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15-21 FEBRUARY 2024 ISSUE 595

Photography Week



INSPIRATION | IDEAS | IN-DEPTH REVIEWS



PET PROJECTS

EXPERT TIPS FOR CAPTURING ENGAGING
PORTRAITS OF CATS AND DOGS

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**Professional photographers, videographers, content creators and image-making industry representatives can apply for FREE entry to the show.
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W E L C O M E

Photography Week



JOIN THE CLUB...



Welcome to the world's No.1 weekly digital photography magazine. If you're already a reader, thanks for your continued support and involvement; if you're new to *Photography Week*, you've come to the right place! In addition to expert advice, brilliant tips and step-by-step tutorials, every issue features interactive galleries of brilliant photos, how-to videos on

essential shooting and editing techniques, and in-depth reviews of the latest camera kit.

But that's not the whole story. *Photography Week* is more than a magazine – it's a community of like-minded people who are passionate about photography. To get involved, just follow any of the links below and share your shots and comments.

Jeff Meyer, Editor

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We're more than just a magazine – read on and discover the many ways you can interact with and enjoy *Photography Week*



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Packing AI smarts into a sub-250g frame, the Mini 4 Pro promises to be the ultimate aerial tool for creatives. We take it up and push it to its limits



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Cover image © Getty

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WHAT'S HOT

THE WEEK'S TOP HEADLINES IN PHOTOGRAPHY

ASTRHORI UNVEILS PERIPROBE LENS FOR APS-C CAMERAS

New optic features the same tricks as the full-frame version, enabling you to 'see round corners' by shooting at a 90-degree angle to the lens barrel



© AstrHori

Lens maker AstrHori has released the 18mm F8 2X Periprobe, an APS-C version of the 28mm F13 2X Macro Periprobe, a full-frame probe lens with a front element angled through 90 degrees, enabling the lens to 'see round corners', which it launched last year.

The new lens has the same rotating barrel tip as the full-frame version, with its perpendicular viewpoint (relative to the main lens barrel), enabling you to shoot at 90 degrees in three directions, as well as straight ahead. This opens up possibilities for intriguing new creative

effects, such as being able to point the lens straight down into the undergrowth or into a flowing stream, with the 90-degree lens angle enabling you to capture a horizontal bug's-eye view of the scene ahead.

This latest APS-C revision also retains the full-frame version's ability to be submerged in water to a depth of up to 25cm, while the entire lens construction measures 470mm and weighs around 712g. The full lens comprises a long, slim probe section, and a shorter, larger diameter barrel containing a 23-element optical stack arranged in 17 groups.

AstrHori says the 18mm focal length provides an 80-degree field of view when paired with a camera with an APS-C sensor, with a working distance of just 5mm. As with the 28mm full-frame version, this APS-C lens is capable of a 2:1 magnification ratio.

The AstrHori 18mm F8 2X Periprobe Lens is available to buy now for Sony E, Fuji X, Canon RF, Nikon Z, L-mount and MFT cameras, priced at £759 / \$789. Alternatively, the lens can be purchased as a bundle with AstrHori's regular, forward-facing probe extension for £1,119 / \$1,169.



PRO
LAURA GALBRAITH

CAMERA:

CANON EOS R5 & R6

Laura was an IT and maths teacher, but seven years ago she decided to pursue her passion and become a full-time photographer. She now runs a successful pet photography and workshop business, and she's enjoyed critical success too, winning the Guild of Photographers Bird Image of the Year title in 2019 and Nature and Wildlife Image of the Year in 2020. We took Helen along to meet her at her home studio near Cambridge, UK.

lauragalbraith
photography.co.uk



HELEN BLACK

CAMERA:

CANON EOS R6

Helen is a former IT trainer for a recruitment agency. She's always had a strong interest in photography, and when she was made redundant 10 years ago she found she had more time to devote to her hobby. She developed a love for wildlife photography during the pandemic, using a pop-up hide in her garden to take photos of birds and other garden visitors. While she's confident photographing wildlife outdoors, she admits that she finds working in a studio and using flash daunting, so we paired her with Laura for a crash course in pet portraiture.

PAW-TRAIT MASTERCLASS

Professional wildlife photographer
Laura Galbraith goes domestic to
offer some expert tips on capturing
engaging pet portraits



F E A T U R E

TECHNIQUE ASSESSMENT

The Animal Eye autofocus tracking takes care of capturing pin-sharp pet shots



SHOOTING IN MANUAL

To get started Laura asked Helen to put her Canon EOS R6 into its Manual mode, and opened the aperture on her 100-400mm lens to its widest f/5.6 at 400mm for a shallow depth of field to create separation between their first subject, Leonardo, and the background, so that he was the clear focal point. Laura set a shutter speed of 1/400 sec to freeze the dog and eliminate camera-shake. The low light levels needed a whopping ISO of 10,000!

ANIMAL EYE AF

Laura shoots with Canon EOS R5 and R6 full-frame bodies, and both feature Canon's incredible Animal Eye autofocus. Helen used the Animal Eye AF on her R6 to quickly lock onto pets' eyes make sure they were pin-sharp – it also came in handy when shooting the high-speed action shots. Helen also set up double back-button focus on her R6 so that AF-ON engages autofocus, while the * button activates Animal Eye AF.

EXPERT INSIGHT HIGH-SPEED SYNC FLASH

A fun technique to try is to throw some treats up in the air towards your cat or dog, and use flash to freeze the moment they attempt to catch them – you can capture some wonderfully funny and comical poses. The conventional maximum sync speed of flash around 1/250 sec will likely be too slow to freeze the animals leaping up to catch their treats, so flashes and triggers with High-Speed Sync (HSS) are a must.



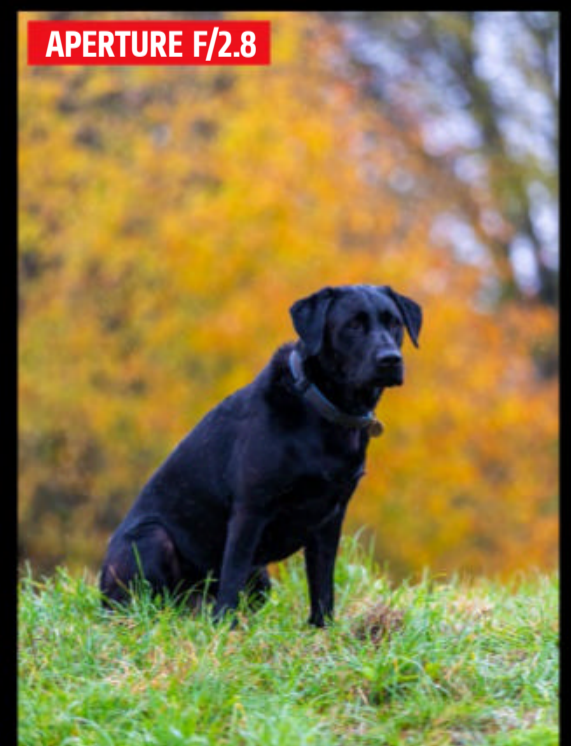
© Shutterstock

PRO TIP BETTER BLUR IN YOUR BACKGROUNDS

The aperture is a series of blades that open up or close down to control the flow of light to the camera sensor. A great way to bring attention to your pets when shooting outdoors is to blur the background by using a wide aperture. This will flood the sensor with light, as well as creating a shallow depth of field. Other factors that help to create a shallow depth of field are a telephoto focal length, such as 200mm or 400mm; getting closer to focus on your subject; and moving your subject further away from the background for maximum separation.



APERTURE F/11



APERTURE F/2.8



F E A T U R E

LENS 100-400mm f/4.5-5.6L IS II USM
EXPOSURE 1/400 sec, f/5.6, ISO10,000



HOT SHOT #1

HELEN'S COMMENT

I met up with Laura at her home studio in Burwell, and we headed straight out with Angie and her black labrador Leonardo and St Bernard, Mr Darcy. Laura explained that having a catchlight in the eyes are the key to a good pet portrait, although I struggled to achieve this with Mr Darcy, and found it easier with Leonardo as his eyes weren't so obscured. For this tight headshot I zoomed into 360mm on my 100-400mm lens to fill the frame, opened my aperture up to f/5.6 to blur the background and set ISO to Auto. We then had Angela stand behind me waving her arm to get Leonardo looking at the camera for better eye contact.

EXPERT INSIGHT GET THEIR ATTENTION

For strong eye contact and to help her light source create a catchlight, whether its outdoor sun or indoor studio lighting, Laura needs to have the pets looking in the right direction. For this shot of Leonardo the black labrador, and Mr Darcy the St Bernard, they were both solely focused on their owner Angela, so Laura had her stand directly behind Helen while she was taking photos to get them facing the right way. Laura also uses toys, treats, catnip, and even duck-call whistles to get the attention of pets.



F E A T U R E



LENS 100-400mm f/4.5-5.6L IS II USM
EXPOSURE 1/1600 sec, f/5, ISO6400

PRO TIP TURN OFF EXPOSURE SIMULATION INDOORS

Exposure simulation combines the shutter speed, ISO and aperture to give you an accurate indication of your exposure when working with natural light – ideal when Helen is taking her wildlife photos outdoors. However, Laura explained that it's best to disable this feature when working with studio lighting, as the camera won't factor in the flash, and the Live View will appear too dark to compose with.



EXPERT INSIGHT READY, SET, GO!

To capture top action shots of animals on the move Laura recommends a shutter speed of at least 1/1600 sec – opening up the aperture and boosting the ISO will make it easier to achieve a fast shutter speed. Laura also uses Animal Eye Detect autofocus to track the animal's eyes, and she suggests using your camera's fastest High-Speed Continuous drive mode to give yourself more chance of catching a sharp shot and the perfect moment in the action sequence.



HOT SHOT #2

HELEN'S COMMENT

After taking some tight headshots, Laura suggested trying to catch a few action shots with athletic three-year-old Leonardo running straight towards the camera – and I was up for the challenge! Laura suggested getting down low to be at eye-level with Leonardo, which would help blur the background, and as the light levels were quite low I needed to boost the ISO to 6400 to achieve a fast enough shutter speed to freeze him and the rain drops. Laura stood on the other side of the park with Leonardo, and owner Angela stood behind me ready to call him over. It was then just a case of firing a high-speed burst with Animal Eye AF to track the dog's eyes. We had four attempts to maximise my chances of catching the right moment, and this was my best shot.



HOT SHOT #3



LAURA'S COMMENT

Cats behave very differently to dogs, so I wanted to teach Helen how to photograph them in my studio. First up we had my cat Hazel, a mixed-breed brown moggie, and we agreed this lilac backdrop would contrast well. I set up the background and lighting, and in Manual mode I locked in settings of 1/160 sec, f/11 and ISO200 on Helen's camera so she wouldn't need to worry about exposure settings, and could concentrate on the focus, composition and firing the trigger and flash at the right moment. Animals react differently to a variety of stimuli, from catnip to toys, treats and sounds, so it's all about experimenting.

LENS 70-200mm f/2.8L IS III USM
EXPOSURE 1/160 sec, f/11, ISO200



F E A T U R E



HOT SHOT #4

HELEN'S COMMENT

Next up we were greeted by the beautiful Keira, a British shorthair silver stripe with celebrity status, as she's the granddaughter of the Whiskas cat food cat! Laura suggested shooting her against black to help her stunning silver stripes stand out, so she set up a black fabric backdrop, and used clips to make sure it was taught, with no wrinkles. Laura stood next to me, and waved Keira's favourite toy so that I could capture this lovely off-camera gaze; her face is lit beautifully, and I love the catchlights, which really bring the portrait to life.

LENS 70-200mm f/2.8L IS III USM
EXPOSURE 1/160 sec, f/11, ISO200



F E A T U R E



LENS 70-200mm f/2.8L IS III USM
EXPOSURE 1/160 sec, f/11, ISO200



HOT SHOT #5

HELEN'S COMMENT

Laura suggested zooming all the way to 200mm on my 70-200mm. This made it a little trickier to compose, but the Animal Eye AF took care of the autofocus and did a brilliant job of tracking Keira's eyes. I wanted to leave some 'active' space in front of Keira in the direction she was facing in this image. With the aperture closed to f/11, the zone of focus is quite deep, so Keira is razor-sharp from front to back. I love the detail you can see in her fur and whiskers – and the catchlight in her eye is the cherry on top of the cake.

PRO TIP CUSTOM WHITE BALANCE

Laura clipped a grey card onto her Scooby Doo toy and had Helen take a picture of it. She then went into the camera menu on her Canon EOS R6, and used the Custom White Balance function, selecting the image of the grey card she had taken to set an accurate white balance. This ensured that her colours were perfect in every shot taken during the studio pet session.



EXPERT INSIGHT BUILD UP THE LIGHTING

When her client's pets arrive, time is of the essence to catch the perfect shot. Laura sets up her lights and backgrounds beforehand, using a Scooby Doo soft toy as her stand-in model. For this setup, Laura used a paper lilac backdrop with two flashes and 90 x 60cm softboxes attached for side lighting. A flash with a large 120cm octabox was then set up in front and above the pets as the key light to illuminate their front, and also create beautiful circular catchlights in their eyes.



LEFT SIDE LIGHT



LEFT & RIGHT SIDE LIGHTS



PLUS KEY LIGHT



F E A T U R E



SHOT OF THE DAY!

LENS 70-200mm f/2.8L IS III USM
EXPOSURE 1/160 sec, f/10, ISO160



HELEN'S COMMENT

For our last shoot we had Panda, a gorgeous two-year-old border collie. As we'd shot Hazel on a purple background and Keira against black fabric, Laura suggested shooting him on a white vinyl for a high-key look. We used highlight priority to make sure the white background was blown out to pure white, but without losing detail in his white fur. With the exposure sorted I got snapping, and I love this shot of Panda looking directly down the lens barrel, with his head tilted, which makes the portrait even more adorable. Shooting with Laura was a great experience; I learned a lot, and it's made me much more confident about using flash.



LAURA'S VERDICT

Helen was a great student. Thanks to her passion for wildlife and getting out regularly to take pictures of wild animals, she already had a solid foundation of skills to work with, so the outdoor portraits and action shots came naturally to her. And even though our subjects were more well-behaved than wild animals, they can still be very unpredictable and give you a good challenge. I also hope I've demystified the dark arts of flash photography, and made her feel more comfortable shooting in a studio. She really got into the swing of it, and by the end of our session she was nailing beautiful poses of Panda like this winner.



LAURA'S TOP 10 ANIMAL TIPS



1 PAWS FOR THOUGHT

When a client's pet enters Laura's studio she always gives them five minutes to get settled. She'll also fire the flashes a few times so the animals get used to it.

2 SCREEN CALIBRATION

To ensure the colours in Laura's pet portraits are accurate when editing, she calibrates her computer monitor once a month with a Datacolor SpyderX Pro.

3 CLEANER BACKGROUNDS

Laura uses the black point and white point eyedroppers in Lightroom Classic CC to set the darkest or brightest point of an image. This ensures that black or white backgrounds look even, and will smooth out blotches.

4 ATTACK OF THE CLONES

Any fur, muddy paw prints or inconsistent colours in the background can be distracting, so Laura uses tools like the Clone Stamp and Spot Healing

Brush in Photoshop CC to tidy these areas up for a professional finish.

5 STUDIO BACKDROPS

Laura has a mixture of different background materials, including fabric, paper and vinyl. Paper can be costly, as it often needs to be disposed of after each shoot due to wear, muddy paws and any accidents, while vinyl backgrounds can be easily cleaned and are reusable.

6 FLASH SYNC SPEEDS

The mechanical shutter needs to be used when shooting with flash, and this usually has a maximum sync speed of 1/250 sec. A faster shutter speed will produce photos where the shutter curtains haven't fully opened, and you'll see a dark band across your images.

7 TALK TO THE OWNERS

Get insight about the pets from their owners. If you plan on using treats, make sure you've checked for food

allergies, and ask them whether treats or toys are best.

8 USE THE HISTOGRAM

The histogram shows the range of tones your camera has captured, from the darkest blacks on the left to the brightest whites on the right. Check this regularly to make sure you're not burning out any bright highlights.

9 WATCH OUT FOR 'WHALE' EYE

When dogs are stressed you'll often see 'whale' eye, where the white (sclera) part of the eye is visible. If you see this, be sure to take a break, or change things up to make sure the dog is happy and relaxed.

10 AVOID SHOWING 'BOY PARTS'

Laura says: "I doubt any of my customers want to see their dog's 'boy parts' on the wall, so always make sure they're hidden. Change your angle so that their leg is covering this area, or put them in a different position."



ESSENTIAL GEAR

The kit Laura relies on for capturing pro-quality animal shots



1 FULL-FRAME MIRRORLESS CANON BODIES

For a long time Laura shot with a Canon EOS 5D Mk IV DSLR, but she's now finished upgrading her kit and lenses to the EOS R mirrorless system. Her main workhorse is now the 45MP EOS R5, and she has a 20MP EOS R6 as a backup body. Both cameras are professional bodies capable of firing at 12fps with the mechanical shutter (and even quicker with the electronic shutter).

2 CANON L-SERIES LENSES

Laura has a wide range of Canon's RF L-series lenses, including the Canon RF 24-70mm F2.8L IS USM, which is a fantastic all-rounder, and the Canon RF 400mm F2.8L IS USM, which she takes on safaris. Her go-to lens for pet portraits, both indoors and outside, is the Canon RF 70-200mm F2.8L IS USM, which provides Laura with the perfect working distance and zoom range for pets, and also has a wide maximum f/2.8 aperture.

3 FLASH HEADS AND MODIFIERS

Laura has four Elinchrom D-Lite RX One flash heads in her studio. Her usual setup is to have two fitted with 90 x 60cm softboxes at each side, pointing towards or away from the background, and a key light fitted with a 120cm octabox in front and above the subject for fill light and to create a circular catch light. She also has a flash head with a strip box mounted to the ceiling, which she uses when she wants to make sure the background is nice and bright.

4 FLASH TRIGGERS

Laura uses an Elinchrom Skyport Transmitter Plus to fire her D-Lite studio lights, which have built-in receivers. This radio trigger works with all camera brands, including Canon, which is important for Laura as she offers workshops to pupils with all manner of camera systems. It also allows her to turn flashes on or off via the transmitter, rather than walking over to each flash head and doing it manually, so it's much more convenient.



F E A T U R E

LAURA'S TOP 3 PET PORTRAITS Professional pet photographer Laura's three favourite pet portrait photos



BLUEBELL Bluebell is an 11-week-old South African mastif puppy – although she was the same size as most of the fully grown dogs that I get to photograph!



NELLY Nelly was one of my secret sessions, as we had to arrange to get her in and photographed without her owner knowing about it – the resulting photo was a gift that was very well received.



REGGIE British bulldog Reggie hands-down wins the top prize for the most drool cleared up in any of my studio sessions – I had to have change of clothes after all his exuberant doggy slobbers!

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G A L L E R Y

XPOSURE

THE WEEK'S MOST INSPIRING READER PHOTOS



EVENING FOUNTAIN

GEORGE KURZIK

"This is a multiple long-exposure HDR taken at dusk at the State Capitol in Harrisburg, Pennsylvania."

<https://bit.ly/2QrRzC5>

GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



TOAD'S MOUTH

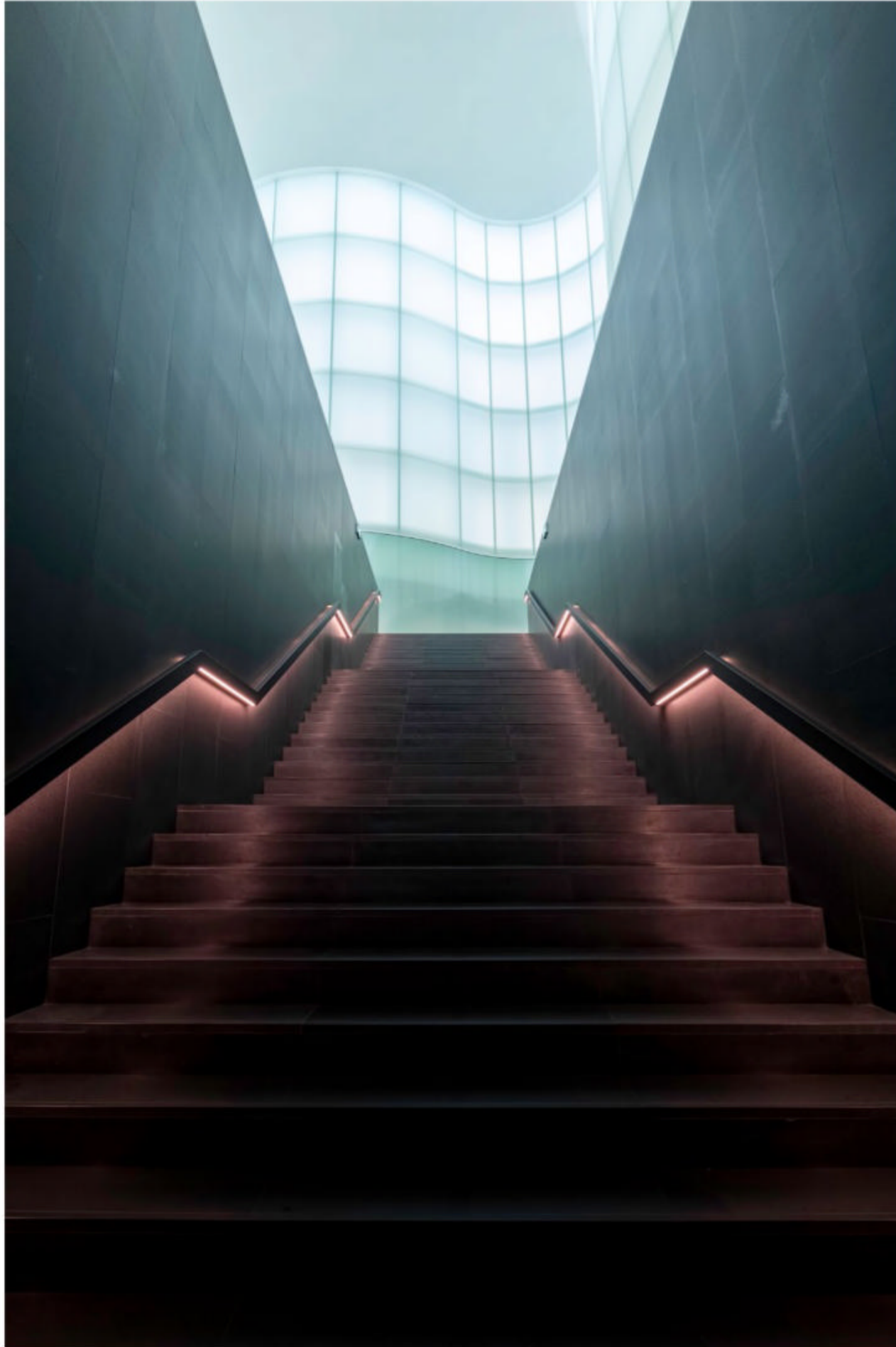
NEIL SHAW

"This is where Burbage Brook passes under the road on the Longshaw Estate in the UK's Peak District. This spot is called Toad's Mouth because of a frog-shaped rock that's located nearby."

<https://bit.ly/465WxJa>

G A L L E R Y

THE WEEK'S MOST INSPIRING READER PHOTOS



DISTORTED REALITY III

MARK GREENFIELD

"This is the stairway to the main hall area of MUDEC, the museum of culture in Milan, Italy. It's one of a series of images of the building that I shot."

<https://bit.ly/3v1BExw>

GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



5 WHITE MUSHROOMS

ALEXANDER FENZL

"I loved the arrangement of these glossy white fungi.
Taken with my Nikon Z6 and 150mm f/8 lens."

<https://bit.ly/3lnVBry>



FACEBOOK

<http://bit.ly/39py9lg>



FLICKR

<http://bit.ly/2VIgsJ0>

PHOTOGRAPHY WEEK WANTS YOUR PHOTOS!

Taken a portrait you're particularly proud of? Shot a sensational sunset you'd like to show off? Then join the *Photography Week* Facebook community and share your best photos today! You'll get feedback from fellow readers and the *Photography Week* team, plus the chance to appear in *Xposure*, or even on our cover!

I N S P I R A T I O N

IT'S COOL, THAT

THE BEST THING WE'VE SEEN THIS WEEK



© Nima Sarikhani

Ice Bed by Nima Sarikhani, People's Choice Winner



© Mark Boyd

Shared Parenting by Mark Boyd, Highly Commended



© Tzahi Finkelstein

The Happy Turtle by Tzahi Finkelstein, Highly Commended



© Daniel Dencescu

Starling Murmuration by Daniel Dencescu, Highly Commended

COLD COMFORT: A POLAR BEAR CHILLS OUT ON HIS ICEBERG BED

Magical image wins Wildlife Photographer of the Year People's Choice Award

Wildlife Photographer of the Year has announced the winner of the People's Choice Award for its 2023 contest. British amateur photographer Nima Sarikhani took the prize for his magical image *Ice Bed*, which shows a young polar bear sleeping on a makeshift bed at the top of an iceberg. Sarikhani's winning shot was captured during a photography expedition off Norway's Svalbard archipelago.

More than 50,000 images were entered

into Wildlife Photographer of the Year last year, with 100 making it through to the finals. A further 25 images were selected by the judges and the UK's Natural History Museum, which runs the contest, with the public invited to vote for their favourite.

Click the link to see more images from the People's Choice Award, and from the main contest. The Wildlife Photographer of the Year exhibition is at the Natural History Museum in London until 30 June.



SEE MORE IMAGES
<https://bit.ly/3IbW3CD>

S K I L L S

CRASH COURSE

ESSENTIAL PHOTO SKILLS MADE EASY



MAKE HEART-SHAPED BOKEH

Mike Harris shows you how to transform bokeh into almost any shape you like using a homemade aperture disc

Bokeh derives from the Japanese word 'boke', which means blur, and it's used to describe the quality of the out-of-focus specular highlights you see time and time again in images, such as portraits or still lifes.

Bokeh is often achieved by focusing on a subject that's separated from a concentrated light source (like a string of LED lights). By shooting at a wide aperture to create a shallow depth of field, the lights in the background are

rendered as attractive glowing shapes. Narrower apertures are still capable of capturing bokeh, but the super-wide apertures of fast lenses are known for producing the creamy depths of field that create these attractive specs of blur most effectively.

Not all bokeh is the same shape, though. You may notice images with spherical, hexagonal, or even pentagonal forms of bokeh. The shape is determined by a number of factors, including the number of aperture

blades in a lens, the shape of those aperture blades, and the aperture being used, and it's therefore possible to manipulate bokeh shapes by introducing a whole new aperture.

In this tutorial we'll show you how to make an aperture disc that will sit on the front element of your lens, and transform the bokeh you capture. We created a simple love heart, but you can use almost any shape you like – all you need is some thick black paper and a few craft utensils.



SKILLS

THE SETUP TOOLS AND CAMERA KIT

You can create stunning bokeh effects with just a few everyday items

1 BLACK CARD

Thick black paper will help prevent light leaks, and is what you'll need to create a DIY aperture disc. We've settled on a heart, but the aperture can be any shape you wish. When placed in front of your lens and used with a wide-open aperture, it'll transform the bokeh into your chosen shape.

2 CRAFT UTENSILS

You'll need a pencil to draw around your lens and mark out a template on the black card, which then needs to be cut out. We'd recommend using sticky tape to fix the card components together, so that your aperture disc stays securely in one piece when you're out and about shooting.

3 TAPE MEASURE

It's important that your aperture shape is placed directly in the centre of the disc. You can use a tape measure or ruler to find and mark the diameter of your template, both horizontally and vertically. If your measurements are right, the lines will meet right in the centre of your disc.



4 SHARP CRAFT KNIFE

You'll need a super-sharp craft knife to cut out your bokeh pattern accurately and crisply – any rough edges from a blunt blade will show up in the bokeh of your final images. Be sure to use a cutting mat to protect your furniture, and always take care to avoid accidents.

5 FAST PRIME LENS

A prime lens has a fixed focal length, so the lens barrel doesn't move, and this should allow your aperture disc to sit a bit more securely on your lens. Most primes – like our AF-S 50mm f/1.8G – also boast wide maximum apertures, making it easier to create prominent blobs of bokeh.

6 CAMERA

Any DSLR or mirrorless camera with manual and semi-automatic modes will work for this technique – you just need to be able to control your aperture value and achieve a shallow enough depth of field to produce prominent bokeh shapes with your DIY aperture disc.



S K I L L S

HOW TO MAKE A DIY APERTURE DISC



TEMPLATE DESIGN FIND THE CENTRE

Rest your sheet of black card on a flat surface and place your lens in the middle (front element facing down). Hold your lens with one hand, and with your other hand draw around the circumference of the lens with a pencil.

Use a tape measure or ruler to measure and draw a line across the diameter of the circle both vertically and horizontally. Draw your aperture where the two lines meet – you can experiment with different shapes and even short words. Our heart measured roughly 1.5 x 2cm, but you may need to experiment with other sizes depending on the lens and shape you're using.

CUT IT OUT ADD THE TABS

You now need to mark out the tabs that will neatly fold around your lens and secure your aperture disc in place. Pencil in multiple marks (roughly 2cm long) as shown here, and use them as a guide in which to draw the outer circle. Cut around the outer circle with your scissors, then carefully cut along the 2cm tab marks.

Use your excess card to draw a 5cm wide band that's long enough to wrap around the circumference of your aperture disc. This will eventually be stuck to the tabs you've just created to form a cylinder cap that will enable your disc to sit snugly over your lens.



S K I L L S

HOW TO CAPTURE SHAPED BOKEH

FINALLY ASSEMBLY FIT YOUR APERTURE CAP

Carefully cut out your aperture shape using a sharp craft knife to form crisp lines – make sure you use a cutting mat, and take proper care when handling sharp implements.

Wrap the 5cm band of paper around your lens so that the edge of the band sits near the edge of the front element, without overhanging. The band should be wrapped around the lens tight enough so it doesn't slip, but not so tight that you'll have difficulty sliding it on and off. Once satisfied, secure it in place with a piece of tape and place the aperture disc over the front element. Fold each tab down and tape them flush against the black band (no tape should

touch the lens itself).

The makeshift cap should fit snugly over your lens, and the aperture shape should sit perfectly over the centre of the front element. If you're concerned about scratching your optic during assembly, you can use a cheap UV filter to protect it.



CAMERA SETTINGS SHOOT FOR BOKEH

Switch to Aperture Priority mode and dial in the widest aperture – this will make it easier to blur your background and create lots of bokeh. You can increase the size of the bokeh by increasing the distance between your subject and the light source – an easy way to do this is by moving the camera closer to the subject. Attach your DIY aperture disc, and set your exposure accordingly. We shot handheld, and we weren't afraid to push the ISO to reach a shutter speed of 1/100 sec (to eliminate camera shake). We used single-point AF, and placed the AF point in the middle of the frame, using it to focus on our model's closest eye to the camera.



E D I T I N G

PHOTOSHOP

LEARN ESSENTIAL EDITING SKILLS FAST!



HOW TO...

CREATE AMAZING MANDALAS

James Paterson creates mandala patterns with Symmetry Painting in Photoshop, then blends them with photos for stunning results

Photoshop's Brush Tool is full of hidden delights, and in this issues video tutorial we'll explore one of our favourite features to create an eye-catching effect.

Symmetry Painting lets you paint in several places at once. There are several types of Symmetrical Painting options to experiment with, but the most enjoyable is Mandala. Often seen in Hindu and Buddhist symbolism,

mandalas are geometric patterns organised around a single central point ('mandala' is Sanskrit for 'circle').

The Mandala setting in Photoshop lets you create these sorts of designs in seconds. You can also choose the number of segments for your mandala design, which essentially determines how many places you can paint in at once. It's simple to set up, and it's very easy to lose yourself once you begin

painting circular mandala patterns.

And we don't need to stop at painting; we can call upon other tools in Photoshop to take our painting further. We can experiment with blending modes, or apply filters (we added a touch of Zoom Blur here).

Once done, we can also go on to combine our paintings with images, using a few simple blending tricks to merge the layers.

G E A R

CAMERA DRONE TEST

EXPERT OPINION ON THE LATEST KIT



DJI MINI 4 PRO

It makes the case for staying light, but does it live up to the Pro tag?

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The Mini 4 Pro appears to be a refinement rather than an out-and-out replacement for DJI's already popular Mini 3 Pro model. When launching that generation of drones, the world's most successful drone manufacturer made clear that it considered it possible to offer three distinct tiers in the ultralight (below 250g) category.

The generational number hasn't advanced at the same time, but it isn't a surprise that it's the Pro that changes first. So how can what is – or, at least, should be – DJI's best option under 250g keep itself ahead of the pack? The drone powerhouse has decided that it's the software and AI, rather than the camera sensor, that

are worthy of attention, and that's certainly something that chimes with not just the wider drone industry, but the world in general.

The AI, by the way, is a broad generalisation for the technology that can both avoid collisions and help track a subject for smooth shots. Collision sensors are one thing, but the way a drone uses them is quite another, so we were keen to find out whether the software is gimmicky or genuinely useful, and whether the drone truly lives up to the 'Pro' tag. The other crucial question for many, no doubt, is whether the Mini 4 Pro should be of interest to photographers and videographers who already own its predecessor; and for the record,

that includes me, as I've previously chosen to spend my own money on a Mini 3 Pro.

With that my mind – and hoping the rain would hold off – I headed out with the Mini 4 Pro to see what it was made of.

Key features

DJI's strapline for the Mini 4 Pro's launch was 'Mini to the max', emphasising how the drone brought ever more flagship features into the ultralight category. Apart from a camera that's broadly similar to one of the two on the recent DJI Air 3, the stand-out additions are the all-round obstacle sensors. These can be used not only for avoiding objects when



CAMERA DRONE TEST DJI MINI 4 PRO

1 Though the Mini 4 Pro is made of plastic and obviously light in the hand, the hinges feel reassuringly strong.

2 The all-round obstacle sensors can be used for avoiding objects when heading sideways.

3 The camera is similar to the one on the Mini 3 Pro, at least as far as the physical hardware is concerned.

4 Its O4 video transmission system means the drone has a range of over 12 miles with a clear line of sight.

5 The collision avoidance system now avoids obstacles and keeps going, rather than stopping and hovering.

6 The DJI RC 2 controller looks like a regression from the previous one, and the antennae feel retro.

7 The controller has a high-res screen and hosts DJI's piloting app, which means you can keep your phone free while flying.

8 The Fly More kit includes the Mini 4 Pro, RC 2 controller and ND filters, among other accessories.



heading sideways (unlike the Mini 3 Pro) but also to bolster subject-tracking AI in an upgrade called ActiveTrack 360°.

This system has also been boosted by a tool called the 'Trace wheel', allowing more complicated shots to be achieved using the automated tracking. There are other UI improvements that have some elements of augmented reality to make finding the take-off point easy, or to see the projected flight path in the air. The camera has also gained Night Shots Video mode, improving low-light performance, and an LED landing light on the base so that you can land in the dark.

At the same time, the drone has been upgraded to DJI's new O4 video transmission system, which has a range of over 12 miles with a clear line of sight, meaning the updated RC 2 controller with fold-out antennae is an option.

Build and handling

For this review, DJI sent a Fly More Kit sample with the RC 2 controller, which I've previously used when I reviewed the Air 3. The kit includes the same high-quality and space-efficient shoulder bag with room for the three-battery charger, remote and quad, plus a lid full of spares, though it's a squeeze to jam the ND filters and wide-angle lens adapter in too. The quadcopter has gained an additional protective strap, which makes sense to protect the flappy propellers when

you're pushing it into and pulling it out of the tight bag. Holding the Mini 4 in my hand, the rear vents are noticeably bigger than those on its predecessor, but the more obvious change is the fish-eye vision sensors: the front ones are now more exposed at the sides, like an insect, and the rear ones similarly so. The Mini 3 Pro's backwards-facing collision sensors were smaller and much less exposed, but could only see backwards – obstacles to the side were ignored.

While the top of the drone has



CAMERA DRONE TEST DJI MINI 4 PRO



© Adam Juniper

On the base of the Mini 4 Pro are a central LED light and two vision positioning sensors to help the drone land and hover near the ground in low light

grown a little, the battery seems interchangeable. On the base of the Mini 4 Pro there's a central LED light, not unlike on other larger DJI drones, and two vision-positioning sensors – both new to this model – as well as the obstacle avoidance cameras. The light and vision positioning means the drone can land and hover near the ground in low light.

The front arms have gained legs, just like on the larger DJI quads, making it easier to land on short grass, if needed. Despite this, it's still possible to open them in either order, making it less fiddly than many folding drones and, although it's made of plastic and obviously light in the hand, the hinges feel reassuringly strong.

Controller build and handling

My experiences with DJI's alternative control choice, which has a grip for a phone that slides from the body, have generally been excellent, but for this review I used a DJI RC 2 controller. Outwardly, it looks like a slight regression from the DJI RC controller that I've been using with my personal Mini 3 Pro. It has a folding antenna, which, given that it's about 20 years since my mobile phone last had an



© Adam Juniper

antenna, feels a bit retro. Similarly, there's no rubber cover on the base, and one fewer USB-C socket.

Otherwise, the two controllers are essentially the same, with a high-resolution screen that's bright enough but occasionally could still be a little brighter, backing an Android-based device that hosts DJI's piloting app, and means you can keep your phone free when flying.

More importantly, the radio system, which not only sends controls but also receives the live video, is actually more reliable. How much of that is due to the antenna and how much is due to the upgrade to DJI's newer O4 system, we'll probably never know. It was already hard enough to get its predecessor to glitch out when flying within a reasonable range; nonetheless, this feels like a marked



CAMERA DRONE TEST DJI MINI 4 PRO

The wide-angle lens adapter replaces the camera lens surround to offer an alternative perspective. It comes at the cost of a slight fish-eye effect, but this is easy to correct



© Adam Juniper



The DJI RC 2 controller looks like a slight regression from the Mini 3 Pro's controller, and the folding antennae feel a bit retro



The DJI Mini 4 Pro is also available as part of the Fly More kit, which expands the capabilities of the drone camera by including an RC 2 controller, and accessories such as the ND filter pack and the wide-angle lens adapter

improvement. That one USB-C socket also serves as a DisplayPort, so can be used with glasses.

Camera performance

As I write this review I'm desperately trying to avoid reaching for my copy-and-paste commands, since the DJI Mini 4's camera is more or less the same as the one on its predecessor, at least as far as the hardware is concerned. The processing grunt now exists for nearly everything to be done in 4K 60fps if desired. This was not always the case – in the past, many auto-tracking modes or the QuickShots would require a drop to a lower resolution or frame rate.

The video output is gorgeous, no question about it. The bit rate

fluctuates around 130kbps in the 4K 60fps clips when checked in VLC, sometimes higher, so there's always enough data to ensure rich detail in the video. It's a good idea to think about your shots and to use manual mode, too – the automatic exposure is susceptible to a quick shift when you tilt the camera up or down. That's not always the wrong response, far from it, but it might not work in certain creative circumstances; however, it's good to have the choice.

I also had the opportunity to test the wide-angle lens adapter. This easily replaces the camera lens surround with a slight twist, and offers an alternative perspective if the already generous 24mm EFL doesn't seem enough for you. Admittedly, this comes at the cost of a slight fisheye effect, but since the lens detects the presence of the adapter and adds it to the metadata, it's easy to locate and correct.

At the other end of the spectrum, the drone offers a 2x digital zoom which, although not especially stunning in its quality, should easily be sufficient for an Instagram post, especially since the camera can be physically rotated so there's no additional cropping. I also noticed when shooting in JPEG+RAW mode



Ultra-light drones will always be vulnerable to strong winds but, during our testing, the Mini 4 Pro proved to be confidence-inspiring





The DJI Mini 4 Pro offers a 2x digital zoom which, although not especially stunning in terms of quality, should easily be sufficient for posting on social media. The above image of a football pitch was taken using the Mini 4 Pro's Wide Angle setting



that I still got to keep the uncropped version in the raw format anyway; that's a good touch from DJI.

I don't know if it's just my imagination, but the automated panorama mode, in which the drone automatically assembles many shots into a large still image as it flies, feels a little quicker than in the past.

Drone performance

The problem an ultralight drone faces will always be how vulnerable it is to

S P E C S

CAMERA: 24MM EFL F/1.7 **IMAGE SENSOR:** 1/1.3-INCH 48MP **STILL IMAGE SIZE:** 8064 X 6048PX **ISO:** 100-6400 (OR 100-1600 IN HIGH DYNAMIC RANGE MODES), 100-12800 NIGHT MODE **VIDEO:** 4K @ 60FPS NORMAL MODE, 100FPS SLOW-MO MODE **MAX FRAME-RATE:** 200FPS AT 1080P/100FPS AT 4K **COLOUR MODES:** 8-BIT OR 10-BIT 4:2:0 (HLG / D-LOG M) **RADIO / RANGE:** DJI O4 / 20KM (12.4 MILES) **MAX SPEED:** 16M/S (35.8MPH) **FLIGHT TIME:** 34 MIN PERFECT/30 MIN HOVER **WEIGHT:** 249G (WITH BATTERY + MEMORY CARD) **DIMENSIONS:** 148 X 94 X 64MM (FOLDED) **DJI RC 2 WEIGHT:** 416G

the wind, but during testing I found the Mini 4 Pro to be confidence-inspiring. The motor control systems are clearly quick to respond to inertial changes, and I even flew around some tight gaps in a sports field with no problem. The waypoint system means it's possible to define a flight path (and gimbal angles) even before take off, and the drone will follow that route – the only issue is that it's a little too easy to forget to hit record! This is a fantastic mechanism for repeating routes in different conditions.

Usability can be fiddly on the small screen of the controller or a phone, but given the number of options it feels a little churlish to complain. Though it isn't new here, I love that the collision avoidance can be asked to avoid and keep going rather than stop and hover – it just feels so much smarter. That said, while ActiveTrack subject tracking did seem better, it still lost a couple of subjects I tried it on – one moving and one static – so it isn't flawless. Between it and waypoints, however, it's easy to plan smooth, sweeping professional-looking shots without having to master fine piloting controls.

Adam Juniper

VERDICT

The DJI Mini 4 Pro is a near-flawless device surfing the cutting edge of drone tech, and is an incredible achievement given the restrictions necessitated by its weight limit. It's not cheap, of course, but that weight makes it a more flexible option for creatives looking to add the aerial string to their bow.

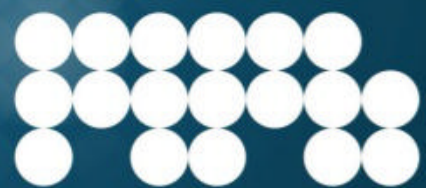
Casual users and those starting out don't need to spend quite this much to get decent video or pictures. The far cheaper DJI Mini 2 SE is still impressive, thanks to the drone's gimbal, so you can go down that route instead. That said, of course, if money is no object, then omnidirectional collision detection is an ideal feature for a beginner too, so bear that in mind if you can afford it.

For more serious content creators, and especially those put off by the regulations concerning higher-weight categories, this is a great choice. 4K from a high-end phone is often good enough to use professionally, and this is true here too – with 10-bit and a high frame rate if needed.

I'd never rely on the AI features alone, but it has to be said that they're impressive. Though the improvements may be incremental, add to those the better waypoints and there's a lot here for serious shooters to like – and DJI's long-standing panorama features are still striking.

Personally, I'd buy this as my day-to-day drone for small professional jobs, taking advantage of the portability to get into a variety of locations more easily. As I mentioned, however, I already have the Mini 3 Pro, so upgrading won't be a priority. Though the vision system is better on the Mini 4 Pro, I don't operate in the dark a lot and try to avoid obstacles myself, so the core upgrades wouldn't be essential. For some, though, they have the potential to be revolutionary; if you do a lot of indoor shoots then the upgrade is probably worth it.





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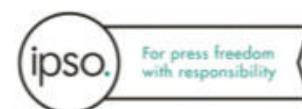
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