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XF Camera System

User Manual

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Primary parts of the XF Camera System

Lens, XF Camera Body, IQ Digital Back

Viewfinder blind lever
Hot-shoe
Removable Viewfinder
Front dial
Top touch screen
Side dial
Handgrip with integrated battery compartment
Rear dial
© Richard Thompson
60MP
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Diopter adjustment dial
Viewfinder release slider
Flash sync port
Back release button
Back lock slider
8-pin multi-connector port
12-pin multi-connector port
CF card compartment
USB 3.0 port
On/Off button
Battery compartment
FireWire 800 port
Rear touch screen
© Richard Thompson
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IQ3

Dials, Buttons and Touch Screen Interface

Lens, XF Camera Body, IQ Digital Back

XF Camera Body

Shutter release buttons and user buttons are all positioned within reach of your fingers. These are all used for photography applications and are referred to as “buttons” as oposed to “keys” which are the user interface keys designed to control the user interface on the OneTouch UI described later in this manual.

XF Camera Body

The top screen of the XF camera body has a touch-sensitive transflective LED display, providing a mix of direct access to features as well as a menu system navigated using the dials and keys. All the controls are customizable.

IQ Digital Back

Assembling the XF Camera System

Digital Back and camera body modularity

Depending on how you purchased the system, the XF Camera System may be supplied ready for use with the IQ Digital Back already attached, and consequently, there is no need to remove it prior to capture. If, however, you would like to do so, for example, to use it with a technical camera, please follow the instructions below.

Removing the IQ Digital Back from the XF Camera Body

1. Turn the Camera System off and remove any interface cables from the Digital Back.
2. Push the IQ Digital Back lock slider toward the XF camera body while simultaneously pressing the IQ Digital Back release button. Note that the lock slider acts as a safety catch.
3. Tilt the IQ Digital Back slightly backwards from the top and gently lift the IQ Digital Back off the XF camera's guide rail.

Attaching the IQ Digital Back to the XF Camera Body

1. Gently place the mounting plate of the IQ Digital Back onto the bottom guide rail of the XF camera body.
2. Push the back lock slider and press the release button simultaneously to retract the back's upper locking mechanism, and then push the IQ Digital Back firmly onto the camera's twin catches, using the bottom guide rail as a pivot.

NOTE:
After removing the IQ Digital Back from the XF camera body, remember to protect the sensor by reattaching cover, and to attach the back port cover on the XF to protect the camera from dust.

Removing the Lens

1. Press the lens release button on the right-hand side front of the camera and keep pressed.
2. Rotate the lens counter-clockwise on the body until it stops, and lift it out carefully from the body.

Attaching a Lens

1. Looking down from the top of the camera, or from right hand side, align the blue or the red index point on the lens with the blue or red index points located on bayonet mount of the XF camera body and rotate clockwise on the body until it stops and clicks into position.

Two different colored index points are available to allow easier attachment of the lens to the camera. Either when looking downwards from above the camera (blue), or in front of the camera looking from the side (red).

If you are not replacing with another lens, then reattach the front and rear caps, and keep them always attached to the body to protect the mirror-mechanism or lens elements from accidental damage.

Interchangeable Viewfinders

In addition to the Prism Viewfinder, the XF features an optional Waist Level Finder (Part # 73090).

Removing the Viewfinder

1. Ensure the power of the XF Camera System is Off.
2. Grasp the viewfinder securely with your right-hand and push the viewfinder release slider forwards, towards the lens with the right thumb.
3. Lift the viewfinder up and out carefully, beginning with the rear of the viewfinder then moving up and away from the camera body.

Attaching the Viewfinder

1. Ensure the power of the XF Camera System is Off.
2. Hold the viewfinder securely with your right hand, with the viewfinder tilting downwards slightly.
3. Place the front edge of the viewfinder so that it is resting on the front edge of the body.
4. Ensure that the viewfinder's front locating pins are aligned with the body's pin registration recesses, located in the front of the XF Viewfinder port. (Both the electrical contacts and prism of the viewfinder must be aligned with the body's contacts and viewfinder screen recess.)
5. Carefully lower the rear of the viewfinder until level with the body, then press the viewfinder down firmly until it clicks into place.

NOTE:
Ensure the viewfinder is securely attached before turning the power on and using the camera. Failure to ensure the viewfinder and body are properly secured could result in a camera malfunction. There is also a risk of dropping either the camera or the viewfinder if the viewfinder is not securely attached! Always remember to protect the optical elements

Readying the camera system

Charging the Batteries

When working untethered, the standard power source of both the XF camera body and IQ Digital Back back is the 7.2 V (3400 mAh) BP-911/914/915 type rechargeable Li-ion battery.

To maximize battery performance, charge both batteries before use with the supplied Twin V Pro charger. Approximately 2.5 to 3 hours are required to fully charge exhausted batteries.

1. Slide open the charger base cover and fold back to form a stand.
2. Slide the batteries into the charger slots from the top down. If charging only one battery, either slot can be used.
3. The charge indicator will blink and display the battery's approximate capacity as a percentage.
4. When the first battery is recharged the charger will automatically start charging the second battery.
5. Charging is complete when the charge indicator stops blinking and the capacity level displays "100%".
6. Remove the batteries and unplug the cable from the charger.

Twin Battery System

The XF camera body and the IQ Digital Back use identical 7.2 V (3400 mAh) BP-911, 914, 915 type rechargeable Li-on batteries and share the same charger for convenience, however the IQ Digital Back requires a battery to be loaded prior to use, also when working tethered to a computer using a bus-powered interface cable (FireWire 800 or USB 3.0).

XF and IQ Power Sharing

The XF camera body and IQ Digital Back are designed to share power from the two BP-915 type batteries in the system, thereby providing improved operation time for the full system. IQ1 and IQ2 backs cannot share power with the XF camera, and therefore operate on their own battery, independent of the camera body.

IQ Digital Backs continue to feature their own power source, so that they may also be used with third-party camera systems.

General advice for using the battery and charger

NOTE:
In low temperatures, keep spare batteries close to body temperature by storing in an inside jacket pocket. Li-Ion type batteries tend to lose efficiency under cold conditions.

Remove batteries when not in use

When the battery is left in the camera or the back a small amount of current is drawn, resulting in accelerated discharge and shorter battery life. Remove the batteries and replace the covers before storing. Dirt and fingerprints on battery terminals may cause loose connection and corrosion. Clean the contacts with a soft-cloth before loading the batteries.

Shooting tethered

Always keep a battery in the IQ Digital Back even when shooting tethered to a computer via a FireWire or USB connection.

Charge the batteries before use

Batteries discharge when not in use. For optimum performance, charge the batteries before the camera and IQ Digital Back are expected to be used.

Use in foreign countries

The AC power adapter is supplied with several power plug adaptors for international use. The power adaptor is compatible with 110 to 250 V AC (50/60 Hz) power sources.

Charge the batteries indoors

Only charge the batteries indoors (and away from moisture) at ambient temperatures between 5–35 Celsius(41-95 Farenheit).

Continued charging

Never store the battery connected to the charger for an extensive period of time. When charging is complete, remove the battery and unplug the charger from power outlet.

Only use approved batteries

Use only 7.2 V BP-915 type batteries only. Capacity in excess of 3300 mAh is recommended. Some third party batteries may not fit into the XF camera body or IQ Digital Back's battery compartment, due to differences in the manufacturing tolerances. Do not try to force a battery into the compartment. When pressing the battery release button it should slide out without being hindered. If a battery can't be removed, levering the battery out may cause damage. Please contact your Phase One dealer for advice.

Only use the original power adapter or 12 V DC car adapter (supplied)

It is not recommended to use a portable voltage transformer with the battery charger. Battery charging from a car's 12 V electrical socket is possible but the car battery will discharge if the engine is not running.

Powering On and Off from the XF camera body

Powering up both the XF and the IQ simultaneously is achieved with a short press of the On/Off button located on top rear of the grip on the the XF camera body. A long press of the same button will power off the XF. The IQ Digital Back will follow and power-off automatically after a few seconds. The XF and IQ may also powered on and off from the IQ Digital Back, using the back's power button.

Tip: As diagnostics are performed by the back first, powering up and shutting down is quicker using the IQ's power button.

Loading the battery in the XF camera body

1. Open the battery compartment cover located in the base of the XF camera body grip.
2. Insert the battery with power contacts first.
3. Push the battery up until it locks into position
4. Close the battery compartment cover.

Removing the battery from the XF camera body

1. Open the battery compartment cover
2. Push the metal retaining catch inside the grip to release the battery and pull out.
3. Close the battery compartment cover.

Loading the battery in the IQ Digital Back

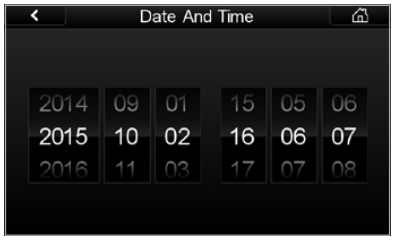
1. Open the battery cover located on the underside of the IQ Digital Back.
2. Insert the battery, power contacts first.
3. Push the battery up until it locks into position
4. Close the compartment cover.

Removing a battery from the IQ Digital Back

1. Open the battery compartment cover.
2. Push the retaining catch inside the compartment to release the battery and pull out.
3. Close the battery compartment cover.

Battery life

The actual number of shots possible will vary depending on the shooting conditions. For instance Image Browsing, Autofocus operation, Live View, WiFi and Profoto Air use will reduce the number of shots available on a single charge. The age and condition of the battery also has an effect on battery life.



Setting the Date and Time on the IQ Digital Back

Setting the Date and Time on the IQ Digital Back

Date and time are set and controlled via the IQ Digital Back's menu. When the IQ Digital Back is initially shipped from factory, or If the IQ Digital Back has been without power for a long period of time, it will automatically prompt you to set the time and date.

Touch the screen and scroll through the numbers to attain the appropriate date and time. Tap the "Home" icon in the top right corner of the screen to exit the dialog and go to the Home Screen of the IQ Digital Back. The time and date is applied to the EXIF data in all files captured with the IQ Digital Back.

Setting Language on the IQ Digital Back

The XF Camera System is delivered, by default, with the language set to English. Follow the steps below to change the language of the IQ Digital Back to one of nine others available, including German, French, Swedish, Italian, Spanish, Chinese (simplified), Japanese, Korean and Russian.

1. From the Home Screen on the IQ Digital Back, press Menu.
2. Navigate to Language by touching the screen and scrolling down.
3. Select the preferred language option. A green check mark icon indicates the selected language.
4. Press the Upper Left Key on the IQ digital to exit the menu.

NOTE:
If you choose a language by mistake, and can no longer read the menu, look for the menu item ending with (L). This is the Language menu option. Each choice is displayed using the native language, with English as the first option.

Using Memory Cards

The Phase One XF Camera System supports Type 1 CompactFlash (CF) cards only. Phase One recommends UDMA 7 type cards (800x speed or better) for optimal performance, however slower cards can be used. Microdrives and CF Type II cards are not recommended for use with IQ Digital Backs.

Installing and Removing the CF Card

Insert the CF card into the media storage slot on the left-hand side of the IQ Digital Back with the card's front label facing the display-screen of the IQ Digital Back. If resistance is felt, stop immediately and check the card is oriented correctly.

Remove the card by pressing the black release lever just above the card – this first press will make the lever protrude and you can now press it a second time to eject the card. Make sure the eject lever is correctly closed before loading another card.

Installing and Removing the CF Card

LED Lights

IQ Digital Backs feature two main LEDs located below the bottom left corner of the screen.

Green

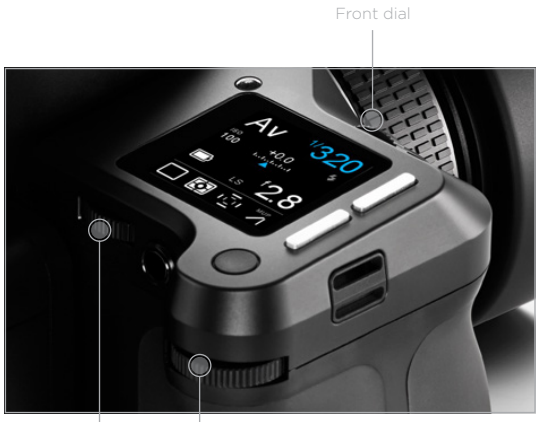
When capturing an image the Green LED will blink rapidly to indicate that the IQ Digital Back is busy. When the IQ screen is dimmed this Green light will continuously display to indicate that the camera is still ready to shoot.

Red

A Red LED indicates that the IQ Digital Back is writing to the storage media, and therefore the buffer has not been emptied. There is an additional Red LED indicator located next to the CF card slot (beneath the cover). It is assigned to indicate CF card activity only (See picture "Installing and Removing CF Card").

LED Lights

Navigating the XF Camera System



Top Touch Screen

Central to the operation of the Phase One XF Camera System is the XF Camera Top Touch Screen. Sitting at the top of the large, ergonomic hand-grip this touch-sensitive, multi-functional screen displays the camera's essential settings, keeping you fully informed at all times. Access to all of that information is quite literally at your fingertips.

Not only does the Top Touch Screen allow you to make selections on the fly but also falling naturally under the fingers and thumb of your right hand are all the controls required to take command of the camera. To change the Exposure mode, AF mode or Metering mode, or switch between manual ISO and Auto, just touch what you want to adjust on the screen and select from the choices displayed.

Three Dials and Two Keys

The XF camera body is designed with a dedicated, ergonomically placed dial for each of the exposure settings; Shutter Speed, Aperture value and ISO. The dials are highly customizable allowing, for instance, any one of them to be reconfigured to alter exposure compensation in Av/Tv or Program, this gives you direct control of the exposure mode.

The dials are modal, switching their function to navigate the Top Touch Screen's integral menu system, or to scroll through each of the displayed function settings as a shortcut, depending on which mode is selected. A single press of one of the two aluminum Top Keys is all that's required.

The Front Key accesses the touch screen's shortcut Camera Function mode, while the Rear Key is used to reveal the integral Camera Menu.

Camera Menu

In the menu system, the Front Dial is always used to scroll up and down through the options, while either the Rear or Side Dial is used to navigate to the next level and ultimately to select settings. That can't be changed to avoid confusion, but we've made the Top Front and Rear Keys modal and they're customizable as well. You can move up and down the menu with either set of controls or reconfigure the keys to move between levels, but you'll still need to make selections using the Rear or Side Dial.

User Configurable Buttons

None of the buttons are labelled, as the features they access are customizable. The Secondary Shutter Release Button, for example, located at the front of the camera, and two the User Buttons, are easily reconfigured from the Top Touch Screen's Camera Control menu.

Once a function has been chosen, a simple half press of the shutter button is all that is required to return the camera to full readiness, so you'll never miss a shot. The only time you will be asked to confirm the settings is when storing or loading groups of settings in one of the three Custom modes, or when restoring the camera to the default (factory) settings. No further confirmation of the settings is necessary, meaning that you can rest assured, the settings are always stored when leaving the menu system.

XF Camera Body Controls

NOTE:
If AF priority is set to "Focus", the camera will only capture an image if the AF system obtains focus.

Shutter Release Button

The shutter release button has a two-stage operation: the first is accessed by a gentle half press and activates both the exposure meter and auto-focus. Pressing the button all the way down to the second stage trips the shutter, either immediately in Single, Continuous Shooting or Exposure Bracketing modes, or after initiating a certain action, such as focusing or locking the mirror up for the Vibration Delay (self-timer) mode. If the camera is in Display Off (sleep) mode, a half press will wake up the camera and activate any configured functions. Half press the shutter release can also be used to exit menus and to return the camera to instant readiness.

Shutter release button

Secondary shutter release button

Secondary Shutter Release Button

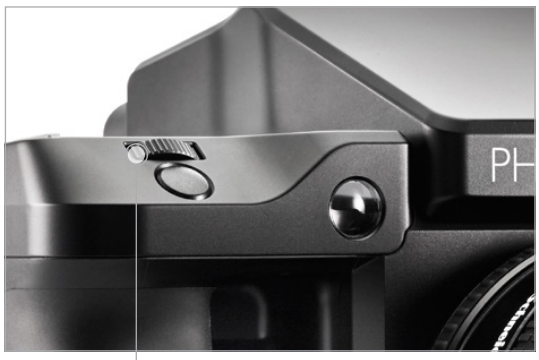
This modal button is de-activated by default but when the shutter release function is enabled (from the Top Touch Screen menu), the secondary shutter release button replicates the functionality of the main shutter release button. When enabled, the primary shutter release button remains active, and either button can be used to release the shutter, or initiate a chosen action.

Top Touch Screen

Top Touch Screen

As a multifunction panel the screen layout varies depending on the status of the camera. However, the Classic layout is the main display, and it's here that the camera's exposure values and mode settings are displayed. Shutter speed, ISO and Aperture values are selected directly by the Front, Rear and Side Dials, respectively. Other camera functions, depicted by icons, including capture, metering and AF area modes may be selected quickly via the optional Camera Function settings mode, after pressing the Front Key and scrolling through the options using the Front Dial, or via touch. The Camera Menu display is used to select the less commonly used camera functions. It is accessed via a short press of the Rear Key, and navigated using the Front Dial. Options are chosen using the Rear and Side Dials.

Note the brightness of the Top Touch screen is determined automatically using a sensor close to the screen, however the brightness setting can be altered via the Rear Key > UI Setup > Backlight



Front Dial

Rear Dial Side Dial

Rear button Front button

On/Off Button

Front Dial
This is used to adjust the Shutter Speed by default, however it is modal, and after pressing the Front or Rear Key it is repurposed for navigation of the Camera Function settings and the Camera Menu, respectively. Note the Front Dial is customizable.

Side Dial
This is set-up to adjust the Aperture value by default, and is similarly repurposed for making selections from both the Camera Function settings and Camera Menu via the Top Touch Screen. The Side Dial is customizable.

Rear Dial
This dial is principally used to adjust ISO, and like the modal Side Dial, is also used for making selections from both the Camera Function settings and Camera Menu. The Rear Dial is also customizable.

Top Front Key
A short press on the Front Key activates the camera function icons displayed on the Top Touch Screen for quick selection, either by repeated pressing of the key or scrolling with the Front Dial. Note the selection is highlighted in white. Adjustment is made using either the Rear or Side Dial and the depicted function is active immediately.

Top Rear Key
A short press and release of the Rear Key will gain access to the camera menu. When the menu is displayed on the top touch screen, the Rear Key's function is repurposed for navigation and can then be used to scroll down through the menu options (with the Top Front Key used to scroll back up). Note the Front Dial can be used to scroll up and down the menu instead.

On/Off Button
A quick press will power up the camera. The XF start-up logo appears on the Top Touch Screen, followed by the Classic display. If the power level is too low, the battery warning light will flash continously in red. Otherwise if battery power is sufficient, the warning light stops and the mirror can be heard lowering into position, ready for capture. This behavior is normal, as the mirror is automatically locked up when powered off for peace of mind during transportation. If left untouched, the camera will enter the Display Off (sleep) mode after 1 minute. Simply half press the Shutter release Button to reactivate the display and ready the camera for capture. Note, the delay for the camera to enter the Display Off (sleep) or Mirror Position are all customizable via the Rear Key > Power Management.
The On/Off button is modal and a quick press while in the camera menu will return it to the previous level, including exiting the menu altogether if pressed when navigating the menu at its upper level.

To power the camera down, press and hold the button for 2 seconds. The mirror can be heard being locked safely in position and the IQ back will power down after 3 seconds.

Front User Button

Rear User Button

Front User Button

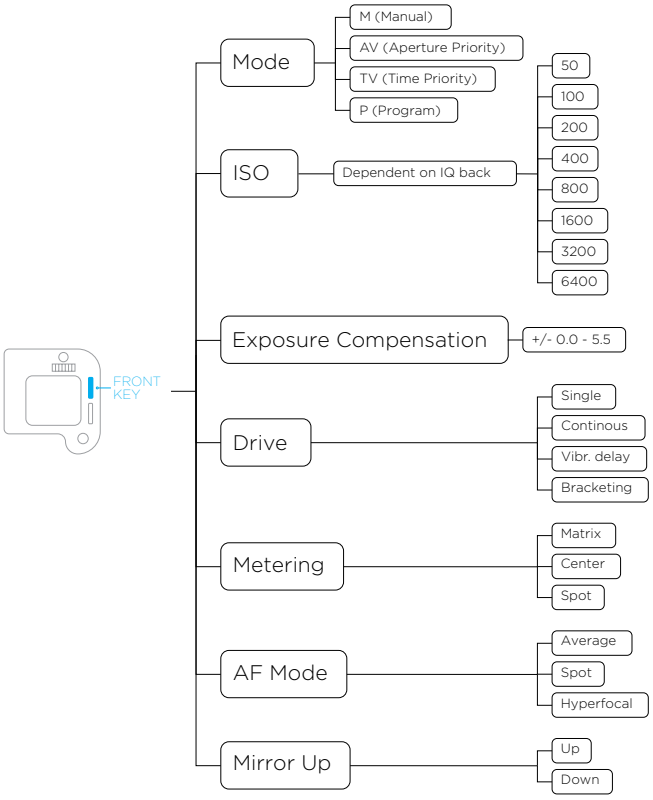
This button is by default set to activate the depth of field function. Note continued pressure on the button is required to operate this particular function, but the modal nature of this button means some functions accessed via this button require only a single press and release, for example, when reconfigured for AF-Lock and AE-Lock.

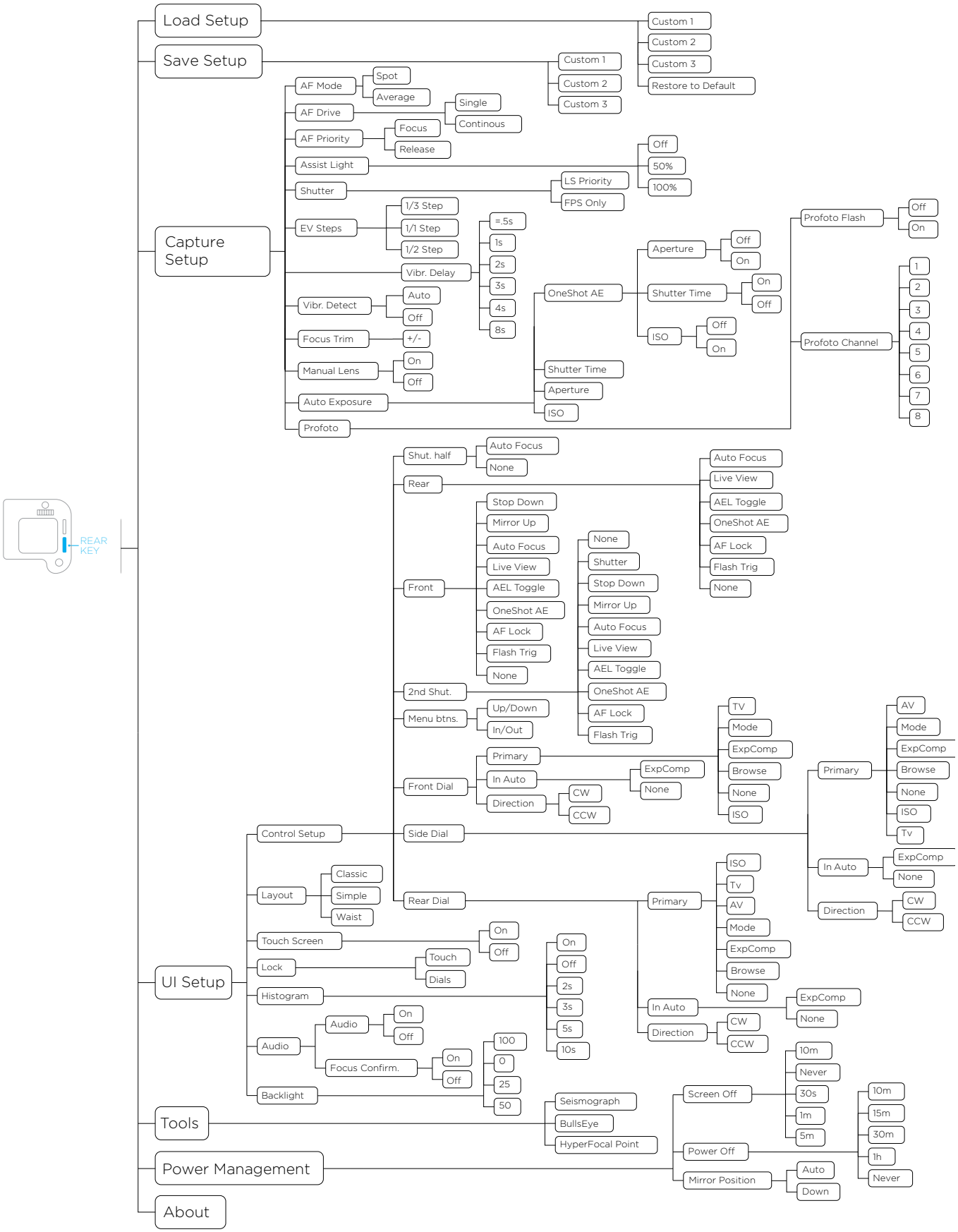
Rear User Button

From the factory the Rear User button is programmed to activate the camera's AE-L (Auto Exposure Lock) function, locking meter readings made in Auto and Manual exposure modes. The Rear User button is customizable,

OneTouch User Interface Flow Diagram

XF Camera Menu Overview




Load Setup
Custom 1
Custom 2
Custom 3
Restore to Default
Save Setup
Custom 1
Custom 2
Custom 3
Capture Setup
AF Mode
Spot
Average
AF Drive
Single
Continous
AF Priority
Focus
Release
Assist Light
Off
50%
100%
Shutter
LS Priority
FPS Only
EV Steps
1/3 Step
1/1 Step
1/2 Step
Vibr. Delay
=.5s
1s
2s
3s
4s
8s
Vibr. Detect
Auto
Off
Focus Trim
+/-
Manual Lens
On
Off
Auto Exposure
OneShot AE
Aperture
Off
On
Shutter Time
On
Off
ISO
Off
On
Shutter Time
Aperture
ISO
Profoto
Profoto Flash
Off
On
Profoto Channel
1
2
3
4
5
6
7
8
REAR KEY
Shut. half
Auto Focus
None
Rear
Auto Focus
Live View
AEL Toggle
OneShot AE
AF Lock
Flash Trig
None
Front
Stop Down
Mirror Up
Auto Focus
Live View
AEL Toggle
OneShot AE
AF Lock
Flash Trig
None
2nd Shut.
None
Shutter
Stop Down
Mirror Up
Auto Focus
Live View
AEL Toggle
OneShot AE
AF Lock
Flash Trig
Menu btns.
Up/Down
In/Out
Front Dial
Primary
In Auto
ExpComp
None
Direction
CW
CCW
TV
Mode
ExpComp
Browse
None
ISO
Primary
AV
Mode
ExpComp
Browse
None
ISO
Tv
In Auto
ExpComp
None
Direction
CW
CCW
Control Setup
Side Dial
Layout
Classic
Simple
Waist
Rear Dial
Primary
ISO
Tv
AV
Mode
ExpComp
Browse
None
In Auto
ExpComp
None
Direction
CW
CCW
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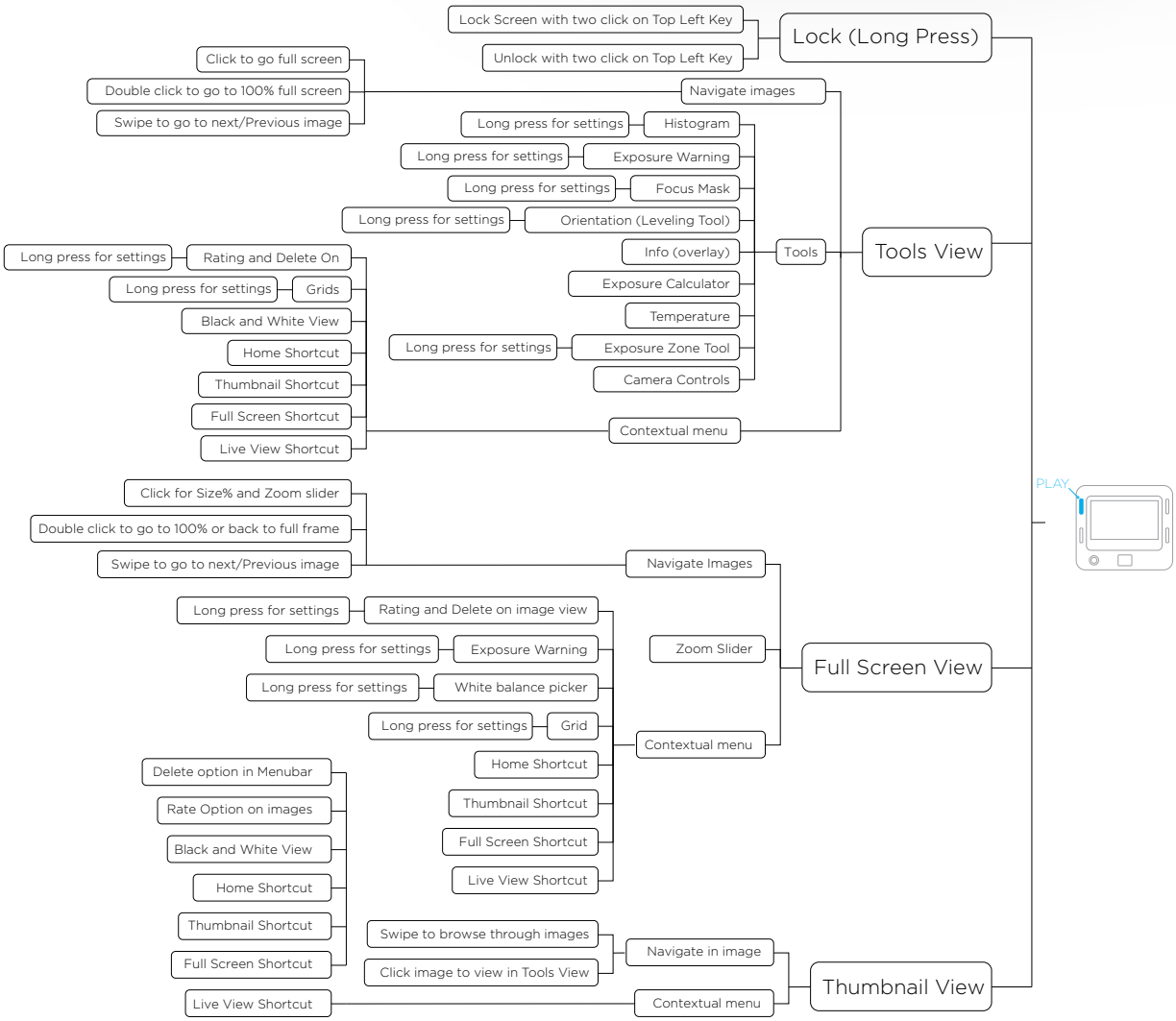
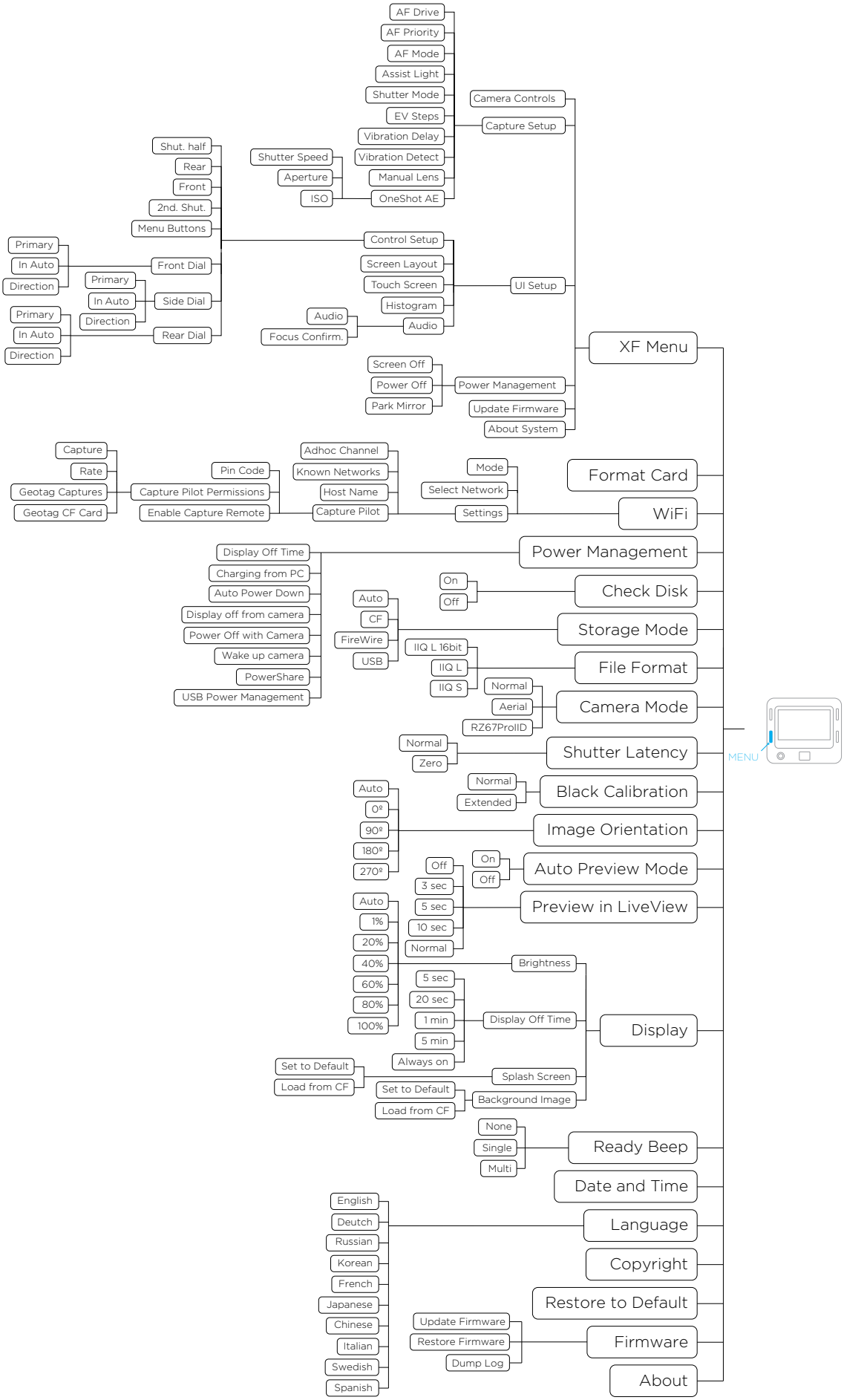
On
Off
Lock
Touch
Dials
Histogram
On
Off
2s
3s
5s
10s
Audio
Audio
On
Off
Focus Confirm.
On
Off
Backlight
100
0
25
50
Tools
Seismograph
BullsEye
HyperFocal Point
Power Management
Screen Off
10m
Never
30s
1m
5m
Power Off
10m
15m
30m
1h
Never
Mirror Position
Auto
Down
About

IQ Digital Back
Menu Overview




XF Menu
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AF Drive
AF Priority
AF Mode
Assist Light
Shutter Mode
EV Steps
Vibration Delay
Vibration Detect
Manual Lens
OneShot AE
Shutter Speed
Aperture
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2nd. Shut.
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Side Dial
Primary
In Auto
Direction
Rear Dial
Primary
In Auto
Direction
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Power Management
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Power Off
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About System
Format Card
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Mode
Select Network
Settings
Capture Pilot
Adhoc Channel
Known Networks
Host Name
Pin Code
Capture Pilot Permissions
Enable Capture Remote
Capture
Rate
Geotag Captures
Geotag CF Card
Power Management
Display Off Time
Charging from PC
Auto Power Down
Display off from camera
Power Off with Camera
Wake up camera
PowerShare
USB Power Management
Check Disk
On
Off
Storage Mode
Auto
CF
FireWire
USB
File Format
IIQ L 16bit
IIQ L
IIQ S
Camera Mode
Normal
Aerial
RZ67ProIID
Shutter Latency
Normal
Zero
Black Calibration
Normal
Extended
Image Orientation
Auto
0º
90º
180º
270º
Auto Preview Mode
On
Off
Preview in LiveView
Off
3 sec
5 sec
10 sec
Normal
Display
Brightness
Auto
1%
20%
40%
60%
80%
100%
Display Off Time
5 sec
20 sec
1 min
5 min
Always on
Splash Screen
Set to Default
Load from CF
Background Image
Set to Default
Load from CF
Ready Beep
None
Single
Multi
Date and Time
Language
English
Deutch
Russian
Korean
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Japanese
Chinese
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Dump Log
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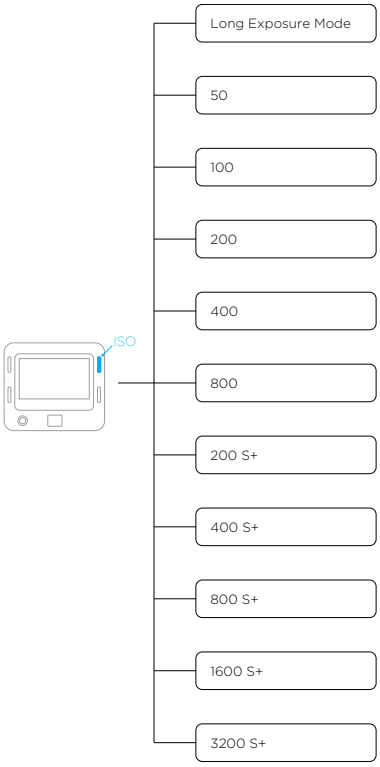
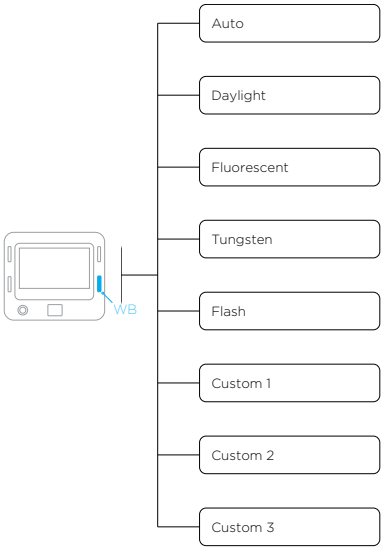
MENU

IQ Digital Back
Menu Overview





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OneTouch User Interface Overview

Top Touch Screen Operation

XF Camera Body Navigation

Dials

The XF Camera System is supplied from the factory in Manual exposure mode with the three dials assigned to the following primary function:

1. Front Dial – Shutter speeds
2. Side Dial – Aperture values
3. Rear Dial – ISO values

Top Touch Screen Operation

All settings and modes displayed in the main panel on Top Touch Screen can be selected and adjusted by touch. Tapping one of the settings or icons will change the display accordingly, see below for more details.

If using the camera in the cold with gloves, for instance, the same settings and modes can also be accessed using the following operation:

1. Front Key – Press for access to Camera Function mode. Press again to navigate to the next setting or mode, or scroll through the settings with the Front Dial instead.
2. Rear Dial or Side Dial – Scroll to make adjustments to the chosen setting or mode. Once selected, no additional confirmation is required.

If operating the camera from the rear, positioned at a high-level on a tripod for example, the main panel can be duplicated on the IQ Touch Screen and operated either by touch or using the IQ back's Rear Keys instead.

User Control Buttons

The User buttons are assigned specific functions from the factory, but can be re-assigned to another function.

1. Front User Button – Press and hold to operate the depth of field preview. The Aperture will close according to the value set on the main display and will remain closed as long as the button is pressed. The Aperture cannot be adjusted while this function is in operation.
2. Rear User Button – Press briefly to lock exposure settings (note when activated, the viewfinder displays the Shutter Speed and Aperture value enclosed by brackets). Press briefly to deactivate the function.

Front and Rear Keys

The Front Key is assigned to access the Camera Function mode, primarily as an alternative to operating the camera without touch (see above).

The Rear Key accesses the Camera Menu system.

Shutter Release Button

Half press activates AF and metering systems. If navigating the menu, selecting functions, or if the camera is in Display Off (sleep) mode, a half press will return the XF to instant readiness.

NOTE:
A secondary shutter release control is available on the front lower-right side, if you want to shoot handheld in portrait orientation or when using the optional waist level finder.

Top Touch Screen Display

Classic Layout (Default)

Classic Layout (Default)

The XF OneTouch UI is setup by default to display the camera's current configuration using the Classic layout on the top screen. Apart from the Shutter Speed, Aperture value and ISO setting, the Classic layout also displays the Exposure mode, Exposure Compensation, Drive mode, Light Metering mode, Focus Area and Mirror Lock-up setting. Tapping on any item on the screen with your fingertip allows you to set the parameters for that function. Touching the Battery icon will display the camera's status, including the number of shots remaining on CF card. If there's no CF card in the back, the Battery icon is replaced with a flashing red Folder icon as a warning.

Auto Functions on Shutter Speed, Aperture and ISO

Tapping on Shutter Speed, Aperture or ISO changes the display and lets you turn on the Auto option for each and set upper and lower limits. For example, you can set ISO to Auto and select a range of ISO settings for the camera to operate within.

Aperture priority is selected by tapping the Shutter Speed setting on the touch screen, and then selecting Auto. If both Aperture and Shutter Speed are set to Auto, the camera will operate in Full Auto (Program) exposure mode.

If Shutter Speed, Aperture or ISO is set to Auto, they will be highlighted in blue on the screen as a reminder. Setting either Shutter Speed or Aperture to Auto mode will also alter the Exposure mode icon in the main display to reflect this change.

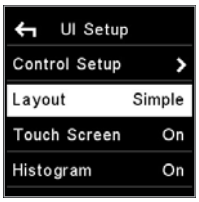
If Auto ISO is set together with Auto Shutter Speed or Auto Apertuer or both, then the ISO is only changed if a properly exosed image cannot be obtained using Shutter Time range or aperture range.

If ISO is set to Auto, the XF camera will always try to make an exposure with lowest possible ISO selection.

Simple Layout

Simple Layout

A Simple layout is offered as an option from the XF menu (or the IQ XF camera menu). This layout may be preferred because it displays only the exposure settings (including exposure correction, if set) and battery power level (and camera status). However, touching the exposure scale will display the Drive mode, Metering mode, Focus Area and Mirror Lock-up icons momentarily and allow adjustment, if required.



Simple Layout

Waist level Focus indicator

Waist Level Layout

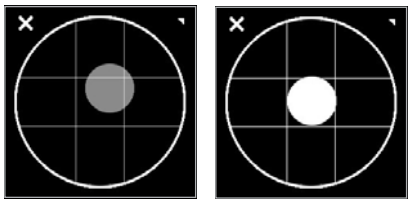
Waist Level Layout is based on the Simple layout, but with an additional focus confirmation indicator, which is very convenient, when working with the XF Waist Level Finder. With this layout the focus confirmation indicator, known from the prism viewfinder, now appears on the XF top screen and guides you to finding the best focus

Change Screen Layout

Press the Rear Key on the XF top screen and from the menu select UI Setup > Layout > Classic / Simple / Waist

Note with the Simple and Waist layout you can use the same Auto On/Off feature for the Exposure modes and ISO as in the Classic layout, without having the screen cluttered with settings you rarely change.

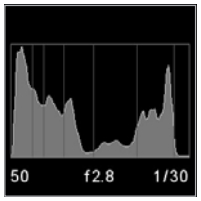
Tools on the XF Top screen



Bulls-eye levelling tool

Bulls-eye Level Tool

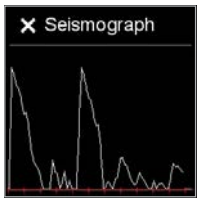
The XF Camera System includes a Bulls-eye levelling tool. To activate it you can either swipe it in, by swiping sideways on the XF top screen, or press the Rear Key of the XF OneTouch UI and from the menu select: Tools > Bulls-eye (select using the rear dial and the rear key). The Bulls-eye tool is calibrated to match the levelling tool found in the digital back's image-tools-list in Play mode. When this tool is accessed for the first time, it is necessary place the XF Camera System on a flat surface (+/- 20°) to facilitate calibration. Calibration is then retained until manual calibration is applied through the 'long press' tool access in the upper right.



Histogram

Histogram on XF top screen

To monitor the exposure of your images a histogram tool is available on XF. It displays the histogram of your last capture on the top screen. To activate it: Press the Rear Key on the XF top screen and from the menu select UI Setup > Histogram > toggle to "On" (between On and Off).



Seismograph monitor

Seismograph Monitor

The XF Camera System is built with precision as a focus. With this in mind, there is an available Seismograph on the XF Camera System OneTouch UI. Like with the Bulls-eye Level Tool you can bring in this monitor in by swiping sideways on the XF top screen. The Seismograph is available to monitor all vibrations which may adversely effect the sharpness of your captured image. The seismograph sensor is also used in connection with Low Vibration mode explained under XF camera system Capture Modes later in this manual.

IQ Digital Back Navigation

Touch Screen Operation

All IQ Digital Backs are equipped with a 3.2-inch touch screen. The touch screen lets you zoom, pan and browse through images quickly, making it easy to navigate between different menus and features. Operation is achieved using the touch screen display or the well known and intuitive, 4-key navigation.

Four Key Navigation

The IQ Digital Back is equipped with four external keys. These keys are modal and will change function to match the menu shown on the display. In addition the function of the four keys changes once one of the Menu, ISO and WB options has been selected. In general, the two keys to the left are used to exit the screen and select a menu option. The two keys to the right are used to navigate up and down.

Home screen with Info Bar

Home Screen

The IQ Home Screen is the first view users will see when the back is switched on. This is the back's default screen and the starting point from which to navigate the menu system. It enables direct access to the Play mode to view captured images, the Menu to configure the IQ Digital Back's features, and also to select ISO sensitivity and White Balance (WB) settings.

Info Bar

At the bottom of the screen you will find the Info Bar. This displays from left to right: Remaining captures on CF card or host computer, Battery status, WiFi status (if available and turned on), CF card inserted or if a Computer is connected this will be displayed as a USB3 or FireWire symbol. A flashing icon means the function is not available, for instance, "No CF-card" or "No WiFi connection". Far most to the right is the contextual menu. This gives access to many other functions, depending on the IQ model you are using and where you are in the menu context.

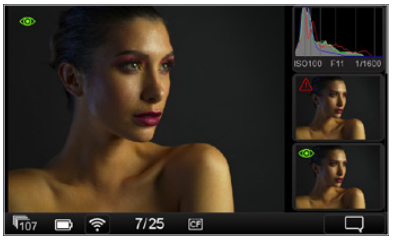
IQ Digital Back Navigation Shortcuts

Home Screen
A long press on the Upper Left Key will always bring you back to the main menu (Home screen).

Enlarge Playback / Preview Image
When focus-checking images in the Play mode or in Live View, double tap the screen at the point you want to inspect and the image will be displayed at 1:1 (100%) magnification.

Key Lock Shortcut
Press and hold the upper-left (Play) key whilst the Home Screen is displayed and double press the Lower Right Key. A key icon will appear at the bottom of the screen and turn red to confirm that the four (external) menu keys and touch screen functionality has been locked. Repeat the procedure to unlock the keys and screen.

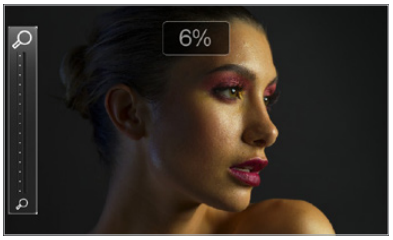
IQ Digital Back Viewing images



Screendump= Screeen0531.jpg

Viewing images (Image Playback)
After capture, an image is shown on the rear screen. Image playback can also be accessed at any time from the upper-left key on the IQ Digital Back (this is particularly useful if the screen is in Display Off / sleep mode), or directly from the Play icon on the Home screen.
The default screen is the Tool view mode and is one of three playback modes available: Tool view, Full Screen view and Thumbnail view.

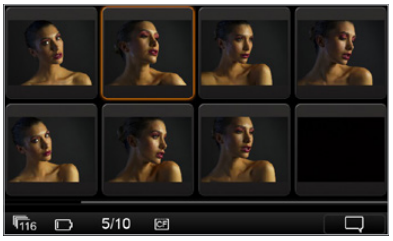
Display Single Image (Tool View)
1. Capture an image, or to view an image already captured, press the top left 'Play' key from the Home screen on the rear touch display.
2. A single image is displayed in the Tool view mode. This mode displays a number of small thumbnail views to the right within which a number of tool options are offered.



Display Single Image (Full Screen View)

Display Single Image (Full Screen View)
From the default Tool View, tap the main image to display full screen. A zoom scale is displayed to the left of the image, allowing touch screen zooming up to 400%. The Context menu icon is also available (though hidden) at the bottom right. This menu provides access to several tools within the Full Screen View.

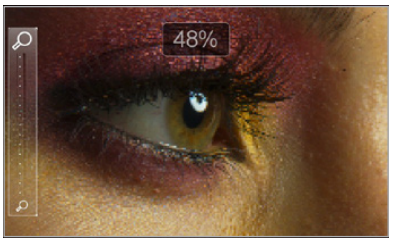
Display Multiple Images (Thumbnail View)
Press the Top Left Key on the back to scroll through the playback modes until the Thumbnail view is displayed. Alternatively, access the context menu from the icon in the lower right of the playback screen and tap the Thumbnail icon on the lower row of menu icons.



Display Multiple Images (Thumbnail View)

Browsing Images
In both Tool View and Full Screen View, simply swipe between images by sliding your finger left or right over the image. This will scroll forward or back through images in the current folder. You can also use right keys up and down to walk through images.

Focus Checking (Zooming)
In Full Screen View, touching an image will reveal a zoom slider on the left side that can be used for focus checking. Slide your fingertip up or down the scale to zoom in or out, respectively. Drag the image to view other areas. Double tap an image in the area of interest in either Tool View or in Full Screen View, to display that area at 1:1 (100%) magnification. To return to the initial magnification setting, double tap the screen a second time, for instance to select another image, or to check some other area in the same image.



Focus Checking (Zooming)

NOTE:
Once the shutter is released and providing no keys are depressed in the meantime, an image is displayed on the rear screen for approximately 60 seconds, by default. The display time can be altered under Menu>Display>Display Off Time.

IQ Digital Back Contextual Menu

Overview of Contextual Menu

A key feature of navigation on the IQ back is the inclusion of the touch-driven Contextual Menu. This powerful and intuitive feature provides rapid access to some exclusive functions, such as Live View and WiFi, as well as a number of useful tools and shortcuts to frequently accessed functions.

Like other controls, operation is modal and the availability of some features (denoted by touch-sensitive button type icons) are based on the context of the screen displayed, hence the menu's name. For example, initiating WiFi is only available from the Home Screen's Contextual Menu.

Access to the Contextual Menu is gained from lightly touching a screen-shaped icon located at the bottom right of the Info Bar on the Home Screen, and from the same location in all four screen views (Tool View, Full Screen View, Thumbnail View and Live View).

In addition it is also worth noting the Contextual Menu follows the XF system's general principal of long-pressing icons to access sub-menus. Button icons with a white colored triangle displayed in the upper-right corner denote this ability.

Shortcuts to the viewing modes, including Live View, are indicated by the addition of a curved arrow icon in the lower-left corner of the button.

Features available from the Home Screen

Features available from the Home Screen

To save power the IQ screen doesn't display the Home Screen continuously and so the Upper Left button must be pressed first. The Home Screen's Contextual Menu icon is displayed in the lower right corner of the screen in the Info Bar. Touching the icon reveals touch-sensitive buttons for direct access to the following features in the top row:

- WiFi
- Lock Screen
- XF Camera Menu

Shortcut buttons in second row, are offered for the following:

- Thumbnail View
- Tool View
- Full Screen View
- Live View

Features available from Tool View

Features available from Tool View

Pressing Play from the Home Screen displays the initial Tool View screen, and the Contextual Menu provides direct access to the following features in the top row:

- Rating/Delete
- Grid Overlay
- Mono View (Monochrome preview)

Shortcut buttons in second row, are offered for the following:

- Home Screen
- Thumbnail View
- Full Screen View
- Live View

Features available from Full Screen View

Features available from Full Screen View

Touching the playback image in Tool View or the accessing the relevant shortcut from the Contextual menu will display the Full Screen View. Direct access is offered for the following features:

- Rating/Delete
- Exposure Warning (Highlight Levels) tool
- Custom White Balance tool
- Grid Overlay

Shortcut buttons in second row, are offered for the following:

- Home Screen
- Thumbnail View
- Full Screen View
- Live View

Thumbnail View

Thumbnail View

The Contextual Menu from this screen provides access and shortcuts to the same features as the Tool View with the exception the Grid Overlay. The Contextual Menu from this screen provides direct access to the following features, in the first row:

- Delete
- Rating
- Mono View (Monochrome preview)

Shortcut buttons in second row, are offered for the following:

- Home Screen
- Thumbnail View
- Full Screen View
- Live View

Features available from Live View

Features available from Live View

The Contextual menu provides direct access to these features in first row:

- Grid Overlay
- Brightness
- White balance
- Alignment (Level) tool

Shortcut buttons in second row, are offered for the following:

- Home Screen
- Thumbnail View
- Tool View
- Full Screen View

To exit the Contextual Menu, touch the menu icon a second time or press the Home Key (upper left soft key).

PHASEONE XF
PHASEONE
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Tools and settings in View Mode

Tools and Settings in View Mode

Besides the option to check focus (discussed previously), the IQ has a number of additional tools available from the Play mode to assist photographers while capturing images. After pressing Play, the tools are accessible from the initial Tool View screen as vertically scrollable thumbnails to the right of the playback image.

The following tools may be displayed in full screen view, by pressing the relevant tool's thumbnail:

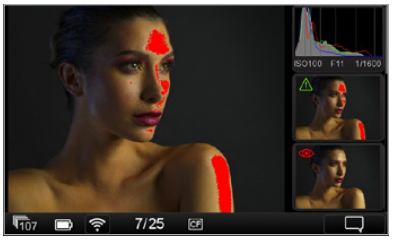
Histogram
Alignment
Exposure Calculator
Sensor Temperature
Camera Controls

The following tools are overlaid, by pressing the relevant tool's thumbnail:

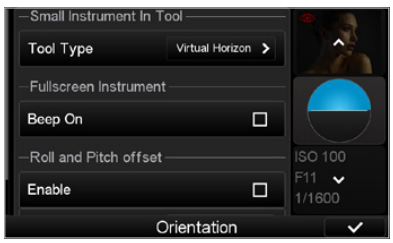
Exposure Warning
Focus Mask
File Info
Exposure Zone

To remove them from the full screen or overlay view, press each Tool's thumbnail a second time.

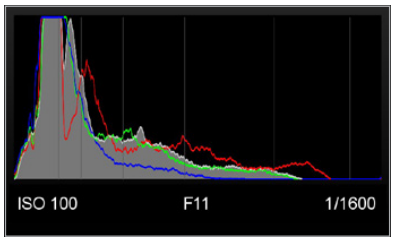
To re-arrange the order in which the tool is displayed, long press the relevant tool's thumbnail and press the white arrow in the direction required.



Exposure Warning



Re-arrange Tool order

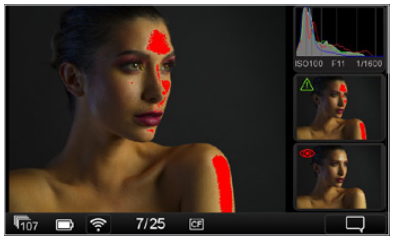


Histogram

Histogram

The histogram displays the brightness data per channel and allows the user to determine a level at which highlights start to clip. For improved accuracy, a custom white balance measurement should be performed.

Press the Histogram thumbnail once to display full screen. The EXIF information (ISO, f-stop and Shutter Speed) of the captured image is displayed below the Histogram. Press the screen again to return to the Tool view. Long press the Histogram thumbnail to access a dialog box to alter the Tool's settings. The user can choose between showing or hiding the RGB readout and EXIF information. To exit, press the Home Key or the small checkmark bottom right.



Exposure and Clip Warning

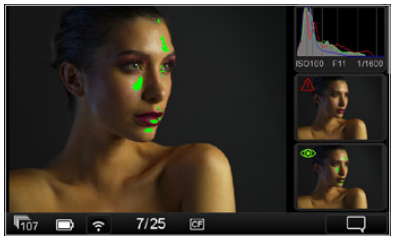
Exposure and Clip Warning

The Exposure Warning tool highlights areas of a captured image that are overexposed. Press the Exposure Warning tool once to display any burned out areas of an image with a (default red) color overlay. Press the Exposure Warning tool again to remove this overlay from view.

This tool also features a new Clip warning option with a default pink colored overlay based on the raw data for the most accurate visualization of the level at which highlights will clip.

Long press the Exposure Warning to access a dialog box to alter the Tool's settings. Users can choose to set the Exposure and Clip Warning and to flash on the overlay and on the tool. The Highlight level can be changed to make it more or less sensitive. The color of the warnings can also be altered to one of nine tones to help it stand out against a captured image.

The Exposure and Clip Warning overlay can be viewed full screen and zoomed to check specific areas, in the same way as focus-checking. It will flash to alert users to areas in that may be overexposed. To deactivate the overlay, return to the Tool View screen and press the tool.

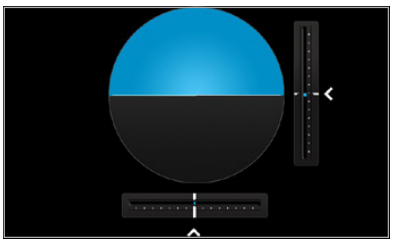


Focus Mask

Focus Mask

The Focus Mask highlights areas that are in sharp focus. Tap the Focus Mask tool once to display any areas of sharp focus in an image with a (default green) color overlay. Tap the Exposure Focus Mask tool again to remove this overlay from view.

Long press the Focus Mask to access a dialog box to alter the Tool's settings. Users can choose to set the Focus Mask to flash on the overlay and on the tool. The Focus Mask can be adjusted to increase and decrease the threshold setting for the preferred sharpness. The color of the Mask can also be altered to one of nine tones to help it stand out against a captured image.



Alignment

Alignment

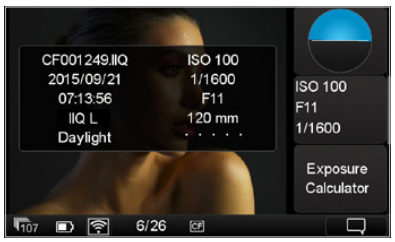
The Alignment tool provides a quick and accurate visual aid when ensuring the camera is level in both horizontal and vertical planes, and is particularly useful when the camera is mounted on a tripod.

Press the Alignment tool once to view full screen. Tap the screen or press the upper left (external) button to return to the Tool view.

To alter the settings, a long press on the tool's thumbnail will access a dialog box. Users can choose to view a virtual horizon or swap to see numeric Roll and Pitch values instead. To hear an audio alert that signals when the camera is level, enable the Beep On option box with a check mark.

Roll and Pitch offset: It is possible to realign the virtual horizon to a custom setting. Press the Set arrow (see circled far left) and the virtual horizon will appear. Adjust the camera/IQ back for the desired roll and pitch angles and press the green check mark. This offset will be enabled automatically.

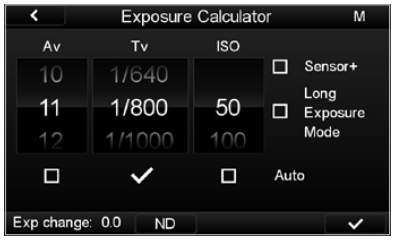
Ensure that the Roll and Pitch offset check mark box is not enabled to revert to the default horizontal or vertical alignment setting. Please note that above settings also is used by the BulsEye leveler on the XF camera body top screen.



File Info

File Info

The File Info option displays the ISO, f-stop and Shutter Speed settings. Tap the File Info thumbnail to see more detailed information that includes the file name, date and time of capture, file format, exposure mode and the focal length of the lens.



Exposure Calculator

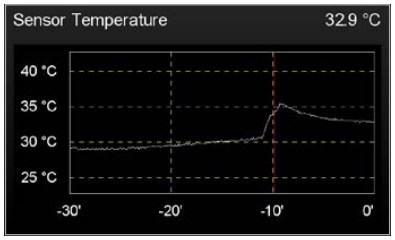
Exposure Calculator

The Exposure Calculator tool allows the photographer to extrapolate Shutter Speeds for long exposures from shorter, equivalent exposure values. This is a useful aid for shortening test exposures, for example, when calculating exposure settings with long exposures at night or when using Neutral Density (ND) filters.

First, capture a test exposure using the widest Aperture available and highest ISO setting (and subsequently the shortest Shutter Speed). Auto exposure and exposure compensation settings may be used to establish the desired exposure. From the Manual exposure mode (if not adopted already), select the Exposure Calculator tool from the Tool View on the rear of the IQ. The calculator is automatically updated with the test exposure values.

To determine the Shutter Speed required, check-mark the box beneath, and then scroll to enter the desired Aperture setting and / or ISO setting. Changing one or more of the settings, after unchecking the box beneath, will display the necessary Shutter Speed and highlight the Exposure (Exp) change in EV (displayed in the Info Bar).

To calculate the exposure before physically applying an ND filter to the lens, touch the ND icon in the Info Bar and select the appropriate ND filter factor from the menu. The calculator will change to reflect the new exposure (if Tv is checked, the Shutter Speed value will alter).

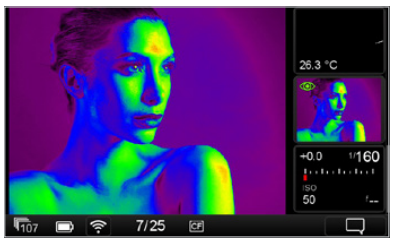


Sensor Temperature

Sensor Temperature

High or low sensor temperatures may adversely affect image quality during long exposures, this tool is useful aid to determine the optimal temperature before capture. A direct readout of the sensor temperature is available from the Tool View and a graph of the temperature over elapsed time is displayed in Full Screen View. To display the graph, select the tool from the Tool View mode and wait for the temperature to stabilize before capturing long exposures.

This tool will also help to determin when a stabelized temperature is reached after extensive use of Live View.



Exposure Zone

Exposure Zone

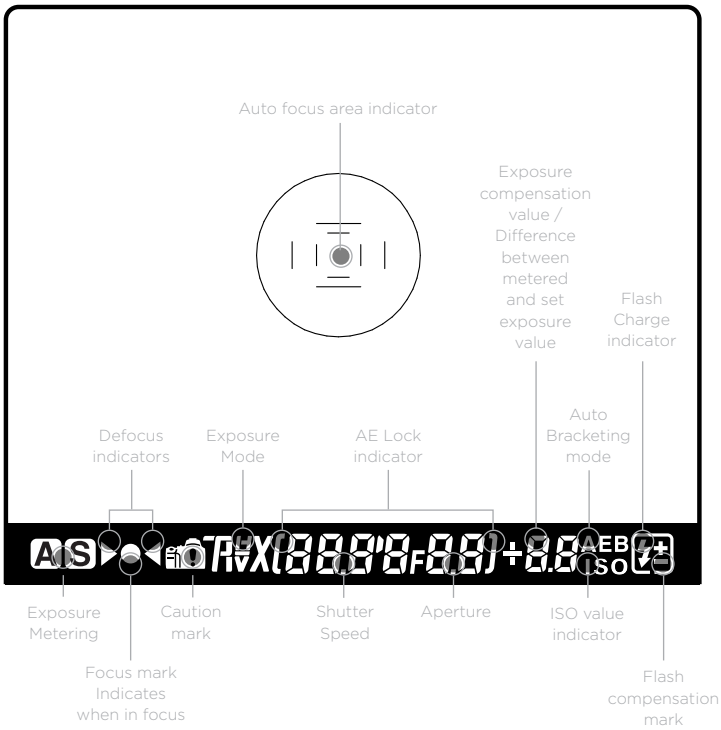
This tool displays a visualization of the dynamic range of the image captured based on the raw luminosity data, and is useful in determining the absolute point at which highlights will clip. It can also be a valuable tool when deciding how shadows are to be rendered. Color tones are used to indicate the dynamic range in EV. Press the thumbnail to display an overlay in full screen view and press again to display the EV scale (a second press reveals a scale using brightness (luminosity) values). Press and hold to display a General Guide to the scale. To remove the guide, press the checkmark, bottom right.

Camera Controls

Camera Controls

When attached to the Phase One XF camera body, the IQ Digital Back can display the camera's control screen, making it easier when working from behind the camera. All the controls may be activated by touch, including the Live View and shutter release buttons displayed alongside, to the right.

Prism Viewfinder Display and Functions



Autofocus Area

The XF is equipped with autofocus sensor indicators in the center of the frame. Two rectangular AF areas are displayed on the focusing screen, one within the other, that corresponds to the Average and Spot AF mode options available with the camera. Surrounding the AF area is a central spot that denotes the Spot metering area only.

The AF area in use is highlighted on the XF Top Touch Screen. To change the AF area mode, touch the icon, and select the appropriate area option from the screen.

Viewfinder Display

The XF has a comprehensive viewfinder display. However, for clarity only relevant information is shown. Please refer to the image above for an explanation of each possible display settings.

Eyepiece Diopter Adjustment

Adjustment is required for comfortable viewing if you wear corrective lenses. To start the procedure, first switch the lens to MF and defocus the lens manually. Point the camera at a bright, evenly lit area such as the sky or a white wall. Look through the viewfinder and turn the diopter adjustment dial on the side of the prism viewfinder until the AF area frames and Spot metering circle on the focusing screen are in sharp focus. Turning the diopter adjustment dial counter-clockwise adjusts for near-sightedness, clockwise for farsightedness.

If you normally wear eyeglasses for distance viewing, or close-up work, and want to continue to wear them while using the camera, follow the procedure described above. Alternatively, if you prefer to remove your eyeglasses while working with the camera, please repeat the method of adjustment above without wearing them.

If the build in diopter is not sufficient, you may require an optional diopter correction lens:
Part# 70278 Diopter correction lens DE402 (Near Sighted, -5 to -2 diopter)
Part# 70279 Diopter correction lens DE403 (Far sighted, 0 to +3 diopter)

For replacement of the supplied diopter correction lens, please order:
Part # 70277 Diopter correction lens DE401 (Standard, -2.5 to +0.5 diopter)

Removing the Eyecup

The eyecup supplied with the XF as standard is suitable for users who intend to use the camera either with or without eyeglasses.To replace the factory diopter, release the eyecup by pulling the small metal latch on the top towards you. Then slide the eyecup up and out of the eyecup rail.

NOTE:
If there is dirt or dust on the lens surface, remove it with a blower or sweep it off gently with a lens brush. If there are fingerprints or dirt on the lens surface, wipe them off with a piece of clean, soft gauze. Using solvents could discolor the correction lens frame.

Changing the Viewfinder Diopter Lens

To change the diopter correction lens, first remove the eyecup then gently slide the diopter lens down, and out of the diopter rail. Reinstall the new diopter lens, and make sure it is positioned back correctly with the small click-lock tab facing up on the left-hand side.

XF Camera System Settings Overview

XF Camera Body basic settings

The XF is delivered from the factory preconfigured with a set of default settings. The XF camera body can be reset to the default settings from the Camera menu, Load Setup > Restore to Default.

Shutter Speed

Shutter Speed can be adjusted using the Front Dial.

Aperture

Aperture can be adjusted using the Side Dial.

ISO Selection

ISO can be adjusted using the Rear Dial. ISO speed options are dependent on which IQ back is attached. Auto ISO speed range can be selected by touch, and is also dependent on the IQ Digital Back attached.

Any one of the three dials may be reconfigured to adjust Exposure Compensation in Auto mode (Off by default). This option is selected by pushing the Rear Key to enter the Camera menu and selecting:
UI Setup > Control Setup > Front / Rear / Side Dial > In Auto > ExpComp.

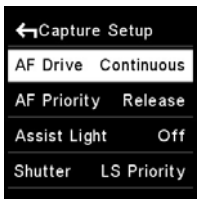
All three dials turning direction may be reversed by pushing the Rear Key to enter the Camera menu and selecting:
UI Setup > Control Setup > Front / Rear / Side Dial > Direction > CCW (default) / CW.

Please note the symbol (/) denotes an optional setting.

UI Setup Menu

Control Setup

AF Drive Single



AF Drive Continuous

AF/MF

Autofocus or Manual focus operation is selected using the physical Auto/ Manual collar on the lens.

AF Drive Mode

The AF drive mode can be changed by pushing the Rear Key to enter the Camera menu and selecting Capture Setup > AF Drive > Single (default) / Continuous.

AF Area Mode

AF Area Mode

Autofocus area can be changed between Average (default) and Spot by selecting the Icon on screen and choosing the required mode by touch or the Side Dial.

Capture Mode

Capture Mode

Single capture (default), Continuous capture, Vibration Reduction, and Bracketing. The Capture mode can be changed by selecting the Icon on screen and choosing the mode by touch or the Side Dial.

Exposure Mode

Exposure Mode

Manual (default), Aperture Priority, Time (Shutter) Priority and Program exposure modes can be changed by selecting the icon on screen and adjusting by touch or the Side Dial.

Metering Mode

Metering Mode

Select one of three modes for reflected, ambient light only. Choose between Matrix (default), Center and Spot, by selecting the icon on screen and choosing the required mode by touch or the Side Dial.

Note modes depicted by screen icons can be selected directly by touch or by pressing the front Top Key and then by scrolling through the various icons using the Front Dial.

IQ Digital Back Basic Settings

Home Screen

WB selection

The IQ Digital Back is delivered preconfigured with a number of default settings ready for use, either when purchased by itself, or with the XF. After adjustment of these settings, the user can restore the back to the factory defaults from the back's screen by pressing Menu > Restore to Default. Press the checkmark to continue. Note the Language and Date and Time remain unaltered.

ISO

The sensitivity range is dependent on the IQ Digital Back model. The default setting for the IQ Digital Back is always the lowest ISO position. This ensures the best possible image quality output, when the Digital Back is reset to default.

Choose the appropriate ISO value by selecting ISO from the Home Screen. Or using the rear dial on the XF camera.

White Balance

There are four White Balance presets plus an Auto option, that can be selected directly from the Digital Back Home Screen. Choose between Auto (default), Daylight, Fluorescent, Tungsten and Flash. It is also possible to create a custom White Balance please refer to Custom White balance section in this manual.

Choose the appropriate white balance by selecting WB from the Home Screen

File Format

File Format

Two Raw file formats are offered. IIQ L is a completely lossless Raw format for the highest quality (default). The IIQ S option delivers a smaller compressed Raw file, however, it is not completely lossless.

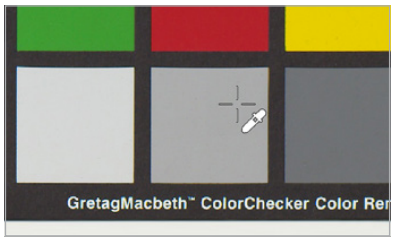
Choose between formats by selecting Menu > File Format >IIQ L (default) / IIQ S.

All three settings, WB, ISO and FIle Format are displayed at the center of the Home screen.

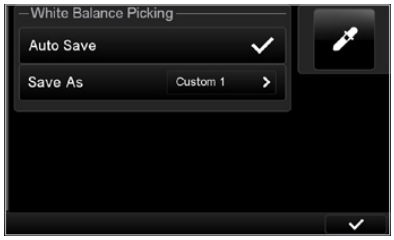
NOTE:
The IIQ S option can be used in almost all applications where it is completely sufficient in quality – in fact the compression is so good that it can be difficult to see a difference. However, there is a very small loss of data, and therefore Phase One does not claim that IIQ S is completely lossless.

Custom White Balance

Custom White Balance in Contextual Menu



White balance picker



Store Custom White Balance Settings

Custom white balance selected

Creating a Custom White Balance

Creating a custom White Balance setting is achieved from a captured image when in the play mode on the IQ Digital Back. Select Auto WB or use one of the four Presets and capture a reference White Balance image (ideally with a Gratac Macbeth Color Checker, or QP-Card displayed in the image under the intended light source). Tap the displayed image, or press Play, then tap the image again to enter the Full Screen view on the IQ display. Touch the small contextual menu icon in the lower right-hand corner of the screen to display the Contextual menu and press the White Balance Picker button. Zoom in and pan to a desired part of the image using your finger-tip and then tap on a gray patch, or a bright white or gray neutra area in the imagel (i.e. not burned out area) to create a custom white balance.

A cross-hair icon will appear on the screen. If necessary, you can continue to select the white balance point elsewhere in the image until you are satisfied with the resulting white balance. The setting is automatically saved and all subsequent captures will use this white balance setting (see note, below).

Store Custom White Balance Settings

The IQ back enables photographers to create and store up to 3 Custom White Balance settings. From the Context menu, long press the White Balance Picker icon and de-select the Auto Save box in the dialog box.

The next time you create a Custom White Balance setting you will be asked to Save WB and presented with a Custom 1, Custom 2 or Custom 3 option. Choose a number to save and store the setting. This stored setting can be accessed again for future use by scrolling to the bottom of the white balance options.

NOTES:
The custom white balance is only applied to the current image if the Auto Save mode is selected.

White balance and custom white balance settings are really only necessary for a representative rendering of the color when displayed on the rear touchscreen of the IQ Digital Back. The IQ Digital Back does not process JPEGs in-camera and the default IIQ L and optional IIQ S file formats contain all the relevant information required for correction in Capture One, especially when capturing a reference white balance file with a gray card under the intended light source.

HAP-1 AF Focusing system

Focus Modes

Focus Modes

There are two autofocus mode (AF Drive) options available from the XF camera body: Single and Continuous. The camera is delivered with the AF Drive mode set to Single and the AF Priority function set to Release (release priority) by default. The focus point is determined by the AF Area mode displayed as inner and outer brackets on the focusing screen. When contrast or light levels are too low, the AF Assist Light may be activated. It is set to Off by default (from the camera menu, select Capture Setup > Assist Light > On).

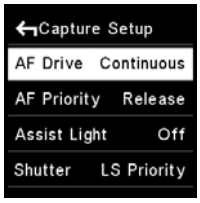
AF Drive mode setting

To change between Single and Continuous AF, press the Rear Key to enter the Camera Menu and select Capture Setup > AF Drive > Single / Continuous, using the Front and Rear Dials.

Single (AF)

Single (AF)

Selecting the Single AF drive mode activates the AF servomotor to focus the lens once, after pressing the shutter release button halfway. After focus has been achieved, maintaining pressure on the shutter button at this half-pressed stage locks the focus, allowing the photographer to recompose the image. Pressing the shutter release button to the second stage releases the shutter. Autofocus is reactivated by releasing the button and half-pressing again.



Continuous (AF)

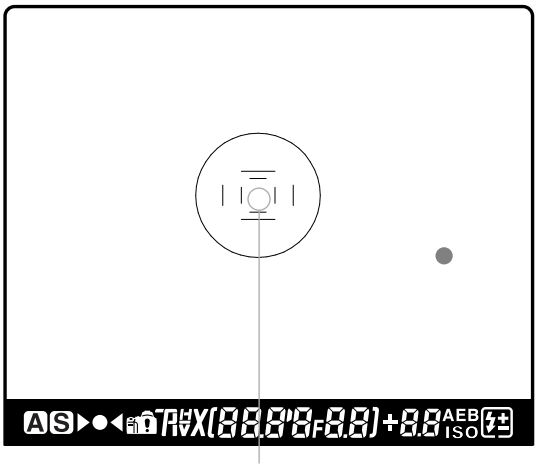
Continuous (AF)

Choosing the Continuous mode, with the shutter-button pressed halfway, the AF servomotor focuses the lens while the HAP-1 AF system continues to monitor the subject. If the subject moves after being acquired, the lens will be refocused to follow the subject.

AF Priority setting

AF Priority setting

The AF priority can be set to prevent the shutter from being released until the subject is confirmed as in focus. To change AF Priority, press the Rear Key to enter the Camera Menu and select Capture Setup > AF Priority > Release / Focus.



Auto focus area frame

AF Area Modes

Autofocus precision and accuracy are essential to deliver sharpness at high-speed, and so Phase One developed a proprietary autofocus sensor for the XF camera, the HAP-1, and equipped it with a dedicated processor. For improved focus precision, the XF camera replaces individual line and cross-type sensors in favor of a single CMOS sensor containing a million pixel elements arranged in a multiple honeycomb-shaped pattern. For optimal autofocus with a variety of subjects and scenes, the HAP-1 sensor has two AF Areas, Average and Spot. Note the AF system is located in the mirror-box and operates when either the prism viewfinder or the waist level finder are attached.

Average AF Mode

The Average mode covers the largest area for focusing and takes advantage of all one million (1MP) pixel elements. The Area covered is displayed in the center of the viewfinder and is represented by the outer-brackets etched onto the focusing screen. The Average mode can be used with long lenses and small Apertures in low light levels. Choose this mode where manual focusing may be difficult during hand-held capture, or when photographing a moving subject.

Spot AF Mode

The Spot AF mode covers a much smaller area in the center of the viewfinder, and is indicated by the narrower brackets on the focusing screen. Select this mode when working with wide-angle lenses, or for pinpoint focusing with longer focal length lenses.

NOTE:
If the lens ring is set to AF pressing the shutter release button activates autofocus. With the subject covered and acquired by the selected AF area, the focus confirmation indicator lights in the viewfinder when focus has been achieved. Audio confirmation is off by default but to turn this option on, press the Rear Key to enter the Camera Menu and select UI Setup > Audio > Focus Confirm. > On.

AF Area Mode setting

AF Area Mode setting

To change from the default Average area to the smaller, Spot AF area, select the AF mode icon from the Top Touch Screen and then switch between the settings directly, using touch (or the keys, as described elsewhere). The mode selected is shown on the Top Touch Screen.

AF Compensation

Adjustment of the AF sensor's point of focus is possible. This AF compensation method adjusts the focus point, or plane of focus, forwards or backwards by the set amount. The focus point will be adjusted by the set amount every time autofocus is initiated. To decide on the amount of compensation necessary, set the amount using the Focus Trim option, capture an image and check the results. Repeat this method until the desired result is achieved.

Phase One recommends making adjustments using the Spot AF mode with the camera and intended lens on a tripod, either at the location (under the anticipated lighting conditions), or at a similar distance with as close to the anticipated conditions as possible.

AF Area Mode setting

AF Compensation setting

To set the amount of front or back focus compensation, press the Rear Key to enter the Camera Menu, and select Capture Setup > Focus Trim > – / 0 / +. The amount can be adjusted in steps of ±5 pts..

Make initial adjustments in multiples of three (±15 pts.) or five steps (±25 pts.) and then fine-tune in smaller steps until the desired result is achieved.

Setting negative (-) Trim values moves the focus point forwards of the default (factory set) focus point (0). Selecting positive (+) Trim values moves the focus point backwards of the default focus point (0). Therefore, if the focus point is in front of the intended point of focus, continue to adjust by increasing the positive (+) value.

To remove the compensation settings, set the Trim value to zero (0).

AF Area Mode setting

AF-Lock

When the camera is set to either the Single shot or Continuous AF Drive mode, the focus position can be locked, which is useful for off-center subjects. The AF-Lock function is not assigned to a control button by default. To re-configure the front or rear user button, or assign the feature to the secondary shutter release button, press the Rear Key and select UI Setup > Control Setup > Rear / Front / 2nd Shut > AF lock.

1. Focus on the subject using the Single shot or Continuous AF Drive mode.
2. Press and hold the assigned button to lock the focus.
3. Recompose the subject in the viewfinder.

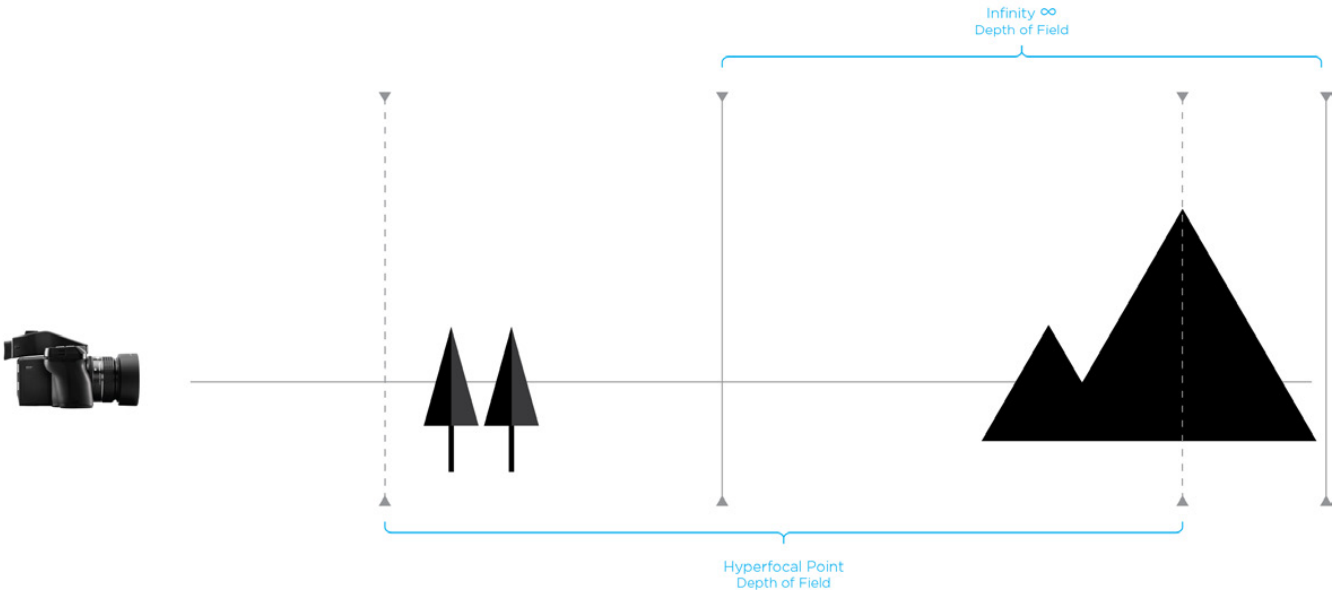
AF/MF selector ring

Manual (MF)

Manual focus is achieved by switching the AF/MF selector ring on the lens from AF to MF. Note autofocus cannot be performed if the lens is set to MF. The point of focus can be determined by the AF Area mode using the focus indicators in the viewfinder display, or by eye using the focusing screen.

NOTE:
The AF/MF selector ring on the lens can help you to rapidly switch between AF (Autofocus) and M (Manual) using your left hand, without having to remove your finger from the shutter release button.

Working with hyperfocal distance



What it is

An important element of landscape photography is ensuring that all of the key elements within your composition are sharp. This can often include foreground objects that are a matter of meters from your camera, as well as background elements that can be kilometres away. One way to ensure that the entire frame is in focus, 'acceptably sharp', is to ensure that the depth of field extends from the foreground to infinity. To do this, you need to focus at the 'hyperfocal distance'. For a given focal length and Aperture, there will be a distance where setting your point of focus will result in the entire scene being within the depth of field.

How you set it per tradition

For many photographers the best way to optimize the point of focus is visually. Try first focusing on the most distant object within your scene, then manually adjust the focusing point as close as possible while still retaining an acceptably sharp background.

Many use a rule of thumb, which states that you should focus roughly 1/3 of the way into your scene in order to achieve maximum sharpness throughout. While this is sometimes helpful, it is rarely optimal; the precise distance actually depends on many factors, including subject distance, Aperture and focal length.

HyperFocal Pont menu

Adjust HyperFocal Point

HyperFocal Point stored

Hyperfocal distance on the XF camera system

The XF camera system can store one specific focus distance for each lens. An obvious use of this functionality is to store the hyperfocal distance for the lens, at your preferred working Aperture. This focus distance can be re-called at your convenience.

On the XF camera system this hyperfocal distance is represented by a "hyperfocal point" corresponding to the physical point or marker many photographers set on their lens to easily adjust focus to the hyperfocal distance. The XF hyperfocal point is measured in absolute "HF-units" of an internal HF-scale, calibrated to the accuracy of the geared lens focus mechanism.

Saving an XF hyperfocal point:

Entering the XF Hyperfocal Point mode – via The XF Rear Key > Tools > Hyperfocal Point

Please NOTE that this always assumes that the lens is in AF mode.

Use dials and save an XF hyperfocal point:

In the HyperFocal Point Tool, now use the front and rear dials to fine-tune your focus and depth of field for your scene. The front dial and the rear dial control the focus movements measured in "HF-unit" increments. The front dial: +/-1 HF-unit, the rear dial: +/-10 HF-units. The electronic control of the lens movements secures optimal positioning accuracy.

Please NOTE that it is important NOT to manually touch the focus ring of the lens in this mode, as this will interfere with the precision of the electronically controlled focus mechanism.

When you have reached an optimal hyperfocus point, it is stored by pressing the save icon of the Hyperfocal Point screen.

Use focus bracketing and save an XF hyperfocal point:

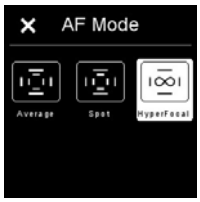
To assist an accurate setting of the Hyperfocal Point, a special focus bracketing function is available. It allows for capturing a sequence of 5 shots: the base shot focussed at your current Hyperfocal Point, complemented by four extra shots, focussed using the hyperfocal increment "Step" your selected HF-units, multiplied -2, -1, +1, +2.

It is strongly recommended to work tethered to Capure One, to accurately inspect each image for focus and depth of field, and secondly to get the Hyperfocal Point "call-out value" for each of the images in the capture sequence (In metadata).

When you select the image, which has the focus and the depth of field best covering your scene, you dial in the Hyperfocal Point call-out from Capture One in the Hyperfocal Point screen, and store the Hyperfocal Point by pressing the save icon of the Hyperfocal Point screen.

Or you may continue the process with a finer increment, now working from your new best image as the base shot.

The captured images can also be inspected on an iPad, connected to an IQ2 or IQ3 XF Camera System via wifi and Capture Pilot, the Phase One wireless camera control software. The images can also be inspected on the XF rear screen. However, neither the iPad-monitor nor the XF rear screen can display the specific Hyperfocus Point "call-out value" of the images. These must be calculated manually.



Select HyperFocal Point

Using the Hyperfocal Point

Once the Hyper Focal point is set, it is possible to select hyper focal mode as an AF mode (spot, average or hyperfocal). If Hyper Focal is selected, an activation of the AF button will move the lens to the stored value.

It is highly recommended to assign a different button than the shutter half-press to "Auto Focus" - this is done with the Rear Key > UI Setup > Control Setup.

The hyperfocal mode is not stored persistently. Once the XF is turned off it jumps back to the previous value.

XF Camera System Capture Modes

Capture Modes

The Phase One XF camera body has four Drive modes; Single, Continuous, Low Vibration and Bracketing. Each mode is accessed from the drive mode screen after tapping the Drive icon on the XF top screen, or from the duplicate XF screen on the IQ Digital Back after selecting XF Menu > Camera Controls...

Single capture

One image will be captured when fully pressing the shutter release button. Holding the button down will NOT result in additional captures. To make a subsequent capture, the shutter release button must be released then pressed again.

Continuous capture

The camera will capture images continuously to the fastest possible frame rate with the release button held down. Note frame rates are dependent on the IQ Digital Back model and file format selected.

Low Vibration mode

Low Vibration mode

The mirror is locked up automatically for reduced vibration and the shutter is released. In this mode, the XF camera system uses data from its seismographic sensor to monitor the low vibration drive where a capture delay secures stability for the capture.

The maximum capture delay is set using a long press of the Vibration icon in Drive screen or by pressing the Rear Key on the XF top screen and from the menu: select Capture Setup > Vibration and then toggle the rear dial to the wanted delay.

The delay can be adjusted between 0.5-8 seconds. When the Vibration delay is reached the camera will always capture the initiated shot.

Exposure Bracketing

Exposure Bracketing

This automatic function delivers a series of captures based around a metered exposure setting, irrespective of the Exposure mode selected. The XF camera body will automatically capture three frames in succession by default: one 1-stop under, one at the metered exposure and one 1-stop over. Bracketing steps can be selected up to 5.0 EV apart, with the option for selecting between 2-7 captures in total.

Press the Drive icon in the main screen to display the Drive modes, and then press and hold the Bracketing icon to reveal the Bracketing functions. From that dedicated screen, select the number of captures and the difference in EV between them using the rear and side dials.

Note to reduce vibration and to fine-tune the metered exposure setting respectively, the bracketing function can be used in conjunction with the Low Vibration mode , which can be turned on or off directly from the bracketing screen.

Bracketing with Normal Drive

Bracketing with Low Vibration mode

XF Camera System Exposure Modes

Exposure Mode

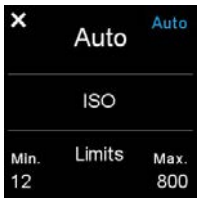
Exposure is controlled manually with the XF delivered set to M (Manual) by default, with the Shutter Speed set by the front dial, and Aperture values selected by the side dial. ISO settings are selected by the rear dial. However there are two additional semi Auto exposure modes available: Av (Aperture Priority), Tv (Shutter Priority), and a full Auto P (Program) option.

In the standard Classic screen layout, the Exposure Mode can be changed by tapping the icon on the top touch screen, followed by a selection of the preferred mode or follwed by toggling the rear or side dial.

In the semi-Auto modes, where the Aperture or Shutter Speed is selected automatically by the camera, the redundant dials may be customized to automatically select the Exposure Compensation function instead. See Exposure Compensation setting for more details.

ISO Setting

ISO sensitivity can be set either by scrolling the rear dial on the XF camera body or by selecting ISO with the top right key of the IQ Digital Back. Settings are automatically transferred between the IQ Digital Back and the XF camera body. The ISO range available is dependent on the IQ Digital Back model attached to the system.



Auto ISO Setting

Auto ISO Setting

An auto ISO option is useful in rapidly changing lighting conditions. On the XF camera body, the function is accessed by pressing the ISO icon on the top screen, or from the XF camera body menu on the IQ Digital Back. Note there's no access from the back's ISO shortcut button or upper right key. The Auto ISO screen displays minimum and maximum ISO limits to set a working range, for example, to limit noise. To set the Function to Auto, select OFF > Auto. To set the limits, scroll through the range using the rear and side dials. No confirmation is required, as the settings are saved automatically. Return to the main screen by the touch the cross (X) mark or half-press the shutter release button.

Exposure Compensation

Exposure Compensation Setting

Exposure Compensation

The Exposure Compensation function is available primarily for the semi-auto and auto exposure modes (Av, Tv, and P), but it can also be used in manual exposure mode. Compensation can be set from -5 to +5 EV in either 1/3, 1/2 or 1 EV increments. By default, exposure compensation is applied in 1/3 EV increments. (To change this to 1/2, or 1 EV increments, press the top rear key and then select Capture Setup> EV Steps > 1/3, 1/2 or 1. Note that this setting is global.)

The EV value applied is displayed on the top screen and in the viewfinder display and remains fixed, regardless of the number of captures. To remove any exposure compensation applied, access the function again and set the value to 0 (zero).

Exposure Compensation Setting

Exposure Compensation can be selected from the camera's top-screen by touch or the Front Key and applied by scrolling through the value (EV value) using the rear or side dials.

Exposure Compensation Quick Set in Auto

In the semi-auto modes, where either the Aperture or Shutter Speed is set automatically by the camera, the redundant dial may be reconfigured to modal operation, for setting the Exposure Compensation function for example. The change in function is applied automatically when selecting the semi-auto or auto exposure modes. Access the XF menu from the top screen (or IQ screen) and select UI Setup > Control Setup >Front / Side Dial > In Auto > ExpComp.

The Rear dial, by default, alters the ISO sensitivity, but if this function is subsequently set to Auto (by touching the ISO icon, and selecting Off > Auto), the dial can be reconfigured in the same way as the others to adjust Exposure Compensation in the Auto ISO mode.

Long Exposure

3.30 min exposure
at 3.18 min

Black frame capture
at 3.12 min

The IQ Digital Back model determines the long exposure capabilities of the system (please refer to the IQ technical specifications for a particular model), however, the basic operation remains the same between them and all relevant settings are syncronized between the IQ Digital Back and XF camera body. The IQ series models are all capable of long exposures up to 60 minutes in duration, selected directly from the front dial of the XF. No special Exposure mode is required when using the Phase One XF, however Manual exposure mode is recommended.

Select the Aperture using the side dial. Compose using the viewfinder or Live View, focus and then trigger the shutter release. The shutter remains open for the allotted time and the top screen of the XF will show the elapsed time (in secs). Shutter speeds longer than 1.0 second automatically change the leaf shutter option (if available) over to the camera's integrated focal plane shutter.

Noise Reduction (Dark Frame Subtraction)

In order to minimize noise, an additional dark frame is captured for the same duration as the capture and subtracted from the original exposure. This is fully automatic, and there is no need for the user to intervene. After the elapsed exposure time, the screen displays a count-down in seconds during the dark frame subtraction, and the icon in the top-left of the screen changes from an iris to a crescent moon to denote the operation. The Stop and Save option ends the exposure and automatically starts the dark frame capture. If the user selects Abort, the image is not saved. When the noise reduction (dark frame) process is finished, the camera is ready to capture another image.

Live View

All IQ Digital Backs are capable of displaying a live preview (Live View) on the rear touch screen LCD. It is a very effective method for capturing still subjects. Using a tripod is recommended to prevent blurred images. The preview image is displayed at the selected Aperture, and the Aperture value may be changed by the user during previewing to observe the effect on the depth of field. Exposure is not simulated in order to make the screen easier to see, and so the exposure compensation function is disabled.

Note, due to the faster refresh rates, the quality of the Live View image displayed on an IQ Digital Back with a CMOS sensor is superior to that from a CCD. File quality, however, is not affected by the Live View image.

All IQ Digital Backs support tethered Live View using FireWire 800 or USB 3.0, except for the 50MP IQ Digital Backs which offer Live View with USB 3.0 only.

Enabling Live View

From the IQ Home screen, touch the context menu icon in the lower right corner of the display. The contextual menu pop-up is displayed. Touch the Movie-camera icon to initiate Live View. The XF camera body opens the shutter and a live preview (Live view image) is displayed on the rear screen.

Focus in Live View

AF is not available during Live View. Select Manual Focus (MF) from the Lens Selector Ring and focus on the subject using the Live View image. Operation thereafter follows the basic functioning described for playback of captured images. Touch the screen and the display will enter Full Screen mode. The live preview can be zoomed to check focus by double-tapping the screen or by sliding your fingertip upward on the Zoom slider displayed on the left-hand side. (Slide your fingertip down to zoom back out.) To examine other areas of the preview, the image may be dragged with your fingertip. Double-tap the screen to return the full screen display. To exit live view, press the upper left key of the IQ Digital Back.

Image Capture in Live View

Follow the steps outlined above to enable Live View and confirm focus. Select the Low VIbration mode or enable the Single (or Continuous) Drive modes and use a cable release to prevent blurred images. Although the mirror is locked-up during Live View, releasing the shutter using the shutter release button is not recommended.

XF Camara Body Custom Presets

Custom Presets

Three Custom presets can be set on the XF camera body. This feature allows you to save and reuse combinations of settings you have made to the system to suit your preferences and workflow. Custom presets also minimize inadvertent use of settings, where the same camera may be adopted for very different assignments or commissions throughout the day. All the current settings can be saved in a Custom Preset.

Save Custom Settings

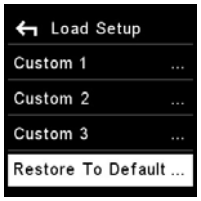
Set up the camera with the various settings required, then press the Rear Key on the XF top screen and from the menu select Save Setup > Custom 1 > Save Settings > Yes / No. Two further groups of settings can be stored (to Custom 2 and Custom 3).

If you change a setting while using the camera in one of the Custom modes and want that set updated, simply access the camera menu and select Save Setup, remembering to save it to the relevant Custom set.

Custom Settings

Changing between Custom Presets

Custom presets are intended to provide a rapid change between groups of settings and features. Press the Rear Key on the XF top screen and from the menu select Load Setup > Custom 1, 2 or 3.> Load Custom Settings > Yes / No. Selecting Yes instantly enables the group of settings. Settings may be continued to be changed afterwards as normal, and to return to the initial group of settings, simply repeat the procedure described above.



Exit Custom Preset
(Restore to Default)

Exit Custom Preset (Restore to Default)

To return the camera and back to the default settings, access the camera menu and select Load Setup > Restore To default...

Note the group of settings registered with the Custom Presets will be not be cleared using this option.

Flash Photography

Enabling Profoto Flash

Flash Readyness Icon

Flash Photography
The Phase One XF has been designed to work with a range of flash solutions in manual mode, and the camera offers flash syncing up to an unprecedented 1/1600th sec with the majority of Schneider Kreuznach LS (Leaf Shutter) lenses.

Built in Profoto Air Sync
The XF camera body can also wirelessly trigger any Profoto Air enabled systems or accessory due to an integral Profoto Air Sync module.

For third party flash systems, a Profoto Air Sync Transceiver can be used (Phase One Part# 70263).

Enabling Profoto Air Sync
Profoto Air Sync is not enabled by default. To set-up the wireless syncing function, access the camera menu and select Capture Setup> Profoto > Profoto Flash > On. The wireless channel can be selected in the same menu. Select between channels 1 to 8. Channel selection should correspond to the channel selected on the Profoto flash system or Profoto Air Sync transceiver in use.

Flash Synchronization range
Phase One lenses have the capability to synchronize flash up to 1/125th of a second using the XF camera body's integral focal plane shutter (FPS).

Schneider Kreuznach LS (Leaf Shutter) lenses can synchronize flash up to 1/1000th or 1/1600th in most cases, depending on the lens model used.

Synchronization readiness is indicated on the top screen with a small flash icon located beneath the Shutter Speed setting. If a flash icon is not visible, the Shutter Speed setting is outside range of the attached lens or manually selected shutter (FPS or LS).

Wired Flash
Wired manual flash is possible through the flash sync port on the XF Prism Viewfinder or IQ Digital Back, with appropriate cable. Manual flash is also possible through the hot shoe, located on top of the prism viewfinder. Slave units and wireless transmitters can also be connected. Please refer to their respective user manuals for more details.

Note Phase One A/S cannot accept responsibility for accidents or damage occurring as a result of using third-party devices in conjunction with Phase One equipment.

XF Camera System Lenses

Focal Plane and Leaf Shutter Lenses

The Phase One XF offers a dual shutter option for the utmost in exposure versatility with flash and ambient light.

Phase One FPS (Focal Plane Shutter) lenses

The XF camera body has a built in focal plane shutter (FPS) for use with Phase One lenses and offers a range of Shutter Speeds from 1/4000th second to 1 hour (determined by the IQ Digital Back model used), however flash sync is limited to a maximum of 1/125th of a second Shutter Speed.

Schneider Kreuznach LS (Leaf Shutter) lenses

Schneider Kreuznach lenses have a built-in leaf shutter (LS). When used in combination with the Phase One XF camera body and IQ Digital Back, the leaf shutters have the capability to synchronize with flash systems up to an unprecedented 1/1600th of a second Shutter Speed.

Shutter preference

If using LS lenses, the XF camera body will indicate if LS or FPS is active on the top screen. The shutter preference can be set using the camera menu from the top screen, or from the XF menu on the IQ Digital Back. Select Capture Setup > Shutter > LS Priority / FPS Only.

Advantages of FPS (Focal Plane Shutter)

One notable advantage of FPS is ability to shoot up to 1/4000th of a second. This overcomes the use of ND filters that results in reduced viewfinder brightness and AF performance. Another benefit is the shutter response time, which is almost twice as fast as a leaf shutter. This means that if you are photographing within the FPS flash sync speed range (using flash or not), there is a shorter time lag between pressing the shutter button and the focal plane shutter being released.

Advantages of LS (Leaf Shutter)

If you want to synchronize flash at a Shutter Speed faster than 1/125th of a second, for example to freeze motion or to work with wider Apertures for selective focus techniques when using balanced fill flash, the Schneider Kreuznach LS lens option overcomes the slow flash sync limitations of focal plane shutters. Another advantage is less vibration during capture due to the lower inertia of the lighter weight shutter blades. The issue of vibration, however, is addressed even on non-LS lenses with the Low Vibration mode of the XF camera body.

Capture One Pro

The XF Camera System is bundled with Capture One Pro,

Installing on Mac

Capture One software includes an easy-to-use installer that will install all the software necessary to run the application on a Mac running OS X 10.9 (Mavericks) or 10.10 (Yosemite).

1. Connect the supplied USB flash drive to your computer's USB port and navigate to the Capture One installer. Alternatively, you can download the latest version of the application from the Phase One website: www.phaseone.com
2. Open the Capture One Disk Image.
3. Drag the Capture One icon to the Applications folder.
4. Open Capture One from your Applications folder.

NOTE:
On Windows, Capture One will initiate installation of Microsoft® .NET Framework, if it's not already installed on your computer.

Installing on Windows

Capture One includes an easy-to-use installer that will install all the software you need to run the application on a Windows based computer.

1. Connect in the supplied USB flash drive to your computer's USB port and navigate to the Capture One install file. Alternatively you can download the latest version of the application from the Phase One website: www.phaseone.com
2. Run the executable software install file.
3. Read and accept the license agreement presented.
4. Follow the on-screen instructions to complete the installation.

System requirements

Capture One may run on other and older equipment than those listed below, but to ensure the best possible results we recommend that your computer, at the minimum, conforms to the following specifications:

Microsoft® Windows® minimum requirements

- Intel® Core™ 2 Duo or better
- 4 GB of RAM
- 10 GB of free hard disk space
- Calibrated color monitor with 1280 x 800, 24-bit resolution at 96 dpi screen ruling
- Windows 7® SP1 64-bit, Windows 8® 64-bit, Windows 10® 64-bit
- Microsoft® .NET Framework version 4.5.2 (will be installed if not present)
- A PDF reader is needed to read the Release Notes
- An Internet connection is needed when activating Capture One.

Apple® Macintosh® minimum requirements

- Intel® Core™ 2 Duo or better
- 4 GB of RAM
- 10 GB of free hard disk space
- Calibrated color monitor with 1280 x 800, 24-bit resolution at 96 dpi screen ruling
- Mac OS X 10.9.5 or 10.10.5 or 10.11.x
- An Internet connection is needed when activating Capture One.

Recommended system requirements

The above hardware specifications are to be considered as minimum requirements. If you work with high-resolution camera systems or simply want to optimize the performance, please follow the recommendations below:

- Use processors with multiple cores, e.g. Intel® Core™ i7 or better
- 16 GB of RAM or more
- Leave plenty of hard disk space free for your images
- Use a fast hard disk e.g. a Solid State Disk (SSD)
- A fast Graphics card from NVIDIA or AMD, e.g. AMD Radeon 7950 (Mac) / AMD R9 290 (Win) or newer, with minimum 2GB RAM. We recommend using the Mac Pro (late 2013) containing the dual AMD D700 GPU.

Activating Capture One Pro (Mac / Windows)

An Internet connection is required to activate and update Capture One Pro.

1. Launch Capture One and select Pro, then Activate from the respective product dialog boxes.
2. Enter the 16-character license code / product key provided and your personal details to create a Profile in the required fields. (Capture One Pro license code is available inside the Capture One packaging).
3. Once you have entered the information, press the Activate... button and Phase One's server will validate the software.
4. Capture One should now be activated and ready for use.

NOTE:
A Phase One Profile is required for activation and future updates and upgrades. If you do not already have a Phase One Profile, please enter an email address and password to create a new Profile ID.

Updates to minor version releases of Capture One are free. For example, updating from Capture One Pro 8.2 to 8.3 is free. Upgrades to major version releases, for example, from Capture One Pro 7 to Capture One Pro 8, are paid for.

A Capture One Pro 8 key will activate earlier versions. For example if you prefer to use Capture Pro 7, the license code may be used for that instead. Please note this does not apply to subscriptions.

Capture One DB supports Phase One backs only. For support of other makes as well as Phase One, please use Capture One Pro.

Troubleshooting

If you are experiencing problems activating the software, follow the instructions provided in the application, read the Capture One help manual online, or visit our website for inspiration and troubleshooting: http://www.phaseone.com/support

Capture One Tethered Use

NOTES:
The IQ digital back is compatible with the FireWire standard which specifies cables up to 4.5 meter and USB standard which specifies cables up to 3 meters in length. Longer cables are possible, but may require a third party power solution or a powered hub. Please ask your local partner for advice on this.

The IQ digital back can draw power and charge the batteries in the system from the computer's ports via the interface cable. Not all computers can supply power by the data-bus, this is especially true of PC laptops with IEEE 1394 ports, and some USB ports.

A battery must be installed in the IQ digital back for it to function properly, regardless of whether it is exhausted or not. If it is flat and the data-bus is powered, the battery will start to be charged.

Shooting Tethered

As a professional tool for working photographers, the IQ digital back can be tethered to a Mac or PC running Capture One Pro raw workflow solution. In addition to being able to select and control a wide range of camera functions including exposure, focus confirmation and Live View, images can be saved to the computer's hard disk as well as the camera's CF-card, as a back-up.

Connecting to a Computer

The IQ digital back can be tethered to a computer using either FireWire 800 (IEEE 1394b) or USB 3.0 interface cables. (Note the 50-megapixel IQ CMOS series digital backs support Live View tethering using only USB 3.0.)

Online Support

For more information on shooting tethered with Capture One please consult the online user guide available in the Capture One Help menu or go direct to http://help.phaseone.com/en/CO8/Capture/Tethered-Shooting.aspx

Tethered Capture (FireWire / USB 3.0)

To connect to a computer running Capture One, insert the supplied FireWire 800 or USB 3.0 interface cable. The ports on the IQ digital back are protected behind hinged covers. When connected, the camera will spontaneously power-up and the settings will be automatically shared with Capture One.

The display on an IQ digital back can be either turned off while shooting tethered, or set to display the images during capture (from the Camera Settings tool (Digital Back) in Capture One or the IQ menu, select Auto Preview Mode > Off / On), as if shooting untethered. It is also possible to enlarge a section of an image on the IQ screen to help check focus.

In the default Auto Storage setting, the IQ digital back will return to the untethered mode of operation when the interface cable is removed.

Please note that the IQ 50MP CMOS range digital backs may be tethered using FireWire 800 or USB 3.0, but only the latter option supports Live View functionality.

NOTES:
The IQ digital back are compatible with the Apple Thunderbolt to FireWire 800 adapter with certain restrictions, please visit the following support page for more details:
http://www.phaseone.com/Search/Article.aspx?articleid=1256&languageid=1

The IQ digital back are also compatible with FireWire 400. Please order a Phase One FireWire 800 to 400 cable 4.5M. Part No: 50300164.

Power settings when tethered (FireWire / USB 3.0)

The IQ digital back has an integrated battery charger to ensure that the batteries are charged when shooting tethered to a computer.

Charge when tethered

Charge when tethered

This charging function can be switched Off, or set to Slow or Fast. From the IQ digital back menu, select Power Management > Charging from PC. The Slow or Off settings should be chosen to preserve the battery life of a laptop. The batteries will only charge via a USB or FireWire connection when the IQ digital back Power Management setting is switched to Slow or Fast.

Please note that most USB ports cannot provide enough power to charge the batteries while working or while in standby, however battery life is prolonged during charging. This is a limitation with the current USB 2.0 and USB 3.0 technology. If the back is powered off while connected via USB, it will continue to charge. Battery charging is indicated by an orange LED on the rear of the back when it has been turned off.

Import Images into Capture One Pro

The IQ digital back captures proprietary raw files only and require processing in Capture One or similar software to output these files as JPEGs or TIFFs. The IQ digital back cannot process raw files in-camera.

Import Images

Inserting a memory card into a card reader attached to a computer will automatically display the Import Images dialog window, when Capture One Pro is running.

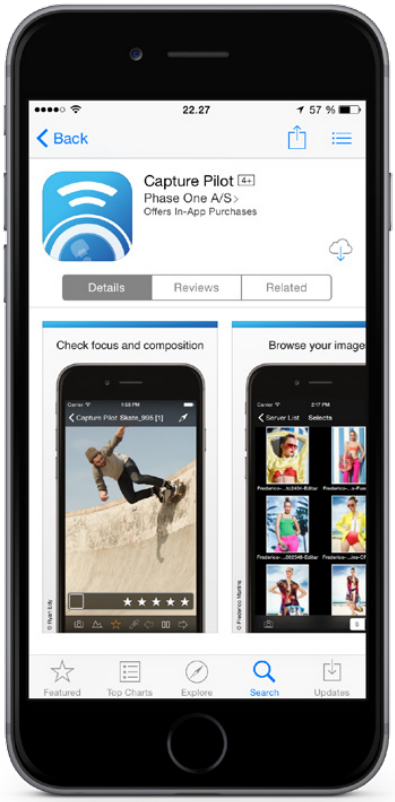
Manual Import of images

1. Go to File and select “Import Images...” The dialog box will open to browse files.
2. Navigate to the “Import From” folder, card or disk in the Locations tool.
3. Select Capture folder (import location) and type in the job name and Metadata (copyright, caption) if desired.
4. If you want to select a naming format for the imported files, press “Format” in the Naming tool.
5. Select all or specific images to import.
6. Press “Import” or “Import All”. You can continue working while images are imported in the background.

Capture One User Guide

Available in the Capture One Help menu or go direct to:
http://help.phaseone.com/

Built-In WiFi and Capture Pilot



Download Capture Pilot from AppStore

All IQ3 and IQ2 digital backs have built-in WiFi and can connect wirelessly with an Apple iOS device (iPhone, iPad and iPod touch) running the Capture Pilot app from Phase One. Capture Pilot enables the user to remotely control the camera's exposure settings and trigger the shutter on XF IQ3 and IQ2 camera systems. In addition, Capture Pilot allows browsing and geotagging of images, and even supports remote live view with the Phase One IQ3 50MP and IQ250 MP backs.

As an option with Capture One Pro, Capture Pilot also enables remote operation and triggering of a tethered camera. The free to download app can also be a useful solution for clients wishing to view images away from computer screen, either in the studio or on location.

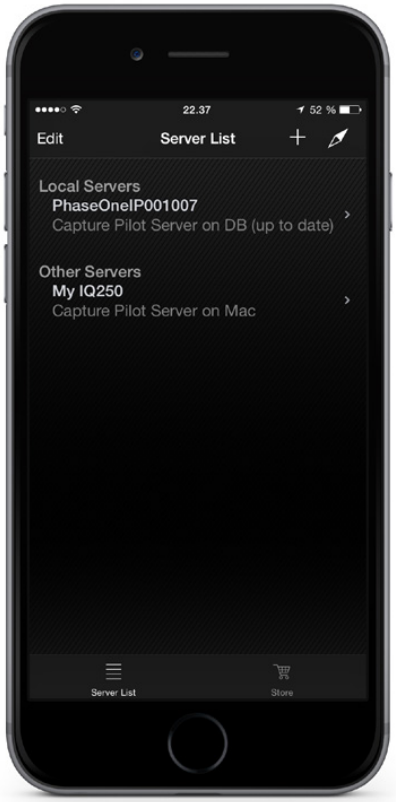
Note raw files are not transmitted to, or stored on, the iOS device. The original files remain on the camera's CF card and/or the tethered computer's hard disk, depending on the setup.

For more information, please see
www.phaseone.com/en/CO8/capture-pilot

WiFi Setup

Before enabling WiFi on the IQ digital back please download the free Phase One Capture Pilot app from the Apple App Store and install it on your iOS device. Capture Remote, the remote camera operation function of Capture Pilot is automatically enabled upon wireless connection with an IQ digital back.

For control of other makes of DSLRs, an in-app purchase of Capture Remote is required. Please check compatibility, before making a purchase. Note for other makes, remote control applies to cameras tethered to a computer running Capture One Pro.



Select digital back in Capture Pilot

Choose digital back network name

WiFi Connection

There are two wireless network mode options available to connect the IQ3 digital back to an iOS device. On location, use the ad-hoc mode for a range of up to 8m / 25 ft. If the studio is equipped with a router, the infrastructure mode can be used for an extended range of up to 30m / 100 ft (depending on the equipment and signal strength).

Connect iOS device directly to IQ digital back using Ad-hoc mode

1. Power on the XF/ IQ3 and from the rear touch screen, select Menu > WiFi > Mode (Off) > Adhoc. This will start an image server with the network name PhaseOne[serial number]. (Note this name can be changed, see Network Security below).
2. Using the iOS device, select the Settings app > WiFi > Choose a Network... > PhaseOne[serial number].
3. Start Capture Pilot and select the IQ digital back's PhaseOne[serial number] network name under the Local Servers list. Enter the back's authentication (pin) code, if applicable (see Network security, for more details).
4. When connected to the IQ digital back, any images stored on the camera's CF card will be displayed as thumbnails.
5. To open Capture remote, the camera control tool of Capture Pilot, press the Camera icon in the menu bar at the bottom of the screen.
6. To initiate remote live view, press the movie-camera icon (IQ3 50MP and IQ250 only).

Troubleshooting Connection

In general, when working in the Ad-hoc mode the WiFi settings of the iOS device should be set to Ask to Join Networks. This may prevent the IOS device automatically switching networks when the signal is lost from the IQ3, for example, when the camera is powered down. However, the iOS device will automatically join a known connection (if available), and even though the IQ digital back will re-enable WiFi on powering back up, Capture Pilot will be prevented from re-connecting. To re-establish the connection, from the iOS device Settings app, please reselect the IQ3 network name PhaseOne[serial number] and then open Capture Pilot.

Connect IQ digital back to a Router (Infrastructure mode)

1. To turn on WiFi on the IQ3, select Menu > WiFi > Mode (Off / Adhoc) > On. Wait for the back to scan for the available WiFi networks.
2. Select the studio's WiFi network name (SSID) from the IQ3 screen, Menu > WiFi > Select Network.
3. Enter the studio WiFi network's password (and user name, if applicable) on the IQ3 touch screen, using the displayed keyboard. Confirm the password with a long press on the keyboard's green check-mark button. (Note only basic ASCII (i.e. basic English) characters are supported when working wirelessly with host names, user names and passwords.)
4. To join the network, press the green checkmark. The IQ back screen displays progress, and confirms connection status.

Connecting Capture Pilot to your IQ3 via a Router

1. From the iOS device, select the studio's network from Settings > WiFi > WiFi network name (SSID).
2. Enter the studio WiFi network's password (and user name, if applicable).
3. Open Capture Pilot and select PhaseOne [serial number] under Local Servers in Capture Pilot. Enter the back's authentication (pin) code, if applicable (see Network security, for more details).
4. When connected to the IQ digital back, any images stored on the camera's CF card will be displayed as thumbnails.
5. To open Capture remote, the camera control tool of Capture Pilot, press the Camera icon in the menu bar at the bottom of the screen.
6. To initiate remote live view, press the movie-camera icon (IQ3 50MP and IQ250 only).

The IQ3 can be remotely operated using Capture Pilot when tethered. Either wireless mode can be adopted, following the same procedure described above.

Network Security

In a large studio, there may be multiple Phase One IQ backs operating wirelessly, as well as computers running the Capture Pilot server from Capture One Pro. If that is the case, and the image servers they're publishing are in-range, your iOS device running Capture Pilot will display each device under the Local Servers list. It is possible to secure each image server with either a pin code for an IQ back, or a password for an image server published by a computer running Capture One Pro (with the Capture Pilot server enabled). Please enter the relevant code or password when prompted by the server.

Network settings on the IQ3 series digital backs include the option to change the hostname (IQ3 image server name), set a pin code, or select a specific network channel. To alter the settings select, Menu > WiFi > Mode > Off > Settings.

To reset all WiFi settings, including all network settings and pin code from the IQ3, select Menu > Restore to Default. Warning, this will reset all IQ3 settings to the factory defaults (time and date settings remain unaltered).

Location Data in Capture Pilot

In order to minimize the use of battery power on location, geotagging may be performed after the event at a more convenient time, for example, when back at the hotel or studio. All that's required is for Capture Pilot to be running in the background with the geotagging feature enabled and the back to set to sync automatically (Geotag CF card > On). However, it is possible to embed the data wirelessly at the time of capture (Geotag captures > On). See below for more details.

Syncing Location data after Capture

From the IQ digital back, select Menu > WiFi > Settings > Capture Pilot > Capture Pilot Permissions > Geotag CF card > On. When taking photographs, ensure that the Capture Pilot app (on your iOS device) is running in the background, and that the app's data-logging feature is enabled (i.e. that the compass needle button, located top right corner, is colored orange).

Note for images to be tagged accurately, ensure the time and date of the back and iOS device are synchronized.

Tagging Images Afterwards

Connecting the IQ digital back to Capture Pilot wirelessly (using the Ad-hoc or infrastructure mode, detailed above) will sync the location data with the files on the CF-card in the IQ digital back. If you have multiple CF cards with images, insert the cards into the IQ digital back, in turn one by one. Capture Pilot will sync with the back and automatically tag the files with the location data. Both the back and app will display confirmation that the files on the CF-card are tagged.

Tagging images at the time of Capture

Capture Pilot can be used to tag images with location data derived from the iOS device at the time of capture. From the IQ digital back, select Menu > WiFi > Settings > Capture Pilot > Capture Pilot Permissions > Geotag captures > On. Ensure the data-logging feature of Capture Pilot is enabled (i.e. that the compass needle button visible at the top right corner is colored orange).

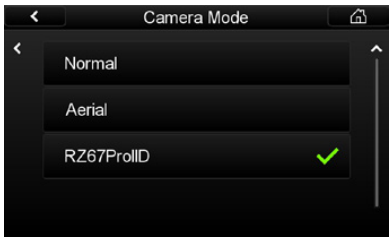
IQ Digital Backs with third party cameras

Phase One IQ digital backs are manufactured with specific mounts and digital interfaces for optimal performance with Phase One / Mamiya cameras and Hasselblad medium format camera bodies.

The standard IQ digital back is equipped with an M mount for use with the Phase One XF or Phase One / Mamiya DF+ camera body, however IQ digital backs may be ordered with specific Hasselblad H or V mounts. In some cases, IQ digital backs can be fitted with an adapter to fit other camera body mounts. Please note the IQ series cannot be ordered with a C mount for the Contax 645 body.

Viewfinder Masking

Mamiya RZ Pro II mode selector



IQ Digital back Camera Mode setting

Mounting IQ digital backs on Mamiya RZ67 PRO II/D

Mamiya RZ67 PRO IID

The IQ digital backs with a standard M mount for use with the Phase One XF or 645DF+ are compatible with the Mamiya RZ67 Pro IID camera, however this will require an additional adaptor plate. (Phase One Part # 70994)

It is also possible to use a Phase One IQ digital back with Hasselblad V mount on the Mamiya RZ67 PRO IID. Modification of the back mount plate is required with the following Mamiya service part number: Y22995-RZ.

Mamiya RZ67 PRO II

The Hasselblad V mount version of an IQ digital back can only be used on the older version Mamiya RZ PRO II with the Mamiya RZ67 Pro II adaptor. (Phase One Part# 70964). Please note, the standard M mount IQ digital backs are not compatible.

Viewfinder Masking

Please check the relevant Mamiya RZ67 manual regarding how to detach the viewfinder and remove the focusing screen.

1. Remove the protection tape from the mask.
2. Detach the prism or waist-level finder and remove the focusing screen.
3. Place the viewfinder mask in the bracket that holds the focusing screen.
4. Re-mount the focusing screen followed by the Viewfinder.

Mamiya RZ Pro II mode selector

The mode selector on the trigger button should be turned to the white dot when used with the IQ digital back. The selector should be set to the orange dot to avoid draining the internal (back-up) battery of the RZ camera when the IQ digital back is attached to the body and not in use.

IQ Digital back Camera Mode setting

Select the specific Mamiya RZ67 PRO IID camera mode on the IQ digital back, Menu > Camera mode > RZ67PROIID. This will ensure that the IQ digital back operates optimally. Note this option is not relevant for the earlier Mamiya RZ67 PRO II model.

IQ digital backs for Hasselblad H-series Cameras

Phase One IQ digital backs incorporating a Hasselblad H mount can be fitted to most early Hasselblad H-series cameras, including the Hasselblad H1 and H2.

Viewfinder Masking

Viewfinder Masking

Please check the relevant Hasselblad H-series manual regarding how to detach the viewfinder and remove the focusing screen. Masking is only required for the 50MP or 40MP IQ digital backs.

1. Remove the protection tape from the mask.
2. Detach the Viewfinder and remove the focusing screen.
3. Place the viewfinder mask in the bracket that holds the focusing screen.
4. Re-mount the focus screen, followed by the viewfinder.

Hasselblad H-series Camera Display

Hasselblad H-series Camera Display

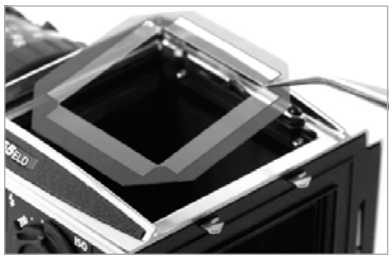
The Hasselblad H-series grip-screen can display some information from the Phase One IQ digital back. Information includes the ISO setting of the IQ digital back and certain error messages, for example, "Digital back storage media is full".

Please note, ISO settings should be set from the IQ digital back or in Capture One Pro software when shooting tethered.

All the Hasselblad H-series camera auto exposure modes are fully supported by the IQ digital back. Please check the relevant Hasselblad H-series manual for more information on exposure modes.

IQ digital backs for Hasselblad V Cameras

Phase One IQ digital backs incorporating a Hasselblad V mount can be fitted to most Hasselblad V cameras, including Hasselblad 555 ELD, 553 ELX, 501 CM and 503 CW models.



Viewfinder Masking

Viewfinder Masking

Please check the relevant Hasselblad camera manual instructions before removing the focus screen.

1. Remove the protection tape from the mask.
2. Dismount the finder and remove the focusing screen.
3. Place the mask in the bracket that holds the screen.
4. Re-mount the focusing screen, followed by the Viewfinder.

Vertical Mounting

On the Hasselblad V it is possible to mount the digital back in vertical position, in order to make portrait oriented images.

Sync Cable
A sync cable must be connected from the lens to the small connector port in the front plate on either the left or right side of the IQ digital back, regardless of which Hasselblad V type camera used.

Motor cable
For ELX or ELM bodies, a motor cable is supplied with the V mount digital back to enable users to fire the camera from within Capture One Pro. This is not required with the Hasselblad 555 ELD body.

Flash Lead Connection

Flash Lead Connection
A flash cable can be connected to the Flash port connector on the IQ digital back.

Shutter Latency Setting

Shutter Latency Setting
The IQ digital back is equipped with both Normal and Zero latency mode settings for optimal performance with certain camera functions. Set the latency setting to Zero if using the Mirror Up function, or if you need to rapidly press the shutter button. Do not to trigger the shutter too fast when using Normal latency. On 903 CW and 905 CW, set the IQ digital back latency to Zero .

Hasselblad 555 ELD
Ensure that the shutter release on the front of the 555 ELD is in the DIG position

DIG position

IQ digital backs and Technical Cameras

Phase One IQ digital backs are compatible with a wide range of technical cameras with the relevant body mount or adaptor, and the Live View option for focussing and composition makes it a compelling solution, particularly the CMOS based IQ digital backs.

IQ digital back Latency and Mechanical Shutters

The IQ digital back is equipped with two shutter latency mode settings; Normal and Zero latency. With the IQ digital back set to Zero latency (select IQ menu > Shutter Latency > Zero), the back will sync with the mechanical shutter on the first release. Connect a standard (one-shot) sync cable between the flash-sync port on the lens' mechanical shutter and the multi-connector port on the IQ digital back. Please note the Zero latency mode consumes more battery power, as the back's power management features are overridden.

With the IQ digital back set to Normal latency, battery life is extended but the mechanical shutter of the technical camera must be tripped twice within a four-second time frame. This requires a special two-shot sync cable. The first release of the shutter activates the IQ digital back with a wake up signal, and the second initiates the exposure. If the time limit of four-seconds is exceeded, the IQ digital back gives a warning 'beep' followed by a 'two shoot error' display on the screen.

There are several automatic, or semi-automatic, two-shot solutions (sometimes referred to as wake-up cables) available from third party manufacturers to use with a mechanical shutter. Please ask your dealer for more information.

Zero latency setting

Normal latency setting

Typical two-shot release procedure

1. Connect a two-shot sync cable to the multi-pin port on the IQ digital back, and connect the other end of the cable to the flash sync port of the mechanical lens. If flash is required, connect a flash sync lead to the IQ digital back.
2. Ensure Normal latency is selected on the IQ digital back.
3. Close, or stop-down, the lens to the taking aperture, if necessary.
4. Push the trigger down slowly on the shutter release cable. The two-shot cable will ready (wake-up) the IQ digital back and take a shot when it is pushed all the way down.

Electronic Shutters

Several vendors make automatic lens controls that are compatible with the IQ digital backs – Please ask your dealer for more information.

More information is available by searching for specific camera names in the Phase One Knowledge base at: support.phaseone.com

System Maintenance

XF Camera Body and Viewfinder

Your XF Camera System generally needs very little maintenance. However, as this is a professional tool it should be treated with proper care and caution. Always perform test shots before a photographic session if the camera, for any reason, has not been used for a long period of time. Keep the electronic contacts and back mount of the XF camera body clean and free of dust, with either a dry micro-fibre cloth or by using a lens brush specifically for the body (do not re-use on the lens' surface).

Lenses

Never touch the optics of the lens with your fingers. Keep the optics perfectly clean with a rubber-type air blower (not compressed air), a soft lens brush and/or the dry lens cloth (delivered with the lens). Do not use any other tools on the lens. Do not touch the electronic contacts with your fingers. Please note the lens is not waterproof. If it becomes wet, it should be immediately dried with a cloth. If the lens is exposed to salt spray, moisten a cloth and carefully clean the lens.

IQ Digital Back

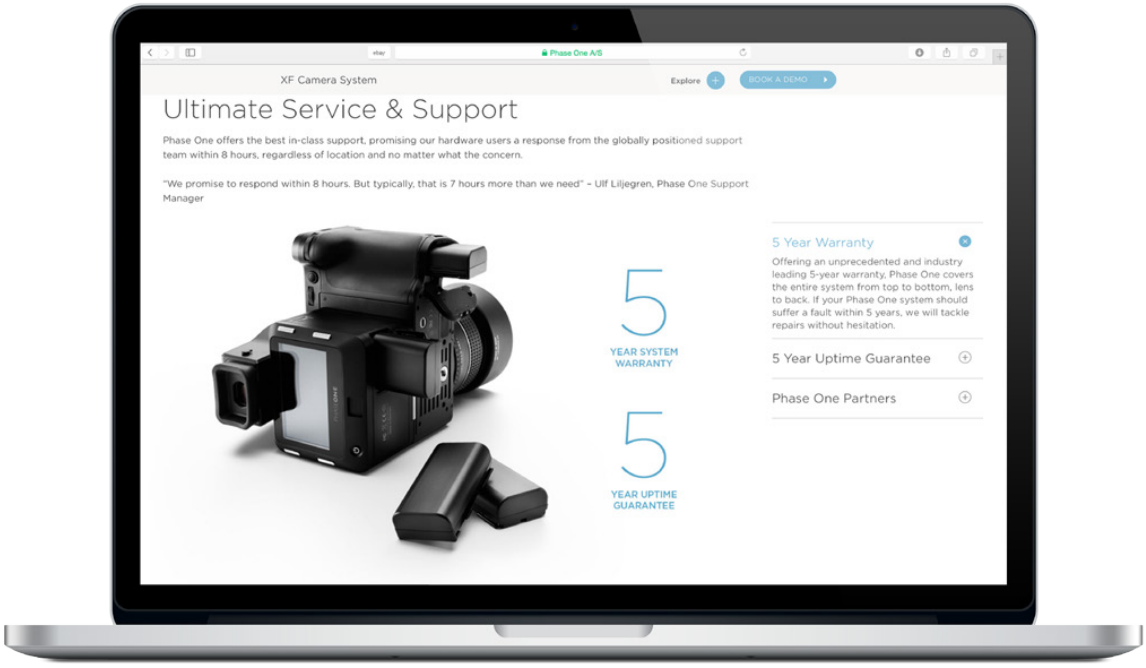
The Phase One IQ digital back must have the protective sensor cover fitted when not attached to a camera. Dust may accumulate on the IR filter of the sensor, which will degrade the image quality if not removed. Please follow the directions included in the Phase One Sensor Cleaning Kit supplied with the IQ digital back.

IR Filter on the sensor

The IR filter (Infrared Reduction Filter) is permanently mounted on top of the sensor. The filter may not be removed for several reasons:

1. Focus accuracy is dependent on the presence of the IR filter.
2. It is only possible to remount the filter without dust degrading the sensor if you have access to special clean room facilities.
3. The Phase One Product Warranty will be void.

Learning More



Phase One Customer Service

The Phase One XF Camera System is a high-performance camera designed to endure the rigors of daily professional use under a wide range of environments. However as a precision made optical and mechanical device it should be protected from harsh use, and stored carefully away from extremes of temperature and humidity when not in use.

If the camera is to be stored for an extended period, remove the batteries and store them safely (to prevent shorting and the risk of fire).

Service and Repair

In the event of damage, or if your Phase One equipment requires servicing, please either contact Phase One or a Phase One subsidiary at www.phaseone.com/contact, or reach out to your Phase One Partner at www.phaseone.com/partners

Phase One Technical Support

For support concerning Phase One hardware or Capture One software, including license and activation issues, please contact a member of the Phase One Technical Support team online at: support.phaseone.com

If you are not a registered user, please sign up for timely notifications of firmware and software updates and news of the latest developments. If you have downloaded and registered Capture One previously, you may already have a user account with us.

Phase One Information

For various articles on Phase One products, including system and software documentation, as well as additional resources such as training and tutorials, or the user forum, please consult the online Knowledge Base at support.phaseone.com

Warranty and Uptime Guarantee

Phase One camera systems come with either a 1 Year Warranty, or a 5 Year Warranty. In some geographical regions, an additional 5 Year Uptime Guarantee is available together with the 5 Year Warranty. Warranty options are available at the time of purchase.

1 Year Warranty

Items covered by the 1 Year Warranty:
Phase One XF camera body, IQ digital back, XF viewfinders, Phase One and Schneider Kreuznach lenses, when purchased as stand alone items.

Phase One XF IQ1 Camera Systems including:

Phase One IQ1 digital back
Phase One XF camera body
XF Prism Viewfinder or XF waist level finder
Phase One or Schneider Kreuznach lenses.
To activate the Phase One warranty, customers are required to register the product online at www.phaseone.com, or through the registration option when the camera is tethered through Capture One Pro.

General Conditions

Subject to the terms contained here and below, Phase One warranties above mentioned products manufactured by Phase One against defects in materials and workmanship for a period of 1 year or 100,000 captures, whichever comes first from the date of purchase, covering parts and labor for repairs.

This warranty gives you specific legal rights and you may have other rights that vary from region to region. You are urged to verify whether any additional rights may or may not exist dependent upon your jurisdiction. However, Phase One shall not be liable for consequential damages or loss of data.

During the warranty period, Phase One undertakes at its discretion to repair or replace defective items at no charge to the customer, when such defects are reported to Phase One within the warranty period, and the defective part(s) are returned to Phase One no later than 30 working days after expiry of the warranty period. The customer shall cover the cost of transportation to Phase One and Phase One shall cover the transportation costs for returning the products after repair.

5 Year Warranty

Items covered by the 5 Year Warranty and 5 Year Uptime Guarantee:

Phase One XF IQ3 or XF IQ2 Camera Systems, including:
Phase One IQ3 or IQ2 digital back
Phase One XF camera body
XF Prism Viewfinder or XF waist level finder
An optional number of Phase One or Schneider Kreuznach lenses purchased on the same system order.

To activate the Phase One warranty, customers are required to register the product online at www.phaseone.com, or through the registration option when the camera is tethered through Capture One Pro.

General Conditions

Subject to the terms contained here and below, Phase One warranties above mentioned products manufactured by Phase One against defects in materials and workmanship for a period of 5 years or 250,000 captures, whichever comes first from the date of purchase, covering parts and labor for repairs.

This warranty gives you specific legal rights and you may have other rights that vary from region to region. You are urged to verify whether any additional rights may or may not exist dependent upon your jurisdiction. However, Phase One shall not be liable for consequential damages or loss of data. During the warranty period, Phase One undertakes at its discretion to repair or replace defective items at no charge to the customer, when such defects are reported to Phase One within the warranty period, and the defective part(s) are returned to Phase One no later than 30 working days after expiry of the warranty period. The customer shall cover the cost of transportation to Phase One and Phase One shall cover the transportation costs for returning the products after repair.

The warranty is limited to the repair or replacement of the faulty part. The warranty does not cover faulty items, where the customer or a third party has attempted without authorization from Phase One to make alterations or repairs, or if the fault is caused by any other circumstances or equipment than the Products themselves or if it is determined that the cause of a failure is the result of customer action or neglect (e.g., dropping or other accident), in which case all costs will be invoiced to the customer. The warranty shall cover only such defects that are due to faulty materials or workmanship. Phase One carries no responsibility for any indirect loss, e.g. consequential loss; loss of profit; loss of data; additional costs etc. as a consequence of deficiencies in Phase One's deliveries.

Phase One shall have no obligation to make repairs or replacements required through normal wear and tear or necessitated in whole or in part by catastrophe, fault or negligence of the user, improper or unauthorized use of or attempt to repair the Products by user or others, or by causes external to the products of part thereof such as, but not limited to, power failure or unusual environmental conditions.

Procedure for Warranty Repairs
Upon experiencing a problem with a Phase One product, an authorized Phase One Dealer must be contacted by you to assist you in troubleshooting the problem and if necessary in obtaining a Return Merchandise Authorization (RMA) number from Phase One. Upon receipt by Phase One, Phase One reserves the right to determine and will determine whether the problem lies within the warranty. When you deliver the product to the Dealer, you must bring the original purchase information and serial numbers, including a copy of the sales invoice. The product must be shipped for the attention of the RMA number. Shipping costs to Phase One for RMA warranty repair are borne by you, and any damages in shipping will be billed to you. We recommend that you obtain insurance to cover potential damages during transportation. RMA numbers are only valid for four (4) business days from the date of issuance so you must ship within that period. If a product is returned to Phase One (a) without an RMA number from Phase One; or (b) beyond the four (4) business day period; or (c) without proper packaging, Phase One retains the right to refuse delivery of such return and thereby to void the warranty. Thus, we suggest that you exercise great care in this process. If the product is within warranty, shipping costs in connection with the shipping of the repaired product to you will be borne by Phase One. Otherwise shipping costs are borne by you. If you are having image quality problems, you should always enclose image samples so that Phase One can determine the reason underlying the problem you believe you are having. All repairs completed within warranty are covered by a normal 90-day guarantee or the balance of the original or extended warranty, whichever is longer. Repairs completed outside warranty are covered by six (6) months warranty on the repaired part.

5 Year Uptime Guarantee – General Conditions
Using the Uptime Guarantee you may request a component loan unit be sent to you within 24 hours*. We will ship the loan unit to you using next business day morning service at our expense.

Phase One allows you one (1) business day to verify the operation of the loan unit and return the defective product to Phase One.
If the defective product is not returned within one (1) business day, a penalty fee of USD250 / EUR200 per day for using the loan unit will be invoiced.

Under the Digital Lifetime Warranty and Uptime Guarantee, a Digital Back loan unit will be available as long as the repair lasts.
After the repaired product is returned to you, the loaned product must be returned to Phase One. Instructions for shipping the loaned product will be included with your repaired product. Shipping and insurance costs in connection with the shipping of the repaired product to you will be borne by Phase One. Return shipping costs of the loaned product are borne by you and must be made within 48 hours after delivery of the repaired product. Failure to return the loaned product in a timely manner will result in Phase One invoicing for the loaned product in accordance with our current list price.

*Uptime Guarantee might be impractical to achieve due to heavily enforced tax regulations, in some countries. Phase One will not be liable for carrying out the Uptime Guarantee shipments to countries where such taxation is enforced. Please ask you Phase One representatives if you are in doubt.

Coverage of Warranty
This Warranty is the complete and exclusive statement of warranty coverage, and it supersedes all prior oral, written, express or implied proposals and communications pertaining to the subject matter hereof. ALL EXPRESSED OR IMPLIED WARRANTIES FOR PHASE ONE PRODUCTS INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY WAIVED subject solely to the limited warranties indicated in this document. No warranties, expressed or implied, will apply after the warranty period has lapsed.

Notices

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User guide version: 1.01
XF Camera Body firmware 1.04.4.fwr
IQ3 80MP and IQ3 60MP Digital Back firmware 1.06.5.fwr
IQ3 50MP, IQ2 50MP, and IQ1 50MP Digital Back firmware 3.02.5.fwr
Q2 80MP, IQ2 60MP, IQ2 60MP achromatic Digital Back firmware 6.06.5.fwr
IQ1 80MP, IQ1 60MP, and IQ1 40MP Digital Back firmware 6.06.5.fwr
Capture One 8.3.4

Colorspace images created in CROMiX ColorThink.
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This product includes DNG technology under license by Adobe Systems Incorporated.

The Phase One IQ Digital Back firmware includes:
Libjpeg:
=========
This software is based in part on the work of the Independent JPEG Group.
zlib:
======
Interface of the 'zlib' general purpose compression library
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3. This notice may not be removed or altered from any source distribution.

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jloup@gzip.org madler@alumni.caltech.edu177

FCC Regulations:
§ 15.19 (a)(3)
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference thatmay cause undesired operation.

§ 15.21
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 (b)
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

§ 15.407 (e)
Operation on the 5.15-5.25 GHz frequency band is restricted to indoor use only. The FCC requires indoor use for the 5.15-5.25 GHz band to reduce the potential for harmful interference to co-channel Mobile Satellite Systems.

§ 2.1093
RF Exposure Information (SAR)
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. The exposure standard for wireless devices employs a unit of measurement known as the Specific Absorption Rate (SAR). The SAR limit adopted by the FCC is 1.6W/kg for an uncontrolled environment. Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands. The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC

RF exposure guidelines.
Although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as