

WHAT WE TESTED

Six frame-filling 'diagonal' fisheye lenses available for D-SLRs with APS-C and Micro Four Thirds sensors.

| | |
|---|------|
| Nikon 10.5mm f/2.8G ED DX | £535 |
| Panasonic 8mm f/3.5 Lumix G | £629 |
| Pentax 10-17mm f/3.5-4.5 DA ED (IF) | £399 |
| Samyang 8mm f/3.5 | £240 |
| Sigma 10mm f/2.8 EX DC HSM | £489 |
| Tokina 10-17mm f/3.5-4.5 AF DX | £509 |



FIND
YOUR
NEXT LENS
RIGHT
HERE!

BIG GROUP TEST

FISHEYE LENSES

With their uniquely distorted view, fisheye lenses offer a great new way to see the world. We test six lenses designed for cropped sensor formats to find the best one for you

TEST BY **ADAM ATKINS**

TURN THE PAGE TO LEARN
ALL ABOUT FISHEYE LENSES >>>

WHAT YOU NEED TO KNOW

If there's one thing for sure about a fisheye lens it's that using one will put a unique spin on anything from landscapes to portraits or even architectural shots, and once you try shooting this way you'll be hooked! A fisheye lens is any optic that squeezes an entire hemisphere of view into your frame - that's a 180° angle of view. To pack it all in, the lens has to bend the image and this distortion shows straight lines as curves as if mapping the shape of a barrel - hence the phrase 'barrel distortion'.

Different types of fisheye

Fisheye lenses come in two types - full frame (or 'diagonal') and circular. Not to be confused with lenses designed for full-frame sensors, the former just fill the sensor area giving a proper rectangular image. A circular fisheye on

the other hand squeezes the whole image circle into the frame leaving black in the corners. The image from a circular fisheye gives a 180° angle of view in all directions whereas the more popular full frame fisheye lenses only have a 180° angle of view diagonally from top corner to bottom. In this test we'll focus on the latter as they're a lot more practical and useful.

Fisheye lenses for APS-C size sensors tend to have a fixed focal length of around 8-10mm giving a 12-15mm full-frame sensor equivalent, but some also offer a zoom such as 10-17mm. Though these might sound the same as many wide-angle lenses, an equivalent focal length on a fisheye lens will always offer a wider view - a 10mm wide-angle lens for example might offer a 110° field-of-view whereas a 10mm fisheye gives 180°, diagonally across the frame.

Though the focal length is the same, the distorted view of a fisheye lens squeezes a lot more into the frame than a regular wide-angle.



10MM WIDE-ANGLE LENS



10MM FISHEYE LENS

KNOWLEDGE



HOW WE DID THE TEST

Testing six different lenses from six different manufacturers we decided to opt for similarly-sized 16Mp sensors from cameras in the same price bracket to ensure the images produced would be as comparable as possible. We took them all out on location, to test coverage and detail rendering throughout a range of apertures. We then tested them in our studio for faults such as vignetting and fringing on our lens test chart. While we paid particular attention to the optical performance of each, we also tested AF performance, handling, and build quality.

EXPERT ADVICE

WHAT TO LOOK FOR...

Before taking the plunge and investing in a fisheye lens, here's what to look for...

FRONT ELEMENT

A curved front element can stick out, preventing you using filters. To address this, some offer rear filter attachments.

ZOOM OR PRIME

Most fisheyes have a fixed focal length but some do offer a range of focal lengths. Distortion will be greatest at the wider settings.

LENS HOOD

Most fisheye lenses have a fixed lens hood to reduce flare. This should allow for a lens cap to be attached over the hood to protect it.

LENS MOUNT

If you're going to be changing lenses frequently, the lens mount should ideally be constructed from metal to reduce the inevitable wear and tear.

FOCUSING

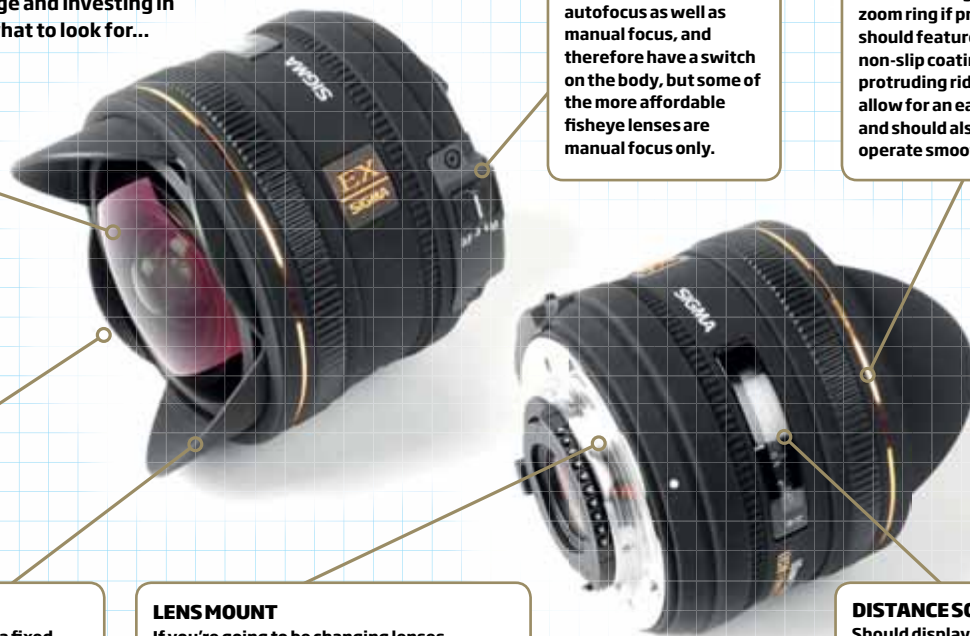
Most lenses will offer autofocus as well as manual focus, and therefore have a switch on the body, but some of the more affordable fisheye lenses are manual focus only.

FOCUS RING

The focus ring (and zoom ring if present) should feature a non-slip coating or protruding ridges to allow for an easy grip and should also operate smoothly.

DISTANCE SCALE

Should display in metres and feet, helping with focus and hyperfocal distance.



NIKON 10.5MM F/2.8G ED DX

» £524 » WEIGHT: 300G » WWW.NIKON.CO.UK

THE 10.5MM F/2.8G is part of Nikon's DX lens range designed for APS-C sized sensors, meaning if you put it on a full-frame FX Nikon D-SLR you'll need to crop the resolution to avoid black edges. On Nikon DX D-SLRs, the crop factor puts this lens at around a 16mm full-frame equivalent, but it boasts a 180° angle of view making it much 'wider' than a normal wide-angle.

The lens performed well on test with fast, accurate AF that very rarely suffered from hunting. Unfortunately, it doesn't feature Nikon's Silent Wave Motor technology built in so if you're thinking of getting it for your D3100/D5100 (which don't have a motor in the body) you'll be limited to manual focus.

The 10.5mm lens has a fast aperture of f/2.8 and features extra-low dispersion glass to minimise chromatic aberration and fringing, which it does very effectively. It's small but solidly built, with a very high quality feel and the focusing ring runs smoothly and doesn't slip, which is great for those times when you won't be relying on the autofocus.

While the lens doesn't come supplied with a lens cap to protect the front element, it is packaged with a protective lens pouch.



RATINGS

FEATURES & BUILD
PERFORMANCE
IMAGE QUALITY
VALUE FOR MONEY
OVERALL VERDICT



PANASONIC 8MM F/3.5 LUMIX G

» £599 » WEIGHT: 165G » WWW.PANASONIC.CO.UK

THE LIGHTEST IN OUR TEST, the Panasonic 8mm Lumix G packs a lot of punch for such a small lens. Sporting a very minimalist look, the lens is designed for the Micro Four Thirds mount of Panasonic's Lumix G range and while at 8mm it may appear to have one of the widest coverages of the lenses on test, it's worth remembering that the Micro Four Thirds format has a crop factor of 2x, making this a 16mm full-frame equivalent (with a 180° view).

The lens's construction is mainly plastic to lighten the weight but it balances well when attached to Panasonic's G-series cameras, such as the Lumix G3. We found the autofocus to be very responsive and it didn't have to hunt much to find the right focus, while images from it were pin sharp. It also features extra-low dispersion glass elements to reduce chromatic aberration and fringing.

At £629 this is the most expensive lens on test, but despite the price tag, it doesn't really stand apart from the others as being superior in any aspect. That said, it's a good all-rounder without any particular faults. It features a built-in lens hood and comes with a lens cap to protect the front element.



RATINGS

FEATURES & BUILD
PERFORMANCE
IMAGE QUALITY
VALUE FOR MONEY
OVERALL VERDICT





PENTAX 10-17MM F/3.5-4.5 SMC DA ED

» £399 » WEIGHT: 320G » WWW.PENTAX.CO.UK

DESIGNED FOR THE PENTAX K-AF Mount, this 10-17mm offers a zoom function on top of its fisheye capabilities. The lens gives a viewing angle of 180° at 10mm and 100° at 17mm and being a DA format lens this equates to a 15mm-25.5mm full-frame equivalent.

The lens also offers extra-low dispersion glass elements to help reduce chromatic aberration, on top of which there's an SP (Super Protect) coating to make cleaning the lens's front element easier.

The build itself is of good quality, featuring both metal and plastic parts, together giving it a refined feel and solid weight. The zoom ring and focus rings have different grips making it easy to distinguish between them while composing through the viewfinder, but they do feel a bit clunky at the extremes of their range where movement is less than smooth.

The autofocus wasn't quite as responsive as the Sigma or Nikon fisheyes we tested and it did make a bit of a racket when the AF motor was kicking into gear. It didn't excel in the image quality stakes either, but at £399 it's an affordable option that comes supplied with a built-in lens hood and a lens cap to fit over the top to protect the front element.



RATINGS

FEATURES & BUILD
PERFORMANCE
IMAGE QUALITY
VALUE FOR MONEY
OVERALL VERDICT



SAMYANG 8MM F/3.5

» £240 » WEIGHT: 417G » WWW.SYOPT.CO.KR

AVAILABLE IN Canon, Nikon, Sony, Pentax, Four Thirds and Samsung mounts, this diagonal fisheye lens represents the budget option in our test at just £240. At such a price you can't expect everything and as such, it's manual focus only and the aperture has to be set via the aperture ring on the lens, rather than through the camera. That means you'll need to shoot in Manual mode. On the up-side it's the widest on test at just 8mm giving an equivalent focal length of 12mm on a full-frame D-SLR and offering a 180° angle of view (167° on a Canon APS-C D-SLR).

Weighing in at 417g, it's certainly not light but the build quality is solid with a nice fluid action on the focusing ring, which also features a good, ridged grip. The aperture ring was also pleasing to turn with a satisfying click as it moved into place.

The images it produced were a little soft towards the edges of the frame but they were by no means the worst in our testing, meaning that though the Samyang 8mm fisheye is a budget option, it's still a strong performer. Also featured is a built-in lens hood and a lens cap that fits over the hood to protect the front element when in a camera bag.



RATINGS

FEATURES & BUILD
PERFORMANCE
IMAGE QUALITY
VALUE FOR MONEY
OVERALL VERDICT



SIGMA 10MM F/2.8 EX DC HSM

» £489 » WEIGHT: 475G » WWW.SIGMA-IMAGING-UK.COM

THE SIGMA 10MM fisheye comes in Canon, Nikon, Sony, Pentax and Sigma mounts with an equivalent full-frame focal length of 15mm (16mm on Canon D-SLRs) and a 180° angle of view (167° for Canon). The Hyper-Sonic Motor (HSM) not only makes the autofocus practically silent but it also means that Nikon D-SLRs without built-in motors can still use autofocus mode.

The autofocus itself was quick and precise, with no signs of hunting or sluggishness and the photos it produced were some of the sharpest on test. The design is fairly large - the largest and heaviest out of the six in fact - but this makes it feel sturdy and the Sigma EX coating makes for a really high-quality finish.

The focus ring has a really smooth gliding action as you turn it, with prominent ridges that make for a positive grip and it also comes equipped with a built-in lens hood and a lens cap to protect the front element (the lens cap comes in two parts allowing you to shoot both full-frame fisheye and circular-style fisheye images if desired).

Costing £489, this certainly isn't the cheapest lens but it does offer the most bang for your buck.



RATINGS

| | |
|------------------|-------|
| FEATURES & BUILD | ***** |
| PERFORMANCE | ***** |
| IMAGE QUALITY | ***** |
| VALUE FOR MONEY | ***** |
| OVERALL VERDICT | ***** |

TOKINA 10-17MM F/3.5-4.5 AF DX

» £509 » WEIGHT: 350G » WWW.TOKINALENS.COM

THE TOKINA 10-17MM offers a 15-26mm full-frame equivalent (16-27mm on Canon D-SLRs) and it's the only other fisheye lens in our test besides the Pentax 10-17mm that features a zoom range. Its fisheye coverage offers angles of view of 180° at 10mm to 100° at 17mm (167-93° on a Canon D-SLR).

The lens features a Super Low Dispersion (SD) lens element to reduce chromatic aberration and a Water Repellent (WR) coating to aid cleaning and repel moisture and oils.

Like the Nikon 10.5mm fisheye, it doesn't have a focusing motor built-in and so won't allow for autofocus on D-SLR models that lack a focusing motor built-in to the body. This shouldn't pose too much of a problem as the action on the focus ring is nicely fluid, if a little clunky at the extremes of motion. Autofocus was very quick and locked-on effortlessly, but image quality was a little soft at the wider apertures.

The zoom and focusing rings offer different grips to help you distinguish between them when looking through the viewfinder and this is particularly helpful when using manual focus. A lens cap is included to protect front element.





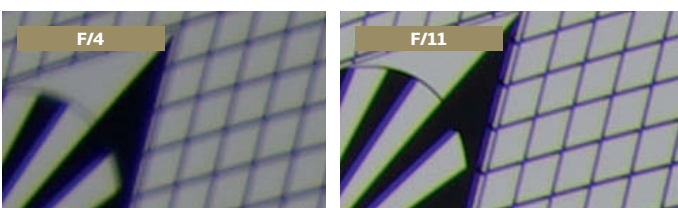



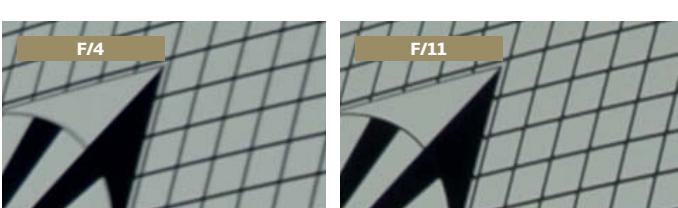

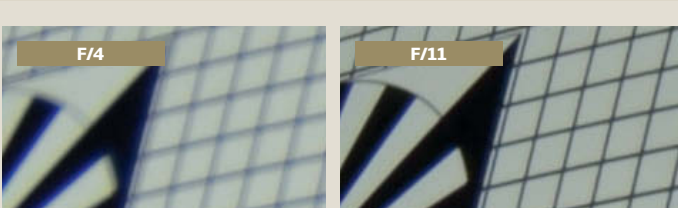



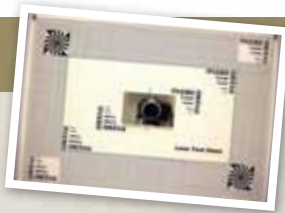
RATINGS

| | |
|------------------|-------|
| FEATURES & BUILD | ***** |
| PERFORMANCE | ***** |
| IMAGE QUALITY | ***** |
| VALUE FOR MONEY | ***** |
| OVERALL VERDICT | ***** |



« IMAGE QUALITY COMPARISON TABLE

| LENS | OPTICAL FAULTS | COVERAGE |
|---|--|--|
| <p>We took the same shots in the same conditions with each lens and assessed the final printed results.</p> | <p>We used our grid template to reveal any lens faults - this included vignetting and fringing (where the lens has failed to focus all colours to the same convergence point).</p> | <p>To show the coverage of each lens we set up on a bridge to see how much each lens in our test could fit into the frame (zooms used the widest setting).</p> |
| <p>NIKON 10.5MM F/2.8G ED DX</p> |  |  |
| <p>PANASONIC 8MM F/3.5 LUMIX G</p> |  |  |
| <p>PENTAX 10-17MM F/3.5-4.5 SMC DA ED (IF)</p> |  |  |
| <p>SAMYANG 8MM F/3.5 FISHEYE</p> |  |  |
| <p>SIGMA 10MM F/2.8 EX DC HSM</p> |  |  |
| <p>TOKINA 10-17MM F/3.5-4.5 AF DX</p> |  |  |



To see which fisheye lens displayed the best image quality, we set them against each other in a series of real-world and laboratory tests.

DETAIL

Each of the fisheye lenses were set at its widest focal length, with a series of shots taken through the entire aperture range. Results were then assessed at 100% to see how each lens resolved detail.



RATINGS

Taking all our test shots into account we've commented on both the strengths and weaknesses of each and given them an overall image quality rating.



10.5MM AT F/3.5



10.5MM AT F/11

The Nikon 10.5mm showed no signs of vignetting and was one of the best when it came to handling fringing right from the widest aperture down to the smallest. It did, however, produce slightly softer images between f/2.8 and f/4 compared to its rivals but soon sorted itself out after this point.

RATING ★★★★★



8MM AT F/3.5



8MM AT F/11

The Panasonic 8mm performed admirably, showing only minor fringing and no signs of vignetting - even at the widest aperture setting. It was also one of the sharpest of the fisheye lenses we tested, maintaining an excellent level of detail right through from the widest f/3.5 to its smallest aperture of f/22.

RATING ★★★★★



10MM AT F/3.5



10MM AT F/11

We found that the Pentax 10-17mm was a bit softer than its rivals and it struggled with sharpness a bit more at wider apertures. It also displayed heavy purple and green fringing throughout the entire aperture range. It did, however, show very few signs of vignetting - even when set at its maximum f/3.5 aperture.

RATING ★★★



8MM AT F/3.5



8MM AT F/11

The Samyang 8mm displayed some noticeable purple and green fringing throughout its aperture range. The lens was also a little soft at f/3.5 but results became noticeably sharper as it was stopped down towards its smaller apertures. The lens also showed minor signs of vignetting at its widest aperture.

RATING ★★★



10MM AT F/3.5



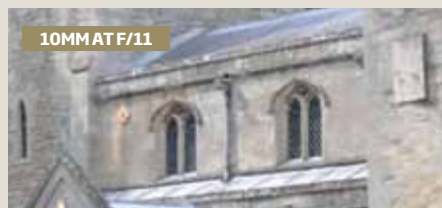
10MM AT F/11

The Sigma 10mm was the best of the bunch when it came to image quality. With the sharpest images right through the aperture range, f/2.8 only showed a slight softness. There were no signs of fringing at any of its apertures and no noticeable vignetting. This lens definitely deserves its five stars.

RATING ★★★★★



10MM AT F/3.5



10MM AT F/11

The Tokina 10-17mm was noticeably softer than some of its rivals, displaying a softness at wider apertures which was more apparent towards the edges of the image. While it did show some heavy fringing, it handled this better than the Pentax and Samyang fisheyes. There was, however, little or no sign of vignetting.

RATING ★★★



« THE VERDICT

Our test contained a real a mixture of fisheye lenses, with something for everyone, ranging from options for the photographer on a budget, through to those offering precise image quality.

The Samyang 8mm has fewer features to offer, but a solid performance and offers a very affordable entry into the world of fisheye lenses. With the Tokina and Pentax zoom models, while their image quality wasn't quite as strong as the others, they did show greater versatility by offering variable focal lengths in a well-built and compact body at a not unreasonable price.

At nearly £100 more expensive than its nearest rival, the Panasonic 8mm comes with quite a hefty price tag, but it and the Nikon 10.5mm, both provided great image quality in a compact build. It would have been nice to see Nikon's Silent Wave Motor included on the 10.5mm, though.

A pretty good show all round then, and if you're after a super-wide fun and funky fisheye lens we don't think you'd be disappointed with any of them. There was one that stood out from the crowd, though - the Sigma 10mm.



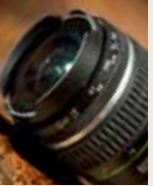
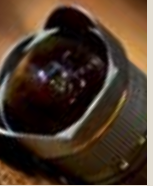

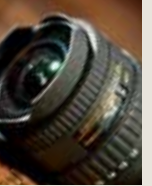
WHAT TO BUY

THE WINNER SIGMA 10MM F/2.8 EX DC HSM FISHEYE

The Sigma 10mm clinched a convincing victory here, offering by far the best overall package for a very reasonable price. While not as compact as the others it certainly came top in nearly all the categories, providing a strong performance with fast, quiet AF thanks its HSM motor and pairing this with outstanding image quality and superior build. Well done Sigma!



"After a fun and funky fisheye lens? You'd be pretty happy with any of these"

| HOW THE LENSES COMPARE |  |  |  |  |  |  |
|------------------------|--|--|--|---|--|--|
| | NIKON 10.5MM F/2.8 G ED DX | PANASONIC 8MM F/3.5 LUMIX G | PENTAX 10-17MM F/3.5-4.5 SMC DA ED (IF) | SAMYANG 8MM F3.5 | SIGMA 10MM F/2.8 EX DC HSM | TOKINA 10-17MM F/3.5-4.5 AF DX |
| Street price | £524 | £599 | £399 | £240 | £489 | £509 |
| Construction | 10 elements in 7 groups | 10 elements in 9 groups | 10 elements in 8 groups | 10 elements in 7 groups | 12 elements in 7 groups | 10 elements in 8 groups |
| Maximum aperture | f/2.8 | f/3.5 | f/3.5-4.5 | f/3.5 | f/2.8 | f/3.5-4.5 |
| Minimum aperture | f/22 | f/22 | f/22-32 | f/22 | f/22 | f/22 |
| Aperture blades | 7 | 7 | 6 | 6 | 7 | 6 |
| Minimum focus | 14cm | 10cm | 14cm | 30cm | 14cm | 14cm |
| Filter attachment | 27mm rear attachment type | 22mm rear sheet filter | Not available | Not available | Rear filter attachment | Not available |
| Dimensions | 63x62.5mm | 60.7x51.7mm | 68 x71.5mm | 74.8x75mm | 75.8x83mm | 70x71mm |
| Weight | 300g | 165g | 320g | 417g | 475g | 350g |
| Mounts | Nikon | Micro Four Thirds | Pentax K-AF | Canon, Nikon, Pentax, Sony, Sony E, Four Thirds, Samsung NX | Sigma, Canon, Nikon, Pentax and Sony | Canon, Nikon |
| Visit | www.nikon.co.uk | www.panasonic.co.uk | www.pentax.co.uk | www.syopt.co.kr | www.sigma-imaging-uk.com | www.tokinale.com |
| Features & Build | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★★ | ★★★★☆ |
| Performance | ★★★★★ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★★ | ★★★★☆ |
| Image Quality | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ |
| Value For Money | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★★ | ★★★★☆ |
| OVERALL RATING | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★☆ | ★★★★★ | ★★★★☆ |

OTHER OPTIONS

There are plenty of other options out there if you're sporting a full-frame D-SLR rather than an APS-C sized sensor. Don't be fooled into thinking the APS-C guys are getting wider lenses either, with the conversion factor of APS-C, a 10mm lens will give a focal length of 15mm full-frame equivalent, so there's not much in it between them. Here is just a few of the fisheye lenses on offer for full-frame D-SLR users.

CREATIVE OPTION

LENSBABY SCOUT

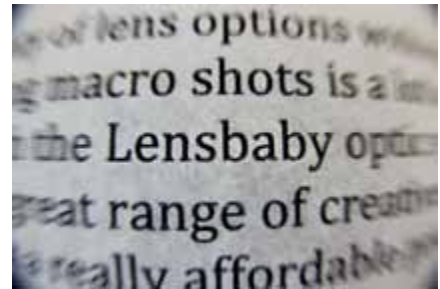
» £195 » WEIGHT: 227G » WWW.LENSBABY.COM

An affordable and creative option from Lensbaby, this 12mm fisheye option offers a 160° angle of view. It's available in mounts to fit Canon, Nikon, Sony, Pentax, Samsung, Olympus and Panasonic Lumix DMC cameras and functions as a full-frame fisheye on D-SLRs with an APS-C sized sensor or as a circular fisheye on those with a full-frame sensor.

This is a manual focus-only lens, but will focus down to a super-close 1.27cm. The scout has a maximum aperture of f/4 and uses aperture disks that are inserted into the lens to change down from f/5.6 to f/22. It's completely compatible with all other Lensbaby products and is part of the Lensbaby Optic Swap System.



The Lensbaby offers a close focusing distance of just half an inch, giving you more creative flexibility in your photography.



FULL-FRAME OPTION

CANON EF 8-15MM F/4L FISHEYE USM

» £1180 » WEIGHT: 540G
» WWW.CANON.CO.UK

This 8-15mm L-series zoom lens caters for full-frame fisheye coverage and offers a 180° circular image when shooting on a full-frame camera. When shooting on a smaller APS-C sensor you get full-frame fisheye coverage without the circular fisheye look.

Weighing in at 540g it features Subwavelength Structure Coating (SWC) to minimise ghosting and flare and it also focuses down to just 15cm. Ideal for all Canon's range of D-SLRs, full-frame and APS-C lenses.



FULL-FRAME OPTION

NIKON 16MM F/2.8 FISHEYE

» £598 » WEIGHT: 290G
» WWW.NIKON.CO.UK

This 16mm fisheye is the older full-frame version of the Nikkor DX 10.5mm fisheye and features a viewing angle of 180° diagonal and a close-range correction system offering independently moving 'floating elements' to provide increased focusing range and accuracy as close as 25cm. The lens contains eight elements in five groups and weighs in at just 290g, making it the perfect fisheye partner for your FX format D3 or D700. Pop it on a DX format camera instead and you have a 24mm equivalent focal length.

FULL-FRAME OPTION

SONY 16MM F/2.8 FISHEYE

» £629 » WEIGHT: 400G
» WWW.SONY.CO.UK

This lens offers a fast f/2.8 maximum aperture and will provide a 180° diagonal angle of view in 35mm format and 110° when fitted to APS-C format Sony D-SLRs. Featuring 11 elements in eight groups it packs in four selectable internal filters, accessible from an adjustable ring located next to the focusing ring. This has been included to get around the problem of the protruding front element not fitting standard filters. This lens will focus down to 20cm.

