



# QUANTUM<sup>®</sup> CX5

USER & SERVICE

MANUAL – v17.01



# QUANTUM<sup>®</sup> CX5

## USER GUIDE – V17

### Thank you

Dear Customer,

On behalf of Vilber Lourmat, we would like to thank you for choosing the Quantum imaging system.

In order to learn the capabilities of your Quantum imaging system, we kindly ask you to read this manual. This manual details how to install and to operate the hardware and the software components.

Vilber Lourmat is dedicated to your satisfaction and we will be pleased to answer any question you may have. We are also very receptive to your suggestions. Many of the new features and enhancements in this system are a direct result of conversations with our customers. Please do not hesitate to contact us to let us know what you would like to see in the next version of this system.

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Do not hesitate to visit our website at [www.vilber.com](http://www.vilber.com)

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## Introduction

### Prerequisites

The User Guide provide you with the instructions needed to operate, and maintain the Quantum imaging system in a safe way.

In order to operate the Quantum imaging system in the appropriate way, the following prerequisites must be fulfilled:

- You have read and understood the safety instructions in this User Guide, particularly in regards of UV danger.
- You should be qualified to use general laboratory equipment and to handle biological materials.
- You should use the instrument only for the intended purpose of gel and blot image acquisition in research laboratories.
- You accept the terms and conditions of the end user license agreement
- The instrument is connected to a grounded power source and to a circuit breaker.
- The instrument is installed by a Vilber Lourmat representatives.
- This instrument is suitable for research use only and shall not be used in clinical procedures, or for diagnostic purposes.
- Some techniques or reagents for generating and / or detecting light in biological samples are patented and may require licenses from third parties. Users should independently determine for themselves whether their activities infringe any valid patent before operating the Quantum imaging system.
- Some Quantum configurations involve UV illumination. This instrument should be used only by trained personnel who know the health risks associated with the UV radiation normally associated with this instrument. Users should be trained on the appropriate personal protection gear for working with UV light to minimize UV exposure.

### About the Quantum imaging system

The Quantum imaging system is a scientific instrument designed to capture fluorescence or colorimetric gel images. The Quantum system uses the Biovision software to control image capture and optimization for selected applications

A scientific CCD camera is used to capture high resolution digital images of protein and DNA bands in gels obtained by electrophoresis separation methods. The instrument can capture images of fluorescent, and colorimetric samples, depending on the system configuration.

The instrument can be used for research purposes in the academia and life sciences industry. The instrument cannot be used for diagnostic purpose.

Quantum offers exquisite precision and resolution, which mean reliable results for both quantification and documentation. The advanced imaging electronics has been developed by our experts especially for your scientific applications. This association of our exclusive electronic, high-quality optics and advanced software delivers outstanding performance. With Quantum, you simply reach the lowest limits of detection on all of your samples.

The Quantum system is supply with the BioVision-Capt software for image quantification and FTP access to the Quantum system.

## Warranty

The Quantum imaging system is warranted against faulty construction or defective material for a period of two years from the Vilber Lourmat invoicing date. If any defect occurs in the instrument during this warranty period, Vilber Lourmat will repair or replace the defective parts at its discretion without charge. The following defects, however, are specifically excluded:

- Defects caused by improper operation, incorrect use or bad maintenance
- Repair or modification done by anyone other than Vilber Lourmat or the company's authorized agent
- Use of spare parts supplied by anyone other than Vilber Lourmat.
- Damage caused by accident, misuse or disaster
- Corrosion caused by improper solvents or samples

This instrument should not be modified or altered in any way. Modification or alteration of this instrument will:

1. Void the manufacturer's warranty.
2. Void the conformity certifications.
3. Create a potential safety hazard.

The light sources (LED panel, UV tubes ...), the filters, the power supplies, the batteries, and the consumables are not covered by our warranty. The use of consumable products or non-original spare parts not recommended by our service department is at the user's own risk and therefore automatically invalidates the warranty.

We reserve the right to decide where the faulty goods will be repaired (in our workshop or elsewhere), and whether or not the faulty part is to be replaced; all other freight charges incurred being at the cost of the purchaser. Returned goods will not be accepted for repair unless previous written authorization is obtained from our service department. A request for authorization must be accompanied by an itemized list of products, model numbers and the corresponding invoice numbers under which they were originally shipped. All returned goods should have a certificate of decontamination. The Buyer must bear all costs and risks incurred during the transportation of the goods from their collection at Vilber Lourmat factory. In the case Vilber Lourmat incorporates some devices or equipment from another supplier in the manufacture of its products, the extent and the duration of the warranty will be those conceded by the suppliers or sellers.

Vilber Lourmat cannot be held responsible for any loss, bodily injury or material accident incurred by any failure of this supply, whatever the origin of this failure may be. Vilber Lourmat is not responsible for any injury or damage caused by use of this instrument for purposes other than those for which it is intended, or by modifications of the instrument not performed by Vilber Lourmat. The responsibility of Manufacturer is strictly limited to its staff and to its own supplies. In the case of dispute, only the commercial court of Meaux (FRANCE) shall be competent, even in third party claims proceedings or when there are several co-defendants.

## Safety instruction

### Introduction

The Quantum imaging system is powered by mains voltage, may be equipped with a UV light source, and is used to capture images of samples that may be hazardous. Before installing, operating or maintaining the instrument, you must be aware of the hazards described in the user documentation. Follow the instructions provided to avoid personal injury or damage to the instrument.

### Safety notices

This user documentation contains safety notices (WARNING and UV WARNING) concerning the safe use of the product. See definitions below.



#### WARNING

Whenever you find this pictograph, be sure to refer to this Manual.

WARNING indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury. It is important not to proceed until all stated conditions are met and clearly understood.



#### UV WARNING

Whenever you find this pictograph, be sure to refer to this Manual.

UV WARNING indicates an imminently hazardous UV radiation situation which, if not avoided, could result in serious injury. It is important not to proceed until all stated conditions are met and clearly understood.



#### NOTICE

NOTICE indicates instructions that must be followed to avoid damage to the instrument or other equipment or to ensure the instrument is properly working.

## General precaution



### WARNING

Do not operate the Quantum imaging system in any other way than described in the User Manual.



### WARNING

Use of this instrument in other ways than those specified in the user documentation may result in physical damage because of exposure to irradiated light or electric shock or injury from touching an operating part.



### WARNING

Do not use the Quantum imaging system in dangerous atmosphere or with dangerous materials for which the Quantum imaging system has not been designed for.



### WARNING

Do not use the instrument if smoke, atypical noises or odors can be perceived, or if the instrument becomes unusually hot as this may result in fire or electric shock. Stop using the instrument immediately, turn off the power switch, and unplug the instrument from the power outlet. Contact Vilber Lourmat representative to request repair.



### WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Do not pour liquids directly on or inside the instrument.

Switch off all the lights immediately after use.

Clean the transilluminator platen after use.



### WARNING

Ensure that all the ventilation-opening systems are not obstructed. The obstruction of the air admission grids may affect the performance of the system and cause operational failure. To ensure adequate cooling ensure there is at least 40 cm of free space in front of the instrument and at least 10 cm on all other sides to walls or other equipment.



### WARNING

The use of accessories not supplied by Vilber Lourmat can damage the system or create safety hazard.



### WARNING

When using hazardous chemicals, take all suitable protective measures, such as wearing protective glasses and gloves resistant to the substances used. Follow local and/or national regulations for safe operation and maintenance of the system.



### WARNING

Do not use the instrument within or near a sink, or in humid (above 70% RH) or dusty environments. This can result in fire or electric shock.



### WARNING

As the equipment is heavy, it cannot be carried by one person. Two service person are necessary when moving or relocating safely the main body of the equipment. If the equipment drops, it may be broken, or you may get seriously injured if it drops on your foot.



### WARNING

Do not touch the light source in the instrument. The light source may be hot.

**WARNING**

- Do not place objects on top of the instrument.
- Use the handle to open or close the instrument door.
- Handle sample trays with care to avoid dropping them.
- Do not leave samples in the instrument after exposure. If left, these may degrade and cause damage to the instrument.
- Do not disable the interlock of the equipment as UV light can be emitted if the door is opened.
- Do not open the instrument door during exposure. This will stop the exposure and image data will be corrupted.
- Do not use abrasive cleaning materials for cleaning. This may cause damage to the instrument.
- Do not use excessive amounts of liquids for cleaning

**Important UV safety information****UV WARNING**

In any UV WARNING situation, the operator should wear appropriate safety glasses or a protective mask and gloves. UV radiation can be dangerous for unprotected eyes and skin; therefore, we recommend the user to wear UV protective goggles (LP-70) or face-shield (MP-80 or MP-800). Protect all skin surfaces (including the neck, ears, and hands).

Use of the UV transilluminator acrylic protective screen does not guarantee the user protection from UV radiation. The use of protective goggles, mask, and/or gloves is strongly recommended

This instrument should be used only by trained personnel who know the health risks associated with the UV radiation normally associated with this instrument. Users should be trained on the appropriate personal protection gear for working with UV light to minimize UV exposure.

In its lowered position, the UV-Pad or UV transilluminator's acrylic shield provides UV protection. However, it does not provide complete protection to the user. In its raised position, the acrylic shield does not protect others who are standing in the area around the imager.

**UV WARNING**

Do not touch the UV unit after UV exposure. There is a risk of skin burn.

**UV WARNING**

The instrument is equipped with a safety interlock. If the interlock is out of order or has been tampered with, UV and visible light may be emitted, which may cause skin burn and impair vision. Do not open the instrument door during imaging operation.



**WARNING:** The non-respect of these instructions can cause very serious burns to the user when the instrument is in use.

**WARNING:** Ultra Violet light is dangerous for unprotected eyes and skin, therefore the user must wear UV protective goggles (Ref. LP70) or a face-shield (Ref. MP-80 or MP-800)

**SAVE THESE INSTRUCTIONS**

**AVISO:** Durante el uso del instrumento, no seguir las instrucciones puede causar quemaduras graves al usuario.

**PRECAUCION:** La radiación ultravioleta puede ser peligrosa para los ojos y la piel expuestos sin protección. Para protegerse, es imperativo usar gafas o una máscara.

**CONSERVAR CUIDADOSAMENTE ESTAS INSTRUCCIONES.**

**AVERTISSEMENT:** Lors de l'utilisation de cet appareil, le non-respect des instructions peut provoquer de graves brûlures à l'utilisateur.

**ATTENTION :** Le rayonnement ultraviolet est dangereux pour les yeux et la peau exposée sans protection, il est impératif de porter des lunettes (Réf. LP70) ou un masque de protection (Réf. MP-80 ou MP-800).

**CONSERVER SOIGNEUSEMENT CES INSTRUCTIONS**

**AVVERTIMENTO :** Durante l'utilizzo di questo apparecchio, il non rispetto delle istruzioni può provocare bruciature gravi all'utilizzatore.

**ATTENZIONE :** I raggi Ultra Violetti essendo pericolosi per gli occhi e la pelle esposti senza protezione, è obbligatorio portare gli occhiali (Ref. LP 70) oppure una maschera di protezione (Ref. MP-80 o MP-800).

**CONSERVARE CON CURA QUESTE ISTRUZIONI.**

**WARNUNG:** während der Benutzung dieses Gerätes kann die Missachtung der Anleitung schwere Verbrennungen an Personen hervorrufen.

**ACHTUNG:** Ultraviolettes Licht ist gefährlich für ungeschützte Augen und die Haut. Der Benutzer ist daher angehalten, eine UV-Schutzbrille (Art. LP-70) oder ein Schutzschild (Art. MP-80 oder MP-800) zu tragen.

**BEWAHREN SIE DIESE ANLEITUNG SORGFÄLTIG AUF**

警告：使用此组件时，若不遵从使用指导将导致严重烧伤！

警告：紫外线对眼和皮肤有害，操作者必须佩戴紫外防护眼镜（货号：LP70）或面罩（货号 MP-80 或 MP-800）请保存使用指导！

警告：機器の使用に際して、説明書の指示に従わない場合、使用者が重大な熱傷をこうむる場合があります。

警告：紫外線は裸眼や保護されていない皮膚にとって危険です。使用者はUV保護眼鏡（Ref. LP70）またはフェースシールド（Ref. MP-80またはMP-800）を装着する必要があります。

将来のためにこれらの説明書を保管しておいてください

**Important electrical power safety information**



**WARNING**

Connect the Quantum imaging system to an appropriate AC voltage outlet that is properly grounded and protected by a circuit breaker. Connecting to ground constitutes an obligatory protection.



**WARNING**

Power down the system and disconnect the AC main from the unit before performing any disassembly or repair the instrument.

Before plugging or unplugging the camera cables, ensure the system is off and disconnect the Quantum imaging system from the AC voltage outlet.

The system must be unplugged from the AC voltage outlet if it is not intended to use it before a long time.



**WARNING**

Do not damage the power supply cord by bending, twisting, heating or allowing them to become pinned under the equipment. Using damaged power cords could result in fire or electric shock. If the power supply cords are damaged, contact us for replacements.

Never pull the cable itself. Disconnect the cable only by grasping the plug.



**WARNING**

Do not block access to the power switch and power cord. The power switch must always be easy to access. The power cord with plug must always be easy to disconnect.



**WARNING**

The Quantum imaging system has -serviceable fuses which are located on the rear panel and are a part of the power entry module. See the Maintenance chapter of this guide for information about replacing the fuses



**WARNING**

All the equipment connected to this instrument shall be certified according to IEC 60950 standard.



**WARNING**

In case of thunder, do not touch the power supply plug, as this can result in electric shock.



**WARNING**

Turn off the power switch before cleaning the inside of the instrument.





**WARNING**

Do not turn off power during image acquisition as this can cause loss of data and damage the instrument. Only turn off power in an emergency situation.



**WARNING** - Electrical shock hazard.

All instrument repairs or modifications should be performed by service personnel authorized by Vilber Lourmat. Do not open any covers or replace parts unless specifically stated in the user documentation.

## Quantum CX5 system installation

### Unpacking the system



**WARNING**

The Quantum imaging system is powered by mains voltage, may be equipped with a UV light source, and is used to capture images of samples that may be hazardous. Before installing, operating or maintaining the instrument, you must be aware of the hazards described in the user documentation. Follow the instructions provided to avoid personal injury or damage to the instrument.

Please, open the Quantum CX5 box carefully and verify the contents:

Quantum CX5	1
Power cable	1
USB Cord	1
Instruction manual	1
BioVision-Capt software CD-Rom inside the instruction manual	1

- ⇒ Remove carefully each component from the box.
- ⇒ To remove the Quantum CX5 from the box, please use the belts which surround the system and designed for this purpose
- ⇒ Do not handle the system by the camera or the camera support.
- ⇒ Remove their protective plastic cover.
- ⇒ Place the darkroom at its permanent location, the door facing forward. The cabinet has to be placed near the computer used for image acquisition.



**WARNING**

It is recommended that the Quantum CX5 darkroom be carried by at least two people – one on each side- holding the instrument from the bottom side. Be sure that the door is properly closed when carrying the instrument.



The imager weighs 40kg. Using two people, place the imager onto the benchtop given proper space, electrical and environmental requirements. Remove the outer packaging materials.

**WARNING**

Do not connect the power cable to a power source until all connections are made. The power source has to be grounded and protected by a circuit breaker.

**WARNING**

The Quantum CX5 system is designed to fit a specific voltage. Please, check the voltage to ensure it corresponds to the Quantum CX5 specifications.

**WARNING**

Please keep an open area of at least 20 cm at the rear of the cabinet to ensure a proper air circulation for the system. The system should be located in an area free of excessive dust or moisture, strong magnetic fields or ionising radiation. It is also recommended that the ambient temperature be stable and within the range of 15°C to 25°C (20°C recommended) and that the relative humidity not exceed 70%, non-condensing.

**WARNING**

Ensure that all of the systems ventilation openings are free of interference. Excessive heat build-up in the instrument may effect performance or cause operational failure.

The Quantum CX5 system should be located away from water, solvents, or a corrosive material, on a bench top that is dry and stable. The system should be placed away from interfering electrical signals and magnetic fields. A dedicated electrical outlet should be used to eliminate electrical interference from other instrumentation in your laboratory

**WARNING**

Do not defeat any instrument interlocks; they are designed to prevent user injury.

It is compulsory to power down the system and disconnect the AC mains from the unit before performing any disassembly or repair to the system.

**UV WARNING**

The use of the Quantum CX5 involves ultraviolet (UV) illumination. Proper precautions must be taken to avoid eye and skin exposure to the UV light. This instrument is meant for use only by specialised personnel that know the health risks associated with UV radiation and the chemicals that are normally used with this instrument.

**Installing the hardware****Environmental conditions****Placement**

Place the Quantum CX5 on a level-working surface.  
The imager requires a stable laboratory bench or table capable of supporting 100 kg.  
The Quantum CX5 is intended for indoor use only.

**Free space**

LCD panel operation free space required: 50 cm  
Right, left, rear and top minimum free space required: 10 cm

**Other conditions**

Do not install the equipment near a window and avoid direct sunlight. We recommend attached blinds to nearby windows

Do not install the instrument where it may get wet or flooded

Do not install the instrument in a dusty environment

Do not install the instrument in a place constantly or excessively exposed to vibration or impacts (next to a centrifuge or to a compressor for instance)

Remove all hot or heat source near the Quantum CX5, specifically from the air intake.

Do not place objects near the power outlet to ensure easy access to the power cord for disconnection in case of emergency.

**Environmental conditions**

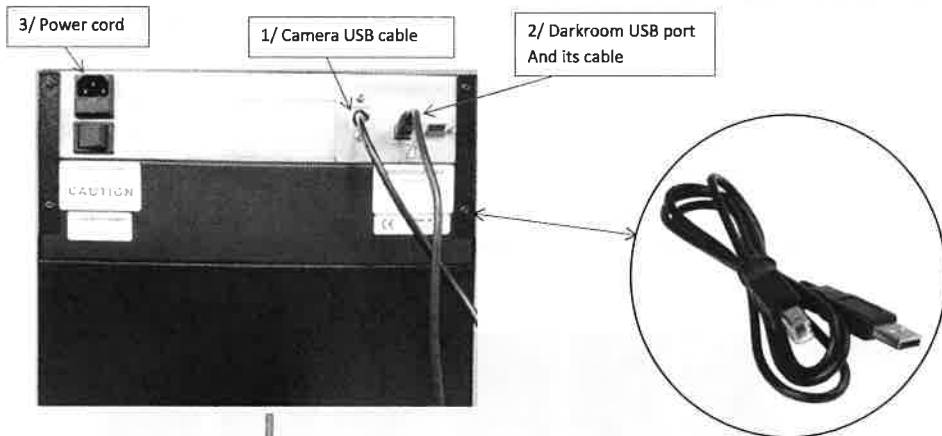
Temperature: 18° C to 25° C  
Humidity: 20% to 70% RH (no dew condensation)

### Imager back side

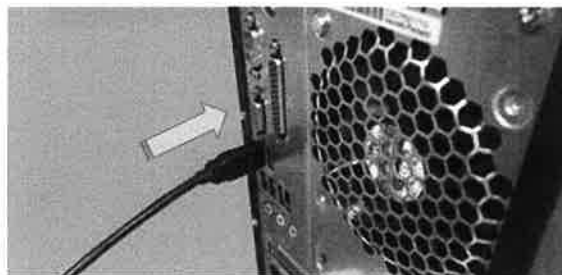
1/Connect the camera USB cable to a USB 3 port (rear side of your computer) (See the computer specifications recommended)

2/ Connect the darkroom USB cable to a rear side of your computer (USB 3 preferred)

3/ Connect the power cord



↓ To



### Operating instruction

#### Warning while using the darkroom



#### UV WARNING

Switch off the transilluminator when gel is not present on the UV filter. If the filter is too hot, it will damage your electrophoresis gel.



#### UV WARNING

Wait for at least 20 second in the "High" position before reducing the intensity selector to "Low".



#### UV WARNING

If one or several tubes are off or used, and in order to keep a better homogeneity, we recommend to change the 6 tubes simultaneously.

#### Imager front side – Door open

The Quantum CX5 SmartCab intelligent darkroom technology allows:

- Software control of the lighting
- Precalibrated focus for all defined zoom preset



When the door is open, you can access the transilluminator, the door UV security switch (9) and the on/ off button (8) of the transilluminator.



Press twice the transilluminator on/off button (8) to switch on the transilluminator light while the door is opened. Attention, you must wear an adapted protection (MP-80 for example) to protect your eyes and your skin. The white light switch on automatically when the door is opened.

#### Optional PadBox and Pad system

The PadBox multimodal container could accommodate our UV, blue, white light or Spectra pad or your own hardware such as heater, cooler, electrophoresis tank, special light source etc. The power socket inside the darkroom is switched on and off through the Quantum software.



The PadBox can easily integrate one of the several available Application Pad.

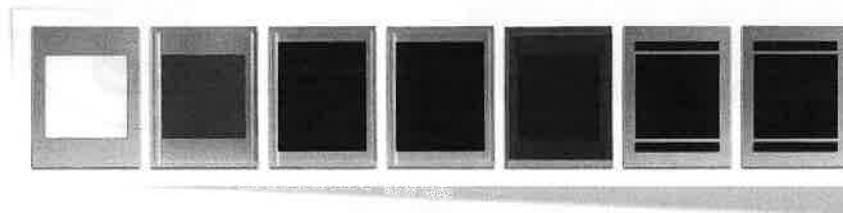


The PadConnect technology allows an automatic recognition of the installed Application Pad. Imaging and software options are then adjusted accordingly.

Several Application-Pad can be easily inserted or removed inside the Quantum CX5:

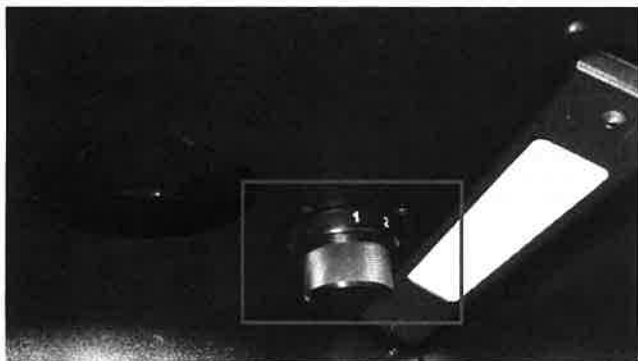
- UV-Pad
- Super-Bright-Pad
- Sky-Pad: LED blue light transilluminator, 470nm
- White-Light- Pad: LED white light transilluminator

All Application Pad except Spectra Pad can be used as a standalone illumination device outside the Quantum CX5 system, with an optional plug adaptor.



### Filter wheel

The Quantum CX5 main switch is located inside the darkroom.



The 10 positions filter wheel is supplied with the F590 M58 interferential filter supplied with the system for Ethidium bromide application. The F590 Ethidium bromide filter is attached to the position 1. To select the filters, turn the black handle and select the position of your choice.

To install a filter, select the filter position using the handle and screw the filter in its dedicated holder.

## System operation

### Introduction

This chapter describes how to operate the Quantum CX5 imaging system.

Before to operate the Quantum CX5 system, it is important that you have read and understood the safety information. Make sure to read this User Guide relevant safety instructions before you start to operate the system.

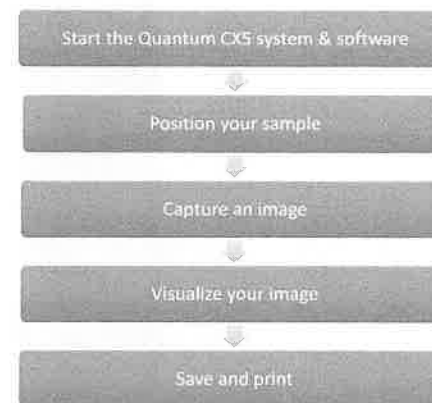


#### WARNING

Do not operate Quantum CX5 system in any other way than described in the User Manual.

The Quantum CX5 instrument is a high-end ultra-sensitive scientific camera platform, designed to extract the lowest level of detection from your protein or DNA sample. Our superior sensitivity, resolution and dynamics provide optimal performance across a large array of applications.

The standard imaging process is as follows:



## Start the Quantum CX5 system & software

### Switch on the Quantum CX5 system

On the right hand side of the imager, press the power button to the position I, to turn it on.

After the computer has booted up completely, the following messages are displayed until the Quantum CX5 system is ready for image acquisition:



When system is ready, the start menu appears on the display:



## Capture an image

This chapter describes the steps to acquire an image.

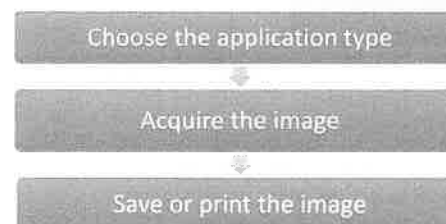
### Fluorescence image acquisition

Fluorescence is the main method used for gene expression and protein detection. It results from a process that occurs in molecules known as fluorophores. The fluorophore absorbs the excitation light, reaching a higher energy state. By returning to its former state, it emits fluorescent light.

The Quantum CX5 system separates the emitted light from the excitation light in order to obtain an optimum sample image. According to the configuration, the Quantum CX5 can accommodate several excitation and emission channels in the visible, RGB and UV area and is ideal for a large array of applications such as 1D DNA gel, 1D protein colorimetric samples, multiplexing, stain free gel and blot.

### Image capture workflow

The basic steps to acquire an image are:



## Choose the application type

### The Application selector

The Quantum CX5 runs with pre-defined image acquisition parameters to facilitate the use of the system for a specific application. These pre-defined parameters are gathered in the Quantum CX5 Application Protocol and can be selected from the Application Selector:



The Quantum CX5 Application protocol will ease the imaging workflow by automatizing the exposure parameters adjustment. The Application protocol automates a task or a set of tasks that you perform repeatedly or on a regular basis. It stores the following information:

- The image exposure pre-defined set-up;
- The live preview pre-defined parameters;
- The image display pre-defined set-up;
- The image printing pre-defined set-up;
- The image file pre-defined set-up.

The benefits of the Application protocol are as follows:

- Time saving
- Reproduction of image acquisition parameters
- Protocols are modifiable, allowing the user to maintain an original template while modifying it for a slightly different result, with minimal effort

The factory settings include several pre-defined Application protocols. You can also create your own Application protocol. Please refer to the Application protocol chapter of this User Guide to have more details on the way you can create your own Application.

For a UV excited gel sample, select the UV fluorescence application from the Application Selector window:



For a colorimetric sample using white light conversion screen, select the Conversion screen application from the Application Selector window:



For a colorimetric sample using epi white light (light from the top), select the White light application from the Application Selector window:



### Acquire the image

The Quantum CX5 system has three exposure mode:

- The live mode
- The auto mode
- The start mode

The exposure modes are gathered in the exposure mode menu:



### The Live mode

Live mode allows direct visualization of the image. This mode enables you to adjust the aperture and the focus, and to position your sample.



**Note:** A live image means the image displayed is refreshed every 1/20th of a second. This short exposure time (or frame) is adequate for a variety of white light samples including protein gels and autoradiography. A live image, however, is not sufficient for most samples, which are visualized and photographed over a relatively dim UV light source. A feature called integration compensates the low light situation by allowing the CCD camera to obtain a timed exposure.

**Note:** After 2 minutes, the software will automatically stop the live preview.

**Note:** The Preview mode is designed to help for sample positioning and focusing. To this extend, the Preview mode is always with white light EPI illumination.

The selection of the Live mode will open the following menu:



Modify the zoom and focus settings.

The Zoom in allows you to change the size of your sample, on the image. To proceed, move the cursor. The zoom automatically moves to the new value. The zoom control will modify the focus accordingly to keep a sharp image.

The Focus is needed to adjust the sharpness of the image by changing the focal point of the lens. To proceed, click on the Plus or Minus button.

You can reset the values to the one saved in the user profile. You can also save the new values in your user profile.

The Big size function allows you to shift from a portrait field of view (roughly 20x20cm at full zoom out) to a landscape field of view (roughly 26x21cm at full zoom out).

Once the settings you think are correct, click Stop, this image appears below



## Technical information

### Electrical specifications

#### Power supply

- Current (A) = 1A/0.5A
- Fuse FST (A) = 2A
- Voltage (V) = 100/230V~ (5%)
- Frequency (Hz) = 50/60Hz
- Power = 50 watts

#### Fuses

- Type FST.
- Time-lag T.
- Ø5 x 20
- 2A

### Climatic conditions

- Altitude = 2000 meters
- Operating humidity: = 20% to 70% (no condensation allowed)
- Operating temperature: = The maximum ambient temperature should be 25°C.



## Spare Parts

### General advices

- To clean the surface of the filter, use mild solvent or warm water. Dry with a soft cloth
- The filter is porous, so try to keep it dry

All our units are fitted with one or two safety fuses.  
They are found in the plug at the rear of the unit

#### TYPE OF FUSE

Type FST  
Time-lag T  
Ø 5 x 20

### Spare parts – QUANTUM-CX5

Réf. article	WL LED's panel	Tubes T-6.C	Tubes T-6.L	Tubes T-8.M	Tubes T-8.L	Fuse Ø 5x20		Filter with support		
						Qty	100V ~ 115V ~ 230V ~	Qty	Transluminator filter	EPI illumination filter FS-1700.LC
QUANTUM-CX5/WL-PADBox	2	/	/	/	/	2	2A	/	/	/
QUANTUM-CX5/WL + PAD-26M	2	/	/	5	/	2	2A	1	FS-TC26.CM	/
QUANTUM-CX5/WL + PAD-26MX	2	/	/	5	/	2	2A	1	FS-TC26.MX	/
QUANTUM-CX5/WL-EPI UV + PAD-26MX	2	2	2	5	/	2	2A	1	FS-TC26.MX	1
QUANTUM-CX5/WL-EPI UV-TLC	2	2	2	/	/	2	2A	1	/	1

## Warranty

Our products (except Compact Flash<sup>®</sup>, light tubes and filters) are warranted against faulty construction or defective material for a period of TWO YEARS from the date of supply. Our products are not warranted for damage due to carelessness, incorrect use or bad maintenance.

The following defects are also specifically excluded:

- Defects caused by improper operation.
- Repair or modification done by anyone other than VILBER LOURMAT or an authorized agent.
- Corrosion caused by improper solvents or samples.
- Use of spare parts supplied by anyone other than VILBER LOURMAT.
- Damage caused by accident or misuse.
- Damage caused by disaster.

This instrument should not be modified or altered in any way. Modification or alteration of this instrument will:

1. Void the manufacturer's warranty.
2. Void the conformity certifications.
3. Create a potential safety hazard.

The Compact Flash<sup>®</sup>, the tubes and the filters are not cover by our warranty.

The use of consumable products or non-original spare parts not recommended by our service department is at the user's own risk and therefore automatically invalidates the warranty.

Tubes, filters, batteries and consumable products are not included in the warranty.

We reserve the right to decide where the faulty goods will be repaired (in our workshop or elsewhere), and whether or not the faulty part is to be replaced; all other freight charges incurred being at the cost of the purchaser.

Returned goods will not be accepted for repair unless previous written authorisation is obtained from our service department. A request for authorisation must be accompanied by an itemised list of products, model numbers and the corresponding invoice numbers under which they were originally shipped.

All returned goods should have a certificate of decontamination.

The Buyer must bear all costs and risks incurred during the transportation of the goods from their collection at VILBER LOURMAT warehouse.

In the case VILBER LOURMAT incorporates some devices or equipment from another supplier in the manufacture of its products, the extent and the duration of the warranty will be those conceded by the suppliers or sellers.

Manufacturer cannot be held responsible for any loss, bodily injury or material accident incurred by any failure of this supply, whatever the origin of this failure may be.

The responsibility of Manufacturer is strictly limited to its staff and to its own supplies.

In the case of dispute, only the commercial court of Meaux (FRANCE) shall be competent, even in third party claims proceedings or when there are several co-defendants.

NOTE: VILBER LOURMAT is not responsible for any injury or damage caused by use of this instrument for purposes other than those for which it is intended, or by modifications of the instrument not performed by VILBER LOURMAT.

France only: Decontamination, collection and elimination of waste



The buyer ensures and finances the decontamination, the collection and the disposal of waste electrical and electronic equipment (WEEE) under the conditions provided in the Articles 21 and 22 of the Decree No. 2005-829 dated of 20 July 2005.

In France, for tubes recycling, contact the Recylum, [www.recylum.com](http://www.recylum.com)  
Improper disposal may be harmful to the environment and human health.

## Conformity



This system complies with the requirements of the EC Directive 2004/108/CEE, 2006/95/EEC and EN 61010-1, relating to Electro-magnetic compatibility and low voltage.

The Electro-magnetic susceptibility has been chosen at a level that gains proper operation in residential areas, on business and light industrial premises and on small-scale enterprises, inside as well as outside of the buildings. All places of operation are characterised by their connection to the public low voltage power supply system.