Est. 1958

Vision ENGINEERING

www.visioneng.com

EVOCAM

Contents list

Navigation instructions

User Guide

EVO Cam II digital microscope

bsi. UKAS MANAGEMENT SYSTEMS 003

FM 557119

Vision Engineering Ltd has been certified for the quality management system ISO 9001:2008.

MICROSCOPY + METROLOGY SERVICES
Swiss made

RYF AG
Bettlachstrasse 2
CH-2540 Grenchen
Tel +41 32 654 21 00

RYF SA Succursale
Route de Genève 9c
CH-1291 Commugny
Tel +41 22 776 82 28

RYF AG (Zürich)
Bahnhofplatz 17
CH-8400 Winterthur
Tel +41 52 560 22 25

ryfag@ryfag.ch

ryf ag

Wir machen Qualität sichtbar
Nous rendons la qualité visible
Making quality visible

www.ryfag.ch

NAVIGATION INSTRUCTIONS

The symbols in the left-hand margin of each page of the manual will enable you to carry out the following functions:

The buttons in text below do not function. They are for illustrative purposes only.

Contents Click on this button to display the Contents page.

Back one page.

Forward one page.

Back button.

Forward button.

Click this button to print some or all of the document (specific pages can be chosen).

Exit Click this button to exit the user guide.

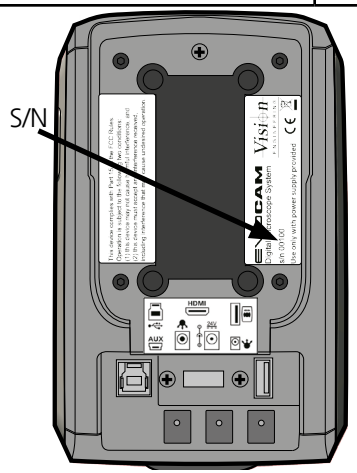
Press the Esc key to display normal Acrobat© Controls.

System serial numbers

Unit type	Serial number
EVO Cam II	
Multi-axis stand	
Ergo stand	
Focus assembly	
Transmitted substage illumination module (option)	

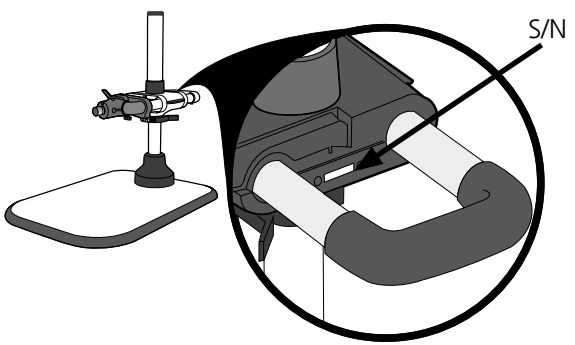
EVO Cam II

On the rear of the unit.



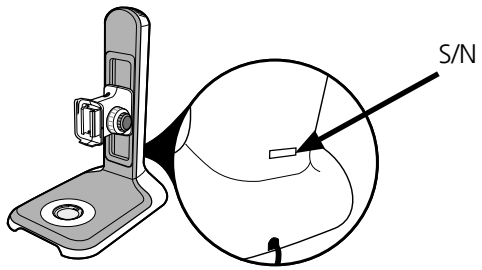
Multi-axis stand

On the rear of the stand mechanism.



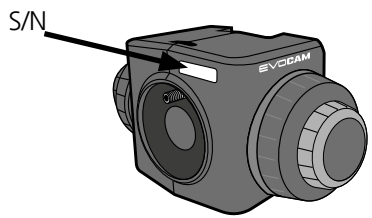
Ergo stand

At the base of the column at the back.



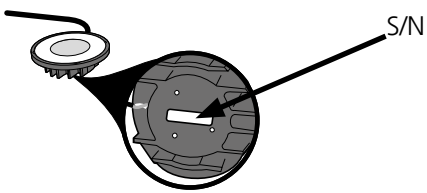
Focus assembly

On the rear of the unit.



Transmitted substage illumination module (option)

On the underside of the module.



Copyright

Copyright © 2018 Vision Engineering Ltd., Galileo Drive, Send Road, Send, Woking, Surrey GU23 7ER, UK All Rights Reserved.

Mantis® (1532468), Lynx® (3672061) and Dynascope® (915579) are registered trademarks of Vision Engineering Ltd. The use of our trademarks is strictly controlled and monitored and any unauthorised use is forbidden.

Copyright in this document is owned by Vision Engineering Ltd. Any person is hereby authorised to view, copy, print and distribute this document subject to the following conditions:

- The document may be used for informational purposes only
- The document may be used for non-commercial purposes only
- Any copy of this document or portion thereof must include this copyright notice

Revision 1.0, published February 2018 by:

Vision Engineering Ltd.
Galileo Drive
Send Road, Send
Woking, Surrey, GU23 7ER, UK
www.visioneng.com

Disclaimer

This document is provided "as is" without any warranty of any kind, either express or implied, statutory or otherwise; without limiting the foregoing, the warranties of satisfactory quality, fitness for a particular purpose or non-infringement are expressly excluded and under no circumstances will Vision Engineering Ltd. be liable for direct or indirect loss or damage of any kind, including loss of profit, revenue, goodwill or anticipated savings. All such warranties are hereby excluded to the fullest extent permitted by law.

We have compiled the texts and illustrations as accurately as possible. However, Vision Engineering Ltd. will not be responsible for the accuracy of the information contained in this document, which is used at your own risk and should not be relied upon. The information included in this manual may be changed without prior notice.

PREFACE 3

System serial numbers 3
EVO Cam II 3
Multi-axis stand 3
Ergo stand 3
Focus assembly 3
Transmitted substage illumination module (option) 3

Copyright 4

Disclaimer 4

General 6
Safety 6
Cleaning 6
Servicing 6

Symbols used 6
Warning! 6
Warning of electrical shock hazard 6
Important information 6

Health & safety 6
Electrical safety 6
Illumination safety 6
Environmental considerations 6
Operator wellbeing 6
Compliance statements 6

SYSTEM DIAGRAM 7

Sub-assemblies 7

Optical data 8

Stand options 9

ASSEMBLY 10

Transmitted substage illuminator (option) 10

Stand mounts 11
Ergo stand 11

Polarisation filter (option) 11
Multi-axis stand 11

Objective lens 12

Cabling 12

OPERATION 13

Quick start 13

Control functions 14
Power on/off 14
Illumination control 14
Image capture 14
Magnification 15
Magnification level OSD (On Screen Display) 15
Overview 15

Main menu options 16
Exposure options 16
Focus options 18
Calibration 19
Measurement 20
Presets and hotkeys 21
Settings 21

Using the remote keypad (optional) 26
Front Panel Lock 26

Changing the camera objective lens 26

Using the Video Out via USB 3. 26

MAINTENANCE 27

Troubleshooting 27
Taking care of your EVO Cam II 27

FIRMWARE UPGRADE 27

Firmware upgrade 27

SPECIFICATION 28

SERVICING 29

Service record 29

WARRANTY 30

General

Safety

Before using your system for the first time, please read the Health & safety section of the user guide.

Ensure that:

- Your system and accessories are operated, maintained and repaired by authorised and trained personnel only.
- All operators have read, understood and observe the user manual, in particular the safety regulations.

Cleaning

- Disconnect your system from the electrical source before cleaning.
- Do not use any unsuitable cleaning agents, chemicals or techniques for cleaning.
- Never use chemicals to clean coloured surfaces or accessories with rubberised parts.
- Use a specialist lens cloth to clean optical surfaces.

Servicing

Repairs may only be carried out by Vision Engineering-trained service personnel. Only original Vision Engineering spare parts may be used.

Symbols used

Warning!

A potential risk of danger exists. Failure to comply can cause i) a hazard to personnel; ii) instrument malfunction and damage. Please consult the operating instructions provided with the product.

Warning of electrical shock hazard

This symbol indicates the presence of electric shock hazards. Please consult the operating instructions provided with the product.

Important information

This symbol indicates important information. Please carefully follow the instructions or guidelines.

Health & safety

Unauthorised alterations to the instrument or non-compliant use shall invalidate all rights to any warranty claims.

Electrical safety

- Disconnect your system from the electrical source before undertaking any maintenance.
- Avoid using any form of liquid near the system.
- Do not operate your system with wet hands.

Illumination safety

- Do not look directly at the illuminated LED's. This may cause damage to the eyesight.

Environmental considerations

- Avoid large temperature fluctuations, direct sunlight and vibrations.
- Ensure electrical components are at least 10cm from walls and combustible materials.
- Position the system on a firm, rigid and level table.
- The equipment should be positioned so that access to the electrical input connector is always available.
- Avoid positioning your system where bright reflections may affect the image.

Operator wellbeing

- The advanced ergonomic design and construction of Vision Engineering products are intended to deliver superior ergonomic performance, reducing the exertion of the user to a minimum. Depending on the duration of uninterrupted work, appropriate measures should be taken to sustain optimal operator performance. This could include: Optimal arrangement of workplace; Variation in task activity; Training of personnel on workplace ergonomics and general health and safety principles.
- It is important to set-up and optimise your working environment correctly in order to obtain maximum benefit from the advanced ergonomic design of your system. For more information visit: www.visioneng.com/ergonomics

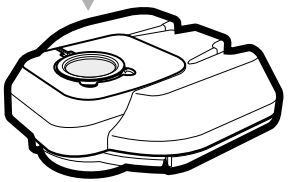
Compliance statements

Vision Engineering and its products conforms to the requirements of the EC Directives on Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS).
All Vision Engineering products conform to the CE mark,

demonstrating that each product meets the requirements of the applicable EC directives. Where applicable, other characteristics of the CE directive are implied such as essential health and safety requirements from all the directives that applies to its product, including low voltage directive and the EMC directive.

Sub-assemblies

EVO Cam II
ECH 005



360° rotating viewer
(optional)
EVR066

Remote Keypad
(optional)
ECX155

Objective lenses
(see Optical data tables)

Standard box contents:

- EVO Cam II camera unit
- Power supply unit
- Plug cord
- HDMI cable
- USB3 cable
- Lens cloth
- 2mm HEX key

Optical data

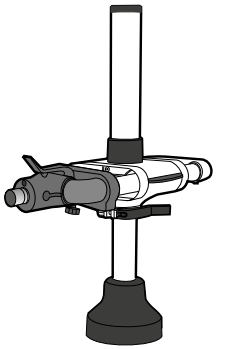
Objective lens	Part number	Magnification zoom range*	Working distance	Field of view at min. zoom (width / height)	Field of view at max. zoom (width / height)
0.45x	ECL001	Full field: 2.27x – 68.04x	160mm	241.0mm / 134.0mm	7.8mm / 4.2mm
		Optimal: 3.78x – 68.04x		142.6mm / 82.6mm	7.8mm / 4.2mm
0.62x	ECL002	Full field: 3.12x – 93.74x	106mm	173.1mm / 96.8mm	5.5mm / 3.1mm
1.0x	ECL003	Full field: 5.04x – 151.2x	85mm	88.0mm / 57.0mm	3.5mm / 2.0mm
		Optimal: 12.56x – 151.2x		40.2mm / 23.1mm	3.5mm / 2.0mm
1.5x	ECL150	Full field: 7.56x – 226.8x	43mm	45.0mm / 36.0mm	2.3mm / 1.2mm
		Optimal: 16.38x – 226.8x		28.5mm / 17.0mm	2.3mm / 1.2mm
2.0x	ECL200	Full field: 10.08x – 302.4x	29mm	37.0mm / 27.0mm	1.5mm / 1.0mm
		Optimal: 23.18x – 302.4x		20.5mm / 12.5mm	1.5mm / 1.0mm

* with 24" monitor

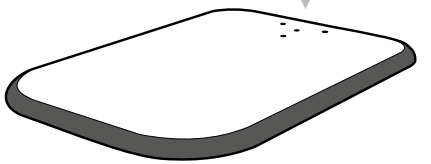
Objective lens	Part number	Magnification zoom range*	Working distance	Field of view at min. zoom (width / height)	Field of view at max. zoom (width / height)
4 dioptre	ECL040	Full field: 1.71x – 51.41x	245mm	293mm / 171mm	10mm / 5.5mm
5 dioptre	ECL050	Full field: 2.12x – 65.5x	197mm	232mm / 135mm	8mm / 4.5mm

* with 24" monitor

Stand options

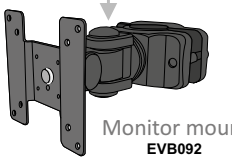


Multi-axis stand column and arm
EVB021

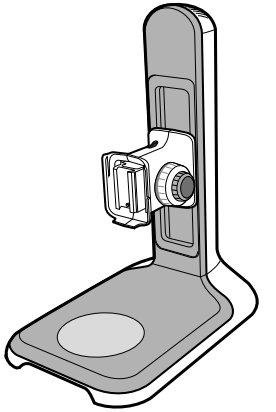


Multi-axis stand base board
EVB022

Focus assembly
EVF111



Monitor mount
EVB092



Ergo stand with focus
EVB010

75mm Riser Block
EVB093

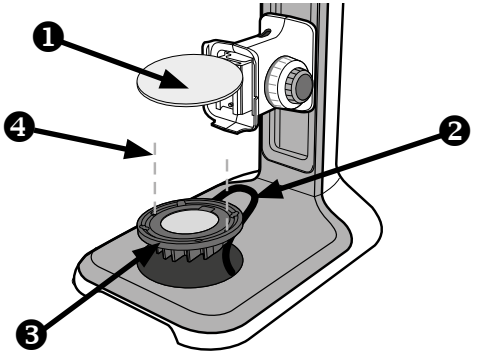
Multi-directional floating stage
EVS120

Transmitted substage illumination
EVS012

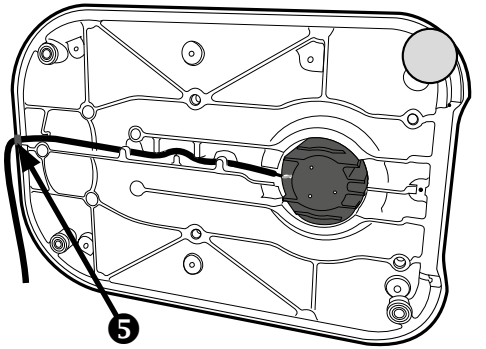
Other stands are also available.

Transmitted substage illuminator (option)

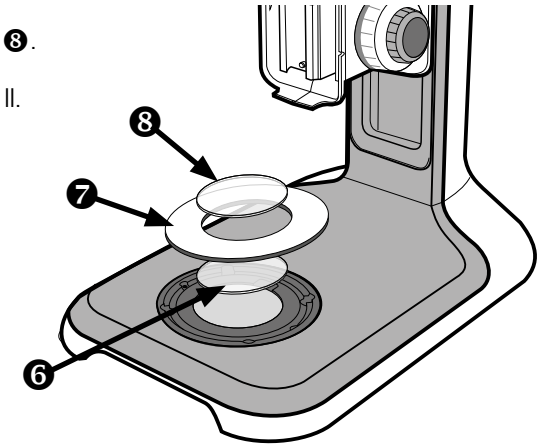
- Remove the stage cover plate ❶ and thread the lead ❷ through the stand base.
- Locate the illuminator ❸ into the stage base and secure it with the 2 screws ❹.



- Carefully lay the Ergo stand on to its side and thread the lead through the base as shown.
- Push the cable grommet ❺ into the stand.



- Turn the Ergo stand upright and replace the illuminator diffuser ❻ shiny side up, surround ❼ and glass ❽.
- Once EVO Cam II is installed on the stand (see *page 11*) connect the sub-stage power cable to the EVO Cam II.

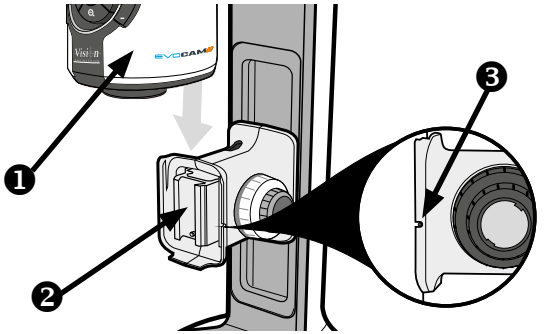


If assembling the optional glare reducing filter, this needs to be placed between the diffuser and the surround.

Stand mounts

Ergo stand

- Locate EVO Cam II ❶ on to the stand's dovetail interface ❷.
- Tighten securing grub screw ❸ with HEX key provided



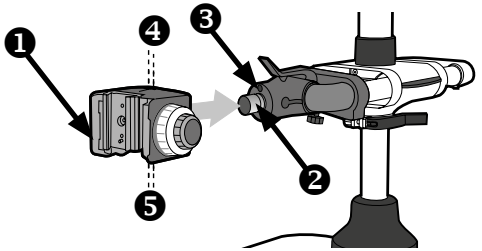
Polarisation filter (option)

Please contact Vision Engineering to have polariser fitted into the unit by an authorised engineer.

Multi-axis stand

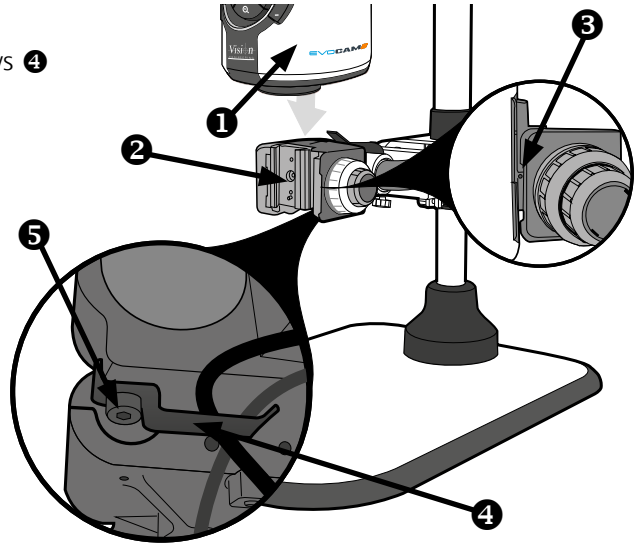
- Place focus assembly ❶ on the mounting post ❷ so that the locator pin is located in the locator pin recess ❸.

To change the camera rotation, remove the locator pin from the focus assembly before attaching it to the mounting post and attach the focus assembly in the desired orientation.



Take care when mounting EVO Cam II.

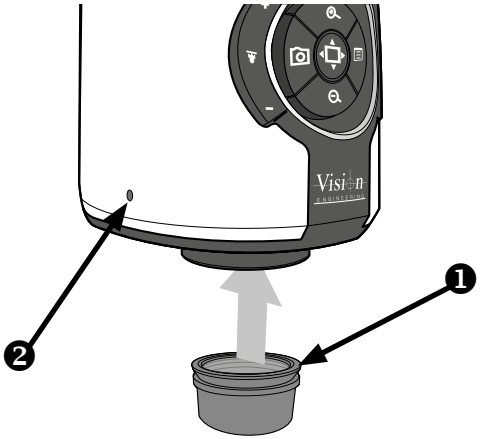
- Ensure the mounting plate is perpendicular to the base or work bench. Tighten the 2x grub screws ❹ at the top of the focus assembly and the 2x grub screws ❺ at the bottom of the focus assembly.
- Locate EVO Cam II ❶ on to the stand's dovetail interface ❷.
- Tighten securing grub screw ❸ with HEX key provided
- Secure the cable retaining clip ❹ under the knuckle of the multi-axis stand using the screw ❺ provided. The clip can be secured to the left or right side.



Objective lens

- While holding the objective lens ❶ in position, use the HEX key supplied to secure the lens by tightening the grub screw ❷ finger tight.

Do not over tighten the grub screw holding the lens in place.



Cabling

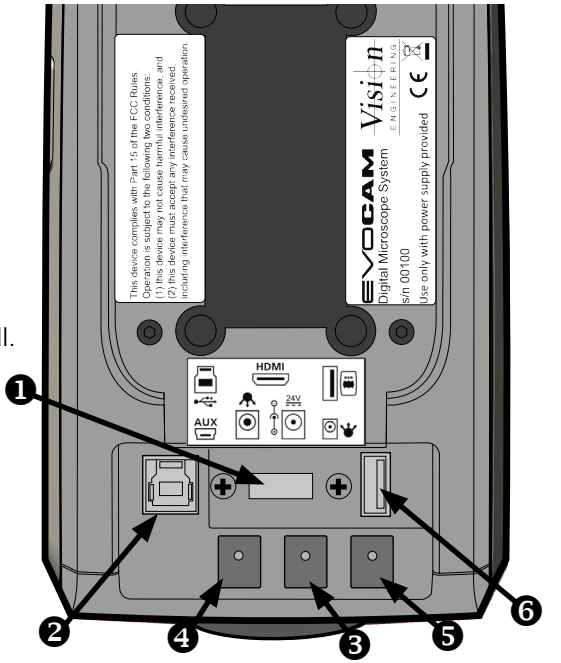
- Plug the HDMI cable into the EVO Cam II connector ❶ and the other end into your HDMI-compatible monitor or TV.
- The USB3 connetor ❷ is used for video out and software control.
- Plug the power supply into a mains socket. Plug the power lead from the power supply into the EVO Cam II power connector ❸ on the back of the unit.
- If required, an external ringlight (option) can be used with EVO Cam II. Plug the external ringlight into the rear panel connector ❹ of EVO Cam II.

Only use a Vision Engineering-authorised external ringlight with EVO Cam II.

- Plug the transmitted substage illuminator cable into the connector ❺ on the rear panel of EVO Cam II.

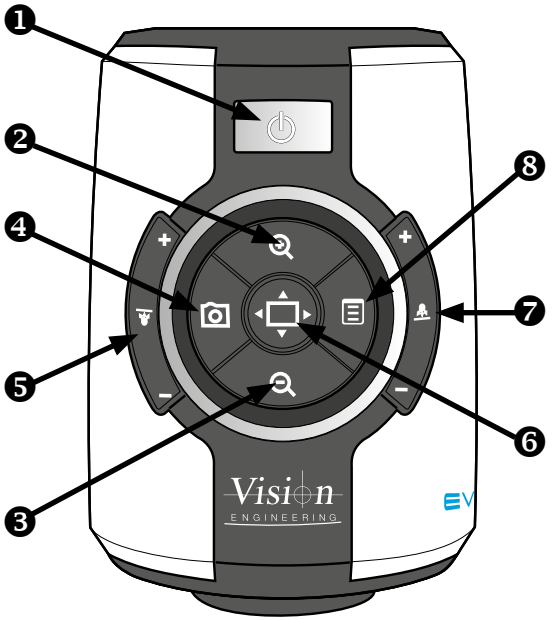
The transmitted substage illuminator is an option for use with the Ergo stand.

- Plug the external remote keypad (optional) into socket ❻ at rear of EVO Cam II.



Quick start

❶ Power on/off
❷ Zoom in
❸ Zoom out
❹ Image capture
❺ Transmitted substage illuminator (option)
❻ Overview mode
❼ Ringlight illumination control
❽ Menu



Power on/off

❶ - Short press = Power on
- Long press = Power off

Zoom control

❷ - Zoom in
❸ - Zoom out

Image capture

❹ - Capture image

Transmitted substage illuminator (option)

❺ - Press '+' to increase brightness
- Press '–' to decrease brightness

Press and hold '+' or '-' for fast change to illumination.
Short press '+' or '-' for fine adjustment

Overview mode

❻ - Short press = Activate overview mode
(Press any button to exit overview mode)

Ring-light illumination control

❼ - Press '+' to increase brightness
- Press '–' to decrease brightness

Press and hold '+' or '-' for fast change to illumination.
Short press '+' or '-' for fine adjustment

Menu

❽ - Short press = Access camera menu
(see *page 16*)

❹ - Short press = exit menu

Image brightness shortcut

In AE or AP mode while on the main screen.

❽ - Long press (3s) to activate the image brightness shortcut

❷ - Press to increase image brightness

Not available in ME mode.

Control functions

Power on/off

When the system is plugged in the unit will take approximately 8 seconds before it can power on properly

- Push the power button ❶ to turn the unit on. After four beeps and a few seconds the picture from the camera will appear. If not, switch your monitor to the input used for EVO Cam II.

- There will also be a panel in the top left of the screen displaying the EVO Cam II's current settings.
- To turn EVO Cam II off, hold the Power button in for approximately 2 seconds.

Illumination control

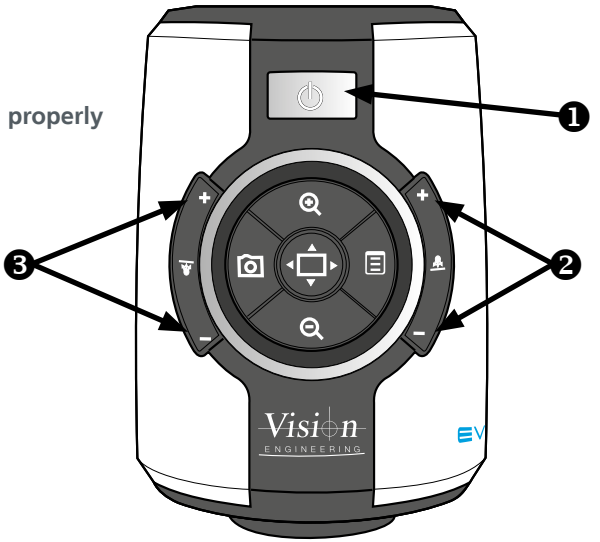
- The integrated ringlight illumination level can be adjusted by the right hand side buttons ❷.
- The optional sub-stage illuminator intensity can be adjusted using the left hand side buttons ❸.
- When connected, the external rightlight illumination level can be adjusted using the right hand side buttons ❷.

Holding down the buttons will allow for faster control of the light settings.
The internal ringlight is disabled when an external ringlight is connected.

Image capture

- To use this feature, insert a USB memory stick into the USB port ❶.
- When the system has detected the USB memory stick it will report "USB Flash Drive Ready"
- When you have an image you want to capture, simply press the capture button ❷.
- The system will indicate the image is being saved to the drive. The image is saved as a 1920 x 1080 (.png) format.
- The image name is Date and Time stamped and saved in the format "IMG-date.png" where the date is arranged as in the camera settings(see *page 24*).

The USB memory stick must be in FAT File System Format. It will not work with any other format.
When USB memory stick is removed "USB Flash Drive Removed" message is shown



Magnification

- Press the Zoom-In button ❶ to enlarge the subject within the image and Zoom-Out button ❷ to reduce the subject size within the image. The unit will make a sound to indicate when it has reached maximum or minimum zoom limits.

Magnification level OSD (On Screen Display)

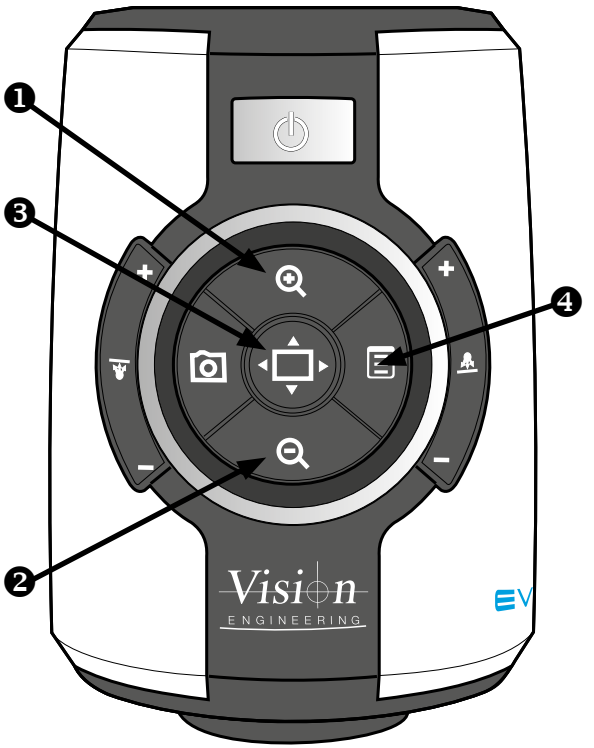
The current magnification level is displayed for example “x30”to show a magnification level of 30. When the magnification changes from optical to digital zoom a‘d’ is also displayed, e.g. “x60d” to indicate a magnification level of 60 including digital zoom.

When changing lenses or monitor, the Screen Size and Lens Power settings need to be changed using the menu options (see *page 21*) to ensure the correct magnification is displayed.

Overview

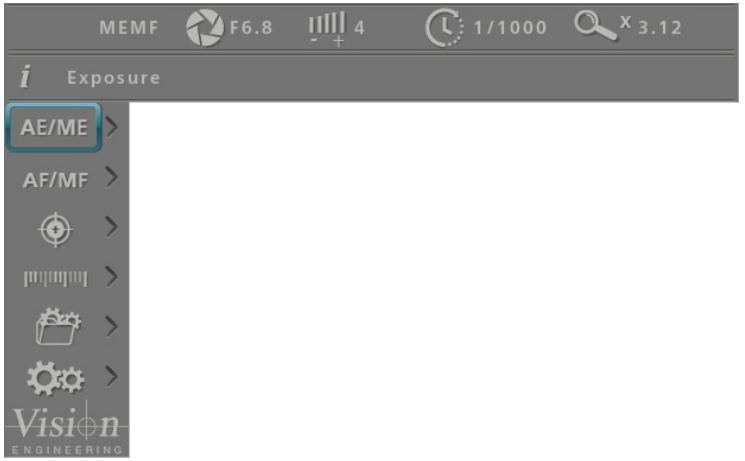
Overview allows you to easily locate a point of interest on the object you are viewing.

- Press and release the Overview button ❸ to make the camera zoom out fully.
- Place the point of interest in the centre of the screen and press any key to restore the magnification to the previous level.



Main menu options

- To access the Main Menu press the Menu button .



- Use the , , , and buttons to navigate the menu, and the button to make a selection.
- To Exit the menu simply press the image capture button until it is no longer displayed.

The following main menu options are available:

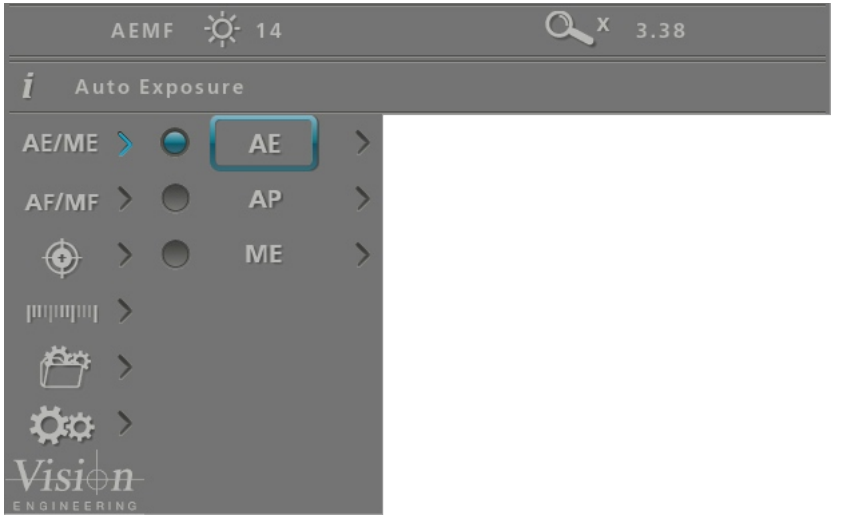
- Exposure
- Focus
- Calibration
- Measurement
- Presets
- Settings

- Use the and buttons to select the option required and then press to display the relevant sub-menu.

Exposure options

The following main exposure options are available:

- Auto exposure
- Aperture priority
- Manual exposure



- Use the and buttons to highlight the option required and then press to enter the relevant settings screen or to select the option with the current settings then press to return to the main menu.

Auto exposure

Using this option, exposure is calculated and adjusted automatically. Target brightness can be set to users desired level.

- With the exposure options displayed, use the and buttons to highlight automatic exposure (AE).
- Press to display the highlighted brightness setting.

- Press to enable the value to be altered if necessary.
- Use the and buttons to decrease or increase the value as required.
- With the required value set, press to store it and then press to return to the exposure menu.
- Press to turn on the blue indicator next to the option to select it then press to return to the main menu.

Aperture priority

This option allows the exposure to be calculated automatically when the user sets the aperture value (F14 – F1.6 & closed). This allows easy control of the depth of field while maintaining the correct exposure. Target brightness can be set to users desired level.

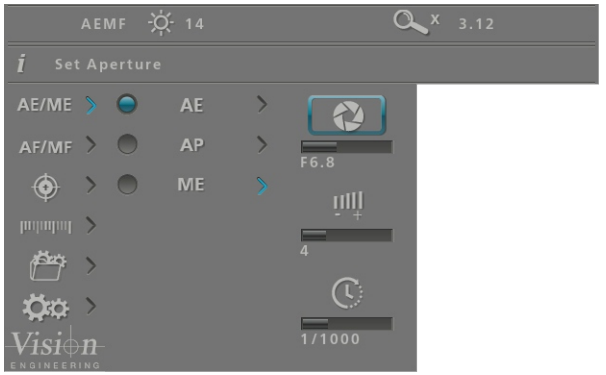
- With the exposure options displayed, use the and buttons to highlight aperture priority (AP).
- Press to display the AP options and then use the and buttons to highlight either the f-number option or the brightness option.

- With the required option selected, press to enable the value to be altered if necessary.
- Use the and buttons to decrease or increase the value as required.
- With the required values set, press to store it and then press to return to the exposure menu.
- Press to turn on the blue indicator next to the option to ensure it has been selected then press to return to the main menu.

Manual exposure

This option enables exposure controls to be set manually. Aperture, Gain and Exposure time can all be adjusted. Aperture (F14 – F1.6 & closed), Gain (1 - 15) and Exposure time (1/10,000 – 1s)

- With the exposure options displayed, use the and buttons to highlight manual exposure (ME).
- Press to display the ME options and then use the and buttons to highlight either the f-number, gain, or exposure time option.



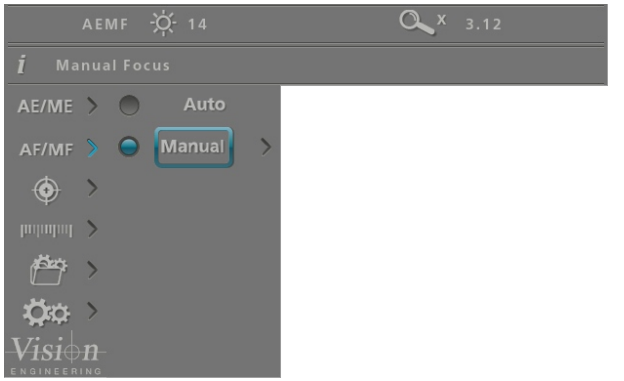
- With the required option selected, press to enable the value to be altered if necessary.
- Use the and buttons to decrease or increase the value as required.
- With the required values set, press to store it and then press to return to the exposure menu.
- Press to turn on the blue indicator next to the option to ensure it has been selected then press to return to the main menu.

Focus options

Auto/Manual focus

This option allows the user to set the EVO Cam II's focus to be set automatically if the subject is within range, or set a specific focal distance.

- With the focus options (AF/MF) displayed, use the and buttons to highlight automatic or manual focus as required.



- Press to turn on the blue indicator next to the required option to ensure it has been selected.
- If the manual focus option is selected, press to display the distance setting.
- Press to enable the value to be altered if necessary.
- Use the and buttons to decrease or increase the value as required.

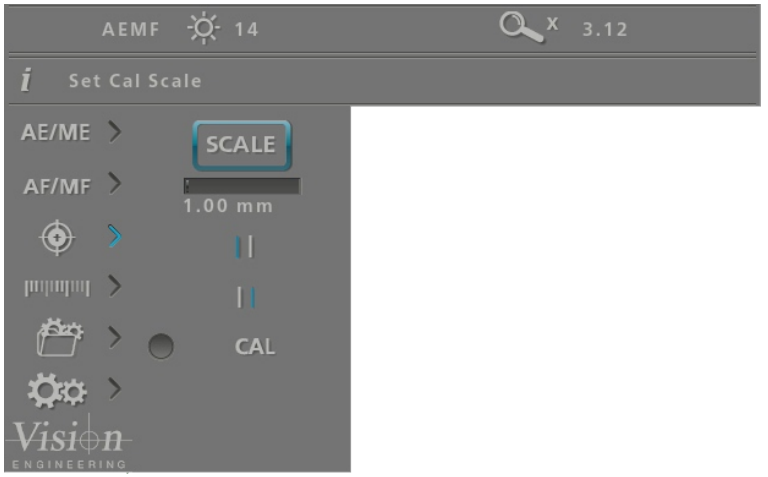
If the focus position is not set to 'Inf' the zoom will not maintain parfocality.

- With the required values set, press to store it and then press to return to the focus menu.

Calibration

Before setting a calibration, ensure the unit is in Manual Focus mode at Inf. When a calibration is set, the unit is automatically set to Manual Focus mode and this can cause the object to move out of focus if working in Automatic Focus mode.

- With the calibrate options ( ) displayed, use the and buttons to highlight the option required and then press to enable the value to be altered if necessary.



Scale

- Use the and buttons to set the size of the calibration piece that can be viewed on the monitor that will be used for calibration.

Right calibration line

- Use the and buttons to set the position of the right calibration line as displayed on the screen.

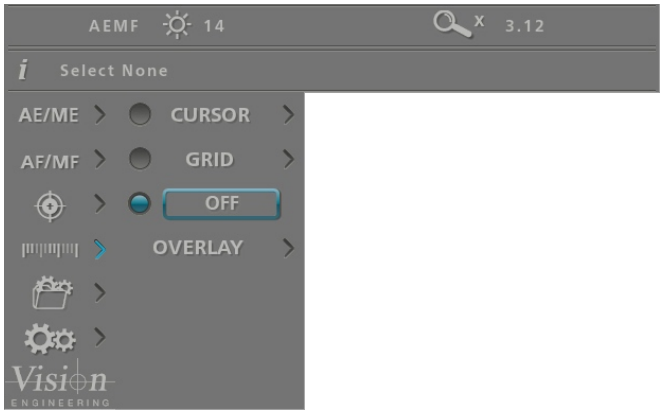
Left calibration line

- Use the and buttons to set the position of the left calibration line as displayed on the screen.

Calibration

- Press to activate calibrated measurements.
- CAL will be displayed in top left corner of the Status bar
- Features that affect the calibration will be disabled while the calibration is active. Press again to turn this feature off to reactivate disabled features.

- With the measurement options ( ) displayed, use the and buttons to highlight the option required and then press to highlight and then enable the value to be altered if necessary.



Cursor

This option enables a measurement to be made between moveable cursors.

Calibration can be carried out with this option set. No units will be shown if calibration is not set.

The cursors' measurement units and colour can be altered using the settings option (see *page 22* and *page 24* respectively).

- Use the and buttons to highlight either the top left cursor ( ) or lower right cursor ( ) and then press to select it in order to change its position.
- Use the , , and buttons to adjust the selected cursor's position and then press to save the altered position and return to the cursor option.
- Press to return to the measurement options.

Grid

This option enables a grid to be displayed on the screen. Both the size and position of the grid can be altered as follows:

Calibration can be carried out with this option set.

No units will be shown if calibration is not set

The grid measurement units and colour can be altered using the settings option (see *page 22* and *page 24* respectively).

- Use the and buttons to highlight either grid size ( ) or grid position ( ) and then press to select it in order to change its value.
- Use the , , and buttons to adjust the selected grid value and then press to save the altered setting and return to the grid option.
- Press to return to the measurement options.

Off

- Press to ensure neither the cursor or the grid are displayed.

Overlay

An overlay file can be imported and displayed for comparison with a live image. The file must be PNG format with transparent background, and must match the camera image size (1920x1080 pixels). Files of different sizes will align to the top left corner of the image. Overlay files must be named '"EVOCam_overlay.png".

- Use the and buttons to highlight one of the following options then press to activate it.

ON: Turn the overlay on
OFF: Turn the overlay off
IMPORT: Import overlay file from USB stick.
CLEAR: Clears overlay file from the memory.

Importing an overlay file will overwrite any existing overlay file already imported.

Presets and hotkeys

The current camera settings can be saved as one of the 10 presets. These settings can then be exported and subsequently imported, enabling multiple EVO Cam II cameras to be standardised.

Any of the 10 presets can be assigned to one of the three hotkeys on the optional remote keypad.

Presets

- With the presets options ( ) displayed, use the and buttons to highlight the required preset and then press to select it.
- Press and then use the and buttons to enable one of the following options:

Save: press to save the current EVO Cam II settings to the selected preset
Export: press to export the current settings to a USB stick
Import: press to import a preset file from a USB stick

- Press to return to the preset options.

Hotkeys

This option enables each of the three hot keys on the optional remote keypad to have one of the 10 presets assigned to it.

- Press to highlight the Hotkeys option and then use the and buttons to highlight the required hotkey.
- Press and then use the and buttons to highlight one of the 10 presets (or None) as required.
- Press to assign the selected preset (or None) to the hotkey and then press to return to the preset options.

Settings

With the settings options ( ) displayed, use the and buttons to select from the following:

- Magnification
- Image mode
- User interface
- System set up

Magnification

- With the magnification ( ) options highlighted, press and then use the and buttons to enable one of the following options:
  - Set screen size
  - Set lens power
  - Set measurement units
  - Set digital zoom

Set screen size

- With set screen size ( ) highlighted, press .
- To alter the screen size (its diagonal measurement), press and then use the and buttons to set the size between 1 and 100 inches.
- With the required value set, press to store it and then press to return to the magnification options.

Set lens power

- With set lens power ( ) highlighted, press .

Some lenses have two options; Optimal Field and Full Field. Optimum Field has been designed to restrict minimum zoom to reduce any vignetting from the set lens. Full Field allows the full zoom range of the lens.

- To alter the lens power, use the and buttons to highlight the required value, press to store it and then press to return to the magnification options.

Set measurement units

- With set measurement units (mm/") highlighted, press .
- To alter the units, use the and buttons to highlight either mm or inch, press to store the change and then press to return to the magnification options.

Set digital zoom

- With set digital zoom (D) highlighted, press .
- To turn digital zoom on or off, use the and buttons to highlight the required state, press to store the change and then press to return to the magnification options.

Image mode

- With the image mode ( ) option highlighted, press and then use the and buttons to enable one of the following options:
  - Auto white balance
  - Black and white
  - Wide dynamic range
  - Infra red mode
  - Capture button action

Auto white balance

- With auto white balance (AW) highlighted, press .
- To set auto white balance, press . The 'Auto white balance in progress' message will be displayed for a short time.
- When the message is no longer displayed, press to return to the image mode options.

White Balance data is lost when the power is turned off. To reset white balance please follow the procedure above.

Black and white

- With set black and white (BW) highlighted, press .
- To turn black and white on or off, use the and buttons to highlight the required state, press to store the change and then press to return to the magnification options.

Wide dynamic range

Wide Dynamic Range is only effective when in Automatic Exposure Mode.

Activate wide dynamic range to enhance image information in shadow and highlight areas of high contrast subjects.

- With wide dynamic range (WD) highlighted, press .
- To turn wide dynamic range on or off, use the and buttons to highlight the required state, press to store the change and then press to return to the magnification options.

Infra red mode

Activating the infra red mode removes internal infrared filter to extend the range of sensitivity. Image is displayed in black and white to incorporate infrared wavelengths. Optionally, IR-transmitting filters (IR720) can be added to objectives for IR only imaging.

- With infra red mode (IR) highlighted, press .
- To turn infra red mode on or off, use the and buttons to highlight the required state, press to store the change and then press to return to the magnification options.

Capture button action

Set this option to **Freeze** to freeze image on first push of capture button. Second press to capture. Or, to **Save** to save image on first push of capture button.

- With capture button action ( ) highlighted, press .
- To turn infra red mode save or freeze, use the and buttons to highlight the required state, press to store the change and then press to return to the magnification options.

User interface

- With the user interface ( ) option highlighted, press and then use the and buttons to enable one of the following options:
  - Language
  - Sound
  - Crosshair size
  - Crosshair colour
  - On screen display
  - Status bar
  - Transparency
  - Information text

Language

- With language ( ) highlighted, press .
- To select the required language, use the and buttons to highlight on of the following:
  - English
  - French
  - German
  - Spanish
  - Italian
  - Portuguese
  - Russian
  - Chinese
  - Japanese
  - Korean
- Press to store the change and then press to return to the user interface options.

Selecting the language changes the language of the information text only. Menu icons are not changed.

Sound

- With sound ( ) highlighted, press .
- To turn the sound on or off, use the and buttons to highlight the required state, press to store the change and then press to return to the user interface options.

Crosshair size

- With crosshair size ( ) highlighted, press .
- To set the crosshair size to off, short or long, use the and buttons to highlight the required state, press to store the change and then press to return to the user interface options.

Crosshair colour

- With crosshair colour (+++) highlighted, press [menu].
- To set the crosshair colour, use the [-] and [+] buttons to highlight the required colour, press [set] to store the change and then press [cancel] to return to the user interface options.

On screen display

- With on screen display (OSD) highlighted, press [menu].
- To set the on screen display position to upper left, upper right, lower left, or lower right, use the [-] and [+] buttons to highlight the required position, press [set] to store the change and then press [cancel] to return to the user interface options.

Status bar

- With status bar (STATUS) highlighted, press [menu].
- To set the status bar to off, or position it to upper left, upper right, lower left, or lower right, use the [-] and [+] buttons to highlight the required state or position, press [set] to store the change and then press [cancel] to return to the user interface options.

Transparency

- With transparency (TRANS) highlighted, press [menu].
- To alter the transparency, press [set] and then use the [-] and [+] buttons to set the percentage transparency of the menu.
- Press [set] to store the change and then press [cancel] to return to the user interface options.

Information text

- With information text (*i*) highlighted, press [menu].
- To turn the information text on or off, use the [-] and [+] buttons to highlight the required state, press [set] to store the change and then press [cancel] to return to the user interface options.

System set up

- With the system set up (⚙) option highlighted, press [menu] and then use the [-] and [+] buttons to enable one of the following options:
  - Time (set time)
  - Date (set date and date format)
  - Reset (factory reset)
  - Frequency (set frame rate)
  - Import settings (load all settings from a USB stick)
  - Export settings (save all settings to a USB stick)

Time

- With time (🕒) highlighted, press [menu].
- To set the time, use the [-] and [+] buttons to highlight either hours (HR) or minutes (MIN) and then press [set] to highlight the value.
- Use the [menu] and [cancel] buttons to set the required value.
- Press [set] to store the change and then press [cancel] to return to the system set up options.

Date

- With date (31) highlighted, press [menu].
- To change the date format, use the [-] and [+] buttons to highlight the required format and then press [set] to store the change.
- To set the date, use the [-] and [+] buttons to highlight either date (DD), month (MM) or year (YY) and then press [set] to highlight the value.
- Use the [menu] and [cancel] buttons to set the required value.
- Press [set] to store the change and then press [cancel] to return to the system set up options.

Reset

- To reset the EVO Cam II to its factory settings, ensure the reset icon (RESET) is highlighted, press and then press to carry out the reset.
- Press to return to the system set up options.

Frequency

- With frequency (Hz) highlighted, press .
- To select the required frame rate, use the and buttons to highlight the required frequency (50 or 60Hz), press to store the change and then press to return to the user interface options.

Import settings from a USB stick connected to the EVO Cam II

- To import all settings from a USB memory stick, ensure the import icon ( ) is highlighted, press and then press to carry out the import.
- Press to return to the system set up options.

Export settings to a USB stick connected to the EVO Cam II

- To export all settings to a USB memory stick, ensure the export icon ( ) highlighted, press and then press to carry out the export.
- Press to return to the system set up options.

Using the remote keypad (optional)

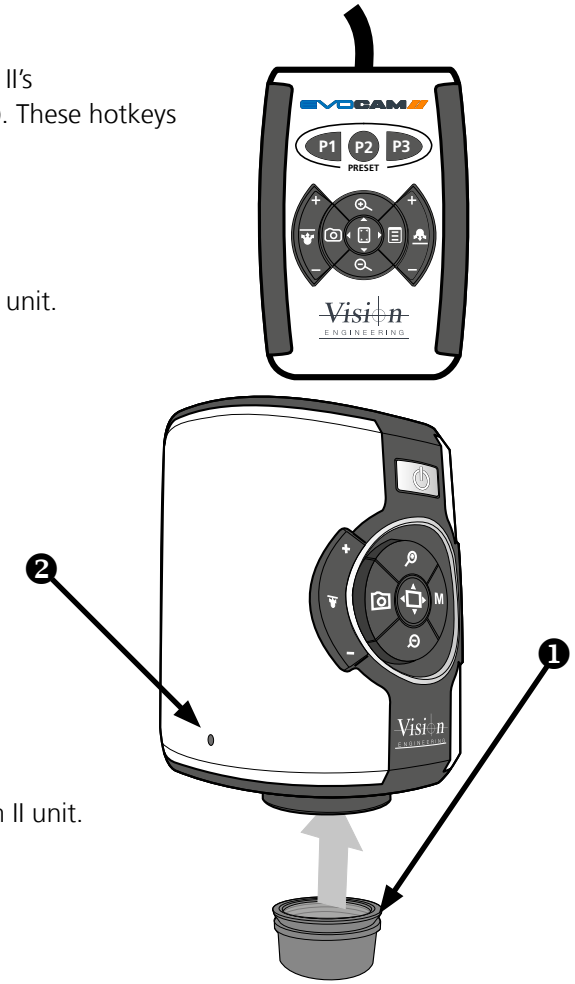
The optional remote keypad can be used with EVO Cam II and has identical controls to the EVO Cam II's front panel with the exception of the On/Off button but with the addition of three hotkeys (P1 to P3). These hotkeys allow one of 10 presets to be assigned to each of them (see *page 21*).

- Press a hotkey (P1 to P3) to activate the preset settings allocated to the hot key.

Front Panel Lock

The remote keypad can be used to lock out the access to the menu from the front of the EVO Cam II unit.

- Press P2 for 3 seconds until 'Front Panel Lock On' is displayed on the screen.
- Disable the lock by following the same procedure.



Changing the camera objective lens

- Holding the lens barrel ❶ from the bottom, use the HEX key supplied to partially unscrew the grub screw ❷ releasing the lens from its housing.
- While holding the objective lens ❶ in position, use the HEX key supplied to secure the lens by tightening the grub screw ❷.

Do not over tighten the grub screw holding the lens in place.

Using the Video Out via USB 3.

- Connect the USB 3 cable supplied with the system to the connection on the back of the EVO Cam II unit.
- Connect the other end of the cable to a free USB3 port on a PC.
- The video output from the camera is a Direct Show Video signal which can be used by a wide range of video viewers. (Windows 10 Camera App, AMCap, and many others)
- A number of software suites are available from Vision Engineering which allow for control of the camera functions via PC.
- Contact your local Vision Engineering Sales Representative for more information on the software available.

Troubleshooting

Taking care of your EVO Cam II

Do not touch the lens. Dirt on the lens will appear as a blurred or dim image or as fuzzy spots on the screen. If you believe the lens is dirty, it can be cleaned with a soft, dry cloth applying minimal pressure. As the lens is polished and coated, do not use a wet or coarse cloth, avoid detergents and abrasive substances or solvents to clean it.

Never look directly at the LED light source for any prolonged period of time.

Use only the supplied power supply and inspect the cabling regularly for damage.

EVO Cam II contains a small battery to enable time and date settings to be retained while the unit is powered off. Should the battery need replacing please contact you Vision Engineering representative who will be able to advise you.

Firmware upgrade

EVO Cam II includes a Firmware Upgrade Function allowing users to install new versions of the firmware.

Any update files will be provided directly from Vision Engineering.

- Place upgrade file on USB stick
- Insert stick into EVO Cam II
- Ensure EVO Cam II is in Standby State (e.g. unit is powered on at the mains, but not switched on and the power LED is not lit)
- Hold down Zoom In + Zoom Out, then simultaneously press the Power button until front panel LED starts flashing red.
- The flashing will stop when software update is complete
- Power off the unit at the mains and switch on again.
- Unit can be powered on as usual
- Verify the software update by checking the unit software version number (navigate on the menu to the information text option (i) and press the overview button while the (i) is highlighted)

Camera resolution:	HD 1080p, 1920x1080 at 50/60 Hz
Monitor connections:	HDMI
Monitor requirements:	HD ready or full HD (recommended)
Outputs:	HDMI, USB3.0
Image capture:	USB 2.0 High-speed
Dimensions:	11 x 16.5 x 14 cm (w x h x d)
Power:	Max. 72 Watts - depending on external attachments
Operating temperature:	Storage: -10°C to +60°C. Operating: +5°C to +40°C