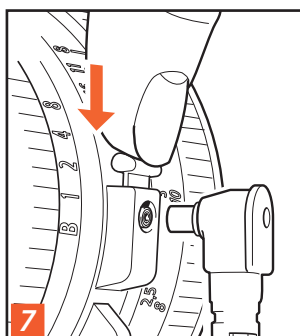
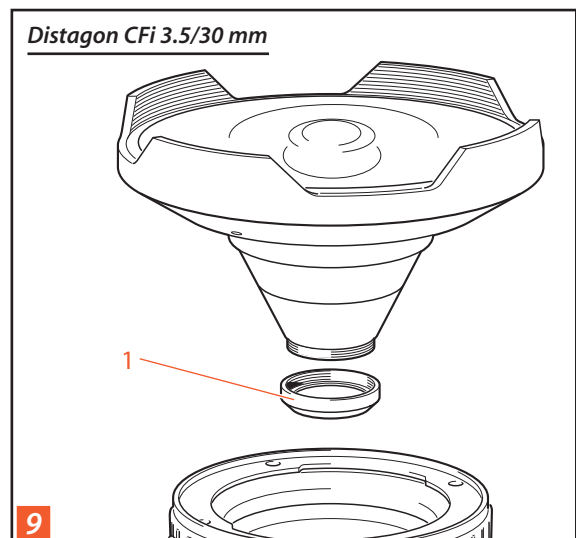
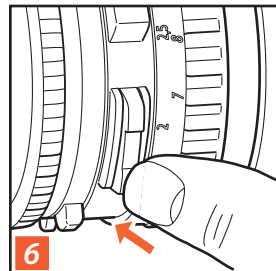
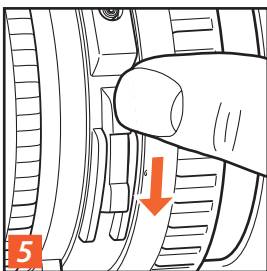
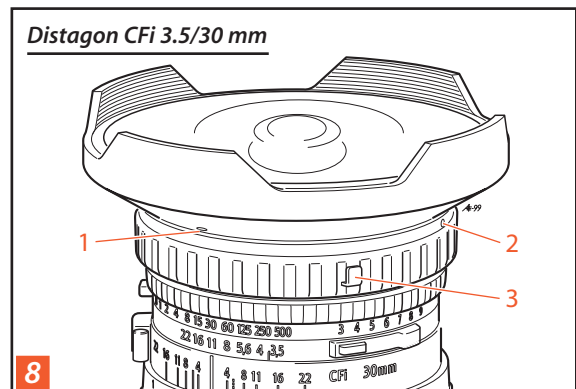
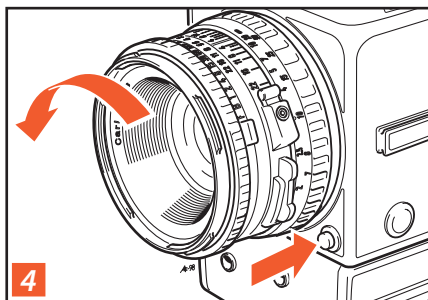
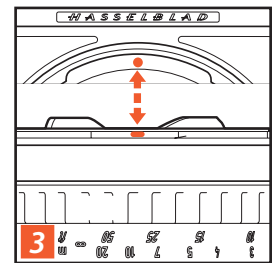
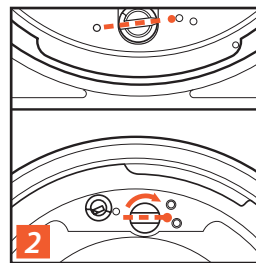
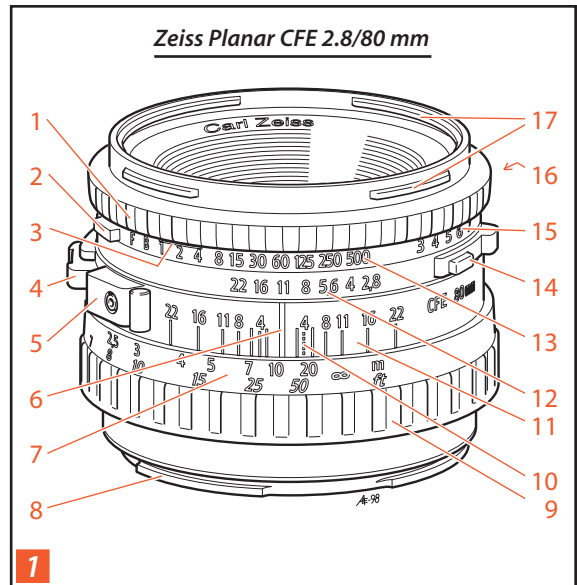
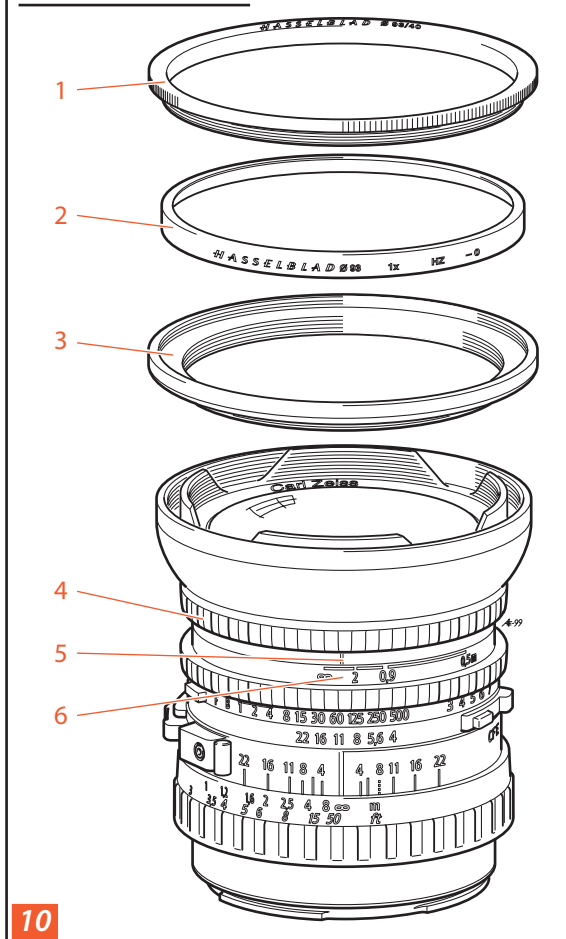


CFi & CFE Lenses

Instruction Manual, Gebrauchsanweisung, Brugsanvisning, Manual de Instrucciones, Manuel d'Instructions, Manuale d'Istruzioni, Gebruiksaanwijzing, Manual de Instruções, Bruksanvisning, Käyttöohjekirja

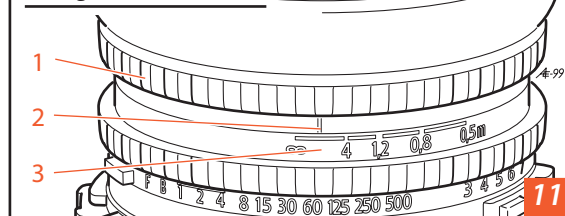


Distagon CFE 4/40 mm



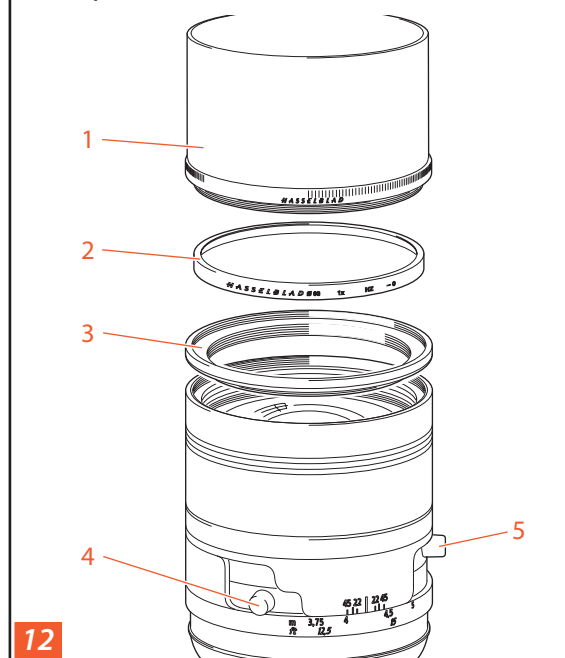
10

Distagon Cfi 4/50 mm



11

Tele-Superachromat CFE 5.6/350



12

ENG Hasselblad Cfi and CFE Lenses

Hasselblad Cfi and CFE lenses are designed for the 500 and 200 series cameras. They are made by Carl Zeiss to the customary exacting standards and feature a built-in shutter with a range of 1-1/500 s and B and flash synchronization at all shutter speeds. The different designations of the lenses are as follows: Cfi – improved, CFE – electronic.

The Cfi and CFE lenses feature a list of improvements on the basic CF lenses that together produce an increase in image quality, reliability and convenience in operation. They include:

- new internal design and new anti-reflection materials reducing stray light and enhancing the image contrast.
- improved design and a new main spring extending life expectancy and increasing precision.
- PC-socket with positive lock
- redesigned focusing mechanism
- reinforced rear bayonet
- front bayonet in durable non-metallic material.
- new external design for comfort and style.

CFE lenses additionally feature:

- databus connections for optimum use with the 200 series cameras.

Lenses are supplied with a lens cap, rear protective cover and a soft pouch or leather case. Some lenses are supplied with additional accessories. Please see under 'Technical Specifications' for specific delivery details.

The relevant illustrations to each section are indicated by the figures beside the headings in the text.

General

Most of the general information in this manual can also be found in your camera manual. Some camera models have additional specific information regarding lens use. For example, the 555ELD has extra 'warning mark' recommendations.

To optimize the quality of a lens, always use some kind of lens shade – either a fixed- or professional-type – or shade it in some other manner, checking to see that no light source is directly falling on the front element of the lens. Ensure that any filter used is dust-free and clean and preferably coated if made of glass. When using a combi-

nation of filters, a compendium filter holder, a PC-Mutar 1.4X Shift Converter (3020311) or suchlike that might cause vignetting use a Rear cover MultiControl (3051070) on the camera for testing.

Care of lenses

Make a habit of using lens caps, and pouches or cases whenever possible. Pay attention to the lens drive coupling and avoid touching the databus connector on CFE lenses. For extra protection, a neutral filter such as a 'Sky' or UV (haze) filter can be left on the lens (except the Cfi 3.5 / 30 mm, see appendix) for most general photography. A fixed type lens shade may also offer some protection against accidental damage. Custom fitted camera cases are recommended for optimum protection.

Extremes of temperature can have an adverse effect on equipment. Try to avoid frequent and severe temperature changes. Be particularly careful in humid environments, allowing the equipment to acclimatize before changing lenses, for example. Store in dry conditions wherever possible.

Try to prevent dust and grit from getting into your equipment and in coastal areas take measures to protect lenses from sand and salt-water spray.

Dust on the lens glass can be removed with a blower brush or a very soft lens brush if necessary. Smears on the lens glass should be treated with great caution. In some cases they may be removed with a high quality lens cleaning solution on a tissue but be careful not to scratch the lens or touch any of the glass surfaces with your fingers. If in any doubt, allow a "Hasselblad Authorized Service Center" to treat them.

Parts and components

Fig 1 shows the Zeiss Planar CFE 2.8/80 mm lens, but the layout of the parts is almost identical on all Cfi and CFE lenses. Where necessary, additional components or features are taken up separately under the respective headings for individual models in the appendix.

1. Shutter speed ring
2. F-setting button
3. Warning mark
4. Depth-of-field preview knob

5. PC-socket with positive lock
6. Central lens index
7. Focusing distance scale
8. Lens bayonet plate with red index
9. Focusing ring
10. Infrared focusing index
11. Depth-of-field scale
12. Aperture ring and scale
13. Shutter speed scale
14. Shutter speed/aperture interlock button
15. Exposure value (EV) scale
16. EV index
17. External and internal front bayonets

Attaching a lens


2, 3

Make sure that both camera (see relevant camera manual) and lens are fully wound, Fig.2 shows the correct relationship between the drive shaft, the lens drive coupling and their indexes. If the lens is not wound, you can insert a coin or something similar in the coupling slot and rotate it clockwise until it locks (about 4/5 of a turn) When you have aligned the red index on the lens with the one on the camera as shown in fig. 3, the lens will drop easily into the bayonet fitting. You can then rotate it clockwise until it stops with a faint click as the lens catch locks it in place.

Removing a lens

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Depress the lens release button on the camera and keep it depressed while rotating the lens counter-clockwise until it stops. The lens is then freed and can be lifted out of the mount.

 You can only remove the lens when the camera is fully wound and not in the pre-released mode (see camera manual).

Shutter speed

The shutter speed ring is located closest to the front of the lens. Rotate it until the desired shutter speed is set against the central lens index.

The white scale shows the shutter speeds, and the orange scale the exposure values (EV).

3

auxiliary shutter will terminate the exposure prematurely if you relax the pressure on the exposure button on the camera too soon. Listen to the buzzing sound of the delay escapement in the lens' shutter and maintain the pressure on the release button until the sound stops.

See relevant camera manual for further details. For example, the 555ELD has extra 'warning mark' recommendations.

Focusing and depth-of-field

The focusing ring is the ring closest to the camera body displaying the distance scales in metres and feet. Rotate the ring until a sharp image of the subject is obtained in the viewfinder or the measured distance between the subject and the film plane is set opposite the lens index.

Objects closer or further away than the selected distance will also appear sharp in the image, within a certain range. This range of sharp focus, namely the depth-of-field, varies with the aperture.

The depth-of-field available at any given aperture can be read off the depth-of-field scale on both sides of the central index.

As an example, the lens in fig 1 has been set at f/11 and focused at a little over 10m. By reading the two 'f/11s' on the depth-of-field scale on both sides of the central index you can see that they align with approximately 5.5 m and infinity respectively on the focusing scale. The depth-of-field therefore extends from approximately 5.5m to infinity at that particular focus/aperture setting.

Depth-of-field preview

5, 6

Depth-of-field can also be visually checked on the focusing screen. Fig. 5 shows the normal position for the depth-of-field preview knob (lens opened to the largest aperture for viewing regardless of desired exposure aperture setting). Slide the knob in the direction of the arrow until it clicks into the new position. The lens aperture is now stopped down in accordance with the aperture ring setting.

By pressing the lower part of the knob as in fig. 6, it will return to its normal position.

Flash synchronization

CFi and CFE lenses have built-in leaf shutters with flash synchronization at all speeds from 1s to 1/500s and B via the PC flash terminal.

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Aperture

The aperture ring is second closest to the front of the lens. The aperture value is also set against the central index.

The aperture diaphragm is automatic i.e. it remains fully open for easy viewing but automatically stops down to the preset working aperture immediately before exposure.

Exposure values

The aperture and shutter speed combination set opposite the central lens index determines the exposure. Every combination of shutter speed/ aperture has an equivalent exposure value (EV) which you can read and set against the white triangular EV index on the aperture ring.

Interlocked shutter speed / aperture

If you want to change the shutter speed or aperture while still keeping the same shutter speed/aperture combination (EV), you can interlock the speed and aperture setting rings by holding down the interlock button on the aperture ring as you rotate it. When interlocked, the rings move together automatically increasing or decreasing the shutter speed setting to compensate for a decrease or increase in aperture setting, respectively.

F- setting

The orange F-setting is used only when the lens is attached to a Hasselblad focal plane shutter camera in the 200 series. Depress the F button and rotate the shutter speed ring until the red 'F' mark is set against the central lens index. See relevant camera manual for further details.

If you work with cameras from both the 500 and the 200 series, remember to reset the shutter speed to any setting other than 'F' when the lens is re-attached to a 500 series camera.

Exposure

As a general rule for all shutter speed settings except B, you should keep the release button depressed until the lens shutter has opened and closed fully. This is especially important at shutter speeds from 1s to 1/4s (see 'Warning mark' below).

Warning mark

There is a red mark on the shutter speed scale above the 1, 1/2, and 1/4s settings. This is to warn you of possible exposure errors as the

4

When a lens is used in the F-setting, however, flash synchronization should be obtained through the flash terminal on the camera body. See relevant camera manual for further details.

PC flash socket with positive lock

7

When inserting a flash cord into the socket (fig.7), keep the lock button pressed in. On release, the cord will be locked into place. To remove, press in the lock button again.

Infrared photography

Infrared (IR) rays (wavelengths longer than 800 nm) form an image on a plane further away from the lens than the image plane for visible light. To compensate for this difference you have to align the chosen distance against the red IR index and not the normal central index (see special note below concerning the Sonnar Superachromat CFE 5.6 / 250 mm Sa). Proceed as follows:

- a. Focus as usual on the focusing screen.
- b. Note the distance on the focusing scale that is opposite the central lens index.
- c. Now rotate the focusing ring to set this distance against the red IR index line instead of the central lens index.

Lens shades and filters

With the exception of the Distagon CFI 3.5/30 mm, Distagon CFE 4/40 mm IF and the Tele-Superachromat CFE 5.6/350 mm Sa (see appendix), all lenses have an internal and external bayonet accessory mount.

The internal bayonet is for filters and the external bayonet is for lens shades.

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Appendix

The following lenses have additional features to take special note of:

Distagon CFI 3.5/30 mm

8, 9

The CFI 3.5 / 30 mm (fig 8) uses an internal filter and so the lens has been taken apart to access it. While depressing catch (3), rotate the locking ring (2) clockwise (when seen from the front of the lens) until the two red dots (1) are aligned. Carefully separate the lens by pulling the front section out from the main body of the lens. The filter (fig 9-1) can be then be unscrewed and changed. Replace the front section of the lens ensuring that the two red dots are aligned. Rotate the locking ring counter-clockwise until the two sections lock together with a click.

 A filter, even the clear glass type, is an integral component in the optical system of the lens so ensure that there is always one fitted!

Distagon CFE 4/40 mm IF

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The CFE 4/40 IF mm features internal focusing (IF) of floating lens elements (FLE). The position of these elements is automatically modified to optimize performance across the whole range of focus settings.

Parts & Components

1. Ø 93/40 lens shade/retaining ring (3040693).
2. Ø 93 filter (accessory, not included)
3. Adapter ring

Please note that the Ø 93/40 lens shade (3040693) is a two component unit consisting of a lens shade/retaining ring and an adapter ring.

Filters

A Ø93 filter can be installed between the lens shade/retaining ring and the adapter ring as in illustration. Proceed as follows:

- a. Unscrew the lens shade/retaining ring (1).
- b. Insert the Ø93 filter (2) (accessory, not included) into the adapter ring (3).
- c. Screw the filter lens shade/retaining ring into the adapter ring.

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Tele-Superachromat CFE 5.6/350 mm Sa

Parts & Components

1. Lens shade
2. Ø93 filter (accessory, not included)
3. Adapter ring
4. Near focus limiter
5. Far focus limiter

The CFE 5.6/350 mm has three distinctive features:

Filters

The CFE 5.6/350 mm is supplied with a combined filter ring and lens shade - Lens shade Ø93 / 350-500 (3040703). Ø93 filters are installed between the lens shade and the adapter ring as follows:

- a. Unscrew the lens shade (1).
- b. Insert the filter (2) (accessory, not included) into the adapter ring (3).
- c. Screw the lens shade into the adapter ring.

Near and far focus limiters

You can set the near and far focus limit distances by aligning predetermined distances on the focus scale against the central lens index or by visually checking the focus on the focusing screen.

- a. Loosen the focus limiter screws (4, 5) by screwing them counter clockwise.
- b. Set the near focus point. Slide the near focus limiter (to the left in the diagram) until it meets the lens casing extension and secure its position by screwing (4) clockwise.
- c. Set the chosen far focus point. Slide the far focus limiter to the right until it meets the lens casing extension and secure its position by screwing (5) clockwise.

The lens will now temporarily only focus within the chosen range.

Quick-coupling plate

The quick-coupling plate is located at the centre of gravity that is produced when the lens is attached to a manual Hasselblad camera complete with film magazine and waist-level viewfinder. In addition, the height of the quick-coupling plate matches the height of the camera base plate. This allows for the combined lens and camera to be placed on a flat surface without causing any restriction to the focusing ring.

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Distagon CFI 4/50 mm

Parts & Components

1. FLE adjustment ring
2. Adjustment index
3. Focus range scale

The CFI 4/50 mm has 'floating lens elements' (FLE) to ensure high performance at close focus settings and so a separate ring is incorporated to modify their position for optimum results at different focus ranges.

The CFI 4/50 mm has four focus range settings:
∞-4 m; 4 m-1.2 m; 1.2 m-0.8 m; 0.8-0.5 m.

To make the correct settings proceed as follows:

- a. Estimate the fine focus distance setting (or visually focus on the focusing screen and then read off the distance aligned against the central lens index, from the metre scale on the lens fine focus ring).
- b. Rotate the FLE adjustment ring until the index is opposite the appropriate focus range setting that includes the chosen focus distance.
- c. Fine fine focus as normal.

 Set the focus range setting first, and the fine focus distance setting last.

Filters

The CFI 4/50 mm is designed to use two stacked Ø70 bayonet filters without vignetting. With the Filter adapter Ø70 - Ø60 (3040775) supplied however, a Ø60 type bayonet filter can also be used. Please see the user manual for full details.

Sonnar Superachromat CFE 5.6 / 250 mm Sa

When using this lens with IR applications, focusing can be judged directly on the viewing screen owing to its unsurpassed correction of chromatic aberration.

As temperature can affect the position of the focal point, there is no stop at the infinity position. Accurate 'infinity' focusing, therefore, should be checked visually on the focusing screen.

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Technical Specifications

Zeiss Distagon CFI 3.5 / 30mm

Focal length:	30 mm
Aperture range:	3.5 - 22
Focusing range:	0.3 m - ∞
Angle of view, diagonal/horizontal:	180° / 112°
No. of elements:	8 T*
Filters:	Ø 26
Weight:	1365 g (3 lb)
Length:	117.5 mm (4.6")
Code:	3020178

Supplied with: a yellow filter (3050636), an orange filter (3050644), a daylight film in tungsten light conversion-filter (3050652), a neutral glass filter (3050660), a Front lens cap Distagon CFI 30 (3051659) a Rear lens cap (3050377) and a leather case.

Zeiss Distagon CFE 4 / 40mm IF

Focal length:	40 mm
Aperture range:	4 - 22
Focusing range:	0.5 m - ∞
Angle of view, diagonal/horizontal:	89° / 69°
No. of elements:	12 T*
Filters:	Ø 93
Weight:	1130 g (2 lb 10 oz)
Length:	122 mm (4.8")
Code:	3020038

Supplied with: a Lens shade Ø93 / 40 (3040693), a Front lens cap Ø93 - 100 (3051654), a Rear lens cap (3050377) and a Lens pouch 4 (3058432).

Zeiss Distagon CFI 4 / 50mm

Focal length:	50 mm
Aperture range:	4 - 32
Focusing range:	0.5 m - ∞
Angle of view, diagonal/horizontal:	75° / 57°
No. of elements:	9 T*
Filters:	Ø 70
Weight:	800 g (1 lb 12 oz)

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Length: 95 mm (3.75")
 Code: 3020047
 Supplied with: a Front lens cap Ø70 (3051648), a Rear lens cap (3050377), a Filter adapter Ø70- Ø60 (3040775 – including a Front lens cap Ø60 (3051643)) – and a Lens pouch 2 (3058416).

Zeiss Distagon CFI 3.5 / 60mm

Focal length: 60 mm
 Aperture range: 3.5 – 22
 Focusing range: 0.6 m (2') – ∞
 Angle of view, diagonal/horizontal: 67° / 50°
 No. of elements: 7 T*
 Filters: Ø 60
 Weight: 680 g (1 lb 8 oz)
 Length: 83 mm (3.27")
 Code: 3020209

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 1 (3058408).

Zeiss Planar CFE 2.8 / 80mm

Focal length: 80 mm
 Aperture range: 2.8 – 22
 Focusing range: 0.9 m – ∞
 Angle of view, diagonal/horizontal: 52° / 38°
 No. of elements: 7 T*
 Filters: Ø 60
 Weight: 510 g (1 lb 2 oz)
 Length: 65 mm (2.55")
 Code: 3020034

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 1 (3058408).

Zeiss Planar CFI 3.5 / 100mm

Focal length: 100 mm
 Aperture range: 3.5 – 22
 Focusing range: 0.9 m – ∞
 Angle of view, diagonal/horizontal: 42° / 30°
 No. of elements: 5 T*
 Filters: Ø 60

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Length: 128 mm (5.03")
 Code: 3020074
 Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 3 (3058424).

Zeiss Sonnar CFI 5.6 / 250mm

Focal length: 250 mm
 Aperture range: 5.6 – 45
 Focusing range: 2.5 m – ∞
 Angle of view, diagonal/horizontal: 17° / 12°
 No. of elements: 4 T*
 Filters: Ø 60
 Weight: 1165 g (2 lb 9 oz)
 Length: 164 mm (6.45")
 Code: 3020081

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 3 (3058424).

Zeiss Sonnar Superachromat CFE 5.6 / 250mm Sa

Focal length: 250 mm
 Aperture range: 5.6 – 45
 Focusing range: 3 m – ∞
 Spectral range: 400 – 1000 nm
 Angle of view, diagonal/horizontal: 17° / 12°
 No. of elements: 6
 Filters: Ø 60
 Weight: 985 g (2 lb 2.25 oz)
 Length: 154 mm (6.1")
 Code: 3020195

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 3 (3058424).

Zeiss Tele-Superachromat CFE 5.6 / 350mm Sa

Focal length: 350 mm
 Aperture range: 5.6 – 45
 Focusing range: 3.75 m – ∞
 Angle of view, diagonal/horizontal: 13° / 9°
 No. of elements: 9 T*
 Filters: Ø 93
 Weight: 1800 g (3 lb 15 oz)

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Weight: 605 g (1 lb 5.25 oz)
 Length: 75 mm (2.99")
 Code: 3020127
 Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377), and a Lens pouch 1 (3058408).

Zeiss Makro-Planar CFE 4 / 120mm

Focal length: 120 mm
 Aperture range: 4 – 32
 Focusing range: 0.8 m – ∞
 Angle of view, diagonal/horizontal: 37° / 25°
 No. of elements: 6 T*
 Filters: Ø 60
 Weight: 695 g (1 lb 8.5 oz)
 Length: 99 mm (3.89")
 Code: 3020056

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 2 (3058416).

Zeiss Sonnar CFI 4 / 150mm

Focal length: 150 mm
 Aperture range: 4 – 32
 Focusing range: 1.4 m – ∞
 Angle of view, diagonal/horizontal: 30° / 21°
 No. of elements: 5 T*
 Filters: Ø 60
 Weight: 785 g (1 lb 11.25oz)
 Length: 101 mm (4")
 Code: 3020062

Supplied with: a Front lens cap Ø60 (3051643), a Rear lens cap (3050377) and a Lens pouch 2 (3058416).

Zeiss Sonnar CFE 4 / 180mm

Focal length: 180 mm
 Aperture range: 4 – 32
 Focusing range: 1.55 m – ∞
 Angle of view, diagonal/horizontal: 24° / 17°
 No. of elements: 5 T*
 Filters: Ø 60
 Weight: 1075 g (2 lb 5.75 oz)

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Length: 235 mm (9.25")
 Code: 3020186
 Supplied with: a Lens shade Ø93 / 350-500 (3040703), a Front lens cap (3051654), a Rear lens cap (3050377) and a leather case with shoulder strap.

Product sheets containing further technical information are available as downloadable PDF files. Please look under 'Docs & Downloads' on the Hasselblad website - www.hasselblad.com.

If you have no Internet access, please contact your Hasselblad dealer or distributor for the latest information.

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