H 20

GETTING STARTED

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1 Contents

1 Introduction

The Phase One H 20 single shot camera back, is designed for high-end advertising studios with a need for productivity, flexibility and the absolute best in image quality.

The Phase One H 20 is able to capture large objects and still reproduce the finest details. The square formatted 16 megapixel CCD allows the Phase One H 20 to generate image files that can be offset printed as large posters – even if the image is cropped to a rectangular format.

The ability to use the same software as all the Phase One single shot camera backs and to connect to a computer simply by hot plugging, allows the Phase One H 20 to integrate perfectly with the productive and flexible workflow appreciated by thousands of studios around the world.
The Phase One H 20 is based upon the highly recognized Phase One technology. This manual "H20 - Getting Started"only describes features and functionality, which are unique for the Phase One H 20.

For a detailed guide to the application software please refer to the Capture One User Guide for Mac and PC.

2 Special H 20 Features

The Phase One H 20 can be mounted on a range of cameras including Hasselblad 555 ELD, 553 ELX, 501 CM, 503 CW as well as Mamiya RZ67 Pro II and 4" x 5" view cameras via optional Phase One adaptor. A Phase One H 20 with special mount for Rollei Rolleiflex camera is also available.

Iso Settings

The default film speed of the H 20 camera back is ISO 50. However this setting can be changed to ISO 100 in the Capture One application.
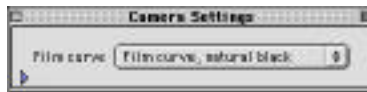
It is recommended to capture images using a film curve. That is done by selecting the film curve in the Capture One software. Click the camera icon in the icon bar, and select "Film Curve" or "Film Curve, Natural Black".

Double exposure protection

When using the H 20 on a Hasselblad body it is not possible to accidently double expose the image by capturing one image quickly after another. The H 20 communication with the Hasselblad is disabling capture functionality in the camera when necessary.

At the end of an image exposure the image information in the CCD has to be moved from the CCD to the host computer. During this short period of time the CCD must be protected from light exposure. The H 20 ensures a safe emptying of the CCD by blocking the shutter release button on the Hasselblad camera.

IR filter on the CCD

The IR filter (Phase One TG1 Infrared cut-off filter) is placed on top of the CCD.

The filter may not be removed for several reasons.

● The focusing of the H 20 camera back will be damaged

● It is only possible to remount the filter without dust in between the filter and the CCD if you have access to special clean room facilities.

● The Phase One Product Warranty is terminated.

Large format photography

The Phase One H 20 can be used on most large format cameras via the optional Phase One FlexAdaptor and supports all mechanical shutters and the Horseman ISS electronic shutter. To ensure optimal image quality, Phase One strongly recommends shutters that can be fired twice within four seconds. The first release of the shutter activates the CCD, the second release takes the picture. If the time limit of four seconds is exceeded the camera gives a warning "beep" followed by a "ready" signal. If for some reason it is not possible to fire the shutter twice, within the time limit the camera will send a time out error message to the screen.

The Phase One FlexAdaptor

3 Getting ready for taking pictures

Mounting the viewfinder mask

The image area of Hasselblad camera body is approximately 6 cm x 6 cm, wheras the image area of the H 20 is 3.96 cm x 3.96 cm. It is therefor necessary to use the H 20 viewfinder mask. Remove the protection tape from the mask and mount it beneath the original focusing screen.

The viewfinder mask is positioned in the bracket that holds the focusing screen. Please refer to the Hasselblad camera manual instructions before the focus screen is removed.

After the Phase One viewfinder mask is positioned in the bracket place the Hasselblad focusing screen on top of the mask and slide the viewfinder top back into place.

Mounting the H 20 on a Hasselblad camera

The H 20 is fully integrated with the camera house and acts as a true part of the whole camera system.

It is important to ensure that the bottom part of the H 20 camera back is pressed well into the locking mechanism before the upper locking mechanism is pressed together.

To avoid that the H 20 is released by mistake from the camera house, you can use the enclosed screwdriver to lock the H 20 locking mechanism, on the top of the camera back.

Cable mounting on Hasselblad

On all Hasselblad cameras a sync cable is connected from the lens to the C-connector on the camera back.
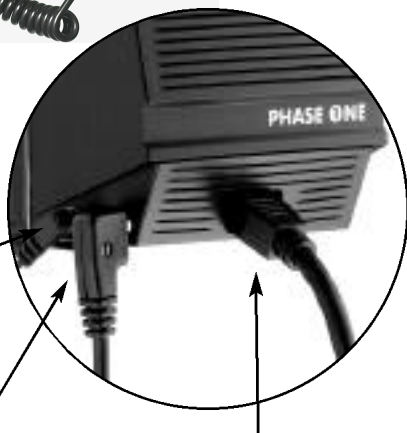

The flash cable is then connected to the F-connector on the camera back

Sync cable connects to the C-connector

Flash cable connects to the F-connector

FireWire connector

When using the H 20 on a Hasselblad motorized body (i.e. Hasselblad ELX series or Hasselblad ELM series) a motor cable is supplied to utilize capture from the computer.

The cable is connected between the M-connector on the H 20 and the DIN connector on the Hasselblad.

Motor cable

Hasselblad 553 ELX

Avoid using A or AS mode at shutter speeds below 1/15 of a second.

If operating in mirror up mode, the mirror up mode has to be set in the Capture One software. This is done on a Mac by pressing ommand + M or on a PC by pressing CTRL + M on the keyboard

Please note that the Phase One H 20 should not be mounted while the camera is set to mirror up (S or RS modes) also make sure that the lens is not jammed when connecting the flash sync cable to the Phase One H 20.

Hasselblad 555 ELD

When using the Phase One H 20 with a Hasselblad 555 ELD, the shutter release on the front of the Hasselblad must be in the "Digital" position. If the shutter release is in the "Film" position you will not be able to release the camera.

A motor cable is not required when using the camera on an Hasselblad 555 ELD body.

Avoid using A or AS mode at shutter speeds below 1/15 of a second.

Please note that the Phase One H 20 should not be mounted while the camera is set to mirror up (S or RS modes) also make sure that the lens is not jammed when connecting the flash sync cable to the Phase One H 20.

Hasselblad 501 CM and 503 CW without winder

Phase One H 20 also supports mechanical Hasselblad cameras such as 501 CM and 503 CW. These cameras are operated in single shot mode via the shutter release button or a standard cable release. The Phase

One H 20 employs a so-called active shutter control that ensures that the shutter release button cannot be depressed until the Capture One Software is ready.

If operating in mirror up mode, the mirror up mode has to be set in the Capture One software. This is done on a Mac by pressing ommand + M or on a PC by pressing CTRL + M on the keyboard

Please note that the Phase One H 20 should not be mounted while the camera is set to mirror up.

Also make sure that the lens is not jammed when connecting the flash sync cable to the Phase One H 20.

Hasselblad 503 CW with Winder CW

Please note that Phase One Does not recommend that the H 20 is used on a Hasselblad 503 CW with Winder CW. However if used then please be aware that the Phase One has to be fired from the computer, and this requires a special motor cable (can be supplied by Phase One).

If operating in Mirror up mode, the Mirror up mode has to be set in the Capture One software. This is done on a Mac by pressing ommand + M or on a PC by pressing CTRL + M on the keyboard.

Please note that the Phase One H 20 should not be mounted while the camera is set to mirror up.

Also make sure that the lens is not jammed when connecting the flash sync cable to the Phase One H 20.

Mamiya RZ67 Pro II adaptor:

Phase One has made an optional H 10/H 20 adaptor plate which enables mounting and close integration with the the Mamiya RZ67 Pro II camera.

When using this adaptor the camera must be set to multiple exposures.

The multiple exposure selector (M) is located along with the fil back revolve switch (R).

Mirror up operation is only recommended if using Mamiya's own double cable release.

The adaptor plate connects to the Mamiya body, and the switch underneath is set in L position (locked).

Rolleiflex 6008 AF/Integrale

Mounting the viewfinder mask

The image area of the Rolleiflex is approximately 6 cm x 6 cm. Whereas he image area of the H 20 is 3.9 cm x 3.9 cm. A Phase One H 20 viewfinder mask is provided. This mask has to be mounted on top of the original focusing screen. Make sure you it is positioned in the center when slided into the bracket that holds the focusing screen. Please refer to the Rolleiflex Instructions before mounting the focus screen .
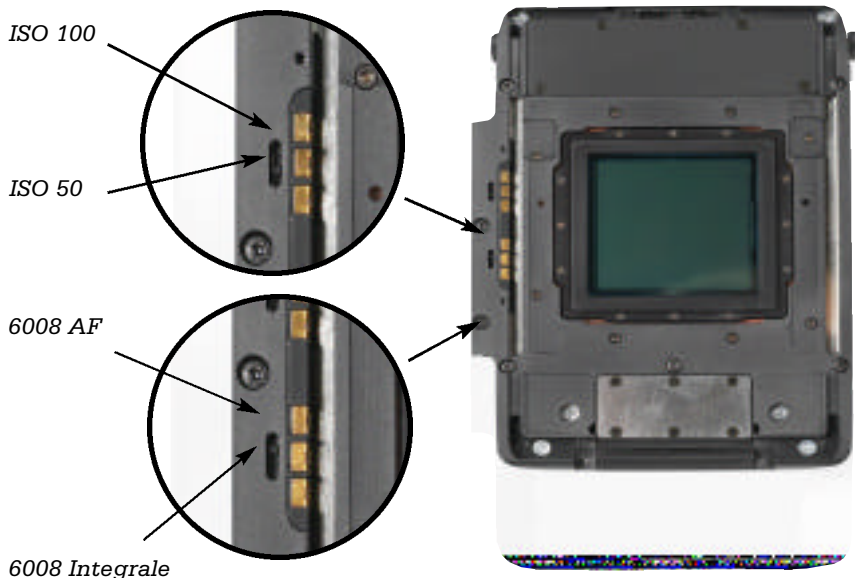
Mounting the H 20 on the Rolleiflex

A few things need to be done before mounting the H 20 camera back on the Rolleiflex body.

Start by removing the detachable film gate from the Rolleiflex.

Camera house type and ISO dip switch

ISO 100

ISO 50

6008 AF

6008 Integrale

On the front of the H 20 Rollei mounting plate you will find two dip-switches, the upper one is used to select the ISO setting and the lower one is to be set according to wich camera body you are using it on.

When shipped from the factory the upper switch is set to ISO 50 and the lower switch is set to Rolleiflex 6008 AF. Use the supplied screwdriver to set the dip switches according to the explanation above.

Rolleiflex cable connections

Rolleiflex 6008 Integrale

The supplied black box cable must be connected between the "C" connector on the H 20 and the 14-pin connector on the Rolleiflex Integral camera house.

Rolleiflex 6008 AF

No cables are required between the H 20 and the Rolleiflex 6008 AF.

Flash sync cable must be connected to the Rolleiflex camera house on both Rolleiflex 6008 AF and 6008 Integral.

When using a Rolleiflex 6008 AF or 6008 Integral the flash cable must NOT be connected to the camera back.

Rolleiflex limitations

Host Capture:

It is not possible to capture from the computer.

Mirror up:

Mirror up is not supported when mounted on the 6008 Integrale.

Bulp Capture:

Is not supported when mounted on the 6008 Integrale.

4 Maintenance

Cleaning the IR filter

When the Phase One H 20 camera back is not attached to a camera, the camera back must be protected with the protection plate. However over time dust may accumulate on the IR filter. This will degrade the image quality if not removed.

Please consult the cleaning procedure that came with the CCD cleaning kit in the H 20 package.

5 Technical Data

Phase One H 20 specifications:

Technology:	Full Frame CCD
Color filter:	R, G and B in Bayer pattern
Total pixels:	4,145 x 4,128 (17.1 million)
Effective pixels:	4,080 x 4,080 (16.6 million)
Effective size:	36.9 x 36.9 mm
Pixels size:	9 x 9 microns
Imager ratio:	1:1
Imager output:	48 bit (16 bit per color)
Antiblooming:	8 f-stops

Digital image

Color depth:	48 bit color (16 bit per color)
Dynamic range:	12 f-stops
Single exposure:	4,080 x 4,080 pixels
	24 bit RGB: 48 MB
	48 bit RGB: 96 MB
	64 bit CMYK: 128 MB
Two exposures:	7,800 x 4,000 pixels
	24 bit RGB: 89 MB

48 bit RGB: 178 MB

64 bit CMYK: 237 MB

Basic sensitivity

ISO range: 50 or 100

Lighting conditions

Flash, tungsten, daylight, fluorescent, HMI

System

Exposure time: 16 sec. to faster than 1/20,000 sec.

Capture rate: 3 Sec. per image

Burst depth: Only limited by available hard disk and server capacity

IR filters: Mounted on chip

Interface: Direct IEEE 1394 architecture

Power: 8 - 40 Volt DC

Data format & compression

Phase One output format, TIFF-RGB, TIFF-CMYK, JPEG

Color Management workflows

RGB, embedded ICC profiles, CMYK

Operating requirements

Temperature: 0˚ to 50˚ C (32˚ to 122˚ F)

Humidity: 15 to 80 % RH (non-condensing)

Physical dimensions

Height:	99 mm
Width:	92 mm
Depth:	53 mm
Weight:	App. 500 g

Computer platform

Mac OS 9.x and Mac OS X

Windows XP, 2000, Me, 98SE

Cameras supported

Hasselblad 500 series, including Hasselblad 555 ELD

Mamiya RZ67 Pro II via optional Phase One adaptor

Rolleiflex 6008 Integrale (Fixed Rollei mount)

Rolleiflex 6008 AF (Fixed Rollei mount)

View cameras (via optional Phase One Flexadaptor):

Arca Swiss, Cambo 23SF, Rollei Xact, Linhof M679,

Sinar 4" x 5", Linhof 4" x 5", Arca Swiss 4" x 5",

Toyo 4" x 5", Horseman 4" x 5", Cambo 4" x 5",

Plaubel 4" x 5"

Certifications

CE