Instruction Manual

VWR® Gel Documentation SMART5 XE

EUROPEAN CATALOGUE NUMBER: 730-1556

Version 01 Issue 11/2024

Legal address of Manufacturer

Europe

VWR® International bvba,
Researchpark Haasrode 2020
Geldenaak sebaan 464
B-3001 Leuven
+3216385011
http:be.vwr.com

UK Importer:

VWR International Ltd
Hunter Boulevard, Magna Park
Lutterworth, Leicestershire, LE17 4XN
http://uk.vwr.com

Country of origin

UK

Table of Contents

Safety Instructions

This document describes the general safety practices and precautions that must be observed when operating the VWR® SMART5 XE.

This advice is intended to supplement, not supersede, the normal safety codes in the user's country. The information provided does not cover every safety procedure that should be followed. Ultimately, maintenance of a safe laboratory environment is the responsibility of the user and the user's organization.

Please consult all documentation supplied with the VWR® SMART5 XE before you start working with the instrument. Carefully read the safety information in this document and in the other documentation supplied. When setting up the instrument or performing analyses or maintenance procedures, strictly follow the instructions provided.

Warning notices

	We use 'Warnings' to highlight information or instructions that **MUST** be followed to avoid personal injury to yourself or other people in the vicinity. **For example: Switch off the mains voltage and remove the mains cord before cleaning.**

	**Ensure that all instrument operators read and understand the precautions listed below.** **You are advised to post a copy of the precautions near or on the instrument shelf.**

The following precautions must be observed when using VWR SMART5 XE.

- Be sure that the voltage of the VWR® SMART5 XE instrument corresponds to the voltage used in your laboratory.
- Never remove the rear panel of the VWR® SMART5 XE instrument without shutting down the instrument and disconnecting the instrument power cord from line power.
- The power cord must be an appropriately rated and approved cord-set in accordance with the regulations of the country it is used in.
- Do not replace the power cord with one of inadequate rating.

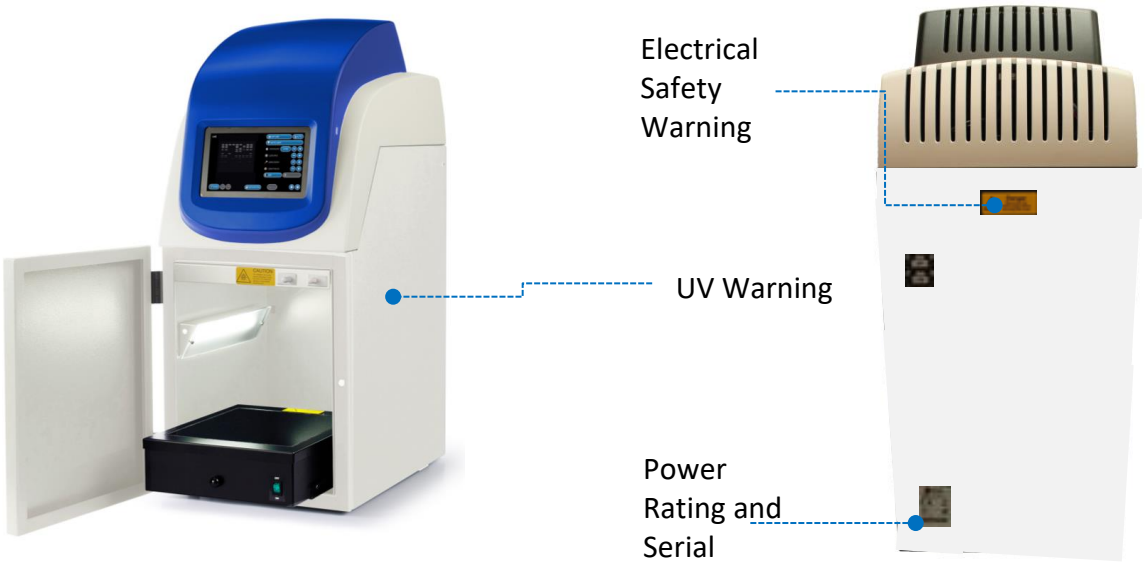
Symbols

Symbol	Definition
	Attention: See instructions for use.
	Attention: Use of UV lights. Please Read UV Safety Warning.
	Attention: Danger of electric shock.
	Serial Number.
	Symbol indicating "Not for general waste." For European Union (EU) States, this symbol should be used to mark devices that are reusable and not contaminated at the end of the device life.
	This symbol is a mandatory marking for devices entering the European market to indicate conformity with the essential health and safety requirements set out in European Directives.
	Symbol for "Manufacturer." This symbol shall be adjacent to the name and address of the manufacturer.
	Symbol for "temperature limitation." The upper and lower temperature limits will be indicated on either side of the symbol.
	Symbol used to indicate that the product should be kept dry.
	Symbol indicating that the device is "fragile" and should be handled with care.
	Symbol indicating the correct upright position of the transport package.

WARNING	**Warning labels attached to the instrument draw your attention to specific hazards. You must refer to this user guide and other documentation provided with your system for more details concerning the potential hazard and any precautions or other actions that must be taken.**

Warning Labels

The following labels are displayed on the outer surfaces of the instrument:



UV Safety Warning

The VWR® SMART5 XE imaging system has a UV Transilluminator. If you open the door the system will automatically switch the UV off. If you wish to override the UV, please refer to section 6.3.

Before you override the UV safety interlock, read the following recommendations:

WARNING	You should wear appropriate personal protection. As a minimum, we recommend the use of full-face shields that meet the necessary levels of UV protection. Those meeting the standard will be marked with the ANSI Z87.1. notation [ANSI Z87.1-89, Practice for Occupational and Educational Eye and Face Protection, IBR approved for 29CFR1910.133(b)(1)]. We recommend that all users of UV be made familiar with the guidelines published by the various national authorities. In the USA these guidelines are published by OSHA (www.osha.gov) in their standard 29CFR1910. This provides up to date safety information and guidance. In the UK the NRPB (www.nrpb.org) issues similar guidelines. Employers must familiarise themselves with these guidelines and their obligations described in the standards. In addition to face shields, we recommend that you should consider wearing appropriate clothing to protect potential exposure to areas of skin (face, arms, and hands for example).

N.B. The door safety interlock is reset when you close the door

General operating conditions

The VWR® SMART5 XE has been designed and tested in accordance with the safety requirements of the International Electrotechnical Commission (IEC). VWR SMART5 XE conforms to IEC61010-1 (Safety Requirements for electrical equipment for measurement, control and laboratory use) as it applies to IEC Class 1 (earthed) appliances, and therefore meets the requirements of EC directive 2014/35/EU.

If possible, avoid any adjustment, maintenance or repair to the instrument while it is open and operative. However, if any adjustment, maintenance or repair is necessary while the instrument is open, this *must* be done by a *skilled* person who is aware of the *hazards* involved.

Whenever circumstances arise that mean your VWR® SMART5 XE may be unsafe, make it inoperative. In particular, a VWR® SMART5 XE may be unsafe if it:

- Shows visible damage
- Fails to perform the intended measurement
- Has been subjected to severe transport stresses
- Has been subjected to prolonged storage in unfavorable conditions

Transportation and Storage Conditions

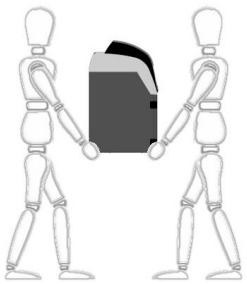
The system should only be transported and stored in its original packaging to ensure maximum protection. It is recommended to keep the original packaging.

The unit should be transported and stored in an environment -10°C to +50°C, not condensing.

If you must move the imaging system any great distance please contact your local distributor to advise you about moving your system.

The VWR® SMART5 XE instrument requires two people to lift it safely.

The VWR® SMART5 XE weighs 20kg.



Environmental conditions

- The instrument should only be used under the following conditions:
- Indoors
- Altitudes below 2000m
- Ambient temperature between 5ºC and 40ºC

- Relative humidity below 80% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C
- Electrical supply fluctuations not exceeding ±10% of the nominal voltage

 WARNING	**The protection provided by the equipment may be impaired if the operating conditions do not lie within these parameters.**

Electrical safety

The instrument has been designed to protect the operator from potential electrical hazards. This section describes some recommended electrical safety practices.

 WARNING	**Lethal voltages are present at certain points within the instrument.** **When the instrument is connected to line power, removing the instrument covers is likely to expose live parts.** **Even when the power switch is set to off, high voltages can still be present – capacitors within the instrument may still be charged even if the instrument has been disconnected from all voltage sources.**

The instrument must be correctly connected to a suitable electrical supply. The supply must have a correctly installed protective conductor (earth ground) and must be installed or checked by a qualified electrician before connecting the instrument.

 WARNING	**Any interruption of the protective conductor (earth ground) inside or outside the instrument, or disconnection of the protective conductor terminal is likely to make the instrument dangerous.** **Intentional interruption of the protective conductor is prohibited**

 WARNING	**Ensure that the electricity supply inlets on the instrument are not obstructed, i.e. leave a gap to allow easy disconnection from the electricity supply.**

When working with the instrument:

- Connect the instrument to a correctly installed line power outlet that has a protective conductor connection (earth ground).
- Do not operate the instrument with any covers or internal parts removed.
- Do not attempt to make internal adjustments or replacements except as directed in the manuals.
- Disconnect the instrument from all voltage sources before opening it for any adjustment, replacement, maintenance or repair. If the opened instrument must be operated for

further adjustment, maintenance or repair, this must ***only*** be done by your supplier's Service Engineer.

- Whenever it is possible that the instrument is no longer electrically safe for use, make the instrument inoperative and secure it against any unauthorised or unintentional operation. The electrical safety of the instrument is likely to be impaired if, for example, the instrument:
  - Shows visible damage
  - Has been subjected to prolonged storage in unfavorable conditions
  - Has been subjected to severe stress during transportation

Electrical protection

- Insulation: Class I rating for external circuits. Only connect equipment that meets the requirements of IEC 61010-1, IEC 60950 or equivalent standards.
- Installation Category: The instruments are able to withstand transient over voltages typically present on the MAINS supply. The normal level of transient over voltages is impulse withstand (overvoltage) category II of IEC 60364-4-443.
- Pollution Degree 2: Normally only non-conductive pollution occurs. Occasionally, however, temporary conductivity caused by condensation must be expected.

Electrical Specifications

The VWR® SMART 5 power rating is as follows:

Voltage	100-240Vac
Frequency	50-60Hz
Current	2A
Fuse	2 of 20 mm x 5 mm IEC127 T 6.3 A H 250V

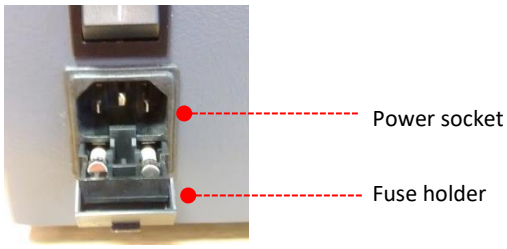
Changing fuses

There are two sets of fuses that you may need to replace: the first set is located near the electrical power cord socket on the rear of the darkroom; the second set is located on the rear of the UV Transilluminator inside the darkroom (if supplied).

To change the fuses on the rear of the darkroom:

 **WARNING**	**Switch off the instrument and unplug the mains power cord from the electrical supply.**

- Gently pull out the fuse holder on the rear of the darkroom.



- Replace the fuse(s) with new ones of the same type and rating. The fuse type is 20 mm x 5 mm IEC127 T 6.3 A H 250V for instruments in all countries.
- Replace the fuse holder.

If the instrument still does not work correctly after replacing the fuses with the correct replacements, or if the fuses blow repeatedly, contact your supplier's office or representative.

EMC compliance

EC directive

The VWR® SMART5 XE instrument has been designed and tested to meet the requirements of the EC directive 2014/30/EU. The VWR® SMART5 instrument complies with the EMC standard EN61326 (EMC standard for electrical equipment for measurement, control and laboratory use) and EN55011 (ISM) class B (RF emissions).

FCC rules and regulations

This product is classified as a digital device used exclusively as industrial, commercial or medical test equipment. It is exempt from the technical standards specified in Part 15 of the FCC Rules and Regulations based on Section 15.103 (c).

UV Safety

The VWR SMART5 XE system uses a UV transilluminator. If the doors opens, the image capture software automatically switches off the UV light.

To override the UV light when the door is open for cutting bands out of your gel, please follow the instructions listed below:

- Select 'PERMIT OVERRIDE' if you wish the user to be able to override the UV safety protocols from the settings menu. This must be selected to turn the Transilluminator on while the door is open.
- To override the UV safety interlock, pull the right-hand door switch and then follow the onscreen instructions.

WARNING	**Please ensure that Personal Protective Equipment (PPE) is used when overriding the UV light source.** **It is recommended that a laboratory coat, a UV visor, and gloves are worn.**

N.B. The door safety interlock is reset when you close the door.

Warning Labels

Warning labels attached to the instrument draw attention to specific hazards- refer to this user guide and other documentation provided with the instrument for more details concerning potential hazards and any precautions or other actions that must be taken.

WARNING	**To prevent potential personal injury and damage to the instrument, switch OFF all components in the system and disconnect them from the mains power supply before altering, or making any new electrical connections.**

Need to add in images here. Image of the SMART5 XE with door open so can see UV warning. An image of the back of the system to show electrical safety warning and power rating and serial.

Unpacking a VWR® SMART5 XE System

Removing from the Packaging

Visual Inspection

Upon taking delivery of a new SMART5 XE Instrument:

- Check the contents of the cartons as they are unpacked against the contents listed on the packing list
- Check each item on the packing list for damage and document any damage carefully
- If any items are missing or damaged, contact your local distributor immediately

Unpacking the Main Box

The SMART5 XE Instrument is packaged in a large carton which is securely strapped. Some Instruments may be shipped as a carton only, others may be shipped with the carton strapped onto a wooden pallet. Accessories are shipped in one or more separate cartons.
To unpack a typical Imager2 Instrument:

WARNING	**A SMART5 Instrument requires two people to lift it safely. A SMART5 XE Instrument complete weighs approximately 20kg.**

UNPACKING A SMART5 XE	
	
Original packing of SMART5 XE	Flip the box upside down and open the box. Turn the box the other way up and lift up the box to remove the VWR® SMART5 XE

Remove the foam from the top of the VWR® SMART5 XE

Remove the foam from underneath the VWR® SMART5 XE

SMART5 XE ready for use

6. Carefully unpack the accessories.

PACKAGE CONTENTS
Mains power cord - suitable for country of use
UV Emission Filter
Transilluminator (optional)
Ultraslim LED blue light transilluminator (optional)
Visible light converter screen (optional)
Blue Converter screen (optional)

Overview

SMART5 XE

The VWR® SMART5 XE system has been designed to make your gel imaging simple, quick and easy. This system is the perfect choice for a low-budget gel imaging system and features a compact darkroom which has an internal LED white light and a motorised lens.

The VWR® SMART5 XE system is intended for general laboratory use and not for specific use for IVD/MD.

The VWR® SMART5 XE system supports multiple applications including DNA/RNA gel imaging such as EtBr, SYBR Green and visible stained gels i.e. Coomassie Blue and silver stain.

Applications supported

Transilluminator UV	Visible Light Converter	Blue Light Converter
Ethidium Bromide SYBR Green SYBR Gold SYBR Safe Gel Green Gel Red SYPRO Ruby	Coomassie blue stain Copper stain Zinc stain Silver stain	SYBR Gold SYBR Green SYBR Safe UltraSafe blue

Specification

	VWR® SMART5 XE
Camera	12/16 bit
Camera sensor	1/2.5 inch
Zoom	Motorised zoom 8-48, F1.2, aperture and focus
Image Resolution	5M pixels
Filter	UV032 filter as standard
Max gel size	20x24cm
Illumination	Slide in and out UV Transilluminator, visible light converter and blue light converter, Epi white LED
Image enhancements	Rotation and inversion, sharpen, smooth and more
Data types	TIFF and JPEG
Image storage	Memory 80GB, USB or network
Display	7” widescreen colour touch screen
OS	Windows 10 Enterprise LTSC
USB	3X USB3 2X USB2

System Components

TOUCH SCREEN
Colour LCD Screen

INTERNAL WHITE LIGHT
For sample positioning and focusing

HINGED DOOR
With magnetic catch

USB
For storing of images on USB memory stick

POWER INDICATOR
Green if power is on

SAFETY SWITCHES
To prevent accidental UV exposure when door is open

TRANSILLUMINATOR (OPTIONAL)
For UV, white or blue light

- UV transilluminator slides in and out of darkroom
- Blue light converter
- Visible light converter

Rear Panel

The VWR SMART5 XE's rear panel contains an ON/OFF rocker switch, which is used to energise/de-energize the instrument.

Darkroom

The darkroom has a hinged door. The darkroom features:

- Slide out mid wave 302nm UV Transilluminator
- Internal white light LED
- Safety switches to protect from accidental UV exposure

UV Transilluminator

The UV Transilluminator will excite many fluorescent stains such as Ethidium bromide, SYBR™ stains, Gel Red™. The standard wavelength is 302nm.

To protect users from accidental exposure, the UV light is automatically shut off if the door is opened. The Transilluminator can be slid easily in and out of the cabinet.

LCD Touch Screen

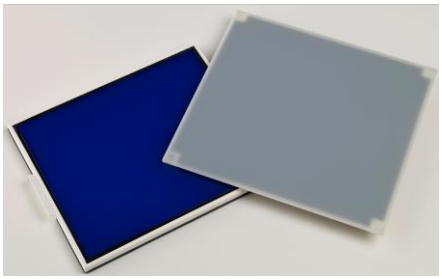
A built-in 7 inch colour LCD touch-screen allows users to preview, capture, print and save images, as well as to select various processing functions, without the connection of an external keyboard or mouse. An optional wireless keyboard and mouse can be connected if preferred.

USB Flash Drive

The USB flash drive on the front of the VWR® SMART5 XE allows for the easy storage of images.

Accessories

Visible or blue light converter screens



VWR® offers a visible light converter that can be placed on top of the UV Transilluminator for imaging Coomassie and silver stained gels.

VWR® also offers a blue light converter that can be placed on top of the UV Transilluminator for safely imaging gels stained with SYBR Safe, Gold and Green, GelGreen and UltraSafe blue.

Printing

The VWR SMART5 XE software can be used with any printer with Windows drivers. VWR International recommends a Sony thermal printer model UP-D898MD.

Analysis software

The VWR® SMART 5 XE system is supplied with VWR® Gel Doc analysis software. This may be loaded on a PC of your choice.

Network connectivity

The VWR® SMART5 XE system has a network (LAN port). If connecting to a network, the user may wish to choose a default pathway to save images on the settings page.

Instrument Set-up

CAUTION: Only connect the power supply to any of the components until you are satisfied that everything is connected correctly.

For assistance please contact your supplier or VWR® directly.

Transilluminator Set-up

Place the UV Transilluminator inside and connect it to the free flying mains lead inside the VWR® SMART5 XE system.

Power on/off

Connect the mains lead from the VWR® SMART5 XE system to the mains power supply and switch on the unit. There will be a few seconds delay as the system boots. After a few seconds a display will appear.

To turn the internal computer off, press the ‘SHUT DOWN’ button on screen and then select ‘SHUT DOWN NOW’. The System will now shut down.

VWR SMART5 XE Image Capture Software

The home screen is shown below.

Dynamic Field Correction (DF)

The dynamic field function is based on powerful algorithms which corrects for uneven illumination from the light source. This results in an image with a flat, even background whilst maintaining GLP compliance. Select to perform dynamic fielding when using the Visible light converter screen to ensure a bright, even background.

Once switched on, please follow the on-screen instructions.

Extended Dynamic Range (EDR)

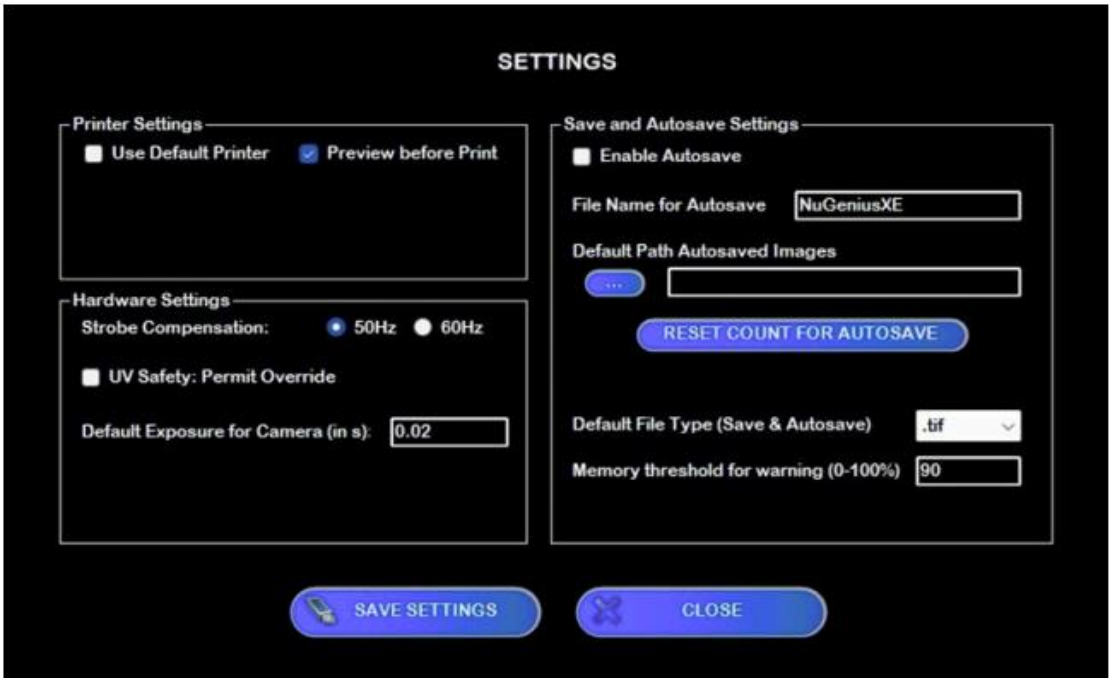
Some gels contain areas that are too bright or too dark to be successfully captured. Closing the iris to cut down the light may prevent the viewing of dark or faint bands, whilst opening it may lead to saturation. EDR solves this problem by automatically capturing a series of images at different exposure times. The content of each image is assessed and those areas that are within the dynamic range of the camera are combined. The result is an image with a large dynamic range (up to 65536 grey levels) that encompasses all the brightness ranges existing within the sample without saturation.

Installing VWR® Gel Doc Analysis software on a separate PC

Plug the VWR® branded flash drive into the PC you wish to install VWR® Gel Doc on. Navigate into the “Gel Doc” folder on the flash drive and run the “InstallGelDoc” program.

Follow the on-screen instructions to install Gel Doc software.

User settings



Printer Settings

Select to use a default printer and select to see a preview before printing.

Hardware Settings

Select Regional Power Frequency for strobe compensation and select either 50 or 60Hz depending on your region's electricity supply.

Select 'Permit Override' if the user wishes to override the UV safety protocols. This must be selected to enable the transilluminator to be turned on when the door is open. Please make sure you are wearing the appropriate PPE when overriding UV safety protocols.

Input a default exposure time for the camera. Simply use this box to enter a time in seconds (s).

The Save and Autosave settings allow the user to enable autosave of captured images. The user can choose a file name for autosaved images and select the default location Path for autosaved images. The reset count for autosave allows the user to return the counter to zero.

The default file type can be selected for saving and autosaving images using the drop-down mwnu to select from the following file formats, TIF, JPEG and BMP.

If images are saved to the internal memory of the VWR SMART5 XE system, then the user can select a memory threshold (0-100%). The VWR SMART5 XE system will pop-up with a warning message when it is close to reaching the percentage threshold set.

Make sure that the 'Save' settings button is selected to save any new settings. Use the close button to close the settings screen without saving.

Image Acquisition

The SMART5 XE image capture software runs in a standard Windows environment and provides a simple-to-follow workflow for capturing images from a variety of applications.

Position sample and choose lighting

Switch on the SMART5 XE system and double click the SMART5 XE software icon from the desktop. Once the NuGenius XE software has started up the home screen will appear. The software will automatically show a live image. Position the sample on the centre of the Transilluminator and close the door.

Use the lighting menu to select the lighting you need for your application.

Use white light for positioning your sample. Select the UV transilluminator for imaging DNA/RNA gels stained with Ethidium Bromide, SYBR dyes and many more.

VWR offers two converter screens. The visible light converter screen converts UV light to visible light and is ideal for imaging Coomassie and silver-stained gels. For imaging DNA/RNA gels stained ‘safe’ dyes, use the blue converter screen.

The VWR SMART5 XE system is stain free enabled. Stain free quick protocol includes a 2.5 minute incubation period with UV light. 2.5 mins activation provides a good balance between the time required for UV activation and signal intensity. The stain free full protocol involves a 5- minute incubation period time with UV light which provides maximum sensitivity.

Adjust Lens Controls

The lens controls that are available are focus, Iris (aperture), and zoom.

Adjust the iris (aperture) using the plus and minus buttons. For small adjustments, press the button once. For bigger adjustments, hold down the button and then release it. Please note that opening the aperture too far may result in areas of the sample being saturated.

Use the zoom controls to zoom in on your sample until it fills the screen for maximum resolution.

Focus the image using the focus controls until the image is nice and sharp.

You can select to display any saturation on the screen by pressing the ‘DISPLAY SATURATION’ button. Saturated areas will appear red. It is important to check that your image is not saturated, as you cannot quantify from a saturated image.

Set Exposure Time

The exposure time can either be set manually or automatically. The exposure controls are simple to manually increase or decrease the exposure time using the following icons.
will alter the brightness of the image. To manually increase or decrease the exposure time, use the following icons.

Click on the ‘+’ or ‘-‘ to increase or decrease the exposure time. Alternatively, click on the time to set it manually.

Set an exposure time you are happy with and press ‘CAPTURE’.

Alternatively, the auto-exposure function sets the exposure time to a level that ensures no saturation of the image occurs. To use the auto-exposure function press ‘AUTO’.

Image Functions

The VWR SMART5 XE system offers a variety of functions ranging from image enhancement to annotation.

Image Enhancement

To access the enhanced functions, select the arrow buttons to move between screens until you get to the ‘Image Enhancement’’ screen. From here, you can select to smooth, sharpen, invert, lighten, darken, or rotate your image.

The Invert button will reverse the image to give black bands on a white background or vice versa. This icon is particularly useful when trying to see faint bands.

The Rotate function will allow you to rotate the image in both 5 degree steps (by using the - and + buttons) and also rotate to set positions (0, 90, 180, 270 degrees).

To apply a sharpening filter to your image move the SMOOTHER/ SHARPER slider to the right. When this filter has been applied band edges should become more pronounced but you may also observe an increase in the graininess of the image.

The DARKER/LIGHTER slider will allow you to change how dark or light the image is.

The RESET button will undo the changes from the captured image.

Annotation

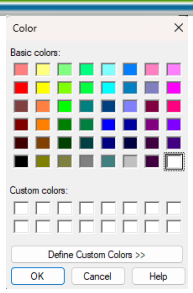
To add text to the image, press the ‘ADD TEXT’ button.

An on-screen keyboard will pop-up. Type your text then press ‘ENTER’.

The text will now appear on the image. To reposition the text, press on the text, a box should appear around it, press and hold on this then drag the text to the position you want it in.

The ‘EDIT TEXT’ button allows the user to edit the text.

The colour of the text can be changed.



Select from a selection of colours available from the palette.

The size of the text can be adjusted. Press the  to increase the font size and the  to decrease the font size.

To remove any text annotations select the text that you wish to remove and then press the ‘REMOVE’ button.

Digital zoom

The digital zoom allows you to zoom in or out on the displayed image.
Use the  to zoom in on your image to take a closer look at your sample to make sure the image is in focus.

Use  to zoom out of your image. Zoom settings can be reset at any time by selecting 

After capture, you can select zoom which opens the zoom window. Use the zoom controls to zoom in and out of the image.

Zoom window

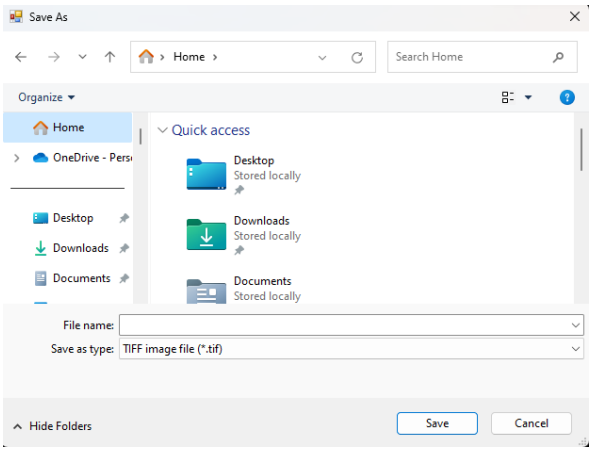
Saving / Opening Images and Printing Images

Saving images

Anytime that an image is captured or in some way changed e.g. enhanced or annotated etc. using the VWR SMART5 XE software you have the opportunity to save the image.

Select the 

icon from the home screen. This displays the standard Windows™ save screen. From the pop-up save dialog box, browse the file saving location, and easily edit the file name before saving. Images can be saved in the following formats; .TIF, JPEG and bmp.



Standard Windows™ save screen

Please note when the ‘Save’ button is coloured dark blue this indicates to the user that the image has not been saved.

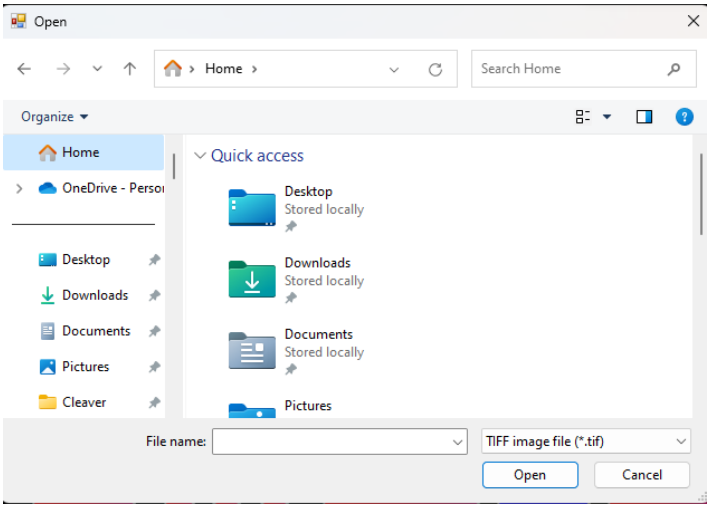
If saving images to the USB drive, we recommend you press the ‘Eject USB Drive’ button to ensure no data is lost.

Eject the USB Drive button

Opening images

Previously, saved images can be located using the Open Saved image button. From the Windows™ pop-up window, browse saved images from a network, internal memory or a USB stick.

Open Saved Image button



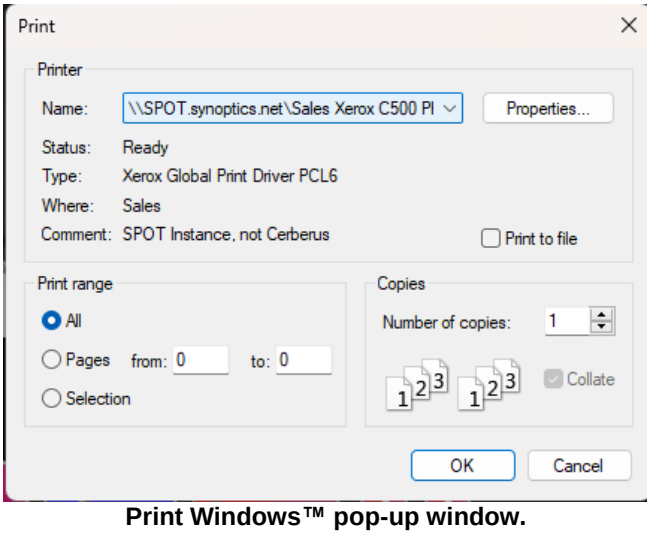
Open saved image Windows™ pop-up screen

Printing

Anytime an image is captured, viewed, or changed in some way, e.g., annotated or enhanced, the Print button is active; using VWR SMART5 XE, you have the opportunity to print the image.

Select the 'PRINT' icon 

If a default printer has been selected on the settings page this printer will be used to print out an image of your sample. If a default printer has not been selected then select your printer in the Printer box, Name: field.



Print Windows™ pop-up window.

A print preview can be viewed before printing if this has been selected on the settings page.

Operator Maintenance

Looking After a SMART5 XE Instrument

The system does not require regular maintenance or calibration other than occasional checking and cleaning.

Cleaning the Imaging System

WARNING	**Switch off the mains voltage and remove the mains cord before cleaning.**

You can clean the outside of the VWR SMART5 XE using a soft lint-free cloth, moistened if required with a little water. Mild detergent may be used, if necessary. Do not use abrasive or solvent based cleaning materials. Always perform a patch test on an inconspicuous area before you clean the entire accessory.

Avoid spilling any liquid into the body of the VWR SMART5 XE and clean any external spills immediately. If any liquid enters the main body of the instrument, make the system inoperative and contact your local distributor.

Contacting VWR International

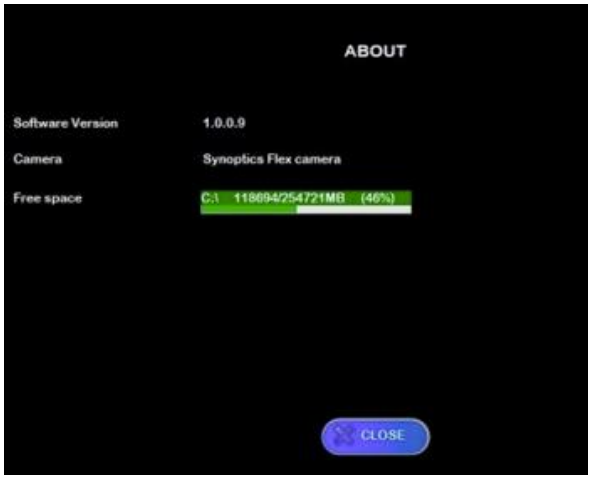
If it becomes necessary to contact VWR International the following information will be required:

- Unit Serial Number
- Camera
- Software version

The Unit Serial number can be found on a sticker on the back of the darkroom. The other system information can be found in the VWR SMART5 XE image capture software, as shown below:

Navigate through the software screens using the arrow buttons to find the ‘About’ button.

The About page pop-up will appear.



About pop-up screen

Select the **Close** button to close the pop-up.

User Replaceable accessories and spare parts

Description	Quantity	Cat. No.
Transilluminator VWR® 302nm 20x24cm	1	730-0497
UV to white light converter screen 20x20cm	1	730-1395
UV to blue converter screen 21x26cm	1	730-1493
Thermal printer digital	1	SYNOUP-D898MD
Networking kit	1	730-0525

Technical service

Web Resources

Visit the VWR website at **www.vwr.com** for:

• Complete technical service contact information

• Access to the VWR Online Catalogue, and information about accessories and related products

• Additional product information and special offers

Contact us For information or technical assistance contact your local VWR representative or visit. www.vwr.com.

Warranty

VWR warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of delivery. If a defect is present, VWR will, at its option and cost, repair, replace, or refund the purchase price of this product to the customer, provided it is returned during the warranty period. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, or from ordinary wear and tear. If the required maintenance and inspection services are not performed according to the manuals and any local regulations, such warranty turns invalid, except to the extent, the defect of the product is not due to such non-performance.

Items being returned must be insured by the customer against possible damage or loss. This warranty shall be limited to the aforementioned remedies. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

Compliance with local laws and regulations

The customer is responsible for applying for and obtaining the necessary regulatory approvals or other authorisations necessary to run or use the Product in its local environment. VWR will not be held liable for any related omission or for not obtaining the required approval or authorisation, unless any refusal is due to a defect of the product.

SMART5 XE Troubleshooting

Problem	Possible cause	Solution
No power to the darkroom	Check the connection of the main power cord to the main power port on the rear of VWR SMART5 XE.	Try another power socket within the laboratory. Contact www.vwr.com if the problem persists.
The transilluminator will not turn on.	Check the power cord by sliding the transilluminator fully out from the cabinet.	If loose, push back in. If it is still not on, remove the power cord and attach another one plugged in elsewhere. If the transilluminator comes on, there is an electrical supply problem with the SMART5 XE. If it still does not come on, the transilluminator has likely failed. Contact www.vwr.com Please use the appropriate PPE when working with UV light.
The print button is enabled, but nothing happens when you select it	Check that the correct printer has been selected.	If more than one printer is present, the system may be unable to distinguish between them. Disconnect one, then continue.
Unable to Save images with USB present	Check that the options on the ‘image storage’ screen are not disabled.	If they are disabled, eject the USB and reinsert it to re-enable them. This should re-enable the options so you can save your image.

Disposal

Disposing of a SMART5 XE

The Waste Electrical and Electronic Equipment (WEEE) Directive

This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.
Instead it's your responsibility to correctly dispose of your equipment at lifecycle -end by handling it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.
For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.
Thank you

Local VWR offices in Europe and Asia Pacific

Austria
VWR International GmbH
Graumanngasse 7
1150 Vienna
Tel.: +43 1 97 002 0
Email: info.at@vwr.com

Belgium
VWR International BV
Researchpark Haasrode 2020
Geldenaaksebaan 464
3001 Leuven
Tel.: +32 016 385 011
Email: vwr.be@vwr.com

China
VWR (Shanghai) Co., Ltd
Bld.No.1, No.3728 Jinke Rd,
Pudong New District
Shanghai, 201203- China
Tel.: +400 821 8006
Email: info_china@vwr.com

Czech Republic
VWR International s. r. o.
Veetee Business Park
Pražská 442
CZ - 281 67 Stříbrná Skalice
Tel.: +420 321 570 321
Email: info.cz@vwr.com

Denmark
VWR International A/S
Tobaksvejen 21
2860 Søborg
Tel.: +45 43 86 87 88
Email: info.dk@vwr.com

Finland
VWR International Oy
Valimotie 9
00380 Helsinki
Tel.: +358 9 80 45 51
Email: info.fi@vwr.com

France
VWR International S.A.S.
Le Périgares – Bâtiment B
201, rue Carnot
94126 Fontenay-sous-Bois cedex
Tel.: 0 825 02 30 30* (national)
Tel.: +33 (0) 1 45 14 85 00 (international)
Email: info.fr@vwr.com
* 0,18 € TTC/ min + prix appel

Germany
VWR International GmbH
Hilpertstrasse 20a
D - 64295 Darmstadt
Freecall: 0800 702 00 07
Tel.: +49 (0) 6151 3972 0 (international)
Email: info.de@vwr.com

Hungary
VWR International Kft.
Simon László u. 4.
4034 Debrecen
Tel.: +36 (52) 521-130
Email: info.hu@vwr.com

India
VWR Lab Products Private Limited
No.139. BDA Industrial Suburb,
6th Main, Tumkur Road,
Peenya Post,
Bangalore, India – 560058
Tel.: +91-80-28078400
Email: vwr_india@vwr.com

Ireland / Northern Ireland
VWR International Ltd / VWR International (Northern Ireland) Ltd
Orion Business Campus
Northwest Business Park
Ballycoolin
Dublin 15
Tel.: +353 01 88 22 222
Email sales.ie@vwr.com

Italy
VWR International S.r.l.
Via San Giusto 85
20153 Milano (MI)
Tel.: +39 02-3320311/02-487791
Email: info.it@vwr.com

Korea
VWR International ~
17, Daehak 4-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do
Tel.: +82 31 645 7256
saleskorea@avantorsciences.com

Middle East & Africa
VWR International FZ-LLC
DSP Laboratory Complex
125, Floor 01
Dubai, United Arab Emirates
Tel.: +971 4 5573271
info.mea@vwr.com

The Netherlands
VWR International B.V.
Postbus 8198
1005 AD Amsterdam
Tel.: +31 020 4808 400
Email: info.nl@vwr.com

Norway
VWR International AS
Brynsalleen 4
0667 Oslo
Tel.: +47 22 90 00 00
Email: info.no@vwr.com

Poland
VWR International Sp. z o.o.
Limbowa 5
80-175 Gdansk
Tel.: +48 058 32 38 210
Email: info.pl@vwr.com

Portugal
VWR International - Material de Laboratório, Lda
Centro Empresarial de Alfragide
Rua da Indústria, nº 6
2610-088 Amadora
Tel.: +351 21 3600 770
Email: info.pt@vwr.com

Singapore
VWR Singapore Pte Ltd
18 Gul Drive
Singapore 629468
Tel: +65 6505 0760
Email: sales.sg@vwr.com

Spain
VWR International Eurolab S.L.
C/ Tecnología 5-17
A-7 Llinars Park
08450 - Llinars del Vallès
Barcelona
Tel.: +34 902 222 897
Email: info.es@vwr.com

Sweden
VWR International AB
Fagerstagatan 18a
163 94 Stockholm
Tel.: +46 08 621 34 00
Email: info.se@vwr.com

Switzerland
VWR International GmbH
Lerzenstrasse 16/18
8953 Dietikon
Tel.: +41 044 745 13 13
Email: info.ch@vwr.com

UK
VWR International Ltd
Customer Service Centre
Hunter Boulevard
Magna Park
Lutterworth
Leicestershire
LE17 4XN
Tel.: +44 (0) 800 22 33 44
Email: uksales@vwr.com