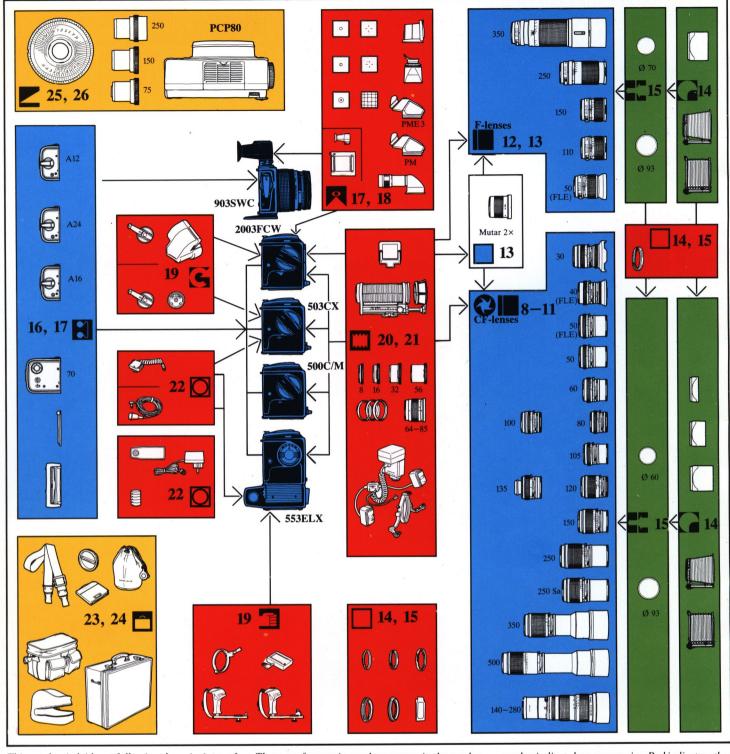
Product Catalog 1989





This catalog is laid out following the principles of the Hasselblad system itself. The schematic system overview above, provides a complete picture of how the various camera bodies, lenses and accessories relate to each other. There are four main product groups in the catalog, each identified by a color, which are then subdivided, with each sub-group assigned a unique symbol. Accessories coded blue can be used to put together a complete Hasselblad camera. Green is

used to indicate lens accessories. Red indicates other interchangeable accessories. Yellow is for special products within the system. A complete Table of Contents can be found on the flap opposite this

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Register your Hasselblad!

The Hasselblad system will keep on growing.

To keep you up to date on new items and changes to the system, or offers we think may interest you, we need interest you, we need your address on our Hasselblad Owners Hasselblad Owners list.

To make sure that you get all the latest news on the Hasselblad system, direct in your mailbox, just fill in the reply card at the end of this catalog.

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HEAB HEIAB

The Hasselblad System

Four new cameras A new, bright focusing screen A new wide-angle lens

Improvements and new features for the Hasselblad cameras have resulted in four brand new models, complete with new model numbers. These new camera models replace the old ones with one exception — the classic, completely mechanical 500C/M will continue to be produced alongside the new cameras.

503CX is a robust, mechanical camera similar to the 500C/M, but with a flash sensor system and the new Acute-Matte* focusing screen. The inside surfaces of the camera have been coated with light-absorbing Palpas material. (Page 6.)

553ELX replaces the 500ELX. Its built-in, powerful motor now utilizes standard penlight batteries. The camera body comes supplied with the new Acute-Matte* focusing screen. (Page 4.)

2003FCW replaces the 2000FCW. It has an electronically controlled focal plane shutter with speeds up to 1/2000 s and the new Acute-Matte* focusing screen. The inside surfaces of the camera are coated with light-absorbing Palpas material. (Page 2.)

903SWC replaces the SWC/M and is equally compact, in spite of being totally redesigned. The permanently attached 38 mm Biogon lens is practically distortion-free and yields a 90° diagonal angle of view with corner-to-corner sharpness even at the largest apertures. There is a spirit level built into the viewfinder. (Page 5.)

Hasselblad continues to expand photographic horizons with new accessories:

Acute-Matte* is a new focusing screen designed by MINOLTA. With 7.5 million lens-like elements spread evenly over the screen and 22 Fresnel lines per mm, it yields an exceptionally bright and sharp focusing image. The Acute-Matte* focusing screen is standard in the new cameras but can also be purchased separately. (Page 17.)

Zeiss Distagon CF f/4 50 mm (FLE) is a completely new wide-angle lens with a floating lens element providing optimum sharpness even for close-up photography. The design is based on the well-known Distagon CF 40 mm lens. (Page 9.)

The Hasselblad system is constantly developing. This is obvious when new products are introduced, but not so obvious when some mechanical or electronic component has been redesigned to even further increase the camera's working life or when an already reliable part is made even more reliable. The modifications and new models for 1989 are certainly no exception. Take a look at our new catalog and you'll see what we mean. For more information and to find out where your nearest Hasselblad dealer is located, contact our distributors (list in the back of this catalog) or write to

Victor Hasselblad AB, Box 220, S-401 23 Göteborg, Sweden.

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^{*} Acute-Matte designed by MINOLTA.

Hasselblad 2003FCW

The Hasselblad 2003FCW single-lens reflex camera combines all the best advantages of the Hasselblad system. The camera can be equipped with a winder. Shutter speeds in whole and half steps are available with the built-in electronically controlled focal-plane shutter. There is a safety feature which protects the shutter from mechanical damage when changing the film magazine.

The same flexibility which is a part of all Hasselblad cameras is built into the 2003FCW. An extra dimension is added by making it possible to choose between two types of shutters and to switch shutter function

in seconds.

When using the 2003, the photographer can choose either the fast F lenses that utilize the camera's focal-plane shutter or lenses from the CF or earlier C series with built-in leaf shutters. Both lens types can be used with either the built-in leaf shutter (1 s to 1/500 s) or the camera's electronically controlled focal-plane shutter (up to 1/2000 s). This arrangement makes available all the advantages of the two shutter types and makes it possible to avoid the limitations each might have in certain photographic situations. When the lens leaf shutters are used, the 2003FCW operates mechanically, entirely independent of the camera's battery.

One of the strengths of leaf shutters is that they can be synchronized for flash up to speeds of 1/500 s. This provides excellent light control over a wide range. The focalplane shutter can be synchronized for flash

up to 1/90 s.

The camera's mirror is non-vignetting regardless of the focal length. Three mirror operation programs give the options of: mirror return after the camera is cocked, instant return after an exposure and locked in the up position.

The film advance mechanism can be disengaged for multiple exposures.

The Acute-Matte focusing screen (designed by MINOLTA) provides an especially bright image with high resolution. The focusing screen and the camera's viewfinder are interchangeable.

The inside of the camera body is coated with light-absorbing Palpas, effectively preventing extraneous light from reaching the negative

and reducing contrast.

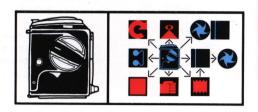
The Hasselblad 2003FCW can be equipped with a winder for automatic film advance and shutter cocking. The winder is attached manually and replaces the removable film advance crank. It has a powerful motor which provides fast and exact action to the camera's mechanical functions and to film advance. (See page 19 for a complete description of the Hasselblad Winder.)

The camera body, interchangeable lenses and film magazines are sold as separate

components.

The Hasselblad 2003FCW replaces the Hasselblad 2000FCW (10317, chrome; 10333, black).

The Hasselblad 2003FCW camera body can be equipped with a winder and accepts interchangeable focusing screens. A prerelease latch and an accessory rail for using accessories like the spirit level are other features. A tripod plate with a 1/4" tripod thread facilitates attachment of the camera to a tripod. Battery type: PX28.



Put together a Hasselblad 2003FCW camera to suit your photographic requirements. The camera accepts the following lenses, film magazines, and other accessories. These items are described in further detail elsewhere in this catalog under their respective headings and symbols.

HASSELBLAD 2003FCW CAMERA BODY

The camera body is available with chrome or black trim and is supplied without a lens or a film magazine. Weight: 1 lb 11 oz. (750 g).

10318 2003FCW camera body, chrome, is supplied with the following equipment:

44075 Rapid-winding crank 2

42315 Focusing hood, chrome

42165 Acute-Matte focusing screen*

49018 Neck strap

51438 Front protective cover

51063 Rear protective cover

* Acute-Matte designed by MINOLTA.

10334 2003FCW camera body, black. Supplied with the same equipment as the 10318 above, but with the black-trim version of the focusing hood 42323.





F LENSES

50mm Distagon F f/2.8 (FLE) 20419 110mm Planar F f/2 20435 150mm Sonnar F f/2.8 20478 250mm Tele-Tessar F f/4 20486 350mm Tele-Tessar F f/4

CF LENSES

20177 30mm Distagon CF f/3.5 20037 40mm Distagon CF f/4 (FLE) 20045 50mm Distagon CF f/4 20046 50mm Distagon CF f/4 (FLE) 20207 60mm Distagon CF f/3.5 80mm Planar CF f/2.8 20029 20126 100mm Planar CF f/3.5 20134 105mm UV-Sonnar CF f/4.3 20053 120mm Makro-Planar CF f/4 20118 135mm Makro-Planar CF f/5.6 20061 150mm Sonnar CF f/4 20080 250mm Sonnar CF f/5.6 20193 250mm Sonnar CF Superachromat f/5.6 20185 350mm Tele-Tessar CF f/5.6 20088 500mm Tele-Apotessar CF f/8 20215 Variogon CF 5.6/140-280 mm

Teleconverter

20303 Mutar 2× Teleconverter

FILM MAGAZINES

30074 Film magazine A12 (chrome) 30147 Film magazine A12 (black) 30104 Film magazine A24 (chrome) 30171 Film magazine A24 (black) 30082 Film magazine A16 (chrome) 30155 Film magazine A16 (black)

30066 Film magazine 70 (chrome) 30139 Film magazine 70 (black)

30198 Magazine 100 for Polaroid film

41017 Sheet film adapter

VIEWFINDERS AND FOCUSING **SCREENS**

42294 Meter prism finder PME 3

42307 Prism viewfinder PM

52183 Reflex viewfinder RM-2

52094 Magnifying hood

42226 Bright-matte focusing screen

42188 Focusing screen with split-image rangefinder

42218 Focusing screen with central grid and split-image rangefinder

42250 Checked focusing screen with central

42200 Plain glass screen

GRIPS AND SUPPORTS

45072 Flashgun bracket 1 45129 Tripod quick-coupling

51700 Quick-focusing handle 1/CF 40-80

CLOSE-UP AND COPYING ACCESSORIES

40541 Extension tube 16

40568 Extension tube 32

40657 Extension tube 56

51691 Variable extension tube 64-85

40517 Automatic bellows extension

51697 Macro-flash equipment

4 WINDING ACCESSORY

44067 Winder (see page 19)

CASES AND STRAPS

46140 Carrying strap

59080 Wide camera strap

59099 Contoured shoulder strap Camera and equipment cases

MISCELLANEOUS ACCESSORIES

43125 Adjustable flash-shoe

43117 Spirit level



Hasselblad 2003FCW camera with motorized winder, meter prism finder PME3 and fast 110 mm Planar F f/2 lens.



The Hasselblad 503CX single-lens reflex camera is a further step in the development of the basic camera in the Hasselblad system. Introduced in 1957 as the 500C, it has remained one of the world's most popular cameras with ambitious professionals and amateurs alike. And since the Hasselblad system has developed around this camera type, all newly developed accessories can be used with the older camera bodies and yet most older components will fit the newer models.

The Hasselblad 503CX is a mechanical camera, with one exception - an electronic flash sensor system (TTL/OTF) which automatically controls the flash by measuring the light reflected from the film plane. The result is perfect flash pictures regardless of the lens, filter, extension tube or bellows combination used. The sensor system is powered by the flash batteries and requires no internal battery. The working range of the sensor is from ISO 16 to ISO 1000.

The sensor system includes an indicator function inside the camera's viewfinder. A fixed light under the left edge of the focusing screen indicates that the flash is ready to be fired. After an exposure has been made, a blinking signal shows that the correct amount of light has been discharged. The flash unit is connected to the camera body using an adapter for either the SCA 300 or SCA 500 flash system.

The inside of the camera body is coated with light-absorbing Palpas, which effectively prevents extraneous light from reaching the negative and reducing its contrast values.

The viewfinder and focusing screens are interchangeable. The Acute-Matte focusing screen (designed by MINOLTA) is standard equipment and provides an especially bright image with high resolution.

The camera body, interchangeable lenses and film magazines are sold as separate components.

The Hasselblad 503CX camera body accepts interchangeable viewfinders and focusing screens and has an interchangeable crank for film advance and shutter cocking. It incorporates a system to prevent unintentional double exposure. It also has a prerelease mode and an accessory rail for using such accessories as the spirit level. A tripod plate with a 1/4" tripod thread facilitates attachment of the camera to a tripod.

HASSELBLAD 503CX **CAMERA BODY**

The camera body is available with chrome or black trim and is supplied without a lens or film magazine. Weight: 1 lb 5 oz (610 g).

10026 503CX camera body, chrome, is supplied with the following equipment:

44040 Rapid-winding crank 1

42315 Focusing hood, chrome

42165 Acute-Matte focusing screen*

49018 Neck strap

51438 Front protective cover

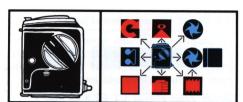
51063 Rear protective cover

* Acute-Matte designed by MINOLTA.

10172 503CX camera body, black, is supplied with the same equipment as the 10026 above, but with a black-trim version of the focusing hood 42323.







Put together a Hasselblad 503CX or 500C/M to suit your photographic requirements. The cameras accept the following lenses, film magazines, and other accessories. These items are described in further detail elsewhere in this catalog under their respective headings and symbols.

SPECIAL ACCESSORIES FOR **THE 503CX**

51681 Flash adapter SCA390 51683 Flash adapter SCA590

CF LENSES

The 503CX and 500C/M accept the entire range of Hasselblad CF lenses. (See pages 3, 8-11 and 13.)

C LENSES

The 503CX and 500C/M accept the earlier Hasselblad C lenses.

FILM MAGAZINES

The 503CX and 500C/M accept the entire range of Hasselblad film magazines. (See pages 3 and 16-17.)

VIEWFINDERS AND **FOCUSING SCREENS**

The 503CX and 500C/M accept the entire range of Hasselblad viewfinders and focusing screens. (See pages 3 and 17 - 18.

GRIPS AND SUPPORTS

(See pages 3 and 19.)

CLOSE-UP AND COPYING ACCESSORIES

The 503CX and 500C/M accept the entire range of Hasselblad close-up accessories. (See pages 3 and 20-21.)

WINDING ACCESSORY

54011 Knob with exposure meter.

CASES AND STRAPS

(See pages 23-24.)

MISCELLANEOUS ACCESSORIES

43125 Adjustable flash shoe 43117 Spirit level

The Hasselblad 500C/M is a manual, $2^{1/4} \times 2^{1/4}$ single-lens reflex camera of unique mechanical design. Thanks to its rugged reliability, the 500C/M has become a classic among professionals and amateurs alike.

The camera body, interchangeable lenses and film magazines are sold as separate components.

The Hasselblad 500C/M camera body accepts interchangeable focusing screens and has an interchangeable crank for film advance and shutter cocking. It incorporates a system to prevent unintentional double exposure. It also has a pre-release mode and an accessory rail for using such accessories as a spirit level. A tripod plate with a 3/8" tripod thread facilitates attachment of the camera to a tripod.

10022 500C/M camera body, chrome, is supplied with the following equipment:

44040 Rapid-winding crank 1

42315 Focusing hood, chrome

42161 Ground glass focusing screen

49018 Neck strap

51438 Front protective cover

51063 Rear protective cover

10170 500C/M camera body, black, is supplied with the same equipment as the 10022 above, but with a black-trim version of the focusing hood 42323.



500C/M





The normal 80mm focal length, i.e. the f/2.8 Planar, is the lens usually selected as basic equipment, but the Hasselblad photographer has a choice of 15 different focal lengths from 30 to 500 mm. By using the Hasselblad teleconverter which doubles the focal length of the lens, the focal length range is increased to 1000 mm. All of the Hasselblad lenses, except the zoom lens, are made by Carl Zeiss, West Germany.

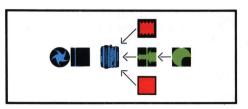
All of the Hasselblad lenses are quality controlled having undergone thorough inspection by state-of-the-art testing equipment. Lens data sheets are available from your Hasselblad dealer.

The test results report on the measurements of three vital factors for lens performance: resolution (MTF diagram), distortion, and light fall-off across the image field. Hasselblad lenses are manufactured with the kind of care and attention that is usually reserved for high-precision scientific instruments.

There are two series of Hasselblad lenses. The CF lenses, that incorporate built-in leaf shutters, constitute the main series. These lenses are compatible with the Hasselblad 500 and 2000 series models.

The F lenses are characterized by their large apertures. They have no shutter and can only be used with the Hasselblad 2000 series with built-in focal plane shutter.

In addition to normal, wide-angle, and telephoto lenses, there are also lenses for closeup photography, lenses with extremely high correction, and a lens for ultraviolet photography.



Hasselblad CF lenses for all the 500 and 2000 models have comfortable, ergonomically designed grip rings and controls. The builtin leaf shutters in this series are synchronized for electronic flash at all shutter speeds. 1-1/500 s. The CF lens also features a manual and automatic diaphragm, a distance scale in feet and meters, a depth-of-field scale and an exposure value scale. The shutter speed and aperture rings operate independently but can be cross-coupled with a button.

CF 80 and 100 mm Normal lenses

All-purpose lenses with normal focal lengths. The lightweight Planar lenses combine relatively large apertures and high resolution with compact design and low weight.

20029 Zeiss Planar CF f/2.8 80 mm T*

The normal Hasselblad lens. A classic lens design yielding outstanding performance. The relatively large maximum aperture of f/2.8 facilitates photography in poor lighting and ensures a bright viewfinder image.

20126 Zeiss Planar CF f/3.5 100 mm T*

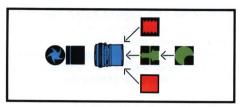
This lens was specially designed for Hasselblad, and provides an optimum relationship between lens speed and focal length in a top-performance lens. Superb distortion correction makes this lens ideal for architectural, copying and similar applications.

CF Normal lenses	80mm Planar CF	100mm Planar CF
Max. aperture	f/2.8	f/3.5
Focal length	80 mm	100 mm
Diaphragm	f/2.8–22	f/3.5-22
Angle of view, diagonal/horizontal No. of elements	52°/38°	42°/30°
No. of elements	7T*	5T*
Focusing range	$3 \text{ ft } (0.9 \text{ m}) - \infty$	$3 \text{ ft } (0.9 \text{ m}) - \infty$
Weight	1 lb 2 oz (510 g)	$1 lb 5 \frac{1}{4} oz (605 g)$
Length	2 ⁹ / ₁₆ in (65 mm)	$2^{15}/_{16}$ in (75 mm)
Accessories included		
Front lens cap	51643	51643
Rear lens cap	50377	50377
Lens pouch	58408	58408
Filters	Ø 60	Ø 60
Close-up lenses (Proxars)	Ø 60	Ø 60
Lens shades	40670	40673
Professional lens shade	40676	40676
Miscellaneous accessories		
Lens mounting ring	40681	40681
Holder for gelatin filters	40690	40690
Step-up ring	40714	40714





CF Wide-Angle Lenses



CF 30-60mm Wide-angle lenses

Distagon lenses with diagonal angles of view that range from the extreme 180° "fish-eye" lens to a 66° lens with many of the characteristics of a standard lens.

20177 Zeiss Distagon CF f/3.5 30 mm T*

This Hasselblad "fish-eye" lens covers the entire $2\frac{1}{4} \times 2\frac{1}{4}$ " field with corner-to-corner sharpness, even with the lens wide open. Supplied in a leather case with four filters, a yellow 50636, an orange 50644, a conversion filter for using daylight-type film in artificial light 50652 and a neutral glass 50660.

20037 Zeiss Distagon CF f/4 40 mm T* (FLE)

This optic has an extreme wide-angle effect with an 88° diagonal angle of view. It has a compact design and features a floating lens element (FLE) for maximum quality in the close-up focusing range. Supplied with a Ø 93 lens shade, which also serves as a filter holder, and two front lens caps which can be used with or without a lens shade attached.

20045 Zeiss Distagon CF f/4 50 mm T*

This moderate wide-angle lens has a 75° diagonal angle of view. The design is compact and the lens displays high resolution and contrast, and even field illumination.

20046 Zeiss Distagon CF f/4 50 mm T* (FLE) A new, improved design with a floating lens element (FLE) for superbly sharp images even for close-up work. The lens has a 75° diagonal angle of view for wide-angle photography.

20207 Zeiss Distagon CF f/3.5 60 mm T*

This optic has the advantages of the wideangle lens, i.e. the short lens-to-subject distance and a wide depth of field, without its 66° diagonal angle of view yielding a marked wide-angle effect.

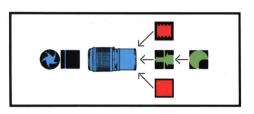
CF Wide-angle lenses	30mm Distagon CF	40mm Distagon CF (FLE)	50mm Distagon CF/20045	50mm Distagon CF/20046	60mm Distagon C
Max. aperture	f/3.5	f/4	f/4	f/4	f/3.5
Focal length	30 mm	40 mm	50 mm	50 mm	60 mm
Diaphragm	f/3.5-22	f/4-22	f/4-22	f/4-32	f/3.5-22
Angle of view, diagonal/horizontal	180°/112°	88°/67°	75°/57°	75°/57°	66°/50°
No. of elements	9 T*	11 T*	7 T*	9 T*	7 T*
Focusing range	12 in $(0.3 \text{ m}) - \infty$	19 in (0.5 m) $-\infty$	19 in (0.5 m) -∞	19 in $(0.5 \text{ m}) - \infty$	24 in $(0.6 \text{ m}) - \infty$
Weight	3 lb 14 oz (1365 g)	2 lb 1/4 oz (915 g)	1 lb 12 oz (795 g)	1 lb 12 oz (800 g)	1 lb 8 oz (680 g)
Length	45/8 in (117.5 mm)	4 in (102 mm)	37/8 in (98 mm)	3¾ in (95 mm)	31/4 in (83 mm)
Accessories included	1)	2)			
Front lens cap	40749	51651/51654	51643	51643	51643
Rear lens cap	50377	50377	50377	50377	50377
Lens pouch		58432	58416	58416	58416
Filters	Ø 26¹)	Ø 93	Ø 60	Ø 60	Ø 60
Close-up lenses (Proxars)			Ø 60	Ø 60	Ø 60
Lens shades	4.	40693 ²)	40668	40668	40668
Professional lens shade		40726	40676	40676	40676
Miscellaneous accessories					n
Lens mounting ring		40720	40681	40681	40681
Holder for gelatin filters		40709	40690	40690	40690
Step-up ring			40714	40714	40714

1) Delivered in case 58157 and with all Ø 26 filters 2) Supplied with lens shade Ø 93/40 40693





CF Telephoto Lenses



CF 150-500mm Telephoto lenses

The Sonnar and Tessar lenses combine long focal length with compact design. Superbly balanced lenses that are light enough to be used hand-held at fast shutter speeds.

20061 Zeiss Sonnar CF f/4 150 mm T*

A lens with a moderate but still unmistakable telephoto effect, i.e. shallow depth of field and compressed perspective. A popular lens for portraits and many other applications.

20080 Zeiss Sonnar CF f/5.6 250 mm T*

True telephoto effect combined with compact design for ease of handling. It is excellent for tightly framed shots without crowding the subject. Its shallow depth of field can be used to throw an extraneous background out of focus.

20185 Zeiss Tele-Tessar CF f/5.6350 mm T*

Optically true telephoto lens of extremely light weight and compact design for its focal length. The nature photographer's favourite lens for hand-held work. Supplied in a leather case with a shoulder strap.

20088 Zeiss Tele-Apotessar CF f/8 500 mm T*

The ideal lens for long distance work. The Tele-Apotessar has superior correction for chromatic aberrations. Its internal focusing system means that the lens can focus to the shortest lens-to-subject distance (5 m) without the length of the lens or the centre of gravity changing. It features a rail for tripod connection. Supplied in a leather case with a shoulder strap.

CF Telephoto lenses	150mm Sonnar CF	250mm Sonnar CF	350mmTele-Tessar CF	500mm Tele-Apotessar CF
Max. aperture	f/4	f/5.6	f/5.6	f/8
Focal length	150 mm	250 mm	350 mm	500 mm
Diaphragm	f/4-32	f/5.6-45	f/5.6-45	f/8-64
Angle of view, diagonal/horizontal	30°/21°	17°/12°	12.8°/9°	9°/6.4°
No. of elements	5 T*	4T*	4T*	5 T*
Focusing range	4.5 ft (1.4 m)-∞	8.5 ft (2.5 m)-∞	15 ft (4.5 m)-∞	16 ft 5" (5 m) $-\infty$
Weight	$1 \text{ lb } 11 \frac{1}{4} \text{ oz } (785 \text{ g})$	$2 lb 3 \frac{1}{4} oz (1000 g)$	$2 lb 15 \frac{1}{2} oz (1350 g)$	3 lb 15¾ oz (1810 g)
Length	4 in (101 mm)	6 ³ / ₁₆ in (164 mm)	8 ¹⁵ / ₁₆ in (227 mm)	12 ¹⁵ / ₁₆ in (329 mm)
Accessories included			')	2)
Front lens cap	51643	51643	51654	51654
Rear lens cap	50377	50377	50377	50377
Lens pouch	58416	58424		
Filters	Ø 60	Ø 60	Ø 93	Ø 93
Close-up lenses (Proxars)	Ø 60	Ø 60		
Lens shades	40673	40673	40703')	407032)
Professional lens shade	40676	40676	40726	40726
Miscellaneous accessories				
Lens mounting ring	40681	40681	40720	40720
Holder for gelatin filters	40690	40690	40709	40709
Step-up ring	40714	40714		100

1) Delivered in case 58378 and with lens shade Ø 93/350–500 40703 2) Delivered in case 58351 and with lens shade Ø 93/350–500 40703



CF Special-Purpose Lenses

CF Special-purpose lenses

The special-purpose Makro-Planar lenses are designed for optimum performance for close-up photography. The UV-Sonnar lens is designed for photography in the ultraviolet part of the spectrum.

20134 Zeiss UV-Sonnar CF f/4.3 105 mm

A special-purpose lens for photography within the ultraviolet part of the spectrum. It is sensitive to radiation from 215 nm to 700 nm (2150–7000 Å), i.e. from short-wave ultraviolet through visible light to the initial part of the infrared range. The lens can be pre-focused for ultraviolet in visible light without requiring refocusing for use in the UV-range.

20053 Zeiss Makro- Planar CF f/4 120 mm T*

A special-purpose lens especially suitable for close-up photography. Its relatively large maximum aperture is important when the lens is used at long extensions, where light fall-off would otherwise make it difficult to focus the lens.

20118 Zeiss Makro- Planar CF f/5.6 135 mm T*

A special-purpose lens which cannot be directly attached to a camera body without a Hasselblad automatic bellows or a variable extension tube. It is primarily a close-up lens, but can be used in many other applications. At the longest bellows extension (8"–202 mm) the lens gives a 1:1 scale of reproduc-

tion. The shortest extension (2.5"-63.5 mm) focuses to infinity.

20193 Zeiss Sonnar CF Superachromat (Sa) f/5.6 250 mm

A special purpose lens of unique design with perfect chromatic correction without sacrificing correction for distortion or other aberrations. An ideal lens for scientific applications, especially multispectral photography, it is also useful in many other fields thanks to its extraordinary correction factors. Spectral range of 400 nm to 1000 nm.

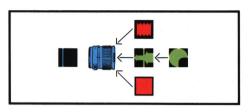
CF Special-purpose lenses	105mm UV-Sonnar CF	120mm Makro-Planar CF	135mm Makro-Planar CF	250mm Sonnar CF Sa
Max. aperture	f/4.3	f/4	f/5.6	f/5.6
Focal length	105 mm	120 mm	135 mm	250 mm
Diaphragm	f/4.3–32	f/4-32	f/5.6-45	f/5.6-45
Angle of view, diagonal/horizontal	40°/29°	37°/25°	32°/23°	17°/12°
No. of elements	7	6T*	7T*	6
Focusing range	6 ft (1.8 m)-∞	2.6 ft (0.8 m)-∞	_	10 ft (3 m)-∞
Weight	$1 \text{ lb } 10^{1/2} \text{ oz } (750 \text{ g})$	$1 lb 8'/_2 oz (695 g)$	1 lb 6 oz (625 g)	$2 lb 2^{1}/_{4} oz (985 g)$
Length	3 ⁴ / ₁₆ in (91 mm)	3 ⁷ / ₈ in (99 mm)	3 ⁷ / ₁₆ in (87 mm)	6 ¹ / ₄ in (158 mm)
Accessories included				
Front lens cap	51643	51643	51643	51643
Rear lens cap	50377	50377	50571	50377
Lens pouch	58416	58416	58416	58424
Filters	Ø 60	Ø 60	Ø 60	Ø 60
Close-up lenses (Proxars)	Ø 60	Ø 60	Ø 60	Ø 60
Lens shades	40673	40673	40673	40673
Professional lens shade	40676	40676	40676	40676
Miscellaneous accessories				
Lens mounting ring	40681	40681	40681	40681
Holder for gelatin filters	40690	40690	40690	40690
Step-up ring	40714	40714	40714	40714







F Lenses for the 2003FCW



F wide-angle, normal, and telephoto lenses

Hasselblad F lenses are designed for the Hasselblad 2003FCW. Unlike the CF lenses, the F lenses have no built-in leaf shutter. The F lenses have many external features in common with the CF lenses, such as ergonomically designed grip rings. High speed and the ability to focus at very close range are distinctive features of the F lenses. The F lenses fit all earlier camera models in the 2000 series.

20427 Zeiss Distagon F f/2.8 50 mm T* (FLE)

A wide-angle lens with floating elements (FLE) for outstanding performance across its entire focusing range. The shortest lens-to-subject distance is just 12.8" (0.32 m), opening up exciting possibilities for close-up pictures with interesting perspectives.

20419 Zeiss Planar F f/2 110 mm T*

The Planar F110 is chosen as standard lens by many photographers for the 2003FCW. The large maximum aperture of f/2 can be used for shallow depth of field for background effects and fast shutter speeds.

20435 Zeiss Sonnar F f/2.8 150 mm T*

A short telephoto lens with a faster speed than its CF counterpart. A popular choice for portrait photography.

20478 Zeiss Tele-Tessar F f/4 250 mm T*

A telephoto lens with an unusually high speed for its focal length. An advantage in hand-held shots since it enables you to work with faster shutter speeds. An ideal lens for sports, nature, and portrait photography.

F lenses	50mm Distagon F (FLE)	110mm Planar F	150mm Sonnar F	250mm Tele-Tessar F
Max. aperture	f/2.8	f/2	f/2.8	f/4
Focal length	50 mm	110 mm	150 mm	250 mm
Diaphragm	f/2.8-22	f/2-16	f/2.8-22	f/4-32
Angle of view, diagonal/horizontal	74°/56°	39°/28°	30°/21°	18°/13°
No. of elements	9, 1 floating T*	7 T*	5 T*	5 T*
Focusing range	$12\frac{1}{2}$ in (0.32 m) - ∞	$2\frac{1}{2}$ ft $(0.8 \text{ m}) - \infty$	4½ ft (1.4 m) – ∞	81/4 ft (2.5 m) - ∞
Weight	2 lb 11¾ oz (1240 g)	1 lb 10¾ oz (760 g)	1 lb 9 oz (710 g)	2 lb ½ oz (920 g)
Length	47/16 in (112 mm)	37/16 in (87 mm)	37/16 in (87 mm)	6 ³ / ₁₆ in (157 mm)
Accessories included	1)			
Front lens cap	51651/51654	51648	51648	51648
Rear lens cap	50377	50377	50377	50377
Lens pouch	58432	58416	58416	58424
Filters	Ø 93	Ø 70	Ø 70	Ø 70
Lens shades	407061)	40576	40576	40576
Professional lens shade	40726	40676	40676	40676
Miscellaneous accessories				
Lens mounting ring	40720	40687	40687	40687
Holder for gelatin filters	40709	40690	40690	40690
Step-up ring				5.0

¹⁾ Supplied with lens shade \emptyset 93/50 40706







2047

20486 Zeiss Tele-Tessar F f/4 350 mm T*

A fast telephoto lens for its focal length. Internal focusing for convenience and unusually short lens-to-subject distance.

A quick attachment tripod plate with a 3/8" tripod thread facilitates work with a tripod. It is supplied in a leather case with a shoulder strap.

20303 Zeiss Mutar 2X T* Teleconverter

The extraordinary quality of Hasselblad lenses has made it possible for Zeiss to design a teleconverter which, when combined with any Hasselblad lens, gives excellent results at even the largest apertures.

The converter doubles the focal length of the lens and reduces the aperture two f/stops. The close-up focus limit of the lens is not affected. Compatible with Hasselblad F, CF and C lenses. A Makro-Planar type lens can also be used in macro applications.*

By using the Mutar 2X the photographer can double his available range of focal length options.

* As always, a Makro-Planar 135 mm lens must be used with either the Hasselblad automatic bellows or a variable extension tube.

20215 Schneider Variogon CF f/5.6 140-280 mm

Hasselblad's zoom lens has continuously variable 140–280 mm focal length and a fully synchronized built-in leaf shutter.

The Variogon offers the Hasselblad photographer a multitude of new and exciting opportunities for creative photography.

A quick attachment tripod plate with a 3/8" tripod thread facilitates work with a tripod. It is supplied in a leather case with a shoulder strap.

	350mm Tele-Tessar l
Max. aperture	f/4
Focal length	350 mm
Diaphragm	f/4-32
Angle of view, diagonal/horiz.	13°/9°
No. of elements	8 T*
Focusing range	1.9 m−∞
Weight	4 lb 6½ oz (2000 g
Length	105/16 in (262 mm)
Accessories included	1)
Front lens cap	51654
Rear lens cap	50377
Lens pouch	
Filters	Ø 93
Lens shades	407171)
Professional lens shade	
Miscellaneous accessories	
Lens mounting ring	
Holder for gelatin filters	
Step-up ring	

¹⁾ Delivered in case 58378 and with lens shade Ø 93/F 350 40717

Mutar 2×					
1)					
,					
			and the same of th		
7 T*					
14¾ oz (4 3½ in (80	(20 g)				
31/8 in (80	mm)				
51438					
50377					
58408					
					_
	scattle and a second	CONTROL OF THE PARTY OF THE PAR	Birth Carlotte Commission Commiss		2020
		VIII.			

1) Reduces the maximum aperture of the lens used by 2 f/stops.

140-280mm Variogon CF
f/5.6 140-280 mm f/5.6-45 16-30°/11-22°
17 (multicoating) 8½ ft (2.5 m) − ∞ + Macro 4 lb 1½ oz (1850 g) 9½ in (240 mm)
¹) 51462 50377
Ø 93
51470¹)
40720 40709

1) Delivered in case 58378 and with lens shade 51470.







Lens shades are used to shield the lens from extraneous light and provide a practical way of safeguarding the front lens element. The system includes lens shades designed for a fixed focal length range and the professional lens shades which feature adjustable compendiums to suit a wide range of lens focal lengths.

LENS SHADES FOR CF LENSES

40668 Lens shade Ø 60/38-60

For wide-angle lenses from 38 to 60 mm. Bayonet mount.

40670 Lens shade Ø 60/80

For the normal 80 mm CF and older 80 mm F lenses used together with 40711 step-up ring \emptyset 50- \emptyset 60. Bayonet mount.

40673 Lens shade Ø 60/100-250

For CF lenses with focal lengths from 100 to 250 mm. Bayonet mount.

40693 Lens shade Ø 93/40

For the 40 mm Distagon CF. Supplied with the lens. Also used as a holder for \emptyset 93 filters.

40703 Lens shade Ø 93/350-500

For the 350 mm Tele-Tessar CF and 500 mm Tele-Apotessar CF. Supplied with these lenses. Also used as a holder for Ø 93 filters. Threaded mount. It also fits the 350 mm and 500 mm Tele-Tessar C lenses and makes it possible to use Ø 93 filters with these lenses instead of Ø 86 filters which have been phased out.

LENS SHADES FOR F LENSES

40706 Lens shade Ø 93/50

For the 50 mm Distagon F. Threaded mount. Now supplied with the lens. Can be ordered for previously bought lenses, thus making it possible to use \emptyset 93 filters with these lenses instead of \emptyset 86 filters which have been phased out.

40576 Lens shade Ø 70/110-250

For F lenses in focal lengths from 110 mm to 250 mm. Bayonet mount.

40717 Lens shade Ø 93/F 350 (not shown)

For the 350 mm Tele-Tessar F. Supplied with the lens. Also incorporates a filter holder Ø 93. External threaded mount.

PROFESSIONAL LENS SHADES

An adjustable bellows lens shade with engravings for various focal lengths providing highly efficient protection against extraneous light. When the shade is used on a 120 mm or longer lens, different masks are added. Because it is collapsible, it takes up very little space in an equipment case.

40676 Professional lens shade Ø 50-Ø 70

For Ø 50, Ø 60, Ø 63 and Ø 70 front lens mounts. It has an extension of approximately 80 mm. For longer focal lengths one of the following masks (supplied with the shade) is added:

Mask 40304 for the 120, 135*, and 150 mm CF lenses and the 250 mm F lens.

Mask 40312 for the 250 mm CF lens.

An L connector 50776 is supplied for use with a cable release.

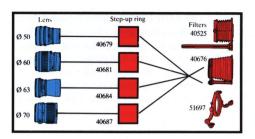
* Note: The rail on the automatic bellows limits the use of the professional lens shade while focusing at long lens-to-subject distances.

40726 Professional lens shade Ø 93

For use with Ø 93 lenses. It has an 80 mm extension. Delivered with mask 40304 for the 500 mm CF lens and L connector 50776.

40729 Guide bracket for Distagon F 50 professional lens shade Ø 93 (not shown)

In order to prevent the vignetting which would occur if the lens shade rotated along with the lens during focusing, a guide bracket is placed between the lens shade and the lens.



The professional lens shades are attached to the lens accessory mount with separate lens mounting rings which also have a slot for a gelatin filter holder. The rings are not supplied with the lens shade. See the figure above and page 15.

STEP-UP RINGS

Filters and lens shades for lenses with \emptyset 60- \emptyset 70 accessory mounts can also be used on lenses with a smaller accessory mount with the aid of step-up rings.

40711 Step-up ring Ø 50-Ø 60

For attaching \emptyset 60 filters and lens shades to lenses with a \emptyset 50 lens accessory mount (older C lenses).

40714 Step-up ring Ø 60-Ø 70

For attaching Ø 70 filters and lens shades to lenses with a Ø 60 lens accessory mount.

51638 Filter adapter ring Ø 60-Ø 63

For attaching \emptyset 63 filters (series 8) to lenses with a \emptyset 60 lens accessory mount.



Hasselblad Original Filters

Hasselblad filters are available for both black & white and color photography.

Filters for color photography are used to balance color temperature and are referred to as light balance filters. These filters can be employed to correct color quality, as well as making it possible to use tungsten film in daylight and vice versa.

Polarization filters can be used with black & white or color film to reduce or eliminate reflections thus increasing color saturation in subjects such as sea and sky.

Softar diffusion filters can be used with both black & white and color and are available in three strengths. They provide controlled softening of otherwise razor-sharp images. The three filter strengths can be combined.

Neutral density filters (gray filters) can be used to make extremely long exposures without over-exposing the film.

A range of colored filters which block out various parts of the spectrum are available for black & white photography.

Hasselblad original filters are supplied in different diameters to fit the lens accessory mounts. Step-up rings make it possible to use \emptyset 60- \emptyset 70 filters with lenses with smaller lens accessory mounts. See the figure below.

The filters are engraved with data indicating diameter, filter factor, color, and exposure value reduction, in that order. See the table below. For example: "Ø 60 1.5×Y-0.5 (4)" means that the filter has a 60 mm diameter, a filter factor of 1.5, is yellow, and requires an exposure value reduction of 0.5. The Ø 60 filters are marked with Kodak Wratten designation in brackets (4) and are multicoated.

		Colore	d filters		S	pecial-purpose fi	lters
Ø	1.5×Y-0.5	3×G-1.5	4×0-2	6×R-2.5	1×HZ-0	8×Gr-3	2×Pola-1
	Yellow	Green	Orange	Red ¹)	Haze ²)	Gray	Polarizing
60 ³)	51586/41586	51592/41592	51594/41594	51597/41597	41608	51606/41606	51603
70	51306	51314	51322	51330	51349		51578
93	51365	51373	51381	51403	51411		514224)

Filters Ø 26

These filters are intended for the 30 mm Distagon CF lens. Engraved data indicates filter factor, color, wavelength limit, and exposure value reduction.

All four Ø 26 filters are supplied with the 30mm CF lens.

51535

51543

50636 Yellow 50644 Orange ×Or57-1.5 50652 Conversion filter* 2 ×B11-1 50660 Neutral glass

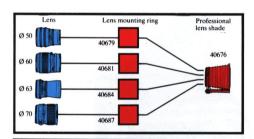
For using daylight-type film in artificial light.

51527

			Light bal	lance filters					Soft-focus	
1×CR1.5-0	1×CR3-0	1.4×CR6-0.5	1×CB1.5-0	1.4×CB3-0.5	2×CB6-1	2×CR12-1	3.5×CB12-1.5		Softars	
CR1.5	CR3	CR6	CB1.5	СВЗ	CB6	CR12	CB12	1	II	III
51614/41614	51616/41616	51619/41619	51622/41622	51624/41624	51627/41627	51630/41630	51632/41632	51670	51673	51675
	CR1.5	CR1.5 CR3	CR1.5 CR3 CR6	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 CR1.5 CR3 CR6 CB1.5	CR1.5 CR3 CR6 CB1.5 CB3	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 1.4×CB3-0.5 2×CB6-1 CR1.5 CR3 CR6 CB1.5 CB3 CB6	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 1.4×CB3-0.5 2×CB6-1 2×CR12-1 CR1.5 CR3 CR6 CB1.5 CB3 CB6 CR12	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 1.4×CB3-0.5 2×CB6-1 2×CR12-1 3.5×CB12-1.5 CR1.5 CR3 CR6 CB1.5 CB3 CB6 CR12 CB12	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 1.4×CB3-0.5 2×CB6-1 2×CR12-1 3.5×CB12-1.5 CR1.5 CR3 CR6 CB1.5 CB3 CB6 CR12 CB12 I	1×CR1.5-0 1×CR3-0 1.4×CR6-0.5 1×CB1.5-0 1.4×CB3-0.5 2×CB6-1 2×CR12-1 3.5×CB12-1.5 Soft-focus Softars CR1.5 CR3 CR6 CB1.5 CB3 CB6 CR12 CB12 I II

Red filter Ø 60 has designation 8×R-3. 2). Haze filter Ø 60 has designation UV-SKY.

3). Filters Ø 60 (except polarizing filter) will eventually replace the first number in the code number from 5 to 4, as indicated. 4). Does not fit Tele-Tessar F350



LENS MOUNTING RINGS

51420

93

For the professional lens shade \emptyset 50- \emptyset 70. lens shades for the automatic bellows extension, and the macro flash equipment when connecting CF, F, and C lenses with accessory mounts \emptyset 50- \emptyset 70. (See the figure above.) The rings have slots for gelatin filter holder Ø 50-Ø 70.

40679 Lens mounting ring Ø 50

For C and F lenses.

40681 Lens mounting ring Ø 60

For CF lenses.

40684 Lens mounting ring Ø 63

For Clenses.

40687 Lens mounting ring Ø 70

For F lenses.

40690 Gelatin filter holder Ø 50-Ø 70

For use with $3\times3''$ (75×75 mm) gelatin filters. Inserted into the slot in the lens mounting ring. Supplied with a transparent storage cover.

For professional lens shade Ø 93:

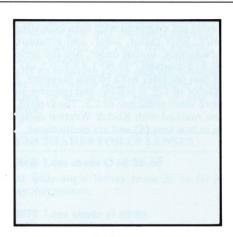
40720 Lens mounting ring Ø 93

For CF and F lenses. The ring has a slot for gelatin filter holder Ø 93.

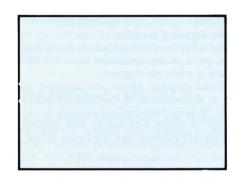
40709 Gelatin filter holder Ø 93

For use with $4\times4''$ (100×100 mm) gelatin filters. For use with lens mounting ring Ø 93 (40720).









6×4.5

Hasselblad film magazines are interchangeable and are compatible with all Hasselblad cameras. Magazines can be switched in seconds without loss of picture frames and provide a wide freedom of choice with regard to film formats, film loads, and film types. There are roll film magazines for 120, 220, and 70 mm perforated film as well as a magazine for Polaroid film, and sheet film holders.

ROLL FILM MAGAZINES

30074 Film magazine A12 (chrome) 30147 Film magazine A12 (black)

A magazine for the 2½4×2½" format for 120 film giving 12 frames on a roll. A signal system indicates when an exposure has been made and whether or not the film has been advanced to the next frame. A film counter shows how many frames have been exposed and is automatically reset to zero when the magazine is reloaded. The film speed can be set on the film indicator. Available in versions with chrome or black trim. Supplied with magazine slide 41068. Weight: 14 oz (400 g).

30104 Film magazine A24 (chrome) 30171 Film magazine A24 (black)

A magazine for the $2\frac{1}{4} \times 2\frac{1}{4}$ " format for 220 film giving 24 frames on a roll. Apart from giving double the capacity this magazine is identical with the A12 magazine. Supplied with magazine slide 41068. Weight: 14 oz (400 g).

30082 Film magazine A16 645 (chrome) 30155 Film magazine A16 645 (black)

A magazine for the 2½×15%" format (horizontal) for 120 film giving 16 frames on a roll. This magazine has the same functions as magazine A12. Supplied with mask 42145, marked for this format, and magazine slide 41068. Weight: 14 oz (400 g).

30066 Film magazine 70 (chrome) 30139 Film magazine 70 (black)

A large capacity magazine for the $2\frac{1}{4} \times 2\frac{1}{4}$ " format for 70 mm perforated film. The magazine gives 70 frames from a loaded cassette. Magazine cassettes can be loaded with up to 15 ft (4.7 m) of 70 mm film sold in 30m (100 ft) bulk loads and are specially useful when used with motorized Hasselblad cameras. The magazine is available in versions with chrome or black trim and supplied with a 51039 empty cassette and magazine slide 41068. Weight: 1 lb 3 oz (530 g).

51039 Film cassette for magazine 70

The cassette can be loaded with perforated 70 mm film in lengths up to 15 ft (4.7 m).





MAGAZINE FOR POLAROID FILM

30198 Hasselblad magazine 100 for Polaroid film

A 21/4×21/4" format magazine for Polaroid film types 107, 108, 665, 667, 668 and 669. The magazine is mounted and dismounted as easily as the roll film magazines. Very practical to have on hand for making fast checks on exposure, lighting, and composition, since any errors are immediately detected. Supplied with magazine slide 41122.

SHEET FILM ADAPTER

41017 Sheet film adapter

For photographers interested in utilizing the wide range of sheet film on the market. The adapter is mounted and dismounted as easily as the roll film magazines. The film is loaded in the 51012 interchangeable sheet film holder.

51012 Sheet film holder

For sheet film, trimmed down to $2\frac{1}{2} \times 2\frac{1}{2}$ " (6.5×6.5 cm).

The viewfinders and focusing screens in the Hasselblad system were developed to cover the individual needs of photographers working under widely varying conditions. Viewfinders and focusing screens can quickly and easily be changed.

42165 Acute-Matte focusing screen

The new Acute-Matte focusing screen designed by MINOLTA combines extreme brightness with excellent focusing characteristics. The Fresnel lines are cut with such high precision they cannot be seen through the viewfinder. There is a reference cross in the middle of the screen. It is compatible with all Hasselblad lenses and viewfinders.

42226 Bright-matte focusing screen

An extremely bright, sharp screen for quick and exact focusing. The Fresnel lines are cut with such high precision they cannot be perceived through the viewfinder. There is a reference ring in the center of the screen. It is compatible with all Hasselblad lenses and focusing screen viewfinders.

42188 Focusing screen with split-image rangefinder

Bright focusing screen with a split-image rangefinder, 7.5 mm in diameter, for fast focusing. For lenses with focal lengths from 30–150 mm.

42218 Focusing screen with central grid and split-image rangefinder

A diagonal split-image rangefinder, 5 mm in diameter, combined with a 14 mm central microprism grid.

42250 Checked focusing screen with central grid

A checked focusing screen combined with a central microprism grid, 15 mm in diameter. For accurate horizontal and vertical alignment with applications in architectural photography and copying work.

42200 Plain glass screen

A bright focusing screen facilitating photomicrography and macro work. Consists of a plain glass screen with a reference cross and a Fresnel lens.

SPECIAL ACCESSORIES FOR 903SWC

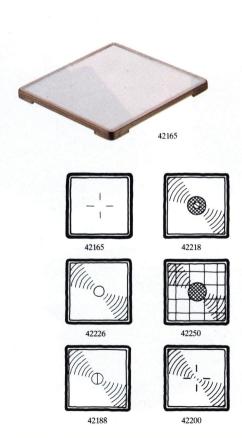
52036 Viewfinder SWC

An optical viewfinder which has a built-in spirit level. Since both the lens distance scale and the spirit level can be checked directly in the viewfinder there is less distraction while concentrating on a subject. The finder field is marked to show the limits of the $2\frac{1}{4} \times 1\frac{5}{8}$ ", and $1\frac{5}{8} \times 1\frac{5}{8}$ " film formats. The viewfinder is securely locked onto the camera frame. Can be used with the earlier SWC and SW camera models, but no distance scale is visible with the C lens used on these models.

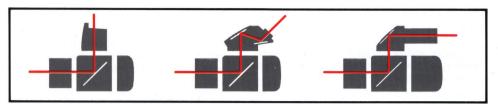
41025 Focusing screen adapter

For checking on picture composition and depth of field. Attached to the camera in the same way as film magazines. Extraneous light is effectively blocked out by using the magnifying hood 52094, the focusing hood 42315/42323, a prism viewfinder, or the reflex viewfinder. Can also be used on all 500 and 2000 model cameras.









The viewfinders in the Hasselblad system have been made for photography in every conceivable situation and deliver a magnified focusing screen image. The large focusing screens provide bright, clear images to aid focusing, composition and for checking the depth of field.

VIEWFINDERS

42315 Focusing hood (chrome) 42323 Focusing hood (black)

Hasselblad focusing hoods provide efficient viewing of the focusing screen image. The entire image is visible even when viewed with the camera at hip level. A folding fine-focus magnifier enlarges the image five times. The standard magnifier 42331 can be easily exchanged for a correction magnifier for compensating faulty vision. The collapsed hood makes the camera very compact. Standard equipment on the 500 and 2000 model cameras.

Correction magnifiers for focusing hoods

42340 -4 diopters 42382 +1 diopter 42358 -3 diopters 42390 +2 diopters 42404 +3 diopters 42366 –2 diopters

42374 -1 diopter

52094 Magnifying hood

Effectively blocks extraneous light and enlarges the focusing screen image 31/2 times. Adjustable from +3.5 to -2.5 diopters to suit individual eyesight requirements.

42294 Meter prism viewfinder PME 3

Features center-weighted metering by means of a silicon cell with a fast response even at low light levels. Values are read on an exposure value scale (EV 2-19) and indicated by red diodes. The meter automatically shuts off after approx. 10 s. Battery check. Battery type PX28. Unreversed screen image magnified three times, 45° sighting angle. Supplied with a turnable and removable rubber eyecup. Can be fitted with correction lenses for compensation of faulty vision. Supplied with protective cover 42064.

42307 Prism viewfinder PM

Yields an unreversed image three times larger than the focusing screen image. The sighting angle is 45°. Optically identical to PME 3, above. Supplied with a removable rubber eyecup. It can be fitted with correction lenses for compensation of faulty vision. Supplied with protective cover 42064.

Correction lenses for prism viewfinders 42294 and 42307

The correction lenses have anti-reflection coating and are available in diopter strengths from -4 to +3.

Supplied with instructions for attachment.

52116 -4 diopters 52159 + 1 diopter

52124 –3 diopters 52167 + 2 diopters

52132 -2 diopters 52175 + 3 diopters

52140 -1 diopter

52183 Reflex viewfinder RM-2

This viewfinder was developed to be used in combination with magazine 70. It yields an unreversed image three times larger than the focusing screen image. The sighting angle is 90° . The ocular is focusable ± 5 diopters and it has a rubber eyepiece which is large enough and placed so that the entire focusing screen image can be seen, even if the photographer is wearing eye glasses. Supplied with protective cover 42064.

The prism viewfinders, reflex viewfinder, and magnifying hood above can be used with the 500 and 2000 series. Together with the focusing screen adapter 41025 the viewfinders can also be used with the 903SWC and the older SWC models.

Masks for focusing screens: 42145 Transparent focusing screen mask

Field markings for the $2\frac{1}{4} \times 1\frac{5}{8}$ " and $1\frac{5}{8} \times 1\frac{5}{8}$ " formats





The Hasselblad photographer has a choice of carefully balanced, anatomically designed grips providing solid support for hand-held shots or quick-couplings for fast tripod attach-

45072 Flashgun bracket 1 46330 Flashgun bracket 2

These flashgun brackets are attached and locked onto the camera's tripod plate. They are anatomically molded to fit the left hand. An adjustable leather strap makes for a much steadier grip. The camera is triggered via the flashgun bracket which is also supplied with a reversible 1/4" or 3/8" thread bolt, as well as an accessory shoe for a flash and can be fitted with an extension arm 45098, or an adjustable flash holder 45039.

Flashgun bracket 1 is designed for use with the 500C/M, 503CX, 2003FCW and older 500C and 2000FC models.

Flashgun bracket 2 is designed for use with the 553ELX and the earlier 500EL and EL/M models.

45129 Tripod quick-coupling

Used on a tripod to facilitate quick attachment and removal of the camera. The quickcoupling can be attached to a tripod with either a $\frac{3}{8}$ " or a $\frac{1}{4}$ " thread.

51700 Ouick-focusing handle 1/CF 40-80

For quick and precise focusing. Ideal for sport and journalistic photo work. Screws directly to the focusing ring of the CF lenses. Since the handle folds down flat beside the lens, it takes no extra space in a lens or equipment case.

For the 40, 50 and 60 mm Distagon CF and the 80 mm Planar CF lenses.

Hasselblad accessories for film advance and shutter cocking include products for both manual and automatic operation.

44067 Winder

The Hasselblad winder is a separate motorized unit for the 2003FCW and 2000FCW camera. The winder is attached and removed with the same degree of ease as the winding crank and provides the ability to take sequential pictures at a speed of 1.3 frames/s. The winder's powerful motor provides fast, distinct starts, smooth advance and cocking. The winder's 6 volt motor is powered by 5 rechargeable nickel-cadmium for about 1,000 exposures or 5 standard penlight (AA) alkaline batteries for about 4,000 exposures.

The winder automatically resets the focal plane shutter after it has been retracted when changing a magazine.

44075 Rapid-winding crank 2

An interchangeable winding crank for film advance and shutter cocking.

Note! This is standard equipment on the 2003FCW and 2000FCW, but does not fit the older models in the 2000 series with permanently attached crank.

44040 Rapid-winding crank 1

Interchangeable winding crank for shutter cocking and film advance; standard equipment on the 503CX and 500C/M. It also fits the older 500C model, but not the cameras in the 2000, EL or SWC model series.

54011 Knob with exposure meter

The rapid-winding crank 44040 on the 503CX and 500C/M can easily be replaced by this knob with a built-in exposure meter with a selenium cell. No battery is needed. The metering knob can be simply removed from the camera for taking measurements close to the subject. It is marked from 6-1600 ASA (ISO) (9-33° DIN) and the readings are indicated as exposure values (EV). The knob has a diffuser for incident light read-

Designed for the 503CX and 500C/M and the older 500C model.





Close-up and Copying Accessories

The Hasselblad system includes close-up accessories, such as close-up lenses, extension tubes, an automatic bellows, and accessories for copying.

When you are choosing equipment for closeup work, the Hasselblad Close-up Calculator is an invaluable aid.

59102 Close-up Calculator

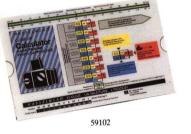
Designed on the principle of a slide rule. From a starting point of the size of the subject or the degree of magnification desired, the calculator can be set to provide an instant guide to which close-up accessories are needed for the various focal lengths.

Data showing extension, lens-to-subject distance, EV reduction and depth of field is dis-

played simultaneously.

The calculator also includes an EV guide to convert EV values to corresponding shutter speed/aperture combinations and vice versa.

The Close-up Calculator is delivered in a protective cover with instructions in six languages. Size: 200×115 mm.



51662 Proxar 0.5 Ø 60 T* 51665 Proxar 1.0 Ø 60 T* 51667 Proxar 2.0 Ø 60 T*

Close-up lenses are available in three focal lengths and can be combined. They are multicoated and fit CF lenses with \emptyset 60 accessory mounts.

40649 Extension tube 8*
40541 Extension tube 16
40568 Extension tube 32
40657 Extension tube 56

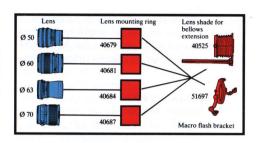
A complete series of extension tubes that covers the range up to the shortest bellows extension; the tubes connect to the lens and camera mechanisms so that all of the camera's automatic functions can be fully utilized. The extension tubes can be attached in different combinations.

* Extension tube 8 cannot be directly connected to the 2003FCW camera body or to older 2000 models.

51691 Variable extension tube 64-85

With continuously variable extension from 63.5 to 85 mm the variable extension tube makes a flexible close-up accessory that is compact and easy to handle. It can be used together with other extension tubes and the automatic bellows from the Hasselblad system.

In addition to being used for changing the extension and level of magnification, the variable extension tube can also be used for focusing. It is ideal for use in combination with the 135 mm Makro-Planar CF f/5.6, providing a range of focus from infinity down to 1.15 m.



40517 Automatic bellows extension

The bellows extension interconnects camera body and lens mechanisms. This means that you can work in the same way with CF, F, and C lenses as you do when the lens is directly connected to the camera. The bellows extension is easily altered with adjusting knobs. The automatic bellows combined with the 135 mm Makro-Planar CF f/5.6 enables you to work from infinity down to 1:1.

40525 Lens shade for automatic bellows extension

Fully adjustable extension with flanges to take the Hasselblad Transparency copyholder. Lens mounting rings, with slot for gelatin filter holders, are required to adapt the lens front mount. These are sold separately. See the figure above, and page 15.



40037 Lens mount adapter

Intended for attaching special-purpose lenses, such as lenses for photomicrography, to the camera. The auxiliary shutter in the camera body, the microscope shutter, or the focal plane shutter in the Hasselblad 2000 models can be used.

40533 Transparency copyholder II

Attaches to flanges on the lens shade for the automatic bellows extension and is used in the copying and reproduction of transparencies and negatives. Electronic flash is recommended as the light source. Also fits the older bellows extension 40223.

51697 Macro flash unit

A practical close-up flash unit consisting of a macro flash and a macro flash bracket. Developed in cooperation with the West German flash equipment manufacturer Metz, the unit provides a highly flexible method of directing the flash light on the subject.

Macro flash unit

The Macro flash unit consists of a control unit and two light sources that can be fired simultaneously or individually. A variety of lighting effects can be obtained using wide-angle and gray screens. The TTL circuitry in the Hasselblad 503CX, 553ELX and 500ELX can be made available by using Flash Adapter SCA 390 (see page 22). This provides automatic control of the amount of light produced. Used with the Hasselblad Macro flash bracket, the light sources offer a highly flexible method of directing flash light on the subject.

The guide number at ISO 100 is 28/92 (m/ft).

The unit is supplied with the following equipment:

2 wide-angle screens 2 different gray screens

Flash shoe with a 3/8" and 1/4" mounting

bracket Cord 240 mm

Standard adapter SCA 301

Coiled cord

Double flash outlet

Macro flash bracket Ø 50-Ø 70

The bracket has three mounting shoes. The two arms are articulated at three points and rotatable 360°. The bracket is attached to the lens accessory mount with separate lens mounting rings which also have a slot for a gelatin filter holder. The rings are not included with the Macro flash bracket. See figure above left and on page 15.



The Hasselblad system includes different types of triggering accessories and flash adapters

for the 553ELX, 500ELX and 503CX.

The NC-battery rechargers can only be used with 500ELX and the older EL series models.

FLASH PHOTOGRAPHY

51681 Flash adapter SCA 390

For connecting flash attachments that are compatible with the SCA 300 system to the 553ELX, 500ELX and 503CX camera. Provides automatic control of the amount of light (OTF/TTL). The adapter makes it possible to utilize the camera's indicator visible at the left edge of the focusing screen, which indicates when the flash attachment is ready to be fired and if it has discharged the right amount of light. Can be attached to the flash-shoe on prism viewfinders, flashgun bracket, or the camera's accessory rail. Fits 553ELX, 500ELX and 503CX.

51683 Flash adapter SCA 590

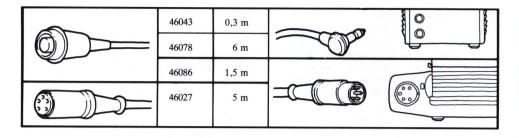
For connecting flash attachments that are compatible with the SCA 500 system to the 553ELX, 500ELX and 503CX cameras (i.e. Metz 45 CT5 or 60 CT2).

553ELX AND EL MODELS

46116 Release button

The release button is placed in one of the front sockets on the 553ELX and 500ELX and is especially convenient when, for example, the other socket is used for a release cord.





46345 Release plate

An easily accessible release plate that has been a standard feature on Hasselblad space cameras for some time now. It is standard equipment on the 553ELX and 500ELX but is also compatible with earlier EL models.

For the 553ELX and 500ELX front sockets 46043 Release cord FK 30

For the 553ELX and 500ELX side sockets

46027 Connecting cord LK 500 46086 Release cord SK 150

46078 Release cord FK 600









56111 Fuse

A 1.6 amps (3/16×34") slow blow fuse is used in the 500ELX. Supplied with the 553ELX and 500ELX camera body.

Also used in the Hasselblad winder 44067.

56081 Battery 1

For the 500ELX. Type Varta 5/600 DKZ or an equivalent type battery (nickel-cadmium battery, 13/8×2"). Supplied with the 500ELX camera body.

Recharge unit I

For recharging batteries in the 500ELX or in battery compartment 46337. Connects to the side socket of the camera. Supplied with the 500ELX camera body with a permanent plug.

56023 110 Volt AC American version.

56024 110-240 Volt AC European version.

46337 Battery compartment 3

For recharging of 56081 nickel-cadmium batteries with recharge unit I with the batteries removed from the 500ELX camera body. The compartment has room for two batteries which can be charged simultaneously. Fits 500ELX and older EL models.



Hasselblad Original Cases

The case assortment includes soft, easily-accessible camera cases, cases that can be carried by hand or on your shoulder and large trunk-type cases. All the cases have been specially designed for Hasselblad cameras and accessories and carefully handmade from materials of the highest quality. The camera cases, equipment cases and the shoulder straps can all be used also for all previous Hasselblad models.

CASES

58270 Case 712

A functional and spacious case for a very large selection of Hasselblad equipment. The internal arrangement, both in the lid and the case itself, is flexible which makes it possible to store cameras and accessories in a large number of different combinations. All the lenses, except the longest telephoto lenses, can be stored in an upright position. A rubber gasket around the opening provides a weathertight seal and protects the case contents from dust and rain. Ideal for desert and tropical climates. Weight: 10 lb 13 oz (4.9 kg). External dimensions (L×W×H): approx. $18 \times 15^{1}/_{4} \times 7^{\prime\prime}$ (455×390×180 mm).

Internal dimensions ($L\times W\times H$): approx.

 $16^{1}/_{4} \times 12^{1}/_{2} \times 6''$ (410×320×150 mm).

58397 Case 540

A soft shoulder bag made of durable, blue Cordura material. Suitable for a medium-sized selection of Hasselblad equipment. Because of its removable interior partitions and lens protectors it is extremely flexible. There are two, roomy pockets on the front of the case. Storage space can be further increased using two add-on pockets 58440, one at each end of the case (available separately, see below). The shoulder and hip straps have rubber, non-slip inserts. The shoulder strap can also be used as a carrying handle.

Dimensions (L×W×H): approx. $14\frac{1}{2} \times 7\frac{3}{4} \times 9^n$ (370×200×230 mm)

58440 Magazine pocket

Pockets for spare Hasselblad film magazines and film rolls. Can be fitted to the ends of case 540 or used as pouches to be worn on a belt.

58386 Case 522

An elegant and practical cowhide carrying case for a medium-sized equipment array. The flexible internal arrangement with movable partitions provides space for many different combinations of cameras, lenses, film magazines, and accessories. The case has a combination lock and a plate on which the owner's name can be engraved.

External dimensions (L×W×H): approx. $15\frac{1}{4}\times11\frac{1}{2}\times5\frac{1}{4}$ " (390×290×135 mm). Internal dimensions (L×W×H): approx. $14\frac{1}{4}\times9\times4\frac{1}{2}$ " (360×230×115 mm).

58238 Camera case 507

A protective case in soft, leather-like material provided with a zipper and slits for carrying strap. Designed for use with cameras in the 500 and 2000 series including the prism viewfinder on all cameras except the EL series. It has sufficient space for a camera body with Film magazine A12 and lens/lens shade up to 240 mm attached.

Dimensions (L×W×H): approx. 94/9×33/4×34/5" (240×95×150 mm).



LENS POUCHES

Protective pouches made of leather-soft material. The lens type can be written on special labels. The lens pouches are supplied with most of the Hasselblad lenses.

58408 Lens pouch 1

For 80 mm CF/C/F as well as 100 mm CF/C lenses and the Mutar 2X teleconverter.

58416 Lens pouch 2

For 50 mm CF/C, 60 mm CF/C, 105 mm CF/C, 120 mm CF/C, 135 mm CF/C, 150 mm CF/ C/F and 110 mm F lenses.

58424 Lens pouch 3

For 250 mm CF/C and F lenses.

58432 Lens pouch 4

For 40 mm CF and 50 mm F lenses.

STRAPS

46140 Carrying strap

A short, black leather strap with a rubber insert to be attached to the camera's strap buttons. Supplied with the 553ELX and 500ELX camera body. Length: 13" (325 mm)

49018 Neck strap

A long, adjustable black leather strap to be attached to the camera's strap buttons. Supplied with the 503CX, 500C/M, 2003FCW, 2000FCW, 903SWC and SWC/M camera bodies. Length: approx. max 53", min 29" (1350/750 mm).

59080 Wide camera strap

A long, adjustable 1¹/₂" (40 mm) wide strap made of black polyester. The strap's underside is rubberized to prevent it from slipping off the shoulder. Length: approx. max 59", min 35" (1500/890 mm).

59099 Contoured shoulder strap

A camera strap contoured for the shoulder giving a comfortable, non-slip, well-balanced grip. Width: approx. 1¹/₄" (30 mm). Length: approx. max 50", min 38" (1280/980 mm).

PROTECTIVE COVERS

51438 Front protective cover

Attached to the camera's lens and the Mutar 2X converter's bayonet mount.

51063 Rear protective cover

Protects the rear of the camera when no film magazine is attached.

51643 Front lens cap Ø 60

Attached to the inner lens bayonet mount.

51648 Front lens cap Ø 70

Attached to the inner lens bayonet mount.

51462 Front lens cap for the Variogon

Friction-fit attachment. Fits the 140-280 mm Variogon CF, C and F lenses.

51651 Front lens cap Ø 93

Friction-fit attachment. Fits CF and F lenses with a Ø 93 front mount.

51654 Front lens cap Ø 93-100

Friction-fit attachment. Fits CF and F lenses with a Ø 93 front mount when a lens shade is attached.

40749 Front lens cap for the 30 mm **Distagon CF**

50377 Rear lens cap

Bavonet mount. Fits all Hasselblad lenses, except the 135 mm Planar.

50571 Rear lens cap 135

Bayonet mount. Fits the 135 mm Makro-Planar CF and the 135 mm S-Planar C.

MISCELLANEOUS ACCESSORIES

43125 Adjustable flash shoe

The flash shoe should be slid onto the accessory rail on the left side of the camera. Small electronic flash units are placed in a swiveltype flash shoe.

43117 Spirit level

Attached to the accessory rail on the left side of the camera. The spirit level is particularly useful in wide-angle photography.





The Hasselblad PCP80 is a slide projector for the 2½4×2½4" format. Built-in perspective control, superb Zeiss lenses, a rotary slide magazine, and a number of other features make the PCP80 one of the most advanced projectors ever built. This professional projector is designed for both large and small slide shows. Its innovative electronics tailor it to the demands of today and prepare it for future developments in the field of control equipment. The designation "PCP80" stands for Hasselblad Perspective Control Projector for 80-slide trays.

Perspective control

Images projected by a projector that is tilted backward are wedge-shaped on the screen, i.e. they taper off towards the bottom. The opposite occurs when the projector is tilted forward. The screen and slide must be parallel to one another for rectilinear projection. With the Hasselblad PCP80 it is possible to shift the lens upwards or downwards, raising or lowering the screen image without altering its keystone-free form. As a result, a square slide image always remains square on the screen. Because the lamp and condenser system are shifted simultaneously to a correct position in relation to the lens, the screen image can be shifted without reducing illumination.

Lens and condenser

Pictures taken with Zeiss lenses should be projected with Zeiss lenses. The lenses for the PCP80 projector are designed and manufactured to the same exacting standards as the camera lenses and like them, also have an anti-reflection coating.

The optical system in the PCP80 is uncompromising and specially tailored to each lens in order to deliver an absolutely sharp and evenly illuminated image on the screen. So

each lens has its own matched condenser lens which is replaced whenever the lens is replaced.

A uniquely angled condenser system with dichroic mirrors makes it unnecessary to use a light-stealing heat absorption filter on the PCP80

Automatic lamp replacement

The projector has two lamps (one primary, one in reserve). Should one lamp burn out, its replacement swings into position automatically within a fraction of a second. A warning lamp on the projector's control panel indicates lamp replacement.

Positioning the lamp (and the filament) in relation to the spherical mirror is easily accomplished from the outside of the projector and without turning the lamp on. This is also true of the built-in extra lamp.

Unparalleled reliability

The Hasselblad PCP80 has multiple safety systems. A fuse is triggered if the main transformer overheats because of voltage surge. Another system monitors the temperature near the transparency and switches off the projector lamp long before there is any risk of heat damaging the slide.

Separate, quiet motors for slide advance, fan operation, and focusing result in an uncompromising drive system and unparalleled reliability. A gravity-operated system ensures gentle treatment of the slides and a mechanical safeguard is triggered should an improperly mounted slide jam. If the jam lasts more than a few seconds power is cut off before the mechanism attempts to return the slide to the magazine. The cooling fan with its independent motor is in operation continuously.

The cooling system uses pressurized, filtered air with an ultra-low noise level fan. After passing through the highly efficient filter, air

is distributed at hyperbaric pressure to all parts of the projector. Thus cleaning the filter is the only action required to ensure the elimination of dust build-up, which would otherwise affect the performance of the projector mechanism and optical system.

Rotary slide magazine

The PCP80 projector utilizes a rotary slide magazine which can be detached at any time, regardless of its position, and without being reset.

The slides are protected by a transparent plastic lid which is locked in position with a bayonet mount.

The magazine cannot be detached when there is a slide in the slide gate. This safeguard makes it impossible to leave a slide in the gate and prevents slide collisions when a new tray is attached. The projector's edit function allows a slide in the gate to be returned to the magazine without the magazine advancing to the next slide.

Control systems

The Hasselblad PCP80 is equipped with three different connector inputs, to give the widest possible choice of compatible external control systems.

A standard six-pin socket provides forward and reverse slide changes and focusing functions. The Hasselblad remote cable control unit (70507) uses this socket.

The eight-pin socket gives the option of controlling the lamp without external TRIAC. For controlling the lamp with external TRIAC the European standard twelve-pin socket must be used. Different connectors are provided as accessories for connecting most control systems developed for other types of projectors.



26 Hasselblad PCP80 Projector

PCP80 PROJECTOR & ACCESSORIES

The Hasselblad PCP80 projector is delivered as separate components: Projector body, lenses, rotary slide magazine, and other accessories.

70101 Hasselblad PCP80 projector body

With a power cord but without a lens or rotary slide magazine. Supplied with front protective cover PCP80 70532. Can be switched to 110/130/220/240 V 50–60 Hz mains voltage. Weight: 30 lb 15 oz (14 kg) (Not for USA).

70104 Hasselblad PCP80 projector body

A special version of the PCP80 for 120 V 50-60 Hz mains voltage (U.S.A.).

70107 Hasselblad PCP80 projector body

A special version for 100 V 50-60 Hz mains voltage (Japan).

70205 Zeiss P- Planar f/3.5 150 mm projector lens

Normal projector lens with a matching condenser lens. Supplied with front lens cap 75/150 (70526). Allows for full utilization of perspective control.

70214 Zeiss P-Distagon f/3.5 75 mm projector lens

Lens for shorter projector distances. Supplied with a matching condensor lens and front lens cap 75/150 (70526). Allows for limited utilization of perspective control.

70210 Zeiss P-Sonnar f/4 250 mm projector lens

Lens for long projection distances. Supplied with a matching condenser lens and front lens cap \emptyset 93–100 (51654). Allows full utilization of perspective control.

70303 PCP80 Rotary slide magazine

For 80 transparencies in $2^{3}/_{4} \times 2^{3}/_{4}$ " (70×70 mm) mounts. Supplied in a specially designed box which can be used to store filled magazines. Labels included.

Accessories:

70507 Remote cable control unit (page 25)

Focusing and forward/reverse slide changes are cable-operated with this unit. Cable length: 13 ft (4 m).

70523 12-pin AV-connector

For adapting certain control systems to the Hasselblad PCP80 projector. Replaces the door at the rear of the projector.

70524 12- pin AV-connector/adapter AA

For adapting certain control systems that cannot use the 70523 12-pin AV-connector. Replaces the rear projector door.

70525 7-pin AV-connector/adapter AA

For adapting certain control systems with standard American AV-connector. Replaces the door at the rear of the projector.

70517 Projector rack, basic unit

For twin projector set-ups, e.g. shows with slide dissolves.

70518 Supplementary unit for projector rack

When combined with the basic projector rack, this unit allows several projectors to be stacked on top of each other. (not shown)

70511 Registration slide mounts (21/4×21/4")

Slide mounts with special guide pins to simplify perfect image positioning in multivision programs. Box of 40 mounts.

70512 Registration slide mounts (21/4×15/8")

Mounts as 70511 above, but for rectangular image format.

70520 Alignment slide (not shown)

For precise adjustment of the projectors in a multi-projector set-up.

70535 Projector case PCP80

A rugged plywood frame with aluminum edging and steel reinforcements at the corners. The foam plastic interior holds the PCP80 projector body. Dimensions: Approx. 17×20×11" (430×510×285 mm).

70526 Front lens cap 75/150

Protects the front lens element of the 75 mm P-Distagon and 150 mm P-Planar lenses. Supplied with the lens.

51654 Front lens cap Ø 93-100

Protects the front lens element of the 250 mm P-Sonnar. Supplied with the lens.

70532 Front protective cover PCP80

To protect the projector when no lens is attached. Supplied with the projector body.

70547 Protective cover PCP80 (page 25)

Dust cover to protect the projector when it is not being used.

70538 Power cord (page 25)

Approx. 8 ft long (2.5 m). Supplied with the projector body. For European plugs.

70539 Power cord

Like the 70538 power cord above, but for American plugs.

70541 Air filter

Supplied with the projector body.



Products marketed by other manufacturing companies within the Hasselblad Group. Hasselblad Electronic Imaging AB (below) and Hasselblad Engineering AB (next page). The companies have their own independent sales organisation.

For more information, contact the individual companies.

Hasselblad Electronic Imaging AB

Hasselblad Electronic Imaging AB develops, manufactures and markets products for the digitization and transmission of photographic images via telephone.

The Hasselblad DIXEL 2000 is one such product. It is a portable, modular wirephoto transmission system intended primarily for use within the field of journalism, but it also has other applications. The unit, weighing approximately 12 kg (25 lbs) is compact enough to be transported as airplane hand

The DIXEL 2000 differs from conventional wirephoto transmitters in that it does not require darkroom facilities. Portable film developing equipment can be used to develop exposed 35mm black and white or color film. The positive or negative transparancy is then placed in the scanner. The picture is automatically digitized to the right exposure. The re-

sult can be checked on a monitor and further adjusted for exposure, contrast and cropped if required. The DIXEL has an automatic color balance function which checks for tone and varying density in the color negative's orange mask.
The DIXEL 2000 could be described as a

portable electronic darkroom.

addition to specialized wirephoto facilities, the integral keyboard enables up to 700 characters to be added, which can then be transmitted with the picture. There are also pre-programmed administrative functions supporting picture search when transmitting to image databases.

The Dixel 2000 system includes modules to provide communications and digital/analog conversion support both when transmitting from the Dixel 2000 and when receiving the transmitted pictures.

For further information, contact:

Hasselblad Electronic Imaging AB

Box 220 S-401 23 Göteborg Sweden

Telephone: +46 (0) 31 10 26 30 Telex: 2279 Hassblds Telefax: +46 (0) 31 13 50 74



28 Hasselblad Engineering AB

Box 220 S-401 23 Göteborg Sweden Telephone: +46 (0) 31-10 24 00 Telex: 2279 HASSBLD S Telefax: +46 (0) 31-13 50 74

Hasselblad Engineering AB is a subsidiary within the Hasselblad Group. The company manufactures and sells photogrammetric cameras type MK and custom designed camera systems. In addition it offers consulting services and specialized manufacturing, such as systems for industrial on-line control. Hasselblad Engineering has a complete image computer system for custom development and advanced test runs. Custom developed systems may take the form of cameras built into a specially designed housing or the production of an entirely new piece of equipment that need not necessarily be directly related to photography or the technology it involves.

The only reservation we make before undertaking a design and construction commission is that the project has to lie within those areas of technical competence for which Hasselblad is renowned. That is to say precision engineering combined with optics and elec-

On this page are some examples of special purpose products which can be ordered directly from Hasselblad Engineering AB, or through one of our distributors.

PHOTOGRAMMETRIC SURVEYING SYSTEMS

IDAC/SEAGLE photogrammetric survey systems are available as the SEAGLE 30 mono-line system and the IDAC 70 stereo system. Both use the MS/DOS operative system.

The cameras used are the Hasselblad MK70, with 60 or 100 mm lenses, or the Hasselblad MKWE with a 38 mm lens. These cameras were specially developed for close-up photogrammetry but can also be used for picture interpretation or aerial surveying from light aircraft.

The MK70 and MKWE are quite different from standard Hasselblad cameras internally. One major difference is the Reseau plate on the MK70. Cross-shaped reference marks vacuum evaporated onto the plate are recorded on the film and used when measurements are made from the images.

Standard Hasselblad camera accessories are compatible with the MK70 and MKWE. This includes the close-up lenses (Proxar lenses). Only film magazine MK70 can be used with these surveying cameras.

61085 SWCE (black)

The same camera body as the 903SWC with a Zeiss 38 mm Biogon CF f/4.5 lens. It has the same built-in motor as the EL series. Note! The Polaroid film magazine (30198) is not compatible with the SWCE.

Hasselblad projector PCP80RA (not shown)

This is the same as 70101, 70104 or 70107, Hasselblad PCP80 with a random access generator added. This makes it possible to control the projector through an external device such as a PC and to choose one or a series of pictures from the slide magazine, without having to place the slides in any particular order first.

PATIENT DOCUMENTATION

(not shown)

The Hasselblad Padoc system offers a simple but effective method for storing pictures of patients with their records. The entire record sheet is prepared in the same way as a regular self- adhesive label. The opening in the sheet measures $2\frac{1}{8} \times 2\frac{1}{8}$ " (54×54 mm).

68004 Padoc Sheet preprinted 68012 Padoc Sheet blank

AIRBORNE EQUIPMENT

64157 Special grip

This grip has been developed for use with the long focal length lenses involved in helicopter photography.

99006 Remote Sensing Camera system (not shown)

A specially designed camera platform to take four MK 70 cameras and a CCD viewfinder system. By loading the cameras with different film material (IR, B/W, COLOR POS. or NEG. for example) and using filters, one is able to supplement LANDSAT data with highly detailed Remote Sensing information.

SPECIAL ORDERS

The picture below will give you some idea of the range of special services Hasselblad Engineering can offer.

On the far left is a Projector PCP80RA equipment package, with a mirror arrangement and plasma-display for superimposing information on to the slides. The package was developed and built in cooperation with Ericsson Radio Systems AB.



Austria	Spain	Barbados	Korea
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1091 WIEN 9	Sweden	Bermuda	Kuwait
Belgium Hasselblad Belgium S A-NV Chaussée de la Hulpe 130	*Hasselblad Svenska AB Box 415 401 26 GÖTEBORG	The Camera Store Ltd. P.O. Box 427 HAMILTON, HM BX	*Ashraf & Co Ltd P.O. Box 3555 13036 Safat
Bte 12 1050 BRUXELLES	Switzerland	Brazil	KUWAIT
Denmark	*Yashica AG Postfach 3201	*Importécnica S. A. Caixa postal 6134	Malaysia Shriro (Malaysia) Sdn Bhd
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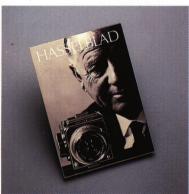
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