 seconds, giving a shooting speed of 10.6 fps. Switching to the sensor shutter – again at the JPEG/large/fine quality setting – a burst of 180 frames was captured in 2.577 sec-



ISO 50



ISO 100



ISO 200



ISO 400



ISO 800



ISO 1600



ISO 3200



ISO 6400



ISO 12800



ISO 25600



ISO 51200



ISO 102400



ISO 204800

TEST IMAGES ISO RANGE

The S1 II's sensor has a sensitivity range equivalent to ISO 100 to 51,200 with extensions either side to ISO 50 and 102,400 and 204,800. It has a dual-gain output – the low-gain for enhanced sensitivity and the high-gain for lower noise – with the base ISOs set at 100 and 800 for stills, 640 and 5000 for V-Log video, and 200 and 1600 for video with the Cinelike A2, D2 and V2 video colour 'Picture Style' profiles. As a result, noise levels are reduced at the higher ISO settings to the benefit of both sharpness and dynamic range.

These test images were captured as JPEG/large/superfine files with the aperture set to f/11 and the exposure time varied to compensate for the ISO adjustments. High ISO and Long Exposure noise reduction are switched off. Lumix S 24-60mm f/2.8 zoom.

VIDEO – Making Movies**AS FOR PHOTOGRAPHERS, THE CHOICE**

for video-makers is between the S1R II's higher resolution and the S1 II's faster speeds. For many, the choice between having 8K at 25/30 fps and 4K UHD/DCI at up to 120/100 fps probably won't be all that hard to make. Otherwise, the two cameras share a very similar videography feature set with the key differences being in the specs related to the faster read-out speed of the S1 II's 'partially stacked' sensor. The bodies and control layouts are the same so the S1 II also has a built-in cooling fan to allow for longer clips lengths at the higher bit rates.

Internal recording in Apple ProRes RAW or RAW HQ is available at up to 5.8K and 17:9 (with a massive bit rate of 4.2 Gbps) or in ProRes 422 or 422HQ (at 1.9 Gbps), all at 24/25/30 fps and, not surprisingly, requiring the speed of a CFexpress memory card. However, 5.8K video can also be recorded at 48/50/60 fps with the H.265 codec and 4:2:0 colour. The full 3:2 aspect sensor area is available for 'open gate' recording at 6.0K (5952x3968 pixels) – down-scaled from the full resolution – for format flexibility (including vertical framing). There's also the option of 5.1K (5088x3392 pixels) at 3:2 if you want the faster frame rates of 48, 50 or 60 fps.

The full width of the sensor is also used for 4K UHD and DCI recording at up to 50/60 fps and with 10-bit 4:2:2 colour, and there's again the option here of using the ProRes 422 or 422HQ codecs also at up to 50/60 fps. Full HD recording is available in the ProRes, H.265 or H.264 and at fast frame rates up to 200/240 fps.

H.265 comes with the LongGOP inter-frame compression routine, but there's choice of this or All-Intra compression when using H.264. You can also opt for the MP4 format with 10-bit H.265 or 8-bit H.265 coding for 4K UHD up to 50/60 fps and Full HD up to 50/60 fps. Firmware Version 1.2 adds an MP4 Lite option which records at the 3:2 aspect 'open gate' and at 25/30 fps to give a much lower bit rate of 50 Mbps and consequently much smaller files.

The fastest video frame rates involve various crops depending on the resolution

and frame shape – for example, 4K UHD at 100/120 fps is cropped at 1.24x and 4K DCI at 1.17x. Notably though, the S1 II doesn't impose fps-rated crops as much as quite a few of its rivals. In practice, there's an almost bewildering choice of resolutions, aspect ratios, bitrates and codecs in various combinations running to a total of 17 pages of 'Rec Quality' menus (11 of these for the MOV options alone). No wonder then, there's a 'My List' custom menu for corraling the most-used quality settings into the one place. New is a 'Cinemascope' 2.4:1 widescreen aspect at 6K 50/60 fps or 4K 100/120 fps (without a crop). The full height of the sensor is used to deliver the 4:3 aspect ratio for use with anamorphic lenses and the camera will show a desqueezed preview.

The new 'partially stacked' sensor has Panasonic's 'Dual Native ISO' circuitry with the base ISOs set at 200 and 1600 for video using the Cinelike profiles and 640 and 5000 for V-Log recording. For video, the S1 II has 'Dynamic Range Boost' processing which, apparently, isn't the same thing as the GH7's 'DR Boost' and also works differently to the S1R II's 'Dynamic Range Expansion', but it gives a quoted 15 stops of dynamic range (compared to 14.2 stops otherwise). It gives an extra two-thirds of a stop at the highlight end with V-Log recording, but a slower sensor read-out speed means that it's only available at frame rates up to 30 fps.

As noted in the main text, there's a choice of seven 'Photo Style' profiles for video; namely Cinelike D2, Cinelike V2, Cinelike A2, Like709, Like2100 HLG and Like2100 HLG Full Range plus the Real Time LUT option. This allows a pre-loaded LUT to be applied to V-Log footage as it's being recorded in-camera. Up to 39 LUTs can be stored in the camera which has the V-Log-to-Like709 conversion installed as standard. The new Cinelike A2 video profile is described as having a wide dynamic range and a rich gradation. It's also possible to add ARRI LogC3 support to the 'Photo Style' profiles via a paid upgrade software key.

As introduced with the S1R II, there's a false colour display which uses a B&W preview with the different brightness levels (i.e. brighter highlights and darker shadows plus the mid-tones) shown in different colours for determining exposures. The

rest of the video assists are zebra patterns (with selectable thresholds), a wave form monitor, a vectorscope, colour bars and a 1.0 kHz test tone, a luminance spot meter, frame markers (a total of ten), and time coding (rec run/free run). On the audio side, it has built-in stereo microphones, a stereo audio input and an output (both standard 3.5 mm minijacks), manual levels adjustment (over an extended range of -18 dB to +12 dB), an attenuator and a wind-cut filter (with High and Standard settings). The S1 II records 24-bit 48 kHz audio via its built-in microphones and at the higher resolution 96 kHz with an external microphone, but there's now also 32-bit 'float' audio recording. This requires the DMW-XLR2 microphone adapter and is designed to eliminate clipped and distorted audio which often happens when there are sudden increases (or reductions) in the sound levels. It also eliminates the need to continually manually adjust the recording levels.

The image stabilisation options for video go beyond IBIS and OIS to add 'Electronic I.S.' which moves the image around on the sensor to counter camera movement. Additionally, there's a 'cropless' EIS mode which uses very edges of the frame that are cropped at output anyway to perform peripheral distortion correction so, in effect, there's no cropping associated with the electronic stabilisation. Also available is 'Boost I.S.' which is essentially designed to provide tripod-level stability when shooting handheld using a fixed view (i.e. not moving the camera). New is the addition of image stabilisation tuned to anamorphic lenses and, in fact, matched to the magnification with settings for 1.30x, 1.33x, 1.5x, 1.8x and 2.0x.

Is the S1 II an even better hybrid offering than the much-lauded S1R II? You'd have to say that it's more flexible in several areas given the still-limited applications for the R's 8K video capability. Besides, the 5.8 and 6.0K modes still deliver bags of image quality – but it's still outstanding with oversampled 4K – and there are just so many in-camera options for matching the recording set-up to the type of content and its end-use. Add in what can be done with cinematic looks – in-camera and custom-made – and the creative possibilities match the technical armoury.



onds which works out at 69.85 fps. The test image files averaged 11.3 MB in size.

We've already seen the latest version of Panasonic's hybrid AF system at work in the S1R II and so, not surprisingly, it puts in a good performance here too, even at the faster maximum shooting speed.

Overall, the autofocus is responsive, lightning fast and a very accurate. The subject tracking is exceptionally reliable and can handle both smaller-sized objects and erratic movements in terms of rapid changes in both direction and in speed. The low light/contrast AF performance is also excellent, maintaining responsiveness with fast, locked-on tracking. Aside from when using the useful list of recognised subjects, there's plenty of scope for fine-tuning the tracking in other situations and for tailoring the AF area to better suit a particular subject or situation.

Twenty-four megapixels on a full frame sensor is already proven to give a good balance of resolution, sensitivity and dynamic range. The bigger pixels have a higher signal-to-noise ratio which is always a good starting point for enhanced performance at higher ISO settings. The out-of-the-camera JPEGs from the S1 II deliver an accurate colour reproduction with good neutrality across the spectrum, including the skin tones and more subtle shades. There's excellent definition with crisply rendered fine details along with very smooth tonal gradations from the brighter highlights to the darker shadows. There's also lots of scope for playing with the visual dynamics of an image with the built-in 'Photo Styles' and the ever-expanding possibilities of

the custom LUTs.

The dynamic range is also excellent and is helped at the higher ISO settings by the sensor's 'Dual Native ISO' circuitry. The dual base ISOs at 100 and 800 for still photography represent a three stops improvement in the noise characteristics at the higher sensitivity settings (i.e. above ISO 800). Consequently, there's very little fall-off in either the definition or the saturation up to ISO 12,800, and only slight fall-offs at ISO 25,600 or even 51,200. In practice, the entire native sensitivity range is in play as the colour saturation remains good all the way through, as does the overall sharpness. Inevitably, the extensions to ISO 102,400 and 204,800 exhibit visible softening of the edges to the detriment of overall sharpness, although the colour reproduction still holds up pretty well. Overall, the noise reduction processing for JPEGs is well-judged, balancing sharpness and grain very nicely which is maintained through to the higher ISOs.

The extra dynamic range – especially at the base ISOs – ensures that the RAW files have plenty of exposure latitude so you

 Monitor screen has tilt and swing adjustments.

can underexpose to preserve the highlights and the shadows can be subsequently brightened quite a bit with post-camera processing without noise becoming particularly noticeable.

The Verdict

It's tempting to assign the higher-res Lumix S1R II model as being more photo-orientated and the faster S1 II more suited to videographers by virtue of having faster frame rates and more aspect ratio options, including widescreen. Yet the 24 megapixels 'partially stacked' full frame sensor has notable benefits for photography too, even if 70 fps might be just a bit OTT for many users. It balances detailing and dynamic range very nicely, enhances the high ISO performance and keeps file sizes more manageable.

Consequently, the S1II is undoubtedly more of an all-rounder as a stills camera, but everybody benefits from the efficient ergonomics, logical controls, snappy autofocus and an ever-expanding choice of creative looks. There's also the growing system of L mount lenses with not just Panasonic's tastier recent offerings – the compact 100-500mm telezoom, for example – but also those from Sigma and, if you have the budget, Leica. More L mount lenses are arriving from third-party lens makers too, most notably Laowa.

The trio of Mark II generation S1 series bodies certainly put Panasonic back in the game in terms of top-end full frame hybrid mirrorless cameras and with some key features that the competition – such as Canon and Sony – don't offer (especially for video). The Lumix cameras are premium priced too, but the fabulous old-school design, reassuringly solid construction and an unmatched feature set mean that they still represent excellent value. The S1 II's sensor-related attributes – chiefly faster shooting with reduced rolling shutter artefacts for both stills and video – give this model even more appeal. It's probably taken a bit longer than it should have, but the Lumix S system is now really taking the fight up to its full frame hybrid mirrorless rivals. 

 Overall, the autofocus is responsive, lightning fast and a very accurate. The subject tracking is exceptionally reliable."

SPECS



PANASONIC LUMIX S1 II \$5,299

recommended retail price

Type: Enthusiast-level and semi-professional digital mirrorless camera with L bayonet lens mount.

Focusing: Automatic hybrid phase/contrast-detection system ('Phase Hybrid AF') with 779 PDAF points and 315 CDAF points. Contrast detection AF via Depth-From-Defocus (DFD) calculations. Manual switching between one-shot and continuous AF modes, the latter with auto tracking. Four 'AF Custom' sets for fine-tuning subject tracking with three parameters – AF Sensitivity, AF Area Switching Sensitivity and Moving Subject Prediction. AI subject detection for Humans (Eye/Face, Eye/Face/Body, Urban Sports), Animals (Birds, Dogs or Cats – Eye or Eye/Body), Cars, Motorcycles/Bicycles, Trains and Aircraft. Area modes for Zone (Vertical/Horizontal), Zone (horizontal/vertical/central), 1-Area, 1-Area+Supplementary and Pinpoint. Adjustable 1-Area point switching speed. 'AF Point Scope' for active point/zone enlargement (up to 6.0x). AF assist via magnified image (up to 6.0x), either full image or picture-in-picture. Sensitivity range is EV -6.0 - 18 (ISO 100 and f/1.4). AF assist provided by built-in illuminator. Manual focus assistance via magnification (either full image or picture-in-picture, up to 6.0x), distance scale and focus peaking displays (Light Blue, Dark Blue, Yellow, Orange, Light Green, Dark Green, Pink, Red, Violet, White; and five levels of intensity). Non-linear or linear manual focus control with supporting lenses. 'Touchpad AF' via the touch screen for AF point/zone selection when using the EVF. AF micro-adjustment for individual lenses.

Metering: 1728-point multi-zone, centre-weighted average, highlight-weighted average, spot and TTL flash. Metering range is EV 0 to 18 (ISO 100 and f/2.0).

Exposure Modes: Continuously-variable program with shift, shutter-priority auto, aperture-priority auto, metered manual, 'Intelligent Auto' (with automatic scene detection (nine modes), TTL auto flash and TTL flash).

Shutter: Electronic, vertical travel, metal blades, 60-1/8000 second plus 'B' (up to 30 minutes). Flash sync to 1/250 second. Sensor shutter has a speed range of 60-1/16,000 second plus B (up to 60 seconds). Hybrid 'Electronic First Curtain' shutter has a speed range of 60-1/2000 second plus 'B' (up to 30 minutes). Shutter delay timer (1, 2, 4 or 8 seconds). Exposure compensation up to +/-5.0 EV in 1/3-stop increments. Shutter delay timer (1, 2, 4 or 8 seconds).

Viewfinder: OLED EVF type with 5.76 megadots resolution. Coverage = 100% vertical/horizontal. Magnification = 0.78x. Refresh rate switchable between 60 and 120 fps. Eyepiece strength adjustment built-in. Auto/manual switching between EVF and monitor screen. 7.62 cm TFT LCD monitor with 1.84 megadots resolution, tilt/

swing adjustments and touch controls. Monitor screen is adjustable for brightness, contrast, saturation, red tint and blue tint. Night Mode red 'filter' for both EVF and monitor.

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

Additional Features: Magnesium alloy body sealed against dust, moisture and sub-zero temperatures down to -10 degrees Celsius; AE/AF lock, auto exposure bracketing (three, five or seven frames and up to +/-1.0 EV adjustment per frame), multi-mode self-timer (2 and 10 second delays, one or three shots, or custom set delay time), shutter delay timer (up to eight seconds), switchable exposure adjust increments (0.3 or 1.0 EV), audible signals, silent mode, auto power-off, wired remote trigger.

DIGITAL SECTION

Sensor: 24.1 megapixels (effective) partially-stacked BSI-type CMOS with 35.8x23.8 mm imaging area and 3:2 aspect ratio. An optical low-pass filter is fitted. Sensitivity equivalent to ISO 100-51,200 (extendable to ISO 50, 102,400 and 204,800).

Focal Length Magnification: None.

Formats/Resolution: Two compression settings for JPEG and HEIF (HLG) capture, RAW output (lossless compression) and RAW+JPEG capture. Four resolution settings at 3:2 aspect ratio; 6000x4000, 4272x2848, 3024x2016 and 1920x1280 pixels. Four resolution settings at 4:3 aspect ratio; 5328x4000, 3972x2848, 2688x2016 and 1712x1280 pixels. Four resolution settings at 16:9 aspect ratio; 6000x3368, 4272x2400, 3024x1704 and 1920x1080 pixels. Three resolution settings at 1:1 aspect ratio; 4000x4000, 2848x2848, 2016x2016 and 1280x1280 pixels. One resolution setting at 65:24 aspect ratio; 6000x2208 pixels. One resolution setting at 2:1 aspect ratio; 6000x3000 pixels. Four resolution settings with 'APS-C' format capture at 3:2 aspect ratio; 3984x2656, 2880x1920, 2064x1376 and 1920x1280 pixels (4:3, 16:9 and 1:1 aspect ratios also available). 24-bit RGB colour for JPEGs, 30-bit RGB colour for HEIF files, 42-bit RGB colour for RAW files.

Video Recording:

- MOV format (Apple ProRes RAW HQ/RAW) at 5760x3040 pixels (5.8K); 30, 25 or 24 fps (up to 4.2 Gbps) and 17:9 aspect ratio (requires CFexpress Type B memory card). At 4096x2160 pixels (4K DCI); 60, 50, 30, 25 or 24 fps (up to 4.2 Gbps) and 17:9 aspect ratio (requires CFexpress Type B memory card).
- MOV format with 10-bit 4:2:2 colour (Apple ProRes 422 HQ/422, and All-Intra compression) at 5760x3040 pixels (5.8K); 30, 25 or 24 fps (up to 1.9 Gbps) and 17:9 aspect ratio. At 4800x3600 pixels (4.8K); 30, 25 or 24 fps (up to 1.9 Gbps) and 4:3 aspect ratio (anamorphic). At 4096x2160 pixels (4K

DCI); 60, 50, 30, 25 or 24 fps (up to 1.9 Gbps) and 17:9 aspect ratio. At 3840x2160 pixels (4K UHD); 60, 50, 30, 25 or 24 fps (up to 1.8 Gbps) and 16:9 aspect ratio. At 1920x1080 pixels (Full HD) at 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 901 Mbps) and 16:9 aspect ratio

- MOV format with 10-bit 4:2:0 colour (HEVC/H.265 codec and LongGOP compression) at 5952x3968 pixels (6.0K); 30, 25 or 24 fps (200 Mbps) and 3:2 aspect ratio ('open gate' recording using the full frame area). At 5952x2512 pixels (6.0K); 60, 50, 30, 25 or 24 fps (up to 300 Mbps) and 2.4:1 aspect ratio ('Cinemascope' widescreen). At 5888x3312 pixels (5.9K); 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 16:9 aspect ratio. At 5760x3040 pixels (5.8K); 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 17:9 aspect ratio. At 5088x3392 pixels (5.1K); 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 3:2 aspect ratio ('open gate' recording using the full frame area). At 4800x3600 pixels (4.8K); 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 4:3 aspect ratio (anamorphic). At 4096x2160 pixels (4K DCI); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 17:9 aspect ratio. At 4096x1728 pixels (Cs4K); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 2.4:1 aspect ratio ('Cinemascope' widescreen). At 3840x2160 pixels (4K UHD); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 300 Mbps) and 16:9 aspect ratio. At 1920x1080 pixels (Full HD) at 120 or 100, 60, 50, 48, 30, 25 or 24 fps (up to 150 Mbps) and 16:9 aspect ratio.

- MOV format with 10-bit 4:2:2 colour (MPEG 4 AVC/H.264 codec and ALL-Intra or LongGOP compression) at 4096x2160 pixels (4K DCI); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 800 Mbps ALL-Intra, up to 200 Mbps LongGOP) and 17:9 aspect ratio. At 4096x1728 pixels (Cs4K); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 800 Mbps ALL-Intra, up to 200 Mbps LongGOP) and 2.4:1 aspect ratio ('Cinemascope' widescreen). At 3840x2160 pixels (4K UHD); 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 800 Mbps ALL-Intra, up to 200 Mbps LongGOP) and 16:9 aspect ratio. At 1920x1080 pixels (Full HD) at 240, 200, 120, 100, 60, 50, 48, 30, 25 or 24 fps (up to 800 Mbps ALL-Intra, up to 200 Mbps LongGOP) and 16:9 aspect ratio.

- MOV format with 8-bit 4:2:0 colour (MPEG 4 AVC/H.264 codec LongGOP compression) at 4096x2160 pixels (4K DCI); 60, 50, 48, 30, 25 or 24 fps (up to 150 Mbps) and 17:9 aspect ratio. At 4096x1728 pixels (Cs4K); 60, 50, 48, 30, 25 or 24 fps (up to 150 Mbps) and 2.4:1 aspect ratio (widescreen). At 3840x2160 pixels (4K UHD); 60, 50, 30, 25 or 24 fps (up to 150 Mbps) and 16:9 aspect ratio. At 1920x1080 pixels (Full HD) at 60, 50, 48, 30, 25 or 24 fps (up to 50 Mbps) and 16:9 aspect ratio.

- MP4 format with 10-bit 4:2:0 colour (HEVC/H.265 codec and LongGOP compression) at 3840x2160 pixels (4K UHD); 60, 50, 30, 25 or 24 fps (up to 100 Mbps) and 16:9 aspect ratio.

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- MP4 format with 8-bit 4:2:0 colour (MPEG 4 AVC/H.264 codec and LongGOP compression) at 3840x2160 pixels (4K UHD); 60, 50, 30, 25 or 24 fps (up to 100 Mbps) and 16:9 aspect ratio. At 1920x1080 pixels (Full HD) at 60, 50, 30, 25 or 24 fps (up to 28 Mbps) and 16:9 aspect ratio. Unlimited clip durations.
- 'APS-C' cropped shooting available in 3.3K 4:3 aspect (anamorphic), 4K DCI 17:9 aspect, 4K UHD 16:9 aspect and Full HD 16:9 aspect in MOV format and ProRes 422HQ, ProRes 422, H.265 and H.264 codecs; or in MP4 4K UHD (H.265/H.264) and Full HD (H.264).
- MP4 Lite format with 8-bit 4:2:0 colour (MPEG 4 AVC/H.264 codec and LongGOP compression) at 3840x2560 pixels (3.8K); 30, 25 or 24 fps (up to 50 Mbps) and 3:2 aspect ratio ('open gate' recording using the full frame area). Built-in stereo microphones with adjustable sound levels, level limiter, gain level adjustment and wind noise canceller. Stereo audio input (for mic-level and line-level) and output. 48 or 96 kHz 24-bit sound recorded in both the MOV format. Optional DMW-XLR2 microphone adapter provides two XLR microphone inputs (giving four channel audio) with 32-bit 'float' level adjustment with 48/96 kHz for two channel stereo and 48 kHz for four channel monaural.

Video Features: Built-in cooling fan, dual on/off record buttons, front and rear tally lamps, time lapse movies, stop motion animation, proxy recording (with MOV format and up to 4K DCI res), 'Crop/Hybrid Zoom' (up to 2.1x with 4K and 4.2x with 2K), external video recording to SSD via USB C (including Apple ProRes RAW HQ and RAW at 5.8K with 10-bit 4:2:2 colour up to 30 fps [up to 4.2 Gbps] and ProRes 422 HQ/422 at 5.7K up to 60 fps [up to 1.9 Gbps], and at 4K DCI up to 120 fps [up to 1.9 Gbps]); variable frame rates for 5.9K, 5.8K, 4K DCI/UHD and FHD recording with 10-bit colour (5.9K = 60 fps maximum sensor output to 24/25/30 fps, C4K/4K = 120 fps maximum sensor output to 24/25/30/50/60 fps, FHD = 120 fps maximum sensor output to 24/25/30/50/60 fps), anamorphic recording with desqueezed previews, 'EIS' electronic image stabiliser, 'Boost EIS', anamorphic lens IS, red frame recording indicator, blue frame streaming indicator, Webcam video streaming (USB C up to 4K at 25/30 fps, WiFi up to FHD at 50/60 fps), USB tethering (up to 4K at 50/60 fps), 'Dynamic Range Boost' processing, master pedestal level (for setting black level, 31 steps), knee control (Like709 colour mode), luminance level adjustment (8-bit and 10-bit), wave form monitor/vector scope, false colour display, colour bars, luminance spot meter, synchro scan, time coding with Rec Run and Free Run modes, Atomos AirGlu wireless timecode sync support, colour bars (SMPTE, EBU and ARIB standards), 1.0 KHz test tone, SS/Gain (Shutter Duration/ISO, Angle/ISO, Shutter Duration/dB), zebra patterns (two types with adjustable thresholds), synchro

scan, centre marker, V-Log/V-Gamut recording; 'Cinelike' A2, D2 and V2 gamma profiles; HLG HDR, Like709 – gamma curve/knee control, V-Log View Assist, HLG View Assist (for Like709), LUT View Assist, VariCam-style video info display, adjustable headphone volume.

HDMI Output: ProRes RAW HQ or RAW to supporting Atomos or Blackmagic external recorders, ProRes 422 HQ/422, H.265 and H.264 codecs. 6.0K 3:2 with 10-bit 4:2:0 colour and 30, 25 or 24 fps. 5.9K 16:9 with 10-bit 4:2:0 colour and 30, 25 or 24 fps. 5.7K 17:9 with 10-bit 4:2:0 colour and 60, 50, 48, 30, 25 or 24 fps, 4K DCI 17:9 with 10-bit 4:2:2 colour and 60, 50, 30, 25 or 24 fps. 4K UHD 16:9 with 10-bit 4:2:2 colour and 60, 50, 30, 25 or 24 fps. 4K UHD 16:9 with 10-bit 4:2:2 colour and 60, 50, 30, 25 or 24 fps. Full HD 16:9 with 10-bit 4:2:0 colour and 120, 100, 60, 50, 30, 25 or 24 fps.

Recording Media: Dual slots for CFexpress Type B and SD with UHS-II and Video Speed Class 90 support.

Continuous Shooting: Around 300 JPEG/large/fine frames, 200 RAW frames or 180 HEIF frames at up to 10 fps using the focal plane shutter with continuous AF/AE adjustment. Around 180 JPEG/large/fine frames, 180 RAW files or 170 HEIF files at up to 60 fps (image quality priority) or 70 fps (speed priority) using the sensor shutter with continuous AF/AE adjustment. A 30 fps speed is available via Firmware Version 1.2. Medium speed continuous mode captures at 5.0 fps and low speed continuous capture at 2.0 fps using either the FP shutter or the sensor shutter. Pre-shot capture buffer using the sensor shutter at 60 or 70 fps for 0.5, 1.0 or 1.5 seconds.

White Balance: TTL measurement. Three auto modes (neutral, maintain warmer tones or reduce warmer tones), five lighting presets and four custom WB settings. White balance compensation (amber-to-blue and/or green-to-magenta) in all presets, and white balance bracketing over three frames. Manual colour temperature setting from 2500 to 10,000 degrees Kelvin with four custom settings. AI AWB adjustment for in-camera RAW processing.

Interfaces: USB Type C (USB 10 Gbps), HDMI (Type A), 3.5 mm stereo audio input, 3.5 mm stereo audio output, 2.5 mm wired remote input.

Additional Digital Features: Sensor-shift five-axis image stabilisation with up to 8.0 stops of correction at frame centre (up to 7.5 stops with 'Dual I.S. 2' which operates along with lens-based optical stabilisation), four/eight-shot 'High Resolution' capture (JPEG, RAW or RAW+JPEG, 48 or 96 MP with hand-held or tripod modes, motion correction processing, shutter delay and in-camera compositing), tethered shooting via Capture One software, sensor cleaning, 'Light Composite' mode, dual-axis level display, grid

guides (choice of three), digital zoom (up to 4.0x), Adobe RGB and sRGB colour spaces, 21 'Photo Style' presets (Standard, Vivid, Natural, L. Classic Neo, Flat, Landscape, Portrait, Monochrome, L. Monochrome, L. Monochrome D, L. Monochrome S, Leica Monochrome, Cinelike A2, Cinelike D2, Cinelike V2, Like709, V-Log, 'Real Time LUT' facility [up to 39 can be uploaded], Like2100 Hybrid Log Gamma, Like2100 Full Range), ten user-defined 'My Photo Style' presets, adjustable 'Photo Style' parameters (Contrast, Highlight, Shadow, Colour Saturation, Colour Tone, Hue, Filter Effect, Grain Effect, Colour Noise, Sharpness, Noise Reduction, Dual Native ISO, Sensitivity, White Balance and LUT, LUT 1, LUT 2), LUT Opacity, LUT Opacity 1, LUT Opacity 2), eight filter effects (Expressive, Retro, Old Days, High Key, Low Key, Sepia and Bleach Bypass), simultaneous recording with and without the filter effect, auto bracketing functions (exposure, aperture, focus – up to 999 frames – and white balance), focus stacking, 'Intelligent Dynamic' processing (Off, Low, Standard, High, Auto), intervalometer (up to 9999 frames), stop motion recording for animation, 'Crop/Hybrid Zoom' (up to 3.1x), 'Quick Menu' control screen with customisation, multiple exposure facility (with overlay and auto exposure adjustment), manual lens corrections (Vignetting Compensation and Diffraction Compensation), long exposure noise reduction (On/Off), customisable 'My Menu' (24 items), luminance/RGB histogram displays, highlight alert, adjustable image display time, auto image rotation, slide show (with variable display times and background music), playback zoom (up to 16x), zoom from AF point/zone, 12 or 30 thumbnail displays, thumbnail calendar display, in-camera editing/processing (RAW-to-JPEG and RAW-to-HEIF conversion), resize, rotate, rating, protect, video divide), picture sort modes (file name or date/time), WiFi (2.4 and 5.0 GHz bands) and Bluetooth 5.0 (LE) wireless connectivity, integrated Frame.io to Cloud support.

Power: One 7.2 volt/2200 mAh rechargeable lithium-ion battery pack (DMW-BLK22 type). In-camera recharging and powering is via USB C. Optional DMW-BG2E battery grip adds a second battery pack.

Dimensions (WxHxD): 134.3x102.3x91.8 mm body only

Weight: 718 grams body only (without battery or memory card).

Price: \$5299 body only. \$6799 with Lumix S 24-105mm f/4.0 Macro OIS zoom lens. Panasonic Australia offers an extended five year warranty (two year standard warranty plus an additional three years) on Lumix camera bodies sold by an authorised Panasonic Australia reseller.

Distributor: Panasonic Australia, telephone 132 600 or visit www.panasonic.com.au



Photo credit | **Street Photography by Locky Cooper** | Locky works at Lismore Camera House and he captured this action skateboarding photo with the Nikon Z8 camera, the Viltrox AF 16/1.8 Z lens plus he used the Godox V1 PRO round head TTL Speedlite Flash too. | **Image details** Shutter 1/30 | Aperture f/5.0 | ISO 1000

Turn moments into stories

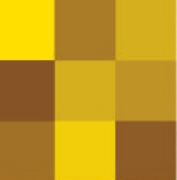


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Australian fashion model
Jimmy Young-Whitforde for
Hackett, London. Original
photograph by Magnus Reed.

WORKING THE CAMERA

JIMMY YOUNG-WHITFORDE

For a change, we're profiling someone whose career, so far, has been mostly spent in front of the camera, but in this time, Australian model Jimmy Young-Whitforde has worked with some of the world's best fashion photographers.

It's Milan Fashion Week in 2009 and Jimmy's eyelids are painted red. He's about to step onto the catwalk for legendary designer Vivienne Westwood. He had just had a wee, but seconds before he stepped out, Vivienne saw some droplets on his suit and made a joke. At that point, he had no idea who she was or her remarkable back story as "one of the architects of the punk fashion phenomenon of the 1970s".

As he walked out for the show, Jimmy had a satchel with a shoulder strap. "Darling, you know you could have tripped over that strap," Vivienne said later. "She was so cool," he recalls. "I didn't realise that the strap was dragging over the ground."

Jimmy Young-Whitforde grew up in Byron Bay on NSW's north coast and has the eye of a photographer as well as a deep love of photography... which was initially ignited by his brother, Daniel, who is also a fashion model and a filmmaker. Jimmy started with a punk band that subsequently evolved into the metalcore band Parkway Drive which is still performing today. He moved to the northern beaches of Sydney to finish high school. He had first dabbled with modelling at 19 and then got back into the scene a few years later influenced by Australian fashion photographer Nick Leary (who was also a very successful model before becoming a photographer in New York in 2000). This was also Jimmy's goal. Nick got him started with a test shoot. His first modelling agency in Australia was The Men's Division and his first job was with British fashion photographer Ben Watts who is also the older brother of the actor Naomi Watts. This was a plum assignment for *Self* magazine, working alongside the Australian model Cheyenne Tozzi. Another plus was

working with Ben as Jimmy had always loved his large-format book called *Big Up* (2004) which was full of fashion, lifestyle, surfers, skating and musician images.

London Calling

"Nothing was planned," Jimmy says. "It was just... go overseas and get a bit of free travel." This was organised through Storm, a London-based modelling agency. Jimmy arrived in London and moved into the Storm agency's model apartment along with six girls. He was the only guy and recalls that the girls were "super messy", but friendly with diverse cultural backgrounds which made for an interesting mix.

"It was exciting to live with a range of talented ladies, but I mostly played a mysterious card staying in my bedroom playing guitar and singing... which I got the impression they enjoyed."

When he began running low on money, Jimmy's agent suggested he go to Greece to get some more pictures and to keep him in the mix. He arrived with just three Euros in his pocket. The Greek modelling agency Ace Models ran promotional nights, the models were fed, given free accommodation and 50 Euros to go to a club which Jimmy describes as "more of a fun thing than serious work".

Back in England, Jimmy met the marketing and advertising team at Hackett, a UK premium clothing brand for men and boys. He did a test shoot and they liked the results, so he was sent to Sicily where the photography team was looking for locations. There were also evaluating the models they would pair as back-ups for the British actor Matthew Goode who was the face of Hackett. Jimmy was testing for this position. Arriving wild-haired and unshaven from Milan Fashion Week,

the photography team initially thought he might have been the assistant, but once he put the suit on, they could see the potential. Realising that he had just come from Milan, they asked about the show and he said, "Well, I got one show from this girl named Vivienne Westwood". They all started laughing because he hadn't known who she was. However, Jimmy got the position of back-up for Matthew Goode, winning against "a minor English celebrity".

In 2009 the United Kingdom was in a serious recession. Jimmy ran into one of Hackett's accountants on the London Underground, and he told him that, "They had been about to go into receivership, but were now making more money than they'd ever made... so it was definitely a case of being in the right place at the right time".

Jimmy did five seasons for Hackett which represents nine or ten catalogues and, for four of these seasons, he was on an exclusive contract. Swedish-born Magnus Reed was the photographer and he was still shooting on film using Hasselblads and, what's more, using the waist level viewfinders. Jimmy later worked with Magnus for a high-end Swiss catalogue. He went to many locations for the Hackett fashion photography shoots; including the Saatchi Gallery in London, the city of

Interview by Bruce Usher

Jimmy featured
on *GQ UK Style
Supplement
Fall/Winter 2011
cover. Original
photograph by
Simon Crane.*





An Englishman ABROAD

A coming-of-age story in menswear sees formal tailoring looks worn with an informal élan usually reserved for the young and the reckless

Photographer *DIEGO MERINO* / Fashion Editor *MITCHELL BELK*

British GQ magazine fashion feature, Venice, Italy. Original photograph by Diego Marino.

next morning he contacted the agency and they couldn't believe his story. "Too funny," they said and then told him he had a meeting with the well-known fashion photographer and film director Bruce Weber.

Of course, Jimmy knew who Bruce was and he got the job modelling for the clothing and accessories brand Abercrombie & Fitch.

"When I arrived, Bruce said he wanted to have breakfast with me the next morning and, at that meeting, he said, 'You remind me a lot of Heath Ledger...' and the girl I'm going to pair you with I used to model with her back in the day when I was briefly a model, before I became a photographer. That was a very personal conversation. Weber shot film –and I think he still shoots film. I only did the one job with him, but that flowed onto other assignments, including one for a Ralph Lauren clothing line called Rugby."

This shoot was in South Carolina and Jimmy was paired with an Australian girl who looked like Jackie Kennedy"... because they thought I looked like a Kennedy". Puerto Rican Arnaldo Anaya-Lucca was the photographer. Then, for Bloomingdales, Jimmy went to the

For Ralph Lauren.

Chichester in Sussex and Lanzarote, a small Spanish island off the west coast of Africa.

A Rough Start In New York

After Hackett, Jimmy started working for State of Art, a Dutch menswear brand. "It wasn't the highest paid job," he says, "but we would go to the most exotic places... LA, Montauk, Rio, Scotland, Portugal, Cortina, Rotterdam, London and Normandy."

Amsterdam-based Hans van Brakel was the photographer. "He is a successful, cool and old-school guy, but a digital shooter and he was a pleasure

to work with. Plus, they always had beautiful Porsche cars in the shoots."

New York was next and Jimmy was on the books of an agency there. "Again it wasn't really planned, but somehow, it all just sort of happened," he says softly. He recalls arriving at JFK airport with just \$20 wasn't even enough to catch the train into the city. But somebody bought him a ticket and he got off the train with 40 kilos of luggage and four surfboards.

"It was too late to call the agency, so I ended up sleeping outside McDonald's in Time Square on my first night and smoking cigarettes to stay awake." The



RALPH LAUREN



Above: Canadian fashion model and photographer Lyle Roblin photographed by Jimmy Young-Whitforde in Milan, Italy.

Left: For Hackett, London. Original photograph by Magnus Reed.

Kennedy holiday house at Montauk on the western tip of Long Island in New York state. Then there were shoots for Hush Puppies and Gap clothing with the Swedish photographer Mikael Jansen in a studio with another ten or 15 models. These included the Canadian supermodel Jessica Stam. Jimmy contends that, generally speaking, the male models on a fashion shoot are at the bottom of the pecking order.

"I went back to the USA in 2016 and then my dad got sick with cancer. Mum had previously passed away from cancer and that happened at the height of my career. She had told me she was fine and she wanted me to carry on. I didn't know that she was terminal, but everyone else in the family did. So, when Dad got sick I thought, 'I can't risk this'. So I left and that's not a good thing in America. They want you to be serious about work. They ghosted me when I tried to contact them. I was disappointed, but it shows you how cutthroat the business is."

Working With Rodney Smith

New York-based fashion photographer Rodney Smith had casted all the NYC

agencies three times. "He was really specific about the guys he picked," Jimmy states. However, at a skype meeting with the photographer, Rodney asked Jimmy if he would come to New York for a casting. Jimmy confesses that he isn't good at castings.

"I don't look people in the eyes enough and, a lot of the time, at castings that's what they want because eye contact is important for a number of reasons."

A few days later, Jimmy walks from the elevator of a high-rise into a room to see around ten people sitting behind a long desk. Rodney is sitting in the middle. Jimmy kept reminding himself to keep maintaining eye contact. Rodney then showed Jimmy some of his work.

"Mum had just passed away and so, incidentally, had Rodney's father. I responded to one of his quirky photos and so we established a bit of a connection. Maybe he saw something in me through the Hackett advertising shots."

Rodney Smith's work is commonly referred to as classic, minimalistic or whimsical. His wife, Lesley Smolan, was

his art director and important in helping to develop his style. She is also the sister of Ric Smolan, the creator/producer of *A Day In The Life Of Australia* and other titles in this very popular series.

Jimmy got the job which involved a seven-day shoot in the Dominican Republic in the Caribbean. As it happens, this was only one of five jobs that he had ever won from a casting. On set, Jimmy had to wear sunglasses the whole time because Rodney didn't like the men looking directly into the camera. Everything was shot on black and white film with a Hasselblad and an 80mm standard lens. He also used a Mamiya 6x7cm rangefinder camera. "You had to twist Rodney's arm to do a colour shot even on an important job like this which was a catalogue for a resort aimed at the aristocracy. When I got there he had me 15 metres up a palm tree with a telescope. The hero shot was me hanging out of a helicopter on a swing. It was a bit dangerous, but I could see in his eyes that he liked it."

Later, Jimmy went to one of Rodney's book launches in NYC and he

“It was too late to call the agency, so I ended up sleeping outside McDonald's in Time Square on my first night and smoking cigarettes to stay awake.”



signed it, 'To Jimmy who never really recovered from this shot, best Rodney.'

"Two years later, Rodney's assistant called me and told me he had passed away in his sleep the previous night."

When he died in New York in December 2016, Rodney Smith was just 68.

Italian Adventures

"I got a job for VBC, the oldest woolen mill in the world which had been founded in 1663 in Pratrivero in north-western Italy," explains Jimmy. "Giovanni Gastel from Milan was the very cool photographer. He was an iconic, top ten Italian fashion photographer and a nephew of Luchino Visconti, the famous Italian film director and screen writer. The photography was at the amazing Villa Erba at Lake Como and, between shoots, Giovanni told lots of stories.

For example, he recalled, 'When I was a child, Coco Chanel would come around and would be sitting here with my aunt.'

Jimmy ended up performing summersaults in his suit on the equipment at the gym where Luchino Visconti used to work out. Canadian-born fashion photographer – and fashion model – Lyle Roblin was hired to do the behind-the-scenes photos. They became friends and have since done several projects together where Lyle is a photographer and Jimmy is an aspiring photographer, both in sharp suits, walking around Italy shooting each other (see the picture of Lyle on a pushbike with the historic La Scala Milan Opera house in the background).

"Lyle is 65 and a humble, gently spoken, down-to-earth guy who is 25 years older than me. He's been modelling for 40 years and also worked



Right: Lyle Roblin photographed by Jimmy Young-Whitforde, Italy.

Left: Vogue Australia fashion shoot in the March 2016 issue. Original photograph by Will Davidson. The female model is Ondria Hardin.

with Bruce Weber. Lyle told me, 'Bruce liked to use the green filter on the guys'. Lyle was the photographer for *The Italian Gentleman* book which is described as 'an in-depth celebration of the finest producers of men's sartorial style in the world's most elegant country'. It's subsequently been a best-seller."

Jimmy made the inside cover and Giovanni Gastel was on the opposing page. Sadly, Giovanni Gastel has also since passed away far too early, dying in Milan in March 2021 aged only 65. Published in English by Thames & Hudson in 2019, *The Italian Gentleman* – still available from various online booksellers – is an excellent example of the rich imagery that can result from the unique creative collaboration of model and photographer. So is Jimmy's extensive portfolio of fashion shoots amassed over the last two decades from shoots all over the world, modelling many major clothing brands, featuring in many of the leading fashion magazines and working with a stellar list of A-list fashion photographers. Being a passionate photographer himself (he's also an avid surfer) has undoubtedly helped in the process and many before him – supermodel Helena Christensen being a particularly notable example – have successfully moved to behind the camera. He often takes his own camera on shoots – and cameras of various vintages often feature in these shoots as accessories – so the future for Jimmy Young-Whitforde looks positive no matter which side of the lens he's chooses. **AP**



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Magic Mic

REPORT BY
PAUL BURROWS

AUDIO-TECHNICA ATV-SG1

It's a crowded market, but Audio-Technica's latest take on the on-camera microphone has some really useful features, versatile functionality, a compact but robust design and pro-level performance.



While the camera makers have been improving the audio recording capabilities of the mirrorless cameras that are primarily aimed at vloggers and video content creators (it's definitely a class of models now), limitations remain and can have a significant impact on the quality – or lack thereof – of a sound track. External, on-camera microphones provide a comparatively effective and affordable solution for small-scale or solo-shooter applications and this market is already well-served by the likes of Rode and Sennheiser. Now Japanese professional audio company Audio-Technica is return-

ing to the sector to offer not just its long expertise in pro recording products, but also some appealing features that are born out of it. Audio-Technica started out in 1962 making bespoke cartridges for record players and today its turntables, headphones and microphone systems are used all over the world

in a variety of applications including live concerts, recording studios, music venues and theatres.

It's made on-camera microphones in the past, but with the use of hybrid mirrorless cameras for video-making across a much wider range of productions, it was time for something new which leverage the latest audio technologies and microphone design features. The first two models are the ATV-SG1 and the ATV-SG1LE which both share the same basic acoustic configuration, but the latter has fewer features and, consequently, is simpler to use and, of course, more affordable. Audio-Technica sees this model as primarily appealing to content creators and vloggers as it essentially offers simple plug-and-play convenience. The ATV-SG1 suits these applications too, but its extra features, operational conveniences and better specs also make it suited to a wider range of recording situations and output applications.

The shared design configuration is a 100 millimetres long acoustic tube with a newly-designed 14 millimetres large-diameter diaphragm condenser-type microphone. This arrangement gives a very directional pick-up pattern which basically means that most of its sensitivity is concentrated in the direction that it's pointed and sounds from the sides or behind the camera are suppressed to reduce background noise. Ambient noise isn't entirely eliminated, but a little is still a good thing in terms creating context and atmosphere while not distracting from the main sound source.

This type of microphone is commonly termed 'shotgun' – mainly because of its long barrel – and it's ideal for recording voices, instruments or sounds coming from a single source (such as a car engine, for example). You'd use it at a wedding, for example, when shooting the couple taking their vows and the speeches at the reception afterwards.

Stereo Modes

Both the new ATV series models are solidly-built with metal tubes and metal mesh grilles. They also have built-in shock mounts to isolate the microphone itself from handling noise or vibrations. This integration means a lower profile is maintained on the camera and the clumsiness of an external mount is eliminated. Both models connect to the camera via a coiled – so it's very flexible – 3.5mm TRS-to-TRS cable which is supplied in the box, along with a 'fluffy' (also, less charm-



ingly, known as 'dead cat') which is a furry cover that slots over the barrel when shooting in windy conditions to reduce buffeting noise.

The SG1 comes with an additional USB cable (Type C to Type A) which is for recharging its built-in battery and a full charge gives up to a claimed 24 hours of recording time (the LE model is powered from the camera). Conveniently, the SG1's power turns on and off with the camera, although it also has its own on/off button. It also has a number of additional controls that aren't provided on the LE model and these are related to features which provide more options for dealing with specific recording situations. They comprise a mode selector, a low-cut filter switch and a gain control plus there's the USB C port for battery recharging, a 3.5 stereo audio output for headphones (with a volume control) and an 'EXT IN' external audio input (more about this shortly).

The audio mode selector has three settings which configure the stereo output and are labelled 'Normal', 'Safe' and 'Ext'. The 'Safe' mode is a particularly interesting feature and records the main audio on the left channel along with a secondary back-up or safety track that's recorded on the right channel with -6 dB reduction in level to deal with any sudden spikes in volume which would cause harsh distortion (known as 'clipping' in audio terms).

The 'Ext' mode is also pretty interesting and allows you to use a wireless microphone – such as a lapel or lavalier type – along with the SG1's own mic, each recording simultaneously to their own channel. The lav mic's wireless receiver couples to an accessory shoe atop the SG1's body and plugs into the external audio input mentioned a moment ago. Why might you want this arrangement? Well, it's a quick and easy way for a solo shooter to have a second microphone on set or on location and it'll also be handy if you want to shoot dialogue or a PTC (piece to camera) from further way which is when the shotgun mic won't work so well. With

wireless lavalier mics clipped on the subjects, their voices will still be loud and clear.

Using the mic's gain knob, you can choose to set the levels yourself according to the where and what you're recording and guided by the level meters displayed in the camera's monitor screen. Put simply, you want to avoid the meters going into their red zones too often and which means very high volumes that will result in distortion. Located at the rear of the mic, the knob's adjustment is stepless with a range of 37 dB, and there's a neat little shield along the outside edge to prevent it being accidentally nudging off a setting.

The low-cut filter switch – a little obscurely marked if you aren't familiar with these things – can be engaged to filter out lower frequency sounds such as wind buffeting, the rumble of traffic or trains in the background, crowd noise or the hum of heating or ventilation systems when shooting indoors. On the SG1, it's set at 160 Hz with 24 dB roll-off slope.

On both models, Audio-Technica's patented A-T noise-immunity technology eliminates RF interference or hum from nearby smartphones or other electronic devices.

Another thoughtful feature of the SG1 is a sliding mount so the whole

Both the ATV series on-camera mics are solidly built with metal tubes and metal mesh grilles, and have built-in shock mounts.”

unit can be moved backwards on the camera's hotshoe. The adjustment range is around 40 millimetres and, if you're using a very wide-angle lens, allows you to reposition the mic so the front of the acoustic tube doesn't appear in the frame. The hotshoe mount itself has a 12-sided plate so the mic's angle can be set at 30-degree increments for a more precise 'aim' if your subject is offset in the frame. This, incidentally, is also a feature of the LE model.

Performance

Clearly, quite a bit of thought has gone into the ATV-SG1's design with attention to the particular requirements for video shooters using it on-camera and often working solo. There's no hidden complications with setting up – you simply secure it to the camera hotshoe, plug it into the camera's audio input and switch the camera on



An audio mode selector and manual gain knob are located at the rear of the SG1.

Novel sliding-rail mount allows the SG1 to be moved back on the camera hotshoe to avoid it appearing in the frame when using an ultra wide-angle lens.



AUDIO-TECHNICA ATV-SG1 ON-CAMERA VIDEO MICROPHONE

(the mic will switch on automatically with it). In many situations that's all you'll need to do and you're ready to roll. Otherwise, depending on the conditions, set the gain manually or the low-cut filter or, if you're unsure what's going to be happening with volumes and don't want to be continually adjusting levels, select the 'Safe' audio mode and the SG1 do the rest.

The audio quality is rich and detailed – especially for vocals – but it also reproduces stringed instruments – such as a solo acoustic guitar or mandolin – with exceptional clarity and character. However, it also copes well with higher volume levels – as you'd expect with a maximum input level of 126 dB which is properly loud – and the dynamic range of 60-20,000 Hz ensures a solid bass reproduction along with crisp high frequencies. Perhaps not surprisingly

given the target applications, the mid-range frequencies are a little brighter in emphasis, but Audio-Technica itself says the ATV design philosophy is to primarily deliver a "lifelike reproduction of the human voice and other sources". It certainly succeeds in terms of the excellent audio quality, further assisted by a pretty well perfect balance between the directional sound and the ambient sound.

The Verdict

Compact but solidly-built, the ATV-SG1 is cleverly designed with an emphasis on the particular demands of on-camera usage hence the flexible mounting options and the versatility inherent in the 'Safe' and 'External' modes. However, Audio-Technica gets all the



fundamentals right too, so the audio performance is exceptional with enough additional controls for when the recording conditions are less than ideal. The key word here is "enough"

so the SG1 isn't so complicated that the novice user will be overwhelmed and, instead, it doesn't take long for you to be operating it like a pro and subsequently getting better results without needing to be an audio expert. Given its capabilities, it's well-priced too, but the LE version is even more affordable if you're happy to let A-T's know-how do all the work. Either do an excellent job, but the SG1 is the one to have if you want superior video soundtracks in any recording situation. **AP**

It's also well-featured with several useful audio controls to optimise performance when shooting outdoors or inside.

VITAL STATISTICS

AUDIO-TECHNICA ATV-SG1 \$369

Design: 14 mm large-diameter diaphragm housed in 100 mm acoustic tube to give highly-directional shotgun pick-up characteristics (i.e. hypercardioid polar pattern). Integrated shock mount.

Frequency Response: 60-20,000 Hz.

Low Frequency Roll Off: 160 Hz, 24 dB/octave.

Dynamic Range: 109 dB (1.0 kHz, THD 3.0 percent, at maximum gain).

Sensitivity: -35 dBV at gain setting 5, -28 dBV at maximum gain.

Maximum Input Sound Level: 126 dB SPL (1.0 kHz, THD 3.0 percent, at maximum gain).

Signal-To-Noise Ratio: 77 dB (1.0 kHz at 1.0 Pa, A-weighted, at maximum gain).

Interfaces: 3.5mm minijack stereo audio output to camera, 3.5 mm minijack stereo audio input (with plug-in power). 3.5 mm minijack stereo audio output (with adjustable volume), USB Type C (2.0 High Speed).

Power: Built-in 3.85 volts lithium-ion battery recharged via USB C.

Features: Patented noise-immunity technology (to prevent the pick-up of RF noise/hum), gain adjustment (37 dB stepless), low-cut filter switch, safety track recording mode (to avoid clipping), external mic recording mode (for use with a wireless

lavalier mic, 12-side mounting shoe (enabling angled positioning in 30-degree increments), adjustable slide rail, accessory/cold shoe, auto power on/off with the host camera, 24 hour continuous operation per battery charge. Furry windscreen/muff supplied, USB charging cable supplied (Type A to Type C), coiled audio cable supplied (stereo 3.5 mm mini plug to stereo 3.5 mm mini plug).

Dimensions (WxHxL): 35.0x82.0x127.1 mm.

Weight: 155 grams.

Price: \$369.

Distributor: Technical Audio Group, www.audio-technica.com/en-au

VITAL STATISTICS

AUDIO-TECHNICA ATV-SG1LE \$189

Design: 14 mm large-diameter diaphragm housed in 100 mm acoustic tube to give highly-directional shotgun pick-up characteristics (i.e. hypercardioid polar pattern). Integrated shock mount.

Frequency Response: 20-20,000 Hz.

Dynamic Range: 102.5 dB (1.0 kHz at maximum SPL).

Sensitivity: -38 dBV at gain setting 5, -28 dBV at maximum gain.

Maximum Input Sound Level: 114 dB SPL (1.0 kHz, THD 3.0 percent).

Signal-To-Noise Ratio: 82.5 dB (1.0 kHz at 1.0 Pa, A-weighted, at maximum gain).

Interfaces: 3.5mm minijack stereo audio output to camera.

Power: Derived from the camera.

Features: Patented noise-immunity technology (to prevent the pick-up of RF noise/hum), 12-side mounting shoe (enabling

angled positioning in 30-degree increments). Furry windscreen/muff supplied, coiled audio cable supplied (stereo 3.5 mm mini plug to stereo 3.5 mm mini plug).

Dimensions (WxHxL): 35.0x59.0x127.1 mm.

Weight: 100 grams.

Price: \$189.

Distributor: Technical Audio Group, www.audio-technica.com/en-au

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