FluorEssence[™]



User's Guide for software version 3.5

with Multigroup software rev. C



FluorEssence™ for Windows®



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January 2012

revision C

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0: Introduction



FluorEssence™ for Windows®



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About FluorEssence™

FluorEssence[™] is the easiest data-acquisition software ever created by HORIBA Scientific. All aspects of spectrofluorometer control are available with only a few mouse-clicks or keystrokes, with a minimum of overlapping screens and windows. Data can be previewed while they are being recorded, and then immediately used with Origin[®] presentation and graphical analysis. FluorEssence[™] runs using Windows[®] 2000 or higher.

About Multigroup

Multigroup is a special data-acquisiton software in which multiple steps can be automated. Repeating loops, delays, with multiple-wavelength acquisition are possible. Multigroup runs using Windows[®] 2000 or higher.



Note: Keep this and the other reference manuals near the system.

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Symbols used in this manual

Certain symbols are used throughout the text for special conditions when operating the instruments:



General information is given concerning operation of the equipment.

1: FluorEssence[™] Installation

Requirements

To successfully install FluorEssence[™], your host computer needs the following:

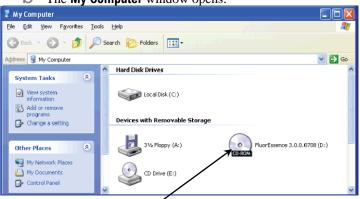
Software

Windows[®] 2000, Windows[®] XP Pro, Windows[®] 7 (in compatibility mode), or Windows[®] Vista

Hardware

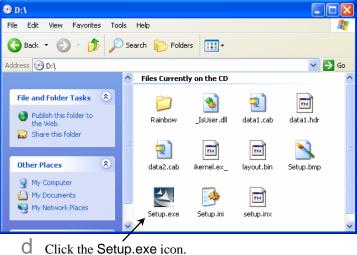
- Supports Windows[®] 2000, Windows[®] XP Pro, Windows[®] 7 (in compatibility mode), or Windows[®] Vista
- 1GB RAM
- 1 GB hard-disk space
- One DVD-ROM drive
- One available USB port
- Video resolution of at least 1024×768

- 1 Remove any HORIBA USB software key (if inserted) from the host computer before starting the installation.
- 2 Insert the FluorEssence[™] CD-ROM in the host computer's CD-ROM drive.
- 3 If Autorun is not operating, continue here:
 - a On the desktop, open the My Computer



The **My Computer** window opens:

C Double-click on the CD-ROM drive to open the FluorEssence[™] CD-ROM:



e Continue with step 4 below.

4 If Autorun is operating, continue here, to install FluorEssence™ software:

The InstallShield® Wizard starts.



a Click the Next > button. The License Agreement appears.



Click I accept the terms of the license agreement radio button, then the Next > button.

The Customer Information area appears.

HJY Application Software 3.0) - InstallShield Wizard	×
Customer Information Please enter your information.		
	Please enter your name and the name of the company for which you work.	
	User Name:	
HORIBA	SC Company Name:	
Puotseenor to Windows®	Jobin Yvon	
Administration of the based in Receptor Conference on the sector of the	T	
	1	
n stærten lefdrield	< Back Next> Cance	

Enter your User Name and Company Name. The Next > button activates.

C Click the Next > button.

The Choose Destination Location area appears.



Choose the location where FluorEssence[™] is to be installed.

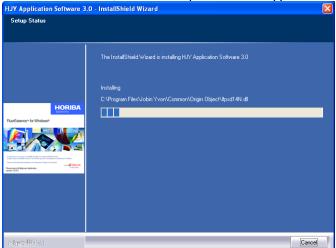
Most people prefer the default location. Click the Change button to find a different location.

• Click the Next > button. The Ready to Install the Program area appears:



Click the Install button.

G The computer starts copying the files from the CD-ROM to the hard-drive, and the Setup Status area appears:



Eventually the Horiba Jobin Yvon USB Installer window appears:

I



h Click the Next > button. The End User License Agreement area appears:

Horiba Jobin Yvon USB Installer					
End User Lic	cense Agreement				
To continue, accept the following license agreement. To read the entire agreement, use the scroll bar or press the Page Down key.					
	HORIBA Jobin Yvon SOFTWARE LICENSE AGREEMENT IF YOU DO NOT ACCEPT OR AGREE TO THE TERMS OF THE LICENSE AGREEMENT, YOU MAY RETURN THIS SOFTWARE WITH PROOF OF PAYMENT TO JOBIN YVON WITHIN 10 DAYS FOR A FULL REFUND OF THE SOFTWARE LICENSE FEE. ALL RETURNED PROGRAMS MUST BE UNUSED AND UNOPENED.				
	I do not accept this EULA Save As Print]			
	< <u>Back</u> Can	cel			
Click th	he I accept this EULA radio button, then clic	k the			

Click the I accept this EULA radio button, then click the Next > button.

A Software Installation warning window may appear:



K Click the Continue Anyway button.

The Installing the software for your HJY USB device... area appears.

Horiba Jobin Yvon USB Installer	
Installing the software for your HJY USB dev	rice
V Vease wait while the drivers install.	D this may take some time to complete.
	< Back Next > Cancel

When complete, the Congratulations! You are finished installing your HJY USB device. area appears:

Horiba Jobin Yvon USB Installer				
HORIBA	Congratulations! You are finished installing your HJY USB device.			
-	The drivers were successfully in	stalled on this computer.		
ST.	You can now connect your device to this computer. If your device came with instructions, please read them first.			
	Driver Name	Status		
JOBIN YVON	✔ Horiba Jobin Yvon Inc. H	Ready to use		
	< <u>Back</u>	Finish Cancel		

Click the Finish button.

The Horiba Jobin Yvon USB Installer window closes. The InstallShield Wizard Complete area appears.

HJY Application Software 3.0	1 11
	InstallShield Wizard Complete
	The InstallShield W/zard has successfully installed HJY Application Software 3.0. Click Finish to exit the wizard.
HORIBA	
PLoEssence* for Windows*	
Ландана съ Ландан (1908). Каладана (1904). Каладана (1904). Каладана канана (1904). Каладана (1904). Каладана (1904). Премерики (1904). Каладана (1904).	
r-kætet Eldie d	< Back Cancel

M Click the Finish button. Installation of FluorEssence[™] is complete.

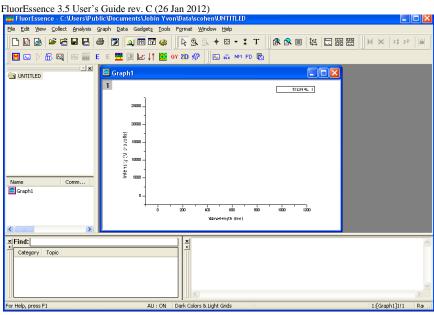
∩ Plug in all HORIBA software keys. Remove the FluorEssence[™] CD-ROM from the host computer.

5 Start FluorEssence™.

a On the desktop, double-click the FluorEssence V3.5 icon.



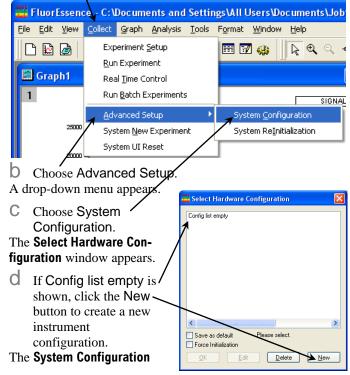
The Fluorescence window appears:



6 Choose a hardware configuration to run.

a Choose Collect.

A drop-down menu appears.



Wizard appears:	
System Configuration Wizard	×
C Load Factory Configuration C Standard Instrument Configuration C Detailed Component Configuration Reset Existing Configurations NOT E: Will remove all existing configuration information) Cancel Next>>	

- Choose one possible hardware configuration that your system can run correctly. You may choose a radio button for:
- Load Factory Configuration The exact hardware setup that HORIBA Scientific built for you.
- Standard Instrument Configuration A basic hardware configuration, for example, a typical FluoroMax[®]-4.
- Detailed Component Configuration Your own hardware setup in which every component can be tailored.



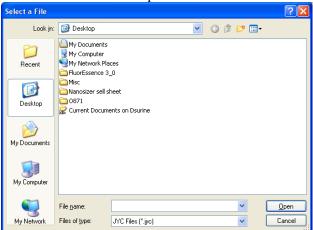
f

Note: Most users do not choose the Detailed Component Configuration.

Click the Next >> button.

If you chose Load Factory Configuration:

The Select a File window opens.



G Browse through the folders, and select the desired .jyc file.

The InstallShield Wizard Complete window opens.

h Continue with step 6 on page 21.

If you chose Standard Instrument Configuration:

The System Selection Page opens.

	Selection Date	o opens.	X
Syste	em Selection Page		
	System Type	Model	
	System Type	Model	
	Fluoromax 🗸	Fluoromax 🗸	
	CONTRACT OF CONTRACT.	nting capable systems.	
			< <u>Back</u> <u>N</u> ext>Cancel
	and Model. If you TCSPC, activate t D Click the Next > The Configuration Nat	ir particular instru he TCSPC Enal button.	the System Type ument includes ble checkbox.
	Configuration Name		
	Configuration Name:		
	Fluoromax		
		(Back Next	Cancel

- **C** Use the default name, or enter your own in the field.
- Click the Next > button.

The Instrument Configuration page opens:

Fluoromax Configuration					
Communications Interface SERIAL	Parameters Port COM1	Baud Rate	Data Bits	Stop Bits Parit	y Parity V
Standard Components Monos Excitation 180F Emission 180F Detectors Channel Type	Grating Grating Model		Integ	Polarizer Phosphorimeter Sample Changer	
S PMT(Photon)	PMT(Photon): V	DM302(Photon)		Microscope with Stag Temperature Control Titrator MicroMax	Not Configured Not Configured Not Configured
				< <u>B</u> ack	Next > Cancel

• Choose the appropriate settings, leave the defaults, or adjust as desired.

Click the checkboxes in the Available Accessories area to activate all desired and available accessories.



Note: If you select a Sample Changer as an accessory, a window appears asking which Sample Changer: 2-position or 4-position. If you select a Temperature Controller or Microscope as an accessory, a window appears asking for its details: be sure to choose the correct Manufacturer.

Samp	le Changer	X
	Sample Changer Configuration	
	2 Position Sample Changer	
	4 Position Sample Changer	
	OK Cancel	



Note: Some parameters are not available for certain systems (e.g., FluoroMax[®]), and thus are grayed-out automatically.

f Click the Next > button. The **Summary** page opens.

The building page open	15.
Summary	
Communication (SERIAL , COM1 , 57600) Monos	
- 180F	
- 1200	
180F	
1200	
Detectors	
Imp PMT (Photon)-Generic	
SS(Current)-Generic	
DM303(Current)	
Accessories	
- Integrated	
Pol(EX) Pol(EM)	
Sample Changer - 2 Position	
External	
Microscope with Stage	
Temperature Control	
Titrator	
I MicroMax	
r	Save To Disk
L	ISAVE TO DISK
	< Back Finish Cancel
	ary page to be sure that your
configuration is corr	ect. To change the entries, click the
< Back button.	
h Click the Finish	Select Hardware Configuration
n Click the Finish '	
button.	Fluoromax
The Select Hardware	
Configuration window	
re-appears, with the	
newly created hard-	
ware configuration in	
the list.	
	Save as default
	Force Initialization
	DK Edit Delete New

If you chose Detailed Component Configuration:

The **Device Configuration** screen opens.

Device Configuration	\mathbf{X}
Device type Choose device type	
Accessory Detector Light Source Monochromator	
Click Cancel To End Device Configuration	
Jobin Yvon	Cancel

- a Choose a component of your instrument to add from the menu. In this case, a monochromator was selected.
- b Click the Next > button.

The Module type screen opens.

Device Name	Description	~
1000M	SPEX 1.0m Spectrometer	
1000M_II 1250M	1000 M - Series II SPEX 1.25m Spectrometer	
1250M II	1250 M - Series II	
1269	SPEX 1.26m Spectrometer	i
1680_1	SPEX .22m Double Monochromator	L
1681	SPEX .22m Monochromator	
1702	SPEX 0.75m Spectrometer SPEX 1.0m Spectrometer	
1000.0	1005	×
<		

d Click the Next > button.

The Communications Parameters screen opens.

18	ODF - Mono3						
-	Communicatio	ns Parameter	15				
	Controller Special Types		ID				
	Default	~	0	Communica	ations Type	GPIB	~
				P	ort Number		1
				Hardwar	re identifier	Unknown	
S	erial settings Baud rate		o bits	Parity		Data bits	
	19200	✓ 1		V No Parity	~	8	
				C Z B	ack	<u>N</u> ext >	Cancel
						Howy	Cancer
(Choose th	ie narai	meters o	raccept 1	the def	ault vali	les
		ic parai		Pacepri	ine uei	aun van	ues.
(Click the	Next >	button.				
				en opens			
• (General i			en opens			
e (Mo	General i	nforma		en opens			
e (Mo	General i	nforma		en opens			
e (General i	nforma		en opens			
e (General i	nforma		en opens			
Mo	General i no General Informa	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa Device Display	nforma		en opens			
e (General i no General Informa Device Display	nforma		en opens			
e (General i no General Informa Device Display	nforma		en opens			
Mo	General i no General Informa Device Display	nforma				Next>	Cancel
Mo	General i no General Informa Device Display	nforma			tack	Next >	Cancel
	General i General Informa Device Display	nforma ation	tion scre		lack		Cancel
E	General i General Informa Device Display 1800F	Name	descripti		lack		Cancel
EU	General i General Informa Device Display	nforma tion Name ame or 2 fault p	descripti rovided.		lack		Cancel

180D		Juli 2012	,						
									~
Acc	essory infor	mation							
Gr Gr	ratings ating#1 ating#2 ating#3	grooves/mm 1200 1200 1200	Blaze	Description	1	💌 Exit M	Entrance Si ntrance Sh ce Mirror Lateral		
	lits Front Er Front Ex Ist Inter	it [L3DF_AUTO		✓ Side	Entrance Exit ntermediate	FL3DF_4		
					< <u>B</u> ac	k <u>N</u>	ext >	Cance	
<mark>80D</mark> Su	r F Immary								
De De	evice Type: ommunicatio	jyDevClassM jyDevTypeM		r:1 De	vice Nar	me: Default			
						Vali	date Hardv	vare	
				/	< <u>B</u> ac	sk 🖵 F	inish	Cance	1
Re	eview f	or corre	ectness.	/	/				
Cl	ick the	Valida	ate Harcommuni	dware cates v	butto vith t	on to ve the hare	erify tl dware	hat the	
			button.						

The **Device Configuration** window reappears.

Device Configuration	
Device type Choose device type	
Accessory Detector Light Source Monochromator	
Click Cancel To End Device	a Configuration
Jobin Yvon	< Back Next > Cancel
configuration is comp	components until the system plete. ose the Cancel button. Warning This will end the device configuration session. Proceed? Yes No New Configuration
The New Configuration window appears. Q Enter a brief name fo the hardware configuration in the	or OK Cancel
ConfigID field. Click the OK button. The Select Hardware Con ration window re-appears the newly created hardwa configuration in the list.	, with
Choose the desired hardware configura- tion, and click the C button.	-

Loading correction-factor files

Correction-factor files adjust specific instruments for their optical responses.

In the main FluorEssence window, choose 1 Collect.

A drop-down menu appears.

2 Choose Advanced Setup.

А	A drop-down menu appears.								
	📕 Fluor	Essen	e - C:\Doc	uments and	l Settin	igs\All (Jsers\Do	cument	ts\Job
	<u>File E</u> dit	<u>⊻</u> iew	Collect Gra	iph <u>A</u> nalysis	<u>T</u> ools	F <u>o</u> rmat	<u>W</u> indow	<u>H</u> elp	
	🗅 🔛	ø	Experim	ent <u>S</u> etup			2 🤹 📗	₽ €	୍ -
		-	<u>R</u> un Exp	eriment					
	🗮 Gra	ph1	Real <u>T</u> im	ie Control					
	1		Run <u>B</u> at	ch e xperiment	s				SIGNAL
			<u>A</u> dvance	ed Setup	Þ	Sys	tem <u>⊂</u> onfig	uration	
		25000	System	<u>N</u> ew Experime	nt	Pys	tem Re <u>I</u> niti	alization	
		20000	System	UI Reset		17			

- 3 Choose System Configuration.
- 4 If there is more 🚆 Select Hardware Configuration than one hardware configuration available, the Select Hardware Configuration menu appears. Choose the desired hardware configu-Save as default Force Initialization ration for the corпĸ rection-factor file, then click the Edit button.

The System Configuration window appears.

>

New

<u>E</u>dit

<u>D</u>elete

Preferences	System Setup
Setup Layout Wiring	Config Name Fluoromax Config Fluoromax Colear
	Tetectors Monos Accessories Light Sources Independent (floating)
	Available Devices Available Slots Locate CC S 1 0 Add Delete Description
Common Area Sta	alus -
Device:	Microscope with Stage Configure
Configuration:	Fluoromax Apply Cancel
Clear Configuration	Load From File Save To File Save As Cancel OK

5 Click the Preferences button.

🚟 System Configura	tion	
Preferences	Preferences	
Global Local	Current Configuration Info ID: Fluoromax Description Fluoromax	
Instrument Correction Files	Files (Global) Plugins (Global) Units (Global)	
Logging	File Save mode Diverwrite Always	*
	Default Directory C\Documents and Settings\All Users\Documents\Jobin Yvon\Data Data Storage	
	Default Directory Save mode Id Settings VAII Users/Documents/Jobin Yvon/Data Save as New Project Name Fluoromax	~
Setup		
	croscope with Stage Configure	
Configuration: Flu	Loromax Apply Cancel	
Clear Configuration	Load From File Save To File Save As Cancel	OK
Click the	e Instrument Correction Files	icc

Global	Current Configuratio	in Info				
Local		promax promax				
Instrument Correction Files	Instrument Correction	Files				
Logging	Detector	Mono	Grating	File		Insert
						Remove
Setup						
Common Area Status						
Device: Mi	icroscope with Stage			*	Configure	
Configuration: Flu	uoromax				Apply Ca	ancel

7 Choose the detector from its drop-down menu, the monochromator from its dropdown menu, and the grating from its dropdown menu:

Click in each field to see the drop-down menu.

🚆 System Configu	ration	
Preferences	Preferent	
Giobal Biobal Local	Current antiguration info ID: Fluxomax Descript n Fluxomax	
Instrument Correction Files	r Instrument C ection Files	
Logging	Detector Mono Grating Tile	sert
	Fe	nove
Setup		
Common Area Sta	tus	
Device:	Microscope with Stage Configure	
Configuration:	Fluoromax Apply Cancel	
Clear Configuration	Load From File Save To File Save As Cancel	ОК

8 Browse for the appropriate correctionfactor file in the File field. 9 If you need an extra row in the table for additional combinations of detectors, monochromators, and gratings, click the Insert button.

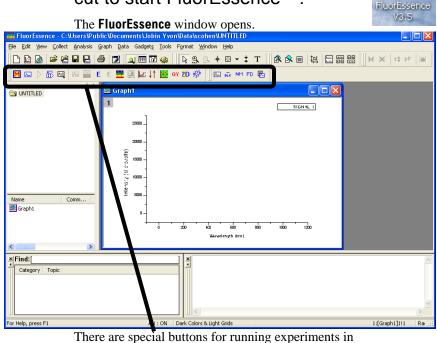
10Click the OK button when you are finished.



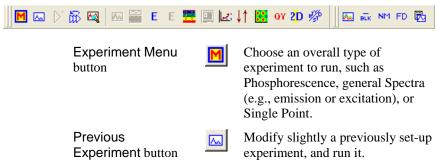
Note: You can have separate correction files for different gratings on the same monochromator.

2: Quick Guide to Running a Scan

- 1 Turn on the host computer, and all instruments and accessories, as explained in their respective instruction manuals.
- 2 Click on the FluorEssence shortcut to start FluorEssence™.



FluorEssence[™]:

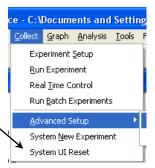


FluorEssence 3.5	⁵ User's Guide rev. C (26 Jan 20) Auto Run Previous Experiment button	(2)	Run a previously set-up experiment without modification.
	Run JY Batch Experiments button	Ê	Run an automated series of experiments, including adjustable repeats and delays between experiments.
	Real Time Control button		Open the Real Time Control window directly, to adjust experimental parameters in real time.
	Make Overlay File		With an existing graph selected, create an .SPC file for use as an overlay file. The existing graph should contain a single spectrum.
	Create/Use Calibration Curve from CWA Data button	¥.	From Single Point experiments, create and use a calibration curve for analytical measurements.
	3D Scan to 3D Profile button		Extract excitation and emission profiles from an excitation- emission matrix. The active file must be such a data matrix.
	2D Intensity Map button	2 <mark>D</mark>	Create a two-dimensional intensity map from microscope mapping data.
	Show Events button	Е	The left E button reveals hardware triggering events recorded during a kinetics scan, for example, using a hand-held pushbutton. A red line appears at each event.
	Hide Events button	Ε	The right E button hides red-line- denoted hardware triggering events recorded during a kinetics scan.
	Switch menu between HJY Software Application and Origin Std. button	r f	Switches the menus at the top of the main FluorEssence window between FluorEssence [™] and Origin [®] functions.
	Multigroup button		Close FluorEssence [™] software, and open Multigroup software.
	Launch DataStation button		Close the FluorEssence [™] software, and start DataStation software.

FluorEssence 3.5	5 User's Guide rev. C (26 Jan 201 Quantum Yield calculator button	2) QY	Opens the quantum-yield calculator spreadsheet to calculate the quantum yield of a sample and chromaticity.
	Overlay graph(s) button		Overlays one plot on top of another.
	Blank Subtraction	BLK	Automatically subtracts a blank (solvent) set of data from the sample data.
	Normalize Data button	NM	Automatically normalizes data to a minimum intensity, a maximum intensity, or a user-defined constant.
	View Experiment Settings button	FD	Lets you see all the parameters for the experiment in a single window.
	Extract Experiment file from Data (Notes) button		Extracts the experimental parameters from Notes in a data file, and creates an experiment file from them.
	Rescale Y button	$\downarrow\uparrow$	Rescales the y-axis on a graph to fit data on-scale.
	Convert XYY data to Contour Plot button		Converts a table of data with multiple <i>y</i> -columns into a contour plot .
	Erom mony of these but	toma	non initial start up of the software

From many of these buttons, *upon initial start-up of the software*, you can choose a hardware configuration and experiment type. After a hardware configuration is loaded, each button has its own separate function.

The Collect menu near the top of the main window also has some of these functions, plus another important command, System UI Reset. In case the six special buttons are grayed out, choose the System UI Reset command. See *Chapter 7* for more details.



3 Click the Experiment Menu button.

The Select Hardware Configuration window opens. To force the appearance of the Select Hardware Configuration window:

Immediately upon opening
 FluorEssence[™],
 press the F8 key and simultaneously click the Experiment

Menu button

Select Hardware Configuration	
Fluoromax	
	>
Save as default	
Force Initialization	
<u>QK</u> <u>E</u> dit <u>D</u> elete <u>N</u> e	ew

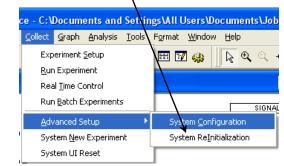
0r

b At any time within FluorEssence[™], press the F8 key while choosing the Collect Menu / Advanced Setup / System ReInitialization.

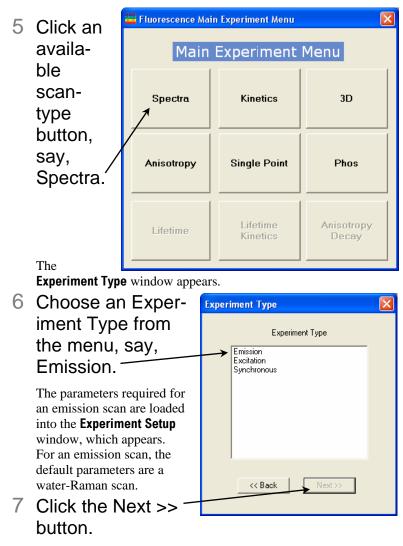


Note: This window does not appear if you have only one hardware configuration installed. Skip to page 34.

4 Choose a system configuration from the list, then click the OK button.



FluorEssence[™] loads the chosen system configuration. The **Fluorescence Main Experiment Menu** appears:



The Experiment Setup window opens:

FluorEssen	ce 3.5 User's Guide rev. C (26 Jan 2012)
🚟 Fluorescenc	e Division - Experiment Setup (Spectral Acquisition[Emission])
Experiment	General information
Monos	Experiment File Directory DBSpectraEmission xml C:\Documents and Settings\All Users\Documents\Jobin Yvon\] Load Save Save As
	Data Suage Data II infliet: DIREm
Detectors	Comme Spectral Acquinition[Emission]
Accessories	Experiment pe Monos
1	Excitation 1
Display Options	V Activate
	Wavelengt Park
≫	SR
Units	nm 5
	Advanced
	r Emission I Activate □ Park O Set as Reference
	Wavelength at End Inc nm 55 450 1
	Sit
	nm
	Advanced
	Status
	Evil Dictosure Help RTC Bun Cancel
Triggers	Spectral Acquisitor(Emission)

- 8 Click the Experiment File field, and enter a new file name, or select a previously saved file with the Load button.
- 9 Verify that the experimental parameters are correct.

Be certain to check all parameters under all icons in the lefthand column.

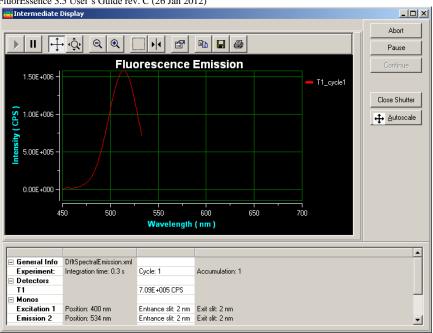
- 10Insert the sample into the sample compartment, and close the cover of the sample compartment.
- 11 Click the Run button

The collected spectrum is displayed on the **Intermediate Display** screen:



Note: If the scan is extremely fast, the **Intermediate Display** may be only incompletely or rapidly displayed before the Origin window appears.



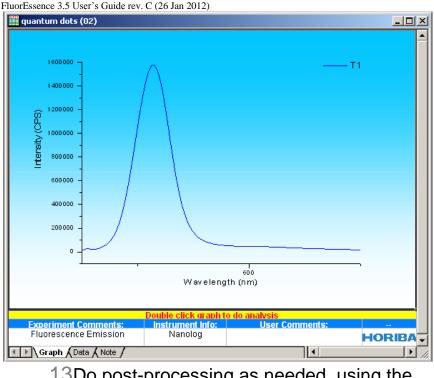


You can watch the incoming data in real time, along with how the positions of accessories vary. The scan may be paused, continued, or aborted. After all data are recorded, the Intermediate Display vanishes. For a new project, the **Project name** window appears:

🚟 Project	name		
Please e	nter a project name		
			Browse
1			
	ОК	Cancel	

12Enter a name for the entire project, or browse for an existing project name with the Browse button, then click the OK button.

All data are moved to Origin[®]'s workbook window:



13Do post-processing as needed, using the Analysis menu in the toolbar:

🚟 FluorEssence - C:\User\Public\Documents\Jobin Yvon\Data\scohen\UNTITLED	
Elle Edit View Collect Analysis Graph Data Gadgets Tools Format Window Help	
	\$\$*
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3: FluorEssence[™] Tips & Tricks

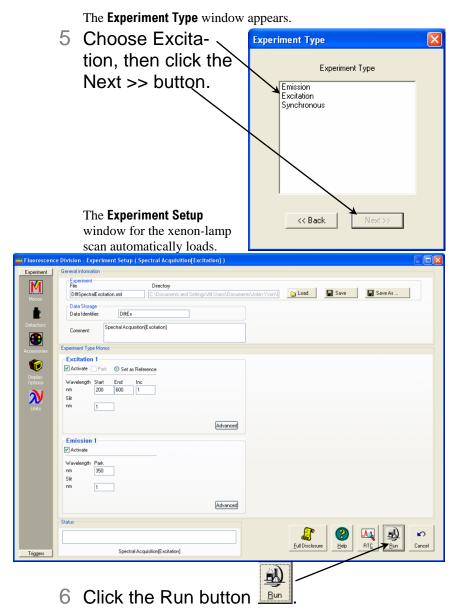
Calibration of your instrument

Excitation calibration

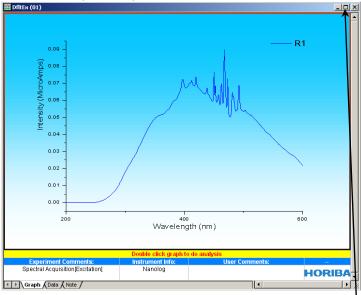
Monochromator parameters for the xenon-lamp scan:							
Monochromator	Initial	nitial Final		Increment	Slits		
(1200	wavelength	wave	length		(bandpass)		
grooves/mm)	/mm)						
Excitation	200 nm	200 nm 600 nn		1 nm	1 nm		
Emission	350 nm				1 nm		
Detector parameters for the xenon-lamp scan:							
Detector (Signal)	Integration	time	Units				
Signal (S1)	100 ms		CPS				
Reference (R1)	100 ms		mA	_			

- 1 Close the sample compartment's lid.
- 2 Start FluorEssence™.
- 3 In the main **FluorEssence** window, choose the Experiment Menu button **№**.

🞏 FluorEssence - C:Wsers\Public\Documents\Jobin Yvon\Data\scohen\U\\FffictU						
Elle Edit Yiew Collect Analysis Graph Data Gadgets Format Window Help						
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. M 🗟 ▷ 🏵 🕰 🗠 🎬 E E 🧱 🖳 🕼 ↓↑ 🔛 ov 20 🖑	1.11	-				
The Fluorescence Main	Experiment N	lenu appears.				
4 Choose the 🛛 😹 Fluorescence Main Experiment Menu						
Spectra but- Main Experiment Menu						
ton.						
	Spectra	Kinetics	3D			
	Anisotropy	Single Point	Phos			
	Lifetime	Lifetime Kinetics	Anisotropy Decay			



The Intermediate Display opens. The xenon-lamp scan runs:



Above is an uncalibrated FluoroMax[®] lamp-scan. The main peak ought to be at 467 nm, but here appears near 480 nm.

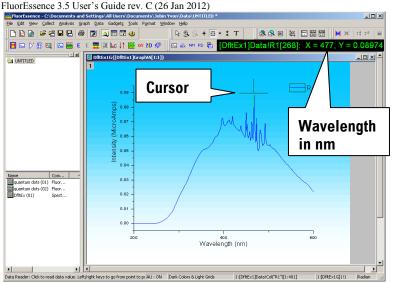
- 7 Calibrate the excitation monochromator, if required.
 - **a** Double-click on the graph to un-embed it from the workbook.
 - b Expand the plot by clicking the Expand button \square

• Click the cursor button to start the cursor function.	
🚟 FluorEssence - C:\Users\Public\Documents\Jobin Yvon\Data\scol\n\UNTITLED	
Elle Edit View Collect Analysis Graph Data Gadgets Iools Format Window Help	
D D @ @ @ C ■ B @ Ø Q ■ M Ø \$ \$ A + B + I A A B ■ ₩	*
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- d Click on the graph near the peak, to place the cursor on the graph.
- Using the left and right arrows on the keyboard, move the cursor to the top of the peak.
- f Read the *x*-value of the plot: this is the wavelength of the peak:



Note: Your lamp scan may appear different, depending on the instrument and its configuration.



This example shows the peak at 477 nm, which is 10 nm too high. **Therefore we must calibrate the monochromator.**

$\mathbf{g}_{\mathbf{z}}$ Click the Previous Experiment button $\mathbf{w}_{\mathbf{z}}$.
🧱 FluorEssence - C:\Users\Public Oocuments\Jobin Yvon\Data\scohen\UNTITLED 📃 🗖 🔀
Elle Edit View Collect Applicas Graph Data Gadgets Tools Format Window Help

The **Experiment Setup** window appears:

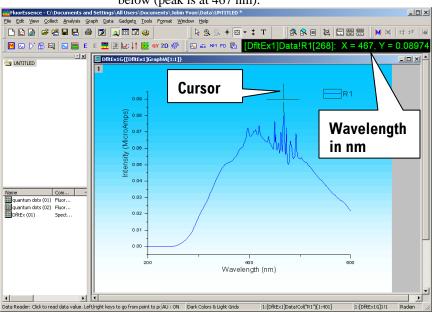
🧮 Fluorescenc	Division - Experiment Setup (Spectral Acquisition[Excitation])	\mathbf{X}
Experiment	General information	
Monos	r - Esperiment File DitSpectraExcitation xml [C:\Documents and Settings\All Uses\Documents\Ucbin Yvon\] Dad Esteve As	
	Data Identifier: DIRE x	
Detectors	Comment: Spectral Acquisiton[Excitation]	
Accessories	Experiment Type Monos	
Display	Excitation 1 Activate Park Set as Reference	
Display Options Units	Wavelength Stat End Inc nm 200 600 1 Stat 1	
	Advanced	
	✓ Emission I	
	Waveley Park mm 350 Sit mm 1	
	Advanced	
	Status	
Triggers	Spectral Acquitition[Excitation]]

h Click the RTC button.

FluorEssence 3.5 User's Guide rev. C (26 Jan 2012) The Real Time Control window opens. Click the Monos icon in the left column. Real Time C All Users\Documents\Johin Yvon\Data\~DfltSpectralExcitation All SCD's Data View в ÎI [⊕ ậ| Q Q • r 🐚 🖬 🎒 A. 100 Channel 1 М 50 0 -30.000 1 40.000 1 50.000 20.000 60.000 70.000 80.000 100.000 10.000 90.000 0.000 L Clear ↔ Autoscale Excitation 1 Emission 2 Position Control Grating light Sour 1200 • 200 Off 1200, Slits Slit width 0.9975 nm Calibrate Excitation 1 Status Shutter Mode Intermediate slit: 0.9975 nm Entrance slit: 0.9975 nm Exit slit: 0.9975 nm • Open **N** C Detailed Auto Normal Clear Transfer Save Cancel Help Closed Critical Continuous Enter the current, observed position of the peak in the Position field (here, 477 nm). k Click the Calibrate Excitation 1 button. The Calibrate window opens: Calibrate Excitation 1 × 477 Current Position: nm (Center Wavelength or Observed Peak Location) 467 Peak Of Interest (Expected Peak Location) ΠK Cancel In the Peak of Interest field, enter the actual or expected position of the peak (it ought to be 467 nm), then click the OK button.

M At the bottom right of the **Real Time Control** window, click the **Cancel** button.

In the Experiment Setup window, click the Run button to confirm the correct peak position. A correct scan is shown below (peak is at 467 nm):



Emission calibration

Monochromator parameters for the water-Raman scan:							
Monochromat	Initial	Final wave-	Increment	Slits			
or (1200	wave-	length		(bandpa			
grooves/mm)	length			ss)			
Excitation	350 nm			5 nm			
Emission	365 nm	450 nm	1 nm	5 nm			

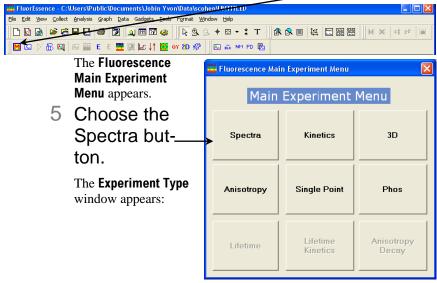
Detector parameters for the water-Raman scan:

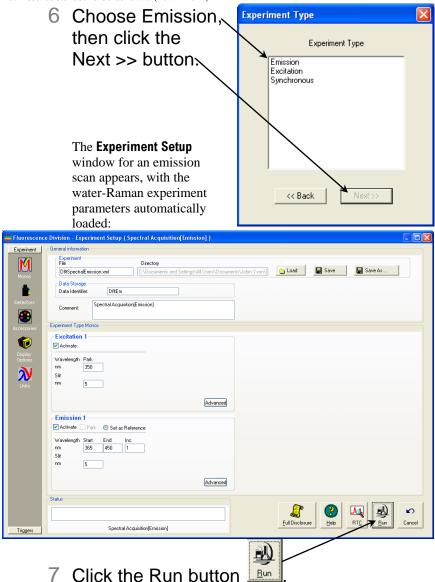
Detector (Signal)	Integration time	Units
Signal (S1)	100 ms	CPS
Reference (R1)	100 ms	mA



Note: You can calibrate a T-side emission monochromator in this way also.

- 1 Insert a cuvette with HPLC-grade, tripledistilled water in the sample compartment.
- 2 Close the sample compartment's lid.
- 3 Start FluorEssence™.
- 4 In the main FluorEssence window, choose the Experiment Menu button 💆





- The Intermediate Display opens. The water-Raman scan runs.
- 8 If the water-Raman scan is not at 397 nm, calibrate the emission monochromator as shown on pages 39–42.

Using corrected signals

Introduction

Subtracting blanks, removing dark noise, and correcting for inhomogeneities in the instrument or detector response give more accurate spectra. Take special precautions to incorporate these functions properly into a FluorEssenceTM experiment. If *S* is defined as the signal, correction follows the equation

 $S_{\text{corrected}} = (S_{\text{measured}} - S_{\text{dark}} - S_{\text{blank}}) \times \text{Correction-factor file}$

Method

Any corrected signal (with a subscript "c") or algebraic use of corrected signals must explicitly include all desired corrected signals in the Formula list

signals in the Formulas list. Corrected signals include:

- Dark offset
- Blank subtraction
- Correction-factor file





Note: All desired corrections must be activated in their respective checkboxes.

🚟 Fluorescence	vision - Experiment Setup (Spectral Acquisition[Emission])
Experiment	eneral information
M	Experiment Pre Directory [DSSpectaeEmission.aml [C:\Documents and Settings\All Users\Documents\Abb_mover\] Load Save As
Monos	Data Storage Data Identifier: DBEm
Detectors	Comment: Spectral Acquisitor(Emission)
Accessories	gnals
-	Select
Display	Integration Time: 0.1 * Vark Offset
Display Options Units	Enable Signal Deetoru Turkt HVIVI Concestion Blark Subtraction
	Signal Algebra Accumulations
	Signal Details Operations Formulas 1 Stacked Scans ✓ R1 R signal + Add>> Signal Units
	S1 Symphony signal
	S1c Symphony signal R1c S1c / Bemove S1c / R1c
	Formula Units << <u>Clear</u>
	alus
Triggers	Specital Acquisitor(Emission)

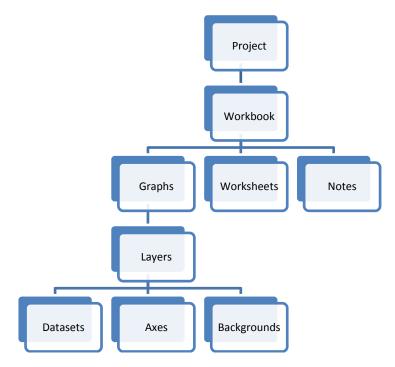
The corrected signal, S1c, and corrected reference, R1c, along with their ratio, S1c/R1c, all must be included in the Formulas list in the Signal Algebra area. If unchecked, $S_{dark} = 0$, $S_{blank} = 0$, and Correction-factor file = 1

Projects and files

What is a project?

A project is a collection of workbooks of data, which hold:

- Graphs (visual diagrams of the data)
- Worksheets (tables of data)
- Notes (comments about the data)

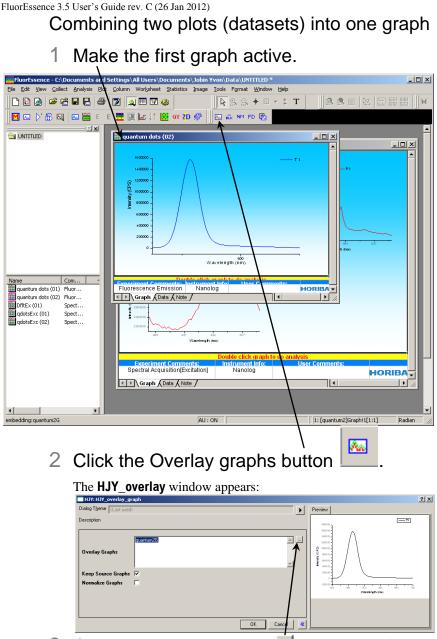


Graphs themselves may contain multiple kinds of information, including separate layers describing the data, the axes, the background colors, etc.

Concerning worksheets, a dataset must contain at least two columns, corresponding to x-y data pairs. Multiple y columns may correspond to a single x column.



Note: For greater detail about projects, graphs, layers, and how to merge, combine, and separate them, see the Origin[®] on-line help files.



- 3 Click the Browse button do browse for the files to combine.
- 4 Activate the listview checkbox.
- 5 Select the desired graphs to combine.

- 6 Click the >> button to add the desired graphs to the combining list.
- 7 Click the OK button.
- 8 A window asks you to choose which signal.

For example, in an excitation scan, ratio the signal (S or T) to the reference (R).

9 Click the OK button.

 qdotsEx2G
 ? ×

 T1
 □

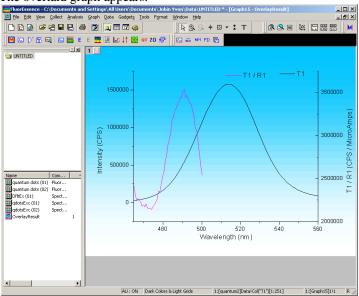
 R1
 □

 T1 / R1
 ✓

 OK
 Cancel

The window closes, and the Preview updates with both graphs together.

10Click the OK button.

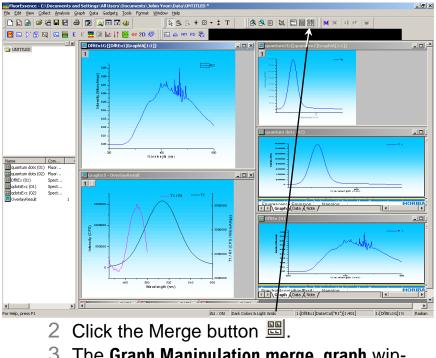


The overlaid graph appears.

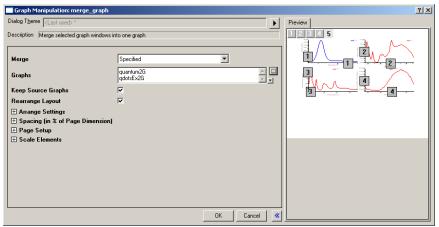
Merging two or more graph windows

This puts all the open layers on one single page.

1 Close all graph windows you don't want to merge.



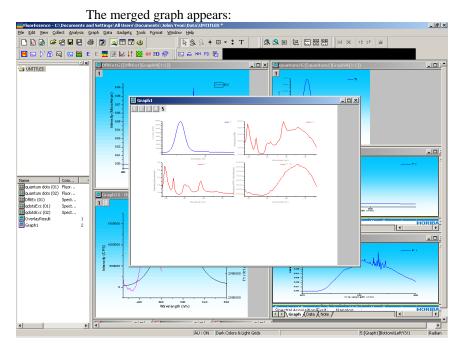
3 The Graph Manipulation merge_graph window appears:



- 4 Click the Browse button is to browse for the files to merge.
- 5 Activate the listview checkbox.
- 6 Select the desired graphs to merge.
- 7 Click the >> button to add the desired graphs to the combining list.
- 8 Click the OK button.

The window closes, and the Preview updates with both graphs together.

9 Click the OK button.



Splitting two graphs by extraction

This extracts each plot to a separate layer in the graph.

- 1 Click on the desired plot to activate it.
- 2 In the toolbar, choose the Extract to Layers button □.

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M 🖾 D' 節 🕰 📧 🎬 E E 🗮 🦉 🔐 🕼 ov 20 🖑 📗 🖬 👞 🚧 FD 🖏
The Graph Manipulation layextract window appears:
Graph Manipulation: layextract
Dialog Theme
Description Extract specified layers to separate graph windows
Extracted Layers
Keep Source Graph 🔽
Full Page for Extracted
OK Cancel

3 Click the OK button.

The new graphs appear.



Note: Other buttons available using the Customize Toolbar command are the button for splitting each layer into a separate graph window, and the button for merging all open graph windows into one graph. See the Origin[®] on-line help for more information.

Saving and recalling a file

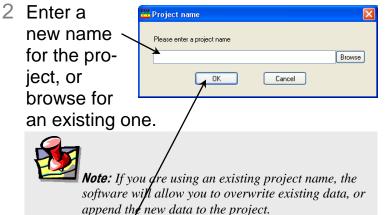
To save a project, when in a new, untitled project



Note: To determine if you are in an untitled, new experiment, examine the path shown at the top of the main FluorEssence window. It should show the word "UNTITLED" at the end of the path.

1 Run an experiment.

When the experiment is complete, the **Intermediate Display** disappears. The **Project Name** window appears.



3 Click the OK button.

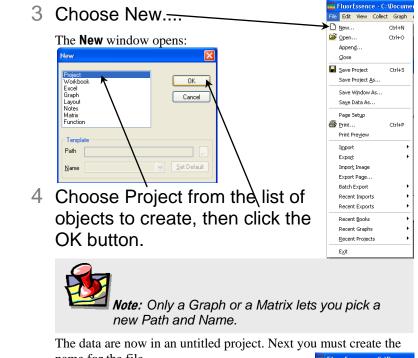
The path of the project appears at the top of the main **FluorEssence** window. The data are now saved.

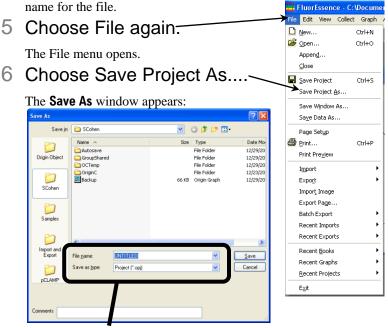
To save data into a new project when another project is already open

- 1 Run the experiment.
- 2 Choose File.

FluorEssence - C:\Users\Public\Documents\Jobin Yvon\Data\scohen\UNTITLED	
Eile Edit View Collect Analysis Graph Data Gadgets Tools Format Window Help	
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The File menu opens:



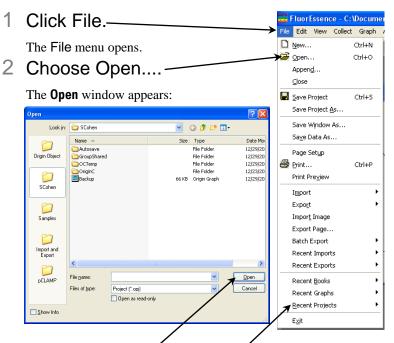


7 In the File name field, enter a name. In the Save as type field, choose Project (*.opj) from the list.

8 Click the Save button.

Now the project has a new name.

To recall and open an existing project



- 3 Browse for the desired project, or examine the Recent Projects list.
- 4 Click the Open button.

The project opens.

4: Shutting Down FluorEssence™

- 1 Save experiment files (and data files, if created).
- 2 In the Experiment Setup window, click the



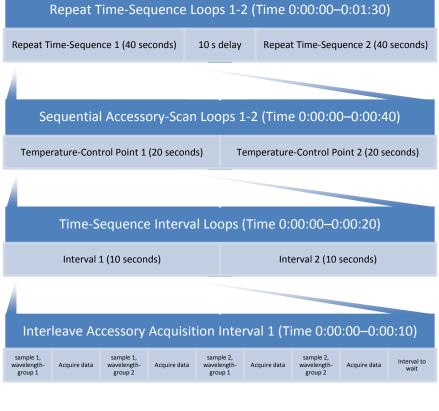
5: Multigroup Software

About Multigroup

Multigroup runs sequential and repeated fluorescence experiments. Delays, temperature ramps, and multiple samples and wavelengthgroups are all included within Multigroup. You can sequentially excite a sample with different wavelengths, then plot the emission data on one view. This method is useful for energy-transfer studies, and dual-wavelength experiments with fluorescent probes to examine ion-transport.

An automated 2- or 4-position sample-changer is usually used with Multigroup.

Below is a schematic of how the levels of multigroup looping and repeat system can be set up, with two samples at two wavelengthgroups, plus a temperature-control accessory.



Requirements

To successfully install Multigroup, your host computer needs the following:

Software

- Windows[®] 2000, Windows[®] XP Pro, Windows[®] 7, or Windows[®] Vista
- Microsoft[®] .NET Framework 3.5.



Note: If the host computer does not have Microsoft[®] .NET Framework 3.5 installed, then the Multigroup Installer attempts to access the internet to download .NET Framework 3.5. If there is no internet connection to the host computer, contact HORIBA Scientific for advice.

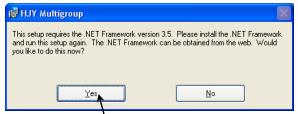
• Same version of FluorEssence[™] (but 2.5.2 or higher) as Multigroup

Hardware

- Supports Windows[®] 2000, Windows[®] XP Pro, Windows[®] 7, or Windows[®] Vista
- 1GB RAM
- 1 GB hard-disk space
- One DVD-ROM drive
- One available USB port
- Video resolution of at least 1024×768
- Usually an automated 2- or 4-position sample-changer

1 From the Multigroup CD-ROM, run the installer.

If your host computer does not have Microsoft[®].NET Framework 3.5, the **HJY Multigroup** window appears.



- 2 Click the Yes' button to download the software.
- 3 Follow the instructions on the Microsoft[®] website for installing .NET Framework.

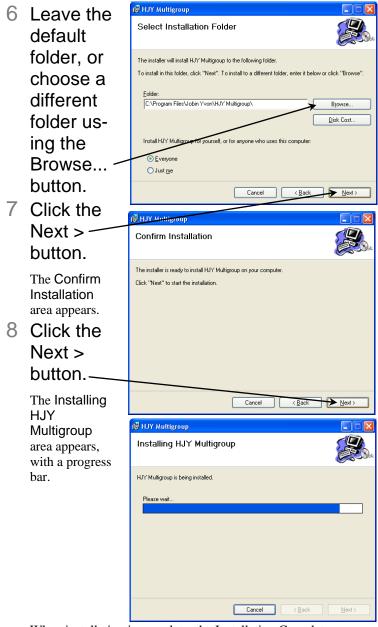
The program is large; the download and installation may take some time.

4 Continue with the installer.

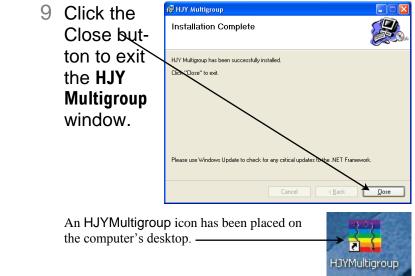
5 Click the Next > button on the HJY Multigroup window.

> The Select Installation Folder area appears:





When installation is complete, the Installation Complete area appears:

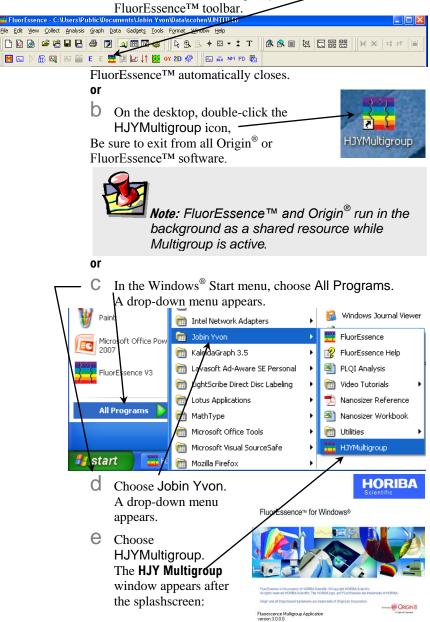


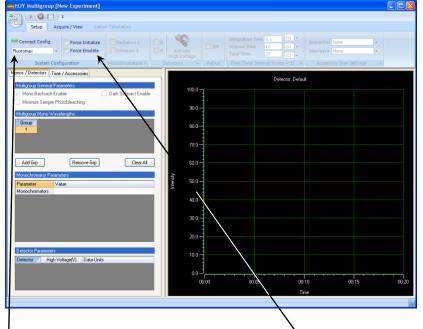
Running Multigroup

1 Start the software in one of three ways.

a If you are working in FluorEssence[™], save the project

file, then click the Multigroup button in the





2 Set up the experiment.

- a In the System Configuration tab, choose the instrument configuration from the drop-down ment.
- b Click the Connect Config button to connect to the instrument.

Multigroup attempts to gain access to the desired instrument configuration in FluorEssenceTM. If unsuccessful, a **Devices Not Found** window appears, asking you to emulate. Choose the Yes button if you want to emulate. If you want to force Multigroup to emulate an instrument, activate the Force Emulate checkbox.

The instrument configuration automatically activates experimental parameters, which you can change manually.

C In the Monochromators tab, activate the excitation and emission monochromators' checkboxes, if necessary.

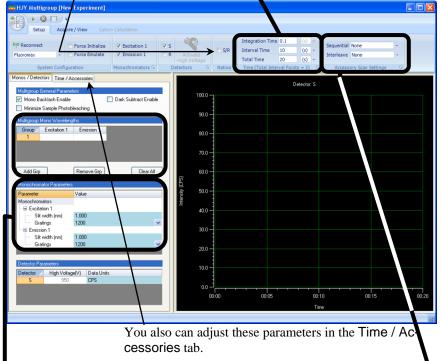
	Cinnob		mon	ators encerto	ones, ii necess	ury.
HJY Multigroup [New Experiment]						
Setup Acquire / View Catio	n Calcution					
(0) Reconnect Fluoromax - Force Initialize	Excitation 1 Emission 1	S R Activate High Voltage	S/R	Integration Time 0.1 (s) Interval Time 10 (s) Total Time 20 (s)	Sequential None Interleave None	- -
System Configuration	Monochromators (Detectors 5	Ratios	Time (Total Interval Points = 3)	Accessory Scan Settings	5

C In the Detectors tab, activate the desired detector checkboxes, if necessary.

To apply voltage to the detectors, click the Activate High Voltage button.

In the Ratios tab, to record the corrected output using the reference detector, activate the S/R button.

In the Time tab, enter an Integration Time, and choose from the drop-down menu the units. Enter an Interval Time and choose from the drop-down menu the units. Enter a Total Time and choose from the drop-down menu the units.



- G In the Accessory Scan Settings tab, choose the accessory for Sequential or Interleaving scans, using the drop-down menus.
- h Click the Monos / Detectors tab to see the monochromator and detector parameters.
- Enter an excitation wavelength and emission wavelength in row 1 of the Multigroup Mono Wavelengths table.
 - Add another row using the Add Grp button.
 - Change the Monochromator Parameters if necessary, by entering a new value next to each parameter, or choosing the parameter from a drop-down menu.

Change the High Voltage or Data Units of each detector by entering a new value if necessary.

ņ	Click the Time / Accessories tab.	
HJY Multigroup [New Experiment]		
Setup Acquire / View Cation Cal		
(v) Reconnect Fore Initialize Fluoromax - Force Emulate System Configuration Mor	V Boztation 1 V Boztation 1 V Emission 1 V Emission 1 Detectors © Ratios Ratios Ratios Ratios V Emission 1 Detectors © Ratios V Emission 1 Detectors © Ratios V Emission 1 Detectors © Ratios V Emission 1 Detectors © Ratios V Emission 1 V	
Monos / Detectors Time / Accessories	Detector: S	
Multi-Time Sequence Parameters Interval Time: 10 Se	100.0 -	
	econds V 90.0	
	Clear List 80.0	
First Acq. Last Acq. Interval Time	Interval Point:	
1 00:00:00.0 00:00:20.0 00:10.0	3 70.0 -	
	60.0	
	<u>د ا</u> <u>ج</u> 50.0 –	
	Line and	
	40.0	
	30.0	
	20.0	
	10.0	
	otal Time: 00:20.0	
Delay between repetitions: Se Number of repetitions:	0.0	00:20
	Time	
		, iii
n	Enter the Interval Time and Sequence Duration, a	and
	choose their units from the drop-down menus.	
0	To add another sequence row, click the Add to List	
0	button.	
3 Run t	the experiment.	
a	Click the Acquire/View tab.	
HJY Multigroup [New Experiment]		
Setup Acquire / View Cation Cal		
Params Start Abort 🔛 📿 🚭 Cl	Copy to Save Clipboard to File *	
Experiment 5	Data Export	
` D	Click the Start button.	
С	Use the various buttons to zoom in on and track the	data
	as they are recorded.	

4 When finished, save the data via the Acquire/View tab:

FluorEssence	3.5	User	s	Guide rev	. C	C (26 J	an 2012))
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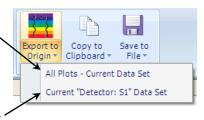
🚟 HJY Multig	roup [New Experime	int]				
	u 🛞 💷					
Setup	Acquire / View					
	11 🛞 🖤	🔁 🔽 💐 🐺	1			
Params Start	Pause Abort Event	🛃 🔾 🤤 🤤	Export to Origin *	Copy to Clipboard *	Save to File *	
	Experiment	G.		Data Export		

a To export the data to Origin[®] and FluorEssence[™], choose Export to Origin.

A drop-down menu appears:

Select All Plots – Current Data Set, to save all the plots on the graph.

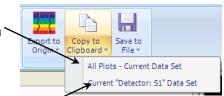
b Select Current "Detector: S1" Data Set to save only the currently selected plot.



C To copy the data to another program, choose Copy to Clipboard.

A drop-down menu appears:

d Select All Plots – Current Data Set, to save all the plots on the graph.



- e Select Current "Detector: S" Data Set to save only the currently selected plot.
- f To save the data in a file, choose Save to File, and select the appropriate data-set.
- G Select All Plots Current Data Set, to save all the plots on the graph.



Working with experiments and data

You can save existing experimental parameters (an "experiment") as well as data ("experimental results) to recall later for future use and reference. An "experiment" file contains only the experimental parameters, but no results. A "results" file contains both experimental parameters *and* data recorded.

To save an experiment

1 Set up experimental parameters.

2, Click the Multigroup button.

A drop-down menu appears. group [New Experiment] Recent Experiments File Integration Time 0.1 Decent Decult Files Seque Interval Time 10 (5) -Interleave None Total Time (s) • en Experimen Save Experime Detector S 100.0 Save D 90.0 Open Result 80.0 Save Results 70.0 Save Results As 60.0 × Exit Appl 50.0 Monochromators Excitation 40 N 1.000 1200 Slit width (nm) Gratings 30.0 Emission 1 Slit width (r 1.000 Gratings 1200 20.0 ector / High Voltage(V) Data Units CPS 00:05 00:15 00:20 00:10 00-00 ve Multigroup Experiment File

Save in: 🍋 Data

Recent

B

Desktop

My Documents

15

My Compute

Overlay

File nam

e as hine

Supported files (".hiyMgExp)

3 Choose Save Experiment.

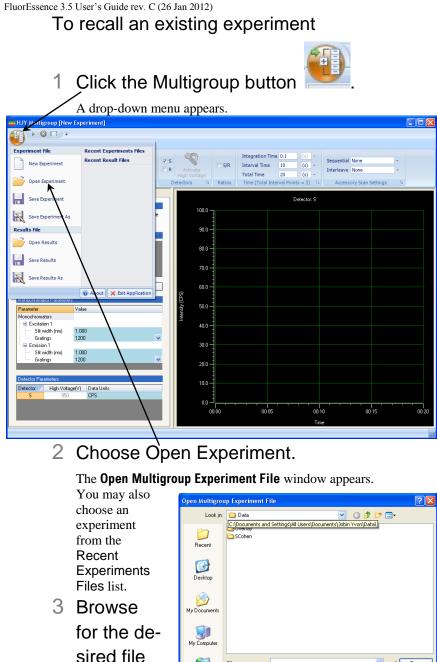
The **Save Multigroup Experiment Files** window appears.

- 4 Enter a file name and browse for the desired folder.
- 5 Click the Save button.~

Save

Cancel

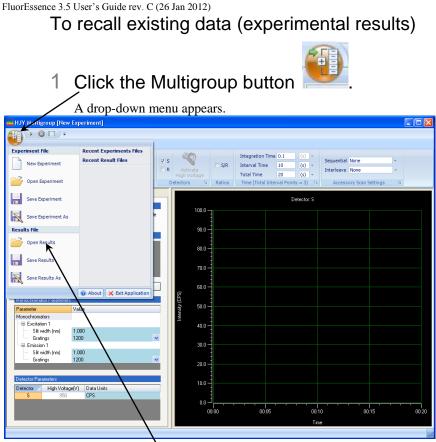
🖌 🔇 🎓 📂 🔜-



My Computer

the Open button.

and click



2 Choose Open Results.

The Open Multigroup Result File window appears.

You may also choose data from the Recent Result Files list.

3 Browse for the desired data, and click the Open button.—

Open Multigrou	p Result File			? 🛛
Look jn:	🚞 Data	~	G 🦸 📂 🖽	•
D Recent	Coverlay			
Desktop				
My Documents				
My Computer				
	File name:		*	▶ <u>O</u> pen
My Network	Files of type: Suppo	ted files (".hiyMgRes)	~	Cancel

Interleaved and sequential data

The choice of interleaved or sequential data is possible in Multigroup. Imagine an experiment over time examining a pair of wavelengths, λ_1 and λ_2 .

Sequential data-acquisition

Sequential data-acquisition compares the first two data-points, then the next two, then the next two, and so on. Direct comparison between one λ_1 and the next λ_1 is only possible over a time interval Δt :

h 2	Wavelength 2	velength 1	Time Wa
[λ_1	$t_1 \geq \Lambda t$
Sequential method	$\rightarrow \lambda_2$		$t_2 \int \Delta t$
	L	λ_1	t_3] Λt
	$\rightarrow \lambda_2$		$t_4 \int \Delta t$

Interleaved data-acquisition

Interleaved data-acquisition compares the first two data-points, then the second with the third, then the third with the fourth, and so on. Each wavelength measurement is used twice, once with the one before it, and again with the one after it. Comparison between one λ_1 and the next λ_1 is possible over a time interval $\frac{1}{2}\Delta t$, half that of sequential data-acquisition (see table below). This technique is better for weak fluorescence or quicker analyses.

Time	Wa	velength 1	Waveleng	th 2
t_1 }	$\frac{1}{2}\Lambda t$	$\lambda_1 \longleftarrow$		
t_2	$\frac{1}{2}\Delta t$	1	λ_2	Interleaved method
$\begin{bmatrix} t_3\\t_4 \end{bmatrix}$	$\frac{1}{2}\Delta t$	λ_1	$\longrightarrow \lambda_2$	

Choose the accessory, and whether its method of data-acquisition is Sequential or Interleave, in the Accessory Scan Settings

t	ab.						
🚟 HJY Multigroup [New Ex	(periment]						
Experiment File	Recent Experiments Files	.5.00					
New Experiment	Recent Result Files	S R Activate	🗖 S/R		10 (s)	Sequential None Interleave None	*
Open Experiment		High Voltage Detectors	Ratios	Total Time 2 Time (Total Interv	20 (s) al Points = 3)	Accessory Scan Settings	9

6: Un-Installation

FluorEssence™

- 1 Close FluorEssence™.
- 2 Click the Start button to open the Start menu.



- 3 There are two ways to continue:
 - a Choose Set Program Access and Defaults, or...
 - b Choose Control Panel. The Control Panel opens:



Click Add or Remove Programs.

4 In both cases, continue here.

The Add or Remove Programs window opens.

🐻 Add or Re	emove Programs	
C <u>h</u> ange or Remove Programs	A program configuration specifies default programs for certain activities, such Web browsing or sending e-mail, and which programs are accessible from the 5 menu, desktop, and other locations. Choose a configuration:	Start
	Computer Manufacturer	8
Add <u>N</u> ew Programs	Microsoft Windows	8
nograms	Non-Microsoft	۲
5	 Custom 	۲
Add/Remove <u>W</u> indows Components		
•		
5et Pr <u>o</u> gram Access and Defaults	OK Cancel Help	2

5 Click the Change or Remove Programs icon.

A list of currently installed programs on the host computer appears:

User's Guide R	ev. C (26 Jan 2012)			
🐻 Add or Re	move Programs			
	Currently installed programs: Show updates	<u>S</u> ort by:	Name 💌	
C <u>h</u> ange or Remove Programs	Easy CD Creator 5 Basic	Size	24.37MB 📩	
	授 EPSON Printer Software 侵 eWebEditPro 4 Client	_	4 00110	
Add New	間 HighMAT Extension to Microsoft Windows XP CD	Size Size	1.99MB 2.13MB	
Programs	Writing Wizard	5126	2.13MB	
5	HJY Application Software 3.5	Size	516.00MB	
Add/Remove Windows	📫 hp instant support	Size	8.08MB	
Components	HP Photo and Imaging 2.2 - Scanjet 3970 Series	Size	112.00MB	
	HP Scanjet 4600	Size	3.37MB	
Set Pr <u>o</u> gram	Intel(R) PRO Network Connections Drivers	Size	2.89MB	
Access and Defaults	Intel(R) PROSet	Cine		
		Size	145.00MB 🖄	

6 Click HJY Application Software 3.5, which becomes active:

🐻 Add or Rei	move Programs			
5	Currently installed programs: 📃 Show up <u>d</u> ates	<u>S</u> ort by:	Name	*
C <u>h</u> ange or Remove	🕞 eWebEditPro 4 Client	Size	1.99MB	^
Programs	HighMAT Extension to Microsoft Windows XP CD Writing Wizard	Size	2.13MB	
	HJY Application Software 3.5	Size	516.00MB	
Add New	Click here for support information.	Used	<u>frequently</u>	
Programs	La	ast Used On	11/1/2010	
5	To change this program or remove it from your computer, click Change or Remove.	Change	Remove	
Add/Remove Windows	📸 HP Image Zone 4.0	/		
Components	💫 hp instant support	bize	8.08MB	
~	🔛 HP Photo and Imaging 2.2 - Scanjet 3970 Series	Size	112.00MB	
	🐻 HP Scanjet 4600	Size	3.37MB	
Set Pr <u>o</u> gram Access and	Intel(R) PRO Network Connections Drivers	Size	2.89MB	
Defaults	🞆 Intel(R) PROSet			~

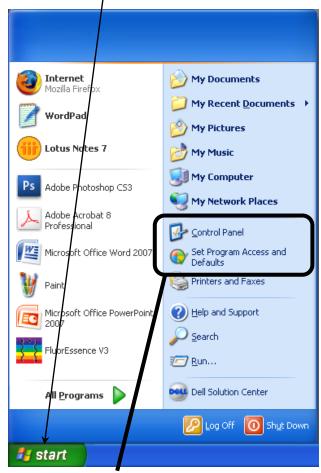
- 7 Click the Remove button.
- 8 Follow the instructions to remove FluorEssence[™].
- 9 You may need to reboot the host computer.

FluorEssence[™] is removed from the host computer.

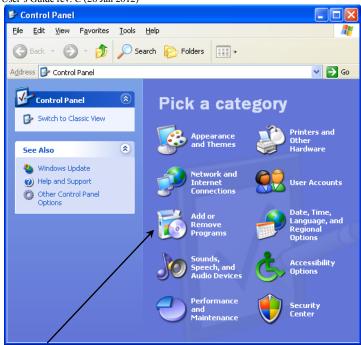
10Remove the USB key from the USB port.

Multigroup

- 1 Close Multigroup.
- 2 Click the Start button to open the Start menu.



- 3 There are two ways to continue:
 - a Choose Set Program Access and Defaults, or...
 - b Choose Control Panel. The Control Panel opens:



Click Add or Remove Programs.

4 In both cases, continue here.

The Add or Remove Programs window opens.

🐻 Add or Re	mov	e Programs	
C <u>h</u> ange or Remove Programs		A program configuration specifies default programs for certain activitie Web browsing or sending e-mail, and which programs are accessible fr menu, desktop, and other locations. Choose a configuration:	
Î 🗛		O Computer Manufacturer	۲
Add <u>N</u> ew		O Microsoft Windows	۲
Programs		Non-Microsoft	۲
5		• Custom	۲
Add/Remove <u>W</u> indows Components			
<₽			
5et Pr <u>o</u> gram Access and Defaults	~	OK Cancel	Help

5 Click the Change or Remove Programs icon.

A list of currently installed programs on the host computer appears:

	move Programs			
Change or Remove Programs	Currently installed programs: Show updates	Sort by: Size Size	Name 3.62MB 1.14MB	<
Add <u>N</u> ew Programs	a GIMP 2.4.6 弱 Good Keywords v2.01.050107 引 HighMAT Extension to Microsoft Windows XP CD Writing Wizard	Size Size Size	92.52MB 1.71MB 2.13MB	Ш
Add/Remove <u>W</u> indows Components	HJY Application Software 3.5 HJY Multigroup HJY Multigroup HP Image Zone 4.0 hp instant support	Size Size Size	578.00MB 8.19MB 8.08MB	
Set Pr <u>o</u> gram Access and Defaults	HP Photo and Imaging 2.2 - Scanjet 3970 Series ② HP Scanjet 4600 @ HP Software Update BBR Intel(P.) IPC. Network Connections: Drivers	Size Size Size	112.00MB 3.37MB 3.79MB	<

6 Click HJY Multigroup, which becomes active:

nove Programs			J×
Currently installed programs: 🔲 Show up <u>d</u> ates	<u>S</u> ort by:	Name	*
Good Keywords v2.01.050107	Size	1.71MB	~
HighMAT Extension to Microsoft Windows XP CD Writing Wizard	Size	2.13MB	
HJY Application Software 3.5	Size	578.00MB	
🚟 HJY Multigroup	Size	<u>8.19MB</u>	Ξ
Click here for support information.	Used (occasionally	
	Last Used On	1/27/2009	
To change this program or remove it from your computer, click Change or Remove.	Change	Remove	
📸 HP Image Zone 4.0	/		
🚫 hp instant support	y lze	8.08MB	
🔠 HP Photo and Imaging 2.2 - Scanjet 3970 Series	Size	112.00MB	
📸 HP Scanjet 4600	Size	3.37MB	
😰 HP Software Update	Size	3.79MB	~
	Good Keywords v2.01.050107 HighMAT Extension to Microsoft Windows XP CD Writing Wizard HJY Application Software 3.5 HJY Multigroup Click here for support information. To change this program or remove it from your computer, click Change or Remove. HP Image Zone 4.0 hp instant support HP Photo and Imaging 2.2 - Scanjet 3970 Series HP Scanjet 4600	Currently installed programs: Show updates Sort by: Ig Good Keywords v2.01.050107 Size Ig HighMAT Extension to Microsoft Windows XP CD Size Writing Wizard Size Size HJY Aultigroup Size Size Click here for support information. Used on Last Used On To change this program or remove it from your computer, click Change or Remove. Change Ig HP Image Zone 4.0 Size Im HP Photo and Imaging 2.2 - Scanjet 3970 Series Size Im HP Scanjet 4600 Size	Currently installed programs: Show updates Sort by: Name Sood Keywords v2.01.050107 Size 1.71MB HighMAT Extension to Microsoft Windows XP CD Size 2.13MB Writing Wizard Size 578.00MB HJY Application Software 3.5 Size 578.00MB Click here for support information. Used occasionally Last Used On 1/27/2009 To change this program or remove it from your Change Remove Change HP Image Zone 4.0 Size Ph Photo and Imaging 2.2 - Scanjet 3970 Series Size Size 112.00MB Size 3.37MB

- 7 Click the Remove button.
- 8 Follow the instructions to remove Multigroup.
- 9 You may need to reboot the host computer.

Multigroup is removed from the host computer.

10Remove the USB key from the USB port.

7: FluorEssence™ Troubleshooting & Technical Support

Troubleshooting

If the special buttons are gray,

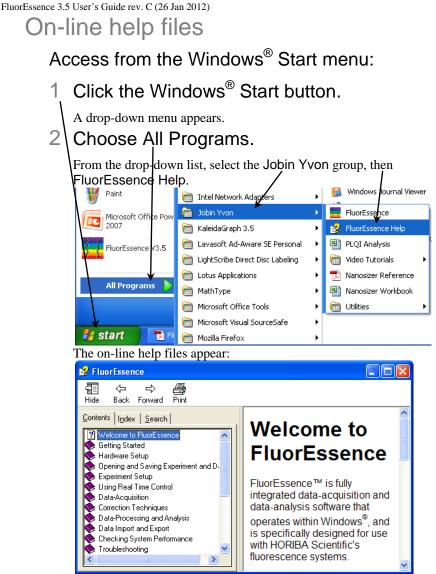


1 Choose Collect.

A drop-down ment appears. FluorEssence - C:\Users\Public\Document Edit Collect File View Analysis Graph Data G ን 🔛 🍙 Experiment Setup Run Experiment Μ 🖂 🖂 Real Time Control Run Batch Experiments UNTITLED Advanced Setup System New Experiment System UI Reset

2 Choose System UI Reset.

The twelve buttons should become active again.



Resize the window to your liking.

Access from the **Experiment Setup** or **Real Time Control** window:

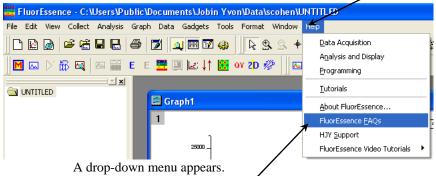
1 Click the Help button is or the F1 key.

Context-sensitive on-line help files appear. Resize the window to your liking.

Frequently-asked questions about FluorEssence™

Many frequently-asked questions (FAQs) about FluorEssence[™] may be found on the HORIBA Scientific website.

In the FluorEssence toolbar, choose Help.



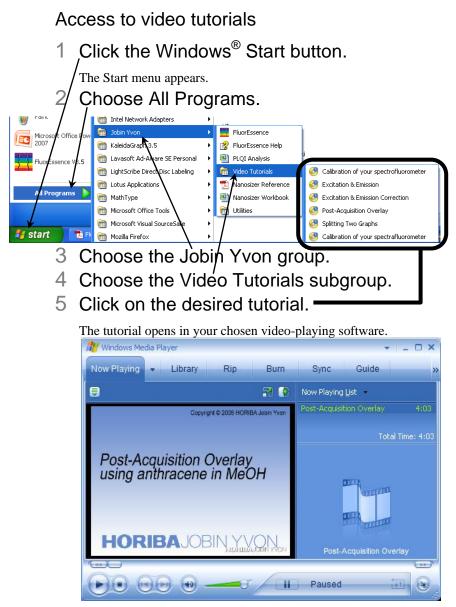
2 Choose FluorEssence FAQs.

If your computer is connected to the internet, your web browser automatically opens in the FluorEssence[™] software webpage:



Video tutorials

For some common procedures, video tutorials are available to guide you. The videos are .avi files, which can be played by software such as RealPlayer[®], Windows Media Player, etc.

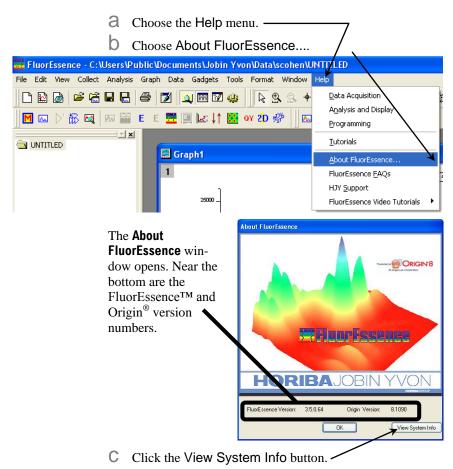


If you have a technical problem,

1 Please consult the FluorEssence[™] help files and this User's Guide, as well as all other manuals supplied with the system.

If you are unable to solve the problem,

- 2 Note the problem and any accompanying error messages.
- 3 Determine FluorEssence™'s version number.



The **Installed Components** window appears, displaying all the software required for FluorEssenceTM.

monicationsCon all 35.0.4 Friday, October 15, 2010, 00:0.356 injuar, all 35.0.64 Friday, October 15, 2010, 00:2518 añverver, frajne, all 35.0.64 Friday, October 15, 2010, 00:27:00 añverver, frajne, all 35.0.64 Friday, October 15, 2010, 00:27:00 añverver, frajne, all 35.0.64 Friday, October 15, 2010, 00:27:00 añverver, frajne, all 35.0.64 Friday, October 15, 2010, 00:42:40 añverver, frajne, all 35.0.64 Friday, October 15, 2010, 00:42:40 CD, all 35.0.64 Friday, October 15, 2010, 00:42:40 CD, all 35.0.64 Friday, October 15, 2010, 00:42:44 Christower, Component, all 35.0.64 Friday, October 15, 2010, 00:50:44 everacioning all 35.0.64 Friday, October 15, 2010, 00:50:44 Sinterwitzer, all 35.0.64 Friday, October 15, 2010, 00:82:01 SinterenalDistafienciew 86:0.00	d Components				
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- 4 Write down the software's version numbers, along with the purchase dates, model numbers, system configuration, and serial numbers of the instrument and its accessories.
- 5 Please contact a HORIBA Scientific Service Department listed below.

Be prepared to describe the malfunction and the attempts, if any, to correct it. Note any error messages observed, and have any relevant spectra (sample, polarization ratio, xenon-lamp scan, water Raman scan, etc.) and system information ready for us to assist you.

Contact information

Via the internet:

World-Wide Web	www.horiba.com/scientific
E-mail	service.jyus@horiba.com

In North America:

Telephone	1-877-546-7422
Fax	1-732-494-8796

In France:

Telephone	+33 (0) 1 64 54 13 00
Fax	+33 (0) 1 69 09 93 19

Worldwide:

China	+86 (0) 10 6849 2216
Germany	+49 (0) 89 462317-15
Italy	+39 (0) 2 57603050
Japan	+81 (0) 3 58230141
UK	+44 (0) 20 8204 8142

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Arial font	command, menu choice, or data- entry field
Arial Condensed Bold font	window
Courier New font	file name or expression

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