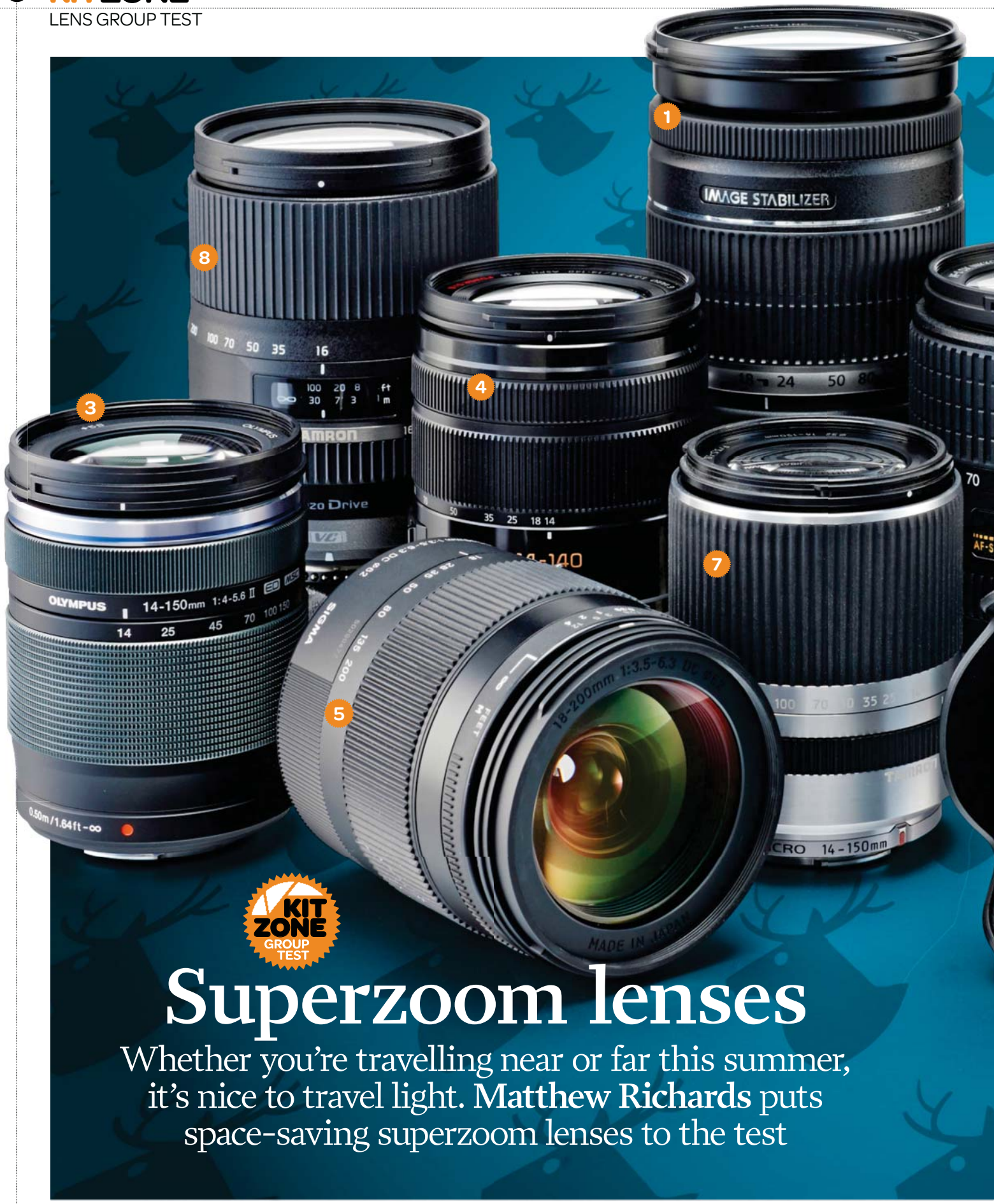


KIT ZONE GROUP TEST

Superzoom lenses

Whether you're travelling near or far this summer, it's nice to travel light. **Matthew Richards** puts space-saving superzoom lenses to the test

THE CONTENDERS

1 Canon EF-S 18-200mm f/3.5-5.6 IS, £390 / $590
2 Nikon AF-S DX 18-300mm f/3.5-6.3G ED VR, £600 / $895
3 Olympus M.Zuiko Digital ED 14-150mm f/4-5.6 II, £550 / $840
4 Panasonic Lumix G 14-140mm f/3.5-5.6 ASPH Power OIS, £480 / $730
5 Sigma 18-200mm f/3.5-6.3 DC Macro OS HSM | C, £270 / $410
6 Sigma 18-300mm f/3.5-6.3 DC Macro OS HSM | C, £400 / $610
7 Tamron 14-150mm f/3.5-5.8 Di III, £340 / $520
8 Tamron 16-300mm f/3.5-6.3 Di II VC PZD Macro, £480 / $730

Photography can literally be a pain. If you're exploring a city, rambling around the countryside, or heading to the other side of the world, a weighty bag of cameras, lenses and accessories will soon have you feeling the strain. Wouldn't it be nice if you could get the advanced handling and image quality of a system camera, without the chore of lugging a big collection of kit around with you? That's where superzoom lenses come in. They aim to deliver standard and telephoto zoom capabilities in a single, space-saving package – but it's not just about keeping the size and weight of your gear to a minimum.

Superzooms have long been popular for their versatility. It's great being able to react quickly as shooting opportunities arise, zooming from wide-angle to telephoto and everything in between at the flick of a wrist. You'll avoid the frustration of missing shots altogether because you were too busy changing lenses. Another bonus for the digital age is that, without needing to swap lenses on the camera so often, you can greatly reduce the risk of dust and muck being dumped on the image sensor. It's especially true for compact system cameras, where the sensor is in plain sight when changing lenses, rather than being hidden away behind a mirror and shutter assembly.

SLIM AND TRIM

In the downsizing stakes for travel-friendliness, it naturally helps if the host camera is also reasonably compact and lightweight. The biggest competition among superzoom lenses is therefore in APS-C format SLRs, rather than their larger full-frame siblings, and in compact system cameras. The physically smaller image sensors usually fitted to today's CSCs enable lenses to be even tinier.

One reason for this is that the image circle the lens needs to produce is relatively small. The second is that the greater crop factor (for example 2.0x for Micro Four Thirds cameras instead of 1.5x or 1.6x for APS-C) means that the actual focal length range tends to be smaller. As a case in point, The Canon 18-200mm APS-C format lens and the Olympus 14-150mm MFT lens both give a similar effective zoom range, equating in 35mm terms to 28.8-320mm for the Canon and 28-300mm for the Olympus. However, while the Canon measures 79 x 102mm and weighs 595g, the Olympus is much smaller at 64 x 83mm and less than half the weight at 285g.

There's been some significant weight loss in APS-C format superzooms over the last few years as well. In our last group test of superzooms (*Digital Camera* 141), we featured the Nikon AF-S DX 18-300mm f/3.5-5.6G ED VR, which we criticised for its podgy proportions of 83 x 20mm and hefty weight of 830g. The newer Nikon AF-S DX 18–300mm f/3.5-6.3G ED VR is a third of a stop slower at the long end of its zoom range, but a much more manageable 79 x 99mm and 550g. A further indication is that

> "You'll avoid the frustration of missing shots altogether because you were too busy changing lenses"

Kit anatomy Roll out the barrel

We're all used to zoom lenses extending in length as you sweep through the zoom range. However, while extension is often minimal with wide-angle and standard zoom lenses, or non-existent with many constant-aperture zoom lenses, superzooms are a different story.

While all of the lenses in this group test are reasonably compact and manageable, to varying extents, they all extend greatly as you zoom from the shortest to the longest available focal length.

As a rule of thumb, you can expect a superzoom lens to double in length at its maximum telephoto setting. Add a lens hood as well (sold separately for the Canon and Nikon lenses on test) and the overall length can be more than you bargained for.

How we test lenses Advice you can trust

Our lens tests are based on a two-stage procedure. First, lab tests are carried out, shooting two test charts under controlled lighting conditions. The results are then processed using Imatest Master, so that we can quantify optical performance in terms of sharpness, chromatic aberrations and distortion. Overall quality is assessed at the centre, edge and corners of the images.

For real-world testing, we use each of the lenses under widely varying indoor and outdoor lighting conditions. Overall handling is checked, along with smoothness and precision of zoom and focus rings, and the operation of all switches. We also test the speed and accuracy of autofocus systems, complete with operation of full-time manual override where available. The effectiveness of optical stabilisation systems, where fitted, is checked by gradually reducing shutter speeds during handheld shooting. Ratings are finally given for features, build quality, image quality and value for money.

the filter thread shrinks from 77mm to 67mm. Even so, the 'slimmer of the year' award goes to Sigma, whose current 18-200mm and 18-250mm lenses (the latter not reviewed this time around) for APS-C format SLRs are much smaller than the original editions, tipping the scales at just 430g and 470g respectively. The 18-200mm featured in this group test measures just 71 x 86mm, so it's barely bigger than most standard zoom lenses for this class of SLR.

THE LONG AND THE SORT

Some superzoom lenses go all out for zoom range instead of trying to keep size and weight to a minimum. Sigma's latest offering is an 18-300mm lens that gives longer telephoto reach than any of its previous superzooms (not counting the enormous Sigma 50-500mm super-telephoto zoom). Size and weight creep up again to 79 x 102mm and 585g.

Tamron has a habit of eyeing up the biggest zoom range on the market – then trumping it. The company has struck again with its latest 16-300mm lens for Canon, Nikon and Sony APS-C format SLRs. As well as having a class-leading 18.75x zoom range, it gives greater wide-angle coverage than any other superzoom, with an effective shortest focal length of just 24mm (25.6mm in its Canon fit), whereas most superzooms are equivalent to 28mm at their shortest zoom setting.

Getting back to the long end of the zoom range, one perennial problem of telephoto shooting is camera-shake, especially for travel and walkabout shooting, where you may not want to be carrying a tripod around with you.

To combat this, all of the Canon-fit and Nikon-fit lenses featured in this group test have optical image stabilisation. Sigma and Tamron both omit the stabiliser from APS-C format superzooms in their Sony-fit option (also Pentax for Sigma), as the host cameras typically have sensor-shift stabilisation built in.

The same goes for Olympus Micro Four Thirds cameras, whereas Panasonic bodies often don't have built-in stabilisation. The Panasonic 14-140mm MFT lens on test here therefore includes a Power OIS (Optical Image Stabilizer).

EQUIPMENT KNOW-HOW

FEATURES TO LOOK FOR

Big up the versatility without going large on size

Zoom range
For a superzoom lens, it's tempting to go for the maximum possible zoom range, but you can often enjoy a reduction in size and weight if you sacrifice a little telephoto reach.

Focus distance scale
The Tamron 16–300mm lens has a focus distance scale beneath a viewing window. Both Sigmas have distance scales printed on their focus rings, but none of the others do.

MFT vs APS-C
Micro Four Thirds lenses in this group are typically smaller and lighter than APS-C format lenses. Check our comparison table (page 126) to see how all the lenses measure up.

Optical stabilisation
In this test group, optical image stabilisers are built into the Canon, Nikon, Panasonic, Sigma (not Pentax or Sony fitment) and the Tamron 16–300mm (not Sony fitment).

Aperture width
You won't be able to find a superzoom lens that offers particularly wide apertures. Most shrink from f/3.5 to f/5.6 or f/6.3 as you stretch through the zoom range.

Zoom lock switch
Apart from the Canon, all lenses on test are impressively resistant to zoom creep. The Canon, Nikon, Sigma and Tamron lenses have the added safety feature of zoom lock switches.

Explained Autofocus systems

The Canon 18–200mm has a basic electric AF motor, which is audible in operation. The Sigmas and Tamron 16-300mm have ultrasonic motor systems, which are quieter. The Nikon has ring-type ultrasonic autofocus which is quieter still, and the MFT lenses have virtually silent stepping motors. The focus ring rotates during autofocus in the Canon and both Sigma lenses. Unusually for a lens with an ultrasonic motor, the Tamron 16–300mm also enables full-time manual focus override. This is also available in the Nikon and the MFT lenses.

APS-C Canon EF

APS-C Nikon F

Canon EF-S 18-200mm f/3.5-5.6 IS £390 / $590

It's a hefty old beast

Despite being outgunned for zoom range by the newer Nikon and Sigma 18-300mm lenses, as well as the Tamron 16-300mm, the Canon is the outright heaviest lens in the group, and the joint biggest along with the Sigma.

Launched in 2008, the Canon looks and feels quite dated. There's no focus distance scale and autofocus is based on a simple and fairly noisy electric motor. Unlike Canon lenses that feature ring-type ultrasonic or stepping motor system (the latter adopted in the newer 18-135mm STM lens), the focus ring rotates during autofocus and there's no full-time manual override.

On the plus side, the lens features a late-generation image stabiliser that has a four-stop rating and comes complete with automatic panning and tripod detection. Two UD (Ultra-low Dispersion) elements are fitted to combat chromatic aberrations and Super-Spectra coatings are applied to reduce ghosting and flare. Overall build quality feels fairly robust, but the mount lacks a weather-seal ring. It also suffers badly from zoom creep.

PERFORMANCE

Autofocus is reasonably quick for an electric motor-driven system and, in our tests, the stabiliser gave a three-stop benefit. Sharpness is below average throughout the zoom range, but there's no major drop-off at the telephoto end. Barrel distortion at the wide-angle end is worse than all others apart from the Tamron 16-300mm, which gives a wider angle of view.

Tech focus...
16 elements in 12 groups; six diaphragm blades; closest focus distance, 45cm; 72mm filter thread; electric motor autofocus; 79 x 102mm; 595g.

Digital Camera

FEATURES	★★★☆☆
BUILD QUALITY	★★★☆☆
IMAGE QUALITY	★★★☆☆
VALUE	★★★☆☆
OVERALL	★★★☆☆

Nikon AF-S DX 18-300mm f/3.5-6.3G ED VR £600 / $895

Newer, smaller and simpler

There are currently two Nikon 18-300mm lenses on the market, this newer one having a narrower f/6.3 rather than f/5.6 aperture at the long end of the zoom range. It's also a lot more travel-friendly than the older lens, being smaller and nearly 300g lighter, at 550g.

Like most Nikon lenses, this one features a rubber weather-seal ring on its metal mounting plate. It beats the competing Canon lens by featuring ring-type ultrasonic autofocus, which is reasonably quick, very quiet and comes complete full-time manual override. As usual for this type of system, the focus ring doesn't rotate during autofocus. Switches are on hand for auto/manual focus, VR (Vibration Reduction) on and off and zoom lock.

We experienced four-stop effectiveness from the VR and, unlike the older Nikon 18-300mm and 18-200mm superzooms, there's no zoom creep. Even so, there's a budget look and feel to the lens, which lacks a focus distance scale and is supplied without a lens hood (sold separately).

PERFORMANCE

Despite featuring three ED (Extra-low Dispersion) elements, colour fringing is the second worst in the group. At least in-camera corrections take care of fringing in current and recent Nikon SLRs, when shooting in JPEG mode or processing raw files in Nikon's own software. Sharpness is good at wide to mid zoom settings but drops off a lot at the long end. Distortion levels are pretty average.

Tech focus...
16 elements in 12 groups; 7 diaphragm blades; closest focus distance, 48cm; 67mm filter thread; ultrasonic (ring type) autofocus; 79 x 99mm; 550g.

FEATURES	★★★★☆
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★☆☆
VALUE	★★☆☆☆
OVERALL	★★★☆☆

Four Thirds | Micro Four Thirds

Olympus M.Zuiko Digital ED 14-150mm f/4-5.6 II £550 / $840

Small, lightweight but powerful

Remarkably simple, the Olympus is the only lens in the test group that has no buttons or switches. There's not even one for locking the zoom mechanism, although this isn't a problem as there's no hint of zoom creep. There's no optical image stabiliser either, as it relies on in-camera stabilisation from Olympus Micro Four Thirds bodies. Finally, there's no auto/manual focus switch as this is taken care of by the host camera.

The stepping motor autofocus system is optimised for shooting both stills and movies. It's virtually silent, reasonably quick for stills and gives silky smooth transitions when shooting movies. Multi-coatings are applied to all lens elements to keep ghosting and flare to a minimum and, of the three aspherical elements, one is made from ED (Extra-low Dispersion) glass. Compact and lightweight at 64 x 83mm and 285g, the lens has a high-precision feel to its construction, complete with a weather-sealed mount and dust, splash and freeze-resistance.

PERFORMANCE

The Olympus beats the competing Panasonic MFT lens for sharpness at wide-angle and mid-zoom settings but drops off at the long end of the zoom range. Sharpness levels are below average, but colour fringing and distortions are complete non-issues on the OM-D E-M1 that we used for testing. For telephoto shooting, we found in-camera stabilisation gave a two-stop advantage, proving less effective than the Panasonic lens's optical stabiliser.

Tech focus...
15 elements in 11 groups; seven diaphragm blades; closest focus distance, 50cm; 58mm filter thread; stepping motor autofocus; 64 x 83mm; 285g.

Digital Camera

FEATURES	★★★☆☆
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★★☆
VALUE	★★★☆☆
OVERALL	★★★☆☆

Four Thirds | Micro Four Thirds

Panasonic Lumix G 14-140mm f/3.5-5.6 ASPH Power OIS £480 / $730

The shortest and lightest lens here

Weighing in at just 265g and measuring 75mm in length, this Panasonic lens is even lighter and smaller than the competing Olympus superzoom. It's also slightly shorter in maximum focal length, equivalent to 280mm instead of 300mm on Micro Four Thirds cameras, but adds optical stabilisation. Panasonic claims a 2x improvement in its Power vs Mega optical image stabilisation system, and it's certainly a big advantage over the Olympus and Tamron MFT lenses in the group, which have no optical stabilisation at all. The addition isn't just good news for owners of Panasonic cameras with no built-in stabilisation, as it gives the choice of whether to use optical or sensor-shift stabilisation on other MFT cameras.

Build quality feels almost as refined as in the Olympus lens but the Panasonic lacks weather seals. However, it features two ED elements where the Olympus only has one. The stepping motor autofocus system is similarly silent and suitable for stills and movie capture. Like the Olympus and Tamron MFT lenses here, manual focusing is an electronic 'fly-by-wire' affair.

PERFORMANCE

There's a dip in sharpness in the middle of the zoom range but it's pretty good at either end. Sharpness in handheld telephoto shots gets a boost from the optical stabiliser, which gives a benefit of about three and a half stops. Tests from our OM-D E-M1 revealed slightly more noticeable distortions than from the Olympus, but well controlled with minimal colour fringing.

Tech focus...
14 elements in 12 groups; seven diaphragm blades; closest focus distance, 30–50cm; 58mm filter thread; stepping motor autofocus; 67 x 75mm; 265g.

Digital Camera

FEATURES	★★★★☆
BUILD QUALITY	★★★★☆
IMAGE QUALITY	★★★☆☆
VALUE	★★★★☆
OVERALL	★★★★☆

APS-C | Canon EF | Nikon F | Pentax K | Sigma SA | Sony A

Sigma 18-200mm f/3.5-6.3 DC Macro OS HSM | C £270 / $410

A mere slip of a thing

Sacrificing a little in telephoto reach can pay dividends when you want to travel light. At 430g and 71 x 86mm, this lens is only about two-thirds of the weight of most 18-300mm APS-C format lenses. An exercise in downsizing, it's also 180g lighter and 14mm shorter than the first edition of Sigma's optically stabilised 18-200mm.

Part of this reduction is due to the introduction of double-sided aspherical lens elements and a downsized autofocus motor, while a new TSC (Thermally Stable Composite) material used in the lens barrels also plays a part. However, autofocus lacks full-time manual override, and the focus ring rotates while autofocusing. As the lens is quite compact, you need to be careful to keep your fingers clear of the focus ring when using autofocus.

The maximum telephoto reach is equivalent to a focal length of 300mm on Nikon, Pentax and Sony bodies, and 320mm on Canon cameras. That stacks up well against the MFT lenses in the group, which give an effective reach of between 280mm and 300mm.

PERFORMANCE

Helped by the inclusion of four SLD (Special Low Dispersion) elements, colour fringing is well controlled, beating most other APS-C format lenses. The optical stabiliser is pretty efficient as well, giving a benefit of about three-stops (Canon and Nikon fit versions). Sharpness is above average at the telephoto end and consistent through the whole zoom range.

Tech focus...
16 elements in 13 groups; seven diaphragm blades; closest focus distance, 39cm; 62mm filter thread; ultrasonic (motor) autofocus; 71 x 86mm; 430g.

Digital Camera

FEATURES ★★★★☆
BUILD QUALITY ★★★☆☆
IMAGE QUALITY ★★★★☆
VALUE ★★★★★

OVERALL ★★★★☆

APS-C | Canon EF | Nikon F | Pentax K | Sigma SA | Sony A

Sigma 18-300mm f/3.5-6.3 DC Macro OS HSM | C £400 / $610

A step up in size and quality

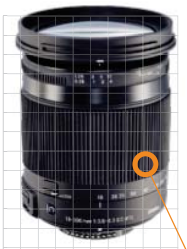
Compared with Sigma's 18-200mm lens that's also on test, this one is relatively big and heavy, at 79 x 102mm and 585g. Similar features include motor-driven rather than ring-type ultrasonic autofocus, with the same weaknesses of focus ring rotation during autofocus and the lack of full-time manual override.

Both lenses feature a focus distance scale printed on the focus ring, and a macro scale printed on the inner barrel which extends at longer zoom settings. The maximum macro magnification ratio is 0.33x but you can boost this to 0.5x by buying Sigma's optional close-up filter, developed exclusively for this lens. Neither of the Sigma lenses has a weather-sealed mount.

While the Sigma 18-200mm features four SLD elements, the 18-300mm upgrades to four top-quality FLD (Fluorite-level Low Dispersion) elements as well as one SLD element. A newer optical stabiliser (Canon and Nikon fit only) is also more efficient, with performance that's closer to four stops than three.

PERFORMANCE

Our tests reveal the new Sigma 18-300mm to be the sharpest lens here at wide-angle to mid-zoom settings, and it remains sharper than the competition at longer focal lengths between 150mm and 300mm (where available in other lenses). Colour fringing is well contained and distortions are less noticeable than in the Canon, Nikon and Tamron APS-C class lenses.



Tech focus...
17 elements in 13 groups; seven diaphragm blades; closest focus distance, 39cm; 72mm filter thread; ultrasonic (motor) autofocus; 79 x 102mm; 585g.

Digital Camera

FEATURES ★★★★☆
BUILD QUALITY ★★★☆☆
IMAGE QUALITY ★★★★★
VALUE ★★★★☆

OVERALL ★★★★☆

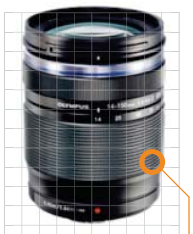
Four Thirds | Micro Four Thirds

Tamron 14-150mm f/3.5-5.8 Di III £340 / $520

First of the independents

Compared to APS-C and full-frame lenses for various makes of camera, independent lenses for the Micro Four Thirds format are thin on the ground. Indeed, the likes of Sigma, Samyang and Voigtlander only make prime lenses in MFT-fit. This Tamron 14-150mm is the only independently made MFT zoom lens currently available. It equals the Olympus's extended zoom range but lacks the Panasonic's optical image stabiliser. It's compact and lightweight at 64 x 80mm and 285g, although the filter thread is smaller at 52mm.

Build quality feels good with a smooth action to both zoom and focus rings, similar to the other MFT lenses on test. Again, there's no hint of zoom creep but the Tamron includes a zoom lock switch which is absent on both other MFT lenses. The metal mounting plate lacks the Olympus's weather-seal but the finish looks stylish. Inside, the construction includes two LD (Low Dispersion) and one XR (Extra Refractive Index) elements, along with the virtually silent stepping motor autofocus system.



Tech focus...
8 elements in 6 groups; 7 diaphragm blades; closest focus distance, 18cm; 49mm filter thread; autofocus driven from camera; 64 x 40mm; 189g.

PERFORMANCE

It's the least impressive lens in the whole group for sharpness at either end of the zoom range, although mid-zoom sharpness is marginally better than from the Panasonic MFT lens. Fringing is more noticeable than from either of the other MFT lenses, but there's less barrel distortion than from the Panasonic lens at the 14mm focal length.

Digital Camera

FEATURES ★★★☆☆
BUILD QUALITY ★★★☆☆
IMAGE QUALITY ★★★☆☆
VALUE ★★★☆☆
OVERALL ★★★☆☆

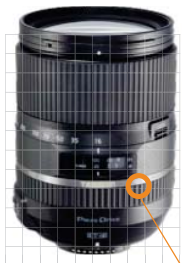
APS-C | Canon EF | Nikon F | Sony A

Tamron 16-300mm f/3.5-6.3 Di II VC PZD Macro £480 / $730

Comes top for zoom range

Pricier than the Canon and both Sigma lenses for APS-C format SLRs, the Tamron undercuts the Nikon, while beating them all in terms of outright zoom range. The Tamron offers a wider viewing angle at its shortest zoom setting than any other lens in the group. In full-frame terms, it has an effective focal length of 24mm in Nikon and Sony mount options, and 25.6mm in Canon-fit.

The lens feels robust but it's actually lighter than all the other APS-C lenses here, apart from the Sigma 18-200mm. Like the Nikon, it has a weather-seal ring on its mounting plate, and it's the only lens on test to feature a focus distance scale that's positioned beneath a viewing window. Switches are on hand for auto/manual focus and zoom lock, plus VC on/off (Canon and Nikon fit only). The Vibration Compensation stabilisation gave four-stop effectiveness in our tests. The PZD (Piezo Drive) autofocus is an ultrasonic motor-based design, but the focus ring doesn't rotate during autofocus, while also enabling full-time manual focus override.



Tech focus...
16 elements in 12 groups; seven diaphragm blades; closest focus distance, 39cm; 67mm filter thread; ultrasonic (motor) autofocus; 75 x 100mm; 540g.

PERFORMANCE

A downside of the extra-wide viewing angle is that barrel distortion is worse at the minimum zoom length than in any other lens in the group, although it's only marginally worse than from the Canon and Nikon lenses. It has the highest levels of colour fringing of any lens in the group, while sharpness at any competing focal length is less impressive than from the Sigmas.

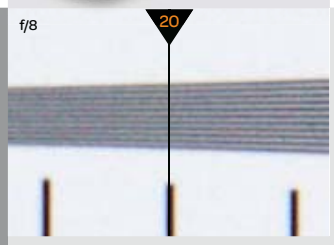
Digital Camera

FEATURES ★★★★☆
BUILD QUALITY ★★★★☆
IMAGE QUALITY ★★★☆☆
VALUE ★★★★☆
OVERALL ★★★★☆

IMAGE QUALITY IN FOCUS

CANON EF-S 18–200MM F/3.5–5.6 IS

SHARPNESS TEST



The Canon comes bottom of the group for sharpness at wide to mid-zoom settings, but there's no real drop-off at the long end.

FRINGING TEST

Fringing is slightly better controlled at either end of the zoom range than in the Nikon 18-300mm and Tamron 16-300mm.

DISTORTION TEST

Barrel distortion is worse than all bar the Tamron 16–300mm at the short end of the range. Pincushion is about average at longer settings.

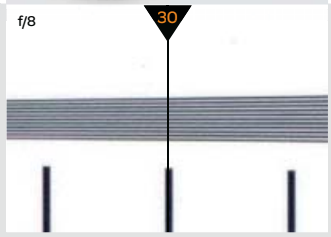
IMAGE TEST VERDICT

Considering this Canon lens's fairly modest zoom range, all the main aspects of image quality in our tests are a little disappointing.

★★★☆☆

NIKON AF-S DX 18–300MM F/3.5–6.3G ED VR

SHARPNESS TEST



There's plenty of sharpness throughout most of the zoom range but it drops off alarmingly as you approach the longest setting.

FRINGING TEST

At either end of the zoom range, there's more colour fringing than with all other lenses in the group, apart from the Tamron 16–300mm.

DISTORTION TEST

Slightly less wide-angle barrel distortion than from the Canon 18–200mm, and very slightly more pincushion at longer zoom settings.

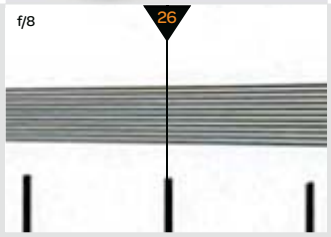
IMAGE TEST VERDICT

The Nikon's image quality isn't particularly impressive, and is let down by a lack of telephoto sharpness and fairly high levels of colour fringing.

★★★☆☆

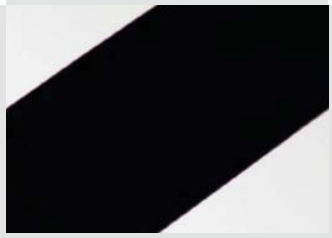
OLYMPUS M.ZUIKO DIGITAL ED 14–150MM F/4-5.6 II

SHARPNESS TEST



The Olympus holds its own pretty well for wide-angle and mid-zoom sharpness, but gradually drops away at long zoom settings.

FRINGING TEST



There's practically no colour fringing at wide-angle settings and only very small amounts throughout the rest of the zoom range.

DISTORTION TEST

Distortion is basically a non-issue at any zoom setting. The Olympus is a clear winner in the test group in this respect.

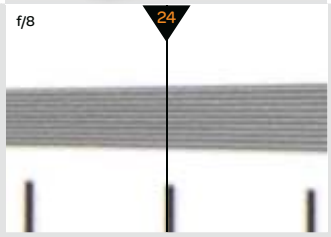
IMAGE TEST VERDICT

Impressive in all respects. Image quality only really suffers from a lack of sharpness at the long end of the zoom range.

★★★★☆

PANASONIC LUMIX G 14–140MM F/3.5–5.6 ASPH POWER

SHARPNESS TEST



Slightly less wide-angle sharpness than from the Olympus, and noticeably less at mid-zoom settings, but telephoto sharpness is good.

FRINGING TEST

Colour fringing is very slightly more evident than from the Olympus at the wide-angle end, but there's practically none at the telephoto end.

DISTORTION TEST

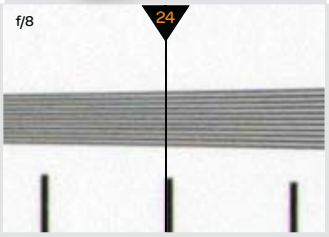
It doesn't score quite as well as the Olympus for distortion, especially at the wide-angle end, but distortions are well controlled overall.

IMAGE TEST VERDICT

Not quite as good as the Olympus lens for fringing and distortions, but sharpness at the long end of the zoom range is more impressive.

★★★☆☆

SIGMA 18–200MM F/3.5–6.3 DC MACRO OS HSM | C



Good levels of sharpness remain very consistent throughout the entire zoom range, even at the widest available apertures.

Lab scores for colour fringing on this Sigma lens are better on the whole than for other APS-C format lenses in the group.

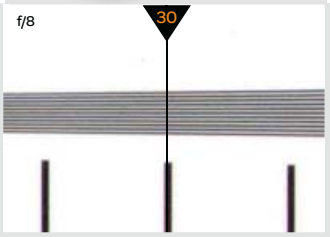
There's less wide-angle barrel distortion than from any other APS-C format lens, whereas mid to long range pincushion is average.

IMAGE TEST VERDICT

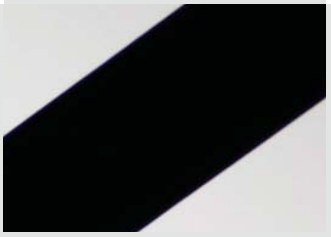
Image quality is very good overall, with consistent sharpness through the zoom and aperture ranges, along with restrained barrel distortion.

★★★★☆

SIGMA 18–300MM F/3.5–6.3 DC MACRO OS HSM | C



Sharpness levels are better than from any other lens here, at any given focal length, throughout the generous 18–300mm zoom range.



Colour fringing is better controlled than in the Nikon 18-300mm and Tamron 16-300mm lenses, and the Canon at mid-zoom settings.

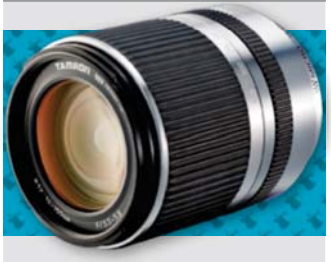
The new Sigma 18–300mm delivers the most pleasing image quality of any lens in the entire group, despite its mighty zoom range.

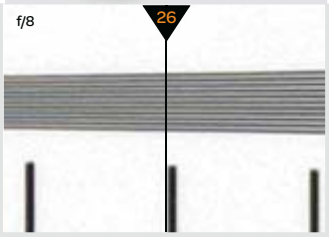
IMAGE TEST VERDICT

Overall, the new Sigma 18-300mm delivers the most pleasing image quality of any lens in the entire group, despite its mighty zoom range.

★★★★★

TAMRON 14–150MM F/3.5–5.8 DI III





At both ends of the zoom range, the levels of sharpness are less impressive than from any other lens on test.

Amounts of colour fringing are fairly well contained but performance in this respect lags behind the Olympus and Panasonic MFT lenses.

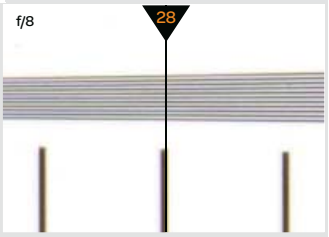
The lack of wide-angle and telephoto sharpness is disappointing and the Tamron doesn't score as highly as competing MFT lenses in other areas.

IMAGE TEST VERDICT

Image quality is very good in most respects, but the lack of sharpness towards the edges and corners of images spoils the party somewhat.

★★★☆☆

TAMRON 16–300MM F/3.5–6.3 DI II VC PZD MACRO



Compared with the competing Nikon and Sigma 18-300mm lenses, the Tamron has less wide-to-mid zoom sharpness.

Colour fringing is more pronounced than from any other lens in the group, especially at both ends of the zoom range.

Barrel distortion at the short end of the zoom range is worse than from any other lens, although the Tamron gives a wider angle of view.

IMAGE TEST VERDICT

The enormous zoom range with its extra-wide facility is great to have, but outright image quality drops off as a consequence.

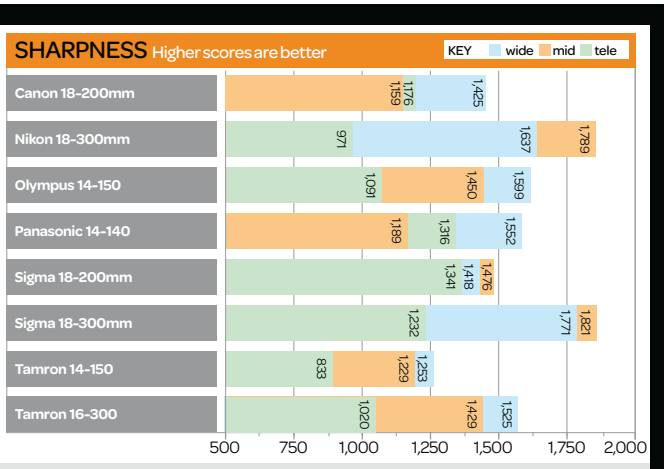
★★★☆☆

LENS BENCHMARKS
How the lenses fare in our lab tests

For our lab tests, we used a Canon 7D Mk II for the Canon and Sigma 18-200mm lenses, and a Nikon D7200 for the Nikon and Sigma 18-300mm lenses, and the Tamron 16-300mm. All three MFT lenses were tested on the same Olympus OM-D E-M1 body. Most lenses dropped in sharpness at the long end of their zoom range, apart from the Panasonic 14-140mm, for which sharpness levels dipped at mid-zoom settings, and the Sigma 18–200mm which maintained fairly even levels of sharpness throughout its zoom range. The Tamron 14-150mm MFT lens was least impressive for sharpness.

Low levels of colour fringing proved good in the Olympus and Panasonic lenses. The worst performers were the Nikon 18-300mm and Tamron 16-300mm lenses. The Olympus gave negligible amounts of distortion at any zoom setting, whereas other lenses gave varying degrees of barrel distortion at their shortest focal lengths, switching to fairly similar degrees of pincushion at mid to long zoom settings.

SHARPNESS Higher scores are better



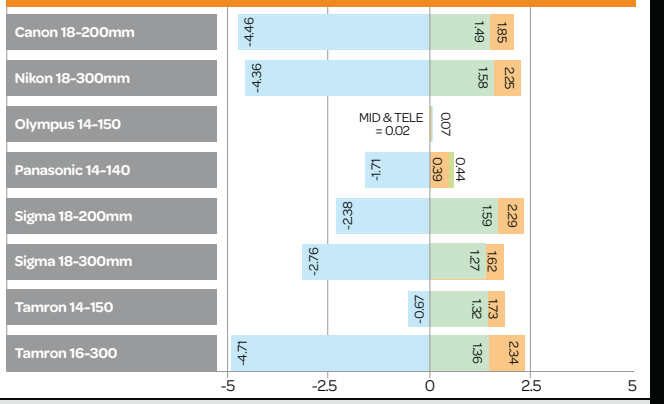
The Nikon and Sigma 18-300mm lead for sharpness in the short-to-mid part of the zoom range but the Sigma has better sharpness at the long end.

FRINGING Lower scores are better

	tele	mid	wide
Canon 18-200mm	2.54	1.52	1.94
Nikon 18-300mm	4.42	1.01	3.17
Olympus 14-150	0.88	0.67	0.14
Panasonic 14-140	0.54	0.45	0.94
Sigma 18-200mm	1.83	0.47	2.04
Sigma 18-300mm	1.64	0.58	2.87
Tamron 14-150	2.54	0.83	1.93
Tamron 16-300	5.6	1.56	5.6

The Olympus and Panasonic lenses boast the best results for colour fringing whereas the Nikon 18–300mm and Tamron 16–300mm fare the worst.

DISTORTION Closer to zero is better



Most lenses follow a similar path of barrel to pincushion distortion as you go through the zoom range, but the Olympus lens delivers negligible distortions.

HOW THE LENSES COMPARE

NAME	Canon EF-S 18-200mm f/3.5-5.6 IS	Nikon AF-S DX 18-300mm f/3.5-6.3G ED VR	Olympus M.Zuiko Digital ED 14-150mm f/4-5.6 II	Panasonic Lumix G 14-140mm f/3.5-5.6 ASPH Power OIS	Sigma 18-200mm f/3.5-6.3 DC Macro OS HSM | C	Sigma 18-300mm f/3.5-6.3 DC Macro OS HSM | C	Tamron 14-150mm f/3.5-5.8 Di III	Tamron 16-300mm f/3.5-6.3 Di II VC PZD Macro
Contact	www.canon.co.uk	www.nikon.co.uk	www.olympus.co.uk	www.panasonic.co.uk	www.sigma-imaging-uk.com		www.tamron.co.uk	www.tamron.co.uk
Street price	£390 / $590	£600 / $895	£550 / $840	£480 / $730	£270 / $410	£400 / $610	£340 / $520	£480 / $730
Sensor fit	APS-C	APS-C	Four Thirds	Four Thirds	APS-C	APS-C	Four Thirds	APS-C
Mount options	EF	F	MFT	MFT	EF F K SA A	EF F K SA A	MFT	EF F A
Autofocus motor	Electric motor	Ultrasonic (ring type)	Stepping motor	Stepping motor	Ultrasonic (motor)	Ultrasonic (motor)	Stepping motor	Ultrasonic (motor)
Dimensions (diameter x length)	79 x 102mm	79 x 99mm	64 x 83mm	67 x 75mm	71 x 86mm	79 x 102mm	63 x 40mm	75 x 100mm
Weight	595g	550g	285g	265g	430g	585g	285g	540g
FEATURES	★★★☆☆	★★★★☆	★★★☆☆	★★★★☆	★★★★☆	★★★★☆	★★★☆☆	★★★★☆
BUILD QUALITY	★★★☆☆	★★★★☆	★★★★☆	★★★★☆	★★★☆☆	★★★☆☆	★★★☆☆	★★★★☆
IMAGE QUALITY	★★★☆☆	★★★☆☆	★★★★☆	★★★☆☆	★★★★☆	★★★★★	★★★☆☆	★★★☆☆
VALUE	★★★☆☆	★★☆☆☆	★★★☆☆	★★★★☆	★★★★★	★★★★☆	★★★☆☆	★★★★☆
OVERALL	★★★☆☆	★★★☆☆	★★★☆☆	★★★★☆	★★★★☆	★★★★☆	★★★☆☆	★★★★☆

KEY: EF Canon EF F Nikon F MFT Micro Four Thirds K Pentax K SA Sigma SA A Sony A

THE DIGITAL CAMERA VERDICT

SIGMA WINS FOR QUALITY

The best combination of image quality and zoom range

Sigma's new 18-300mm delivers a mighty 16.7x zoom range with deliver excellent sharpness and reasonably low amounts of distortion and colour fringing. It does rather better than the Tamron 16-300mm in all aspects of image quality. However, the Tamron is more refined in terms of handling, thanks to the way the focus ring doesn't rotate during autofocus and enables full-time manual override. The Tamron also has a weather-sealed mount that's lacking in the Sigma, as well as giving a wider angle of view at the short end of the zoom range. Overall, it's a close call but the Sigma edges ahead for outright image quality and price.

For outright value, Sigma wins again with the latest incarnation of its 18-200mm lens. The zoom range is less powerful but all-round quality is very impressive at such a low asking price – it's the cheapest lens in the group by quite a margin. We prefer Sigma lenses to the Canon 18-200mm and Nikon 18-300mm own-brand options. The Canon is dated and needs the same kind of refresh that the company's 18-135mm has benefitted from, while the Nikon lacks telephoto sharpness and is fairly poor value for money.

For Micro Four Thirds, the Panasonic 14-140mm gives best all-round image quality and boasts optical image stabilisation, but it's slightly down on telephoto reach compared to the Olympus and Tamron 14-150mm lenses.

1 SIGMA 18–300MM F/3.5-6.3 DC MACRO OS HSM | C

What's good: Powerful zoom range; excellent all-round image quality; effective stabiliser.

What's bad: Focus ring rotates during auto-focus; mounting plate lacks a weather-seal.

We say: It edges ahead for image quality.

★★★★☆

Digital Camera

OUR TEST RESULTS

Discover our top five superzoom lenses

2 TAMRON 16-300MM F/3.5-6.3 DI II VC PZD MACRO

What's good: Extra-wide viewing angle at 16mm; good handling; weather-sealed mount.

What's bad: Loses out to the Sigma 18-300mm for sharpness, distortions and colour fringing.

We say: It adds extra wide-angle potential.

★★★★☆

3 SIGMA 18-200MM F/3.5-6.3 DC MACRO OS HSM | C

What's good: Very compact and lightweight for an APS-C format lens; strong performance.

What's bad: Relatively modest telephoto reach; focus ring rotates during autofocus.

We say: It's a highly impressive superzoom lens at a bargain price.

★★★★☆

4 PANASONIC LUMIX G 14-140MM F/3.5-5.6 ASPH POWER OIS

What's good: Small and lightweight build but with good performance and stabilisation.

What's bad: Less telephoto reach than the Olympus and Tamron 14-150mm lenses.

We say: The increase in image quality and added stabiliser makes this the best MFT buy.

★★★★☆

5 OLYMPUS M.ZUIKO DIGITAL ED 14-150MM F/4-5.6 II

What's good: Beautifully built with the inclusion of weather-seals; good image quality.

What's bad: No optical stabilisation; sharpness drops off at the telephoto end.

We say: It's a pretty good lens but the Panasonic is a better buy at its lower price.

★★★☆☆