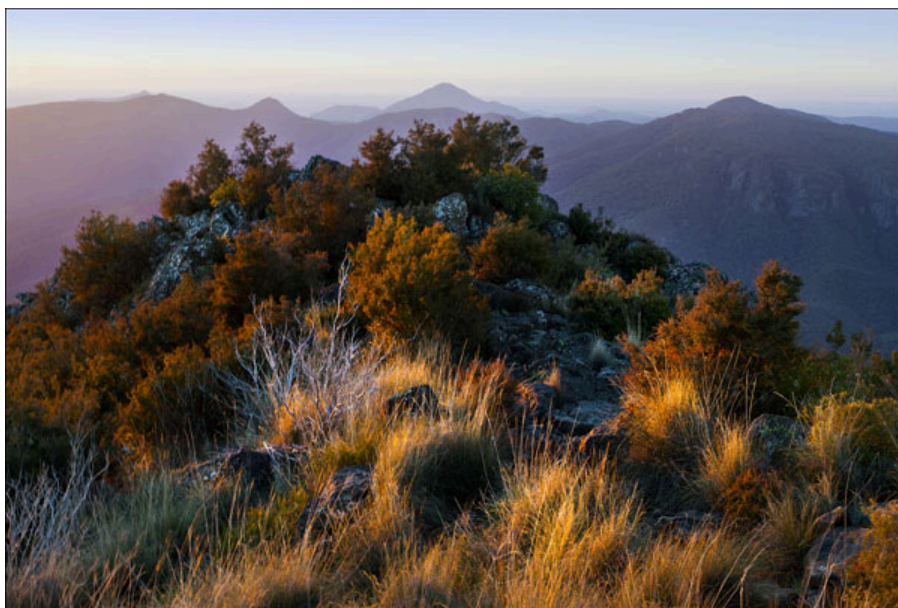


The Value of Lens Hoods

[Home](#) / [Tips](#) / [Lenses](#) / The Value of Lens Hoods

Why you should always fit a lens hood – and how to make your own, when necessary.



Without a lens hood, the strong side lighting in this scene would have reached the front element of the lens and caused a significant loss of image contrast, due to veiling flare.

We're big fans of lens hoods because they ensure the imaging light that reaches the camera's sensor is not contaminated by scattering and internal reflections, both of which produce lens flare. Flare only occurs when light from a very bright source, such as the sun, strikes the front element of the lens.

It is never seen in photographs taken with the light source behind the photographer or well away from the lens axis. So there will be some situations (and lenses) for which a hood is essential and others where it's not. In this feature we'll look at what flare is, how to avoid it, the benefits of lens hoods and how to make your own lens hood if one isn't provided or you feel the asking price is excessive.

About Lens Flare

Light reflected back from the glass-air surfaces of each lens element and scattered due to irregularities in the glass causes a loss of contrast and colour saturation and visible artefacts in images produced by the lens. The latter can appear as polygons, starbursts, rings, or circles in a row across the image.

Lens manufacturers apply coatings to suppress scattering and internal reflections but even the best coatings are hard-pressed to counteract the effects of flare when the lens is pointed towards the sun. Flare is less obvious when the light doesn't shine directly into the lens, although contrast can often be reduced in backlit shots, particularly in lower-quality lenses.



Recommended cameras and
lenses

PHOTO REVIEW NEWSLETTER



Latest news, reviews, tips, and new ways to improve and inspire your photography.

[\[JOIN HERE \]](#)

Wide-angle lenses are more likely to be flare-affected than tele lenses because they cover a larger field of view (which is more likely to include the sun). Fish-eye lenses are particularly vulnerable because hoods can't be fitted, so most have built in hoods that are very short. Accordingly, manufacturers generally design them to be more flare-resistant to bright light sources.



A typical fisheye lens has a very short hood that is permanently attached. (Source: Nikon.)

Zoom lenses are usually more flare-prone than prime lenses as they have more internal elements, and multiple surfaces tend to produce more scattering. Adding a filter can also produce flare, particularly in the form of ghost images of bright lights. Flare can also occur as a result of internal diffraction on an image sensor, which acts like a diffraction grating due to its pixel structure.

Flare effects are sometimes introduced deliberately to add a sense of drama and 'realism' to computer and video games. Many graphics programs include starburst, ring or angular patterns that can be moved according to the position of the light source using ray tracing technologies, but unless applied by very skilled operators they rarely appear genuine.

The Roles of Lens Hoods

The primary role of a lens hood is to prevent the direct sunlight (or other light source) from shining on the front element of the lens. Studio photographers are seldom worried by flare because they can control the direction of their lights with gobos and barn doors, both of which can be attached to lights to prevent the illumination from spilling into areas where it is not wanted.

Lens hoods achieve the same role but are much more portable because they are attached to the end of the lens, rather than the light source. This also enables them to be effective for light sources that aren't controllable, such as the sun.

Aside from minimising the effects of flare, a lens hood can protect the lens from physical damage. It will act as a buffer between the lens and the environment, preventing your fingertips from straying onto the delicate front element and leaving greasy marks that will degrade your photos.

A hood can also protect the front element from being scratched by branches or chipped by impact with hard objects; for example, if the lens is dropped. Lens hoods on longer tele lenses will also provide some protection against rain, spray and dust (although lenses that aren't weather-resistant shouldn't be exposed to the former).

While some people attach UV filters to protect the front elements of their lenses, it's actually better to use a lens hood. Unless they are made of very high-quality glass and properly fitted, filters can actually degrade image quality. They may also produce ghosting of some bright light sources, due to reflections between the internal surface of the filter and the outer surface of the front element of the lens.

NEW ISSUES



Photo Review Jun Aug 2014 Issue 100

[Read More](#)

PHOTO GUIDES



Astrophotography
pocket guide



Travel Photography
4th Edition



Take Better Photos

Unfortunately, lens hoods are often under-valued, even by professional photographers. They take time to fit, add length and weight to the lens (though usually not much) and take up space in a camera bag.

And while manufacturers may provide them with their more expensive lenses, they seldom do so with the cheaper, entry level lenses. Although this strategy allows them to extract more money from consumers who are knowledgeable enough to want hoods, it is essentially penny-pinching and environmentally unsound.

Most lens hoods are made of plastic or, at best, lightweight aluminium. It costs a few dollars to produce them; probably about as much as the total cost of packaging them in cardboard and plastic that will be discarded. Add to that the cost of freight when shipping the packages and you have a lot of unnecessary expenditure and an environmental cost that would be eliminated if lens hoods were bundled with lenses in the first place.

When searching for hoods for most consumer lenses, you'll find the manufacturers' RRP's range from about \$25 to \$100, depending on the size of the hood and what it is made from. Theoretically, there shouldn't be much price differential between plastic and aluminium hoods, although in practice, the former are more common and generally cheaper because of the perceived 'superiority' of metal components.

In fact, modern plastics are very robust and less likely to shatter than lightweight metals, or become dented when subjected to impact shock. Plastics are also less likely to show scratches than metals, particularly when the latter are painted black.

Lens Hood Designs

All lens hoods must be designed to cover the field of view of the lens to which they are fitted. Their shapes can vary from a simple cylinder or conical section (like a traditional lamp shade) to a complex 'petal-' or 'flower-shaped' hood. Some hoods for wide-angle lenses have cylindrical attachments but end in rectangular (or square) shapes.

COMPETITIONS



Rio Antirrio Bridge



Australian Snow Gums



It's All Mine



A typical cylindrical hood for an 85mm prime lens.

In petal-shaped hoods, the longer 'petals' are set to correspond with the longer axes of the image frame, while the shorter 'petals' match up with the shorter axes. Between them are lowered areas that correspond to the corners of the frame and admit more light to prevent vignetting (corner darkening).



A short, petal-shaped hood for a 35mm wide-angle lens.



A longer, petal-shaped hood for a 70-200mm tele-zoom lens.

Rectangular lens hoods have a shape that closely matches the image frame shape. Best suited to wide-angle prime lenses, they can be longer than circular lens hoods without blocking the angle of view or causing vignetting.



Rectangular lens hoods are often produced for wide-angle prime lenses like the M-Zuiko 12mm f/2.0, shown here on the Olympus OM-D E-M5 camera.

A few third-party manufacturers produce adjustable hoods with a bellows-like design, usually made from rubber. They are generally conical in shape and attach to the lens via the filter thread. Users can extend the bellows for longer focal length lenses and reduce it with wider angles of view.



A typical rubber lens hood, the length of which is adjustable by pulling out or pushing in the ribbed cylindrical section.

Although not precisely matched to any particular lens, this can be an option if used carefully (which means checking that the hood doesn't become visible in the frame by stopping the lens down and using the depth-of-field preview). If you have lenses with different filter diameters, you'll need a separate hood for each lens.

Manufacturers are aware of at least some of the inconveniences associated with lens hoods and usually produce hoods that can be reversed onto the lens for easy, compact storage. Some lenses (notably ultra-wide-angle lenses) come with permanently-attached hood-like mouldings that act as lens hoods. In other cases, the front element is recessed deeply into the lens barrel, providing basic protection against flare and impact.

Usage Tips

If space is tight in your camera bag, packing the lens with the hood reversed makes good sense. But don't forget to fit the hood properly before shooting. (It's amazing how many people shoot with their lens hood in this reversed position, where it has no beneficial effects.)

If you carry your camera with lens attached in a top loading bag or backpack, it's safe to leave the lens hood in place to enable you to grab shots quickly. You can even leave the lens cap off, provided the interior of the bag is dust and grit free.

Petal-shaped and rectangular lens hoods shouldn't be used with zoom lenses whose front elements rotate as the focal length is changed, because they will block part of the image when the lens is adjusted. Cylindrical and conical hoods work best with these lenses.

Hoods (and other attachments) should be fitted 'finger-tight'. Screw-in hoods should fit securely but still be easy to remove. Hoods that have been screwed on too tightly may need to be removed by a camera service technician (which is costly).

If the fit tends to be too tight, run your finger across your nose or forehead and use the body oil picked up to lubricate the threads on the hood, taking care to avoid touching the front element of the lens. This should make it easier to remove next time.

DIY Lens Hoods

If you're strapped for cash "" or can't find the hood you need "" you can always make your own. There are a couple of UK-based websites that provide printable patterns for lens hoods in PDF format. These patterns can be traced onto black cardboard, cut out and attached to the lens with adhesive tape. They are also easily trimmed to suit individual lenses.

Go to <http://www.lenshoods.co.uk/> for 35mm and digital SLR camera lenses or www.lenshoods.net for lens hoods optimised for digital SLRs with 1.5x and 1.6x crop sensors. Manufacturers covered include Canon, Nikon, Pentax, Sigma, Tamron and Tokina.

Olympus is listed but only the Zuiko 4/3 system lenses are covered. Micro 4/3 lenses don't get a look-in; nor do lenses for Fujifilm's X-series cameras. Don't expect the recently-released lenses to be included, either, as the sites don't appear to have been updated recently. However, you will find hood patterns for some very expensive fast tele lenses for which the hood RRP's are \$300 or more.

This is an excerpt from Photo Review Issue 56.

Subscribe to Photo Review:

- [Quarterly Print Edition and PDF/eMag](#)
- [Monthly Mag App](#)

Hand-held Shooting with Longer Lenses

What to Look For in a Lens

REVIEWS

MIRRORLESS CAMERAS

MIRRORLESS LENSES

DSLR CAMERAS

DSLR LENSES

FIXED LENS CAMERAS

MONITOR REVIEWS

EDITING SOFTWARE

COLOUR MANAGEMENT

PRINTERS

PHOTO PAPER

SEE ALL

BRANDS

CANON

NIKON

SONY

PANASONIC

OLYMPUS

FUJIFILM

LEICA

TAMRON

SIGMA

EIZO

EPSON

TIPS

BUYING

LENSES

SHOOTING

PHOTO EDITING

PRINTING & DISPLAY

STORAGE & MEMORY CARDS

SEE ALL

PHOTO GUIDES

TRAVEL PHOTOGRAPHY

TAKE BETTER PHOTOS

ATURE PHOTOGRAPHY

LENSES POCKET GUIDE

IDEOGRAPHY

PORTRAITURE

DIGITAL DARKROOM

PHOTO RESTORATION

LOW LIGHT PHOTOGRAPHY

PHOTO PRINTING

LANDSCAPE PHOTOGRAPHY

SEE ALL

PARTNER LINKS

CAMERA HOUSE

DIAMONDS CAMERA

EIZO

ASSOCIATIONS

AP

BIFB

HEAD ON

PHOTO REVIEW

MEMBERHIP

MAGAZINE

PHOTO REVIEW HOP

PUBLISHER

ABOUT

CONTACT

PRIVACY POLICY

FUJIFILM	FREE EMAIL NEWSLETTER	LEGAL
OM SYSTEM	NEWSLETTER ARCHIVE	ADVERTISE
TAMRON	RSS FEED	
TED'S CAMERAS	LOGIN/MY ACCOUNT	
	REALSURF (DON'S SITE)	
