

INTRODUCTION TO VIDEO LENSES

EXPLORING THE WORLD OF DEDICATED CINE OPTICS

IN ASSOCIATION WITH
SAMYANG



**CINE OPTICS**

DEDICATED TO THE JOB

Samyang's range of cinema lenses continues to expand and they are fast becoming the tools of choice for a new generation of professional filmmakers and students. Here's why you should be looking to join them...



IT'S NO SECRET THAT HD/SLR CAMERAS HAVE REVOLUTIONISED THE WAY WE MAKE FILMS, WITH THEIR LARGE SENSORS ABLE TO PRODUCE BEAUTIFULLY CINEMATIC SCENES FOR A FRACTION OF THE COST OF TRADITIONAL MOVIE CAMERAS.

However, as DSLRs continue to be engineered with still photography at the fore, to get the most filmic output from your camera you need to consider your accessories, and dedicated cine lenses are the perfect starting point.

Designed with the end goal in sight, cine lenses are purpose-built to produce high-quality images that are sharp enough to be projected up to cinema size and flexible enough to ease the modern filmmakers' workflow by being compatible with a wide selection of third-party accessories. Samyang's range of VDSLR cine lenses fits into this genre perfectly and they have been constructed with incredibly high-quality glass to transmit light as flawlessly as possible, with high resolution and low contrast. They also adhere to the film industry convention of measuring light transmission in more accurate T-stops rather than f/stops, utilising a stepless aperture ring – see panel for more.

One of the main differences from traditional still lenses is that cine lenses are matched sets optically – if you purchase or rent a range of cine primes from the same manufacturer they will have matching T-stops, barrel sizes, focal length and back focus throughout

the set as well as having a warmer colour calibration, meaning that you can effortlessly edit between scenes shot on these different lenses. Still camera lenses are not regulated in this way, creating potential headaches in post from mismatching visuals. Properly calibrated distance marks are another cine lens specific feature.

Focus is fundamental in filmmaking, so Samyang's VDSLR lenses all have functional, deep toothed focus gearing for convenient attachment of follow-focus rings. As is to be expected in cine lenses, the throw or movement of the focus ring is longer and smoother to make rack focuses a cinch. Importantly too, the internal focus of cine lenses limits the ability for your lens to breathe, which is often the Achilles heel of still lenses being used for DSLR filmmaking.

With all these additional features you could be forgiven for thinking you'll have to pay a premium for the specialisation, which is the case with a number of manufacturers. Thankfully, Samyang has used its optical expertise to deliver a range of superior VDSLR manual prime lenses at a highly competitive price point, making cinematic quality imagery and ease of use accessible to all.

“Purpose-built to produce high-quality images that are sharp enough to be projected up to cinema size and flexible enough to ease workflow”

THE JARGON**F/STOPS VS T-STOPS**

Most dedicated cine lenses feature T-stop demarcations, and while you can pretty much substitute like for like from f/stops it's worth understanding the differences between the two measurements because even when you are using a lens with T-stops, it's typically the f/stop translation that will be registered in-camera.

F/STOPS

An f/stop is a geometric calculation between focal length and aperture but light can be lost within the lens or optics, a loss which is usually more apparent with zoom lenses or when you switch between different lenses.

T-STOPS

The T stands for True or Transmission, which means that the apertures have been calibrated to the actual light transmission of the lens, allowing footage from different lenses to be seamlessly edited together without exposure variation in a multicam set-up (assuming the colour has also been accurately balanced between lenses).

A stepless aperture ring is also a fundamental feature of cinema lenses because this enables the aperture to be finely adjusted during filming, while moving up in half or full stops would be noticeable and jarring. There's also the need for absolute silence if you're recording sound, and adjusting a stepless aperture meets this requirement, whereas the clicks of a conventional still camera lens would register on the audio track.

CINE LENSES: THE RANGE

MEET THE SAMYANG LINE-UP!

Having expanded rapidly since launch, the Samyang line-up of cine lenses now caters for filmmakers looking for focal lengths right across the spectrum, and even includes dedicated models for APS-C cameras



SAMYANG 8MM T3.8 UMC FISH-EYE CS II

APS-C

» Available mounts: Canon EF, Nikon F, Sony A, Sony E

Samyang's 8mm T3.8 UMC Fish-eye CS II is a sophisticated wide-angle fisheye lens specifically designed for APS-C sensor cameras, delivering a 35mm equivalent focal length of 12mm. All VDSLR Samyang lenses are fitted with racks compatible with the follow focus system. The optics of this lens consist of ten lens elements arranged in seven groups. The product's optical parameters are extremely high, thanks to the hybrid aspherical element and multi-layered anti-reflection UMC coatings. The lens provides a diagonal field of view equal to 180°, while the minimum focusing distance is 0.3 metres.



SAMYANG 10MM T/3.1

APS-C

» Available mounts: Canon EF/M, Nikon F, Sony A/E, Fujifilm X, Samsung NX, Pentax K, Four Thirds, MFT

The latest lens to be added to the cinema range, the 10mm is made specifically for APS-C DSLRs and CSCs, and it delivers a 35mm equivalent focal length of 16mm. This lens features Samyang's Nano Coating System (NCS) for even higher contrast and lower internal reflection when compared with the original Samyang UMC system. Other optical high points include two Aspherical and one ED elements for superb definition at any focus setting. The aperture ring has six rounded blades for an almost perfect circle when fully closed down and is made from a high strength aluminium alloy.



SAMYANG 14MM T3.1 ED AS IF UMC

APS-C/FULL-FRAME

» Available mounts: Canon EF, Nikon F, Sony A, Sony E

An ultra wide-angle prime lens, the Samyang 14mm T3.1 has been designed to work with both full-frame and APS-C cameras. Its optics consist of 14 lens elements arranged in ten groups, and the model has been fitted with two ED elements with a low dispersion factor, two aspherical elements, including one hybrid and three with a high refraction factor. All lens elements have been covered with the highest-quality anti-reflective UMC coatings. The lens provides maximum angle of view equal to 115.7°, while the minimum focusing distance is 0.28 metres.



SAMYANG 16MM T2.2 ED AS IF UMC CS

APS-C

» Available mounts: Canon EF, Nikon F, Sony A, Sony E

This ultra wide-angle, bright 16mm T2.2 lens is intended for cameras with an APS-C sensor, delivering a 35mm equivalent focal length of 26mm. Its optics comprise 13 elements arranged in 11 groups, including one ED element with very low dispersion factor, an aspherical element made of optical glass and a hybrid-aspherical element. They are covered with multi-layered anti-reflective UMC coatings to ensure perfect light transmission.



SAMYANG 24MM T1.5 ED AS IF UMC

APS-C/FULL FRAME

» Available Mounts: Canon EF, Nikon F, Sony A, Sony E

Samyang's 24mm T1.5 is an extremely bright, prime lens designed to work with digital cameras fitted with full-frame or APS-C sensors. Its optics comprise 13 elements in 12 groups. Four lens elements are made of the low dispersion (ED) glass, which minimises the level of chromatic aberration. There are also two aspherical elements used to prevent spherical aberration, and the lens features multi-layered anti-reflective UMC coatings to ensure good light transmission. Thanks to its sophisticated optical construction, the lens gives exceptional image quality even when used with the aperture fully open.



SAMYANG 35MM T1.5 AS IF UMC

APS-C/FULL FRAME

» Available mounts: Canon EF, Nikon F, Sony A, Sony E

The 35mm T1.5 has been designed to work with cameras equipped with full-frame or APS-C sensors. Featuring 12 elements arranged in ten groups, the lens make-up includes one aspherical lens element and two elements made of glass with a high refraction factor. High-quality multi-layered anti-reflection coatings ensure high contrast and accurate colour reproduction. This optic is also fitted with a system of gliding lenses to maintain high image quality at the minimum focusing distance.



SAMYANG 85MM T1.5 AS IF UMC

APS-C/FULL FRAME

» Available mounts: Canon EF, Nikon F, Sony A, Sony E

This bright prime lens has been designed to work with both full-frame and APS-C cameras. Its optical construction consists of nine elements in seven optical groups, including one aspherical lens, and all featuring anti-reflective UMC coatings to improve the contrast quality and faithfully reproduce all the colours. The eight-blade aperture, which delivers brightness corresponding to a T-stop of 1.5, has been designed to deliver extremely smooth bokeh, making this a perfect lens for those who enjoy shooting sequences with minimum depth-of-field.

AS WE'VE MENTIONED ALREADY, ONE of the key advantages of cine lenses is that all the models in the range are perfectly optically matched, so if you stick to one brand you can be sure your footage will match up whichever focal length you use. Obviously, for this advantage to be properly felt there has to be enough choice available for the filmmaker to have a full range of options, and the rapid expansion of the Samyang line-up has now delivered no less than seven lenses, three of which are specifically designed for use with APS-C models, while the remaining four can partner both APS-C

and full-frame models. All are fast primes and they are supplied in all the regular fits for the most commonly used HD/SLR and CSC models.

Dedicated cine lenses tend to be predominantly wide angle, and although high-quality zoom versions are available prime lenses are in the ascendancy, primarily because it's possible to make them faster and optically superior and they are easier to stabilise. Something around a 35mm is a popular first choice because it's wide enough to give you room coverage yet not so wide that you face issues with geometric distortion.

The super wide lenses are also a good choice because they allow the capture of a wide scene but, just as with a wide lens and still portraiture, you have to bear in the mind the possibility of unflattering distortion if your portrait sequences are not set up carefully.

Wider lenses also feature a built-in depth-of-field capability, meaning that it's easier to follow focus if you set mid-range apertures. Invariably fast, they enable the use of the widest available apertures to create cinematic narrow plane of focus shots, which are enhanced by the use of a larger sensor, such as the

35mm full-frame version featured by the Canon EOS 5D Mark III and others.

The Samyang range currently goes up to 85mm, which comes with an impressive T1.5 maximum aperture. Because a longer focal length lens features apparent shorter depth-of-field, you can play with planes of focus, and wide open and close up to your subject you'll find that you get masses of bokeh and a depth-of-field that might only be a millimetre or so. Working at these levels takes a lot of skill and experience: if you've set up a tight shot on someone's face, for example, they would only need

to move a fraction for the focus to move from their eyes to their nose, so you have to choose your subjects carefully and be red hot on your follow focus to reap the full benefit of this characteristic.

The important thing, however, is that this is yet another tool at your disposal and it's something you can experiment with as you become more involved in filmmaking. For a very reasonable cost it's possible to acquire a set of Samyang cine lenses that will cover the majority of shots, and you'll have the reassurance of knowing that you're working with optics specifically designed for cine capture.

CINE LENSES: IN USE

THE FILMMAKERS' VERDICT

We sent two of Samyang's VDSLR lenses to working filmmakers to find out what they thought about the principle of cine lenses in general and the Samyang models in particular. This is their feedback...

IF YOU WANT TO FIND OUT HOW good a product actually is you don't put it on a test bench you send it out to working professionals and ask them to give you feedback from a real world perspective. That's what we did with two of the Samyang family of cinema lenses, and the verdict from both of our case studies was universally positive.

Joe Henderson is a professional camera assistant involved with feature films, music videos and commercials. He also works as a shooting videographer or lighting cameraman, and is a seasoned user of DSLRs for video production.

"Working as a videographer and camera assistant on various shoots splits my interest in lens choice between two primary concerns; picture quality and practicality," he says. "As a cinematographer my focus is on photographic clarity, idiosyncratic qualities and technical specifications, amongst a myriad of other considerations such as the given lens's aperture and minimum focus distance.

"Conversely, as a camera assistant these specifications don't generally factor into any evaluation. Instead, concerns tend to be centred on practicality. From this side of things I'm much more interested in build quality, distance



LEFT For camera assistants, practicality is a major concern, and on that score, the Samyang 16mm T2.2 rates highly in Joe Henderson's opinion.

RIGHT The solidly built Samyang 16mm T2.2 costs just £449 – which could be a good first dedicated cine addition to your kitbag.



markings and barrel rotation, and with this particular hat on my first impressions of the Samyang 16mm T2.2 lens were good; very good in fact, and I was especially impressed with the street price the lens carried, just £449."

Given its relatively budget cost Joe thought build quality of the lens was way above expectations. "The outer plastic and aluminium casing feel solid and the Canon EF mount is stable," he says. "The stepless aperture ring, one of the major selling points of the lens of course, has a smooth rotation, enabling more specifically incremental, or even mid-shot adjustments, to exposure and depth-of-field.

"However, by far and away the most important aspect of any cine lens is the focus ring and the one featured on the Samyang felt relatively firm, which was just what I was looking for. While not quite matching up to the cine standards offered by the similarly sized Arri Ultra Primes – not surprising

perhaps when you consider these cost \$26,000 or so – the Samyang easily exceeds the smoothness during focus pulls that the best of Canon's L series can muster.

"Any videographer or cinematographer who's been through the arduous task of using stills lenses fitted with follow focus rings will vouch for the suffering they have been through. They're fiddly to initially attach and marks are lost instantaneously when the focus ring is rotated even a fraction past its upper or lower limit. The cinema modifications on the Samyang lenses eliminate this problem by providing hard stops, and don't require any assembly or adjustment before use. The lens snugly fits any industry standard follow focus and therefore slides easily into any videographer's kitbag without a need for adapters or a reshuffling of kit."

Looking at the lens from the perspective of a cinematographer Joe was also pleasantly surprised at the quality of the results the Samyang lens was capable of producing. "Chromatic aberration is visible, as you would expect with a wide-angle lens, but it's handled well," he says. "Whilst you would imagine that sharpness would potentially be a slight issue, particularly when compared side by side with the Canon L equivalent, there isn't an immediate difference, and it's only fathomable by those scrutinising pixels. Colour reproduction is a similar story: the Samyang appears remarkably similar to its Canon equivalent.

"A lot of thought has gone into the lens, not just in terms of its photographic quality but also with regard to the modifications that have been undertaken to make it more suitable for cinematic work. For any dedicated HD/SLR shooters the VDSLR range of lenses is certainly worthy of attention."



Getting to know the Samyang 16mm T2.2 ED As IF UMC: Joe Henderson's first impressions were "good; very good in fact".

"By far and away the most important aspect of any cine lens is the focus ring and the one features on the Samyang felts relatively firm, just what I was looking for"

Great value for money

Ben Langdon who runs Mile 91, which primarily offers story gathering through photography and video to charities, took the Samyang VDSLR 35mm T 1.5 for a spin in combination with his Canon EOS 5D Mark II, and he likewise was immediately knocked out by the value for money that the lens offered. "It just seems to be an amazing piece of kit for that money," he says. "I've never really considered working with dedicated cine lenses before, but the chance to work with one for a while has certainly piqued my interest."

As one of the many who have moved across into filmmaking on the back of the video facilities offered by HDSLRs, it's been natural for Ben to work up until now with the conventional still lenses with which he's tackled his photographic assignments. Handling the Samyang made him think again about the advantages a dedicated cine lens can offer.

"While you can do many stills and video jobs using the same kit I am aware that there are times when a dedicated cine lens would make the filming side of things much easier," he says. "Obviously if you already have a bag full of lenses you use for stills then the temptation is to go on using them for your video work, but I'm really impressed not just by the very affordable street price point of this lens, just £419.35, but also with its quality. It was solid, well built and the combination of smooth manual focus and the stepless aperture ring was of real benefit."



"It's a very cost-effective way of giving an extra option in the kitbag, and it makes certain aspects of filming easier, particularly such things as follow focus"

ABOVE The Samyang 35mm T1.5 was Ben Langdon's first encounter with a dedicated cine lens, and he's now considering adding one to his news-gathering kitbag.

For Ben, who regularly undertakes trips to remote African locations, weight of kit is a major consideration and he would be loathe to give up on his zoom lenses altogether, but the thought of adding at least one or more dedicated cinema primes to his outfit is one that's starting to make sense. "It's a very cost-effective way of giving an extra option in the kitbag," he says, "and it does make certain aspects of filming easier, particularly such things as follow focus, for which the Samyang lens is specifically designed."

Likewise the addition of T-notations and a stepless aperture ring carries benefits that Ben is quick to see.

"If a stepless ring meant that I could change the exposure quickly and smoothly while actually filming then it could be the difference between missing and getting the shot," he says. "I'm often working under a lot of time pressure and on my own, so anything that can speed up

the way I work would be hugely appreciated."

As filming becomes an ever more important part of his business Ben is looking ahead and considering what his next purchases need to allow him to move on and to take that next step on the road to being a fully fledged filmmaker. Budget, as always, is a prime consideration, but a Canon C-100 is on the wish list, because it's a dedicated cinema camera rather than an adapted DSLR. For the same reasons a cine lens could find its way into his gadget bag as well, and the chance to invest in a product tailor made for filming that doesn't carry a massive premium is tempting. "It might make sense for me to look at something like this for certain jobs," he says. "I was really impressed with it: it's very nicely balanced and easy to use."

LEFT As well as being cost-effective, the Samyang 35mm T1.5 AS IF UMC is designed to make such things as follow focus easier.

» More information

www.samyang.co.uk

Ben Langdon: www.mile91.co.uk