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Issue 159 • February 2024
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THE NIKON MAGAZINE

PHOTO CHALLENGE!

Take your best-ever images!

24 ideas to supercharge your photography for 2024



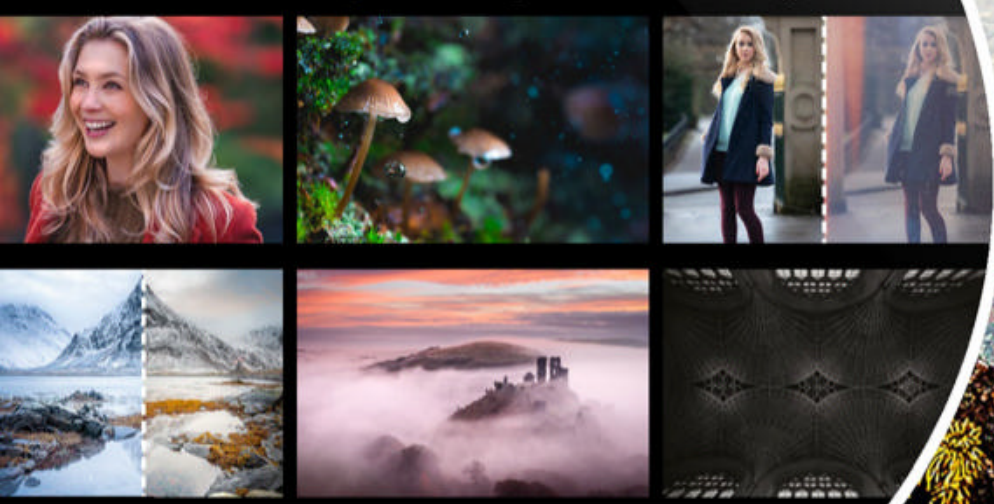
BIG TEST!

Fab flashguns

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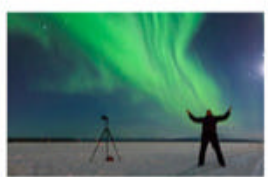
NikonSkills



EXPERT TIPS!

Streets ahead!

Our apprentice takes candid people pics in the city of London



Göran Strand
"I went to shoot a comet but got the Northern Lights" **p60**



Be sensitive
How far can you push ISO? **p70**



Z 600mm f/6.3
Nikon's super-light super-tele rated **p92**





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NPhoto

This issue's special contributors...



Lucy Hamidzadeh

PAGE 6

Lucy takes this issue's apprentice on a tour of Covent Garden, Chinatown and Leicester Square for a candid street shoot.



James Paterson

PAGE 26

James sets 24 challenging photography assignments for you to try your hand at throughout the rest of the year.



Tom Mackie

PAGE 38

Tom heads to the serenity of the Slovenian alps to capture a picture-postcard image of a church on a hill.



Göran Strand

PAGE 60

We meet with Swedish astrophotographer Göran to learn how his fascination with space turned into a career.



Shelby Nolan-Hoare

PAGE 68

Commercial photography graduate Shelby tells how a uni fashion shoot assignment led to an award-winning image.



Chris Aldred

PAGE 86

Reader Chris hits the streets of London to capture the sights of the nation's capital on a whistle-stop tour of the Big Smoke.



Image: © Giles Rocholl

Your best images from the past year, and your chance to win a Nikon Z f in our 2024 NPOTY contest, see page 76.

Welcome to issue 159



Welcome to the first edition of *N-Photo* of 2024! As we settle into the new year, it's time to re-invigorate our photography, and to that end James Paterson sets 24 photo challenges for you to try over the next 12 months, from ideas to shoot at home to those designed to get you out and about with your Nikon.

Our apprentice undergoes her own personal challenge, stepping firmly outside her comfort zone to sneak surreptitious snaps of strangers on a candid street shoot in London, under the watchful eye of pro photographer Lucy Hamidzadeh.

In our Gear section, we turn the spotlight on to a selection of speedlights to add anything from a blip of fill to a blast of overpowering flash to your shots, plus we have in-depth reviews of Nikon's super-light Z 600mm f/6.3 S VR super-tele prime, with its clever phase fresnel optics that enable an ultra-compact design, and Tamron's fast and versatile 35-150mm f/2-2.8, which blurs the boundaries between standard and telephoto zooms.

Our photo projects include capturing misty scenic shots, outdoor portraits, indoor architecture and the magic of mushrooms. Enjoy!

Adam Waring, Editor

adam.waring@futurenet.com

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Contents



Our photo of the year! **76**
Meet the winning photographer behind this shot – and get ready for our *N-Photo* Photographer of the Year challenge 2024!



68 From student photographer to award-winner



06 Our apprentice faces her fears to shoot brilliant street scenes

06 **Apprentice** Our reader is guided through street photography skills

16 **Lightbox** Widescreen images from the Epson International Pano Awards

26 **Your best-ever images!** 24 ways to shoot better photographs in 2024

38 **On Location** Tom Mackie gets up early to visit a dream destination

41 **Nikon Skills** Try your hand at the plethora of projects in our Skills section

59 **Back Issues** Gaping hole in your *N-Photo* collection? Resolve it here...

60 **Interview** Get star-struck with the astrophotography of Göran Strand

68 **On Assignment** How photographer Shelby Nolan-Hoare shoots fashion

70 **Nikopedia** Image sensitivity explained, plus problems solved in Ask Matthew

76 **N-Photo POTY** The year's best Nikon photos in our 2023 roundup

83 **Win a Nikon Z f!** Enter *N-Photo* Photographer of the Year 2024

84 **Letters** Share your views with the team and you could win Affinity Photo

86 **Your Stories** *N-Photo* reader Chris Aldred shows a different view of London

107 **Next Issue** You really won't want to miss the next issue of *N-Photo*

114 **Parting Shot** Look back over a triumphant year for Nikon

83 Nikon Z f up for grabs!

Enter your best images into our monthly NPOTY competition to be in with a chance of winning Nikon's fab full-frame, retro-style mirrorless camera! Turn to page 83 to find out more



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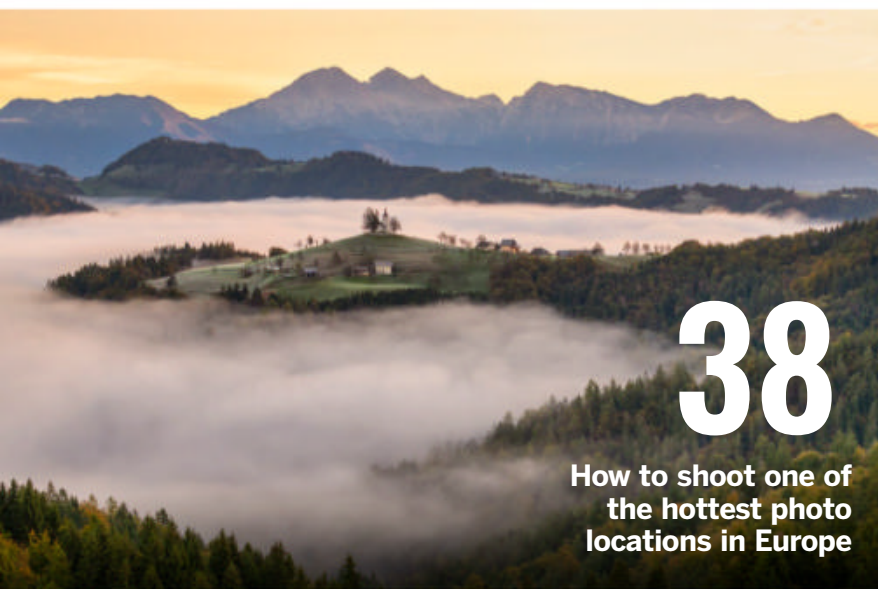
NikonSkills

Master your Nikon today!



60

How Göran Strand shoots stunning images of the Northern Lights



38

How to shoot one of the hottest photo locations in Europe



Gear Zone

90 New Gear Get the lowdown on the latest Nikon-compatible gadgets and gizmos

92 Reviews Nikon's 600mm prime and Tamron's versatile 35-150mm zoom

96 Flashguns Eight affordable speedlights to transform every shot you take

108 Buyer's Guide Your at-a-glance guide to Nikon cameras and compatible lenses



42 Master misty landscapes
Tips and techniques for moody scenes

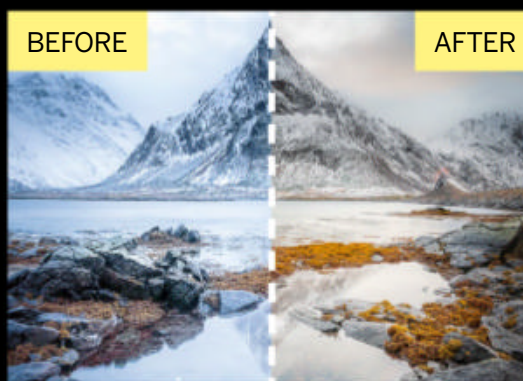
44 Separate ways
The smart way to retouch your portraits



48 Amazing architecture
See buildings from a different angle



50 Prints charming
Apply our free textures in Affinity Photo



52 White balancing act
Fix off-colour photos with white balance



54 Magic mushrooms
Introduce flash to your macro shoots



Whenever you see this logo, you'll know there's an accompanying video that you can **watch online**.

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NPhoto APPRENTICE



THE PRO

NAME: **Lucy Hamidzadeh**

CAMERA: **Nikon Z f**

Lucy's first DSLR was a Nikon D3100, but when she tried a friend's Sony, she decided to go mirrorless. It would be the Nikon Z f that brought her back to the Big N, where she featured in a video on the new camera for Nikon Asia. Lucy's love for street art developed from attending an Instagram photography meet 14 years ago. She's since left behind a career in content marketing to become a freelance photographer, and has even produced a book, *Lucy Hamidzadeh: Unfinished Stories*. To see more of her work, visit: www.lucyhamidzadeh.com

THE APPRENTICE

NAME: **Paula Irvine**

CAMERA: **Nikon Z 7II**

NHS worker Paula was given a bridge camera 14 years ago, to document her first child growing up. She moved onto a D3000-series DSLR, but photography was still an occasional hobby. Once her children reached their teens, she picked up a D750 and began searching for new subjects. As it turns out, she needed a laboratory-grade microscope to find them, turning her hand to photomicrography. Still, her dream is to capture street photos. Here's hoping Lucy can help build her confidence.



Street life

Streetwise pro **Lucy Hamidzadeh** helps our apprentice overcome her fear of shooting solo

M

any pro photographers carry a high-end Nikon camera and lens, a large technical backpack and look like they've fallen through Cotswold Outdoor backwards... But not Lucy Hamidzadeh. The street photographer's faux fur coat,

Nikon Z f and bum bag certainly buck the trend – and it's entirely intentional.

"I keep things light, and don't wear bright clothes that attract attention," she said to Paula as they sipped coffee in a Covent Garden cafe. "The same applies to my camera." Paula cradled Lucy's brand-new

SUPER
SHOT #1

Camera:	Nikon Z 7II
Lens:	50mm f/1.8
Exposure:	1/320 sec, f/1.8, ISO400

EXPERT INSIGHT ISOLATE

Lucy says... Streets are inherently busy, and not just with people. Backgrounds are cluttered with lights, signs, vehicles and all manner of other things, so you have to find a way to make your subject stand out. Depth of field and composition are key. The former allows you to blur backgrounds and make subjects pop. The latter allows you to guide the viewer to the subject, with techniques such as leading lines and frames within frames.



Nikon Z f. “I do love the different colour options,” said Lucy, “but I had to have the standard black version because it doesn’t stand out quite so much. I bought a red strap for it,” she held up the black strap that was now attached to the camera, “and when it arrived, I was like, what a silly thing to do. Everyone would have noticed it.”

“Has anybody ever asked you to delete a photo?” Paula asked.

“Never. I was shouted at years ago in Brixton – and I hadn’t even taken the person’s photo – but I was less aware of people back then. The more experienced you get, the more aware you become. You start to develop a sixth sense for when is and isn’t a good moment to take a picture.”

Paula fiddled with the strap on her Z 7II. “See, that’s something I need to work on. My issue – as a female photographer



Lucy loves using prime lenses, because their fast apertures allow for super-shallow depths of fields and lots of beautiful bokeh.

TECHNIQUE ASSESSMENT

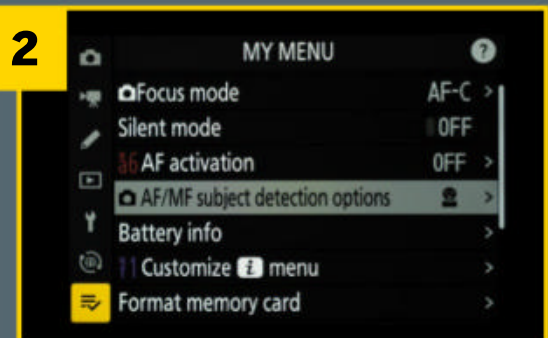
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WHAT'S THE POINT?

Lucy says... I will occasionally use 3D tracking – mainly for weddings – but most of my street shots are captured with single-point AF. With so much going on in the frame, the camera can't always tell what you want to focus on. Single-point AF allows me to identify my subject and focus accordingly.

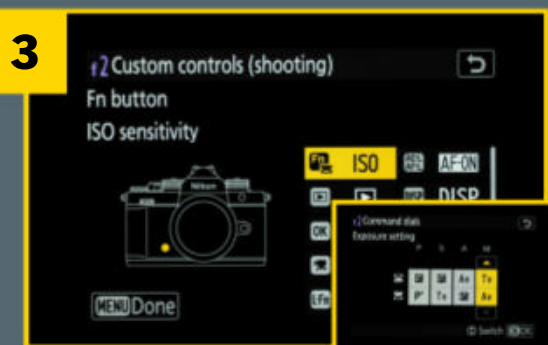
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WHAT'S ON THE MENU?

Lucy says... I really love Nikon's menu system; it's much more intuitive than Sony's. I put my most used settings in My Menu, such as my focus mode, so I can change from AF-C to AF-S and Silent Mode if I'm shooting a wedding or candid portraits. I even have battery info, so I know when I'm running low.

3



BACK TO FRONT

Lucy says... I have to react fast to capture a moment, so I find using the Z f's Fn button to change my ISO much quicker than using the dedicated dial. I also swap my shutter speed and aperture command dials around so the former is the front dial and the latter is the back one. It's personal preference.

shooting solo – is feeling safe. A lot of photographers say you should buddy up with someone, and that's what's prevented me from really delving into street photography on my own."

"Don't go somewhere and shoot straight away," said Lucy as she set down her cup. "Observe and read the room. It's better than going in guns blazing. If you don't feel safe, you don't get your camera out."

The pro nodded towards a woman in the coffee shop who had her back to them: she was sat at a bar, facing the window. "Come on, Paula, we'll start small and build it up."

The pair left the coffee shop and moved around the corner so they were standing in front of the same window as the woman.

"I feel really self-conscious already," said Paula as she looked down at her camera.

"Right now we're just two people talking," said Lucy. "So you've got nothing to worry about."

NO PANE, NO GAIN

The pro talked Paula through her favourite camera settings, providing the apprentice with a welcome distraction.

"So, you wouldn't normally dip below 1/200 sec, generally shoot wide-open and use your ISO to compensate?"

"Correct," said Lucy with a smile. "And you should have no trouble using single-point AF here, as nobody's moving."

"Right," said Paula as she tightened her grip on her camera and took a deep breath.

"I'll make it a little easier for you," said Lucy as she stepped in front of Paula. "Now it looks like you're taking a photo of me, but really, you'll be shooting over my shoulder."

"That's much better," said the apprentice as she looked through her

EXPERT INSIGHT TAKE MY HAND

Lucy says... I collect hand photos! For me, it's intimate. I love the detail of a person's hands or how they carry their hands. You can put makeup on a face, make yourself look different but, apart from nail varnish and a bit of jewellery, you can't really change your hands.



Z 7II's EVF and fired the shutter. "That's a good effort," said Lucy, "but how do you think we can improve it?"

Paula looked at the image on the Playback screen. "It's a little dark, and she's sipping from her coffee cup, so I can't really see her eyes properly because the cup is obscuring her face."

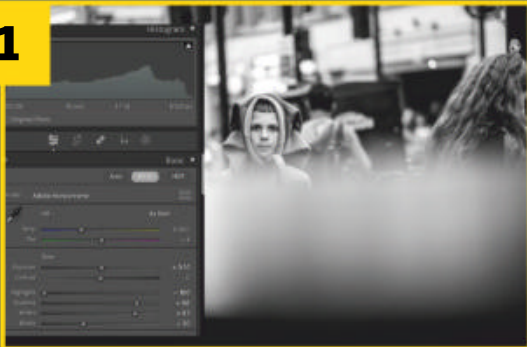
"Good observations," said the pro.

"Maybe if the cup was nicer, it would be fine?" said Paula with a laugh.

"I like your way of thinking," said Lucy. "You're really considering the story aspect. If it was a really ornate china cup, for example, then yes, maybe that would be different." Paula dialled in ISO400 →

HOW TO: EDIT STREET SHOTS

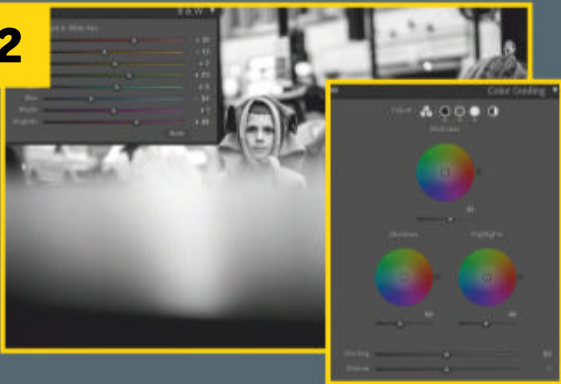
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TONAL TWEAKS

Lucy says... I use Lightroom to convert images to black and white straight away, to see whether colour or mono speaks to me on a storytelling level. I then make basic global adjustments for highlights, shadows, whites and blacks. Less is more, so I try to keep tonal tweaks to a minimum.

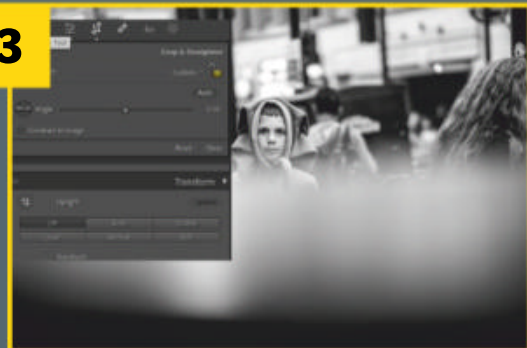
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ISOLATE THE COLOURS

Lucy says... I use the B&W panel to target individual colour ranges. Pay close attention to how each slider affects your photo; it's easy to go too far and even distort the image. Don't feel you need to adjust every slider either. I then use the Color Grading panel to do a final tonal tweak.

3



CROP AND STRAIGHTEN

Lucy says... I'll finish by straightening my horizon or verticals – if needed – and use the Crop Overlay to refine my composition further. I use composition to emphasize the subject, so the eye is drawn to them. You don't have to stick to conventional dimensions: if it suits the image, feel free to crop creatively.

A 'nifty fifty' is tight enough not to noticeably distort subjects, but wide enough to frame plenty of context. Just be prepared to get close.



and, once again, shot over Lucy's shoulder. "That's lovely," said Lucy. "You've got a story going on there. She looks like she's reflecting on something, and the woman in the background adds depth to the image. The reflections are important too, adding plenty of interest to the rest of the frame."

"It's a shame about the bag though, don't you think?" said Paula. "Would you ever clone anything like that out?"

"No, it's what you and the camera sees so I would leave it in. The only thing I might clone out is something like a small, inconsequential white dot of sunlight that's causing a distraction, but that's very rare. And although the bag looks quite distracting now, when the image is turned black and white, it'll blend right in."

Super Shot #1 was in the bum bag!

DOUBLE CROSSING

The pair walked along the streets, stopping intermittently to capture a reflection in a window here or an interesting passerby there. As they neared Leicester Square, they found themselves on a busy crossing.

This is a good spot," said Lucy. "As people cross they often look back, which is always a nice shot." She then moved herself into a group of chained-up bicycles. "Sometimes I'll stand in here so I'm out of the way; it works as a bit of a distraction." She then moved towards the pelican crossing's button, housed in a bright yellow box: "This can be used to create a nice frame. I might rest my camera right by it, so the yellow side frames the shot."

As the crossing began to get busier, Paula was faced with multiple

EXPERT INSIGHT HIDING IN PLAIN SIGHT

Lucy says... A 50mm prime requires you to get quite close to your subjects. It can be quite intimidating having a camera pointed at you, so I take things slow and try to blend in as much as possible. I'll look at my phone for a bit, wear earphones... I'll even fiddle around with my camera so it looks like I don't know what I'm doing. It's a real thrill when somebody looks directly at the camera and you fire the shutter. Eyes say so much: they help build stories. Eye contact is a good thing, but it's not easy to capture. Take lots of photos so you don't miss the moment, which is why I always use burst mode.

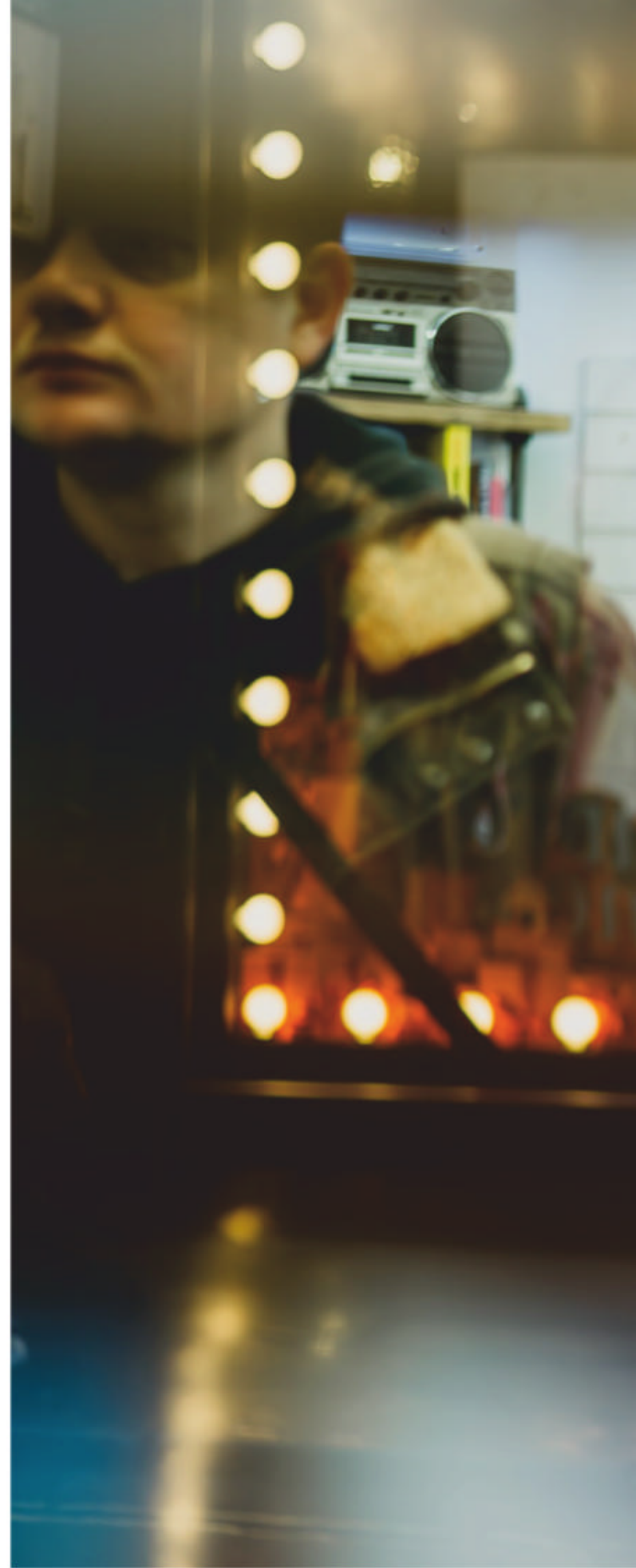


SUPER SHOT #2

Camera:	Nikon Z7II
Lens:	50mm f/1.8
Exposure:	1/500 sec, f/1.8, ISO200



Windows naturally frame subjects, while reflections from the glass can add plenty of interest to an otherwise-dull scene.



subjects. "I usually shoot wide-open anyway," said Lucy, "but for a scene like this, it's particularly important, because the shallow depth of field will help to isolate your chosen subject in the confusion."

Paula was struggling to get close enough to her subjects. "This feels pretty uncomfortable; do you use longer lenses?"

"I love using my Z 85mm f/1.8 S," said Lucy. "It's great if you're not feeling so confident, and you want to stand further back a bit. But I find the wider 50mm allows me to create more of a story. I have to get closer, which feels like I'm connecting more with the person."

DUCK AND COVER

Lucy stepped behind a nearby electricity box and beckoned Paula over. "If you're feeling a little overwhelmed, try placing something between you and your subject."

"That does feel a little better," said the apprentice. "Are there ever any situations that you won't photograph?"

Lucy let her camera hang from her neck as she thought: "Food. While drinking seems fine, nobody wants their picture taken when they're tucking into a burger. So I avoid people eating, unless it's something a bit casual, like an ice-cream."

As the traffic lights turned red and the crossing beeped, scores of pedestrians charged across the road. For a moment, each opposing side looked as if it would clash in a pitched battle, commuters versus office workers. But the tote-bag and briefcase-wielding soldiers never came to blows, somehow managing to

filter through each other. "This is where single-point AF really comes into its own," said Lucy. "In crowds that are this busy, eyes are everywhere, which makes it very difficult for eye-detection autofocus to work effectively."

But autofocus wasn't Paula's problem; she was still struggling to isolate a subject. "There's just too much going on," she said.

"It's about finding that one person who catches your eye," said Lucy. "And if you can find some kind of emotion to tell a story, that's even better."

Before long, a woman appeared wearing a long multicoloured scarf. Paula took her

EXPERT INSIGHT COLOUR VS MONO

Lucy says... I would shoot all of my photos in black and white; I love it. But sometimes you just have to render an image in colour. Your subject might be wearing an amazing colour that pops or complements another part of the image, and by turning it black and white, you lose that. I've learned to see in black and white, so I shoot mainly in colour, and then change all of my images to black and white in the edit to see what works. The Nikon Z f has changed that slightly, though, because of its black-and-white switch.





SUPER SHOT #3

Camera:	Nikon Z 7II
Lens:	50mm f/1.8
Exposure:	1/320 sec, f/1.8, ISO500

chance and raised her Nikon. At 50mm she wasn't quite close enough, so she had to break her cover behind the electricity box and get closer. She paused for a few seconds as the woman waited to cross.

"Go for it," said Lucy, "make sure the shutter speed is a bit faster, say 1/500 sec, to compensate for any faster movements."

Paula adjusted her exposure settings as she stepped into the group of bicycles. She framed the shot and, just before she fired the shutter, the woman looked back at her.

"That's Super Shot #2," said the pro. "You've captured a connection, with the eye contact, and the vibrant clothing works really well with the background."

THE ONCOMING TIDE

With Paula's confidence growing, Lucy suggested they head through the nearby Chinatown. "Chinatown is a great place to practise because so many other people are

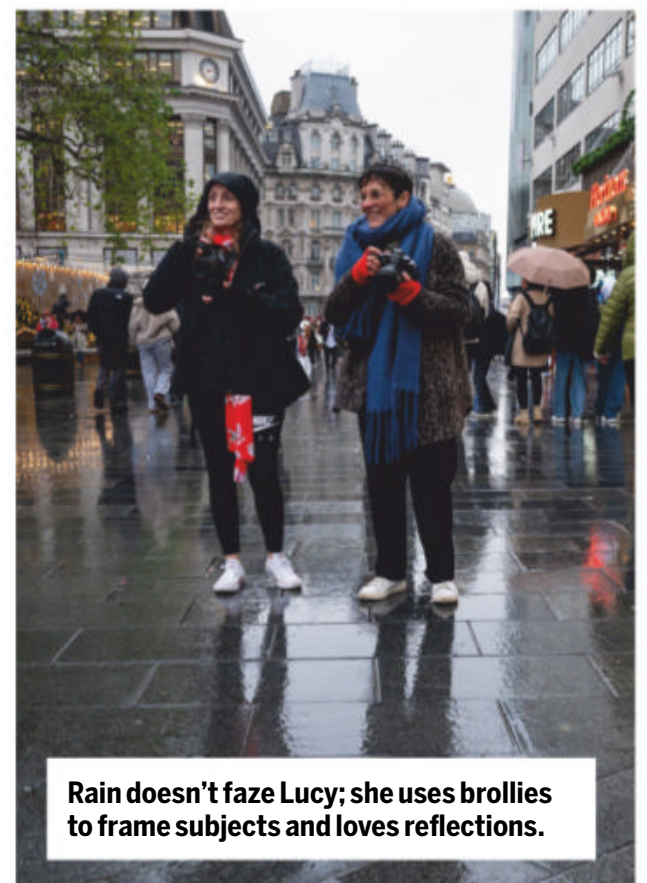
taking photos, so you don't stick out." The district was bustling with people. Some peeled off into supermarkets or restaurants, while others browsed outdoor menus or took photos and selfies.

Lucy told Paula to stand right in the middle of the street. She seemed reluctant at first, but the pro stood right by her side to bolster her confidence. "Arrrgh, it feels so strange to be stood in front of a huge crowd with everyone coming right towards me," said Paula with a nervous laugh.

"But notice how nobody cares we're here?" said Lucy. "They're too busy heading to wherever it is they're going."

As they walked through the district, they photographed chefs preparing food, through restaurant windows, and hosts and hostesses as they greeted diners.

Lucy noticed that Paula was only taking one or two images at a time and suggested she set her Nikon to continuous burst →



Rain doesn't faze Lucy; she uses brollies to frame subjects and loves reflections.



Camera:	Nikon Z7II
Lens:	50mm f/1.8
Exposure:	1/320 sec, f/1.8, ISO640



By the time they looped back round to Covent Garden, Paula's confidence had grown exponentially.

mode. "If you only take one or two, you might miss that moment where the subject suddenly looks at the camera."

THE VINYL COUNTDOWN

As they made their way back to Covent Garden, they happened upon a small record shop. Stuck to the window was row upon row of classic records. "Look," said Lucy as she held her camera right up against the window, "you can photograph through the records and into the shop."

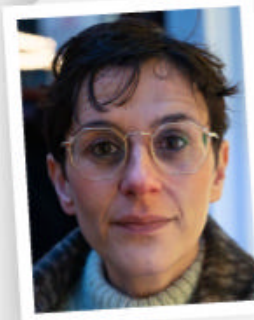
Paula followed the pro's lead and began taking photos: "It's a bit darker in there than out here," she said.

"Let's up the ISO to compensate. Again, shoot wide open to isolate the subject by blurring their surroundings. Try the man who's just entered the shop, he looks cool."

"He's coming towards us," said Paula.

"If you can get him looking straight at the camera that would be great," said Lucy.

PRO PORTFOLIO LUCY HAMIDZADEH



ON REFLECTION

Reflections in windows add another layer to images, providing more depth. They help to create more compelling images because shapes, lighting, textures and even emotions are often enhanced. Here, they add to a four-way story: me taking the shot, the person sat in the window, the person's reflection, and the viewer.



TWO FRAMES

I always readjust my camera settings before heading into any underground station, as the lighting can be tricky. Practice made me ready for this eventuality. Capturing moments like this are incredibly special. I love how the two frames make a story without words.

EXPERT INSIGHT BUILD A BARRIER

Lucy says... Photographing strangers with a 'nifty fifty' can be quite daunting. A good trick to make yourself feel a little more confident is to shoot behind a physical barrier. People are less likely to notice you, and you'll feel much safer by separating yourself from the scene.



BE OUR NEXT APPRENTICE!

We're looking for future apprentices to accompany *N-Photo* on exciting adventures! So, if you would like to appear on these pages and get top one-to-one professional tuition thrown into the bargain, fill out our Apprentice form at: <https://bit.ly/npapprentice> Please fill out the form in its entirety and be as detailed as possible with your answers. Fingers crossed; the next *N-Photo* apprentice could be you!

After a few minutes, Paula reappeared with a big grin and Super Shot #4: a candid of a couple taking a selfie.

"Well done, Paula," said Lucy. "You've finally done it on your own! And what a great image, too. You've identified a moment and, despite the chaos, you've isolated the couple."



PAULA'S COMMENT

Lucy gave me the confidence to search out the photos I wanted to capture. All her little tips to blend in or place a barrier between me and the subject really helped.



LUCY'S VERDICT

Everybody gets nervous capturing street photos for the first time, but Paula was determined to boost her confidence. Super Shot #4 proves it! **N**



Paula was used to shooting Manual mode: helpful in a fast-paced environment.

"And be mindful of the reflections. The frame of lights from the theatre behind looks fantastic."

As Paula attempted to frame the man, another customer appeared on his right. "Can you use them to frame the woman on the phone in the midground?" said Lucy.

Paula fired the shutter and flicked to the Playback screen, excited to see the results.

"That's brilliant!" cried Lucy. "If you'd managed to frame the woman within the lights, it would have been perfect. But this is fantastic. You've created layers around the woman with the man in the foreground, the man to his right, and then the background. And the bokeh and lights give this a really cinematic quality, which we can really embellish in post."

With Super Shot #3 sorted, the pair headed back into Covent Garden in search of Paula's final Super Shot.

ALL BY MYSELF

Covent Garden was heaving with Christmas shoppers, making it extremely difficult to identify a particular subject within the throng.

"Show starts in five minutes!" cried a street performer. "After it's snowed..."

"Snowed?" said Paula.

"Fake snow gets pumped from that building on the hour," said Lucy. "People love it. It's a great time to capture photos, because everyone is preoccupied."

Sure enough, fake snow shot from the building to a cacophony of excitable cries. Both Lucy and Paula stepped aside to let people pass as they rushed to the smattering of snow – phones aloft.

"Let's see if... Paula?" said Lucy as she spun around to look for her apprentice.

LIGHTBOX

Our favourite Nikon images from The 14th Epson International Pano Awards competition



Mystical Inca

HUNG CHANG LIN

I set off from the foot of the mountain before dawn. As I entered Machu Picchu, the sky was filled with dark clouds and drizzle. Then the sun pierced the clouds, causing the Incan buildings to appear as if they were floating on the clouds.

Camera:	Nikon Z 7
Lens:	14-24mm f/2.8
Exposure:	4 secs, f/18, ISO64

© Hung Chang Lin / The 14th Epson International Pano Awards

THE 14TH EPSON INTERNATIONAL PANO AWARDS





© Stefano Pellegrini / The 14th Epson International Pano Awards

Blacons Hike Arch

STEFANO PELLEGRINI

I discovered this spot after a hike in Tenerife. I fell in love with this huge pinnacle but I had to wait till 4am to have the Milky Way arch perfectly centred. I also wanted to add my figure. I had to make several attempts, especially for the light painting.

Camera:	Nikon D850
Lens:	15-30mm f/2.8
Exposure:	4 mins, f/5, ISO3200 & 13 secs, f/2.8, ISO6400



THE 14TH EPSON INTERNATIONAL PANO AWARDS



© Daniel Trippolt / The 14th Epson International Pano Awards

White Water

DANIEL TRIPPOLT

It was a perfect winter's day at the frozen Josefsthaller waterfall, Germany. After waiting patiently for the right weather conditions, my vision of a winter wonderland came to life. The path to the waterfall wasn't easy due to the icy trails, but the hike to the spot was worth it.

Camera:	Nikon D750
Lens:	17-35mm f/2.8
Exposure:	1.3 secs, f/11, ISO100





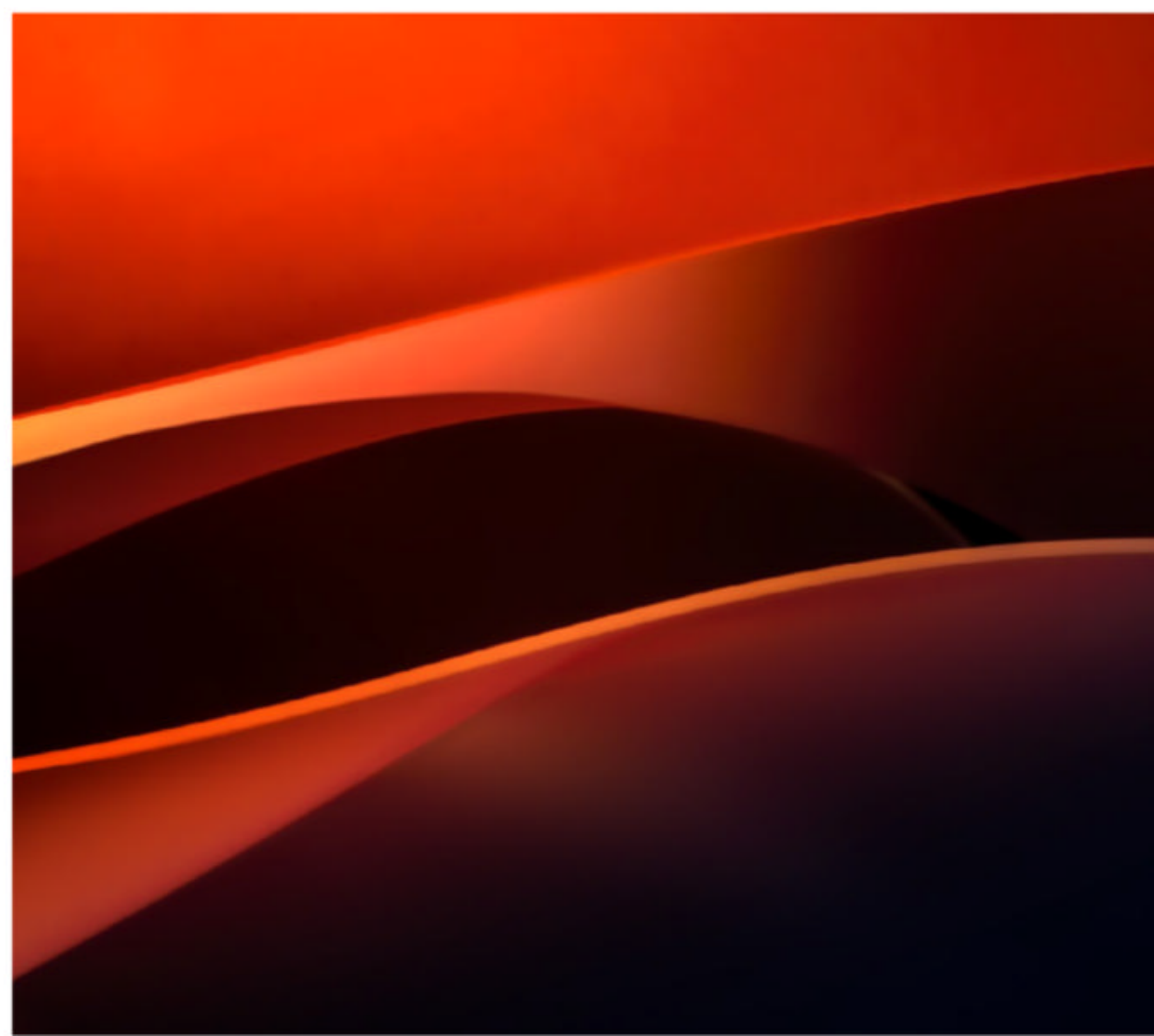
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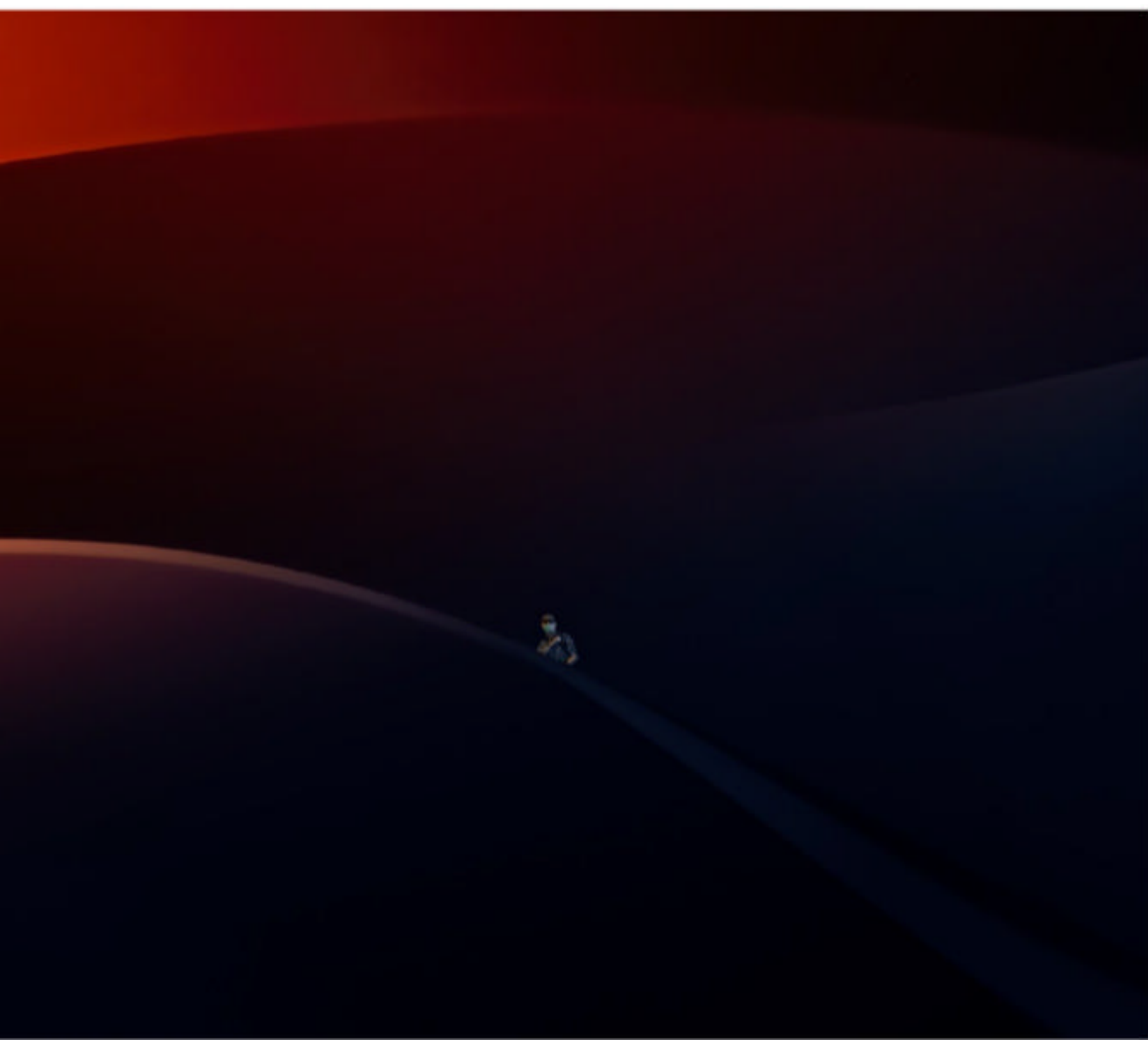
The Burning Sky

HIN KAU CHAN

The bright city lights of the Hong Kong skyline in the background are juxtaposed with the rural farmland in the foreground, and the colours of the breaking dawn sky are reflected in the fishing ponds. It is the most beautiful that I have ever seen it.

Camera:	Nikon D810
Lens:	28-70mm f/3.5-4.5
Exposure:	1.3 secs, f/8, ISO640





© Afshin Jafari / The 14th Epson International Pano Awards

To the Light

AFSHIN JAFARI

A masked figure moves gracefully across a balcony, peering downward from the futuristic architecture. To me, the masked individual symbolizes resilience in the face of challenges, navigating from a colder, uncertain space to a warmer, hopeful one.

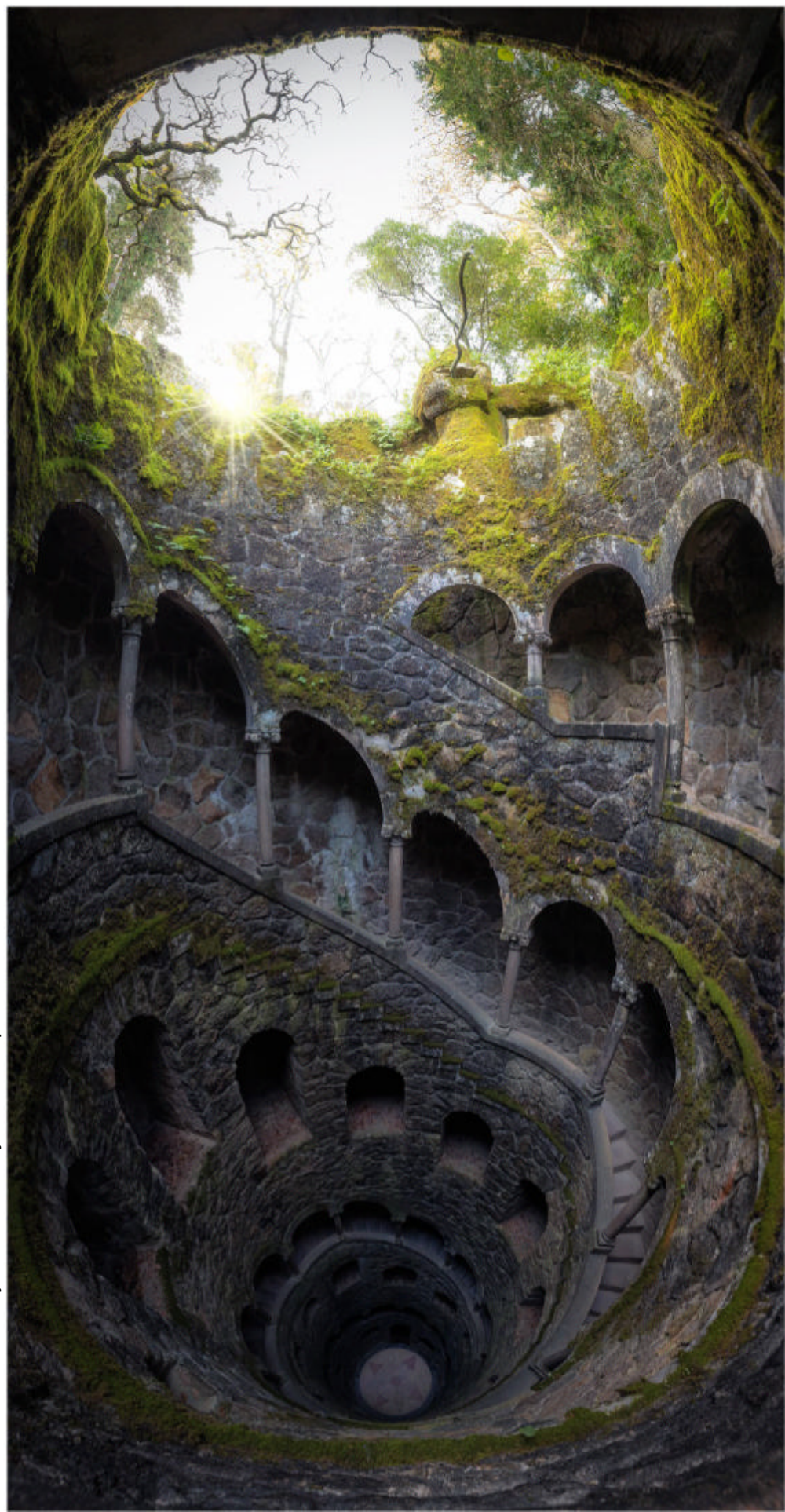
Camera:	Nikon Z7
Lens:	24-70mm f/2.8
Exposure:	1.6 secs, f/22, ISO200





© Tom Putt / 12th Epson International Pano Awards

© Ian Asprey / The 14th Epson International Pano Awards



© Alejandro Ruano Vallejo / The 14th Epson International Pano Awards

The Pinnacles

IAN ASPREY

This four-shot portrait-orientation panorama was taken on a hiking and camping adventure in the Drakensberg mountains, South Africa. I had to wait patiently for light to burst through the brooding clouds, but the scenery at 3000 metres was the best I'd ever seen.

Camera:	Nikon Z7
Lens:	14-30mm f/4
Exposure:	1/5 sec, f/11, ISO64

Downward Spiral

ALEJANDRO RUANO VALLEJO

This shot was taken in Quinta da Regaleira, Sintra, Portugal, in the midst of the Covid-19 crisis. The main difficulty was taking several pictures handheld (no tripods were allowed), with a security guard by my side, hurrying me up. But it was totally worth it. **N**

Camera:	Nikon D750
Lens:	14-24mm f/2.8
Exposure:	1/20 sec, f/8, ISO1600

the EPSON international
[P] pano awards

These are a selection of winning Nikon images from the 14th Epson International Pano Awards, which showcases the work of panoramic photographers worldwide and is the largest competition for panoramic photography. This year's competition received 4414 entries from 1104 photographers in 102 countries. For more, visit <https://thepanoawards.com>



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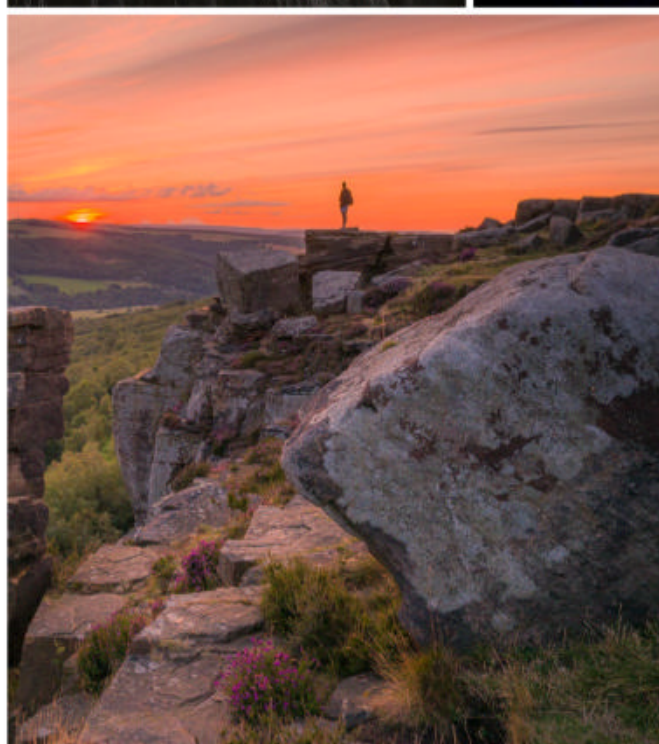
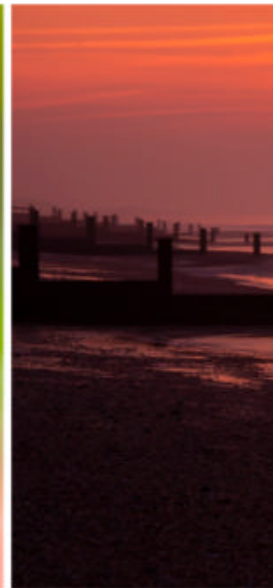
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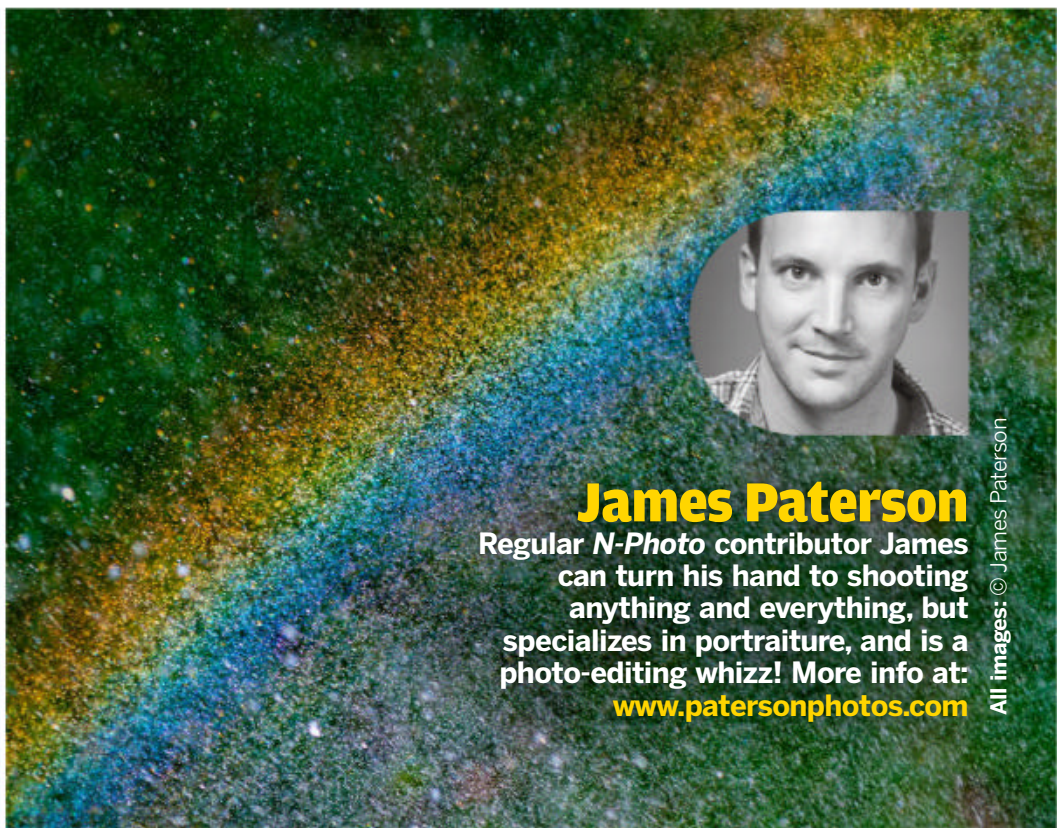


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24 new year tips!

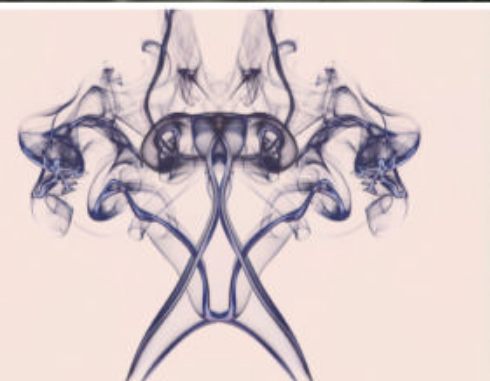
Photography ideas for 2024!



James Paterson

Regular *N-Photo* contributor James can turn his hand to shooting anything and everything, but specializes in portraiture, and is a photo-editing whizz! More info at: www.patersonphotos.com

All images: © James Paterson



James Paterson shows you how to kick-start your creativity this new year with a host of Nikon tips, tricks and photo inspiration



The new year is a chance for new beginnings, lifestyle changes and fresh endeavours. So why not start by getting creative with your camera? Over the next 12 pages, we'll explore a range of ideas to help you kick-start your photography in 2024. You'll find a host of camera tricks, project ideas and lifestyle hacks that will leave you keen to grab your Nikon and get shooting.

We'll begin by exploring some of the cutting-edge techniques and technological advances that make Nikon photography in 2024 more accessible and exciting than

ever. Then we'll explore an array of fun shooting projects that anybody can try, from simple camera tricks to eye-catching lighting techniques. Whether you're looking for inspiration or keen to learn new camera skills, you'll find plenty of tips and ideas to get you started.

But photography isn't just about settings and gear: it's also about having the right mindset for creativity. With that in mind, you'll find lots of advice on honing your creative approach, expressing your own artistic voice, and pushing the boundaries of what and how you capture. So let's level up our skills, set ourselves new targets, and make 2024 the year we take our greatest-ever photographs! →



1

Cutting-edge techniques

Thanks to advances in camera technology, you can do things with your Nikon in 2024 that you might have thought were impossible not so long ago...

1 SET UP A CAMERA TRAP

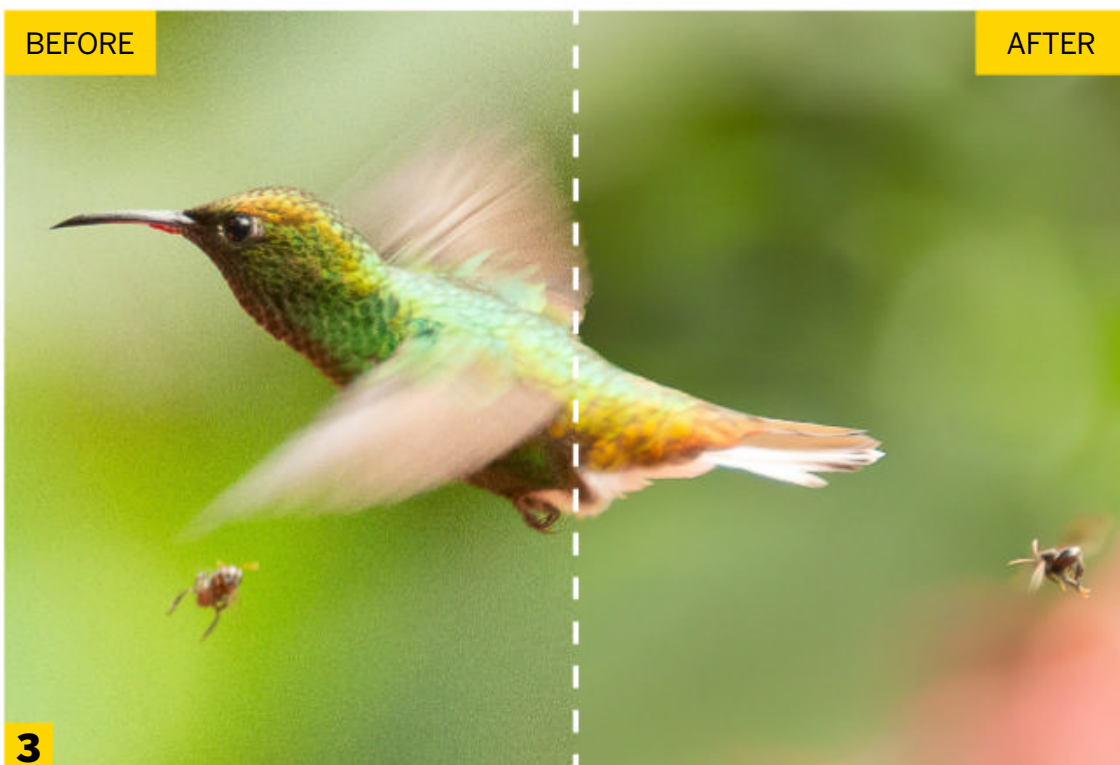
Arguably no other aspect of camera technology has seen such a giant leap forwards in the past few years as autofocus. As well as making the act of focusing easier and more precise, these advances also propel new camera features that could change the way we shoot.

For instance, Nikon's Auto-Capture feature is able to recognize subject movement in the frame and trigger the shutter, making it possible to set up camera traps or place the camera where the photographer can't go. The feature allows you to set a portion of the frame to watch for movement, and determine whether the detected movement is fast or slow enough to trigger the shutter. At the moment, Auto-Capture is only available on the Z 9, but expect it to filter down to other models. If you don't have a Z 9, there are other tools that allow you to set up a camera trap, like Hähnel's Captur Pro trigger.

2 TRY HAND-HELD LONG EXPOSURES

Thanks to the in-body image stabilization (IBIS) of Nikon mirrorless cameras, you can get away with handholding at 4-5 stops slower than you would dare to with an older camera. This could mean shooting handheld frames at up to 1/4 sec, slow enough to blur the motion of fast-moving things like waterfalls and traffic, or capture night scenes in dim conditions.

Of course, when it comes to shooting long exposures, IBIS is not going to replace the stability of a good tripod anytime soon; but if you're stuck without a tripod, or shooting somewhere where they're not permitted, IBIS can help you to get handheld shots that were once impossible. To take it further, you could try shooting in high-speed burst mode to capture an entire set of photos at 1/4 sec, then merge them in Photoshop or Affinity Photo using the mean averaging technique to simulate an even longer exposure.



**NEW YEAR'S RESOLUTION
COMMIT TO A MONTHLY PROJECT**

5 Cambridge-based Martin Bond recently brought to an end his Instagram project to take a photograph of his home town every day. This was after 13 years and 5000 photos, during which time he couldn't leave the town for more than a day. While 13 years may be longer than most of us are willing to commit, we can still take inspiration. So why not start your own long-term project? How about photographing a certain subject every day; shooting on a theme each month; or trying your hand at something completely outside of your comfort zone?



3 REVIVE FORGOTTEN PHOTOS

As well as trying new photography techniques, it's always worth revisiting photos you've taken in the past, especially if you previously dismissed them for technical gaffes or low quality. Modern tools powered by artificial intelligence have the potential to breathe new life into these old photos.

If, for instance, there are photos in your image library that you thought were unusable due to unacceptable levels of noise, you now might find they can be given a new lease of life. Intelligent noise reduction tools, such as the Denoise feature in Lightroom or plugins like Topaz Denoise and DxO PureRaw, can clean up noisy, high-ISO photos to an astonishing degree.

“Arguably no other aspect of camera technology has seen such a giant leap forwards in the past few years as autofocus

[1] Nikon's Auto-Capture feature triggers the shutter upon detecting movement.

[2] IBIS in Z-series Nikons allows you to handhold at slower shutter speeds, so you can capture motion blur without a tripod.

[3] Lightroom's Denoise command can dramatically improve archive images like this, shot years ago at ISO6400.

[4] With Lightroom allowing you to edit photos in HDR mode, those with an HDR-capable display can enjoy eye-popping views.

And it's not just noise reduction: the modern photo editor has a whole host of powerful and time-saving tools at their fingertips, like intelligent masking, subject recognition, automatic sky replacement, realistic lens blur and more. These could all help you enhance those once-forsaken old photos.

4 SHOOT, EDIT AND VIEW IN HDR

Just because a camera feature is simple doesn't mean it can't be transformative. Bracketing your shots can be hugely beneficial to your photography. By taking a set of three or more rapid frames – one 'correct' exposure, the others over and underexposed – you give yourself a mountain of options. Not only do you have the luxury of choosing the best exposure from the set, you also open the door to HDR merging techniques. With the vast improvements to HDR displays over the past couple of years, capturing an expanded dynamic range can be a game-changer. Lightroom-using HDR lovers can now view and edit their photos with up to an extra four stops of highlight detail (you'll need a compatible HDR display). If you like bold, high-contrast photos, the difference has to be seen to be believed. →



“
What these shots might lack in sharpness, they more than make up for with a sense of motion and speed

6

Creative camera skills

You can do more with your Nikon than you think. Try these simple exposure tricks, from creative motion blur and time-lapse to painting with light in the garden

6 BLUR BIRDS IN FLIGHT

The usual advice with fast-moving subjects, like birds in flight, is to increase the shutter speed so that you can capture them sharply. This might mean going to 1/2000 sec or more. But for a creative approach, why not try going the other way and slowing your shutter in order to capture motion blur?

The shutter speed you'll need will depend on the movement of your subject, so experimentation is key. Start around 1/20 sec in Shutter Priority mode. The results can be unpredictable, and you'll need to shoot a lot of frames, so set your Nikon to fast drive mode (but keep in mind your fps will be restricted by the slower shutter speed). When everything comes together, you can capture stunning wildlife or action photos. What they might lack in sharpness, they more than make up for with a sense of motion and speed.

7 TRY GARDEN LIGHT PAINTING

If you've not tried light painting before, now is the perfect time to give it a go, as the nights draw in early. You don't need to go far in the dark to get extraordinary photos: the garden offers all sorts of opportunities for light painting, and lets you hone your skills before heading further afield. Simply wait for darkness, then set up your camera on a tripod. Set manual

exposure with a shutter speed of 30 secs, an f/16 aperture and ISO100. Focus on a plant using autofocus, then switch to manual focus to lock it in place.

Use your Nikon's self-timer or a cable release to trigger the shutter, then swing a torch or another light source around the scene, weaving it in and out of the plants to create layers of light. Shine the light on any details you want to lift, like the tulip here.

8 SHOOT IN-CAMERA MULTIPLE EXPOSURES

Most modern Nikon cameras have a multiple exposure mode that lets you blend two or more frames together. The technique is based around the old film camera trick of exposing the same frame twice. With Nikon Z cameras, we can even see the overlaid images through the viewfinder or screen as we compose the shot, so we can line things up just as we want them.

To mimic the analogue effect, set the Overlay mode to Add. Now the light you capture in your multiple shots will be additive, so the lighter areas will only stay the same or get brighter. This can work brilliantly with objects in silhouette, or buildings against a bright sky. Experiment with the exposure compensation setting on your Nikon to control the brightness of each individual frame.



7

[6] This photo was taken at 1/25 sec, slow enough to blur wing motion but fast enough to retain detail

[7] We taped coloured plastic to our torch to get vibrant streaks of light.

[8] Try your Nikon's Multiple Exposure mode to combine two or more frames. Create striking abstracts by flipping the camera upside-down for the second frame.

[9] To blend a sequence like this in Photoshop, open the set as layers (File > Scripts > Load Files into Stack) then change the blend mode of all the layers to Lighten.

9 SET UP AN INTERVAL SEQUENCE

Delve into the menus of most Nikons, and you'll find an Interval Shooting mode that lets you set up the camera to take shots at specified intervals. You can choose the number of frames and the time between each. This is ideal for shooting a time-lapse sequence that shows slow movement over time, like the unfolding of flower petals or the moon creeping across the sky for several hours.

Once you've captured a time-lapse sequence, experiment with combining the frames with the help of layer blend modes in Photoshop.

**NEW YEAR'S RESOLUTION
RESTRICT YOUR GEAR CHOICES**

10 Photography is about making choices: framing, lens choice, exposure, and much more. But – as anybody who's ever spent half their evening deciding what to watch on Netflix will know – an abundance of choice isn't always a good thing. So why not try restricting your photography choices? Shoot for a month with a 50mm lens; keep your Nikon's Picture Control set to Monochrome; or capture everything at f/2.8. How about only shooting towards the sky for a day, or capturing landscapes solely with a long lens?

When our choices are endless, we tend to fall back on old, familiar options, whether that's approaching all our landscape photos the same way, or binge-watching *Seinfeld* yet again. Setting limitations may force us to think outside the box and come up with fresh-feeling imagery →

8



9





UV can have a dramatic effect on flowers, revealing colours and details unseen by the naked eye



11

Light up 2024!

Experiment with different types of light for all manner of spectacular effects. Explore the spectrum from infrared to ultraviolet, and create your own rainbow

11 SHOOT WITH UV LIGHT

Ultraviolet light is just outside the range of visible light that goes from red at one end through orange, yellow, green, blue and violet. While humans can't see it, we can see how it excites certain surfaces and substances to make them glow. For instance, it can have a dramatic effect on flowers, revealing colours and details unseen by the naked eye. UV radiation causes phosphors in the flowers to store up energy, then release it as visible light. You'll need a decent UV torch to light subjects with UV light. Always wear eye protection: strong UV light can permanently damage eyesight.

12 PLAY WITH COLOUR TEMPERATURES

LED panels are more affordable than ever. They're not as powerful as a flash, but for portraiture, you often only need a gentle fill to light the face. This can give your portraits a fresher look

and create catchlights in the subject's eyes. What's more, the what-you-see-is-what-you-get nature of LEDs make them much easier to work with than flash. A battery-powered LED unit can be brilliant for shooting portraits on location. Bi-colour LEDs, which allow you to shift the colour temperature, give you the option matching the LED to the ambient colour temperature, or contrasting against it.

13 CREATE A RAINBOW

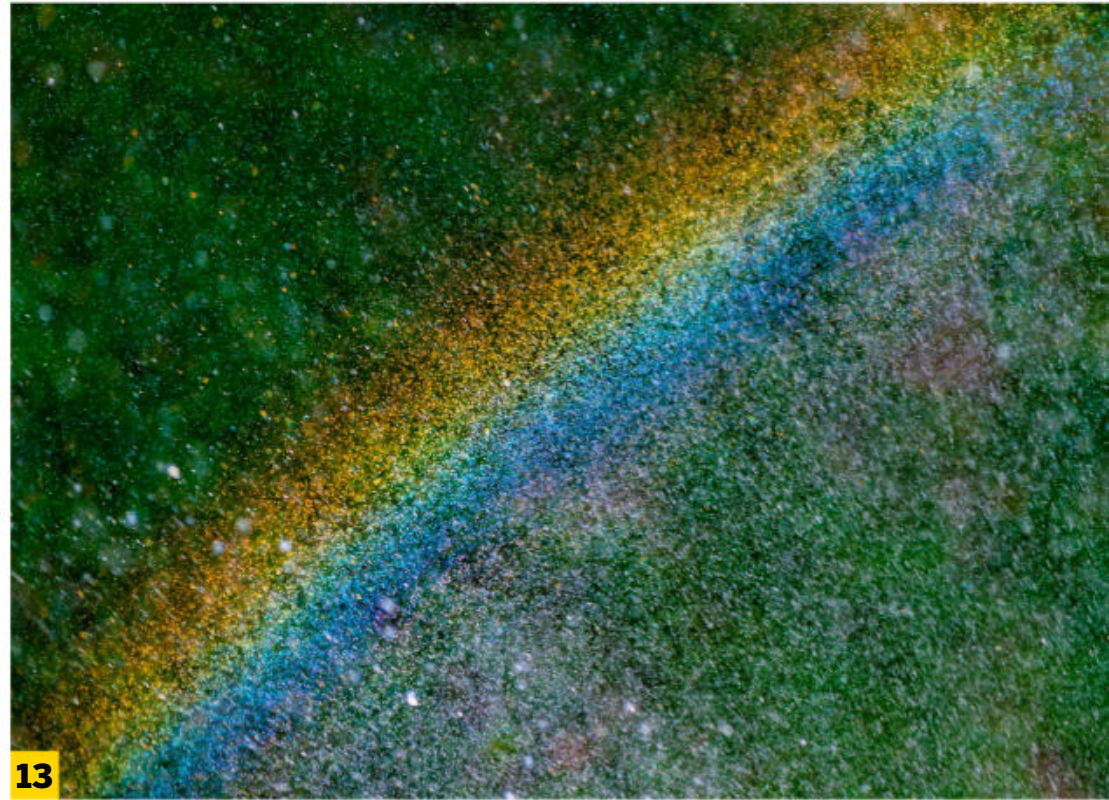
To capture your own rainbow, all you need is a garden hose and a sunny day. Simply set the hose up to spray a fine mist. Rainbows become visible when the sunlight shines on the water droplets and is reflected back towards the viewer. Water is denser than air, so sunlight passing through each drop will slow down. This slowing down is called refraction, and it causes the light to split into different colour wavelengths, resulting in the colourful strips of light

[11] We used a Convoy S2+ UV LED flashlight and a ZWB2 filter to light the plants here.

[12] A bi-colour LED set to warm light lets us lift the subject while cooling down the temperature in the rest of the scene.

[13] Capture a rainbow on a sunny day with a hose.

[14] IR-converted cameras render trees and foliage as bright white.



we see. Position the hose with the sun behind you so it's shining directly at the water drops; at the right angle, you'll be able to capture all the colours of the rainbow in your photos.

14 CAPTURE INFRARED

Outside the visible wavelength of light, infrared casts scenes in an otherworldly glow. In particular, trees and foliage are highly reflective of infrared light so they appear to glow, while blue skies are rendered dark and dramatic.

To capture infrared light, you'll need either to use an infrared lens filter or, even better, to get an old camera converted. This means sending it off to a reputable camera converter, a service that usually costs £200-300, depending on the camera model. Alternatively, you can find used IR cameras for sale around a similar price range.



NEW YEAR'S RESOLUTION KEEP YOUR OLD CAMERA IN YOUR BOOT

15 A love of photography can be a bit of a curse. When we see something beautiful or interesting, it's impossible to simply sit back and enjoy it. We begin devising compositions, mentally working out angles and studying the light.

If we don't have a camera to hand, it's hard to move on without feeling a little deflated about the photos that got away. How often have you been driving past a scene bathed in light and thought 'I wish I had my camera'?

Many of us have an old Nikon knocking around. Maybe its value has dropped too far to bother with eBay, or it's a bit beaten up but still working. If so, why not leave it in the boot of your car, or tucked away somewhere out of sight? Of course, this goes against the general rule about leaving valuables in the car. But if you're comfortable with it being there, it might prevent that discomfiting feeling of missed photo opportunities. →



16

Home projects

If it's cold outside, you don't even need to leave the house to get creative with your Nikon. Try a fresh approach to pet portraits and still-life scenes, or make photographic abstracts

16 MAKE OILY REFLECTIONS

Here's a fun project you can try at home. Fill a black baking tray (or similar dark container) with water, then add a slosh of cooking oil. Place your camera to one side of the tray and a light source on the opposite side, so that the light source is reflected in the oil. Create a template to cover the light source. Either cut out a shape in cardboard, or try using coloured acetate to tint the light in different ways. Here we used colours to create the blue and red circles, then placed our template in front of a lamp. Swirl the oil around and you'll see the light source reflected in a thousand tiny bubbles.

17 CAPTURE YOUR PET WITH DRAMATIC LIGHTING

If you have a pet, it can be the ideal subject to hone your lighting skills and create moody black-and-white animal portraits. Try shooting your pet in profile with a light behind them to one side, so that it hits the edge of the head in profile and creates dramatic rim lighting. This kind of lighting setup is great for furry or feathery subjects, as it highlights the fine textures while leaving the front of the face in moody shadow. An off-camera Speedlight is ideal, especially if you have a small softbox to put over it.

Try setting your camera to Manual mode at 1/200 sec, f/11, ISO100. Set your flash to manual power at 1/4 power, then take a test shot and adjust the flash power until it looks right.

If you don't have a flash, you can create a similar effect with a household lamp or a window to the side and behind the face.

18 SHOOT A MOODY STILL-LIFE

Everyday objects around the house can be transformed into striking art with a bold black-and-white conversion. The key to strong black-and-white photography is contrast, so look for objects that contrast with their surroundings, or position a plain light or dark background to isolate the object. Side-lighting can help to emphasize the form of the object by creating a balanced mix of highlight and shade, so try lighting the object with a household lamp, or position it with a window to one side. Setting your Nikon's Monochrome Picture Control can help you visualize the black-and-white effect as you shoot.

19 EXPLORE ABSTRACTS WITH SYMMETRICAL SMOKE

Set up an incense stick with a lamp or flash placed behind it to one side so that the smoke is backlit, and set up a dark background for the smoke. Gently waft the smoke so that it twirls into interesting shapes then capture it with your camera.

If you like, you can create an effect like this in Photoshop or Affinity Photo. Duplicate the image layer then flip it, set the layer's blend mode to Lighten, and position it to the side to create symmetrical smoke. Add an Invert adjustment layer to complete the look.



A pet can be the ideal subject to hone your lighting skills and create moody black-and-white animal portraits

17

[16] Make a colourful template to cover your light source, mix oils with water, and capture the

reflections in the tiny bubbles.

[17] Practise your lighting skills on your

pets and create bold black-and-white character studies.

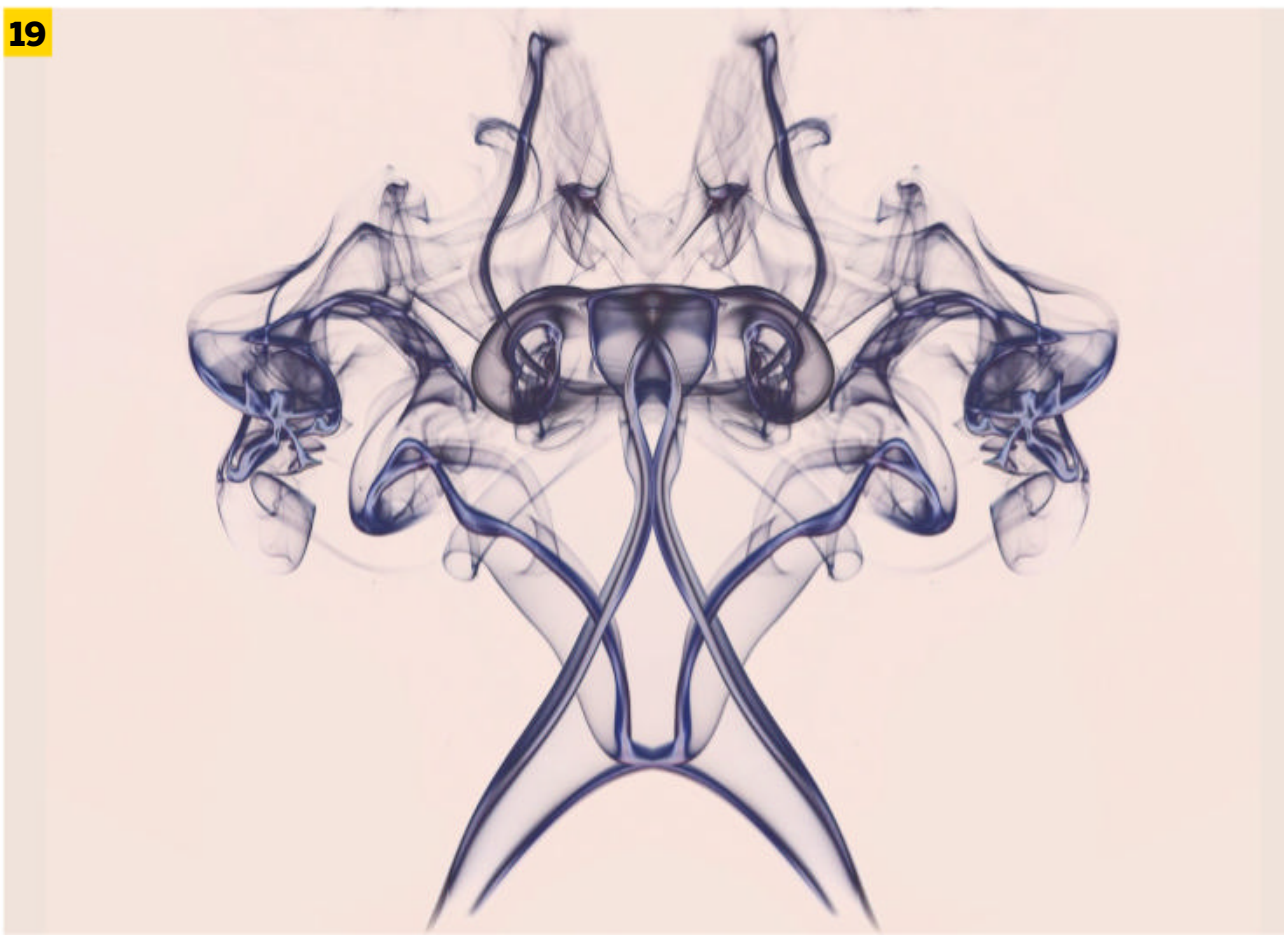
[18] Look around for

ordinary objects you can show in a new light.

[19] Capture billowing smoke from an incense

stick then invert, copy, flip and blend it in Photoshop to create interesting abstracts.

19



18

NEW YEAR'S RESOLUTION STOP LOOKING FOR LIKES

20 Naturally we want our work to be admired by other photographers, and any interest in our images is appreciated. But consider how this might affect our approach, especially if that appreciation comes through social media. If, for instance, a photo of a waterfall garners a ton of likes, that recognition might naturally make the photographer keen to shoot more waterfalls. But would they have chosen to direct their photographic journey down that particular tributary had it not been for the likes? Will there come a point when their portfolio is full of pretty, but rather banal, long exposures of waterfalls?

Likes are nice, but it can be a mistake to conflate them with growth as a photographer. We won't know most of these likers anyway, so why place such stock in their opinion? We shouldn't afford undue importance to social media attention, or let it influence the direction we want to take our photography. That being said, who doesn't like a nice waterfall? →



BEFORE AFTER

Landscape ideas for 2024

Get outdoors and capture the natural world with your Nikon. Mix focal lengths and explore the power of lens filters, and show a new side to the world around you

21 TRY FOCAL LENGTH BLENDING

When you're shooting landscapes, a wide-angle lens allows you to include foreground details, but it can also exaggerate the perspective and leave distant details like mountain ranges looking small and insignificant in the frame. This editing trick can improve things by allowing you to rework the proportions of objects in the scene. It works best if you're able to shoot two versions of a scene at the same time: one wide, the other slightly more zoomed in.

Open the images in Photoshop and grab the Object Selection tool. Use it to select the foreground in the wide shot, then add a layer mask to hide the backdrop. Copy in the zoomed image and drag its layer below the wide image layer, then position it. Once done, fine-tune the layer mask by painting black to hide or white to reveal, until everything fits together seamlessly.

22 GET TO GRIPS WITH ND FILTERS

Photography lets us show the passage of time like no other medium, whether that be a moment frozen in a millisecond or an hour of gentle motion. One of the best skills you can learn, as a photographer, is how to manipulate your shutter speed by controlling the flow of light into your camera with a neutral-density (ND) filter. During the day it'll allow you to stretch your shutter speed out to several seconds or more – perfect for blurring the motion of water or clouds, for example. It's how photographers achieve that classic, smooth or 'milky' effect in pictures of streams or waterfalls.

You'll need a tripod and a fairly strong neutral-density filter – anywhere between six and 12 stops depending upon the strength of the natural light, the speed of the motion in the scene, and the effect you're after.



22



23

[21] Try blending shots taken at different focal lengths in Photoshop to shift the balance between foreground and background, and avoid distortion.

[22] Here a six-stop ND and a 30 second exposure blur the motion of the waterfall.

[23] You can find compelling images

in ugly scenes, like the swaths of algae that plague Lake Winnipeg.

[24] Work photography into your daily routine to create opportunities.



24



One of the best skills you can learn, as a photographer, is how to manipulate your shutter speed by controlling the flow of light

23 LANDSCAPE AS DOCUMENTARY

As landscape photographers we tend to seek out beauty; but, at a time when climate change is visibly altering the natural world in front of us, it seems like something of a misrepresentation to show only the beauty of the landscape. So instead of seeking out the most scenic views, why not try treating landscape photography as documentary, and look to capture scenes that tell the story of climate change, pollution or the ravaging of the land?

You won't need to look far to find evidence, from the unusually early flowering of plants to the blooming of lake algae. It might make for depressing viewing, but it's perhaps a more accurate portrayal of our natural world than another pretty sunset or an epic mountain range.

Climate change isn't the only topic you could pursue in documentary-style photography, of course. Think about your reaction to what you see around you as you move through the landscape, and set out to capture scenes that reflect your personal response, whether that's pretty or gritty.

NEW YEAR'S RESOLUTION

WORK PHOTOGRAPHY INTO YOUR DAILY ROUTINE

24 Why not change your daily routine to better accommodate your photography? Perhaps you could get up an hour earlier to capture dawn landscapes with your camera, or head out on your lunch break to try your hand at street photography? Maybe there's a local beauty spot you can stop off on your daily commute, or a location for wildlife that you could regularly visit.

Most of us have to fit photography around work, life, family and other hobbies, but in a way we can use this to our advantage. Need to take the dog for a walk? Take your camera. Hanging around for the evening train? Maybe experiment with long exposures. Looking after the kids? Try your hand at natural-light portraits. Waiting for the kettle to boil? Give food photography a shot. The same old routine can be revitalized with some everyday creativity! **N**



Tom Mackie
On Location

Tom is an award-winning professional photographer, best known for his high-quality landscape work. More info at: www.tommackie.com
YouTube: [Landscape Photography IQ](#)

Somewhere above the mist

Tom Mackie shows how to get the most from iconic locations – and sets you a challenge to improve your compositional skills



Some places in the world are just destined to become classic photographic locations. St Thomas Church in Slovenia has swiftly become one such destination.

Positioned amidst pine forests and framed by the stunning Kamnik-Savinja Alps, this small church captivates with its charm. Once a touch of mist

graces the valley, the attraction of this location becomes even more evident. Finding the location isn't easy, though: it seems that only locals and photographers know about it.

During my Slovenia workshop, we explored numerous breathtaking locations, including Lake Bled, Lake Jasna, Lake Bohinj, and the Mangart Pass in the Julian Alps. However, St Thomas Church emerged as the top priority for everyone's photography list.

With rain within three days forecast, the pressure was on. The cold, crisp mornings were ideal for valley mist, but on the first day, the mist was so dense that we had to ascend right into the mountains to escape it, which wouldn't have worked for St Thomas Church.

Time ticking away, we decided to give it a shot on the second morning. Driving through mist-laden villages, I ascended the winding mountain road, hoping to rise above the mist. Fortunately, luck was on our side as we emerged, revealing the stunning mountains in the distance

and St Thomas Church perched above an ethereal blanket.

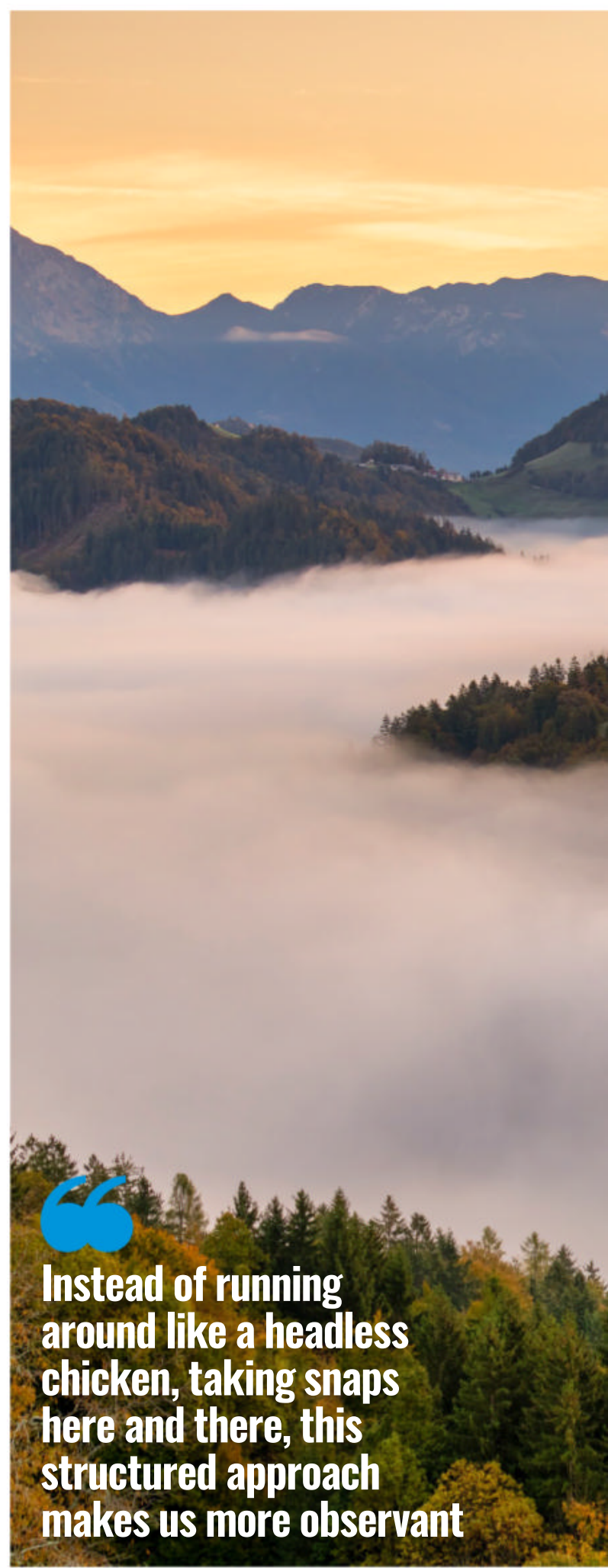
Approaching the viewpoint, I noticed a row of workshop vans along the road, but finding a spot to set up was easy. As we took in the scene, it became clear why this place is a magnet for photographers. Remarkably, despite over 40 photographers lining the road, the atmosphere remained quiet and peaceful. Each person was focused on capturing their unique perspective of this iconic location.

However, I couldn't help but ponder the inevitable changes ahead. Once the general tourists and Instagrammers catch wind of this gem, the tranquillity might fade. I think we have a couple of years before the influx alters the serenity. Sadly, it only takes a few thoughtless individuals to prompt road closures by local residents, a fate seen in many scenic spots worldwide.

Think about your frame

This was also the perfect place to try out a technique that I often get workshop participants to use, to make them think about creating different compositions. I have them stand in one place and observe the ever-changing light and conditions in the scene. They must try to create as many different compositions as possible – without moving, and using only one lens. They can only create a different perspective by zooming.

When I go through this process myself, I'm consciously thinking about horizontal, vertical and panoramic



Instead of running around like a headless chicken, taking snaps here and there, this structured approach makes us more observant

orientations within the scene. This increases my ability to sell my work for a variety of uses: horizontals for calendars, verticals for magazine covers, and panoramas for double-page spreads in magazines and specialist calendars. But even for those who don't sell their work, it's a great exercise to visualize a multitude of images from one vantage point. Instead of running around like a headless chicken, taking snaps here and there, this structured approach makes us more observant, often anticipating what might happen next so you're prepared for it.

Tom creates a wider view of the scene, creating alternation lines with the forest in the foreground. This forms a good base to the composition, with the church centred below the high mountain peak.



As I observed the interplay of mist with the pine forest, I zoomed my 70-200mm f/4 lens to 135mm. This allowed me to isolate a specific section of the forest where the mist had a beautiful, ethereal ambience. Integrating an S-shape into your composition serves as a powerful tool, directing the viewer's eye around the image. Here the mist forms not precisely an S-shape, but rather a compelling Z-shape.

If you would like to join me in October, I'll be going back to visit this iconic location. For more information, check out www.tommackie.com. 📷



As the mist began to drift through the forest, Tom zoomed to the 135mm focal length needed to isolate the Z-shape created by the mist against the trees.

Photography: © Tom Mackie

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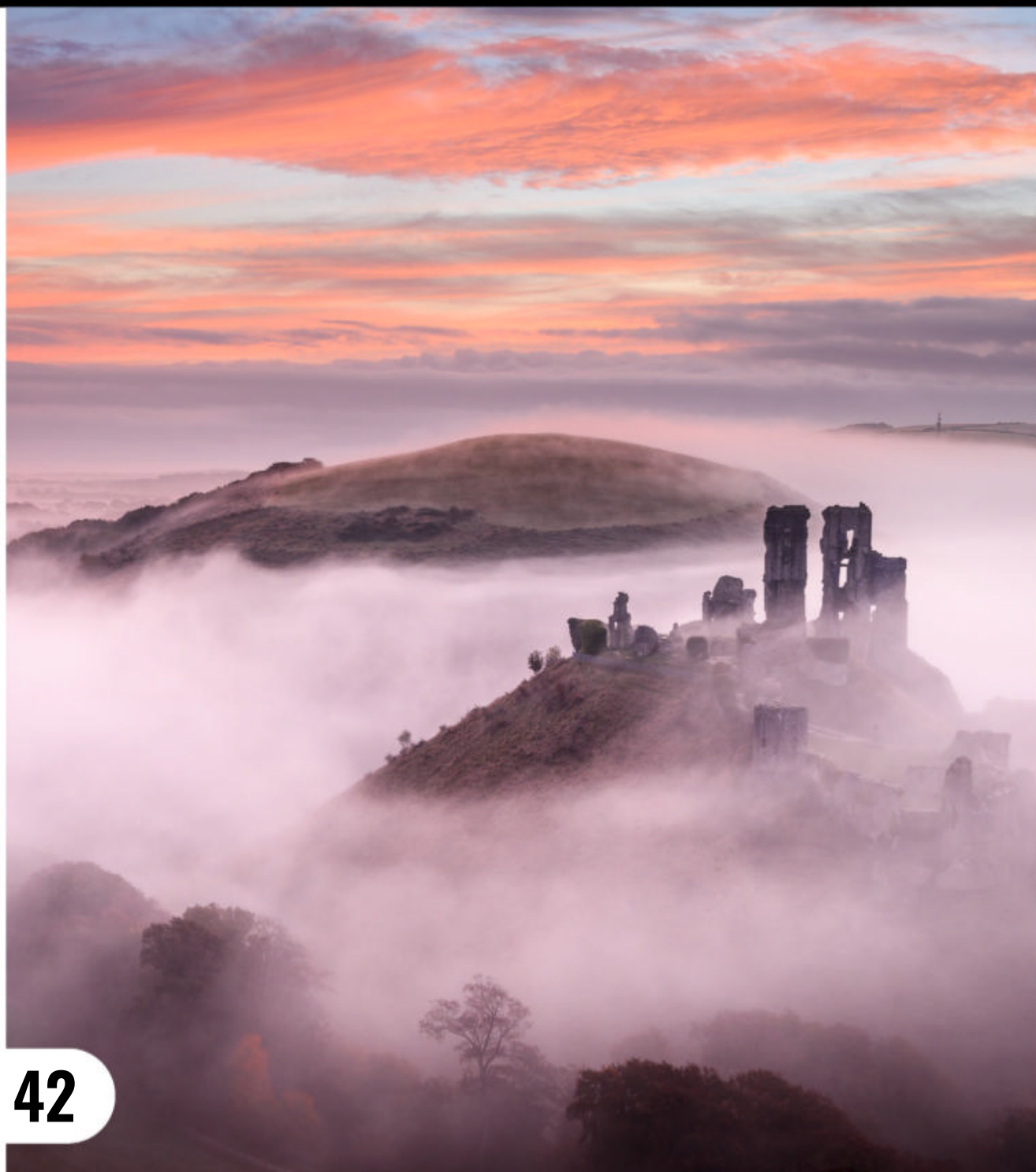
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Your donation will go towards funding Centrepont's vital work with young people all year round providing accommodation and support. We sometimes use models and change the names of the young people we work with to protect their identity; however all stories are true and as told by the young person.



NPhoto Nikon Skills

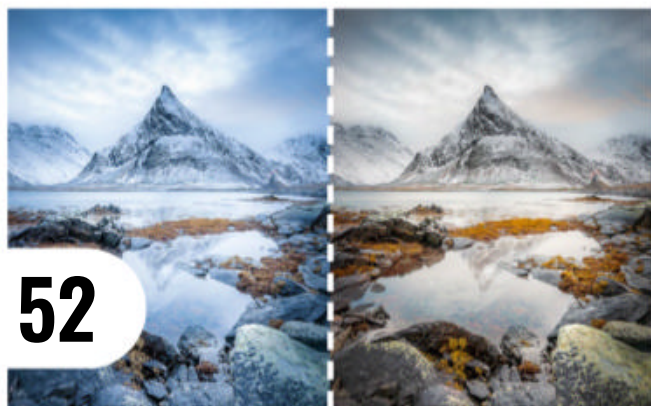
Ingenious recipes for stunning shots



42

Master misty landscapes

Discover the routines and techniques you need to capture nature at its moodiest



52

White balancing act

Fix off-colour photos with temperature tools in Camera Raw and Lightroom



54

Flash fungi

Master macro photography with off-camera flash to capture mushrooms in the woods



44

Separate ways

Use frequency separation techniques to retouch a portrait like a pro in Adobe CC



48

Amazing architecture

If a popular location is packed with tourists, try a different angle to capture a distinctive view



50

Prints charming

Evoke the imperfect but wonderful look of film with our free textures, and Affinity Photo



Whenever you see this logo, it means there's a video to accompany the tutorial, taking you through things step by step. If a tutorial has accompanying project files, there will be an accompanying download link too.



Project one: Misty landscapes

Hit and mist

Haven't got the foggiest idea how to shoot misty landscapes? **Stu Meech** shows you how...

It's hard to think of anything more stunning than a misty morning. Get up early and stand upon higher ground, and you'll see the landscape below transformed. Photographing these conditions can require a degree of luck – sometimes you'll need to return to the same location over and over before you get just the right conditions. Look out for cold, clear nights following

warm, wet days – especially in autumn – and you might find that your favourite locations are totally transformed at sunrise.

A favourite misty scene of mine is Corfe Castle, Dorset. The ruins stand high above the mist, and you can also capture some beautiful rays of light as the sun rises and shines through the crumbled architecture. Read on to find out my workflow...

Expert Tip



Predicting a misty or foggy morning can be a challenge, and it's possible different weather forecasts will predict different conditions. However, you'll develop a gut feeling if you shoot in misty conditions often. If you feel there's a good chance of mist forming, then head out early. After all, you have nothing to lose but sleep!

How to shoot misty landscapes

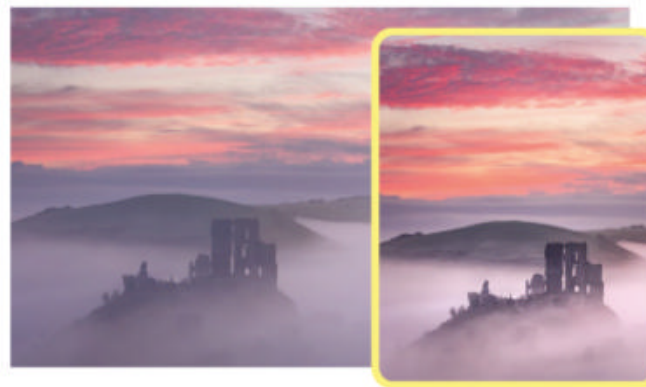
1 Mist opportunity

Arrive at your location early; something like an hour before sunrise is best. This will help ensure that you're not rushing to set up your camera. Fog and mist can change very quickly at this time of day. It's possible that, by sunrise, it's either disappeared or thickened so much that the landscape is a white-out.



2 Don't fog your filters

Depending on the conditions, it's possible that condensation will form on your lens and filters, which can affect the accuracy of your camera's autofocus or cause an overall drop in contrast. I always keep a couple of microfibre cloths to hand, so I can clean my lens and filters (front and back) if they do happen to fog up.



3 Another dimension

If you are lucky enough to have good colours in the sky, alongside your mist, you may find yourself getting lost in the moment and pouring all of your efforts into a single landscape composition. But don't forget to shoot some different compositions and orientations, to make sure you get the most out of the shoot.

4 Go long

As well as a standard zoom, consider taking a long lens, such as a 70-200mm or even an 100-400mm, to pick out far-away details in the landscape. Modern superzooms, like the Nikon Z 24-200mm f/4-6.3 VR, are great: you can go from wide-angle to telephoto without swapping lenses or comprising much on detail.



Camera:	Nikon D750
Lens:	24-120mm f/4
Exposure:	1/5 sec, f/8, ISO100

Even if you follow Stu's advice to a tee, you may have to revisit a location multiple times to get a shot like this.



5 Stay for the sun

Make sure you stay long enough for the sun to rise above the mist. If you're shooting into the sun, you can capture beams of light filtering through the mist. If you're shooting side-on to the sun, a pleasing side light may provide some contrast between warm and cool colours. **N**



Project two: Retouching

Separate ways

Mike Harris shows you how to use frequency separation to retouch a portrait in Adobe CC

One of the biggest challenges when you shoot a portrait is to capture your subject's skin tone as evenly as possible. The best way to do this is to avoid direct light, which causes harsh shadows and bright hotspots. But there are many other reasons why a subject's skin tone might not be consistent. We photographed our model Jessica (Instagram: @connor_and_jessica) at a botanical garden, on a bracing autumn's day. Cold weather causes skin to flush; and light, reflected off of foliage, causes green colour casts. Thankfully, there's a clever way to fix these problems in post-production: frequency separation.

This technique is so-called because it splits an image's high and low frequencies – essentially, texture and colour – into separate layers. This means you can even out tones without actually removing the details and character of a person's skin. We used Photoshop CC to showcase this technique, but you can apply the principles in other layer-based editing applications, such as Affinity Photo. →



www.bit.ly/np159retouch





Face the facts

Naturally, most of your efforts will be spent retouching your subject's face, but don't neglect other areas of skin that might be showing, such as their neck or hands. Even a tiny sliver of wrist or ankle will stand out if the skin tone doesn't match that of the face. Fortunately, the same frequency separation techniques still apply.



1 Time for my close-up

Frequency separation isn't a five-minute job, so save your best retouching efforts for when it's going to have the maximum impact on your image. If you've captured a full-length or 3/4-length portrait, you can spend less time retouching, because the tiny details simply won't be visible to the viewer.

However, if you're shooting a close-up portrait, like we were (with the new Nikon Z 135mm f/1.8 S Plena), then taking the time to carefully retouch the skin tones will have a huge impact on the final result.



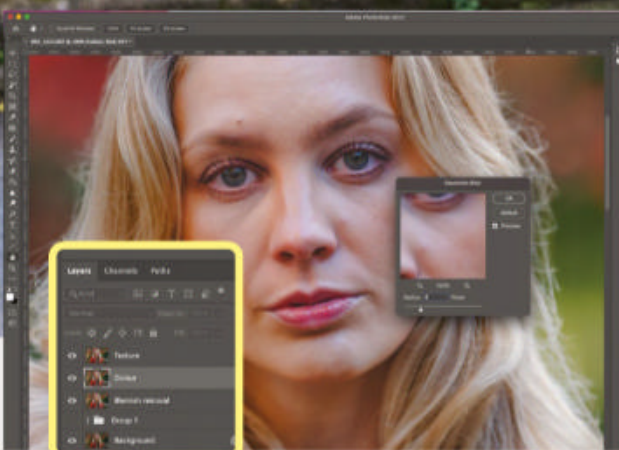
2 Bad lighting

When you shoot outdoor portraits, it's much easier to operate on an overcast day, when the sunlight is diffused. On a sunny day, direct sunlight is best avoided because it can cast harsh shadows and bright hotspots on your subject's face. Instead, backlight your subject and bounce soft light back onto their face using a reflector, or find a shady spot where the light is naturally diffused. Rather than trying to fix a poorly lit portrait, you'll have much more success retouching an image that's already well lit, providing you with a good base to work from.



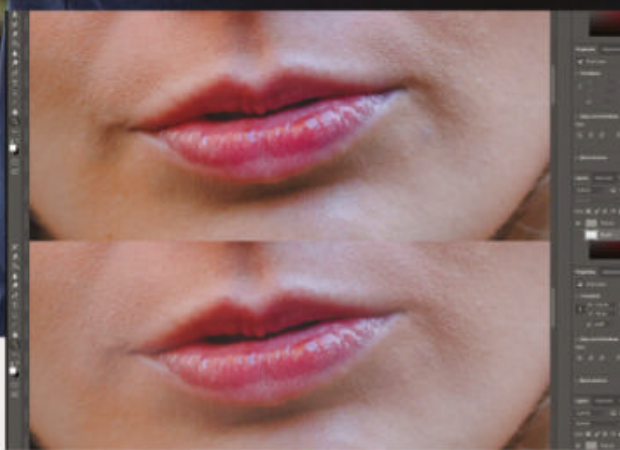
3 Patch work

Once you've made your base edits in Lightroom or Camera Raw, open the image in Photoshop. Duplicate the 'Background' layer (Cmd/Ctrl+J). Use the Patch tool to draw around a temporary blemish on your subject's skin, or a strand of fly-away hair. Click inside the bounding box and drag it over a clear area of skin that's as tonally similar as possible. The Patch tool will blend the patch within the bounding box so the blemish disappears. We like to remove anything that isn't permanent, but leave features such as freckles.



4 Split the frequencies

Duplicate the layer twice. Rename the top layer 'Texture' and the layer beneath, 'Colour'. On the 'Colour' layer, go to Filter > Blur > Gaussian Blur. Blur the image enough so that the skin smoothens, but you can still make out the main details of your subject's face. We set Radius to 4px. Select the 'Texture' layer and go to Image > Apply Image. In the Apply Image window, set Layer to your 'Colour' layer, Blending to Subtract, Scale 2 and Offset 128. Click OK, then set the 'Texture' layer's blend mode to Linear Light.



5 Stamp your mark

Hide the 'Texture' layer and make a new layer above the 'Colour' layer, called 'Painting'. Look for colour casts, and for areas where light isn't falling evenly or is creating harsh shadows. Select the Clone Stamp tool. Set Opacity between 15 and 25%, Sample to Current & Below, and ensure the brush is 0% softness. Hold Alt while using the Clone Stamp and click on an area of skin that matches the tone you want to cover the inconsistent area with. Paint over the area; if the Opacity setting is too thin, keep painting over it until you're happy.



6 Brushwork

You can also use the Brush tool to paint tones. This method works just like the Clone Stamp tool, but rather than sampling areas of skin, you use the Eyedropper tool to sample solid colours. This method is harder, because you have to keep sampling colours to match changes in lighting or else you'll end up with flat, 2D patches of skin. Try using a graphics tablet while painting to create more natural brushstrokes. Finish by reducing the opacity of your 'Painting' layer to prevent the skin from looking too perfect, and therefore fabricated. ■

Look up

Mike Harris photographs a busy abbey, but avoids the crowds by capturing a look-up shot of its stunning 16th-century ceiling

It's nigh-on impossible to visit a grand building that isn't blighted by hordes of visitors. You could visit at a quieter time of day or capture multiple exposures before masking out the moving onlookers – but what if you're strapped for time, or there's a ban on tripods? Turn your attention to the ceiling: it may well be even more magnificent than what's on the ground.

1 Reach the ceiling

Not all settings make for good look-up subjects. We captured Bath Abbey's famous vaulted ceiling. While it's magnificent to look at in its own right, its structure provides the perfect opportunity to capture a symmetrical composition. That's not to say unsymmetrical ceilings won't work, though: try to find abstract patterns, leading lines and shapes.

2 Lens choice

Decide whether to lean into the barrel distortion effect and select a super-wide-angle lens, or to go with a lens that's wide enough to capture a good portion of the ceiling, but easy enough to straighten in post. For the former, DX users will fare well a 10-20mm, while FX users will find a 14-30mm sufficient. For the latter, try a 18-55mm (DX) or 24-70mm (FX) kit lens.

3 Camera settings

In an old building like a church, the ambient light will probably be quite dark, while light and airy modern buildings are likely to fare much better. We focused in the centre of the scene using single-point AF, and used a shutter speed of 1/80 sec to combat camera shake. Many ceilings don't have much depth, so you can shoot wide-open if available light is scarce.

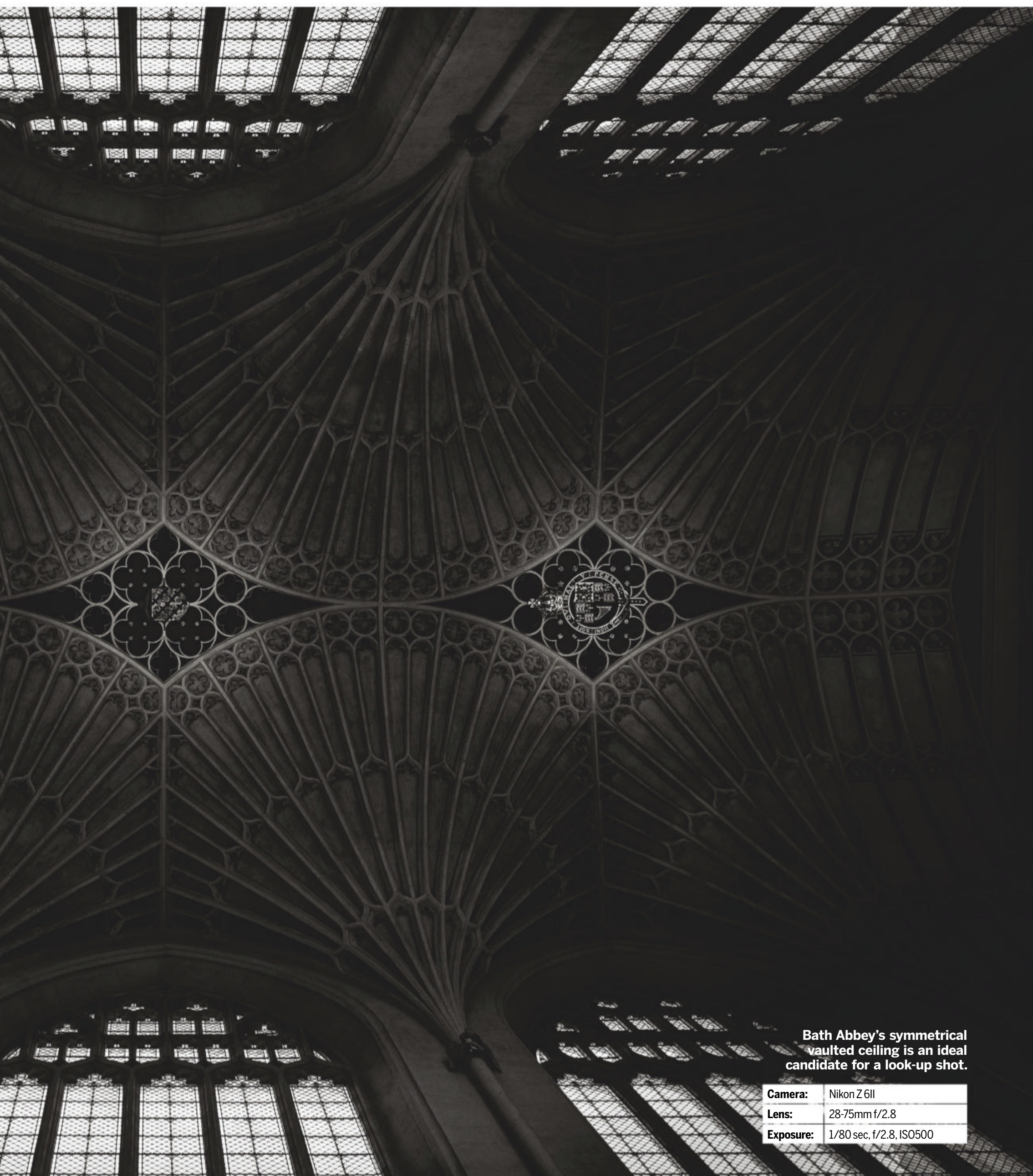
4 Set yourself square

If you're shooting a symmetrical image, it's imperative that the lens's front element is square on to the centre of the ceiling. Position yourself directly below the centre of the ceiling without looking through the viewfinder, then look through the camera and refine your positioning if you need to. Ensure the lens is pointing directly up, so the front element is level.

5 Alter your geometry

Allow a little room around the edges of your framing, so you can straighten verticals and horizontals in post, then crop to achieve your intended composition. Lightroom's Transform panel allows you to tweak verticals, horizontals and more, while Photoshop's Transform tools, such as Warp and Perspective, allow for greater refinement. **N**





Bath Abbey's symmetrical vaulted ceiling is an ideal candidate for a look-up shot.

Camera:	Nikon Z 6II
Lens:	28-75mm f/2.8
Exposure:	1/80 sec, f/2.8, ISO500

BEFORE



AFTER



Project four: Affinity Photo

Prints charming

James Paterson evokes the visual charm of old film prints using our free textures pack for Affinity Photo

Modern cameras can produce images of staggering clarity and pixel-perfect detail, but these defect-free digital depictions of scenes can sometimes feel a little cold. It's no surprise, then, that many of us feel nostalgia for a time when photography was harder, and imperfections in photos were the norm. There's a certain charm to old pictures that have been tainted by colour casts, light leaks, blurry edges and grainy details. What they lack in crispness, they make up for in fuzzy old-school feels.

This perhaps goes some way to explaining the continuing popular trend for adding analogue effects to digital photos. It lends them some of that retro charm, and lets you create photos that evoke a feeling of time and place.

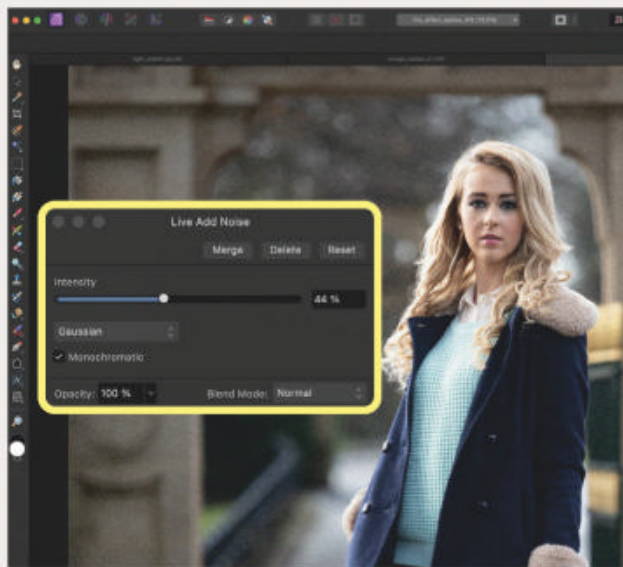
In this project, we'll look at how to add a range of vintage effects to our photos, using simple layer skills in Affinity Photo. To help you out we've supplied a set of 15 textures and light leak images. You can copy these onto any photo you like, experiment with

layer blend modes, and retro-ify your photos in seconds.

We'll begin here by using the Noise filter to add a film grain effect, as if our photo was taken on an old roll of high-ISO film. Next, we'll skew and fade the colours with a simple Curves adjustment. From here we can add a light leak effect of the sort you might see in old cameras, where a sliver of light has snuck in and fogged the edges of the film roll. Finally, we'll blend a texture to rough up the image.

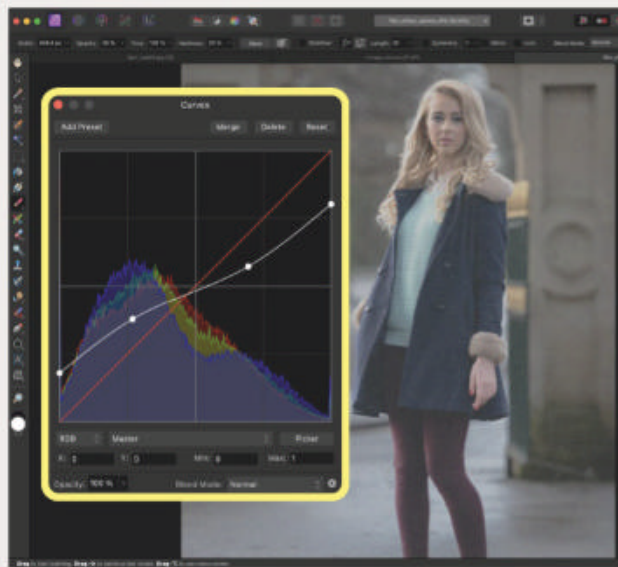


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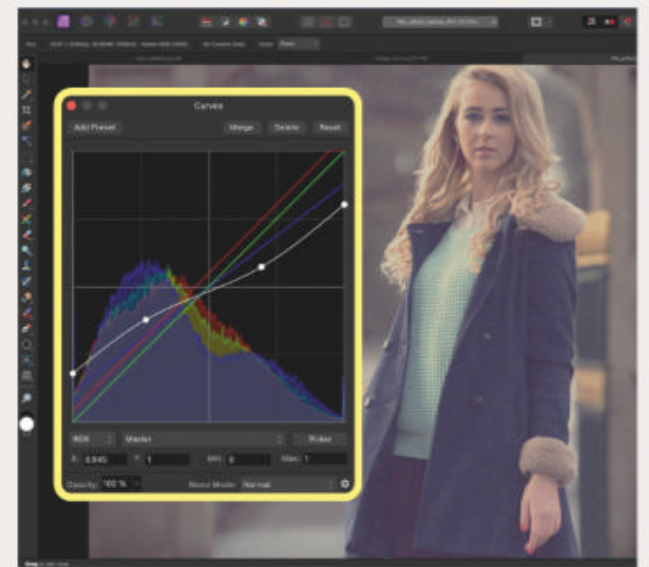
1 Create grain

Open the image in Affinity Photo and go to the Photo Persona. Go to Layer > New Live Filter Layer > Noise > Add Noise. Zoom in close and use the slider to add a grainy effect. Close the box. (You can tweak it at any time by double-clicking the Live Filter in the Layers panel).



2 Get the matte look

Click the Adjustment icon in the Layers panel and choose Curves (or press Cmd/Ctrl+M). Drag the bottom-left point up and the top right point down, for a matte effect. We can reduce contrast further by adding two points to plot an inverted S-shape, as shown.

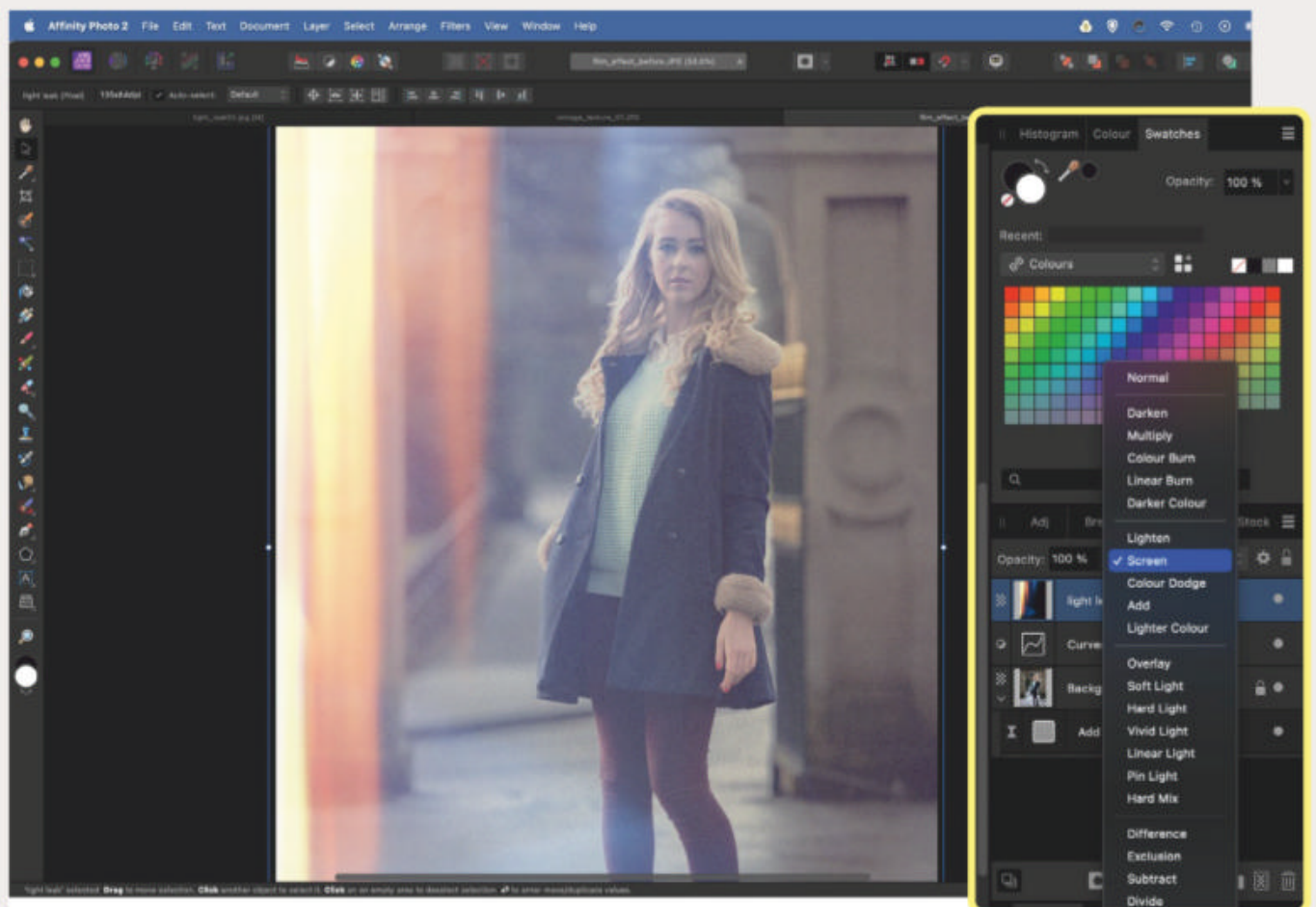


3 Skew the colours

Click Master and change it to Blue. Drag the bottom-left point upwards to tint the shadows blue, then drag the top-right point down to tint the highlights yellow. Switch to Red; drag the bottom point up and the top point left to add a red tint. Experiment with other colour shifts too.

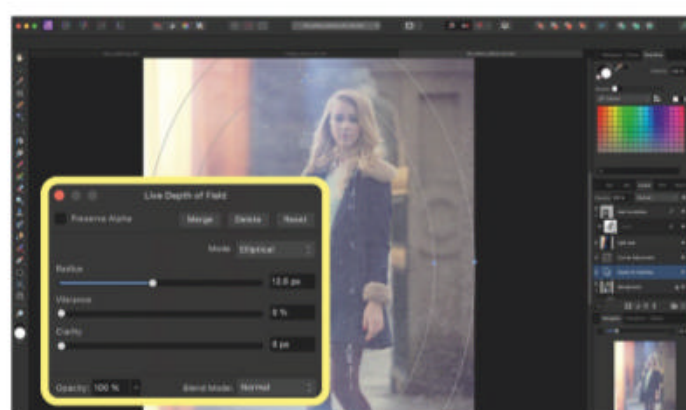
4 Add a light leak

Open one of the supplied light leak images (light_leak04 here). Press Cmd/Ctrl+C to copy. Go to the other image and press Cmd/Ctrl+V to paste. Go to the Layers panel and change the blend mode of the layer from Normal to Screen. Grab the Move tool and use the bounding box to resize and position the light leak effect.



5 Blend a texture

Choose one of the supplied texture images (vintage_texture_07 here). As before, copy and paste the image and set the blend mode to Screen, then use the Move tool to position it. If it's too strong, lower the layer opacity. If you want to fade it out in parts of the image, add a layer mask and paint with black.



6 Blur the corners

Highlight the 'Background' layer, then go to Layer > New Live Filter Layer > Colors > Vignette. Use the sliders to darken down the corners of the image. Go to Layer > New Live Filter Layer > Blur > Depth of Field. Set Mode: Elliptical and blur the corners. **N**

Expert Tip



You'll find 10 textures and five light leak images in the project files. To use them, copy one into your image and experiment with blend modes. Screen and Lighten tend to work best with the light leak images, while the textures work well with Screen, Multiply, Overlay, Soft Light, Lighten or Darken. Use layer opacity and masks to control the strength of the effect.

BEFORE



AFTER



www.bit.ly/np159white

Project five: Adobe CC

White balancing act

James Paterson adds temperature shifts and fixes casts with Camera Raw and Lightroom

There's more to white balance than getting the whites balanced: it's about every colour in the image. There are two ways to do this: you can set the white balance in the camera, or shoot in Raw and set it afterwards. The best practice is to set it in-camera, but sometimes this isn't practical. By shooting in Raw, you can leave your white balance set to Auto WB, safe in the knowledge that you can tweak it afterwards, if necessary.

Photoshop's Camera Raw and Lightroom offer near-identical white

balance tools, which you'll find either in the Basic panel in Camera Raw or in the Develop module in Lightroom. The tools are simple, but there are some essential tricks to learn that can help you get the most out of them.

One of the great things about white balance tools is that you can use them selectively in different areas of the photo. With a landscape like the one above, it means we can pull out a touch of warmth in the sky while also correcting the overall cool cast to the scene.

Expert Tip



Sometimes it can be tricky to determine the right white balance settings, especially if there isn't an obvious neutral area to sample with the Eyedropper tool. If you're struggling, a handy trick is to temporarily take the Saturation and Vibrance sliders all the way to 100%. This can make it much easier to assess the balance of colours and determine whether the image is too warm or cool (in which case, tweak Temperature) or too green or magenta (tweak Tint). Once you're happy, double-click the Saturation and Vibrance sliders to reset them.

1 Temperature slider

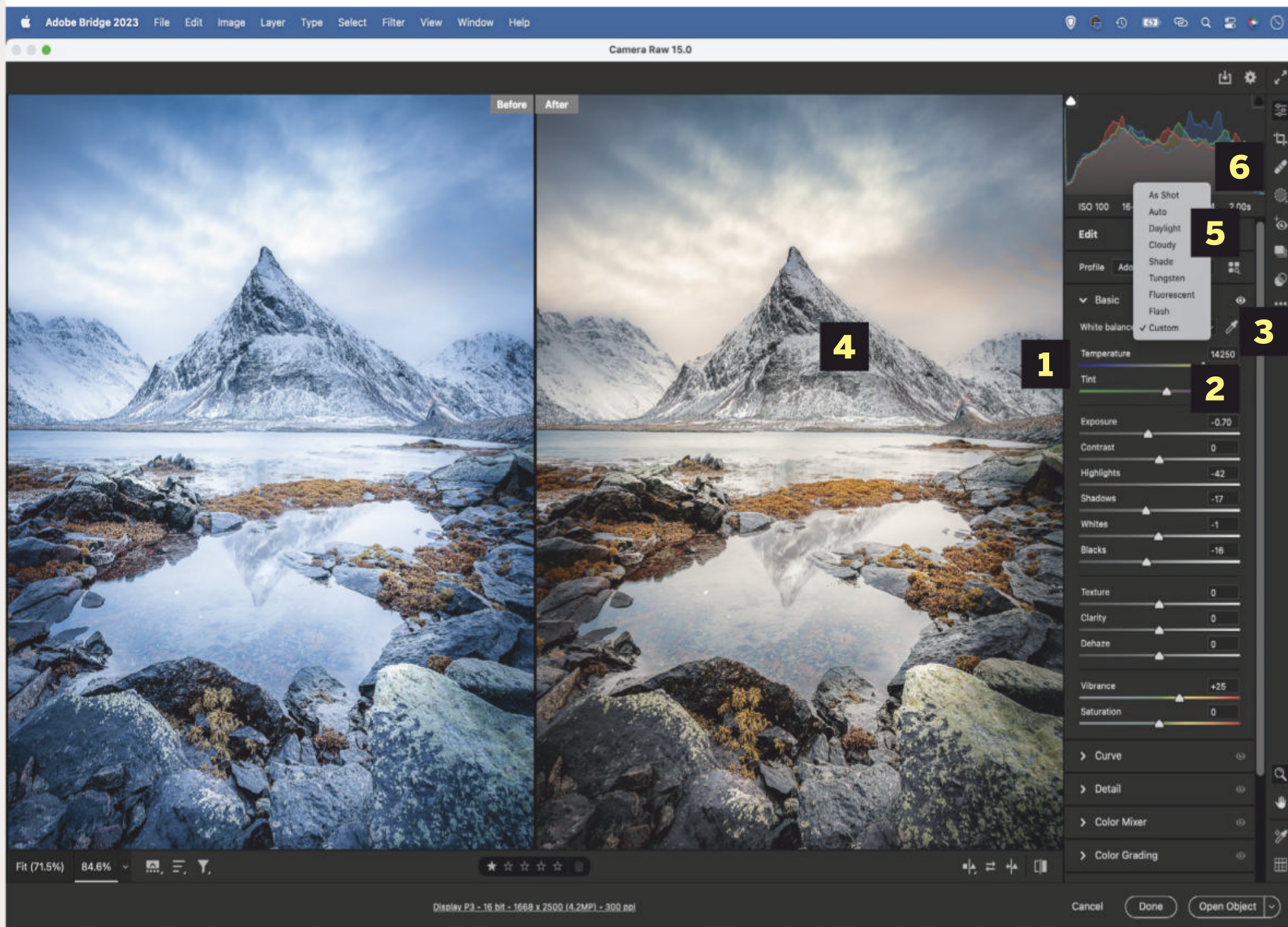
Sometimes natural light is a cool blue, as at midday, while at others it's warm orange, as at sunrise or sunset. This can be gauged as colour temperature, measured in Kelvin. Midday light is about 5600 Kelvin, while at sunrise or sunset it may be 3000-4000 K and in twilight 10,000 K. The Temperature slider lets you balance the Kelvin setting so that no matter what temperature the light is, whites look white.

2 Tint slider

The Tint slider shifts colours between green and magenta, and is designed to help you correct artificial lighting. Fluorescent light tends to look slightly green, while tungsten can have a magenta cast. Natural light doesn't usually need a tint correction, but you can change the colours. Sunsets may benefit from a subtle magenta shift, while street scenes look more atmospheric with a green tint.

3 Neutral grey Eyedropper

The Eyedropper samples colours from the image. To correct a colour cast, click on a neutral point that should be grey or white (see tip 4). The other colours are remapped around this neutral point. Click multiple times to keep sampling until you hit upon the right result. You can also click-and-drag to make a rectangular box, which allows you to sample the average of a wider area.



4 Find a neutral point

In any scene, there are likely to be neutral surfaces like roads, rocks or clothes that you can sample with the Eyedropper. They may not be completely neutral, but they can be a starting point. If you want complete colour accuracy, however, take a reference shot while on location, with a grey card or similarly neutral sheet in the frame. You can either set a custom white balance in-camera or use the Eyedropper.

5 Try out the white balance presets

The dropdown option in the White Balance section lets you choose one of the familiar white balance presets, just as you would in your camera. If you've shot Raw, the results will be exactly the same as if you'd set it before taking the shot. The presets can be useful, but they offer broad results, and often need fine-tuning with the aid of the Temperature and Tint sliders.

6 Be selective with white balance

With the masking tools in Camera Raw and Lightroom, you can change the white balance in different parts of the scene. Here, it lets us add a glow to the sky by increasing Temperature. Once you're happy with the white balance, you can sync it to photos taken at the same time. Open them in Camera Raw, highlight them, right-click and choose Sync Settings. **N**



BEFORE

Project six: The big project

Flash fungi

Master macro with off-camera flash to capture mushroom photos with **James Paterson**

From antibiotics to alcoholic drinks, organic decay to delicious food, fungi play an important role in all manner of things. They range in size from tiny microscopic structures to the largest living organism on the planet. Underground, the 'wood-wide web' of fine tendrils creates a network that allows plants and trees to communicate. Above ground, the fruiting bodies form as mushrooms and other stunning structures that offer some wonderful opportunities for macro photography.

Fungi – and mushrooms in particular – tend to prefer dark conditions like dense woodlands, crevices in rotten wood and shady areas. When photographing in these murky spots, a burst of flash can provide a welcome lift to the scene. But it's not just about increasing the light levels, a flash also gives you the opportunity to enhance the mood. By firing the flash off-camera, either from the side, above, behind or even below, we can highlight the fine fungi features, draw attention to colours and textures or show the delicate gills on the underside. Whenever we add our own light into a scene like this, the ambient daylight becomes almost like a secondary light source. We can decide whether the daylight plays a major or minor role in the exposure, either by balancing our flash with it for a subtle lift or by overpowering it for a spotlight effect.

But before you head out in search of fantastic fungi, it's worth saying that you shouldn't touch anything you don't know. Do not inhale spores and you must wash your hands. As for eating foraged mushrooms, please heed the wise words of Terry Pratchett: 'All fungi are edible. Some fungi are only edible once.' →



www.bit.ly/np159fungi

Majestic mushrooms

GET YOUR OFF-CAMERA FLASH SET UP FOR FUNGI CLOSE-UPS

1 Exposure & aperture

The camera is set to Manual mode with 1/30 sec shutter speed, f/8 aperture, ISO100. A mid-range aperture like this will give you the sharpest results, as lenses tend to perform their best a couple of stops down from the maximum aperture. Even at f/8, the depth of field will be very limited, so precise focusing is crucial.

2 Tripod and focusing

A tripod is a must for macro photography, not just because it lets you slow your shutter speed, but also because it means you can be really precise with your focusing. Manual focus is best. Use Live View and zoom in, then use the focus ring to ensure the front edge of the mushroom is sharp.

3 Speedlight

Fired at 1/4 manual power, the Speedlight is placed slightly behind the subject and angled back towards the camera so that it doesn't spill onto the area beyond the subject. This helps the backdrop to come out nice and dark, which, in turn, helps the water drops to stand out.



4 Flash triggers

Key to this technique is learning how to fire your flash off-camera. You'll need a wireless trigger and receiver for this (we used a set of Godox triggers here). With tiny macro subjects the slightest change to the position and angle of the flash can have a huge impact, so experiment with your flash placement.

5 Small softbox

A small portable Lastolite softbox is fitted over the speedlight. This diffuses the harsh light from the flash bulb so that it looks softer and more natural. The softbox is angled so that the edge of it catches the subject, rather than directed straight at it. This feathers the light to give it more of a wraparound quality.

6 Water sprayer

Water spray can add extra atmosphere to your macro photography, especially if you're using flash. The flash will freeze the droplets and make them sparkle and glow. Try spraying over the mushroom and capture drops falling off the bonnet. If the camera is on a tripod, combine several frames with the best droplets.

Top tips for fungi pics



1 Bring a beanbag

You'll often need to be shooting low to the ground to capture mushrooms and fungi. As such, a small beanbag like this comes in very handy to prop up your camera. A flip-out screen is also hugely useful for shooting at low angles, and don't forget that waterproof trousers come in handy too, for kneeling down on damp ground for close-in shots.



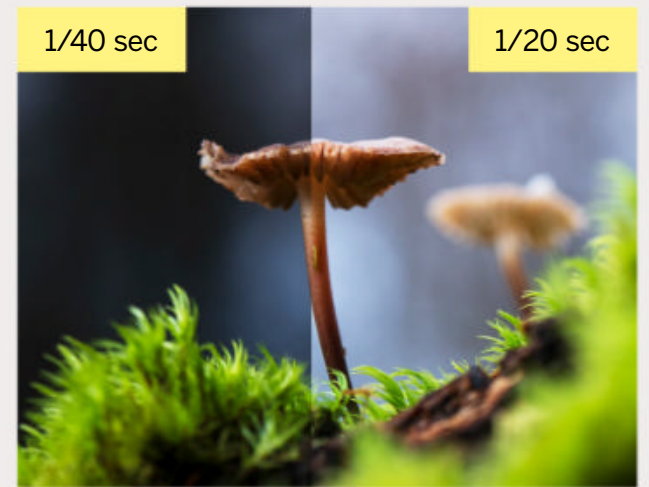
2 Control the flash

Setting the right flash power can be trial and error. Begin by working out a manual exposure without the flash. Set aperture f/8, ISO100 and adjust the shutter speed until things look dark. Turn on the flash, then use it to lift the subject. Here the flash is at 1/16 manual power.



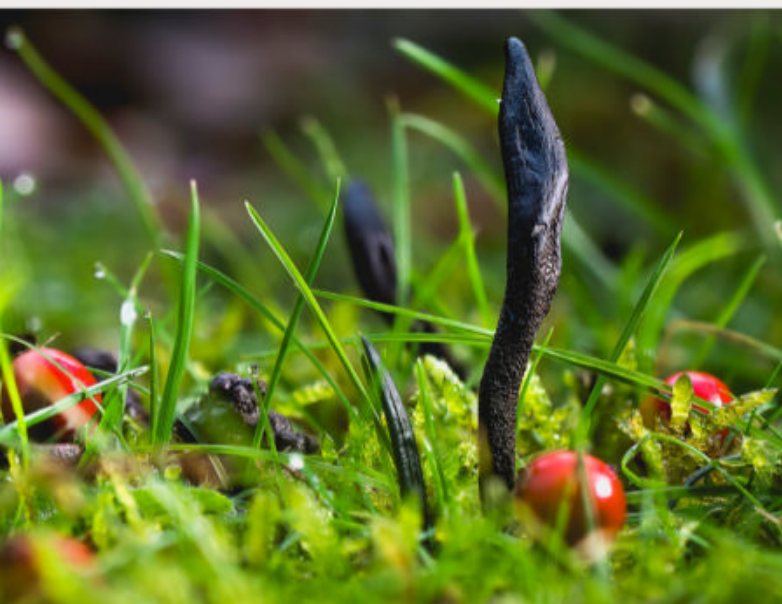
3 Create depth

For a sense of depth and to blur out the background, find an angle with empty space. Shooting down the length of the fallen tree gives us space beyond the common bonnet mushrooms. If we shot straight on, it would be difficult to get the flash to the side and darken the backdrop.



4 Ambient exposure

Your shutter speed has no influence on the flash, only on the ambient light. Here, the left side was shot at 1/40 sec, the right at 1/20 sec. The subject stays similarly lit but the light behind it changes. For a brighter or darker backdrop with flash, tweak your shutter speed.



5 Dress the scene

When shooting close-ups the tiniest distractions really stand out, so take the time to tidy any messy details, like stray strands of grass or flecks of mud. You might also want to 'dress' the scene. Here, for instance, the red berries were scattered around the black earth tongue fungi to add a splash of colour.



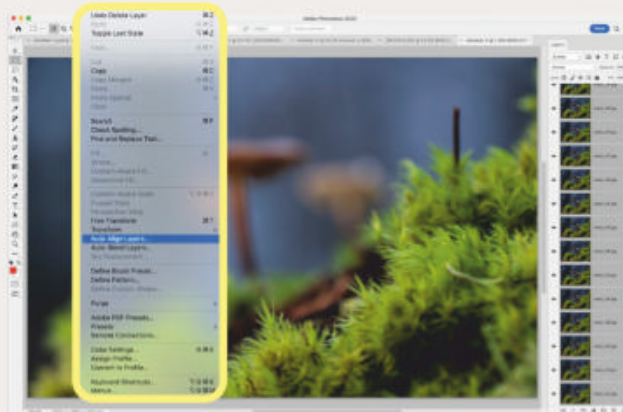
6 Finding fungi

Fungi grows year round in all kinds of conditions, and it's amazing how many you can find once you start looking. Most prefer dark, damp conditions, although some like open spaces, like fields. Check decaying wood and inspect the forest floor. This yellow spindle coral fungi can be found in mossy lawns.

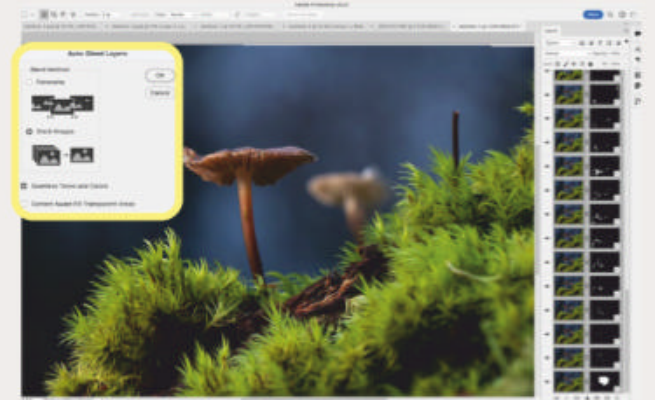
Focus stack your fungi photos SHOOT FOR A FOCUS STACK THEN MERGE IN SECONDS WITH PHOTOSHOP FOR FRONT-TO-BACK SHARPNESS



1 Shoot for a stack
To get macro subjects sharp you could try shooting for a focus stack. Focus on the closest point and take a shot, then shift the focus point backwards and take another, Continue until you've captured sharpness across the subject. Some Nikons have a focus shift mode that can shoot the stack for you.



2 Align the layers
You can use Photoshop to automatically combine the sharp parts into a single image. Go to File > Scripts > Load Files into Stack and load in your set of images. Once done, go to the Layers panel, highlight the top layer then hold Shift and click on the bottom layer to select them all. Go to Edit > Auto-Align Layers.



3 Blend the sharp bits
In the Auto-Align settings choose Auto and hit OK. Ensure the layers are highlighted then go to Edit > Auto-Blend Layers. Set 'Stack Images' and hit OK. Grab the Crop tool and crop off the messy edges. Make any tonal changes you like, then sharpen the image to finish off with Filter > Sharpen > Unsharp Mask.

Puff piece

CREATE A SPOTLIGHT EFFECT WITH A FLASH TO CAPTURE THE WONDERFUL WOLF FART

A flash is a brilliant tool for nature close-ups, here, for instance, by picking out the subject with the flash we can create a spotlight effect and allow the backdrop to become moody and dark. To do so, we set a manual exposure that underexposes the natural light (1/100 sec, f/8, ISO100), then turned on our flash and used it to lift the foreground. This is the ideal setup to show the puff of spores emitting from this little stump puffball. The puff wouldn't stand out without the flash to darken the background and light the spores. Spores are usually released by raindrops but a gentle poke doesn't do the puffball any harm (take care, inhaling large quantities can be dangerous). The scientific name for this family of mushrooms is *Lycoperdon*, which, rather wonderfully, translates as 'wolf fart'! **N**



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- High-speed flash photos



Issue 157

- Nikon Z f full review!
- 20 tips for portrait pics
- How to shoot forests



Issue 156

- Best British landscapes
- Fast tele-zooms on test
- Autumn wildlife



Issue 155

- Autumn landscape tips
- Best mirrorless for you
- Shoot fantasy portraits



Issue 154

- 100 outdoor photo tips
- Filter holder systems
- Birds of prey Apprentice



Issue 153

- Shoot dramatic scenes
- Music photography tips
- Standard zooms on test



Issue 152

- Inspiring travel images
- Shoot summer scenes
- Fast budget Z primes



Issue 151

- Wildlife skills revealed
- Nikon Z 8 review
- Fine art flowers



Issue 150

- 25 landscape tips
- Macro lens test
- Trend-setting portraits



Issue 149

- Master landscape filters
- Wide-angle lens test
- Tasty food photography



Issue 148

- 20 tips for spring shots
- Budget telephoto lenses
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Göran Strand

Swedish photographer Göran Strand has been star-struck since he was a child. Today, he is one of the world's pre-eminent astrophotographers. He sheds some light for Keith Wilson about shooting lunar halos, solar eclipses and the Northern Lights...



Göran Strand Profile

All images: Göran Strand

- Based in Östersund, Sweden, Göran Strand is a freelance commercial photographer, best known for his images of the Northern Lights and other celestial events.
- His astrophotography is often published by NASA's Astronomy Picture of the Day, SpaceWeather.com, National Geographic and other popular platforms.
- In 2021, Göran won second prize in Astronomy Photographer of the Year, the world's largest astrophotography contest.
- His astrophotography appeared in a Coldplay video to promote their single 'A Sky Full Of Stars'.
- Göran is a Nikon Creator for the Z-series of mirrorless cameras, and a brand ambassador for Focus Nordic and Leofoto.

www.astrofotografen.se

THE N-PHOTO INTERVIEW

E

very night, there is one photographic subject that is accessible to all of us, no matter where in the world we might be. All you have to do is look up, and there they are:

the stars. Admittedly,

a night sky covered in cloud or obscured by the light pollution over a big town or city can affect the quality of the view, but with the long nights of winter upon us in the northern hemisphere, now is the best time to photograph celestial displays.

Göran Strand knows better than most how to get results that will leave you feeling heavenly, thanks to his own life-long passion for astronomy. "I can't say what sparked my childhood fascination with astronomy," he says. "From what I recall, it's always been there. I can still remember being five or six years old, lying on my back in the snow just watching the stars and wondering what was out there."

In his teens, Göran sought out astronomy books in his local library and in 1986, when he was just 16 years old, he saw the fabled Halley's Comet from his backyard. Halley is the only known short-period comet that is regularly visible to the naked eye from Earth, but Göran wasn't into photography back then. As the comet is not expected to appear again until 2061, he knows he will

be a very old man if he does get the chance to photograph it next time round...

When did photography start to become an interest, and what were your first photos like?

In the early 1990s, I did a lot of mountain hiking and started to bring a camera along with me, so I started out doing nature photography while hiking. Then in 1996, when I bought my first telescope, I started doing astrophotography with my old Olympus OM-1 film camera. Back then, using film meant it was a lot of work keeping track of exposure settings – writing them down in a notebook. Once I got my film developed, I could compare the photos with my notes and see which exposure settings worked best for certain objects.

Did you have a mentor or someone who inspired you?

I'm pretty much self-taught. Back when I started, the internet was not that accessible and common to use, so I read books about astrophotography and how to get started with deep-sky photography.

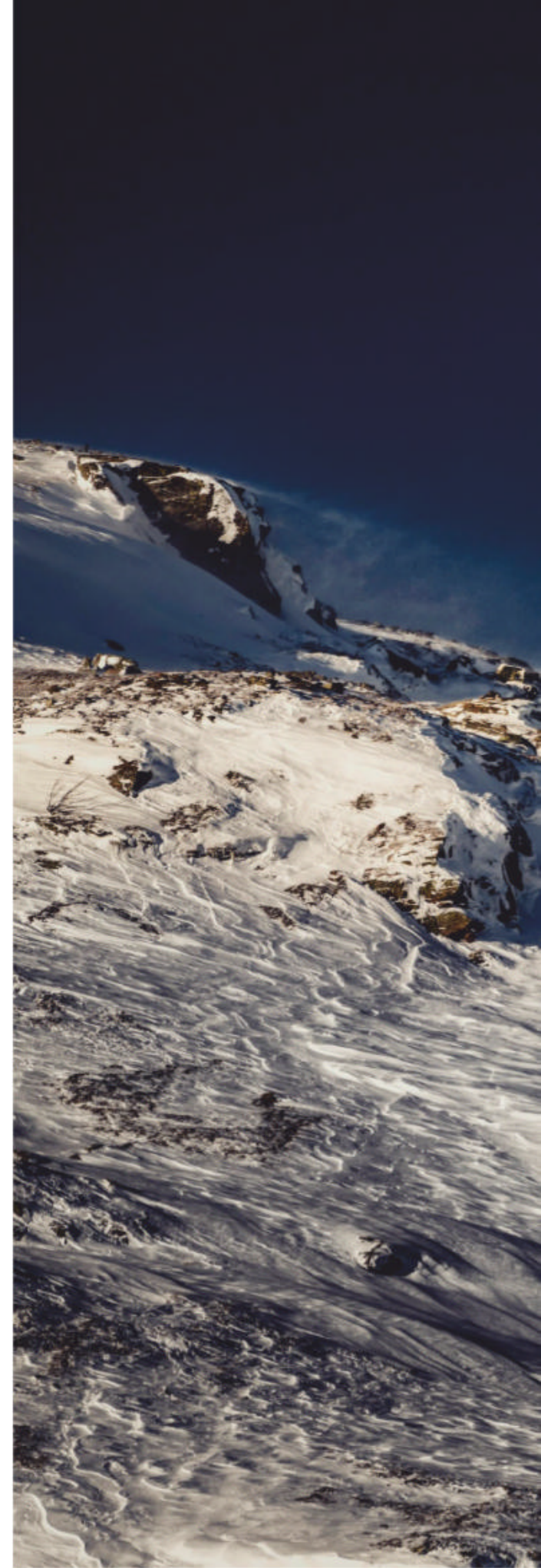


I remember being five or six years old, just watching the stars and wondering what was out there

Previous page:
The Northern Lights put on a spectacular display over Östersund, Sweden.

Right: Lunar flyby at moonset. This image, shot during a snowstorm in 2018, was Göran's 25th Astronomy Picture of the Day for NASA.

Below: Moonwalk. A family watches the full moon rise above the horizon.



I got my inspiration and tips from magazines like *Sky & Telescope* and *Sky at Night*.

What other gear were you using for astrophotography back then?

My first big telescope was a Meade LX55 six-inch reflector telescope. I started out using the Olympus OM-1, but then later moved onto a Nikon D70. That was my first digital SLR, and everything was so much easier working digitally compared to film. With the D70, I also started doing nightscape photography using wide-angle lenses.

What have been the biggest technological improvements for you since that point?



I think the biggest improvements for astrophotography have been the cameras. Today's cameras are so much better than the old ones, because they give you a higher dynamic range and a much cleaner image to work with. Also, the mounts on motor-driven tripods have improved, and are much more accurate at tracking the stars during long exposures. In recent years, there has also been a big improvement in controlling your gear, with small computer boxes that regulate everything from focus to tracking to exposure.

The same goes for regular DSLRs – the cameras of today are so much better at high ISO, and have a much better dynamic range. The optics →

Below: With this image of a lunar halo, Göran was runner-up in the 2021 Astronomy Photographer of the Year contest.

* MOONSTRUCK

THE STORY OF HOW GÖRAN CAPTURED A RARE LUNAR HALO...

This is a great picture: how did you take it?

That was a really cold winter night, and it also happened to be my birthday!

After dinner, I went out because I saw that the conditions were right for a lunar halo to be visible. I drove to a location I use for scouting the sky, and saw that the halo was starting to show. Then I looked around and found these trees up on a small hill. I went over there and looked for an angle with an untouched snowy foreground. But when I got closer I saw these rabbit tracks in the snow, and thought they added an interesting story to the photo. Perhaps the rabbit went up the hill to watch the halo for a bit, then went back home!



THE N-PHOTO INTERVIEW

have also improved, but not as much as the cameras.

What camera do you use now?

For my deep-sky work, I use a dedicated cooled astronomy camera, an ASI2600MC Pro made by Zwo, which uses an APS-C image sensor. For my nightscape photos, I use my Nikon cameras: the Z 9, the Z 6II and the D810A, which is a modified astro DSLR camera made by Nikon.

What is the main benefit of using a mirrorless system for this type of photography?

I would say the biggest benefit, at least for me, is the ability to easily frame your photo in the dark. New cameras like the Nikon Z 9 have the Starlight mode, which improves low-light autofocus and allows the screen to display a brighter image, showing your surrounding landscape much better in the dark.

What is your preferred lens?

I would say my most-used lens at night is probably the Nikkor Z 14-24mm f/2.8 S. It's a great lens for longer exposures, capturing both the night sky and the foreground in one shot. It's the perfect lens for the Northern Lights and the Milky Way. For more close-up photos of smaller objects in the sky I use the Nikkor Z 70-200mm f/2.8 VR S and the Nikkor Z 400mm f/2.8 TC VR S, a truly amazing lens in so many ways.

And your tripod?

My go-to tripod is a Leofoto LM-323C with HB-70 ball head. When travelling more lightly, I use a Leofoto Mr Q-series LQ-284C carbon tripod with LH-30 ball head.

You do plenty of workshops, so what's the basic kit a beginner needs to get started with astrophotography?

I think the best kit for a beginner is a DSLR camera, a tripod and a couple of wide-angle lenses covering 14 to 50mm. With that, you can capture lots of things in the night sky. When you go above 50mm in focal length, you're running into trouble, with the Earth's rotation showing much more quickly. So at this point, you need to start to think about adding a tracker to your gear, so you can compensate for the rotation.



Is it possible to take good astro pictures without a tripod?

It is possible, but a tripod is strongly recommended, since it gives you greater flexibility. Since you're working with exposures that are quite long, the camera needs to sit still. One way is to place the camera on the ground, pointing it to the sky. A small beanbag is a great tool to have in your camera bag for this, because it makes it much easier to point the camera at a specific angle.

Where do you typically prefer to go for taking pictures?

I like the variation between urban and remote locations. In the city, you can do really exciting shots of the moon and planets together with



I prefer a remote location, where you get a much darker sky to work with

Above: An ultra wide-angle lens was used to capture this view of the Northern Lights corona over Östersund.

Right: Göran enjoys yet another awesome display of Northern Lights.

different buildings. But generally, I prefer a more remote location, where you get a much darker sky to work with. Also, I like being out in the dark all alone.

Why's that?

For me, it's really a wonderful experience, standing alone in the dark, far from any civilization. Then you can just enjoy total silence, and really embrace your surroundings and the night sky.

What have been the most challenging or satisfying images that you've taken?

The most challenging photos are the ones I plan to do with really long focal lengths, capturing a celestial object together with a landmark of some kind. For these types of photos, you need to study the exact location to take the photo from, and then get everything right at the exact moment. Also, the weather needs to be in your favour, so while these photos are challenging, they are also the most satisfying when you pull them off. →





Can you give an example?

Those that involve capturing some really rare phenomena in the sky, like the lunar fogbow I photographed back in 2016, together with some Northern Lights. I still remember the feeling when I saw it. At first, I panicked when I realized what it was, and what I needed to do to get a photo of it; but when I got the picture, I felt so much joy at witnessing and capturing that beautiful phenomena. I was high on adrenaline, and shouted out to myself in sheer joy.

Tell me about the photos you took that featured on a set of Swedish stamps...

It all started in 2013, when I was out to capture a comet passing by. While I was setting up my telescope, one of the most intense Northern Lights started to show. I quickly changed focus while setting up a camera to do a time-lapse, and then I just shot the auroras all night.

Afterwards, I uploaded a video to YouTube that went viral (www.bit.ly/np159aurora), and lots of media reached out to me regarding that video and the photos. Later in 2014, Coldplay got in touch saying they

wanted to use my footage for their upcoming single, 'A Sky Full of Stars'. That also got a lot of media attention, and that's when the Swedish postal service reached out to me, wanting to release five of my Northern Lights photos as stamps.

All that response came from a single night's photography!

When I think back on all of this, it's quite funny how things turned out. I went out to capture a comet, probably photos that no one would have taken much notice of, and instead I got the Northern Lights, Coldplay and stamps! You just never know what can happen when you're heading out into the night.

Is it possible to get tired of shooting the Northern Lights?



I went out to capture a comet – instead I got the Northern Lights, Coldplay and stamps!

Above: A lunar fogbow and the Northern Lights over a frozen Lake Storsjön, the largest lake in central Sweden.

Top right: Faster than a speeding bullet! The rapid shutter release of the Z 9 freezes the shot fired by a contestant at the Biathlon World Cup.

Right: Coldplay perform their song 'A Sky Full of Stars' using footage by Göran Strand.

I don't think so, at least not for me. Every Northern Light is different, and you never know what's going to happen. Also for me, it's a good challenge to keep taking new and interesting views of the Northern Lights. By now I've seen lots of Northern Lights, and taken so many photos of them. But each time I think to myself, "What can I do this time that I haven't done before?" I think this is a good way of not stalling in your creativity as a photographer; when you keep shooting what you've been shooting, but still manage to be creative and come up with new ideas.

What is the rarest celestial phenomena you have shot?

That would probably be the lunar fogbow, together with the Northern Lights I captured back in 2016. Another rare set of photos I captured was in 2015, when I got a solar halo and a lunar halo on the same day, in the exact same location in the sky. Later on, I learned that this was really rare, since the Sun and the Moon seldom pass the same location in the sky. This was just a couple of weeks after the total solar eclipse in March 2015, so after a lot of discussion on



forums, people agreed that it must be around eclipses. That image later got published as Astronomy Picture of the Day (APOD) at NASA. As of today, I've had 25 photos published as APOD at NASA, which is such a great honour.

How important is research and planning to a successful result?

It all depends on what you're photographing. You can keep it simple and just go out and photograph. Later on, you can use a cloudy night to research what you have captured in your images, and from there maybe learn something new that you want to improve on the next time you go out. But in general, it's always good to be as prepared as you can be. For me, the research and planning is probably the most fun part. Then, when you're out waiting for that special moment, it's like watching an exciting movie: the tension rises as the time gets closer.

Which celestial events should we look out for in 2024?

The biggest event is probably the total solar eclipse on 8th April. It will be visible across North America, so



HEAVENLY MIDWINTER

FOR MANY OF US, THE LONG WINTER NIGHTS ARE OUR LEAST FAVOURITE TIME OF YEAR FOR PHOTOGRAPHY – BUT NOT FOR GÖRAN STRAND...

What are the ideal conditions for astrophotography?

The best conditions for night photography occur when the air is dry and has very little turbulence. So during midwinter, when the air is really dry, you usually have the best conditions. There's a really good smartphone app called Clear Outside from First Light Optics (www.clearoutside.com), which shows you lots of information about the current sky conditions at your location.

The best skies I have ever seen were in 2019, when I was in the Atacama desert in Chile. That was crazy-good: everything looked crystal-clear, and the photos looked crisper than ever.

a very accessible totality. Sadly, I won't be able to attend this eclipse. I've seen and photographed three total solar eclipses, and that is by far the most beautiful sky phenomena you can ever experience.

Away from astrophotography, tell me about the Biathlon World

Next Month
Getty sports
photographer
Clive Mason

Cup and the type of pictures that you're taking for this...

I work for a big international company, managing the marketing around different sports. I've been doing this for 10 years now, and do a lot of travelling around Europe, covering many different winter sports. It's a lot of fun, since I get the time to do creative work.

How did you photograph a speeding bullet at one event?

The cameras of today are getting really fast regarding exposure time and frames per second. I've done it a couple of times, and the pre-release shutter on the Nikon Z 9 makes things a lot easier since you can press the shutter button after the bullet is fired.

What can we expect to see from Göran Strand in 2024?

I don't really know what plans I have for 2024! One thing that has been on my to-do list for some time now is to release a new book. My most recent book, *Ljusår: Ett År Av Ljus (Light Years: A Year of Light)*, was released in 2016, so I would really like to get a new book published. We'll see. **N**



Learning space



Photography student **Shelby Nolan-Hoare** explains how her course has helped her take her photography to an award-winning level

a much harder time deciding when I was content with the outcome. 'Doll's House', which won the People's Choice award in the Fashion category of the 2023 British Photography Awards, initially took me three trial shoots. I used a range of techniques, such as colour-blocking with panels on set, projecting clouds onto the background, and using a different model and outfit entirely. It was through letting ideas roll over from shoot to shoot that I refined my images.

I shot 'Liminal Space' with a Nikon D850 and a Nikkor AF-S 24-70mm f/2.8 lens. This combination allowed me to photograph close-up portraits and details in the clothing, while also allowing me to pan out and capture the whole location.

The thing that I found most challenging was that common ground of 'less is more'. My mind is always swimming with ideas. To stay on topic, I sometimes need to take a step back, and whittle down my ideas to a selection that brings the point across in a way that is clear and tasteful. **N**

BA (Hons) Commercial Photography at Arts University Plymouth is a skills-based course that prepares photographers to create everything from technically precise fashion shots to unique concept branding for advertising campaigns.
www.aup.ac.uk/commphoto



To stay on topic, I sometimes need to take a step back, and whittle down my ideas



The 'Liminal Space' series was created as part of the final project of my BA (Hons) Commercial Photography degree at Arts University Plymouth. The series is fashion-led, exploring how clothing, props and set design can be used to discuss themes of nostalgia and illusion.

I wanted the images to speak for themselves, and to include elements that are not only technically advanced but also personal to me. I started the project by listing various things that were symbolic of my childhood and used these as motifs to inform my subject matter and composition, exaggerating the ideas of liminal space – a place, or state of mind, during a transitional period – and nostalgia to a degree that is high-fashion and oddly unique.

The project was inspired by the longing I felt at the time to regress and heal my inner child. I was facing personal hardships, and felt low-spirited. This led me to reminisce about a happier, simpler time: which ignited a motivation to narrate

through my fashion photographs the inner monologue I was experiencing, of two contradictory states of mind. When you look at the expressions on my models' faces and compare them to the joyful sets, you feel that tension between two emotions: this adds an unsettling note, while linking to the liminal space concept.

From idea to reality

Location and set design played a major role in my picture-making process. In a studio setting, I looked towards conveying illusion, using props such as the unveiling of a curtain. Sometimes I would curate a new set entirely: this would involve me free-painting a recurring pattern, such as clouds or checkerboards, to aid the narrative.

On location, I selected places or activities that felt reminiscent of my childhood, such as the entrance of a fun house I would visit as a child, the inside of a soft-play area, and a field near my family home.

On most of my shoots, I had a clear vision of what I was aiming to achieve that stemmed from childhood memory. However, on some of the shoots, I had



[1] 'Funfair' is one of a series that sees Shelby shooting images based around the ideas of illusion, nostalgia, and holding two states of mind at the same time.

[2] 'Doll's House' won the People's Choice award in the Fashion category of the 2023 British Photography Awards.

[3] 'Cloud Room' is one of several shots where Shelby rolled her sleeves up to make the set and model's clothing unite to fit the concept.

[4] In 'Checkerboard', Shelby's theme of illusion takes flight.

[5] 'Teddy Bear's Picnic' makes Shelby's second major theme of nostalgia personal, by being photographed a short walk away from her family home.

[6] For 'Soft Play', Shelby designed and made the model's jacket to tie in with the location.

NIKOPEDIA

The only camera manual you'll ever need...

70 Nikon Know-How It's a sensitive subject, but we're going to talk about ISO

74 Ask Matthew Pop your questions on a postcard – or better still, an email...

THE ISO SCALE

These are the standard settings – the range available to you will depend on your Nikon



LOW

HIGH

50 100 200 400 800 1600 3200 6400 12800 25600 51200 102400 204800

LANDSCAPE

ISO50-200

Low ISOs give the best image quality, and using a tripod will mean you don't have to worry about camera shake.

SPORT

ISO200-6400

The key to sports is capturing the action. Noise is secondary, so use whatever ISO you need if the light is low.

ASTRO PHOTOGRAPHY

ISO800-1600

This allows a shorter exposure to reduce object movement across the sky.

LOW LIGHT/ CANDID

ISO3200-12800

The most important things are to get sharp shots and preserve the atmosphere.

TWILIGHT/ WILDLIFE

ISO12800+

All current Nikons can shoot at high ISOs, ideal for low-light wildlife photography.

NOCTURNAL

ISO51200+

The sensitivity of the sensor in some advanced Nikons means you can shoot things you can't see!

NIKON KNOW-HOW

ISO and what it means

Find out how your Nikon's sensitivity to light is measured, and when you should alter the ISO setting

The camera's ISO setting is its sensitivity to light. The higher the ISO, the more sensitive it is. This is measured according to international standards, so ISO100 on one camera will be exactly the same as ISO100 on another.

Each ISO setting is double the one before: if you increase the ISO from 100 to 200, you

double the camera's sensitivity; and if you increase it from 200 to 400, you double it again. This carries on through the ISO scale.

This is deliberate. The ISO settings are designed to double (or halve) the exposure in the same way that the lens aperture settings and shutter speed settings are, and this is why the lens aperture, shutter speed

and ISO are often described as the 'exposure triangle'. For example, if you want to use a faster shutter speed without changing the aperture, you could increase the ISO instead.

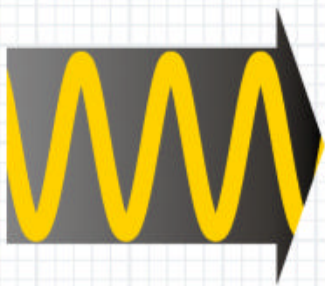
This relationship between lens aperture, shutter speed and ISO could quickly get complicated, but there are drawbacks →

Pump up the volume

When all other exposure options have run out, you can increase the ISO

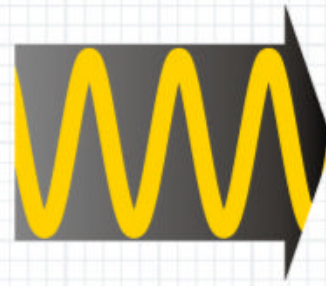
STRONG LIGHT PRODUCES A STRONG SIGNAL THAT DOESN'T NEED TO BE AMPLIFIED

STRONG SUNLIGHT



Bright light produces a strong signal

This doesn't need amplifying, so the ISO can be left at its lowest setting

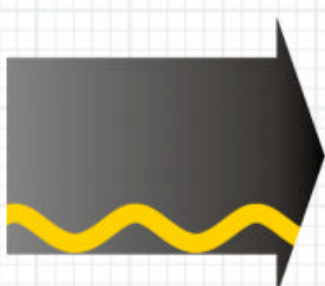


The image gets the strong signal it needs and shows little or no noise



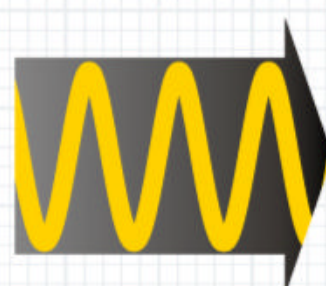
LOW LIGHT PRODUCES A WEAKER SIGNAL, AND AMPLIFYING IT WILL ALSO AMPLIFY THE NOISE

WEAK CANDLELIGHT

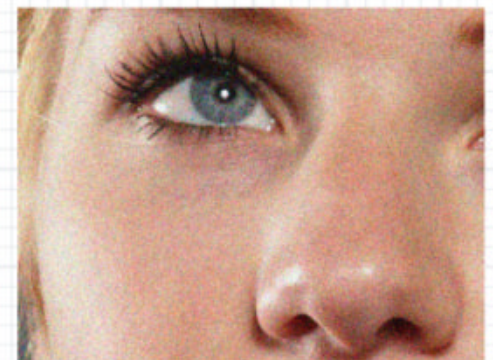


The signal from a very dim light source is very weak

The ISO has to be increased to produce a strong enough signal for the image



This also amplifies the background noise in the image, which is why high-ISO shots are noisy



TAKE CONTROL

See the difference

Four ways to tackle the same low-light scene using ISO



1

ISO100, 1/2 sec

This gives the best quality because the camera is working at its minimum ISO setting – but the shutter speed is so slow that it will almost certainly cause camera shake if you attempt to shoot with the camera handheld.



2

ISO800, 1/15 sec

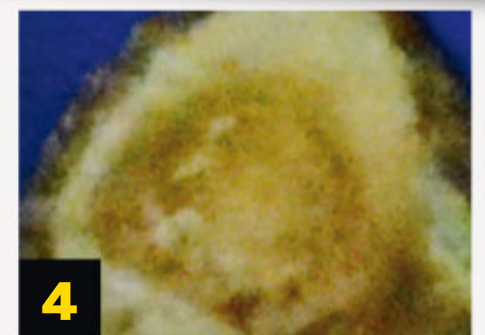
ISO800 used to be considered very 'fast', but today's Nikons produce good quality even at this setting. You will notice more noise, but the shutter speed is 1/15 sec, which is more likely to give a sharp picture.



3

ISO6400, 1/125 sec

Increasing the ISO to 6400 gives much more noise, but it's still not too obtrusive at normal viewing distances and it allows a shutter speed that should eliminate any camera shake, especially if your lens has VR built in.



4

ISO51200, 1/1000 sec

At this ISO setting, the picture quality is relatively poor, so you probably want to avoid setting the ISO this high if you possibly can – but it does allow a shutter speed that would freeze most moving subjects.

NIKON KNOW-HOW – CONTINUED

→ to changing the ISO, which mean that, in practice, you tend to change the ISO only when you have to.

ISO DRAWBACKS

When you increase the ISO setting, you're not really making it more sensitive to light: you're simply amplifying the light values it's managed to capture. The problem with this is that all digital images have some background noise. Usually, you don't see it because it's faint compared with the light falling on the sensor; but when you increase the ISO, you amplify it, and it shows up as a kind of random speckling. The higher the ISO, the worse the noise.

The 'signal-to-noise' ratio is one of the things we measure in our *N-Photo* camera tests. Low ISOs offer a high signal-to-noise ratio (lots of signal, not much noise), but higher ISOs bring a lower signal-to-noise ratio, which means that this random noise is making up a larger part of the picture.

EXPOSURE OPTIONS

ISO adjustments are best kept for situations where they're really necessary. The regular exposure adjustments of lens aperture and shutter speed are the ones to use on a daily basis; you only need to think about the ISO if the light levels fall to the point where you 'run out of apertures' – you're at the

maximum aperture, and are risking camera shake from slow shutter speeds.

If your Nikon is in full Auto mode, it will make these decisions for you, increasing the ISO where it has to in order to avoid camera shake. Otherwise, you need to keep an eye on the camera settings yourself and increase the ISO if you're shooting in marginal conditions (or use your camera's Auto ISO function).

It's often best to take control rather than leaving it to the camera, because there will be situations where you're the only one who can judge what a suitable shutter speed will be. You can see some examples in 'When to change the ISO', opposite. **N**

How much noise is too much?

Just because you can see the noise, it doesn't mean it's a problem...

It's easy to zoom in on a photo on the computer at 100% magnification and see every dot and speckle of image noise. But don't forget that 100% is a very high level of magnification, especially if you're using a Nikon like a D850, Z 7II, Z 8 or Z 9. These cameras have 45.7-megapixel sensors, so 100% view represents a very high magnification indeed. The danger is that you can end up paying far too much attention to reducing image noise areas that are too small to see at normal viewing sizes and distances.



Noise is easy to find in a photograph taken at ISO6400 or above – but will you really notice it at real-life display and print sizes?

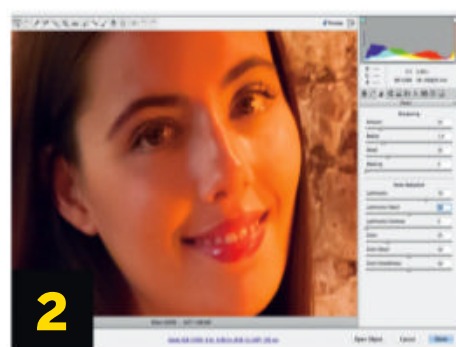
Step by step Ways to keep the noise down

You can use both in-camera and software tools to smooth out your high-ISO shots



1 High ISO NR

You'll usually find this in the Shooting menu. It's on by default because most people want their high-ISO shots to be as smooth as possible.



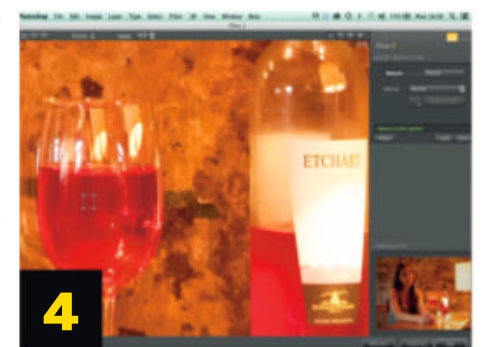
2 Raw noise reduction

If you use Camera Raw to process your Raw files, play around with noise reduction settings. Reducing noise can reduce sharpness, though.



3 Photoshop filter

Photoshop's Reduce Noise filter can reduce both luminance and colour noise (see opposite). You can even adjust the red, green and blue channels individually.



4 Noise plug-ins

Some of the best results come from dedicated plug-ins, like Nik Dfine 2. These will analyse different areas of the image and balance detail and smoothness.

Auto ISO

It's one of our favourite Nikon features!

The main reason for increasing the ISO in dark conditions is to make sure you can shoot at a suitable shutter speed. At the same time, you'll want to shoot at the lowest ISO you can, to get the best possible picture quality. This means you can end up doing complicated mental maths when you

should be concentrating on your pictures.

But there's no need, because your Nikon can do it for you! Auto ISO lets you select the minimum shutter speed you want the camera to use and the maximum ISO, then works out the best combination instantly as you shoot.

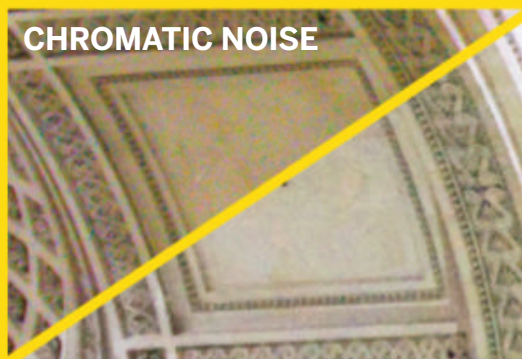


Types of image noise

There are actually two types of noise, not one

CHROMATIC

Colour or 'chroma' noise is a multicoloured speckling, where neighbouring pixels show random colour variations. This is quite easy for noise reduction processes to remove without harming image detail, and you tend to see it on older cameras.



Chromatic noise creates a distinctive blotchy, rainbow-colour effect that's easy to remove.

LUMINANCE

Luminance noise is caused by random variations in brightness between pixels. It's harder to deal with because noise reduction processes can't readily distinguish noise from real detail. Reducing it will usually have an effect on fine detail too.



Luminance noise appears as a scattering of black dots across your images.

PUTTING IT INTO PRACTICE

WHEN TO CHANGE ISO

Changing the ISO is easy; working out when to do it and what to change it to is the hard part

There are so many ways to change the exposure on your Nikon that it's easy to get lost in a sea of possibilities. Think of ISO as a means of getting the shutter speed you need. Here are some examples of what we mean...

1 AT NIGHT ON A TRIPOD:

ISO100

Always use a tripod for night shots when you can. When the camera is locked in position, you can use any shutter speed you like – and this means you don't have to increase the ISO and risk noise, even if your exposures run into many seconds.



2 SNAPSHOTS AFTER DARK:

ISO1600

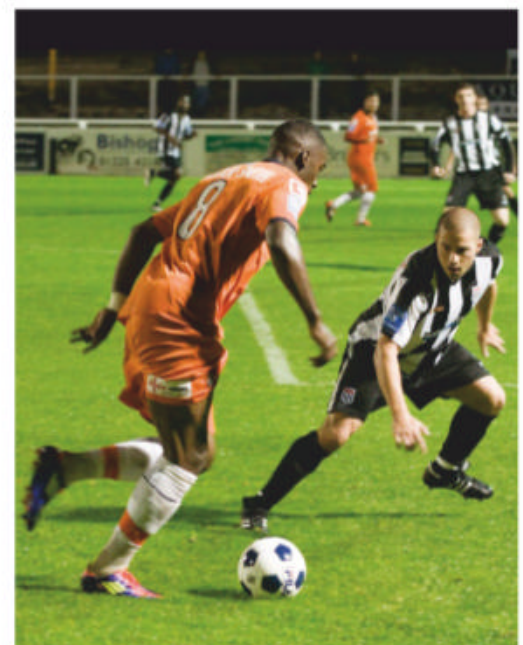
The latest Nikons can get great shots even at really high ISOs, so it is possible to shoot handheld indoors and after dark. But you will need a fast enough shutter speed to avoid camera shake, so try ISO1600 to start with, or use the Auto ISO function.



3 LOW-LIGHT SPORT:

ISO6400

The problem here is subject movement. Sports are fast-moving and you'll need a fast shutter speed of 1/250 sec or 1/500 sec to have any chance of freezing the action. This means you may need a very high ISO – but that's better than blurred pics.





Ask Matthew...

Our resident Nikon expert Matthew Richards answers your questions and solves your problems. If you have a Nikon-related question, email it to mail@nphotomag.com



One of the biggest advances in the Z system is the lens mount so, while you can use most F-mount lenses via an adapter, Z-mount lenses are generally preferable.

Q I use a number of lenses with my Nikon D500 but am concerned that some might be incompatible if I upgrade to a Z 8. Can you help?

Barbara Hilton

A It's good and bad news! From the full list you sent, all three of your FX format (full-frame) Sigma 105mm, Sigma 150-600mm and Nikon 300mm should work with the Z 8 without any limitations, via a Nikon FTZ or FTZ II mount adapter. Most of the other lenses are basically compatible but, being DX format (APS-C) lenses, they'll only work in DX crop mode on the full-frame Z 8 (see the following Q&A).

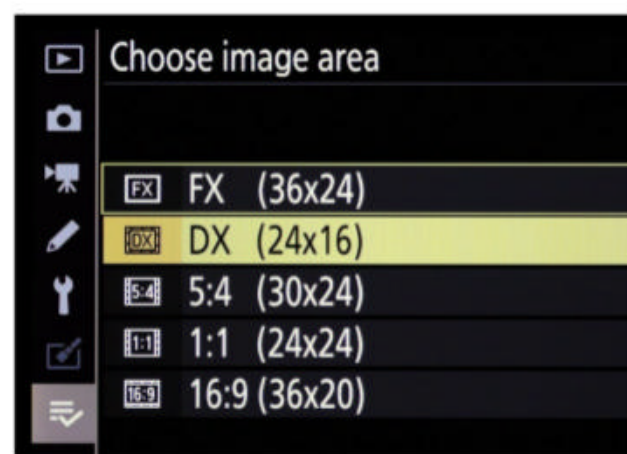
For your Tamron lenses, the Tamron 18-400mm f/3.5-6.3 Di II VC HLD would need to be serial number 052673 onwards. If it's an earlier sample, you'd need to update the lens's firmware to V2.0. You can do this yourself via a USB-connected computer, if you buy Tamron's TAP-in Console. The Tamron 16-300mm f/3.5-6.3 Di II VC PZD Macro is incompatible, and can't autofocus on any Z-system body.

Q I've noticed that my Z 7II automatically switches to DX crop mode if I mount a DX lens on it. Can I also use this mode with FX lenses?

Jason Barker

A I really like using the DX crop mode on my Z 7II. It's available in the Photo Shooting Menu, if you scroll down to the 'Choose image Area' option. It's definitely not just for shooting with DX (APS-C format) lenses on a full-frame camera.

Because the DX crop mode only uses a smaller, central region of the image sensor, it gives you a 1.5x magnification in 'effective' focal length. For example, it boosts the range of a 70-200mm zoom lens to 105-300mm, extending your telephoto reach with no loss of aperture rating, unlike when using a teleconverter. It also adds to the versatility of prime lenses. For example, with just a pair of 24mm and 50mm primes, the DX crop mode gives you the option of highly useful 24mm, 36mm, 50mm and 75mm effective focal lengths. You'll need a lens like the Z DX 16-50mm if you're after wide viewing angles.



Thanks to the 45 megapixel native resolution of the Z 7II, you still get 19.5 megapixel images, even in DX crop mode.

Q I noticed the 3 Legged Thing Ellie L-bracket in issue 157's Christmas Gift Guide. What's the difference between this and the Zella?

Alan Keown

Secondhand superstar

Q I'm planning a trip to Alaska. What secondhand lens should I add to my D5500 and 18-140mm zoom?

Charles Thompson

A **Matthew recommends...** The Nikon AF-P 70-300mm f/4.5-5.6E ED VR would be good as an additional telephoto zoom but an 'all in one' lens, like the Tamron 18-400mm, can be more convenient when you're on a trip.



Tamron 18-400mm f/3.5-6.3 Di II VC HLD
THIS TAMRON LENS STRETCHES FROM WIDE-ANGLE COVERAGE TO HUGE TELEPHOTO REACH

RELEASED: 2017
PRICE NEW: £699/\$699
SECONDHAND PRICE:
'Excellent' £449/\$525
'Good' £419/\$499

There are rumours that this Tamron lens is about to be discontinued but it's still available new and is a great secondhand buy. It's unique in its extra-large zoom range, equivalent to 27-600mm in full-frame terms, so gives greater telephoto reach than a 70-300mm lens, which might come in handy if you're planning on shooting wildlife in Alaska. It's not particularly compact or lightweight but performs well and can be a lot more convenient than carrying two lenses and swapping between them, especially when you're travelling around. The Tamron features weather-seals, fast

autofocus and effective optical stabilization.

Key points

1. Autofocus
The HLD (High/Low torque modulated Drive) autofocus system is near-silent.

2. Vibration Compensation
Optical image stabilization is a boon for handheld telephoto shooting.

3. Solid build
The robust construction includes a metal mounting plate and weather-seals.

Elements/groups: 16/11
Aperture diaphragm: 7 blades
Optical stabilization: Yes
Min focus distance: 0.45m
Max magnification: 0.34x
Filter size: 72mm
Dimensions: 79x124mm
Weight: 710g



Unlike old Ni-MH batteries, the latest editions from companies like Eneloop, EBL, Powerowl and Hi-Quick typically retain their charge for months or even years.

A The 3 Legged Thing Zolda is an L-bracket that's designed exclusively for Nikon Z 5, Z 6, Z 7, Z 6 II and Z 7 II cameras. As such, it's a tailored fit and engineered from a single, solid block of magnesium alloy. It's incredibly rigid and robust but, naturally, the downside being that it won't fit other cameras.

3 Legged Thing makes dedicated L-brackets for other Nikon cameras, including the Z 8, Z 9 and Z 50. However, if you want to use a single L-bracket that you can adapt to fit a variety of different cameras, the Ellie has an adjustable, modular design.

3 Legged Thing has also just released a new Lexie universal L-bracket, available in copper, metallic slate grey and 'darkness' matte black, at around £60/\$65.

Q I've just bought a Nikon SB-700

Speedlight but have noticed that the recycle speed between flashes slows down after a few dozen shots. Is this normal?

William Bennett

A It sounds like you're using regular alkaline batteries rather than rechargeable Ni-MH batteries to power your SB-700, as featured in this month's big test. Fresh alkaline batteries have a higher initial voltage than Ni-MH batteries but start to drop off as soon as you start using them. By contrast, Ni-MH batteries output 1.2V instead of 1.5V when fully charged, but remain pretty constant until they're completely drained.

In our tests with an SB-700, we got around 300 full-power flashes with the likes of EBL, Powerowl and HiQuick 2800mAh Ni-MH batteries, and the recycle speed stayed fairly constant throughout, at around 2.7 seconds. With alkaline batteries, we only got just over 100 full-power flashes and the recycle speed dropped from around five to almost 10 seconds after 70 flashes. **N**

Like any L-bracket, the Ellie enables easy and well-balanced switching between landscape and portrait orientation shooting. Its modular design accommodates a wide range of cameras.





The search for the **world's best Nikon photographer of 2023** is finally over! Each issue the monthly *N-Photo* POTY photo contest's top 10 images have been selected by the *N-Photo* team – but this month we pick the best of the best and crown our winner of the *N-Photo* Photographer of the Year 2023 competition!



OVERALL WINNER!

1. On the Edge

BY PAWEL ZYGMUNT

Each of the photographs printed here topped one of the 12 rounds throughout NPOTY 2023 – and, in doing so, beat over 15,000 other images to the punch. But only one reader gets to take home the Nikon Z 9 grand prize and be crowned *N-Photo's* Photographer of the Year 2023... Congratulations to Pawel Zygmunt! His entry 'On the Edge' won our Winter round in issue 158.

As we considered the 12 stunning monthly winners, Pawel's entry stood out for many reasons. He had to hike to the Cadini di Misurina viewpoint for sunrise, in snowy conditions; he adapted when the glorious sunset he'd anticipated instead provided a moody skyline; and he managed to frame a hiker to convey the scale of the scenery. Add in a four-shot pano to create jaw-dropping levels of detail, and this is a worthy winner.

Camera:	Nikon D810
Lens:	100-400mm f/5-6.3
Exposure:	0.5 sec, f/19, ISO64

The overall winner



Pawel Zygmunt

N-PHOTO PHOTOGRAPHER
OF THE YEAR 2023

I'm overwhelmed to become *N-Photo's* Photographer of the Year 2023. *N-Photo* is fantastic, not only for Nikon users, but anyone interested in photography. My favourite sections are *On Location* and *The N-Photo Interview*, where I can read about the brilliant adventures of other photographers.

Becoming the overall winner never crossed my mind. I just wanted to show a spectacular place to enjoy during the winter months. I've lived in Ireland for the past 18 years, so I don't get many chances to experience a *real* winter. Visiting the Dolomites brought back memories of my childhood in Poland. I always say that photography is an adventure, and photographs are only to memorize it.

I can't wait to test the Z 9. I'm going to bring it on my next trip to the Faroe Islands, where it will have the honour of being my main camera!



WIN! A WhiteWall Photo Lab voucher Worth £100! WHITE WALL

Witness your work as a glorious gallery-quality print from award-winning online photo laboratory WhiteWall. Each of the 12 winners, as judged by the *N-Photo* team, received a £100 WhiteWall voucher to have their entry printed in a range of stylish options including acrylic, aluminium, giclée and canvas in a huge array of sizes. See www.whitewall.com/uk



2

3

2. Autumn is Coming BY DARIAGUFO

The beautiful Rembrandt-style lighting in this image was 'light painted' using a single light source. This was achieved by maintaining a fixed composition and shooting a sequence of images, with a light beamed onto the image at various points. These images were then blended together in post. The attractive arrangement, seamless edit and beautiful lighting earned this entry the top spot of our Still-Life round.

Camera:	Nikon D610
Lens:	35-70mm f/2.8
Exposure:	f/14, ISO100

3. Colour of Autumn BY HAYLEIGH

You'd be hard-pressed to find a more creative image than our Autumn winner. A light board backlit the translucent petals, while an aperture of f/8 provided sharpness. Textures were overlaid in post to create this fantastic painterly result.

Camera:	Nikon Z 7II
Lens:	85mm f/1.8
Exposure:	1/125 sec, f/8, ISO100





4

4. Apex Predator

BY ALLAM

In the winner of the Sports category, just enough of this rally car is visible to make it out as it kicks plumes of water, with the headlights peering out like a striking predator. A fast shutter speed has captured the flying debris still enough to form explosive patterns.

Camera:	Nikon D750
Lens:	70-200mm f/2.8
Exposure:	1/1000 sec, f/6.3, ISO280

5. Focus Crocus

BY ANDY VISART

This crocus was severed due to heavy winds. Once sheltered inside, it opened up to reveal a magnificent flower. We love how clean and crisp this portrait is. An aperture of f/14 has provided a large enough depth of field to render the stamen and surrounding water droplets tack-sharp. But the real genius of our Flowers & Plants winner is the choice of background.

Camera:	Nikon D7500
Lens:	50mm f/1.8
Exposure:	1/200 sec, f/14, ISO100



5



6

6. The Cabin

BY GILES ROCHOLL

Some people travel to Iceland and never witness the Northern Lights, but our Travel winner was captured on the first night of a trip. An awful lot of work went into the final product. It's a four-photo composite: two for the sky, two for the foreground. The natural-looking blend – created using luminosity masks – and the way the aurora stretches across the sky are standout features.

Camera:	Nikon D810
Lens:	14-24mm f/2.8
Exposure:	25 secs, f/4.5, ISO1600

7. Heron on a Stick

BY LIGHTBROOM

This striking minimalist exposure has made use of high-contrast lighting and a dark background by exposing for the highlights and rendering everything else near-black. The result is a low-key lighting effect that required little attention in post, beyond a mono conversion and a dash of contrast. Our Wildlife winner is all the more impressive when you consider that it was shot from a moving boat.

Camera:	Nikon Z9
Lens:	600mm f/4
Exposure:	1/3200 sec, f/5.6, ISO1400

8. Golden Fairytale

BY SOLLENAPHOTOGRAPHY

The Portrait winner has conjured up ample storytelling potential. The model gazes past the viewer, directing her magic towards something beyond the frame. Golden light pulls the subject from the dark background, and the viewer is drawn to her clearly defined and pin-sharp eyes. The fiery sparks and glow complement the overall warm tones. A magical portrait!

Camera:	Nikon D610
Lens:	50mm f/1.4
Exposure:	1/160 sec, f/1.8, ISO100



9. Symmetry

BY YOUSIF ALBADI

Our Architecture winner was captured in the Qasr Al Watan, Abu Dhabi. A wide-angle focal length, narrow aperture and accurate focusing has created front-to-back sharpness, but what makes this image really stand out is the composition. The symmetry is flawless; each corner lines up, and the dome is positioned right in the centre. The icing on the cake is the spotlight starburst effect.

Camera:	Nikon Z7II
Lens:	24-70mm f/2.8
Exposure:	1/6 sec, f/13, ISO100



10

10. Electric Landscape BY ALEXIUS VAN DER WESTHUIZEN

This incredible lightning storm was captured from the top of a multistorey car park. Three shots were blended in post, spreading the lightning across the frame and balancing the composition. It's a deserved winner of our Low Light category.

Camera:	Nikon D750
Lens:	24-70mm f/2.8
Exposure:	3 secs, f/8, ISO50

11. Strictly Superb BY MATTHEW D CROSBY

The Performance winner is beautifully lit and perfectly sharp, but the standout feature is the dancers' dynamic poses. The lines and shapes formed by their bodies are graceful, and the billowing dress adds to the pleasing shapes.

Camera:	Nikon D500
Lens:	18-35mm f/1.8
Exposure:	1/160 sec, f/13, ISO100

12. Vegetarian Still Life BY STEVE JAMES

This compelling but busy scene has been cleverly tamed by using varying intensities of light. We love the use of texture in this Food & Drink winner, with various materials and surfaces adding interest.

Camera:	Nikon D850
Lens:	15-30mm f/2.8
Exposure:	10 secs, f/2.8, ISO200



11



12



WIN! A Nikon Z f

The overall winner of *N-Photo's* Photographer of the Year 2024 will receive the grand prize of a Nikon Z f!

When we reviewed the Nikon Z f, we called it: "Nikon's best-looking camera since 1982!" And now, together with Nikon UK, we're giving you the chance to win this full-frame retro-style Z camera. It's an incredible prize that's worth a whopping £2299/\$1999. Enter any of the 12 rounds of NPOTY 2024 to be in with a chance of taking Nikon's nostalgia-infused Z camera home – and of being crowned *N-Photo's* Photographer of the Year 2024.

A blast from the... future?

The Z f is far from retro under the hood. It's built around a 24.5Mp full-frame CMOS sensor and inherits some of the latest advancements from the Nikon Z 8 and Z 9. It's powered by the latest EXPEED 7 processor, has a native ISO range of 100-64,000, and uses the same impressive autofocus system as the Z 8 and Z 9.

It's equipped with 299 focus points that enable you to pinpoint your subject with superb accuracy. This system is adept at subject tracking, including humans (faces, eyes), animals, birds and vehicles, ensuring precision even in challenging shooting conditions, down to an impressive -10EV.

Unique to the Nikon Z f is the introduction of subject-detection algorithms that function seamlessly in manual focus mode or when using adapted manual-focus lenses, enhancing exposure accuracy based on recognizing the subject.

The camera is also capable of achieving up to eight stops of image stabilization with

compatible lenses and is the first Nikon camera to offer Pixel Shift Shooting. This physically moves the sensor to capture a sequence of up to 32 Raw images. When blended together in Nikon NX Studio, this creates a whopping 96Mp image.

Nikon's Focus Point VR system takes in-body image stabilization a step further by employing the camera's active focus point to enhance stabilization around the subject.

It's a serious video tool too, supporting 4K up to 60p; oversampled 6K footage up to 30p for better quality 4K; and Full HD up to 120p. It also shoots 10-bit internally and records continuously up to 125 minutes.

Z f Features

- 1 The camera body has a leather-like textured finish, adding to its retro charm.
- 2 Z 8/9 tech and totally new features make this a modern camera beneath the hood.
- 3 Precision-milled brass control dials don't just look the part: they will patina with age.
- 4 Black-and-white switch allows you to toggle seamlessly between colour and mono.
- 5 The rear LCD is fully articulating, rather than tilting as seen on Nikons like the Z 6II.
- 6 Retro-style shutter button has a screw to fit an after-market soft-shutter-release button.

How to enter

HOW OUR COMPETITION WORKS

- Each issue, the *N-Photo* team sets a theme – we next want to see your best Portrait photography. Enter at www.photocrowd.com/npoty24portraits
- The deadline for entries is 15 February 2024. The top 10 gallery will appear in *N-Photo* 161, on sale 14 March 2024
- Here are our next three competitions:
Wildlife Opens: 08 Feb Closes: 14 Mar
www.photocrowd.com/npoty24wildlife
Flowers & Plants Opens: 07 Mar
Closes: 11 Apr
www.photocrowd.com/npoty24flowers
Mono Opens: 04 Apr Closes: 09 May
www.photocrowd.com/npoty24mono
- It goes without saying that *all* images must be shot on Nikon cameras!
- Please ensure your entry *does not* contain a watermark and *is* submitted with the necessary EXIF data: the model of the camera and lens, and the shutter speed, aperture and ISO used.
- 12 competitions will appear throughout 2024, and the overall *N-Photo* Photographer of the Year 2024 – and winner of the grand prize – will be crowned in the issue that goes on sale in January 2025. So, grab your Nikon and start capturing photos. Good luck! 🍀

Readers' letters

We'd love to hear your thoughts on the mag and all things photographic! You can write to us, message us or share your images in the following ways: ✉ mail@nphotomag.com
 🐦 twitter.com/nphotomag 📘 facebook.com/nphotomag 📷 instagram.com/nphotomag

★ Star Letter

Let there be Lightroom

A

As a subscriber to your magazine I am quite surprised that you do not include more help in your Nikon Skills section for Lightroom.

I say this as the vast majority of professional photographers I follow on YouTube use it. There appears to be a move away from Photoshop now.

And as edits in Lightroom are non-destructive, it is the ideal software for any photographer. I only use Photoshop for stacked images, the remaining edits are all handled by Lightroom.

I could see a range of skills to cover from the basics to more advanced tools within Lightroom. For example:

- 1) How to import an image and how to set up the options when doing this.
- 2) Exporting files, covering different file types, setting up presets, and so on.

3) Delving deeper into the Develop module to explain what each adjustment does.

4) How to apply masks, including Intersect.

5) Options such as Snapshot – I only learnt about this function recently, and it's really powerful.

I am sure your contributors could cover a whole host of useful information on

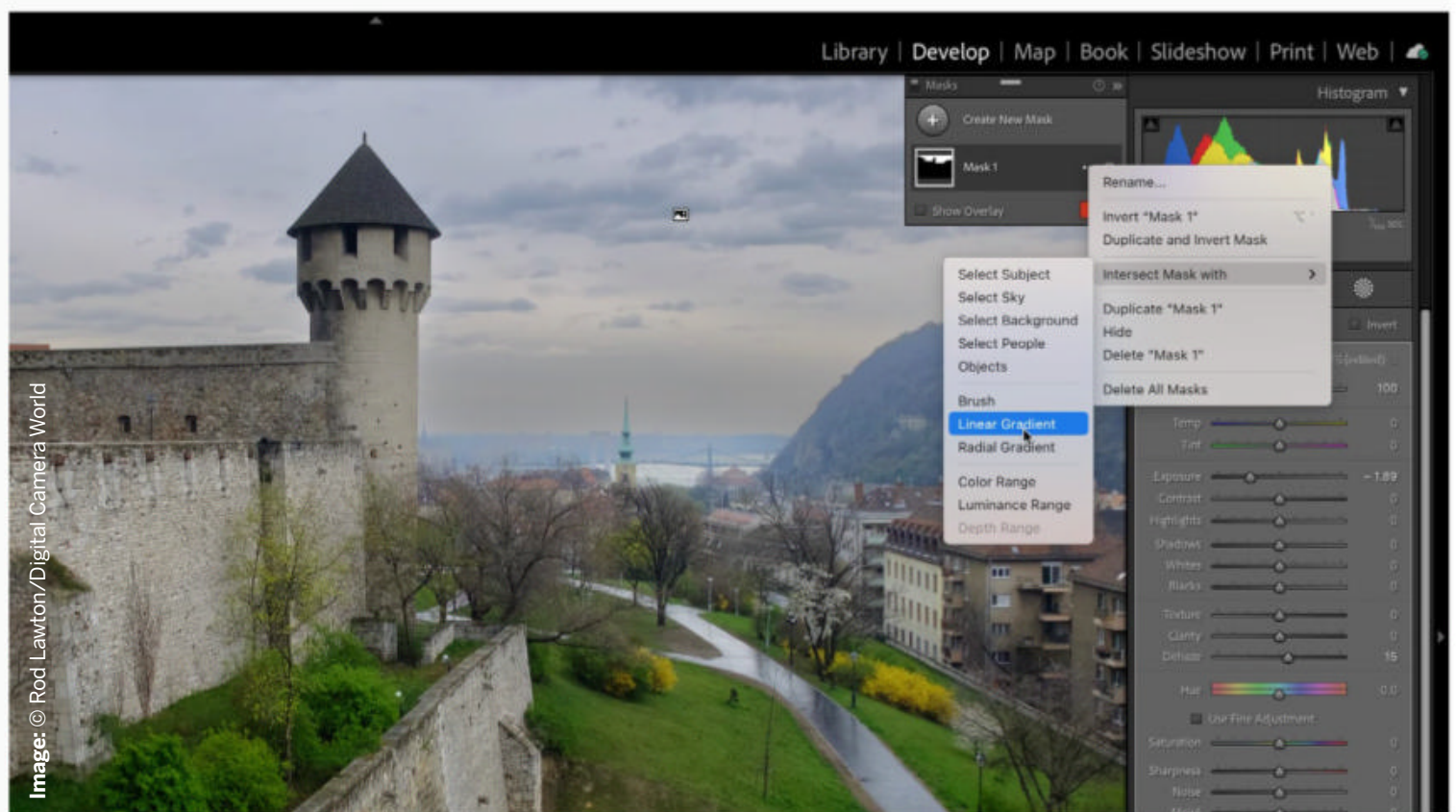
Lightroom, and I look forward to reading more in future editions.

Les Allan

Our regular two-page Adobe CC skills project is designed to cover both Photoshop and Lightroom – as you get both programs as part of the Adobe CC Photography Plan package. This issue's White Balance tutorial is a case in

point, as it's applicable to both. However, when it comes to more creative aspects, rather than straight image processing, Photoshop is by far the most flexible program. But we're taking your ideas on board!

Below: Intersect masking in action. Should we be concentrating more on Lightroom and less on Photoshop?



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*Winners will need to create an Affinity user account to download the app. The prizes are issued in accordance with the standard Affinity EULA and there's no cash alternative.

www.DigitalCameraWorld.com
The best from our companion website



Image: Gareth Bevan / Digital Camera World

1. Nikon's old-looking camera appeals to a young audience

It's no surprise that Nikon's latest retro camera, the Nikon Z f, has been a big success. However, what may come as a surprise is who it has been a success with: the younger audience. Nikon's director and executive officer director of marketing headquarters, Tsuji Takuhide, gave an insight into Nikon's thoughts, plans, and observations with the Z f. <https://bit.ly/47LKzIS>



Image: Helin Bereket / Nikon

2. Nikon shows 'timeless' photographs for Nikon Z f launch

To mark the release of the Nikon Z f, Nikon has released a series of images taken with the new camera that appear timeless but are made in the modern day, much like the camera design. They provided the camera to photographers from different locations and with different styles, with the brief of taking the viewer on a journey through time. <https://bit.ly/4a9g3Ut>

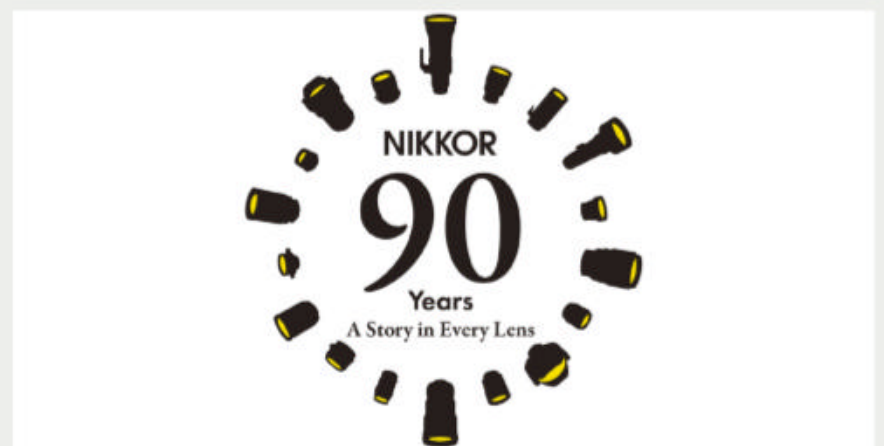


Image: Nikon

3. Nikon celebrates 90 years of Nikkor lenses

Nikkor began in 1932 when Nikon Corporation registered the Nikkor trademark. A year later, the release of Aero-Nikkor aerial photographic lenses started the 90-year production of optical instruments. The Nikkor brand has subsequently grown and is renowned globally for delivering the highest performance on the best Nikon cameras. <https://bit.ly/3tclaS3>



Sign up to our newsletter for the latest Nikon news! Simply scan this QR code or go to <https://bit.ly/dcwnews>



Image: © Brian Crossley

Brian captured this sequence of an anxious bird caring for its chick after falling from its nest... and fortunately saw a happy ending.

A bird on the car

One morning I was just leaving home when there was a little disturbance near my car. On investigating, a baby swallow had fallen from its nest and the mother was causing quite a commotion, swooping down – I think to protect the youngster.

I ran back into the house and grabbed my camera, returning to find the chick had somehow got onto the car's roof. Unfortunately, in the heat of the moment, I shot off at the settings already on my D750.

Brian Crossley

Your settings look pretty good to us, Brian – with the parent bird mostly frozen with the shutter speed and just a hint of movement in its wings...

Not such a fungi

Every advert I read for used equipment at dealers or online auction sites, especially for lenses, refers

to dust and fungus within the optical elements. I had two lenses, through my own error, cleaned at some cost. With our changing climate here in the UK, becoming hotter, more humid and with greater amounts of airborne particulate and fungal spores, I am wondering if there is an optimal method for the storage of equipment or is there a case for a cabinet where both the temperature and humidity can be regulated – or is there a more cost efficient solution?

I am considering the purchase of a used Nikon 200-400 F4 G VR AF-S IF ED, and with such a purchase I would not wish to incur costs for poor storage.

Colin Heath

You can buy humidity controlled 'dry cabinets' for the optimum conditions to prevent fungus from forming on your gear (see the guide on our companion website Digital Camera World: <https://bit.ly/drycab>) but these can be very expensive.

Our advice to store your lenses in dry conditions and use them regularly, as exposing the elements to UV light (sunlight) will kill fungus. 🍄

Left: A dry cabinet will protect your lenses from fungus, but they can be expensive, so alternatively regular use will expose the elements to UV light.

Image: © Ruggard





Camera:	Nikon D3500
Lens:	18-140mm f/3.5-5.6
Exposure:	1/50 sec, f/10, ISO150

[1] Chris flipped this image in post-production so the 'Ritz Hotel' wording was legible.

The London look



Chris Aldred heads to 'the Big Smoke' with his trusty Nikon D3500, to capture his own unique perspective on the photogenic capital

MISSION: Capture the streets of London throughout the day, sunset and blue hour

PHOTOGRAPHER: Chris Aldred

LOCATION: Bristol, UK

KIT USED: Nikon D3500, Nikon AF-S DX 18-140mm f/3.5-5.6G ED VR

INSTAGRAM: @aldredvisual

Growing up in Bristol, I was surrounded by the creative wave of local photographers, street artists and architects in my community – and I wanted to be a part of that. My love of photography grew after leaving school, as I observed and learned from others I looked up to.

My journey really began when I picked up my first proper camera, a Nikon Coolpix P510 bridge camera. This allowed me to

develop my skills and creative outlook. I advanced onto a D5100 DSLR shortly after, and then a D3500. I've recently invested in my first Z-series camera, the Nikon Z 5, which I'm excited to be using more often in the near future.

I took my trusty D3500 on this trip to London. It's an absolute workhorse, and has been my go-to camera for a while. It was paired with my AF-S DX 18-140mm f/3.5-5.6G ED VR lens, a versatile piece of kit to suit all environments and subjects. I also had a Manfrotto Element MII tripod, which is nice and light to carry around.

Streetwise shots

After spending the latter part of the morning walking around Piccadilly, I took a couple of photos of the Ritz, but wanted to find an angle to create something unique

within my surroundings. I noticed there were several motorbikes parked not far away, and I couldn't resist trying my luck with one of the mirrors. It took a few attempts to get the focus right, as the camera was set to Face-Priority AF, but I used the framing grid display to help keep it central. I then flipped the image in editing to make the lettering legible [1], which I think made the image stand out more.

I could tell by the clouds forming above that there was a good chance of a nice sunset (a rarity in London). I proceeded to walk towards Tower Bridge, wanting to capture something with architecture in the foreground [2]. The pattern on the side of the bridge gave me the perfect opportunity to capture a frame within a frame (although it did raise a couple of eyebrows from some nearby tourists). It took some time to frame the image properly – the 'Walkie Talkie' needed to sit in the middle of the pattern – and I found myself racing against the clock so I wouldn't miss the best light as the sun began to set. →



I found myself racing against the clock so I wouldn't miss the best light as the sun set



Camera:	Nikon D3500
Lens:	18-140mm f/3.5-5.6
Exposure:	1/80 sec, f/14, ISO100

[2] A frame within a frame provided a unique composition to this much-photographed London building.



[3] Blue hour is one of Chris's favourite periods of the day to capture creative photos.

Camera:	Nikon D3500
Lens:	18-140mm f/3.5-5.6
Exposure:	1sec, f/4.5, ISO125

Chris's Top Tips



- Explore your surroundings and try something new – it could help you find a unique composition, and is a great way to allow your creativity to flow.
- Always take a spare battery (or two): the last thing you want to do is worry about conserving the battery level while you're out in the field, experimenting with shutter speeds and different compositions.
- Take your time, and don't rush or panic about your photography goals for the day. Enjoy the process of developing your photo skills and creating content. Be curious about your environment and let your imagination run wild.



Camera:	Nikon D3500
Lens:	18-140mm f/3.5-5.6
Exposure:	1/50 sec, f/3.5, ISO640

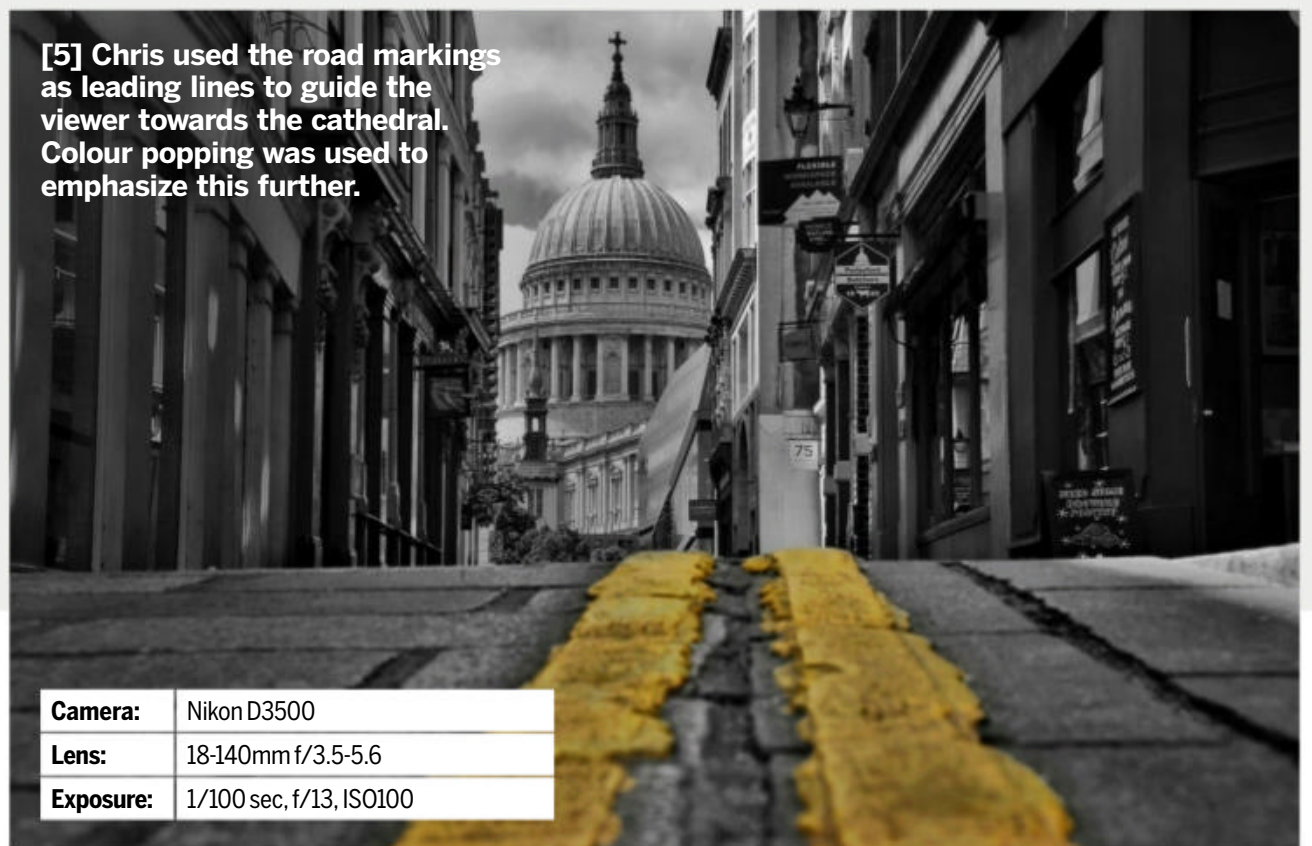
[4] Chris used a Dutch tilt to cleverly add tension to this candid street silhouette.

London Bridge can be a busy place, especially with the financial district nearby. I felt it was time to try my luck with my Manfrotto Element MII tripod. I had a long-exposure shot in mind – vibrant red buses with iconic London architecture in the background [3]. It can sometimes take a little trial and error to settle on the right exposure length. I opted for just one second, as I didn't want the blur to look too elongated and artificial.

One of my favourite storytelling genres is science fiction, with elements of film noir and dystopian fiction. The London Underground offers a great location to try something that fits these categories. This image depicts a silhouette of a commuter on the Jubilee line, walking onto the escalator [4]. A slight Dutch tilt and muted colour palette provided me with an image that I initially thought would look good in black and white; but in post-production, colour seemed more appropriate. I only altered the highlights and shadows. The key with shooting these candid scenes is to respect people's space and to be considerate (and not use the flash) when taking portraits of strangers.



The key with shooting these candid scenes is to respect people's space



[5] Chris used the road markings as leading lines to guide the viewer towards the cathedral. Colour popping was used to emphasize this further.

Camera:	Nikon D3500
Lens:	18-140mm f/3.5-5.6
Exposure:	1/100 sec, f/13, ISO100

I've always loved leading lines. You need to have a clear subject for the viewer to be led to – and what better example than St Paul's Cathedral? This quiet street nearby offered a great chance to get down low and capture a quirky image of the famed building. It took several minutes to adjust my focus with Wide-Area AF, along with Vibration Reduction. I wanted the double yellow markings to stand out just enough so the landmark in the distance would remain in focus. I was delighted I managed to capture a clear scene with no pedestrians, as that would have changed the image. **N**

SUBMIT YOUR IMAGES!
 To see your images here, send a small portfolio to mail@nphotomag.com with 'Your Stories' as the subject

NPhoto GearZone

New gear, buying advice and the world's toughest tests



NEW GEAR

90 New for Nikon

Fresh Nikon-ready lighting, graphic tablets and other gear



BIG TEST

96 Flashguns

Eight affordable ways to totally transform the way you light any scene



REVIEW

92 Nikon Z 600mm f/6.3

A super-telephoto prime lens that's so light you won't believe it

REVIEW

94 Tamron 35-150mm f/2-2.8

Photographers who have to think fast will love the versatility of this zoom lens

BUYER'S GUIDE

108 Nikon cameras & F/Z-fit lenses

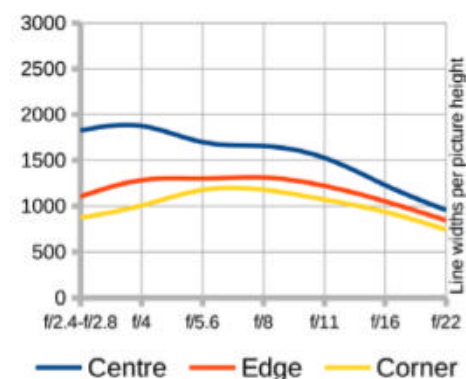
Every current Nikon camera, plus an exhaustive round-up of lenses to put on 'em



Lab tests explained

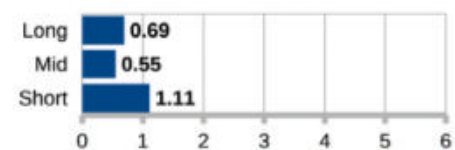
Sharpness

A chart with multiple sharp boundaries is photographed, the extent of blur at the centre, mid and edges showing how many line widths per picture height the lens can resolve. Simply put, the bigger the numbers the sharper the lens.



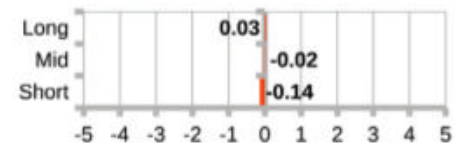
Fringing

Chromatic aberration is visible as purple or green fringing around high-contrast boundaries, caused by different wavelengths being focused on different areas of the sensor. The larger the number, the worse the score.



Distortion

A lens that bulges towards the edges of the frame produces barrel distortion, shown as a negative score. Pincushion distortion produces a positive score. A score of zero indicates no distortion.



Our awards in a nutshell



The best performance, design and value



A product that gives you more for your money



The very best kit that really sets the standard

Our scoring system

- 1.0** Forget about it!
- 2.0** Below average
- 3.0** Good for the money
- 4.0** Excellent product
- 5.0** Best-in-class

New gear

Here's what caught our eye this month

GlareOne Vega monolights

From £199 www.wexphotovideo.com

Polish lighting specialist GlareOne has launched a brand-new range of studio lights. Offering a choice of studio flash heads, continuous lights, light shapers, stands and backgrounds, Vega is available in the UK only from the online and in-store dealer Wex.

Originally focused on the Polish market, GlareOne was recently acquired by European Imagine Group, which also owns Wex Photo Video, and has since expanded across Europe. Compared with some of the big-name lighting brands such as Profoto, Elinchrom, and Bowens, GlareOne lights seem to be competitively priced – and look the part too.

A GlareOne Vega 200 monolight with 200W LED bulbs, a recycle time of 0.9 sec and an energy range of six stops costs £349; while a 60W, 5500K GlareOne LED 6000 continuous light comes in at just £199. A wide range of light shaping tools – including easy-collapse



softboxes in a range of shapes and sizes, umbrellas, pop-up reflectors and barn doors with coloured gels – is also available to buy separately, making these lights highly versatile, and suitable for a huge range of lighting setups.

Founded by people who have a lot of experience with both flash photography and continuous lighting, GlareOne is continually expanding its product line, improving its products and giving

customers a reason to stay loyal. Products with an impressive 36-month warranty show GlareOne's confidence when it comes to supplying reliable, well-made products.

All of GlareOne's flashlights feature a Bowens mount, so whether you're looking to invest in new flash equipment, upgrade existing gear or switch brands, there's a huge range of non-GlareOne compatible products. We haven't had a chance

to get our hands on any of the range yet, but looking at the price and specs, we would bet money on being pretty impressed by their performance capabilities.

FIRST IMPRESSIONS

Competitively priced, attractively designed and well-built, this newly available range of photo lights could be serious rivals to better-established low-price lighting brands, such as Godox.

Wacom Cintiq Pro

From £2350/\$2500 www.wacom.com

Wacom has announced two powerful new additions to its top-of-the-range Cintiq Pro family of pen displays. The Cintiq Pro 17 and the Cintiq Pro 22 include the revolutionary technology introduced with the Pro 27, making it easier for photographers, retouchers, animators and designers to create beautiful, colour-accurate works of art.

Once you start using a drawing tablet in your editing or creation workflow, it's hard to go back – and pen displays like these, with built-in

screens, make it even easier to see exactly what you're doing.

The Cintiq Pro 22 boasts a generous 21.5-inch display, providing plenty of screen real estate for those who require it, while the Cintiq Pro 17 offers a more compact 17.3-inch screen, for people who need to use a pen display in different locations.

Both tablets feature 4K resolution and can display a breathtaking 1.07 billion colours. They are also Pantone and Pantone SkinTone



Validated, ensuring accurate representation of human skin tones.

The accompanying Pro Pen 3 can be configured to suit your needs with customizable weight grip thickness, pen buttons and centre of balance. It has over eight thousand levels of pressure sensitivity and

three side switches where you can allocate shortcuts.

The Wacom Cintiq Pro 17 is now available in the US and UK for £2350/\$2500, while

the Cintiq Pro 22 costs £2850/\$3000.

FIRST IMPRESSIONS

Wacom is regarded as the best in the business, and these new tablets with 4K screens offer (slightly) more affordable options than their innovative 27in stablemate.



TTArtisan 35mm f/1.8 AF

£159/\$149 www.ttartisan.com

The TTArtisan 35mm f/1.8 AF is the newest addition to TTArtisan's AF prime lens range. A company best known for its affordable manual-focus lenses, TTArtisan has been slowly releasing AF lenses to cover all of the essential focal lengths. The new lens is available for Nikon Z DX mount.

The 35mm f/1.8 is broadly equivalent to 50mm on full-frame, a classic focal length that can cover a wide range of shooting situations. The f/1.8 aperture allows versatility in different lighting scenarios, which also enables great fall-off into smooth bokeh.

At a weight of around 200g, the lens body is light and compact, made from aviation aluminium. If you're walking around all day with

your camera, the lighter the kit, the better.

Another user-friendly new feature is a USB-C port for updating firmware. Updating lenses is a great way to future-proof your kit. We have seen USB ports added to the lens bodies themselves, but TTArtisan has built it into the rear lens cap, which acts as a kind of dock, much like the Sigma USB dock.

Other features of note are chromatic dispersion control through ED Glass, and a square lens hood in order to block out more ambient light.

FIRST IMPRESSIONS

A fast mirrorless lens for under £160/\$150 is hard to believe in itself – but an f/1.8 prime with autofocus is mind-blowing!



3 Legged Thing monopods

From £80/\$90 www.3leggedthing.com

Three new monopods have been released from 3 Legged Thing. Named after the late Foo Fighters drummer Taylor Hawkins, Taylor 2.0 is a travel-friendly magnesium alloy monopod in 3LT's Punks range. It's designed for compact transportation, with a folded length of just 44cm. The monopod reaches a substantial 1.58m fully extended, and can support loads of up to 30kg, despite only weighing 677g.

Alana is a part of the new Legends range, and is named after Alana Smith, the youngest skateboarder to win a medal at the X Games. Legend monopods feature a smooth bowl-shaped top section that, alongside the large rubber grip, makes them comfortable to use for long periods.

Alana's folded length is a compact 44.8cm, yet reaches 1.58m fully extended, offering a highly portable and lightweight monopod that can support up to 60kg.

Lance is also part of the Legends range. Named after skateboarder Lance Mountain, it's designed for photographers and filmmakers who need greater extension. With a fully extended height of 2.02m, Lance can also support up to 60kg of camera gear. It folds to just over 61cm for transportation.

Taylor 2.0 costs £80/\$90, while Alana and Lance are both set to retail for £130/\$150.

FIRST IMPRESSIONS

3 Legged Thing's new monopods promise a variety of ways to enable stabilization, whatever your setup.

Apple Pencil (USB-C)

£79/\$79 www.apple.co.uk

Apple has introduced a new iteration of its Apple Pencil for iPad, which is easier on the wallet while providing the same core experience of drawing on the tablet.

The new Apple Pencil will bring more choice and value to the existing lineup, which currently consists of the 1st and 2nd generations. The new Apple Pencil is not the 3rd generation, however; it is specified as the Apple Pencil (USB-C) due to its new way of charging. The new pencil will be a more affordable alternative,

removing some features that may not be required by the everyday user (including pressure sensitivity and double-tap gestures) while keeping many others.

Simpler does not mean simple in this case, though, as it still boasts an array of functions that make it a premium stylus. When the pencil is used with M2 iPad models, for example, it supports hover, enabling more accuracy when sketching or painting in a photo.

As expected from Apple products, the new Pencil is a sleek-looking gadget designed to be both

comfortable to use and easy to look at. Much like the 2nd generation model, it is designed with a matte finish and a flat side that magnetically attaches to the side of an iPad for storage.

Instead of using wireless charging like the 2nd-generation Apple Pencil, this model charges by USB-C via a concealed port. Connecting with a USB-C cable will enable both pairing and charging. While the pencil is magnetically attached to the iPad, it automatically enters a sleep mode that preserves battery life. The new Apple Pencil is compatible with all

iPad models with a USB-C port, including iPad (10th generation), iPad Air (4th and 5th generations), iPad Pro 11-inch (1st, 2nd, 3rd, and 4th generations), iPad Pro 12.9-inch (3rd, 4th, 5th, and 6th generations), and iPad mini (6th generation).

FIRST IMPRESSIONS

The new Apple Pencil (USB-C) will provide iPad users with a more affordable option for drawing on-screen, but its lack of pressure sensitivity may make subtle editing tasks, such as dodging and burning, a little trickier. ■



Nikon Z 600mm f/6.3 VR S

£4999/\$4799 www.nikon.co.uk

The Nikon Z 600mm f/6.3 VR S packs powerful telephoto reach and mighty performance into an unfeasibly lightweight package

Specifications

Mount: Nikon Z (FX)

Lens construction: 21 elements
in 14 groups

Angle of view: 4.2 degrees

Diaphragm blades: 9

Minimum aperture: f/32

Minimum focusing distance: 4m

Maximum magnification ratio: 0.15x

Filter size: 95mm

Dimensions: 107x278mm

Weight: 1470g (with tripod ring)

T

The Nikon Z 600mm f/6.3 VR S follows on from a couple of other super-telephoto lenses that have really impressed us. The most similar is the Z 800mm f/6.3 VR S, which has the same kind of design, based on the use of a Phase Fresnel element in the optical path. Similar to those used to focus lighthouse beams and stage lights, this

enables a smaller, more lightweight design. Even so, the Z 600mm is much smaller and lighter than the Z 800mm, weighing just 1470g (including tripod mounting ring) compared with 2385g. It also has a regular 95mm filter attachment thread at the front,

whereas the Z 800mm takes 46mm drop-in filters at the rear.

A more recent lens that we're really keen on is the Nikon Z 180-600mm f/5.6-6.3 VR: it naturally has the advantage of zoom versatility, although it's not a top-flight S-line lens and is again heavier than the Z 600mm at 2140g. Cost-wise, the Z 600mm knocks more than £/\$1000 off the price of the Z 800mm, but is the best part of three times the price of the Z 180-600mm zoom.

Key features

The 600mm focal length of this lens makes it right at home for action, sports and wildlife photography, where there's often a lot of distance between the camera and the subject you're shooting. We find that the Z 600mm is generally a better fit than the

Z 800mm in these scenarios: the latter is better for small subjects, for example in bird photography. Another upside of the super-telephoto focal length is that you can compress the effect of perspective, giving a different look to landscape photography.

The inclusion of a Phase Fresnel element enables a comparatively downsized design. For a 600mm prime, the dimensions of 107x278mm make the lens very manageable. That's even more true of the overall weight, which shrinks to just 1390g if you remove the tripod mount. The lens is barely any heavier than the Nikon Z 70-200mm f/2.8 VR S trinity zoom.

Other optical highlights include two ED (Extra-low Dispersion) elements and an SR (Short-wavelength Refractive) element,



Using the Z 600mm, you can freeze the action while maintaining a decent depth of field.



The quality optic configuration ensures that areas of bokeh look nice and smooth.

to enhance clarity and colour accuracy while minimizing chromatic aberrations.

Engineered to make handheld super-telephoto shooting a breeze, thanks to its relatively lightweight build, the lens features optical Vibration Reduction, rated at 5.5 stops. This is further enhanced to six-stop performance on recent camera bodies that support Synchro VR, including the Z 8, the Z 9 and the Z f. Autofocus is based on a linear stepping motor system, which is designed to be suitably fast for tracking rapidly moving subjects in sports and wildlife photography, as well as being virtually silent in operation.

If you want to super-size your telephoto reach, the lens is compatible with Nikon's 1.4x and 2.0x Z-system teleconverters, albeit with the usual one- or two-stop reduction in aperture, respectively. Using the lens on a DX format Z camera gives you an effective 1.5x boost in focal length to 900mm, with no aperture reduction.

Build and handling

Build quality is everything you'd expect from one of Nikon's top-flight, S-line lenses. The lens feels really solid and robust, and features a comprehensive set of weather-seals. For added security, there's also a Kensington lock slot.

It's not just the build that makes for easy handling. Thanks to the Phase Fresnel

element, the centre of gravity is near the rear of the lens, so it feels very natural in handheld shooting, rather than being like a tail that's wagging a dog. Rubber grip rings help to ensure a really secure and comfortable hold while shooting handheld.

Performance

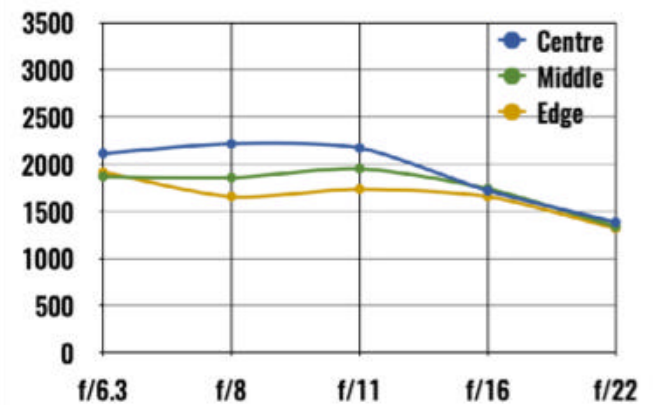
Although the f/6.3 aperture rating isn't particularly fast, the long focal length of the lens does enable a tight depth of field. Defocused areas in images look really smooth, with nice bokeh. For outright sharpness, the lens performs excellently right across the entire image frame, even while shooting wide-open. You'll often want to shoot at the widest aperture to maintain fast shutter speeds for freezing movement.

Coupled with advanced tracking options in recent Nikon Z cameras, particularly for people, animals and vehicles, the autofocus system proved super-quick at acquiring subjects during our testing, and adept at tracking them. Every aspect of image quality and performance is top-drawer. **N**

Features

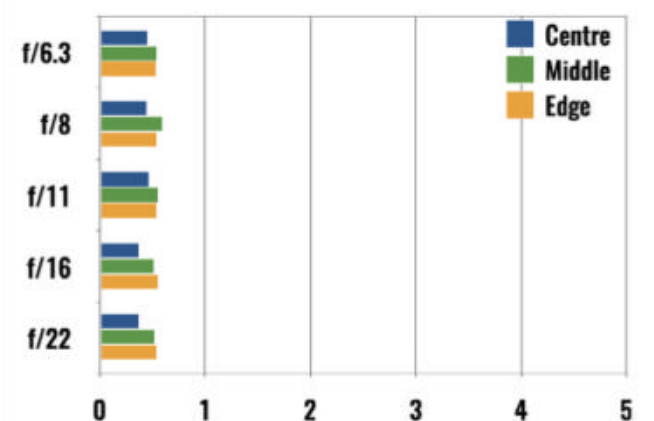
- 1 The Z 600mm sports a full set of weather seals to protect it from the elements.
- 2 Four function buttons near the front and another further back are all customizable.
- 3 You can also customize the control ring to adjust aperture or ISO, for example.
- 4 A fluorine coating on the front element makes the glass easier to clean.
- 5 The autofocus range limiter switch can lock out the short end of the range.
- 6 A tripod mount is included to keep your camera and lens combo nicely balanced.

Sharpness



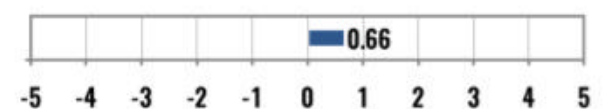
Even shooting wide-open, which you'll want to do often given the modest aperture rating, the Z 600mm is both super-sharp and remarkably consistent, right out to the extreme edges and corners of the frame.

Fringing



There's virtually no colour fringing to be seen, even in terms of lateral chromatic aberration out at the edges and corners of the image frame, where it typically tends to be more of a problem.

Distortion



It's not quite a zero-distortion lens – but it comes very close. With no in-camera correction applied, there's only the merest hint of pincushion distortion, which generally goes unnoticed in real-world shooting.

N-Photo verdict

Think super-telephoto primes and you're probably thinking of hulking heavyweights that are a pain to carry around and shoot with. This 600mm lens uses a Phase Fresnel element in its optical path and a lot of crafty design work, making it a relative lightweight that's easy to live with and a real joy to use. That joy is enhanced by terrific image quality and all-round performance, along with exotic handling characteristics – but it doesn't come cheap.





Tamron 35-150mm f/2-2.8 Di III VXD

£1799/\$1999 www.tamron.eu

The Tamron 35-150mm f/2-2.8 Di III VXD for Nikon Z cameras is a catch-all zoom that's well-suited to wedding and event photography

e've almost been here before.

The full-frame compatible Tamron 35-150mm f/2-2.8 Di III VXD for Z-mount mirrorless cameras is billed as the world's fastest lens with this sort of zoom range.

The Tamron 35-150mm f/2.8-4 Di VC OS,

launched in 2019, offered the same zoom range, but was an f-stop slower at any given focal length. That lens was designed for Nikon F-mount DSLRs, but has been discontinued.

Key features

Many discerning photographers prefer constant-aperture zoom lenses but, while this Tamron has a variable aperture rating, it's uncommonly fast at the wide-angle end, and still delivers a bright f/2.8 at its longest telephoto setting. The zoom range of

35-150mm is really useful, stretching from a moderately wide-angle field of view to a pretty powerful telephoto reach. Compared with using two 24-70mm and 70-200mm f/2.8 trinity zooms, you lose reach at both ends of the range, but the Tamron 35-150mm is a remarkably versatile all-in-one lens if you can live with the tighter focal length boundaries.

The optical path is based on 21 elements in 15 groups and features some upmarket glass, including three GM (Glass Moulded) and four LD (Low Dispersion) elements, aiming to boost sharpness and clarity while minimizing colour fringing.

Autofocus is based on a VXD (Voice-coil eXtreme Drive) linear stepping motor, which is fast for stills and enables smooth transitions while shooting video, in almost complete silence. The minimum focus distance is pretty short, ranging from 0.33m at the wide-angle end to 0.85m at full telephoto stretch.

Specifications

Mount: Nikon Z (FX)

Image stabilization: No

Autofocus: Yes

Lens construction: 21 elements
in 15 groups

Angle of view: 63.4-16.4 degrees

Diaphragm blades: 9

Minimum aperture: f/16-22

Minimum focusing distance:
0.33m (W) 0.85m (T)

Maximum magnification ratio:
0.18x (W) 0.17x (T)

Filter size: 82mm

Dimensions: 89x158mm

Weight: 1165g

The lens features a USB-C port and compatibility with Tamron's Lens Utility software. This enables you to set up custom modes for the lens's duplicated function buttons, accessible via a three-way custom switch. For example, you can use the buttons as AF Hold, Focus Preset or A-B Focus – the last of these allowing you to shift the focus point between two preset object distances. You can also change the direction of the electronically coupled focus ring, and select alternative functions for its use while in autofocus mode.



35mm

In one lens, you get a wide-angle view...

Build and handling

At 89x158mm and 1165g, the lens feels a whole lot smaller and lighter than lugging around a pair of 24-70mm and 70-200mm f/2.8 trinity zooms. The inner barrel extends as you sweep through the zoom range from wide-angle to telephoto settings, but our test sample didn't suffer from any zoom creep. A zoom lock switch is also fitted. The zoom and focus ring operate smoothly, with a high-precision feel.

Performance

As advertised, autofocus is super-speedy and proved consistently accurate in our tests. Unlike Tamron's now discontinued 35-150mm zoom for DSLRs, which had five-stop optical stabilization, the Z-mount lens relies solely on the in-body stabilization of Nikon mirrorless cameras. That's all very well if you're using a full-frame Z-series body, but not so good when mounted on a DX-sensor mirrorless, which lack IBIS.

Levels of centre-sharpness are very good at the widest apertures, throughout the zoom range, generally becoming excellent if you narrow the aperture by one f-stop and beyond. In the region between the central zone and the edges, sharpness drops off noticeably towards the edges and corners. This can be a disappointment in landscape photography, but is much less of an issue for portraiture, where you'll often



The inner barrel extends at longer zoom settings, shown here at its longest configuration, at a focal length of 150mm.



150mm

...and a very decent telephoto range, making this Tamron an appealing all-in-one optic.

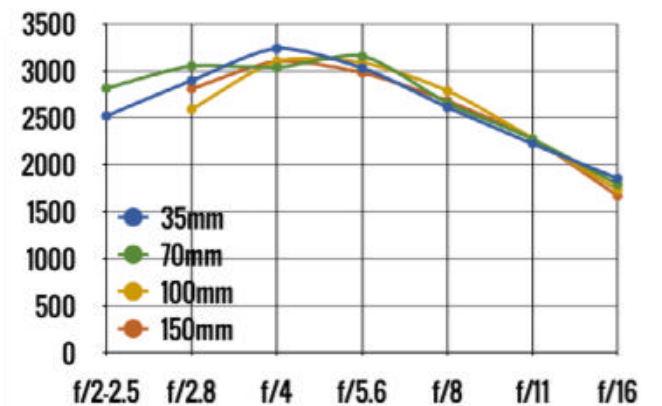
want to blur the background anyway. The lens performs very well in this respect: the wide apertures enable a tight depth of field and the opticals deliver dreamy bokeh.

Both lateral and axial chromatic aberrations are minimal in the shorter half of the zoom range, and there's good resistance to ghosting and flare. There's very minor barrel distortion at 35mm, although pincushion distortion can be noticeable in the 50-150mm sector of the zoom range, at least with in-camera correction switched off. Image quality and all-round performance is very satisfying – impressive for a lens with such a big zoom range and fast aperture rating. **N**

Features

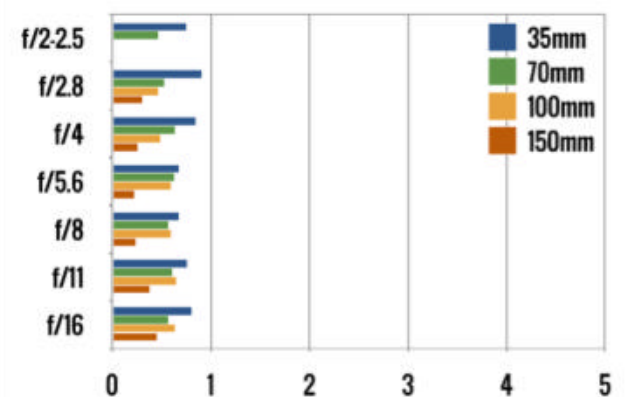
- 1 A fluorine coating on the front element, repels moisture and greasy fingermarks.
- 2 Weather-seals are fitted to all the joints to keep rain and dust out.
- 3 The function buttons are placed to suit both portrait and landscape camera positions.
- 4 The 95mm filter thread doesn't rotate as you focus, so you can attach circular filters.
- 5 If you are using autofocus, you can set the focus ring to manage another setting.
- 6 The three-way switch enables you to quickly change the setting of the function buttons.

Sharpness



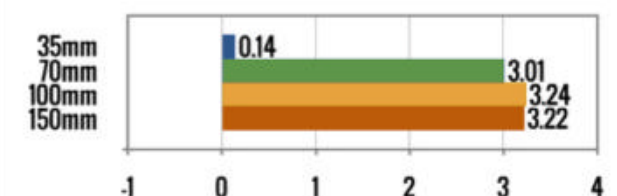
Sharpness is excellent in the central region of the image frame, throughout the entire zoom range, and still holds up pretty well at the extreme edges and corners.

Fringing



Colour fringing is quite minimal at 35mm, and entirely negligible from 70mm right up to the longest end of the zoom range.

Distortion



There's almost no distortion at 35mm, but pincushion distortion can be noticeable in the 70-150mm sector of the zoom range, at least without the use of automatic in-camera correction.

N-Photo verdict

Tamron touts this lens as being suitable for travel photography. At nearly 1.2kg, however, it's arguably a bit on the weighty side, and it's pretty chunky as well. We reckon it works much better for wedding and event photography, enabling everything from fairly wide group portraits to tight head shots, without the risk of missing important moments while swapping lenses. Autofocus is snappy and sharpness is mostly very good, along with lovely bokeh.





Super Speedlights

Let there be light. Here are the best-buy flashguns for Nikon cameras, large and small, to suit a range of requirements and budgets

0

Often referred to as 'the most available light', a decent flashgun is an amazingly versatile piece of kit. Supremely portable, a flashgun can make a huge difference to the quality of lighting in almost any scenario, from night-time shots and gloomy interiors to portraits on a bright sunny day.

Indeed, filling in the shadows under direct sunlight is one of the things that flashguns do best.

With i-TTL (intelligent Through The Lens) flash metering, dedicated flashguns can team up with your camera to enable correct exposures in all sorts of shooting conditions. The system works by using brief pulses of

light, fired by the flashgun prior to the actual exposure. This is reflected from the subject and passes through the lens, after which it's measured by the camera's metering system. The camera then communicates the correct setting back to the flashgun, and the duration of the main flash during the exposure is adjusted.

All of the flashguns we're featuring have bounce and swivel heads. These enable you to bounce the light output off walls and ceilings, instead of firing directly at the subject. The trade-off is that the light has to travel rather further, and some intensity is lost when bouncing, so greater maximum power ratings become preferable. Let's shed light on your options... →

The contenders

Hähnel Modus 360RT	£179/\$200
Nissin Di700A + Air 1	£179/\$249
Godox Ving V860III	£190/\$229
Nikon Speedlight SB-500	£239/\$247
Nissin i60A	£249/\$299
Hähnel Modus 600RT Mk II WK	£299/\$329
Nikon Speedlight SB-700	£309/\$327
Nikon Speedlight SB-5000	£599/\$597



Hähnel Modus 360RT

£179/\$200

This downsized delight inherits the DNA and features of the fully grown 600RT Mk II. It's a good option if you like to travel light



Feature-rich flashguns tend to be big, hefty affairs that make for a somewhat top-heavy combination in the hotshoe of relatively slim mirrorless cameras. The Modus 360RT redresses the balance with its compact, light build. Even so, there's a lot shoehorned into its diminutive frame, including RF and infrared wireless commander/remote modes, programmable stroboscopic modes and Auto FP sync, all powered by a high-capacity lithium-ion battery pack.

While the larger and pricier Hähnel Modus 600RT Mk II (page 103) has a conventional red AF-assist lamp, the 360RT substitutes this with a secondary LED lamp. That's good news if you're using a Z-system camera, which can't use red AF-assist lamps anyway. As well as providing

AF-assist, you can also use the LED as a modelling lamp and even in its own right for close-up stills and video, with a range of power levels on tap.

For bounce and swivel, you get -7 to 90 degrees vertical movement. Horizontal swivel is more limited, with 90 degrees to the left but a full 180 degrees of movement to the right.

The control interface is based on the classic combo of pushbuttons and a rotary dial. The backlit mono display changes from green to orange in wireless commander/remote modes. That's certainly not unique, but it does give a clear and useful visual check of which mode the flashgun is set to.

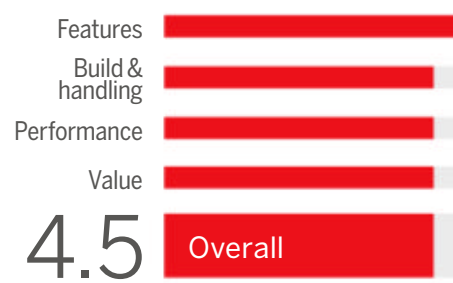
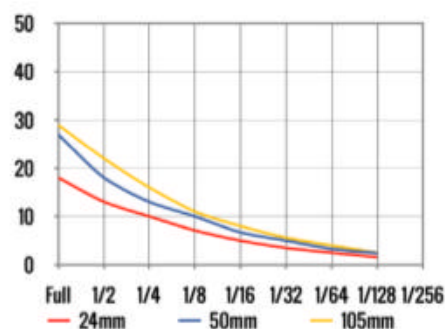
Performance

The maximum flash output proved a little better than from most low-budget flashguns – but a little less than from mid-range models like the

Nikon Speedlight SB-700.

It should prove easily sufficient for direct flash in most scenarios, but you might struggle with bounce flash under high ceilings. TTL flash metering is consistently accurate, and recycling speed after a full-power flash is just 1.6 seconds.

Power Output



Features

- 1 The rechargeable Li-ion battery pack has sufficient stamina for 400 full-power flashes – many more at lower output settings.
- 2 For constant lighting with the LED lamp, the battery lasts for around 11 hours at maximum power.
- 3 Manual power adjustments for flash have the typical range of most flashguns: 1/128 to full power.
- 4 A USB socket enables firmware updates via a computer.
- 5 The zoom head has a 24-105mm range in full-frame terms, and includes a wide-angle diffusion panel and catchlight card.

How we test

We combine real-world shots with rigorous lab tests



We test all features for each flashgun. These typically include flash exposure compensation and manual power settings, motorized zoom heads and advanced flash modes like high-speed sync, rear curtain and, in some cases, strobe flash. To test power output, we used a Sekonic flash meter placed one metre from each flashgun. We check the complete range of manual power settings, in one-stop increments. Based on a sensitivity of ISO100, the figures correlate directly with the Gn (Guide number).

The results are double-checked by taking shots with the appropriate lens apertures and using the

camera's histogram display in playback mode. This is done for flash zoom settings of 24mm, 50mm and 105mm (in full-frame terms), where these are available.

We also check the accuracy and consistency of i-TTL flash metering, and the speed with which each flashgun can recycle to a state of readiness after a full-power flash. We test this using both Ni-MH and alkaline AA batteries, or the rechargeable Li-ion battery pack supplied with some flashguns. Both sets of results for i-TTL accuracy and recycling speeds are shown graphically on these pages.

Nissin Di700A + Air 1

£179/\$249

This powerful and well-connected flashgun, complete with RF trigger, is of a certain age, with better compatibility for DSLRs

Not much to look at, the Nissin Di700A appears almost too simple to be taken seriously. On-board controls boil down to a rotary dial and a solitary Set button. The info display is rudimentary, although at least it lights up in colour. Only the most basic settings can be altered without resorting to controls on the host camera.

A more sophisticated part of the package is the Air 1 Commander, which slots into the camera's hotshoe. The flashgun itself works in both infrared and RF remote modes. Additional, optical remote modes include digital and film options. The digital option disregards pre-flash pulses when triggering, whereas the film mode triggers on the first pulse of light – more useful when commanded by studio flash heads. Auto FP sync and

rear-curtain sync are available, but there's no repeating flash mode for sequential bursts within a single exposure.

A minus point is that the Air 1 Commander is incompatible with Nikon Z cameras, so you'd need to upgrade to the Air 10s trigger. In the hotshoe, the flashgun itself is only compatible with Z 6, Z 7 and Z 6II mirrorless cameras, but you can use it off-camera in remote modes. Build quality feels pretty solid for a fairly inexpensive flashgun. The Nissin seems robust and well-made, and features a metal rather than plastic mounting foot. However, the thumbwheel is more fiddly to use than the more usual locking lever.

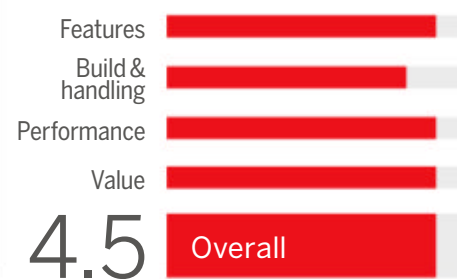
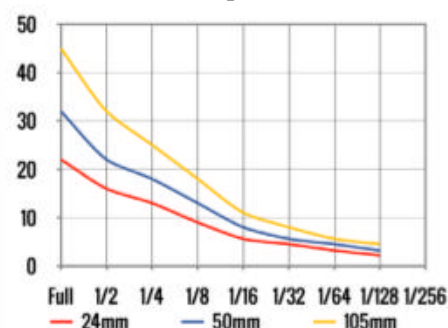
Performance

For best results in i-TTL mode, you generally need to dial in about half a stop of positive flash exposure compensation.



In this respect, the Di700A is the least accurate in the test group. On the plus side, recycling speeds are fast and the maximum output is hefty, coupled with a long maximum zoom range of 200mm. Overall, it's a good performer for use with DSLRs – but Z-system compatibility is limited.

Power Output



Features

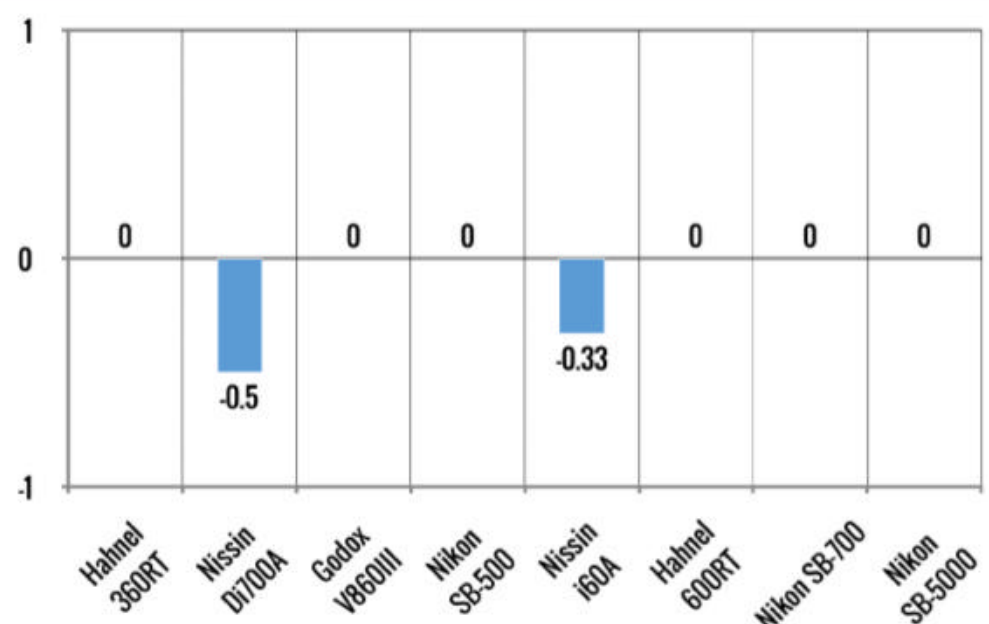
- 1 Going further than some competitors, the zoom head stretches from 24 to 200mm based on full-frame coverage.
- 2 Built-in wireless links enable remote operation with both infrared and RF triggering. RF works with the supplied commander, at least for DSLRs.
- 3 The Di700A has a quick-change battery caddy; additional ones are sold separately.
- 4 The control panel at the rear is rather basic.
- 5 The illuminated status screen is colourful but, again, the information displayed is quite limited.

i-TTL accuracy

How accurate is i-TTL flash metering?

Nikon's Creative Lighting System enhances communication between the camera and compatible flashguns. This includes i-TTL (intelligent Through The Lens) flash metering, although recent Nikon Speedlights default to i-TTL-BL (Balanced Light) mode. This

combines ambient metering from the camera with flash metering, for a more natural look. This chart shows the flash metering accuracy of each flashgun. Positive values equate to overexposure (too bright), negative values for underexposure (too dark).



Godox Ving V860III

£190/\$229

Powerful and feature-packed, the Godox is a brilliant flashgun and great value, complete with a rechargeable Li-ion battery pack



This Godox flashgun goes toe to toe with the Hähnel Modus 600RT Mk II (page 103). It has a wealth of features and trick modes, all powered by a high-capacity Li-ion battery pack, but only costs about two thirds of the price.

The head has full bounce and zoom capabilities, with a downward -7 to rear-facing 120 degrees of vertical movement, a full 180 degrees of swivel to the right, and 150 degrees to the left. The motorized zoom range is similarly generous, equating to 20-200mm in full-frame terms, and a pull-out wide-angle diffusion panel and catchlight card are included.

Advanced modes include Auto FP sync, programmable strobe and rear-curtain flash, with options for setting the number and frequency of flashes during a long exposure. A built-in RF transceiver enables

full wireless commander/remote connectivity over a range of up to 100m, and short-range infrared wireless options are also featured. The flashgun works particularly well off-camera, using a Godox XPro TTL Wireless Flash Trigger (2.4GHz), sold separately for £64/\$69.

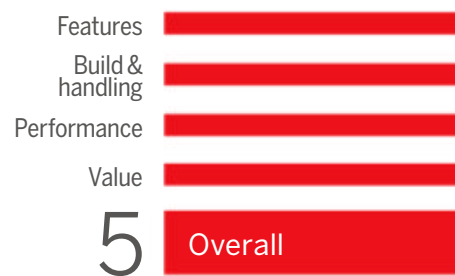
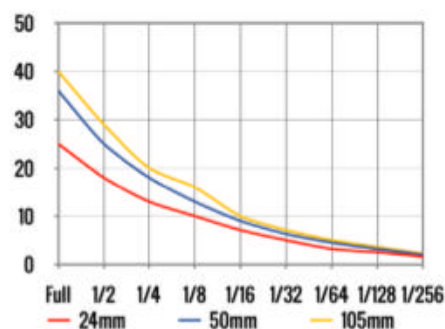
Upgrades over the previous model include the addition of a bright LED lamp, with two switchable operating modes, so you can use it as a constant lamp for close-up stills and video, or as a modelling/AF-assist lamp, both with a 10-step power range. An i-TTL/M switch is also added for quick and easy mode swapping.

Performance

The power range is immense, stretching from 1/256 to generous full-power output. This makes the Godox ideal for everything from very subtle

fill-flash to bounce flash with high ceilings. i-TTL flash metering proved consistently accurate in our tests, and recycling speeds are pretty much instantaneous up to the 1/4 power mark, and a very quick 0.7 second and 1.5 seconds after half-power and full-power flashes, respectively.

Power Output



Features

- 1 The 7.2V, 2600mAh rechargeable Li-ion battery pack has enough stamina for 500 full-power flashes.
- 2 Switch to wireless remote mode and the display screen illumination swaps from blue to orange.
- 3 Controls are conventional, based on a row of context-sensitive buttons and a rotary dial.
- 4 As Z-system mirrorless cameras can't use red AF-assist lamps, the LED is a useful extra, and it's also ideal for close-range video.
- 5 The flashgun comes with a USB charging dock, but you'll need to add your own mains charger.

Get creative

Make more of the creative options flashguns offer

Direct flash can give a harsh look. Bouncing the flash off the ceiling softens the effect, but you can lose detail in shadows. A diffusion dome creates both direct and bounced light, for a better balance. Slow-sync flash makes more of ambient light, and you can use creative off-camera positioning for more dramatic effects.



Direct flash



Bounce flash

Nikon

Speedlight SB-500

£239/\$247

It's a compact Speedlight with an added constant light attraction, but it's also relatively light in features and output



Just about small enough to squeeze into a coat pocket, this is a travel-friendly flashgun that also features a built-in triple-LED constant light. In other areas, the SB-500 is a particularly bare-bones affair. There's no zoom facility for the head, which has a fixed focal length equivalent of 24mm, or 16mm for DX format cameras. There's no flip-out wide-angle diffuser or catchlight card, found on most current flashguns. At least you get a full 90 degrees of bounce and 180 degrees of swivel, to both left and right.

Around the back, the control panel is simplistic, and uses a few status LEDs instead of the more usual LCD panel. As such, most settings and adjustments need to be applied from menus in the host camera. An infrared wireless remote mode is featured (channel 3 only), but

the commander mode only works with fairly recent Nikons.

The LED array is a plus point for short-range stills and video. A button on the rear panel enables you to switch the lamp on or off, as well as cycling through quarter, half and full power settings, the last of which gives a 100 Lux intensity, with the same beam angle as the flash tube. However, you can't use the LED at the same time as the flash. This could have been handy for providing fill-in light, or for AF-assist illumination in the absence of a red AF-assist lamp.

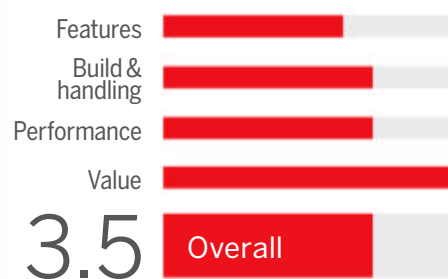
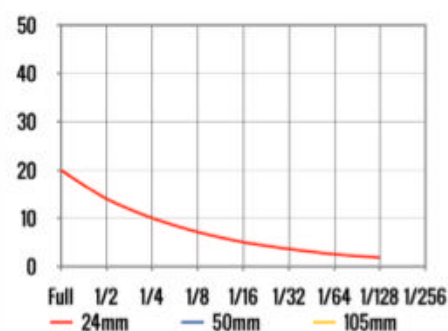
Performance

Maximum power output comes close to most larger flashguns when used at their 24mm zoom setting. However, the lack of a zoom head means you'll lose power while shooting at longer focal lengths. Ultimately, we like the compact, lightweight build

and LED constant lamp of the SB-500, but it's missing a few important features.

All in all, the SB-500 is a decent choice if you're after a genuine, own-brand Nikon Speedlight but your money will go further if you opt for an independently manufactured flashgun instead.

Power Output



Features

- 1 This basic head has no motorized or manual zoom facility, no flip-out diffuser, and no catchlight card.
- 2 The SB-500 runs on two AA batteries, rather than the usual four, but recycling speeds are pedestrian.
- 3 Just above the battery door is the infrared window for wireless commander and remote modes.
- 4 The LED array can run for up to 30 or 60 minutes at full power, using alkaline or high-capacity NiMH batteries respectively.
- 5 Build quality feels good despite the lightweight build. The mounting foot is metal rather than plastic.



Nissin i60A

£249/\$299

This diminutive Nissin punches well above its weight, proving that compact flashguns don't have to compromise in power



There are quite a few small, lightweight flashguns on the market that look very much at home on similarly compact mirrorless cameras. However, most only have a meagre maximum power output and rudimentary onboard controls, and also often lack an LCD screen around the back. This Nissin proves that you really can pack a lot into a small build, with its powerful Gn 60 rating, 24-200mm motorized zoom head, and an elegant graphical user interface based around a colour screen.

The bounce facility has 0-90-degree tilt and a full 180-degree swivel in both left and right directions. Despite its small build, the Nissin even manages to sport an LED light. It's not particularly powerful, but still comes in useful for close-up shooting and video.

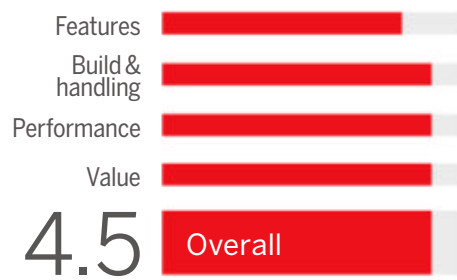
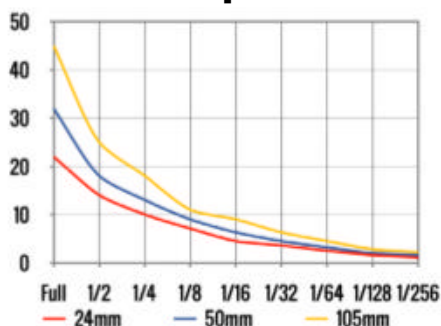
Both infrared and RF wireless remote triggering are available, the latter working well with Nissin's optional Commander Air 1 or more upmarket Commander Air 10s RF triggers, with the same caveat as the Di700A kit on test. You can buy these separately for around £79/\$79 or £149/\$129 respectively. The Nissin Air system works on 2.4GHz radio frequency, with a range of up to 30 metres. It also comes complete with the provision of being able to set up to eight channels in three groups.

Performance

In our tests, the little Nissin matched the maximum power output of the pro-spec Nikon Speedlight SB-5000 at the 105mm mark in zoom range. That makes it one of the most powerful flashguns in the whole group. We experienced a slight and fairly consistent amount of

underexposure during TTL flash shooting, equating to about a third of an f-stop. Recycling speed after a full-power flash is a bit sluggish while using NiMH batteries, but doesn't slow down much more with fresh alkaline cells. All in all, it's very powerful and versatile for such a compact flashgun.

Power Output



Features

- 1 Despite its dimensions, the i60A features a monster 24-200mm motorized zoom range, matching some of the biggest flashguns in the group.
- 2 Like the Nikon SB-500, the Nissin features an additional LED lamp, but runs on four rather than just two AA batteries.
- 3 Nicely built, the Nissin feels solid and sturdy despite its relatively light weight.
- 4 For off-camera flash, there are RF and infrared wireless remote modes, plus a basic optical remote option.
- 5 The rear panel features a graphical colour interface, which is a joy to use.

Bounce and swivel

Soften the light by playing the angles

If you slot a flashgun into your camera's hotshoe and fire it directly at the subject, you're likely to create a harsh lighting effect. This is because the size of the light source is relatively small, considering the distance between the flashgun and the subject. A larger light source

gives a softer quality of light that's more flattering for portraiture. All the flashguns in our group feature a bounce and swivel head, so you can angle the head upwards, to reflect the light off a white ceiling. This creates a larger light source, and much softer lighting.



For versatility with bouncing flash off walls or ceilings, a generous range of vertical bounce and horizontal swivel come in useful.

Hähnel

Modus 600RT Mk II WK

£299/\$329

This Li-ion powered flashgun packs in a host of high-end features at a competitive price – and comes in a range of kit options



Ticking pretty much every box on the wishlist of demanding flashgun fans, the 600RT Mk II has an impressive feature list and includes a built-in RF transceiver. It boasts both RF and infrared commander and remote connectivity, along with a powerful Gn 60 maximum power rating. On its own, the flashgun is great value; the Wireless Kit on test is even better, as it includes a hotshoe-mounting Hähnel Viper RF trigger with a 100m range. Topping the range, the Pro Kit includes two flashguns plus the same hotshoe trigger.

Like many recent flashguns, the Hähnel is powered by a rechargeable Li-ion battery pack. It has mighty stamina, enabling up to 600 full-power flashes and as many as 1000 at the half-power setting. Recycling speeds are about

twice as fast as from most flashguns that use AA batteries, at 1.5 seconds after a full-power flash and just 0.7 seconds after a half-power flash.

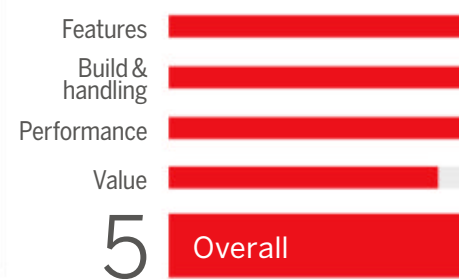
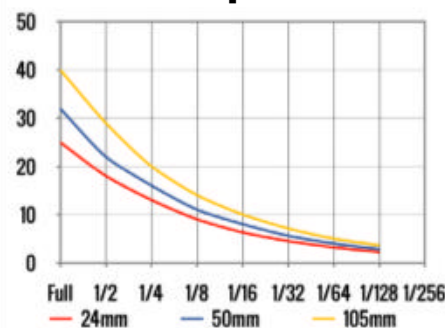
In other areas of its feature set, the Hähnel goes toe to toe with competing top-end flashguns. It has a motorized zoom head with a 20-200mm range, a flip-down 14mm wide-angle diffuser, and a pull-out catchlight card. Advanced flash modes include Auto FP sync, rear-curtain and programmable stroboscopic output. Mark II improvements include a quick-release hotshoe locking lever instead of a fiddly thumbwheel, and a new USB-type battery charger.

Performance

Performance is impressive in all areas, from powerful maximum output to super-fast recycling and reliable TTL metering. RF triggering never misses a beat,

and you can link other makes of flashgun to an RF group with optional Viper receivers, costing around £69/\$79 each. As with the Godox Ving V860III (page 100), this Hähnel flashgun proves the performance benefits from using a Li-ion battery pack can be considerable.

Power Output



Features

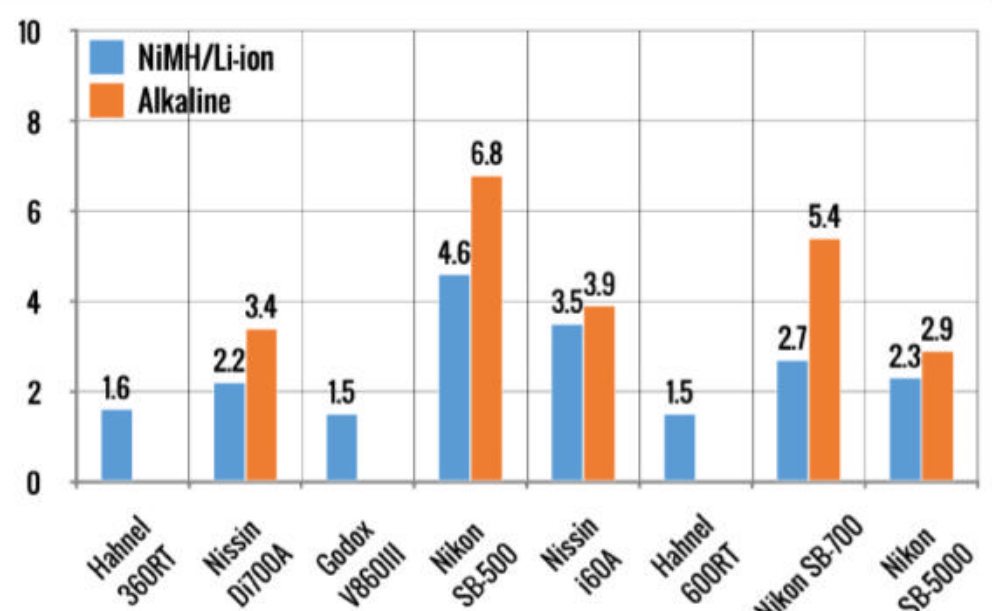
- 1 The flashgun has a generous 20-200mm motorized zoom range, with a 14mm diffuser and a catchlight card.
- 2 Context-sensitive control buttons are similar to those of other top-end flashguns. The interface sticks with time-honoured tradition.
- 3 Additional Hähnel HLX-MD1 Extreme batteries cost £49/\$89 each.
- 4 There's a USB port in the side for updating firmware, plus a PC sync socket.
- 5 The infrared and RF commander/remote transmission options have a range of 15m and 100m respectively.

Recycle speed

Nobody likes to be kept waiting

At low-power settings, most flashguns recycle pretty much instantaneously, so you can fire shot after shot to capture fleeting expressions or a definitive moment in a sequence of events, without worrying about your flashgun not being ready. As you approach the

maximum power setting, recycling takes rather longer, and you might need to wait for a few seconds between shots. Here's how long each of the flashguns on test will keep you waiting, when using NiMH and alkaline batteries, or the supplied Li-ion battery packs.



Nikon Speedlight SB-700

£309/\$327

The SB-700 is trusty and efficient, with a mostly intuitive interface. At the price, however, it's a bit lacking in some respects



There's literally a lot to love about the SB-700. As well as the typical soft carrying case and tabletop/tripod stand you'll usually get with flashguns, there's a diffusion dome, plus colour filters for balancing flash with tungsten or fluorescent lighting. It all comes together to form an impressive kit that feels more than the sum of its parts.

The power rating of G_n 38 and the 24-120mm motorized zoom range are certainly adequate, but fall short of what's available in a number of competing independently manufactured flashguns with similar or smaller price tags. On the plus side, there's the bonus of three different illumination patterns across the image frame – even, narrow and wide-beam – all of which are easily available via a switch on the back panel.

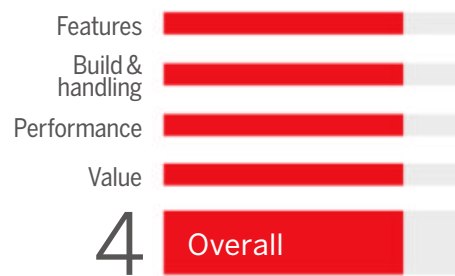
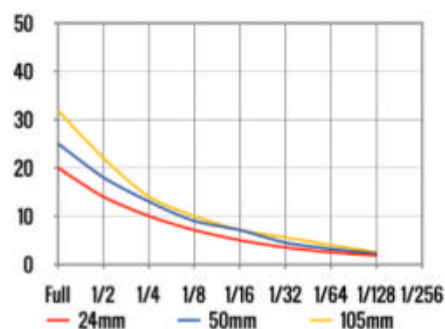
A plus point is that the SB-700 boasts wireless infrared commander and slave modes, for off-camera flash and multi-flashgun setups. It's implemented well, with a simple and intuitive control panel. However, there's no built-in radio frequency receiver or transceiver, as featured in the Godox and Hähnel flashguns on test. As such, the wireless communication range is relatively short compared with RF triggering, at around 5-7 metres, and the SB-700 needs clear line of sight rather than being able to work around corners and obstacles.

Performance

Maximum output power is noticeably down compared with most competing flashguns, but i-TTL metering is accurate and consistent. Annoyingly, regular i-TTL mode (rather than i-TTL BL) is only available by

switching the host camera to Spot metering mode, which you might rarely want to use. Recycling speed after a full-power flash is pretty respectable for an AA battery-powered flashgun, but still takes almost twice as long as competitors that use a Li-ion battery.

Power Output



Features

- 1 The intuitive control panel is based around an illuminated rear screen, which includes a temperature gauge.
- 2 The supplied diffusion dome gives a balance of direct and reflected light bounced off white walls or a ceiling.
- 3 Information is relayed to the camera when attaching the supplied colour filters, and the white balance is adjusted accordingly.
- 4 Zoom range is a modest 24-120mm but a diffusion panel and catchlight card are featured.
- 5 The supplied soft case has internal dividers.

Card trick

Solve the shadowy problem of bounce flash

It's great to be able to soften the quality of a flashgun's light by bouncing it off the ceiling, but there's a catch. With the light effectively pointing down from above, areas of the subject can be cast into shadow. In portraiture, for example, you can find that eyes look

dull and lifeless because they're in the shadow of the brow.

All the flashguns on test apart from the Nikon SB-500, feature a catchlight card, which pulls out from the top of the head. It can work a treat for portraiture or any other time you need to fill in shadows.



Most flashguns feature both a pull-out catchlight card and a flip-down wide-angle diffuser, to help control your scene lighting.

Nikon Speedlight SB-5000

£599/\$597

Nikon's range-topping model is a powerful flashgun that adds radio reception, but it misses a trick compared with some rivals



The big deal about the pro-grade SB-5000 is that it's Nikon's first flashgun to feature built-in radio frequency connectivity. This boosts the off-camera connectivity range from about 7m to 35m. While the beam angle of a pop-up flash for triggering is limited to about 60 degrees, the RF link gives you a full 360 degrees. Another bonus is that RF linking works through obstacles and even around corners, and is more reliable while shooting under bright sunlight.

However, unlike the Godox and Hähnel flashguns on test, the SB-5000 only has an RF receiver rather than a transceiver, so you can't use it as a commander in multi-flashgun setups. The working range is also below the 100m that's now quite common.

On the plus side, the SB-5000 has great build

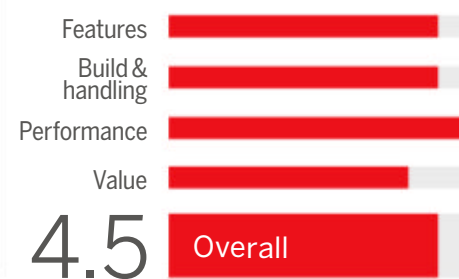
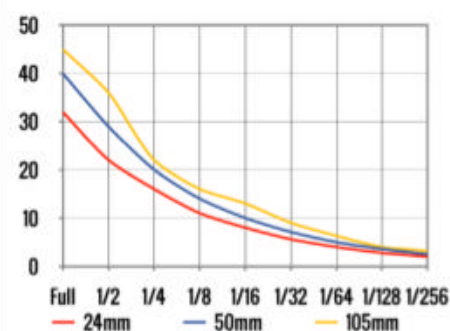
quality, a 24-200mm zoom range, a programmable repeat mode, and comprehensive on-board controls. It also features a new cooling system, which enables more than 100 full-power flashes in quick succession. That can be a major bonus for the likes of fashion and press reporters, who need to shoot a lengthy series of images to ensure capturing a definitive moment. As with the less pricey SB-700 (page 104), the SB-5000 comes complete with a diffusion dome, a tripod/tabletop stand, and colour-matching filters for tungsten and fluorescent ambient lighting.

Performance

Punching above its G_n 55 rating, maximum output from the SB-5000 equals or exceeds that of many G_n 60-64 flashguns on the market. Recycling speeds are also

pretty rapid for a flashgun that runs on AA batteries rather than a Li-ion battery pack, especially considering the high power output you get. i-TTL flash metering is consistently accurate and, unlike in the SB-700, you can easily switch between i-TTL and i-TTL BL modes.

Power Output



Features

- 1 The SB-5000 has a power range that stretches all the way down to 1/256 of maximum flash output.
- 2 The full complement of advanced flash modes includes programmable repeat output.
- 3 The interface is simple yet sophisticated, based around an illuminated screen and giving quick access to the most important settings.
- 4 A sync socket gives the option of cable-connected off-camera use.
- 5 A power input socket at the front enables the SB-5000 to be powered from an external battery pack.

Auto FP sync

Can a flashgun compete with the sun?

Even under bright sunlight, a flashgun can be useful for filling in shadows around the eyes and under the nose – but the shutter speed you need for a correct exposure might exceed the flash sync speed of the camera (typically around 1/200 sec). This is because the

flash needs to occur after the shutter's first curtain has fully opened, and before the second 'rear' curtain begins to close. To fix this, the Auto FP custom setting option in many Nikons fires a series of pulses of light throughout the exposure.



Available in your Nikon's Custom Setting menu, Auto FP makes less maximum flash output available, but is great for filling in shadows. →

The winner is... Godox Ving V860III TTL

The performance and versatility of the Godox Ving makes it our top gun



The Godox Ving V860III TTL has everything you might want from a top-end flashgun and more. It boasts advanced operating modes, RF connectivity and a mighty power range, all at a very affordable price. On a long-term testing note, I like it so much that I bought two of them, plus the









accompanying Godox XPro TTL Wireless Flash Trigger, and have never looked back.

Although pricier, the similarly feature-rich Hähnel Modus 600RT II has pro-grade handling and features to match, although it lacks a secondary LED lamp, as featured in the more compact Modus 360RT, which is a bit lacking in maximum flash power. The

Nissin i60A is more powerful if you're in the market for a compact flashgun.

Of Nikon's current Speedlights, the SB-700 is our favourite for performance, features and price. The SB-500 adds the bonus of a secondary LED array but is relatively lacking elsewhere. The SB-5000 is powerful but pricey. **N**

How the Speedlights compare

								
	Hähnel Modus 360RT	Nissin Di700A + Air 1	Godox Ving V860III	Nikon Speedlight SB-500	Nissin i60A	Hähnel Modus 600RT Mk II	Nikon Speedlight SB-700	Nikon Speedlight SB-5000
Website	www.hahnel.ie	www.nissin digital.com	www.godox.com	www.nikon.co.uk	www.nissin digital.com	www.hahnel.ie	www.nikon.co.uk	
Target price	£179/\$200	£179/\$249	£190/\$229	£239/\$247	£249/\$299	£299/\$329	£309/\$327	£599/\$597
Max claimed Gn (ISO100, metres)	Gn 36	Gn 54	Gn 60	Gn 24	Gn 60	Gn 60	Gn 38	Gn 55
Bounce (degrees)	-7 to 90 degrees	-7 to 90 degrees	-7 to 120 degrees	0 to 90 degrees	0 to 90 degrees	-7 to 90 degrees	-7 to 90 degrees	-7 to 90 degrees
Swivel (left/right)	90/180 degrees	180/180 degrees	150/180 degrees	180/180 degrees	180/180 degrees	180/180 degrees	180/180 degrees	180/180 degrees
Zoom range	24-105mm (auto)	24-200mm (auto)	20-200mm (auto)	24mm (fixed)	24-200mm	20-200mm	24-120mm	24-200mm
Wide-angle diffuser	14mm	16mm	14mm	No	16mm	14mm	12mm	14mm
Reflector card	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Flash exposure compensation	+/-3EV	+/-2EV	+/-3EV	+/-3EV	+/-2EV	+/-3EV	+/-3EV	+/-3EV
Manual power	1/1 to 1/128	1/1 to 1/128	1/1 to 1/256	1/1 to 1/128	1/1 to 1/256	1/1 to 1/128	1/1 to 1/128	1/1 to 1/256
AF-assist beam	Red lamp	Red lamp	Red lamp	No	Red lamp	Red lamp	Red lamp	Red lamp
Secondary lamp	Constant LED	No	LED lamp	Constant LED	Constant LED	No	No	No
Wireless commander/remote	Commander/Remote IR/RF	Remote IR/RF	Commander/Remote IR/RF	Commander/Remote IR	Remote IR (optional RF)	Commander/Remote IR/RF	Commander/Remote IR	Commander/Remote IR, Remote RF
Auto FP/Repeat modes	Auto FP, Repeat	Auto FP	Auto FP, Repeat	Auto FP	Auto FP	Auto FP, Repeat	Auto FP	Auto FP, Repeat
TTL/TTL-BL modes	TTL	TTL	TTL	TTL + TTL-BL	TTL	TTL + TTL-BL	TTL + TTL-BL	TTL + TTL-BL
TTL flash exp error	0EV	-0.5EV	0EV	0EV	-0.33EV	0EV	0EV	0EV
Full power recycle (NiMH/alkaline)	1.5 seconds (Li-ion)	2.2/3.4 seconds	1.5 seconds (Li-ion)	4.6/6.8 seconds	3.5/3.9 seconds	1.5 seconds	2.7/5.4 seconds	2.3/2.9 seconds
Flash info LCD	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Supplied accessories	Pouch, stand, charger	Stand, RF commander	Pouch, stand, charger	Pouch, foot	Pouch, stand, dome	Pouch, stand, charger	Pouch, foot, dome, filters	Pouch, stand, dome, filters
Batteries	Li-ion	4x AA	Li-ion	2x AA	4x AA	Li-ion	4x AA	4x AA
Dimensions (WxHxD)	64x150x50mm	75x140x115mm	75x195x59mm	67x115x71mm	73x112x98mm	64x190x76mm	71x126x105mm	73x137x104mm
Weight (exc batts)	300g	380g	530g	226g	300g	430g	360g	420g
Features	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Build & handling	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Performance	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Value	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Overall	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

NPhoto

Next issue

**Don't miss
N-Photo 160**

See page 24 for
our free bag
subs offer!

NEW NIKON SKILLS

Go coastal!

We head to the
seaside with Ross
Hoddinott to capture
ever-changing scenic
shots where the land
meets the ocean

ALSO NEXT ISSUE

Sports photographer
Clive Mason interview
Portrait primes on test
Nikon Z TC 1.4 & TC 2.0
teleconverters rated
**How to photograph
a mermaid!**

Image: © Ross Hoddinott

ON SALE THURSDAY 15 FEBRUARY

•Contents subject to change

Nikon cameras

The current range of Nikon DSLR, Coolpix & Z-series mirrorless cameras

Current market prices are checked regularly with reputable stores to serve as a guideline. Body-only prices quoted unless stated. Different lens bundles are available. Prices correct at time of going to press.

Category	Model	Description	Tested In Issue	Price (UK/US)																
DX DSLRS	NIKON D7500	THE D7500 SHOEHORNS the best bits from the now-discontinued pro-grade D500 into a smaller, more affordable body. The control layout makes everything easy to get at, and there's a top-plate info LCD, 51-point autofocus system, fast 1/8000 sec shutter speed and 8fps continuous drive rate. Video resolution stretches to 4K. ★★★★★	TESTED IN ISSUE 155	£999/\$897																
			<table border="1"> <tr><td>Sensor</td><td>20.9Mp, DX (5568x3712)</td></tr> <tr><td>Processor</td><td>EXPEED 5</td></tr> <tr><td>Viewfinder</td><td>Pentaprism, 0.94x, 100%</td></tr> <tr><td>ISO</td><td>100-51,200 (50-1,640,000 expanded)</td></tr> <tr><td>AF</td><td>51-point (15 cross-type)</td></tr> <tr><td>LCD</td><td>3.2-inch, tilt, touch</td></tr> <tr><td>Max burst (buffer)</td><td>8fps (50 Raw)</td></tr> <tr><td>Memory card</td><td>SDXC UHS-I</td></tr> </table>	Sensor	20.9Mp, DX (5568x3712)	Processor	EXPEED 5	Viewfinder	Pentaprism, 0.94x, 100%	ISO	100-51,200 (50-1,640,000 expanded)	AF	51-point (15 cross-type)	LCD	3.2-inch, tilt, touch	Max burst (buffer)	8fps (50 Raw)	Memory card	SDXC UHS-I	
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LCD	3.2-inch, tilt, touch																			
Max burst (buffer)	8fps (50 Raw)																			
Memory card	SDXC UHS-I																			
NIKON D780	THE D780 TAKES the D750's winning design and handling cues, but adds on-sensor phase-detection autofocus and EXPEED 6 processing, inherited directly from the Z 6. The result is a capable and natural-feeling DSLR for shooting stills in viewfinder mode, coupled with the same kind of performance as a mirrorless camera in live view. ★★★★★	TESTED IN ISSUE 155	£2029/\$1897																	
			<table border="1"> <tr><td>Sensor</td><td>24.5Mp, FX (6048x4024)</td></tr> <tr><td>Processor</td><td>EXPEED 6</td></tr> <tr><td>Viewfinder</td><td>Pentaprism, 0.7x, 100%</td></tr> <tr><td>ISO</td><td>100-51,200 (50-204,800 expanded)</td></tr> <tr><td>AF</td><td>51-point (15 cross-type)</td></tr> <tr><td>LCD</td><td>3.2-inch, 2359k, tilt, touch</td></tr> <tr><td>Max burst (buffer)</td><td>7fps (68-100 Raw)</td></tr> <tr><td>Memory card</td><td>Two SDXC UHS-II</td></tr> </table>	Sensor	24.5Mp, FX (6048x4024)	Processor	EXPEED 6	Viewfinder	Pentaprism, 0.7x, 100%	ISO	100-51,200 (50-204,800 expanded)	AF	51-point (15 cross-type)	LCD	3.2-inch, 2359k, tilt, touch	Max burst (buffer)	7fps (68-100 Raw)	Memory card	Two SDXC UHS-II	
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Max burst (buffer)	7fps (68-100 Raw)																			
Memory card	Two SDXC UHS-II																			
FX DSLRS	NIKON D850	THE D850 GOES extra-large in megapixel count with a 45.7Mp image sensor. Further attractions include a high-spec 153-point autofocus system and fairly recent EXPEED 5 processor. For live view and video capture, however, the contrast-detection autofocus system is massively inferior to that of Nikon's mirrorless cameras and the D780. ★★★★★	TESTED IN ISSUE 155	£2339/\$2497																
			<table border="1"> <tr><td>Sensor</td><td>45.7Mp, FX (8256x5504)</td></tr> <tr><td>Processor</td><td>EXPEED 5</td></tr> <tr><td>Viewfinder</td><td>Pentaprism, 0.75x, 100%</td></tr> <tr><td>ISO</td><td>64-25,600 (32-102,400 expanded)</td></tr> <tr><td>AF</td><td>153-point (99 cross-type)</td></tr> <tr><td>LCD</td><td>3.2-inch, 2359k, tilt, touch</td></tr> <tr><td>Max burst (buffer)</td><td>7fps (29-200 Raw)</td></tr> <tr><td>Memory card</td><td>One XQD/CFexpress, one SDXC UHS-II</td></tr> </table>	Sensor	45.7Mp, FX (8256x5504)	Processor	EXPEED 5	Viewfinder	Pentaprism, 0.75x, 100%	ISO	64-25,600 (32-102,400 expanded)	AF	153-point (99 cross-type)	LCD	3.2-inch, 2359k, tilt, touch	Max burst (buffer)	7fps (29-200 Raw)	Memory card	One XQD/CFexpress, one SDXC UHS-II	
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AF	153-point (99 cross-type)																			
LCD	3.2-inch, 2359k, tilt, touch																			
Max burst (buffer)	7fps (29-200 Raw)																			
Memory card	One XQD/CFexpress, one SDXC UHS-II																			
NIKON D6	THE D6 HAS the best autofocus module of any DSLR in Nikon's history, based on a 105-point system in which all of the points are cross-type. Eye-detection is also available in 3D tracking mode, and the 14fps burst rate is impressive. The flipside is that the D6 only has a 20.8Mp image sensor. One significant advantage over the Z 9 is a 3,580-shot battery life. ★★★★★	TESTED IN ISSUE 155	£6799/\$6497																	
			<table border="1"> <tr><td>Sensor</td><td>20.8Mp, FX (5568x3712)</td></tr> <tr><td>Processor</td><td>EXPEED 6</td></tr> <tr><td>Viewfinder</td><td>Pentaprism, 0.72x, 100%</td></tr> <tr><td>ISO</td><td>100-102,400 (50-3,280,000 expanded)</td></tr> <tr><td>AF</td><td>105-point (105 cross-type)</td></tr> <tr><td>LCD</td><td>3.2-inch, 2359k, touch</td></tr> <tr><td>Max burst (buffer)</td><td>14fps (105-186 Raw)</td></tr> <tr><td>Memory card</td><td>Two XQD/CFexpress</td></tr> </table>	Sensor	20.8Mp, FX (5568x3712)	Processor	EXPEED 6	Viewfinder	Pentaprism, 0.72x, 100%	ISO	100-102,400 (50-3,280,000 expanded)	AF	105-point (105 cross-type)	LCD	3.2-inch, 2359k, touch	Max burst (buffer)	14fps (105-186 Raw)	Memory card	Two XQD/CFexpress	
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LCD	3.2-inch, 2359k, touch																			
Max burst (buffer)	14fps (105-186 Raw)																			
Memory card	Two XQD/CFexpress																			
COOLPIX	NIKON P950	SMALLER & LIGHTER than the P1000, the P950 has broader appeal, but a smaller full-frame equivalent zoom range of 24-2000mm. Like all bridge cameras, image quality is the pay-off for unrivalled versatility. £829/\$697 ★★★★★																		
																				
	NIKON P1000	ANOTHER BRIDGE CAMERA, the P1000 offers a zoom range equivalent to 24-3000mm in full-frame terms, so it's ready for any shooting situation. The camera has a 16Mp sensor and supports Raw photography. £1049/\$997 ★★★★★																		
																				
DX Z-SERIES	NIKON Z 30	THE Z 30 LOOKS and feels like the Z 50 with the viewfinder lopped off, and the tilting rear screen replaced by the vari-angle screen of the Z fc. The rangefinder style makes the camera about 20mm shorter and 40g lighter. The Z 30 is good value for vloggers, with little difference in image or video quality between it and the Z 50/Z fc. ★★★★★	TESTED IN ISSUE 155	£599/\$607																
			<table border="1"> <tr><td>Sensor</td><td>20.9Mp, DX (5568x3712)</td></tr> <tr><td>Processor</td><td>EXPEED 6</td></tr> <tr><td>Viewfinder</td><td>None</td></tr> <tr><td>ISO</td><td>100-51,200 (100-204,800 expanded)</td></tr> <tr><td>AF</td><td>209-point</td></tr> <tr><td>LCD</td><td>3-inch, 1040k, vari-angle, touch</td></tr> <tr><td>Max burst (buffer)</td><td>11fps (30-35 Raw)</td></tr> <tr><td>Memory card</td><td>SDXC UHS-I</td></tr> </table>	Sensor	20.9Mp, DX (5568x3712)	Processor	EXPEED 6	Viewfinder	None	ISO	100-51,200 (100-204,800 expanded)	AF	209-point	LCD	3-inch, 1040k, vari-angle, touch	Max burst (buffer)	11fps (30-35 Raw)	Memory card	SDXC UHS-I	
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Max burst (buffer)	11fps (30-35 Raw)																			
Memory card	SDXC UHS-I																			
NIKON Z 50	WITH ITS DOWNSIZED DX format image sensor, the Z 50 nevertheless inherits the same oversized lens mount from full-frame Z system bodies. The slimline build makes the most of the mirrorless design ethic. The 20.9Mp image sensor matches the megapixel count of the later Z fc and Z 30. It's a real joy to use, and very travel-friendly. ★★★★★	TESTED IN ISSUE 155	£739/\$757																	
			<table border="1"> <tr><td>Sensor</td><td>20.9Mp, DX (5568x3712)</td></tr> <tr><td>Processor</td><td>EXPEED 6</td></tr> <tr><td>Viewfinder</td><td>OLED, 2360k, 0.39-inch, 100%</td></tr> <tr><td>ISO</td><td>100-51,200 (100-204,800 expanded)</td></tr> <tr><td>AF</td><td>209-point</td></tr> <tr><td>LCD</td><td>3.2-inch, 1040k, tilt, touch</td></tr> <tr><td>Max burst (buffer)</td><td>11fps (30-35 Raw)</td></tr> <tr><td>Memory card</td><td>SDXC UHS-I</td></tr> </table>	Sensor	20.9Mp, DX (5568x3712)	Processor	EXPEED 6	Viewfinder	OLED, 2360k, 0.39-inch, 100%	ISO	100-51,200 (100-204,800 expanded)	AF	209-point	LCD	3.2-inch, 1040k, tilt, touch	Max burst (buffer)	11fps (30-35 Raw)	Memory card	SDXC UHS-I	
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Memory card	SDXC UHS-I																			



DX Z-SERIES

NIKON Z FC



IT'S NOT JUST the retro chic styling that makes the Z fc so alluring. The direct-access shutter speed, exposure compensation and ISO dials, as well as the usual command dial for aperture control, enable a really hands-on approach to creative shooting. It features highly competent people/animal autofocus modes, along with a vari-angle touchscreen. ★★★★★

TESTED IN ISSUE 155 • £789/\$857

Sensor	20.9Mp, DX (5568x3712)
Processor	EXPEED 6
Viewfinder	OLED, 2360k, 0.39-inch, 100%
ISO	100-51,200 (100-204,800 expanded)
AF	209-point
LCD	3-inch, 1040k, vari-angle, touch
Max burst (buffer)	11fps (30-35 Raw)
Memory card	SDXC UHS-I

NIKON Z 5



THE MOST AFFORDABLE FX format mirrorless Nikon, the Z 5 costs much less than the Z 6II, although it lacks a top-panel OLED display. Dual card slots enable instant backups while you shoot. Like all other FX format Z-system cameras, the Z 5 features five-axis IBIS, which is a major plus point over the DX format cameras. ★★★★★

TESTED IN ISSUE 155 • £1029/\$997

Sensor	24.3Mp, FX (6016x4016)
Processor	EXPEED 6
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	100-51,200 (50-102,400 expanded)
AF	273-point
LCD	3.2-inch, 1040k, tilt, touch
Max burst (buffer)	4.5fps (100 Raw)
Memory card	Two SDXC UHS-II

NIKON Z 6II



THE Z 6II HAS a pair of late-generation EXPEED 6 processors, a superb 3690k OLED electronic viewfinder and tilting 2100k touchscreen, as well as an identical control layout to the Z 7II. But with fewer megapixels to process, the Z 6II beats the Z 7II with a 14fps rather than 10fps drive rate, and the buffer holds around twice as many Raw files. ★★★★★

TESTED IN ISSUE 155 • £1639/\$1597

Sensor	24.5Mp, FX (6048x4024)
Processor	Dual EXPEED 6
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	100-51,200 (50-204,800 expanded)
AF	273-point
LCD	3.2-inch, 2100k, tilt, touch
Max burst (buffer)	14fps (19-200 Raw)
Memory card	One XQD/CFexpress, one SDXC UHS-II

NIKON Z F



ITS RETRO DESIGN may be heavily inspired by the classic Nikon FM2 film camera, complete with brass dials for inputting exposure settings, but this stylish full-frame mirrorless Nikon is crammed with the latest tech. With an EXPEED 7 processor at its heart, it has better ISO, AF and subject tracking capabilities than the Z 6II, and a trick pixel-shift mode for super-hi-res images. ★★★★★

TESTED IN ISSUE 157 • £2299/\$1997

Sensor	24.5Mp, FX (6048x4024)
Processor	EXPEED 7
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	100-64,000 (50-204,800 expanded)
AF	299-point
LCD	3.2-inch, 2100k, tilt, vari-angle
Max burst (buffer)	7.8fps Raw (35 Raw), 30fps JPEG
Memory card	One SDXC UHS-II, one MicroSD

FX Z-SERIES

NIKON Z 7II



A MASSIVE 45.7MP super-high-res image sensor and an astonishing 493 phase-detection AF points in its hybrid autofocus system are the chief enhancements over the Z 6II. Dual XQD/CFexpress and SDXC memory card slots are a big bonus over the single XQD slot of the original Z 7, and the bigger memory buffer enables much longer bursts. ★★★★★

TESTED IN ISSUE 155 • £2399/\$2297

Sensor	45.7Mp, FX (8256x5504)
Processor	Dual EXPEED 6
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	64-25,600 (32-102,400 expanded)
AF	493-point
LCD	3.2-inch, 2100k, tilt, touch
Max burst (buffer)	10fps (46-82 Raw)
Memory card	One XQD/CFexpress, one SDXC UHS-II

NIKON Z 8



SHARING THE SAME new-generation EXPEED 7 image processor as the Z 9, the Z 8 is step ahead of the Z 6II and Z 7II, boasting intelligent autofocus recognition and tracking for vehicles in addition to people and animals. Its fully electronic shutter matches the Z 9's 1/32,000 sec max shutter speed and 20-120fps burst rate. ★★★★★

TESTED IN ISSUE 155 • £3789/\$3697

Sensor	45.7Mp, FX (8256x5504)
Processor	EXPEED 7
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	64-25,600 (32-102,400 expanded)
AF	493-point
LCD	3.2-inch, 2100k, v/h tilt, touch
Max burst (buffer)	20fps Raw (79-1000 Raw), 120fps JPEG
Memory card	One XQD/CFexpress, one SDXC UHS-II

NIKON Z 9



HEADLINE ATTRACTIONS INCLUDE shutter speeds up to 1/32,000 sec and a 120fps continuous drive rate in JPEG mode – dropping to 20fps Raws, albeit with a massive 1000-shot buffer. A built-in vertical grip offers duplicated shooting controls, and houses an EN-EL18d battery with sufficient stamina for 700-770 shots. ★★★★★

TESTED IN ISSUE 155 • £4849/\$5497

Sensor	45.7Mp, FX (8256x5504)
Processor	EXPEED 7
Viewfinder	OLED, 3690k, 0.5-inch, 100%
ISO	64-25,600 (32-102,400 expanded)
AF	493-point
LCD	3.2-inch, 2100k, v/h tilt, touch
Max burst (buffer)	20fps Raw (79-1000 Raw), 120fps JPEG
Memory card	Two XQD/CFexpress

Nikon-fit lenses

Your at-a-glance guide to the current crop of Nikon-fit lenses

KEY: ■ BEST ON TEST ■ GOLD AWARD ■ GREAT VALUE ■ Current market prices are checked regularly with reputable stores to serve as a guideline. Prices correct at time of going to press.

	LENS NAME	Price	Mount	DX/FX	Max zoom	Stabilizer	Autofocus	Weight	Min focus	Magnification	Filter size	Aperture blades	Issue reviewed	Rating	Awards	
WIDE ZOOMS	Nikon AF-S 8-15mm f/3.5-4.5E ED	£1449/\$1246	F	FX	1.9x	No	Ultrasonic	485g	0.16m	0.34x	None	7	149	★★★★★		
	Nikon AF-P DX 10-20mm f/4.5-5.6G VR	£299/\$308	F	DX	2x	Yes	Pulse	230g	0.22m	0.17x	72mm	7	149	★★★★★	■	
	Nikon AF-S DX 10-24mm f/3.5-4.5G ED	£949/\$900	F	DX	2.4x	No	Ultrasonic	460g	0.24m	0.2x	77mm	7	77	★★★★★		
	Nikon AF-S 14-24mm f/2.8G ED	£1619/\$1749	F	FX	1.7x	No	Ultrasonic	1000g	0.28m	0.15x	None	9	122	★★★★★		
	Nikon AF-S 16-35mm f/4G ED VR	£1149/\$1097	F	FX	2.5x	Yes	Ultrasonic	680g	0.28m	0.25x	77mm	9	149	★★★★★		
	Nikon Z DX 12-28mm f/3.5-5.6 PZ VR	£299/\$357	Z	DX	2.3x	Yes	Stepping	205g	0.19m	0.21x	67mm	7	152	★★★★★		
	Nikon Z 14-24mm f/2.8 S	£2169/\$2497	Z	FX	1.7x	No	Stepping	650g	0.28m	0.13x	112mm	9	149	★★★★★	■	
	Nikon Z 14-30mm f/4 S	£1069/\$1347	Z	FX	2.1x	No	Ultrasonic	485g	0.28m	0.16x	82mm	7	149	★★★★★	■ ■	
	Nikon Z 17-28mm f/2.8	£1009/\$1200	Z	FX	1.65x	No	Stepping	450g	0.19m	0.19x	67mm	9	145	★★★★★	■ ■	
	Sigma 12-24mm f/4 DG HSM A	£1259/\$1299	F	FX	2x	No	Ultrasonic	1150g	0.24m	0.2x	None	9	149	★★★★★		
Sigma 14-24mm f/2.8 DG HSM A	£1169/\$1299	F	FX	0.19x	No	Ultrasonic	1150g	0.26m	0.19x	None	9	149	★★★★★	■ ■		
Tokina atx-i 11-16mm f/2.8 CF Plus	£480/\$449	F	DX	1.5x	No	Electric	555g	0.3m	0.09x	77mm	9	32	★★★★★			
Tokina atx-i 11-20mm f/2.8	£500/\$529	F	DX	1.8x	No	Ultrasonic	560g	0.28m	0.12x	82mm	9	135	★★★★★			
Tokina Opera 16-28mm f/2.8 FF	£700/\$700	F	FX	1.7x	No	Electric	940g	0.28m	0.19x	None	9	101	★★★★★			
STANDARD ZOOMS	Nikon AF-S 24-70mm f/2.8E ED VR	£1919/\$2400	F	FX	2.9x	Yes	Ultrasonic	1070g	0.38m	0.27x	82mm	9	138	★★★★★		
	Nikon AF-S 24-85mm f/3.5-4.5G ED VR	£579/\$500	F	FX	3.5x	Yes	Ultrasonic	465g	0.38m	0.22x	72mm	7	88	★★★★★		
	Nikon AF-S 24-120mm f/4G ED VR	£1069/\$1097	F	FX	5x	Yes	Ultrasonic	710g	0.45m	0.24x	77mm	9	153	★★★★★		
	Nikon Z DX 16-50mm f/3.5-6.3 VR	£329/\$307	Z	DX	3.1x	Yes	Stepping	135g	0.2m	0.2x	46mm	7	153	★★★★★		
	Nikon Z 24-50mm f/4-6.3	£449/\$397	Z	FX	2x	No	Stepping	195g	0.35m	0.17x	52mm	7	153	★★★★★		
	Nikon Z 24-70mm f/2.8 S	£1899/\$2300	Z	FX	2.9x	No	Ultrasonic	805g	0.38m	0.22x	82mm	7	138	★★★★★	■ ■	
	Nikon Z 24-70mm f/4 S	£949/\$997	Z	FX	2.9x	No	Stepping	500g	0.3m	0.3x	72mm	7	153	★★★★★		
	Nikon Z 24-120mm f/4 S	£899/\$1097	Z	FX	5x	No	Stepping	630g	0.35m	0.39x	77mm	9	153	★★★★★		
	Nikon Z 28-75mm f/2.8	£849/\$897	Z	FX	2.7x	No	Stepping	565g	0.39m	0.34x	67mm	9	153	★★★★★	■ ■ ■	
	Sigma 24-70mm f/2.8 DG OS HSM A	£1149/\$1299	F	FX	2.9x	Yes	Ultrasonic	1020g	0.37m	0.21x	82mm	9	153	★★★★★		
Sigma 24-105mm f/4 DG OS HSM A	£639/\$899	F	FX	4.4x	Yes	Ultrasonic	885g	0.45m	0.22x	82mm	9	153	★★★★★	■		
Tamron SP AF 24-70mm f/2.8 Di VC USD G2	£1199/\$1200	F	FX	2.9x	Yes	Ultrasonic	905g	0.38m	0.2x	82mm	9	88	★★★★★			
TELEPHOTO ZOOMS	Nikon AF-S 70-200mm f/2.8E FL ED VR	£2219/\$2350	F	FX	2.9x	Yes	Ultrasonic	1430g	1.1m	0.21x	77mm	9	156	★★★★★	■	
	Nikon AF-P 70-300mm f/4.5-5.6E ED VR	£589/\$597	F	FX	4.3x	Yes	Ultrasonic	680g	1.2m	0.25x	67mm	9	148	★★★★★	■	
	Nikon AF-S 80-400mm f/4.5-5.6G ED VR	£2299/\$2297	F	FX	5x	Yes	Ultrasonic	1570g	1.5m	0.2x	77mm	9	157	★★★★★		
	Nikon AF-S 120-300mm f/2.8E FL ED SR VR	£10499/\$9500	F	FX	2.5x	Yes	Ultrasonic	3250g	2m	0.16x	112mm	9	156	★★★★★		
	Nikon AF-S 200-500mm f/5.6E ED VR	£1249/\$1397	F	FX	2.5x	Yes	Ultrasonic	2300g	2.2m	0.22x	95mm	9	157	★★★★★		
	Nikon Z DX 50-250mm f/4.5-6.3 VR	£289/\$377	Z	DX	5x	Yes	Stepping	405g	0.5m	0.23x	62mm	7	148	★★★★★	■	
	Nikon Z 70-180mm f/2.8	£1199/\$1247	Z	FX	2.6x	No	Stepping	795g	0.27m	0.48x	67mm	9	156	★★★★★		
	Nikon Z 70-200mm f/2.8 VR S	£2149/\$2600	Z	FX	2.9x	Yes	Stepping	1140g	0.5m	0.2x	77mm	9	156	★★★★★	■ ■	
	Nikon Z 100-400mm f/4.5-5.6 VR S	£2199/\$2697	Z	FX	4x	No	Stepping	1355g	0.75m	0.38x	77mm	9	157	★★★★★	■ ■	
	Nikon Z 180-600mm f/5.6-6.3 VR	£1799/\$1697	Z	FX	3.3x	Yes	Stepping	1955g	1.3m	0.25x	95mm	9	157	★★★★★	■	
Sigma 50-100mm f/1.8 DC HSM A	£999/\$1100	F	DX	2x	No	Ultrasonic	1490g	0.95m	0.15x	82mm	9	72	★★★★★			
Sigma 60-600mm f/4.5-6.3 DG OS HSM S	£1699/\$2000	F	FX	10x	Yes	Ultrasonic	2700g	0.6m	0.3x	105mm	9	127	★★★★★			
Sigma 70-200mm f/2.8 DG OS HSM S	£1099/\$1380	F	FX	2.9x	Yes	Ultrasonic	1805g	0.95m	0.21x	82mm	11	156	★★★★★	■ ■		
Sigma 100-400mm f/5-6.3 DG OS HSM C	£699/\$699	F	FX	4x	Yes	Ultrasonic	1160g	1.6m	0.26x	67mm	9	157	★★★★★	■ ■		
Sigma 120-300mm f/2.8 DG OS HSM S	£2699/\$3600	F	FX	2.5x	Yes	Ultrasonic	3390g	1.5-2.5m	0.12x	105mm	9	156	★★★★★	■ ■		
Sigma 150-600mm f/5-6.3 DG OS HSM C	£849/\$939	F	FX	4x	Yes	Ultrasonic	1930g	2.8m	0.2x	95mm	9	157	★★★★★	■ ■		
Tamron 35-150mm f/2-2.8 Di III VXD	£1799/\$1999	Z	FX	4.3x	No	Stepping	1165g	0.33-0.85m	0.17-0.18x	82mm	9	159	★★★★★			
Tamron SP 70-200mm f/2.8 Di VC USD G2	£1369/\$1200	F	FX	2.9x	Yes	Ultrasonic	1500g	0.95m	0.16x	77mm	9	156	★★★★★	■ ■		
Tamron 70-300mm f/4.5-6.3 Di III RXD	£599/\$699	Z	FX	4.3x	No	Stepping	580g	0.8-1.5m	0.11-0.2x	67mm	7	148	★★★★★			
Tamron 100-400mm f/4.5-6.3 Di VC USD	£799/\$799	F	FX	4x	Yes	Ultrasonic	1115g	1.5m	0.28x	67mm	9	157	★★★★★			
Tamron SP 150-600mm f/5-6.3 Di VC USD G2	£1249/\$1399	F	FX	4x	Yes	Ultrasonic	2010g	2.2m	0.26x	95mm	9	157	★★★★★			
SUPER	Nikon AF-S DX 18-140mm f/3.5-5.6G ED VR	£599/\$500	F	DX	7.8x	Yes	Ultrasonic	490g	0.45m	0.23x	67mm	7	27	★★★★★		
	Nikon AF-S DX 18-300mm f/3.5-6.3G ED VR	£629/\$700	F	DX	16.7x	Yes	Ultrasonic	550g	0.48m	0.32x	67mm	7	136	★★★★★		
	Nikon Z DX 18-140mm f/3.5-6.3 VR	£555/\$650	Z	DX	7.7x	Yes	Stepping	315g	0.2m	0.33x	62mm	7	136	★★★★★		
	Nikon Z 24-200mm f/4-6.3 VR	£729/\$900	Z	FX	8.3x	Yes	Stepping	570g	0.5m	0.28x	67mm	7	136	★★★★★	■ ■	
	Tamron AF 18-400mm f/3.5-6.3 Di II VC HLD	£699/\$650	F	DX	22.2x	Yes	HLD	710g	0.45m	0.34x	72mm	7	136	★★★★★		
	WIDE PRIMES	Irix 15mm f/2.4 Blackstone	£625/\$480	F	FX	None	No	None	653g	0.28m	0.1x	95mm	9	142	★★★★★	
		Laowa 20mm f/4 Zero-D Shift	£1179/\$1100	F	FX	None	No	None	747g	0.17m	0.17x	82mm	14	138	★★★★★	
		Nikon AF-S 20mm f/1.8G ED	£799/\$720	F	FX	None	No	Ultrasonic	355g	0.2m	0.23x	77mm	7	116	★★★★★	
		Nikon AF-S 24mm f/1.8G ED	£749/\$680	F	FX	None	No	Ultrasonic	355g	0.23m	0.2x	72mm	7	116	★★★★★	
		Nikon AF-S 24mm f/1.4G ED	£1999/\$2000	F	FX	None	No	Ultrasonic	620g	0.25m	0.18x	77mm	9	59	★★★★★	
Nikon AF-S 28mm f/1.8G		£699/\$700	F	FX	None	No	Ultrasonic	330g	0.25m	0.22x	67mm	7	87	★★★★★		
Nikon AF-S 35mm f/1.8G ED		£529/\$530	F	FX	None	No	Ultrasonic	305g	0.25m	0.24x	58mm	7	125	★★★★★		
Nikon AF-S DX 35mm f/1.8G		£169/\$177	F	DX	None	No	Ultrasonic	200g	0.3m	0.24x	52mm	7	111	★★★★★	■	
Nikon AF-S 35mm f/1.4G		£1799/\$1700	F	FX	None	No	Ultrasonic	600g	0.3m	0.2x	67mm	9	25	★★★★★		
Nikon Z 20mm f/1.8 S		£999/\$1047	Z	FX	None	No	Stepping	505g	0.2m	0.23x	77mm	9	149	★★★★★		
Nikon Z DX 24mm f/1.7	£269/\$279	Z	DX	None	No	Stepping	135g	0.18m	0.19x	42mm	7	153	★★★★★			
Nikon Z 24mm f/1.8 S	£959/\$1000	Z	FX	None	No	Stepping	450g	0.25m	0.18x	72mm	9	116	★★★★★	■		
Nikon Z 26mm f/2.8	£479/\$499	Z	FX	None	No	Stepping	125g	0.2m	0.19x	52mm	7	150	★★★★★			
Nikon Z 28mm f/2.8	£229/\$300	Z	FX	None	No	Stepping	160g	0.19m	0.2x	52mm	7	134	★★★★★	■		
Nikon Z 35mm f/1.8 S	£789/\$850	Z	FX	None	No	Stepping	370g	0.25m	0.19x	62mm	9	125	★★★★★	■ ■		
Samyang 8mm f/3.5 IF MC CSII Dh Circular Fisheye	£299/\$280	F	FX	None	No	None	435g	0.3m	N/S	None	6	12	★★★★★			
Samyang 10mm f/2.8 ED AS NCS CS	£429/\$400	F	DX	None	No	None	600g	0.25m	N/S	None	6	113	★★★★★			
Samyang MF 14mm f/2.8 Z	£359/\$349	F	FX	None	No	None	810g	0.28m	0.08x	None	6	142	★★★★★			

	LENS NAME	Price	Mount	DX/FX	Max zoom	Stabilizer	Autofocus	Weight	Min focus	Magnification	Filter size	Aperture blades	Issue reviewed	Rating	Awards	
WIDE PRIMES	Samyang 14mm f/2.8 AF	£559/\$800	F	FX	None	No	None	474g	0.2m	0.15x	None	7	105	★★★★★		
	Samyang 14mm f/2.4 XP	£899/\$730	F	FX	None	No	None	791g	0.28m	0.08x	None	9	142	★★★★★	🏆 🏆	
	Samyang 14mm f/2.8 IF ED UMC	£349/\$350	F	FX	None	No	None	560g	0.28m	N/S	None	6	70	★★★★★		
	Samyang 20mm f/1.8 ED AS UMC	£499/\$580	F	FX	None	No	None	488g	0.2m	N/S	None	7	116	★★★★★		
	Samyang 24mm f/1.4 ED AS UMC	£559/\$550	F	FX	None	No	None	680g	0.25m	N/S	77mm	8	104	★★★★★		
	Samyang T-S 24mm f/3.5 ED AS UMC (tilt & shift)	£599/\$800	F	FX	None	No	None	680g	0.2m	N/S	82mm	8	25	★★★★★		
	Samyang 35mm f/1.4 AS UMC AE	£499/\$500	F	FX	None	No	None	660g	0.3m	0.2x	77mm	8	125	★★★★★		
	Sigma 14mm f/1.8 DG HSM A	£1399/\$1599	F	FX	None	No	Ultrasonic	1170g	0.27m	0.1x	None	9	149	★★★★★		
	Sigma 15mm f/2.8 EX DG Diagonal Fisheye	£599/\$610	F	FX	None	No	Electric	370g	0.15m	0.26x	None	7	12	★★★★★		
	Sigma 16mm f/1.4 DC CN C	£449/\$499	Z	DX	None	No	Stepping	405g	0.25m	0.1x	67mm	9	154	★★★★★		
	Sigma 20mm f/1.4 DG HSM A	£779/\$900	F	FX	None	No	Ultrasonic	950g	0.28m	0.14x	77mm	9	116	★★★★★		
	Sigma 24mm f/1.4 DG HSM A	£629/\$850	F	FX	None	No	Ultrasonic	665g	0.25m	0.19x	77mm	9	116	★★★★★	🏆 🏆 🏆	
	Sigma 30mm f/1.4 DC HSM A	£449/\$500	F	DX	None	No	Ultrasonic	435g	0.25m	0.15x	62mm	9	111	★★★★★		
	Sigma 30mm f/1.4 DC DN C	£349/\$399	Z	DX	None	No	Stepping	265g	0.3m	0.14x	52mm	9	152	★★★★★		
	Sigma 35mm f/1.4 DG HSM A	£649/\$800	F	FX	None	No	Ultrasonic	665g	0.3m	0.19x	67mm	9	125	★★★★★		
	Tamron SP 35mm f/1.4 Di USD	£829/\$900	F	FX	None	No	Ultrasonic	805g	0.3m	0.3x	72mm	9	111	★★★★★	🏆	
	Viltrox AF 13mm f/1.4 Z	£349/\$459	Z	DX	None	No	Stepping	420g	0.22m	0.1x	67mm	9	142	★★★★★	🏆 🏆	
	Viltrox AF 23mm f/1.4 Z	£230/\$320	Z	DX	None	No	Stepping	300g	0.3m	0.1x	52mm	9	144	★★★★★	🏆	
	Viltrox AF 33mm f/1.4 Z	£210/\$279	Z	DX	None	No	Stepping	270g	0.4m	0.1x	52mm	9	152	★★★★★	🏆	
Voigtlander D23mm f/1.2 Nokton Z Aspherical	£649/\$699	Z	DX	None	No	None	240g	0.18m	0.2x	46mm	12	158	★★★★★			
Zeiss Milvus 18mm f/2.8 ZF.2	£2190/\$2300	F	FX	None	No	None	675g	0.25m	0.1x	77mm	9	116	★★★★★			
Zeiss Milvus 35mm f/2 ZF.2	£1160/\$1200	F	FX	None	No	None	650g	0.3m	0.19x	58mm	9	87	★★★★★			
STANDARD PRIMES	7Artisans 50mm f/1.05	£450/\$349	Z	FX	None	No	None	606g	0.57m	0.13x	58mm	13	152	★★★★★		
	Nikon PC-E Micro 45mm f/2.8D ED (tilt & shift)	£1899/\$2050	F	FX	None	No	None	740g	0.25m	0.5x	77mm	9	25	★★★★★		
	Nikon AF-S 50mm f/1.8G	£229/\$220	F	FX	None	No	Ultrasonic	185g	0.45m	0.15x	58mm	7	130	★★★★★		
	Nikon AF-S 50mm f/1.4G	£459/\$450	F	FX	None	No	Ultrasonic	280g	0.45m	0.15x	58mm	9	130	★★★★★		
	Nikon AF-S 58mm f/1.4G	£1699/\$1600	F	FX	None	No	Ultrasonic	385g	0.58m	0.13x	72mm	9	40	★★★★★		
	Nikon Z 40mm f/2	£229/\$280	Z	FX	None	No	Stepping	170g	0.29m	0.17x	52mm	9	140	★★★★★	🏆	
	Nikon Z 50mm f/1.8 S	£489/\$700	Z	FX	None	No	Ultrasonic	415g	0.4m	0.15x	62mm	9	140	★★★★★	🏆 🏆	
	Nikon Z 50mm f/1.2 S	£2099/\$2099	Z	FX	None	No	Stepping	1090g	0.45m	0.15x	82mm	9	122	★★★★★		
	Nikon Z 58mm f/0.95 S Noct	£8299/\$7999	Z	FX	None	No	Stepping	2000g	0.5m	0.19x	82mm	11	108	★★★★★		
	Sigma 50mm f/1.4 DG HSM A	£649/\$950	F	FX	None	No	Ultrasonic	815g	0.4m	0.18x	77mm	9	130	★★★★★		
	Sigma 56mm f/1.4 DC DN C	£449/\$499	Z	DX	None	No	Stepping	280g	0.5m	0.14x	55mm	9	152	★★★★★		
	Viltrox AF 56mm f/1.4Z	£250/\$299	Z	DX	None	No	Stepping	320g	0.6m	0.1x	52mm	9	152	★★★★★	🏆 🏆	
	Yongnuo YN50mm f/1.8Z DF DSM	£345/\$359	Z	FX	None	Yes	Stepping	417g	0.45m	0.15x	58mm	9	152	★★★★★	🏆	
	Zeiss Milvus 50mm f/1.4 ZF.2	£1245/\$1200	F	FX	None	No	None	875g	0.45m	0.15x	67mm	9	130	★★★★★		
	TELEPHOTO PRIMES	Nikon AF-S 85mm f/1.8G	£489/\$430	F	FX	None	No	Ultrasonic	350g	0.8m	0.12x	67mm	7	140	★★★★★	
		Nikon AF-S 85mm f/1.4G	£1699/\$1600	F	FX	None	No	Ultrasonic	595g	0.85m	0.12x	77mm	9	124	★★★★★	
		Nikon AF-S 105mm f/1.4E ED	£2099/\$2200	F	FX	None	No	Ultrasonic	985g	1m	0.13x	82mm	9	124	★★★★★	
		Nikon AF-S 300mm f/4E PF ED VR	£1619/\$2000	F	FX	None	Yes	Ultrasonic	755g	1.4m	0.24x	77mm	9	63	★★★★★	
		Nikon AF-S 400mm f/2.8E FL ED VR	£12999/\$11200	F	FX	None	Yes	Ultrasonic	3800g	2.6m	0.14x	40.5mm	9	143	★★★★★	🏆
Nikon AF-S 500mm f/4E FL ED VR		£10999/\$10300	F	FX	None	Yes	Ultrasonic	3090g	3.6m	0.15x	40.5mm	9	143	★★★★★	🏆	
Nikon AF-S 500mm f/5.6E PF ED VR		£3229/\$3600	F	FX	None	Yes	Ultrasonic	1460g	3m	0.18x	95mm	9	143	★★★★★		
Nikon AF-S 600mm f/4E FL ED VR		£12999/\$12300	F	FX	None	Yes	Ultrasonic	3810g	4.4m	0.14x	40.5mm	9	143	★★★★★	🏆	
Nikon Z 85mm f/1.8 S		£699/\$800	Z	FX	None	No	Ultrasonic	470g	0.8m	0.12x	67mm	9	124	★★★★★	🏆 🏆	
Nikon Z 85mm f/1.2 S		£2499/\$2797	Z	FX	None	No	Ultrasonic	1160g	0.85m	0.11x	82mm	11	151	★★★★★	🏆	
Nikon Z 135mm f/1.8 S Plena		£2699/\$2499	Z	FX	None	Yes	Stepping	995g	0.82m	0.2x	82mm	11	158	★★★★★	🏆	
Nikon Z 400mm f/2.8 TC VR S		£13499/\$14000	Z	FX	None	Yes	SSVCM	2950g	2.5m	0.17x	Drop-in	9	143	★★★★★	🏆	
Nikon Z 400mm f/4.5 VR S		£2899/\$3250	Z	FX	None	Yes	Stepping	1245g	2.5m	0.16x	95mm	9	143	★★★★★	🏆 🏆 🏆	
Nikon Z 600mm f/4 TC VR S		£15499/\$15497	Z	FX	None	Yes	Stepping	3260g	4.3m	0.14-2x	Drop-in	9	146	★★★★★		
Nikon Z 600mm f/6.3 VR S		£4799/\$4799	Z	FX	None	Yes	Stepping	1470g	4m	0.15x	95mm	9	159	★★★★★	🏆	
Nikon Z 800mm f/6.3 VR S		£5499/\$6500	Z	FX	None	Yes	Stepping	2385g	5m	0.16x	Drop-in	9	141	★★★★★	🏆 🏆	
Samyang AF 85mm f/1.4 F		£550/\$530	F	FX	None	No	None	480g	0.9m	0.11x	77mm	9	140	★★★★★		
Samyang MF 85mm f/1.4 Z		£319/\$399	Z	FX	None	No	None	730g	1.1m	0.09x	72mm	8	152	★★★★★		
Sigma 85mm f/1.4 DG HSM A		£929/\$949	F	FX	None	No	Ultrasonic	815g	0.85m	0.12x	86mm	9	124	★★★★★	🏆 🏆	
Sigma 105mm f/1.4 DG HSM A	£1249/\$1600	F	FX	None	No	Ultrasonic	1645g	1m	0.12x	105mm	9	124	★★★★★			
Sigma 500mm f/4 DG OS HSM S	£4699/\$6000	F	FX	None	Yes	Ultrasonic	3310g	3.5m	0.15x	46mm	9	143	★★★★★	🏆 🏆		
Tokina SZX Super Tele 400mm f/8 Reflex MF	£209/\$229	F, Z	FX	None	No	None	355g	1.15m	0.4x	67mm	None	148	★★★★★			
Yongnuo YN85mm f/1.8Z DF DSM	£345/\$379	Z	FX	None	Yes	Stepping	405g	0.8m	0.13x	58mm	7	152	★★★★★	🏆		
MACRO	Irix 150mm f/2.8 Macro 1:1 Dragonfly	£510/\$495	F	FX	None	No	None	831g	0.35m	1x	77mm	11	150	★★★★★		
	Laowa 90mm f/2.8 2:1 Ultra Macro APO	£569/\$499	Z	FX	None	No	None	619g	0.21m	2x	67mm	13	150	★★★★★		
	Laowa 100mm f/2.8 2:1 Ultra Macro APO	£569/\$499	F, Z	FX	None	No	None	650g	0.25m	2x	67mm	7, 13	150	★★★★★		
	Nikon AF-S DX 40mm f/2.8G Micro	£299/\$280	F	DX	None	No	Ultrasonic	235g	0.16m	1x	52mm	7	110	★★★★★		
	Nikon AF-S DX 85mm f/3.5G ED VR Micro	£459/\$557	F	DX	None	Yes	Ultrasonic	355g	0.29m	1x	52mm	9	150	★★★★★		
	Nikon Z MC 50mm f/2.8	£539/\$647	Z	FX	None	No	Stepping	260g	0.16m	1x	46mm	9	150	★★★★★		
	Nikon Z MC 105mm f/2.8 VR S	£899/\$1047	Z	FX	None	Yes	Stepping	630g	0.29m	1x	62mm	9	150	★★★★★	🏆 🏆 🏆	
	Samyang 100mm f/2.8 ED UMC Macro	£429/\$490	F	FX	None	No	None	715g	0.31m	1x	67mm	9	110	★★★★★		
	Tokina atx-i 100mm f/2.8 FF Macro Plus	£424/\$429	F	FX	None	No	Electric	515g	0.3m	1x	55mm	9	150	★★★★★		

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Illustration: © Getty

What a year!



Mike Harris looks back on a jam-packed year of Nikon releases including the Z 8, Z f and a bumper bundle of FX and DX lenses

I reckon 2023 has been Nikon's best year since the mirrorless revolution. In the past 12 months we've had two huge camera releases and a bumper selection of FX lenses. But what I've been most impressed with is Nikon's dedication to expanding its modest range of DX-format Z lenses. With such a formidable line-up of APS-C cameras in the Z 50, Z fc and Z 30, native DX glass deserves a little love.

Cream of the crop

The Z DX 12-28mm f/3.5-5.6 PZ VR and Z DX 24mm f/1.7 have been important releases then. And let's not forget, in February, we *finally* received news that Sigma was making Z lenses, and a trio of DX optics at that! Add in the various small-form-factor FX primes that suit APS-C Z cameras down to the ground, such as the Z 26mm f/2.8, and there's never been a better time to pick up a DX mirrorless.

When it comes to full-frame glass, there's been something for everyone, from super-telephoto zooms such as the Z 180-600mm f/5.6-6.3 and its Tamron equivalent, to some super-fast gems in the form of the Z 85mm f/1.2 S and Z 135mm f/1.8 S Plena. On the more affordable end of the spectrum, the Z 70-180mm f/2.8 was one of the year's most

exciting releases, because it completed Nikon's lightweight 'trinity' alongside the Z 17-28mm f/2.8 and Z 28-75mm f/2.8 – arguably the best FX introduction to Z mount. Add up all of the lens releases over the past couple of years alone and it's hardly surprising Nikon finished the year just shy of an exciting milestone, the end of the Z-mount roadmap. Only an S-line 35mm remains...

But the biggest news was the launch of the Z 8 and Z f. The former was the most anticipated Z camera ever. After all, it was the mirrorless successor to the D850 (only the greatest DSLR of all time). The Z 8 was instantly dubbed the 'Baby Z 9' and it lived up to that moniker. But I never doubted the follow-up to the D850, the big surprise in my mind was the Nikon Z f.

Far from being just a full-frame Z fc, the Z f launched as one of Nikon's most advanced Z cameras ever. Move past the precision-milled dials, analogue form factor and classy leatherette finish and you've got Z 8/9 tech, the first Nikon with Pixel Shift Shooting, up to 8-stops of VR, 4K 60p and let's not forget that genius black-and-white switch.

So there you have it, I think 2023 was Nikon's best year for mirrorless. Do you agree and what are you hoping to see in 2024? (Cough) *Z 6III please, Nikon!* 📷



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Name of taxpayer	Today's date
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Please let us know if you would like to hear from us:

by phone by email
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Please make cheques payable to 'Hope and Homes for Children' and send to Hope and Homes for Children, FREEPOST RTKX-TYLS-JHNB, East Clyffe Farm Barn, Salisbury Road, Steeple Langford, Salisbury SP3 4BF.

You can view our privacy policy here www.hopeandhomes.org/privacy.

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