HASSELBLAD H4D 31

The H4D-31 is often the first step into the world of professional-level digital Hasselblad photography for many. Though economical in cost it is not economical on performance. The H4D-31 lists all of the main features that characterize all the other H system models. In short, that means True Focus with Absolute Position Lock, refining the auto-focus system for accurate composing at close range with shallow depth-of-field and the security of UltraFocus. Features such as new low noise color filters on the sensor and the high performance HC/HCD lens line, provide the basis for increased clarity and increased depth of field. The Hasselblad Natural Color Solution (HNCS) achieves consistent color reproduction using a single color profile, and digital lens correction (DAC), perfects each image captured through the HC/HCD lenses, by removing any trace of distortion, vignetting, or chromatic aberrations. The H4D-31 also shares the same unique bright viewfinders as all the other H4D models and shares the same wide choice of accessories as well as the wide range of quality lenses matching even the best lenses from Carl Zeiss, which, incidentally can also be used via the CF Adapter. For budget conscious users wanting to maximise their investment without compromising on quality, there would be no better way to enter the world of Hasselblad H photography.

POWERED by Phocus

Raising the bar from H3D

Expanding on the great feature set of the H3D camera-line, a set of new camera features are introduced with the H4D-31:

- new 3” TFT 24bit color display with large viewing angle.
- new camera electronics delivering the basis for True Focus and ultra fast Auto Focus.
- new True Focus auto-focus system with Absolute Position Lock and new camera controls.
- new AF assist light for working in dark environments.
- new 90 MB/sec read-write performance on Extreme Pro cards from Sandisk.

The H4D-31 camera system has been especially designed to meet demands for both flexibility and ultimate image quality.
This includes:

- the freedom to choose between eye-level and waist-level viewfinders.
- the choice of combining point-and–shoot and tilt/shift to solve creative commercial challenges.
- the ability to combine working tethered and un-tethered to get the most of your camera system both on location and in the studio.
- the option of processing your raw images in Hasselblad’s Phocus imaging toolbox, or working with your raw images directly in Apple or Adobe imaging environments.

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Medium Format digital capture advantage

In digital photography, the advantages of large format cameras have become even more obvious. The basic 6×4.5 cm design allows the H4D-31 to use one of the largest image sensors currently available in digital photography. The H4D-31 features CCD sensor measuring 33.1 × 44.2mm - almost twice the physical size of the largest 35mm DSLR sensors. Consequently the sensor holds more and larger pixels, which deliver the highest possible image quality without gradation break-ups in even the finest lit surfaces. Basic ISO rating is from ISO 100 to ISO 1600.

The H4D-31 makes use of a new high speed capture architecture capturing full size, compressed 40Mbyte images at the rate of 1.2 seconds per capture, working either mobile or tethered to a computer.

The combination of these features makes the H4D-31 the natural choice for the professional commercial photographer wanting to work with the highest image quality within a camera system that supports ultimate creative expression in order to deliver outstanding images to satisfy the most demanding customer.

An impressive lens line outperforming the Carl Zeiss icons

The highly renowned HC/HCD lens line includes 11 Auto-Focus lenses, all with central lens shutters. Range is from 28mm to 300mm, 50-110mm zoom, 35-90mm zoom and 1.7X converter. The built-in central lens shutter allows flash to be used at all shutter speeds down to 1/800s. It also improves image quality by reducing camera vibration.

The HTS 1.5 tilt/shift adapter delivers an easy to use, portable tilt/shift solution for 5 HC/HCD lenses ranging from 28mm to 100mm. The CF adapter allows use of the classic CF-lenses from the Hasselblad V-camera, with full use of their central shutters, allowing flash to be employed at shutter speeds down to 1/500s. And thanks to the large format of the H System cameras, there is a considerably shallower depth of field range, making it much easier to utilize selective focus to creative effect.

A choice of bright viewfinders

One of the important traditional advantages of the medium format is the extra-large and bright viewfinder image, enabling extremely precise compositions and easy operation in dim lighting. The H4D-31 comes with the HVD 90x viewfinder designed for full performance over the large sensor. Hasselblad has added an interchangeable waist-level viewfinder, the HVM, for the entire range of H system cameras. The bright and large viewfinder image is ideal for creative composing and the photographer is able to shoot in the fashion that suits them most; maintaining eye contact with the model, or gaining impact by shooting from a point lower than eye-level, for example.

Hasselblad's unique natural colors

Hasselblad's Natural Color Solution (HNCS) enables you to produce outstanding and reliable out-of-the-box colors, with skin tones, specific product colors and other difficult tones reproduced easily and effectively. In order to incorporate our new unique HNCS and DAC-features we have developed a custom Hasselblad raw file format called 3F RAW (3FR). This file format includes lossless image compression, which reduces the required storage space by 33%. The 3FR files can be converted into Adobe's raw image format DNG ('Digital Negative'), bringing this new technology standard to the professional photographer for the first time.

H4D-31 takes full benefit from all the flexibility of the impressive H camera system.

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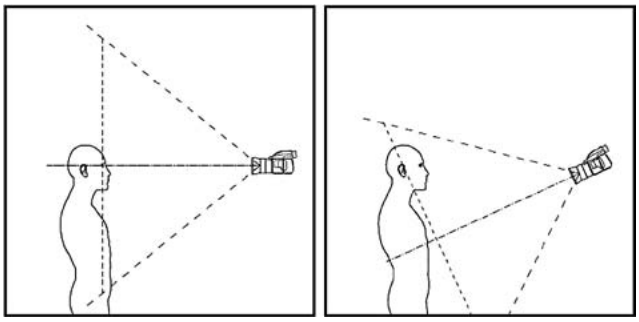
True Focus and Absolute Position Lock

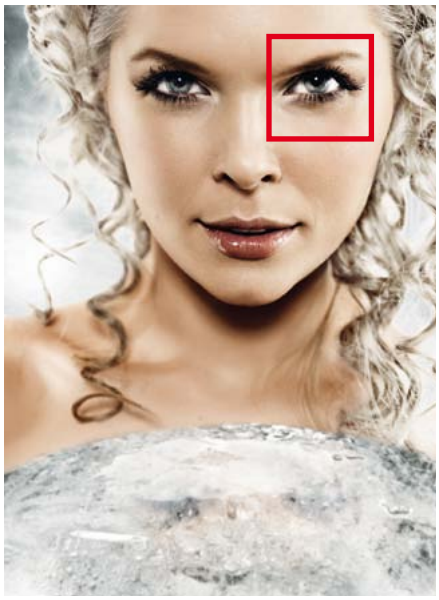
True Focus helps solve one of the most lingering challenges that faces serious photographers today: true, accurate focusing throughout the image field. Without multi-point auto-focus a typical auto-focus camera can only correctly measure focus on a subject that is in the center of the image. When a photographer wants to focus on a subject outside the center area, they have to lock focus on the subject and then re-compose the image. In short distances especially, this re-composing causes focus error, as the plane of focus sharpness follows the camera's movement, perpendicular to the axis of the lens.

The traditional solution for most DSLR cameras has been to equip the camera with a multi-point AF sensor. These sensors allow the photographer to fix an off-center focus point on an off-center subject, which is then focused correctly. Such multi-point AF solutions are often tedious and inflexible to work with. Due to the physics of an SLR-camera, the off-center focus points that are offered are all clustered relatively close to the center of the image. To set focus outside of this center area, the photographer is still forced to focus first, and then shift the camera to reframe, with the resulting loss of focus as a result.

To overcome this problem, Hasselblad has used modern yaw rate sensor technology to measure angular velocity in an innovative way. The result is the new Absolute Position Lock (APL) processor, which forms the foundation of Hasselblad's True Focus feature. The APL processor accurately logs camera movement during any re-composing, then uses these exact measurements to calculate the necessary focus adjustment, and issues the proper commands to the lens's focus motor so it can compensate. The APL processor computes the advanced positional algorithms and carries out the required focus corrections at such rapid speed that no shutter lag occurs. The H4D's firmware then further perfects the focus using the precise data retrieval system found on all HC/HCD lenses.



The plane of focus changes when the camera is tilted for composition.



The middle image shows the result when not using True Focus. While this image looks relatively sharp, the rightmost image where True Focus has been used, is razor sharp.

Photo: Marcel Pabst

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Digital Lens Correction and Ultra-Focus for image perfection

The H4D-31 camera allows information from the lens and exact capture conditions to be fed to the camera processor for ultra-fine-tuning of the auto-focus mechanism, taking into account the design specifications of the lens and the optical specifications of the sensor. In this way the full HC/HCD lens program is even further enhanced, bringing a new level of sharpness and resolution. Digital correction for color aberration and distortion is also added. "Digital Lens Correction" (DAC), is an automatic correction of the images based on a combination of the various parameters concerning each specific lens for each specific shot, ensuring that each image represents the best that your equipment can produce.

Accessories including GPS Recording Flexibility

Hasselblad's Global Image Locator (GIL) is an accessory for use with any Hasselblad H-System digital capture product. With the GIL device, all images captured outdoors are tagged with GPS coordinates, time and altittude. This data provides the key to a number of future applications involving image archiving and retrieval. One example is the direct mapping of images in Phocus software to the Google Earth application. Check out full list of accessories at: **http://www.hasselblad.com/products/lenses-and-accessories/h-system-accessories.aspx**

H4D with GIL Global Image Locator accessory.

Phocus for professional level workflow

Phocus provides an advanced software toolbox that has been especially designed to easily achieve optimum workflow and absolute image perfection from Hasselblad raw image files. With the H4D-31 camera system Phocus provides:

- **Uncompromising Image Quality**
- **Special extended camera controls** with which to operate your H4D-31 camera. These features, such as live video for easier shot set-up and workflow, or the ability to control the lens drive for focusing when the camera is in a remote position or when the digital capture unit is mounted on a view camera, bring an entirely new level of flexibility to the way you shoot.
- **Moiré Removal Technology** automatically applied directly on the raw data, leaving image quality intact and eliminating the need to carry out special masking selections or other manual procedures, saving hours of tedious post-production work.
- **Flexible Workflow.** The Phocus GUI features easy-to-use options that allow you to customize your set-up to suit a range of different workflow situations, such as choice of import source, browsing/comparison functions, file management, image export in a number of file formats, pre-setting of options for upcoming shoots, and much, much more.
- **New Metadata (GPS, etc).** The extended metadata included in all Phocus images provides for accurate and detailed cataloguing and indexing, easy image management, and includes added GPS data functionality in order to allow a range of new functions. Phocus links GPS data directly to Google Earth, for example, making geographic reference a snap and image storage and retrieval much easier.
- **100% Viewing Quality.** The Phocus Viewer delivers image viewing quality that matches every detail of what you will see later in Photoshop. In addition, the Phocus Viewer allows you to customize layout and composition to suit your current or desired workflow, providing a wide range of options including full view, compare, browse, horizontal, or vertical view, and so on. You can have multiple folders open simultaneously for side-by-side viewing, comparison, and selection

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Instant Approval Architecture

Building on the success of the Audio Exposure Feedback technology, Hasselblad has created Instant Approval Architecture (IAA), an enhanced set of feedback tools, designed to enable the photographer to focus on the shoot rather than the selection process. IAA triggers audible and visual signals for each image captured, notifying the photographer immediately of its classification status. The information is recorded both in the file and in the file name, providing a quick and easy way to classify and select images, in the field or back at the studio. IAA is a Hasselblad trademark and Hasselblad has a patent pending on the invention.

Options for working with tilt/shift

Two basic options are available for tilt/shift work with H4D-31. A simple-to-use, portable adapter solution and the classic view camera solution.

H4D with HTS 1.5 tilt/shift adapter and a HCD 28mm lens.

5 HC/HCD lenses including Extension Tubes can be used with the HTS 1.5

The HTS tilt/shift adapter for H4D-31 allows for portable tilt/shift with the HC/HCD lens range from 28mm to 100mm.

Please refer to the separate datasheet on this product for details.
To further increase usability, the H4D-31 has been designed to allow the digital capture unit to be detached and used on a view camera by way of an adapter.

Two modes of operation and storage

The H4D-31 offers a choice of storage devices: CF cards or a computer hard drive. With these operating and storage options, you are able to select a mode to suit the nature of the work in hand, whether in the studio or on location.

Digital Zeiss – the classic V System lenses on the H4D

The CF adapter allows you to work with the V System's classic CF-lenses on your H4D camera, bringing old school glass to a cutting edge digital platform. The CF adapter is not just is not just a mechanical socket that allows you to plug your legacy lenses into a new body. The CF adapter allows the lenses to use their central lens shutter, which is not the case with other cameras offering Carl Zeiss lens interface. All images processed with Hasselblad's digital lens correction software take the already amazing image quality from these renowned lenses to even higher levels. The CF adapter does not, however, transform your Carl Zeiss lenses into autofocus lenses, but it does enable the H4D camera to provide focus confirmation in the viewfinder when using these lenses. Naturally, should you feel the need to work with auto-focus, the H4D cameras offer the full HC/HCD lens line, covering 11 Auto-Focus lenses, all with central shutters.

H4D with CF Lens Adapter and a Carl Zeiss lens.

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Technical specification

DIGITAL FEATURES	
Sensor size	31 Mpixels (4872×6496 pixels)
Sensor dimensions	33.1×44.2 mm. 6.8µm pixels
Image size	RAW 3FR capture 40 MB on average. TIFF 8 bit: 93 MB
File format	Lossless compressed Hasselblad RAW 3FR
Shooting mode	Single shot
Color definition	16 bit
ISO speed range	ISO 100, 200, 400, 800 and 1600
Storage options	CF card type U-DMA (e.g. SanDisk Extreme Pro) or tethered to Mac or PC
Color management	Hasselblad Natural Color Solution
Storage capacity	4 GB CF card holds 100 images on average
Capture rate	1.2 seconds per capture. 42 captures per minute
Color display	Yes, 3 inch TFT type, 24 bit color, 230 400 pixels
Histogram feedback	Yes
IR filter	Mounted on CCD sensor
Acoustic feedback	Yes
Software	Phocus for Mac and Windows
Platform support	Macintosh: OS X 10.7,10.6,10.5. Windows: XP, Vista, Windows 7 (32 and 64 bit)
Host connection type	FireWire 800 (IEEE 1394b)
View camera compatibility	Yes, Mechanical shutters controlled via flash sync. Electronic shutters can be controlled from Phocus
Operating temperature	0 - 45 ˚C / 32 - 113 ˚F
Dimensions	Complete camera w. HC 80mm lens: 153 x 131 x 205 mm [W x H x D]
Weight	2290 g (Complete camera w. HC80 mm lens, Li-Ion battery and CF card)

CAMERA FEATURES	
Camera type	Large sensor medium format DSLR
Lenses	Hasselblad HC/HCD lens line with integral central lens shutter
Shutter speed range	64 seconds to 1/800 second
Flash sync speed	Flash can be used at all shutter speeds
Viewfinder options	• HVD 90x: 90° eye-level viewfinder w. diopter adjustment (-5 to +3.5D). Image magnification 3.1 times. Integral fill-flash (G.No. 12 @ ISO100). Hot shoe for SCA3002-system flashes from Metz™ • HV 90x: 90° eye-level viewfinder w. diopter adjustment (-4 to +2.5D). Image magnification 2.7 times. Integral fill-flash (G.No. 12 @ ISO100). Hot shoe for SCA3002-system flashes from Metz™ • HVM: Waist-level viewfinder. Image magnification 3.2 times
Focusing	Autofocus metering with passive central cross-type sensor. Ultra focus digital feedback. Instant manual focus override. Metering range EV 1 to 19 at ISO 100
Flash control	Automatic TTL centre weighted system. Uses built-in flash or flashes compatible with SCA3002 (Metz™). Output can be adjusted from -3 to +3EV. For manual flashes a built-in metering system is available
Exposure metering	Metering options: Spot, Centre Weighted and CentreSpot. Metering range Spot: EV2 to 21, Centre Weighted: EV1 to 21, CentreSpot: EV1 to 21
Power supply	Rechargeable Li-ion battery (7.2 VDC / 1850 mAh)
Film compatibility	No

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Connectivity diagram

Optional viewfinders

HV 90x viewfinder

HVM waist-level viewfinder

Tilt/Shift

HTS 1.5. For use with HCD28, HC35, HC50, HC80 and HC100 (including extension tubes)

Accessories

GIL GPS receiver

SCA3902 TTL Flash Adapter

H4D Camera

HVD 90x viewfinder (included)

Sensor unit (included)

Camera body

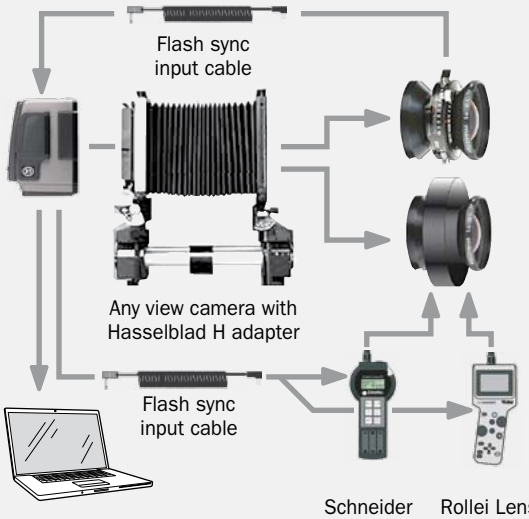
Optional V system lenses

CF lens adapter

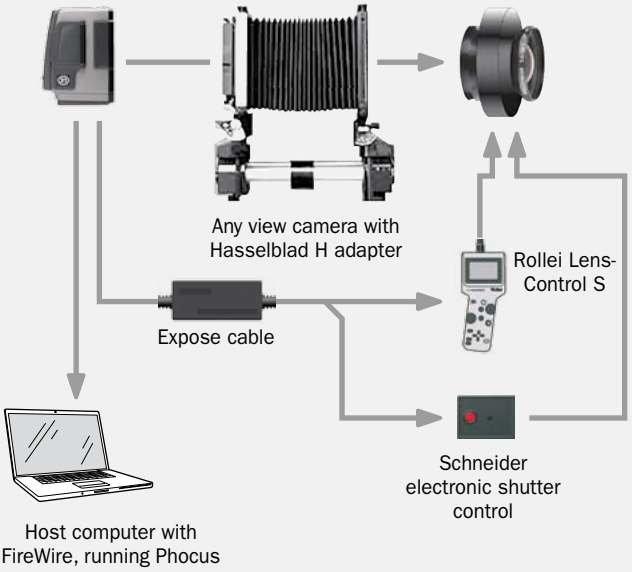
Lenses

All HC/HCD lenses, including extension tubes and converter

View cameras – Flash sync shutters



View cameras – Electronic shutters



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H4D-31 lens range

		
HCD 4/28mm	HC 3.5/35mm	HC 3.5/50-IImm
		
HC 2.8/80mm	HC 2.2/100mm	HC Macro 4/120-IImm
		
HC 3.2/150Nmm	HC 4/210mm	HC 4.5/300mm
		
HC 3.5-4.5/50-110mm	HCD 4-5.6/35-90mm Aspherical	All C-type lenses from the V system with optional CF lens adapter