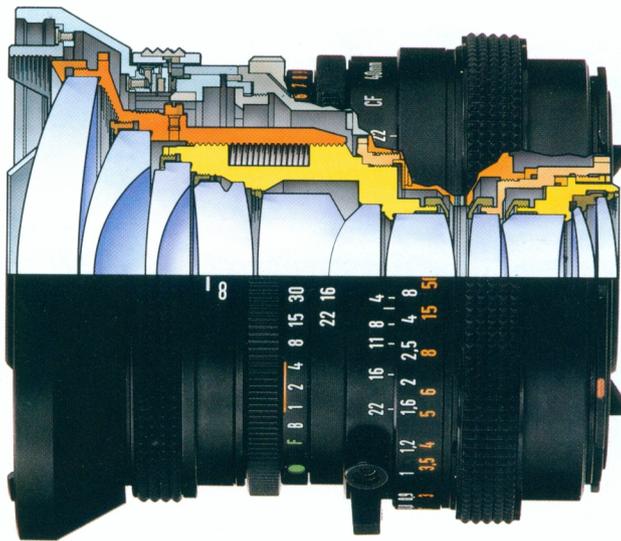


Hasselblad  
Lenses



*Lenses are optical and mechanical precision instruments. A Zeiss Distagon CF f/4 40 mm T\*, has no fewer than 403 parts.*

## The crucial choice

There are no short cuts to high picture quality. Every detail of a camera's optical system is equally important to the final picture.

The tolerances are very small. Everything must be perfect, from the tolerances in the camera, lenses and magazines to the film's position on the film plane, the grinding of the lens surfaces and the anti-reflection coating.

In order to keep its place in the Hasselblad system, a lens must meet very clearly defined optical and mechanical performance specifications. And its operation and reproduction quality must be able to stand up to years of hard professional use.

### **The world's best lens manufacturers**

Hasselblad lenses are produced in cooperation with the world's leading lens manufacturers. The expertise, technology and commitment to quality we demand are found at Carl Zeiss and Jos. Schneider & Co. of West Germany.

The lenses are subjected to rigorous quality control at every point of the manufacturing process. As you would expect, every lens must pass a final series of tests before leaving the factory.

A lens that does not meet the required specifications, for example, because of unsatisfactory resolution characteristics or imperfect dimensioning on the mounts, can never get by these stringent tests.

It's a demanding quality control system built up to ensure that Hasselblad lenses can be matched by few other manufacturers. But we don't stop there. When the lenses arrive at Hasselblad, they are put through another series of tests before they're approved for sale.

### **A complete lens program**

Today the Hasselblad system includes 23 different lenses with focal lengths from 30 mm wide angle to

500 mm telephoto. Our goal is to provide a complete lens program to meet the needs of professional photographers in every photographic situation.

There are two main lens types in the Hasselblad system: CF lenses, which have integral leaf shutters and the wider aperture F lenses, specially designed for use with the Hasselblad 2000 series camera focal plane shutter.

In addition there are several dedicated lenses and a teleconverter for doubling focal lengths.

### **Which lens options meet your needs best?**

Because of the extraordinary breadth of the Hasselblad lens program, there really are no limits. Which lenses you choose for your outfit depends entirely on your own needs.

Even with just one or two lenses you will get most of the benefits of the Hasselblad system's unique flexibility. One, classic combination, is 50-80-150 mm. It's still a combination many photographers use today. But because the Hasselblad system offers so many choices, it's very likely that one of the other alternatives within each focal length will give you even better results.

Instead of the 80 mm, perhaps a wider angle 60 mm as your standard lens or the longer 100 mm lens would offer a better alternative?

If you need a longer telephoto you could choose a 140-280 zoom instead of the 150 mm lens. Or if you prefer a fixed focal length, you could complement your outfit with a 250 mm telephoto.

For everyday professional work it's enough to choose a lens which makes the most of the picture format. Using every millimeter of the large Hasselblad 6×6 format means you can be sure of the best possible results.

Using the right lens shade is also important. Each lens has its corresponding lens shade carefully designed to shade out as much extraneous light as possible without vignetting. And to ensure that the lenses you choose re-

tain their superlative performance characteristics, remember to always use Hasselblad original filters and close-up lenses.

### Special lenses for special subjects

In copying applications the demands made on lens performance are even greater. That's when you benefit from the extraordinary characteristics the designers managed to build into several of our lenses.

Some will give you an unusually high resolution, right out to the corners of the picture. Others offer a minimum of distortion or special possibilities for close-up work.

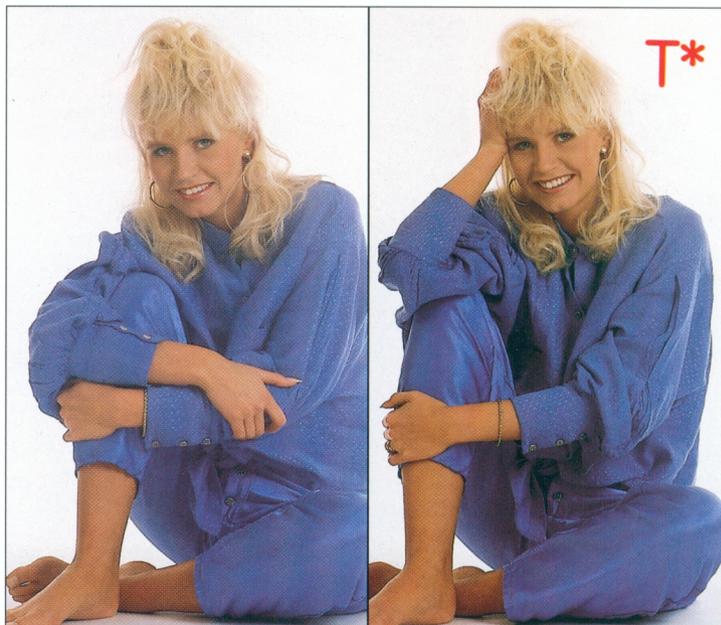
To make it easy to choose lenses for those special photographic situations, Hasselblad publishes complete technical data for all the system lenses in detailed product information sheets that provide data on MTF, distortion and light requirements. Your Hasselblad distributor can supply you with copies or you can have them sent direct from Victor Hasselblad AB in Sweden.

### Continuous development

In recent years photographic film quality and specifications have improved significantly. This means that lens flaws which weren't even noticed earlier can be seen now. And only those lenses that meet the very highest standards can satisfy the new demands on lens performance.

Since one of our goals is to stay one step ahead of our competitors, our lens manufacturers are constantly seeking ways to improve lens performance. Their major

*On their presentation in 1982, the CF lenses were warmly received by Hasselblad photographers. The designers had*



*The T\* multi-coating diminishes the amount of scatter in the lens and increases image contrast.*

*Both pictures were taken at exactly the same exposure setting and with the same camera and film. The picture on the left was taken using a 100 mm Planar C without T\*, the one on the right using a modern 100 mm Planar CFT\*.*

concern is to produce only those improvements in design that will lead to a significant increase in lens quality or performance.

For Hasselblad this philosophy has been put into practice by offering the very best within optical technology. If you work to professional standards where your only concern is quality of the very highest order, it is especially important that you have access to the latest generation of lenses.

On the next page you will find a chronological list of lenses and improvements it may be useful to know about.

*included most of the users' wishes. Pictured here are some of the CF generation's strong points.*

#### Standardized lens mount

Eleven of the fourteen CF lenses have a Ø 60 mm filter.

#### F button

Locks out the lens' built-in leaf shutter, returning the viewfinder image instantly when using the focal plane shutter on the 2000FCW.

#### Preview button

Stops down the diaphragm for a quick depth-of-field check on the focusing screen.

#### Protected flash outlet

Flash outlet is held securely by a friction ring.

#### Soft and exact focusing

Improved mechanical movement. Wide and comfortable grip.



#### Convenient settings

The shutter speed and aperture setting rings can be adjusted independently.

#### Doubled lifetime

The newly developed Prontor shutter has double the expected lifetime of the earlier Compur shutter.

#### Cross-coupling button

With the cross-coupling button depressed speed/aperture combinations can be altered without changing the Exposure Value setting.

#### Both metres and feet

Two distance scales. And a focusing index for IR photography.

# The Hasselblad Lens Program



Zeiss Biogon CF f/4.5 38 mm T\*

Zeiss Distagon CF f/3.5 30 mm T\*

Zeiss Makro-Planar CF f/5.6 135 mm T\*

Zeiss Makro-Planar CF f/4 120 mm T\*

Zeiss Distagon CF f/4 40 mm T\*

Zeiss Distagon CF f/4 50 mm T\*

Zeiss Distagon CF f/3.5 60 mm T\*

Zeiss Sonnar CF Superachromat (Sa) f/5.6 250 mm

Zeiss Planar F f/2 110 mm T\*

Zeiss Sonnar F f/2.8 150 mm T\*

Zeiss Mutar 2X T\* Teleconverter

Zeiss Planar CF f/3.5 100 mm T\*

Zeiss Planar CF f/2.8 80 mm T\*

Zeiss UV-Sonnar CF f/4.3 105 mm

Zeiss Sonnar CF f/5.6 250 mm T\*

Zeiss Tele-Tessar CF f/5.6 350 mm T\*

Zeiss Distagon F f/2.8 50 mm T\*

Zeiss Tele-Tessar F f/4 250 mm T\*

Zeiss Sonnar CF f/4 150 mm T\*

Zeiss Planar F f/2.8 80 mm T\*

Zeiss Tele-Tessar F f/4 350 mm T\*

Schneider Variogon C f/5.6 140-280 mm

Zeiss Tele-Apotesar CF f/8 500 mm T\*

### 1957—C Lenses from Zeiss

Hasselblad introduces a new camera model, the 500C/M, and the new C series lens made by Zeiss. The C lenses are matt-chromed and have an integral Compur-shutter. They can be used on all Hasselblad single-reflex cameras built after 1957.

### 1973—Zeiss T\* multi-coating launched

Zeiss has developed the multi-layer, anti-reflection, T\* multi-coating. It's considered a breakthrough in optical technology. Reflections inside camera lenses can be greatly reduced.

T\* multi-coating is used first on lens in the 30–80 mm focal length range.

### 1973—Black trim lenses

All C lenses are supplied in black trim from this year onwards.

### 1974—T\* multi-coating on all lenses

Only one year after its initial launch, the revolutionary anti-reflection treatment from Zeiss is applied to all Hasselblad lenses. All carry the red T\* symbol.

### 1974—Zeiss Sonnar C Superachromat f/5.6 250 mm

Yet another technological breakthrough—a new lens with practically perfect chromatic correction. It is now possible to focus a lens

in the visible spectrum which can also be used when working in the infra-red range up to 1000 nM.

### 1976—Zoom lens from Schneider

Zoom-lens specialist Jos. Schneider & Co. in West Germany starts production of the first lens with a variable focal length in the Hasselblad system: the Schneider Variagon f/5.6 140–280 mm.

### 1978—the Hasselblad 2000FC and the F Lenses

A completely new series of Zeiss lenses are introduced at the same time as Hasselblad's focal-plane shutter camera, the 2000FC. These F lenses have a wider aperture and shorter close-up focusing limits than the C lenses. Because they have no built-in shutter, the lenses can only be used with cameras in the 2000 series.

### 1982—the CF Lenses

The new CF lens series replaces the C lenses. Among the important improvements are a more modern design with improved ergonomics and a newly developed Prontor shutter with double the life-expectancy of the earlier Compur shutter. The CF lenses are designed so they can also be used on the 2000 series cameras.

### 1982—newly developed CF lenses

*Distagon CF f/4 40 mm T\**. Smaller, more compact than its predecessor and with further improved imaging characteristics.

*Makro-Planar CF f/4 120 mm T\**. Replaces the S-Planar C f/5.6 120 mm T\* and increases lens speed one stop without impairing performance.

*Tele-Apotessar CF f/8 500 mm T\**. By using a new, special glass with unique optical characteristics, Zeiss has succeeded in drastically reducing chromatic aberrations in the Hasselblad system's longest telephoto lens. Imaging characteristics for close-up work have also been improved.

### 1984—Zeiss Mutar 2X T\*

The teleconverter Mutar 2X brings new possibilities to the Hasselblad lens program. It gives extremely high image quality to all Zeiss lenses.

### 1984—Zeiss Tele-Tessar F f/4 350 mm T\*

An optically true telephoto lens for the 2000 series cameras rounds out the lens program at 23 different lenses.

Hasselblad lenses	Focal length	Max. aperture	Dia-phragm	Angle of view diag./horizont.	No. of elements	Focusing range	Filter-diameter	Weight g	Length mm
<b>CF Normal lenses</b>									
Planar CF f/2.8 80 mm T*	80 mm	f/2.8	f/2.8–22	52°/38°	7 T*	0.9 m–∞	Ø 60	510	65
Planar CF f/3.5 100 mm T*	100 mm	f/3.5	f/3.5–22	42°/30°	5 T*	0.9 m–∞	Ø 60	605	75
<b>CF Wide-angle lenses</b>									
Distagon CF f/3.5 30 mm T*	30 mm	f/3.5	f/3.5–22	180°/112°	9 T*	0.3 m–∞	Ø 26	1365	117.5
Distagon CF f/4 40 mm T*	40 mm	f/4	f/4–22	88°/67°	11 T*	0.5 m–∞	Ø 93	915	102
Distagon CF f/4 50 mm T*	50 mm	f/4	f/4–22	75°/57°	7 T*	0.5 m–∞	Ø 60	795	98
Distagon CF f/3.5 60 mm T*	60 mm	f/3.5	f/3.5–22	66°/50°	7 T*	0.6 m–∞	Ø 60	680	83
Biogon CF f/4.5 38 mm T*	38 mm	f/4.5	f/4.5–22	90°/72°	8 T*	0.3 m–∞	Ø 60	960	
<b>CF Telephoto lenses</b>									
Sonnar CF f/4 150 mm T*	150 mm	f/4	f/4–32	28°/20°	5 T*	1.4 m–∞	Ø 60	785	101
Sonnar CF f/5.6 250 mm T*	250 mm	f/5.6	f/5.6–45	17°/12°	4 T*	2.5 m–∞	Ø 60	1000	164
Tele-Tessar CF f/5.6 350 mm T*	350 mm	f/5.6	f/5.6–45	12.8°/9°	4 T*	4.5 m–∞	Ø 93	1350	227
Tele-Apotessar CF f/8 500 mm T*	500 mm	f/8	f/8–64	9°/6.4°	5 T*	8.5 m–∞	Ø 93	1810	329
<b>CF Special purpose lenses</b>									
UV-Sonnar CF f/4.3 105 mm	105 mm	f/4.3	f/4.3–32	40°/29°	7	1.8 m–∞	Ø 60	750	91
Makro-Planar CF f/4 120 mm T*	120 mm	f/4	f/4–32	37°/25°	6 T*	0.8 m–∞	Ø 60	695	99
Makro-Planar CF f/5.6 135 mm T*	135 mm	f/5.6	f/5.6–45	32°/23°	7 T*	–	Ø 60	625	87
Sonnar CF Superachromat (Sa) f/5.6 250 mm	250 mm	f/5.6	f/5.6–45	17°/12°	6	3 m–∞	Ø 60	985	158
<b>F-lenses</b>									
Distagon F f/2.8 50 mm T*	50 mm	f/2.8	f/2.8–22	74°/56°	9 T*	0.32 m–∞	Ø 93	1240	112
Planar F f/2.8 80 mm T*	80 mm	f/2.8	f/2.8–22	51°/37°	7 T*	0.6 m–∞	Ø 50/Ø 60	425	60
Planar F f/2 110 mm T*	110 mm	f/2	f/2–16	39°/28°	7 T*	0.8 m–∞	Ø 70	760	87
Sonnar F f/2.8 150 T*	150 mm	f/2.8	f/2.8–22	30°/21°	5 T*	1.4 m–∞	Ø 70	710	87
Tele-Tessar F f/4 250 mm T*	250 mm	f/4	f/4–32	18°/13°	5 T*	2.5 m–∞	Ø 70	920	157
Tele-Tessar F f/4 350 mm T*	350 mm	f/4	f/4–32	13°/9°	8 T*	1.9 m–∞	Ø 93	2000	262
<b>Zoom Lens</b>									
Variogon C f/5.6 140–280 mm	140–280 mm	f/5.6	f/5.6–45	16°–30°/11°–22°	17 multi.	2.5 m–∞	Ø 93	1850	240
<b>Teleconverter</b>									
Mutar 2X T* Teleconverter	–	–	–	–	7 T*	–	–	420	80

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