
FLUODXConnect User Manual

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Introduction

The FLUODXConnect Software is used to communicate with the FLUODX invisible ink colorimeter. The software is available for the Windows Operating System, Windows 7, Windows 8.1, Windows 10, 32-bit or 64-bit.

The FLUODXConnect software can communicate via USB to the FLUODX Device for data download and device configuration and IRDA for data upload. In order to use both communication technologies, two USB2.0 ports are needed, one for the USB connection, one to connect the IRDA Interface box.

Installation

Download the most recent Software version from the Download Section of www.peret.it. Run the installer and follow the instructions. Once you get prompted for a password, insert the installation password. If you do not have the password on hand, contact your dealer or contact info@peret.it or call +39.0472.250965. The installer will create an Icon on your desktop. Click the Icon to run the software.



FLUO DX

Two drivers will be installed which are located in the DRIVER sub-directory of the installation folder. If the one of the driver installation fails, follow the instructions of the USBDriverInstallation.pdf

document. The document is available for download using the following link:

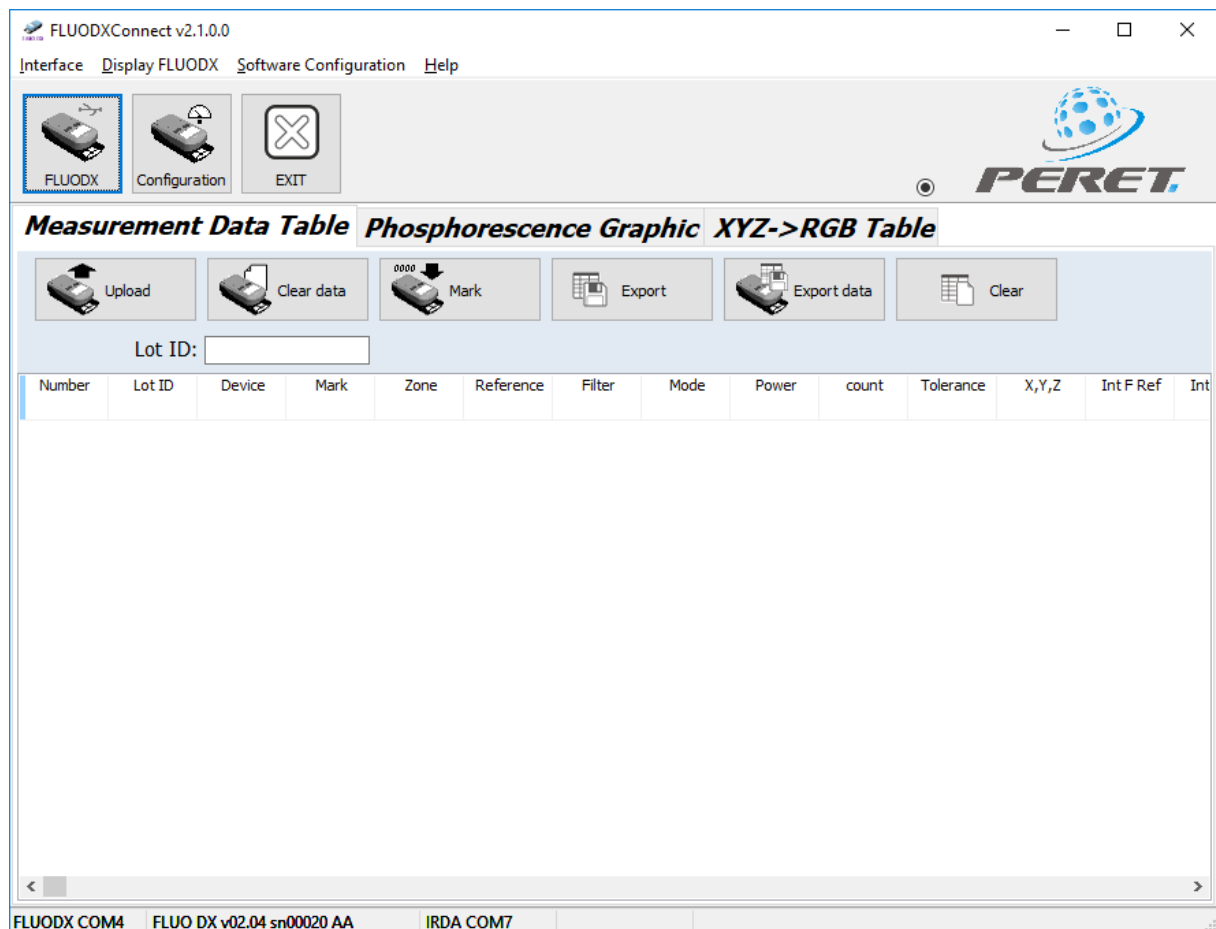
<http://www.peret.it/PDF/USBDriverInstallation.pdf>

An example of an error message that might arise is shown here: ***“you have to run the 64-bit version of dpinst.exe on this machine, contact the vendor”***

Both drivers are assigning COM ports to the FLUODX and the IRDA Interface box. The COM port assigned needs to be within the range of 1-7. If another COM port is assigned, modify the assignment using the Windows Control Panel.

Run FLUODXConnect

Click the FLUODX Icon on your desktop to run the FLUODXConnect Software.



Select the Interface to connect to the FLUODX device

Connect to FLUODX USB Port

When starting the Software for the first time you need to select the COM ports your device is connected with. Connect the FLUODX using the USB Cable to the USB port of your computer. The driver normally is going to be installed automatically.

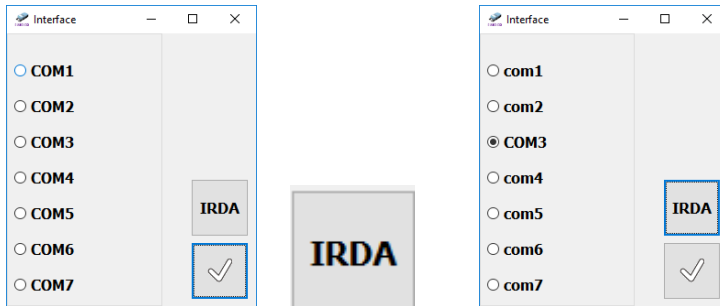
Select Interface/FLUODX USB from the main menu. You can select the COM port directly if known. If you do not know the COM port, click the FLUODX Icon highlighted in the figure above to automatically search for the proper COM port.



Click the Check Icon to connect and to close the Window. The COM port will be automatically selected the next time the software is started.

Connect to FLUODX IRDA Box

Select the Interface/FLUODX IRDA from the main menu. You can select the COM port directly if known. If you do not know the COM port click the IRDA Icon to automatically search for the proper COM port.



Click the Check Icon to connect and to close the Window. The COM port will be automatically selected the next time the software is started.

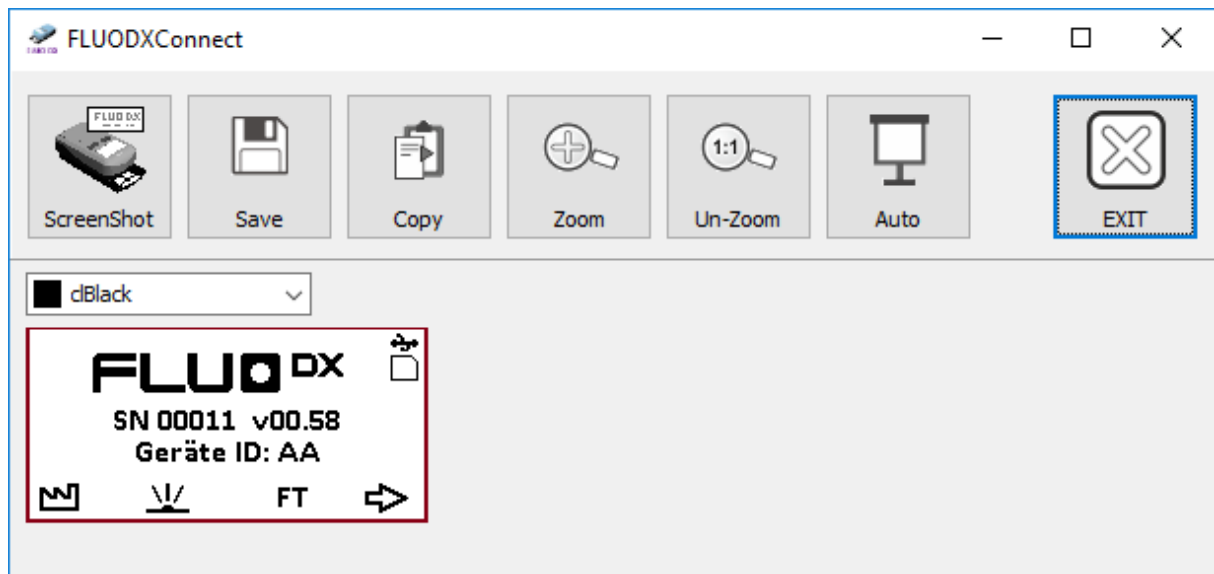
Connect to the FLUODX for bi-directional communication

Finally click the Connect Button on the Main Screen to connect to the FLUODX via USB Port.



Create a Screenshot from the FLUODX Display

Select the Item 'Display FLUODX' from the main menu. The Software can be used to create reports based on screen shots, or for training purposes using this function.



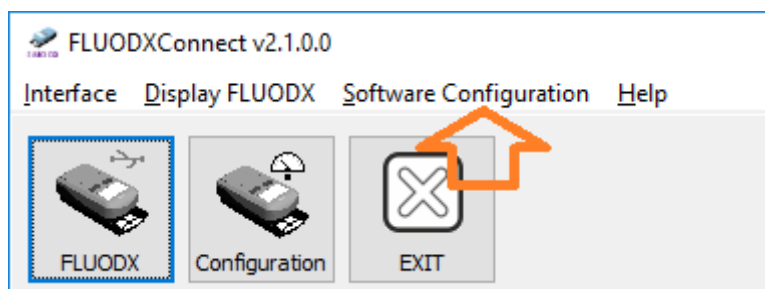
Click the ScreenShot Icon to upload the current screen of the device. The screen can be saved by clicking the Save Icon or copied to the Windows Clipboard. Once it is copied to the Clipboard it can be pasted in any other application that supports the paste function for a Windows bitmap format. You can select the color of the frame as needed from the color selector box on top of the screen shot image.

Click the Zoom Icon to zoom the Screenshot image. Click the Un-Zoom Icon to display the screenshot in its original size.

For training and presentation purposes the AUTO function can be used. Click the Auto icon to start an automatic upload on a regular frequency such as the audience can follow your operations with the device directly without the need to explicitly upload every screen separately.

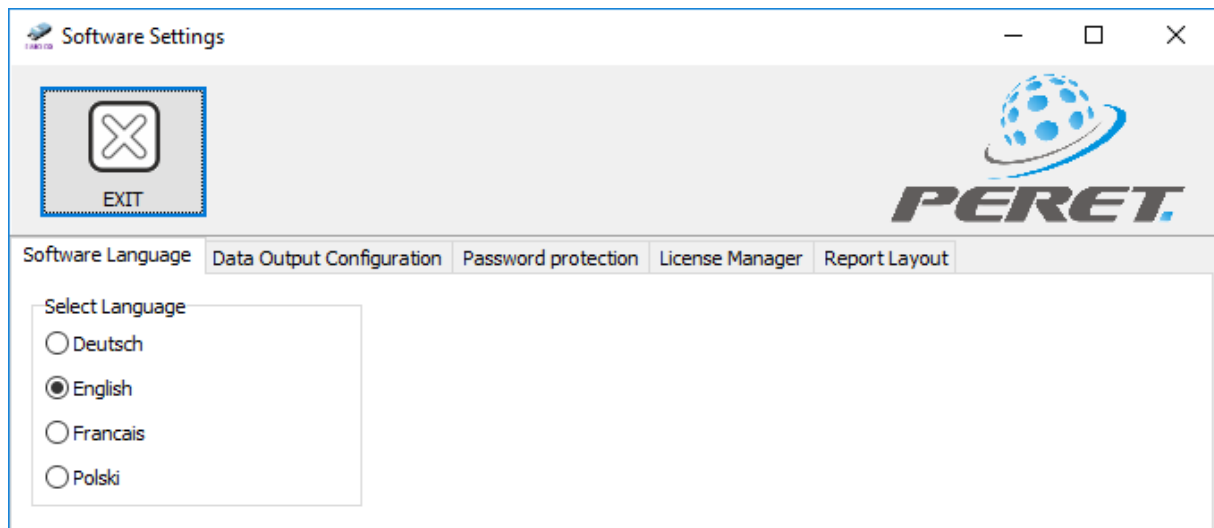
Software Configuration

Select the Software Configuration Item from the main menu to open the Software Settings Window.



Select the Language of the Software

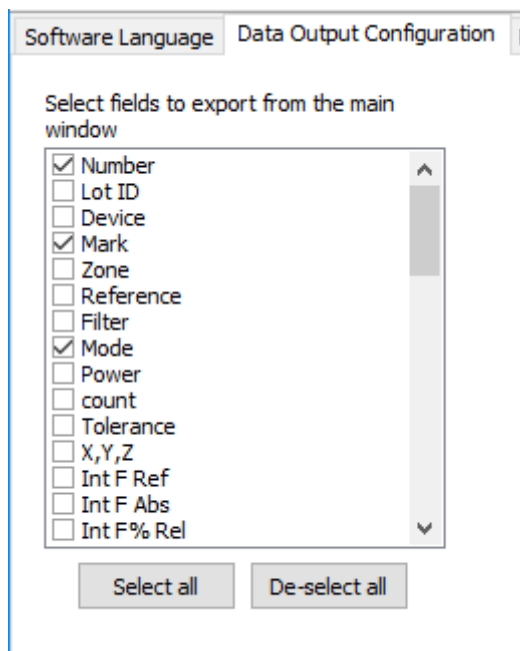
Click the Software Language tab from the Main menu to open the Language Window.



Select one of the available languages and click the EXIT Icon to close the Window.

[Specify the Data Columns to be written to the export file](#)

Select the Data Output Configuration tab of the Software Settings Window.



Set the flag for all Items that should be written to the file. Remove the flag for items you don't want to be written to the file. Click the Save Configuration Icon to permanently save the setting.



Password Protection

The settings of the FLUODX device and the Settings for the software can be protected by a password. Select the Password Protection tab to the Device and Software configuration password protection page. Enter a password and click the <Set Password> button.

Software Language Data Output Configuration Password protection License Manager Report Layout

Password for Device Configuration



Password for Software Configuration



The password characters are hidden, unless you click and hold on the eye icon.



User List and activity log

In case the PRO version is activated, the simple password protection is replaced by a database of certified users. Any user is classified as Administrator (ADMIN=True) or Standard user (ADMIN=False). The access to critical functions is made impossible to Standard users. The following functions are locked or hidden:


- Clear Device Memory
- Reset Device Mark
- Secure Icons Editor
- Reference database – upload, download, add, delete, modify references
- Job database – upload, download, add, delete, modify jobs
- Customer database – add, modify, delete customers
- Register new Devices
- Modify Report details
- Access to Users List and User activity Log
- Change Device settings and parameters

At least one user needs to be ADMIN=true. If the users list contains at least one user, after program start the Login Window will open. Enter the user and password to continue.

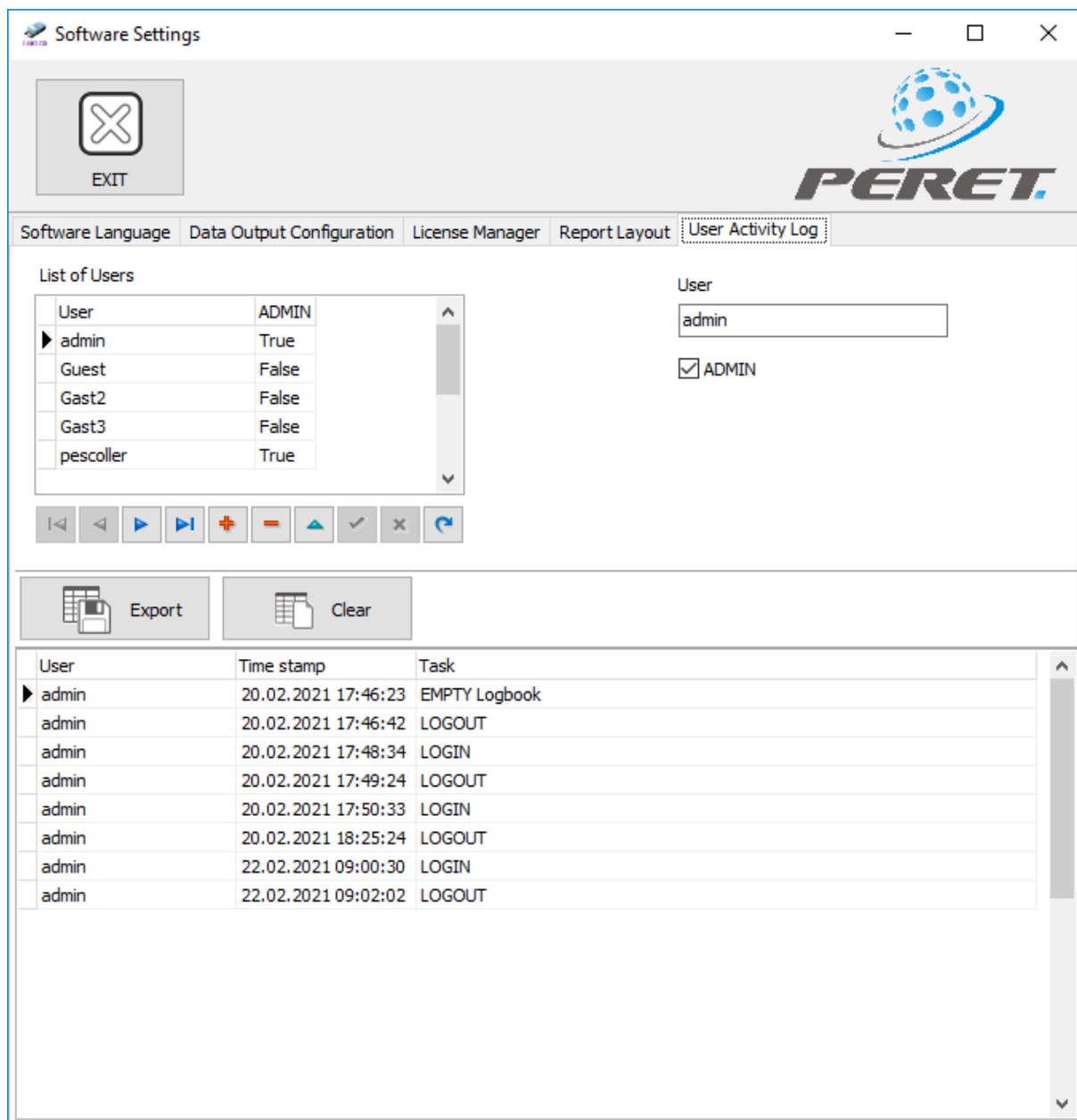
FLUODXConnect Login

User

Password:



Add users on the User Activity Log Page of the Software Settings Window.



Once a user is logged on, all critical tasks performed with the software will be written to the log book. The log book table can be exported to EXCEL and Cleared only by a user with ADMIN rights.

License Manager

The PRO Version of the software requires a License. The License is a simple code that can be obtained by your dealer or directly from PERET. The code needs to be inserted only once at the License Manager page to activate the PRO functions. In order to get full access to all functions the FLUODX must be set into PRO mode.

Software Language	Data Output Configuration	Password protection	License Manager	Report Layout
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Insert the FLUODX device serial number and the License code for that device. Click <register> to get permanently access to the FLUODXConnect PRO functions. If the proper FLUODX is connected, the PRO functions will also be activated for the device.

FLUODX sn: FLUODXSN:

License code:

License code High Security Features:

- Connect the FLUODX to the USB Interface of your computer
- Click the FLUODX Connect Icon on the main screen
- Open the License Manager Page of the Software Settings Window
- Insert the serial number (if not automatically inserted by the Software)
- Insert the License code
- Insert the High Security Features License code if available
- Click Register

Now the Start Screen after RESET of the FLUODX will show the suffix PRO after the version number of the Firmware.



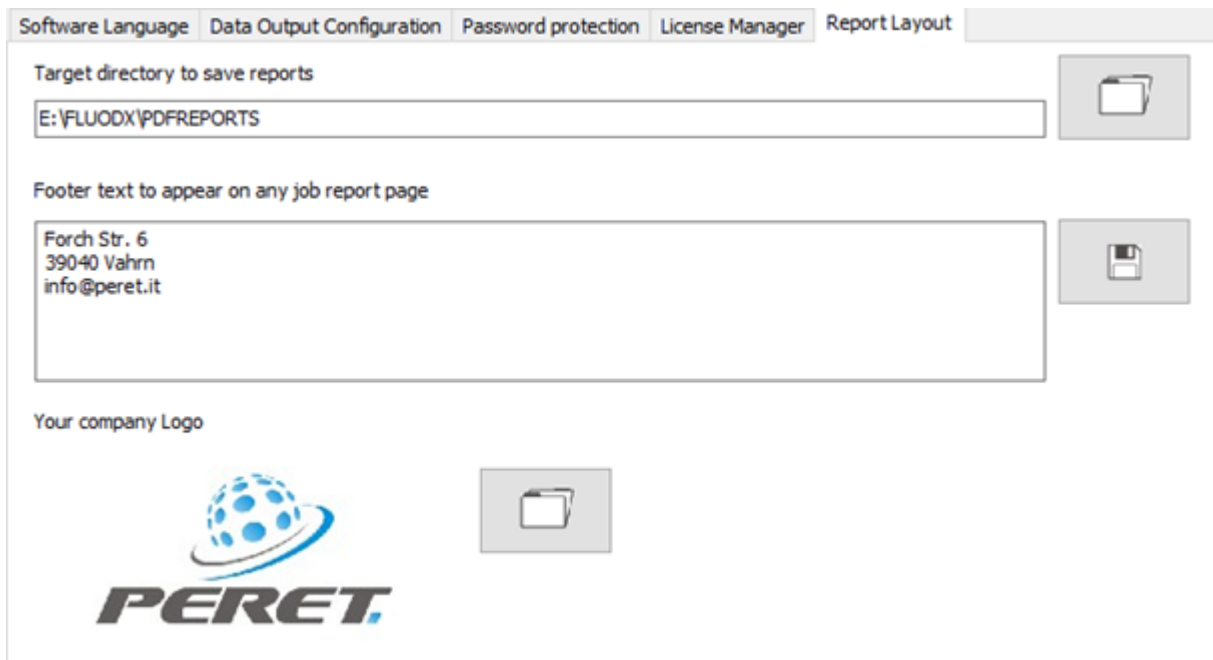
The main screen of the FLUODXConnect Software will now offer three additional functions;



- Secure Image is an easy- to- use security image TIFF creator to create your own security elements with a few mouse clicks.
- References will enhance the number of references stored in the device to 12 references per mode.
- The references can be organized by jobs in a database. The job composed of up to 12 references can be uploaded at any time to the FLUODX device.
- The Database feature will collect any uploaded data in a database. The database offers analysis and reporting functions.

Report Layout Configuration

Select the Report Layout tab from the Software Settings Window.



The screenshot shows the 'Report Layout' tab selected in the 'Software Settings' window. The window has a tabbed interface with the following tabs: 'Software Language', 'Data Output Configuration', 'Password protection', 'License Manager', and 'Report Layout'. The 'Report Layout' tab is active and contains the following configuration options:

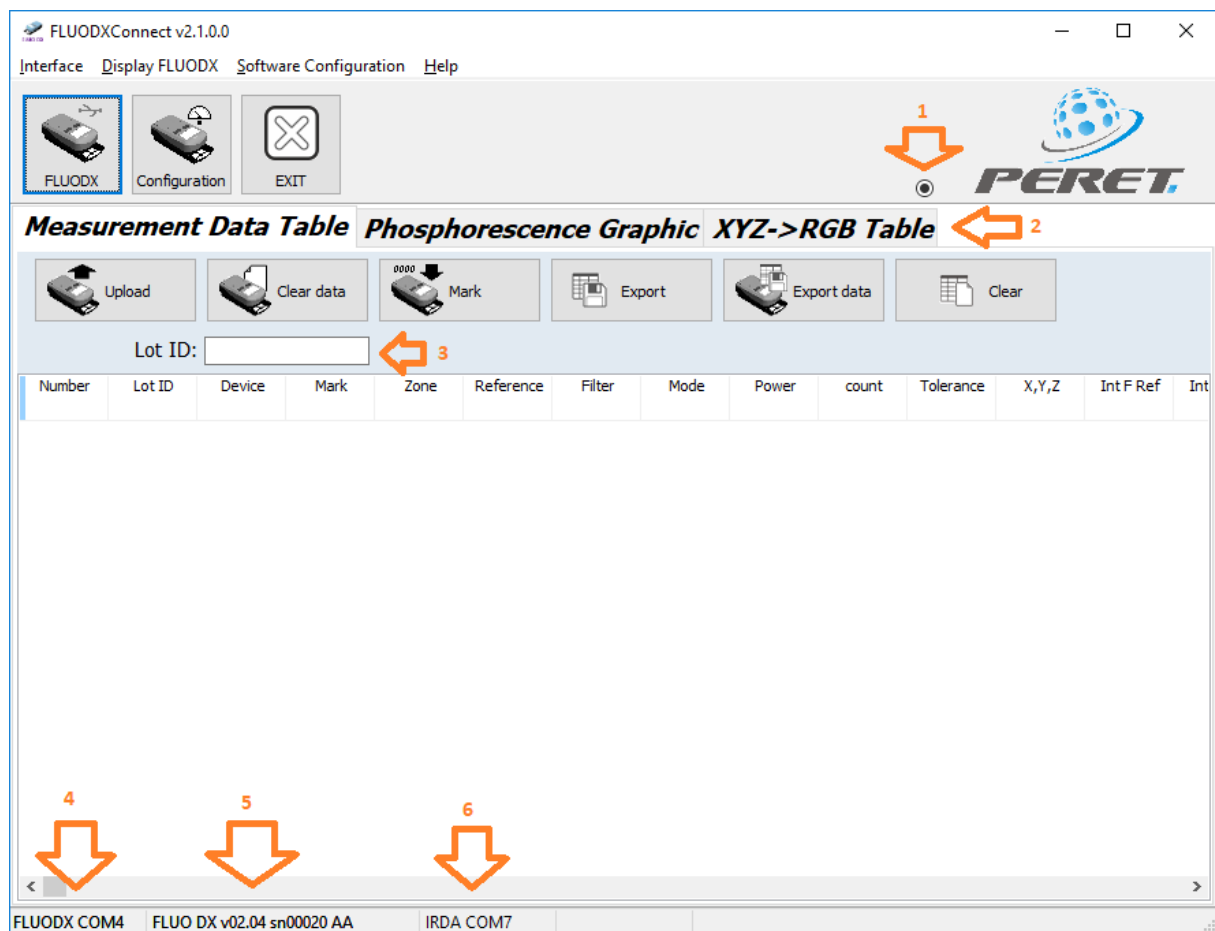
- Target directory to save reports:** A text field containing 'E:\FLUODX\PDFREPORTS' and a folder icon button to the right.
- Footer text to appear on any job report page:** A large text area containing 'Forch Str. 6', '39040 Vahrn', and 'info@peret.it', with a save icon button to the right.
- Your company Logo:** A section showing the 'PERET.' logo and a folder icon button to its right.

Select the file path where to save reports. The path can also be on a network drive.

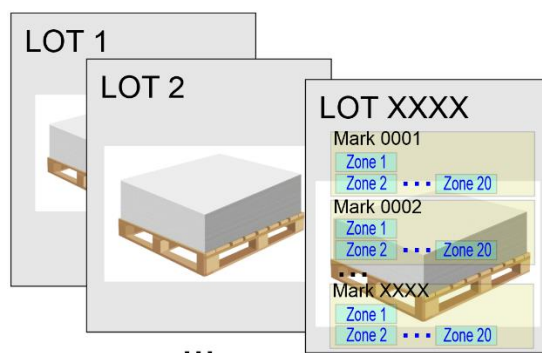
Every report has a footer section. You can enter customized information like company details there.

On the right top of any report a Logo is displayed. You can configure you company logo to be used by loading it with the <open> icon into this page.

The FLUODX Connect Main Screen



1. Whenever communication is in progress, the circle will be blinking. Do not disconnect the device while it is blinking. Disconnecting will cause communications requests to be ignored.
2. There are three different applications available on the main screen:
 - a. Measurement Data Table is used to upload measurements taken off-line and stored in the FLUODX Device.
 - b. Phosphorescence Graphic is used to perform a Phosphorescence reading and to upload Phosphorescence Time curves directly after measurement.
 - c. XYZ-RGB Table is used to perform a color measurement and to display the measured colors in RGB on the computer screen.
3. When collecting measurement data using the FLUODX the traceability is maintained by Zones and an automatically generated Mark. Measurements within one single zone can be averaged. The average Zone value is saved together with other zones on the same sheet to a maximum of 20 zones per sheet. The sheet measurements are saved with a unique mark Identifier, which is generated automatically by the FLUODX. At the end of a Job, shift, or at LOT change, the data can be uploaded, assigning the LOT Identifier to the data. The LOT Identifier is given by the operator before the upload is executed.

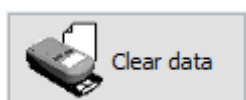


4. The USB Interface is connected to COM 4
5. The FLUODX currently connected is sn00020, device ID AA, and equipped with Firmware version 2.04
6. The IRDA Interface is connected to COM 7

Measurement Data Table



The FLUODX can store approximately 6000 single measurements of any type in its internal memory. Use the Measurement Data Table page to upload the data to the Host PC and to export the data to a file.



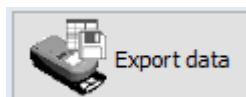
Click the Clear Data Icon to permanently delete all measurement data stored in the FLUODX device memory.



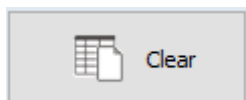
Measurement data is organized using a Mark. The Mark is automatically incremented whenever the Save function is executed on the FLUODX Device. Click the Mark Icon to permanently reset the Mark to 0000.



Once the data has been uploaded and is displayed in the table, this data can be exported to a tab-delimited text file.



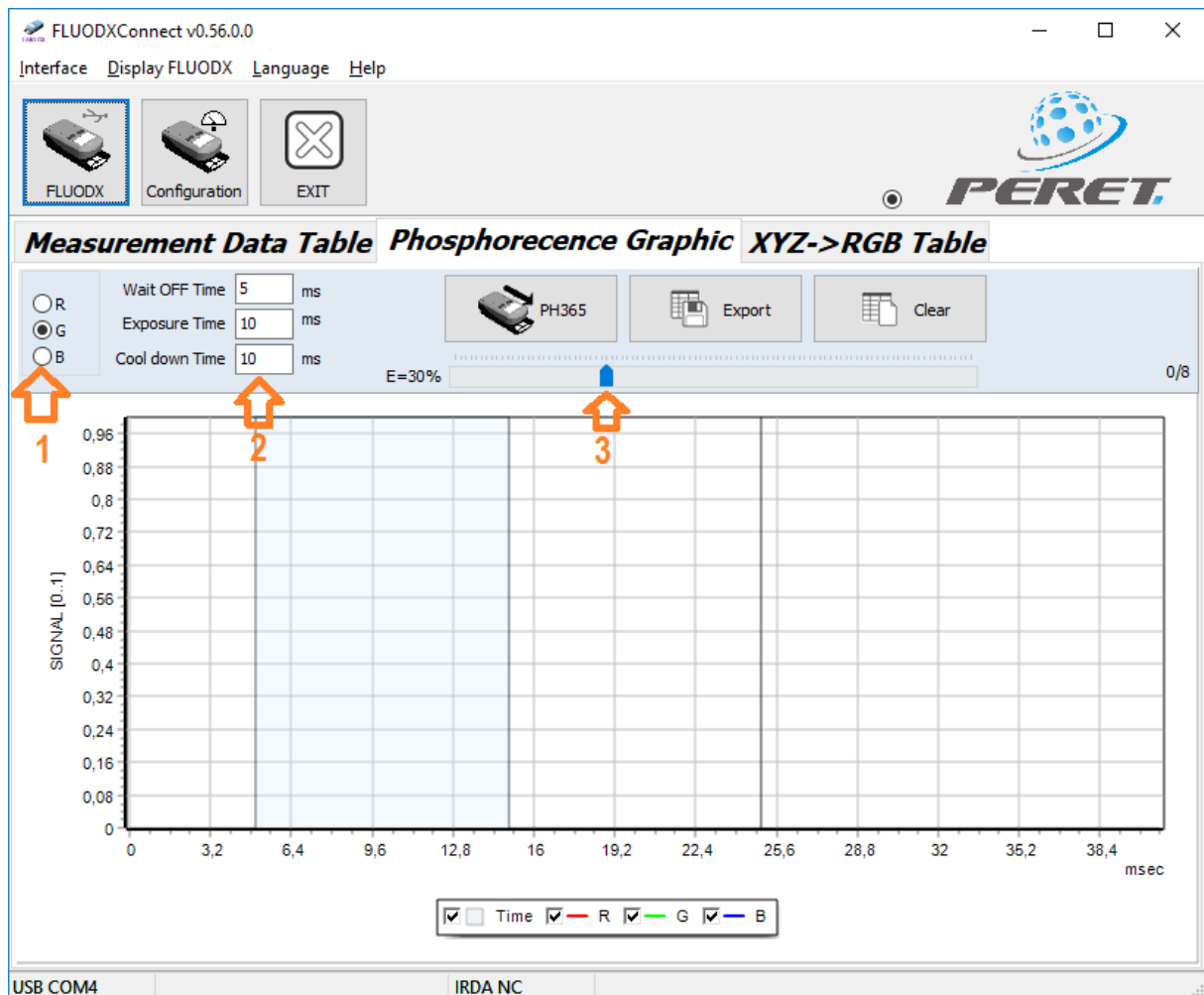
Click the Export data Icon to upload measurement data from the FLUODX to the Host PC and export that data to a tab-delimited text file in one operation.



Click the Clear Icon to delete the data in the table. This will not delete any data stored in the FLUODX device.

Phosphorescence Graphic

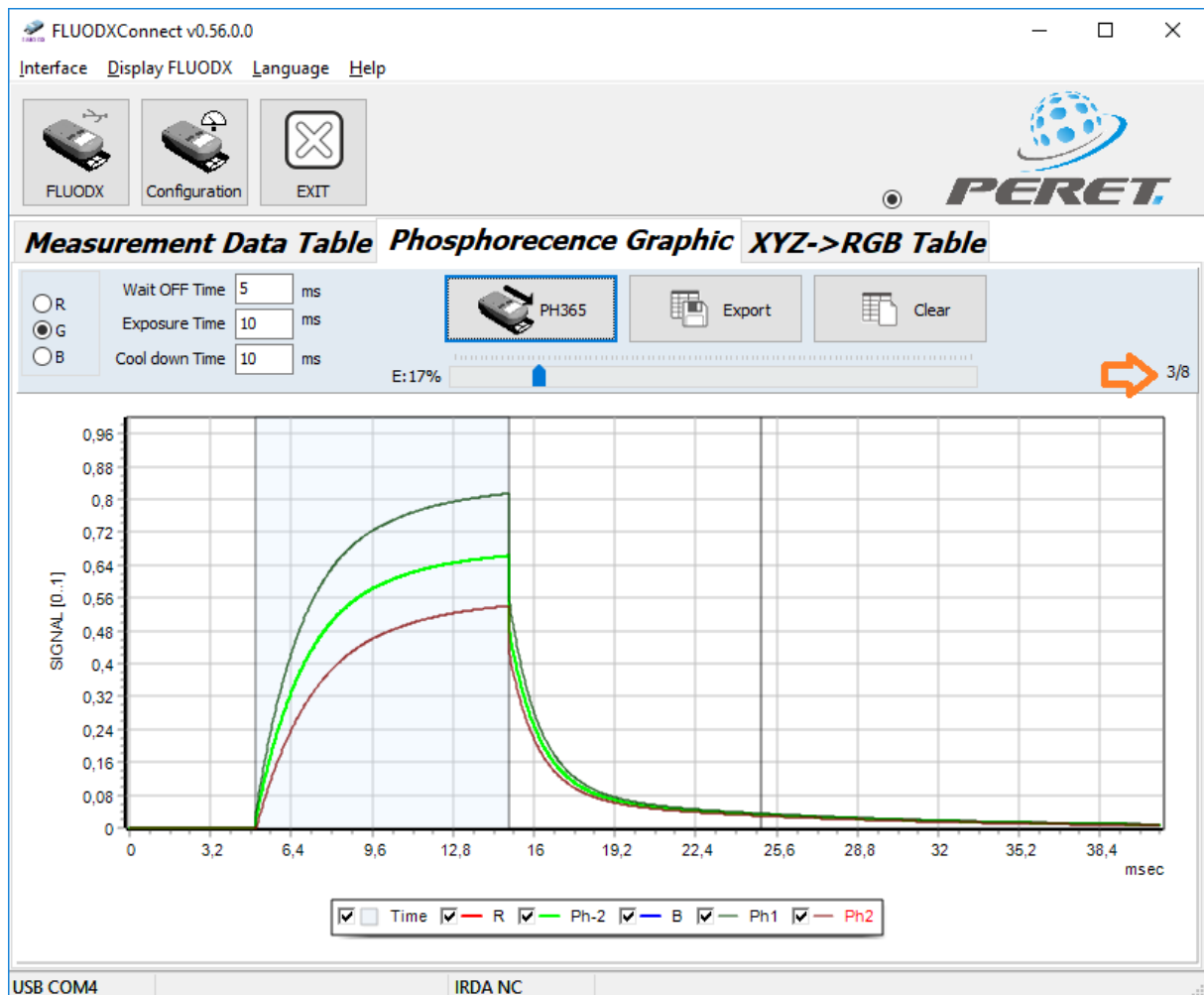
Select the Phosphorescence Page to measure Phosphorescence Behavior of a printed sample.



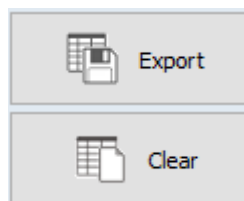
1. Select the color channel with the highest intensity of the sample to be measured
2. Select the timing for the phosphorescence measurement. The sum of Exposure time + Cool down time must not exceed 600 milliseconds.
3. Select the intensity of the UV Illumination. Exposure Time and LED Intensity have an impact on the maximum Fluorescence signal that might be reached. If you get an Overflow Error you can reduce the Exposure Time or the UV Illumination intensity. The modification of either one does not have the same effect on measurement results.



Position the FLUODX on a sample and move the FLUODX to the front measurement position. Keep it in measurement position until the measurement result is displayed. Click the PH365 (Phosphorescence with 365nm illumination) Icon to perform a phosphorescence reading. The reading will take some time as the entire signal curve will be downloaded to the PC. At the end of the successful measurement the curve will be displayed.



Up to 8 samples can be measured. The number of measured samples is displayed in the right top corner above the diagram.

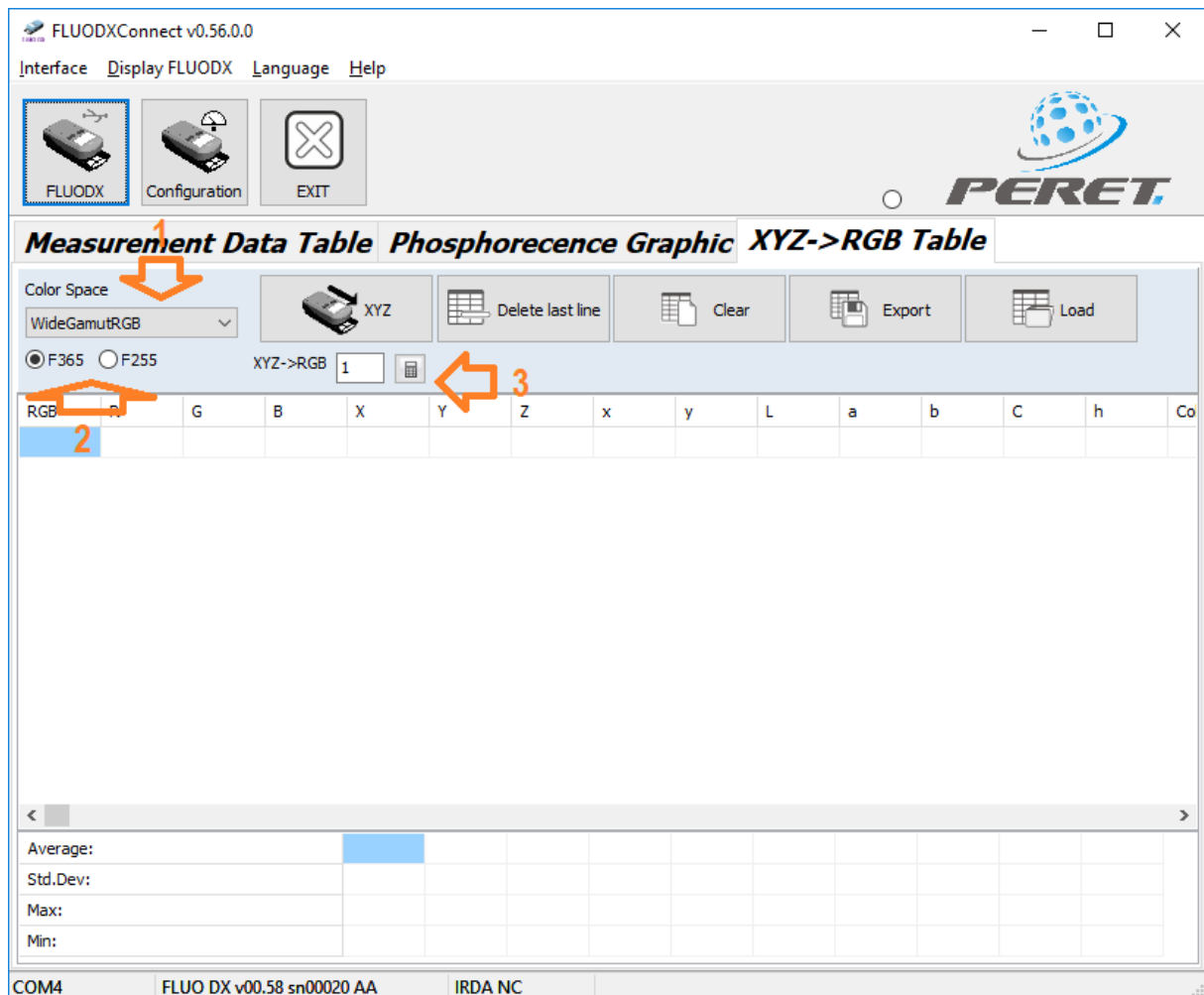


Click the Export Icon to export the measurement data to a tab delimited text file.

Click the Clear Icon to clear the graph.

XYZ->RGB Table measurement

Select the XYZ->RGB Table Page of the Main Window to measure color and simulate visual appearance under UV illumination of a measured fluorescent sample.



1. Select the color space you would like to use. Use WideGamutRGB as default.
2. Select the UV Illumination wavelength
3. Select a brightness Factor to adjust the RGB color to visual brightness impression. Click the calculator Icon to recalculate the RGB Values and to calculate the statistics

FLUODXConnect v0.56.0.0

Interface Display FLUODX Language Help

FLUODX Configuration EXIT

PERET

Measurement Data Table Phosphorecence Graphic XYZ->RGB Table

Color Space
WideGamutRGB

XYZ

Delete last line Clear Export Load

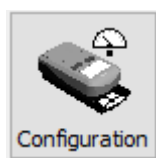
☒ F365 ☐ F255 XYZ->RGB 1

RGB	R	G	B	X	Y	Z	x	y	L	a	b	C	h	Co
	255	19	26	155,03	92,83	34,01	0,55	0,33	97,16	98,01	46,28	108,39	25,27	rec
	255	73	207	184,05	132,75	212,49	0,35	0,25	111,49	70,73	-54,32	89,18	322,48	ma
	12	84	248	82,86	82,80	247,20	0,20	0,20	92,93	5,86	-100,50	100,67	273,33	blu
	72	255	255	213,07	297,40	289,99	0,27	0,37	150,82	-67,77	-16,44	69,74	193,64	tur
	77	255	93	186,43	289,87	133,28	0,31	0,48	149,40	-90,01	50,52	103,22	150,70	lim
	255	255	80	245,60	273,12	113,83	0,39	0,43	146,15	-16,06	56,93	59,16	105,75	yel
	255	255	203	258,78	282,91	232,10	0,33	0,37	148,06	-12,31	0,56	12,32	177,39	gre

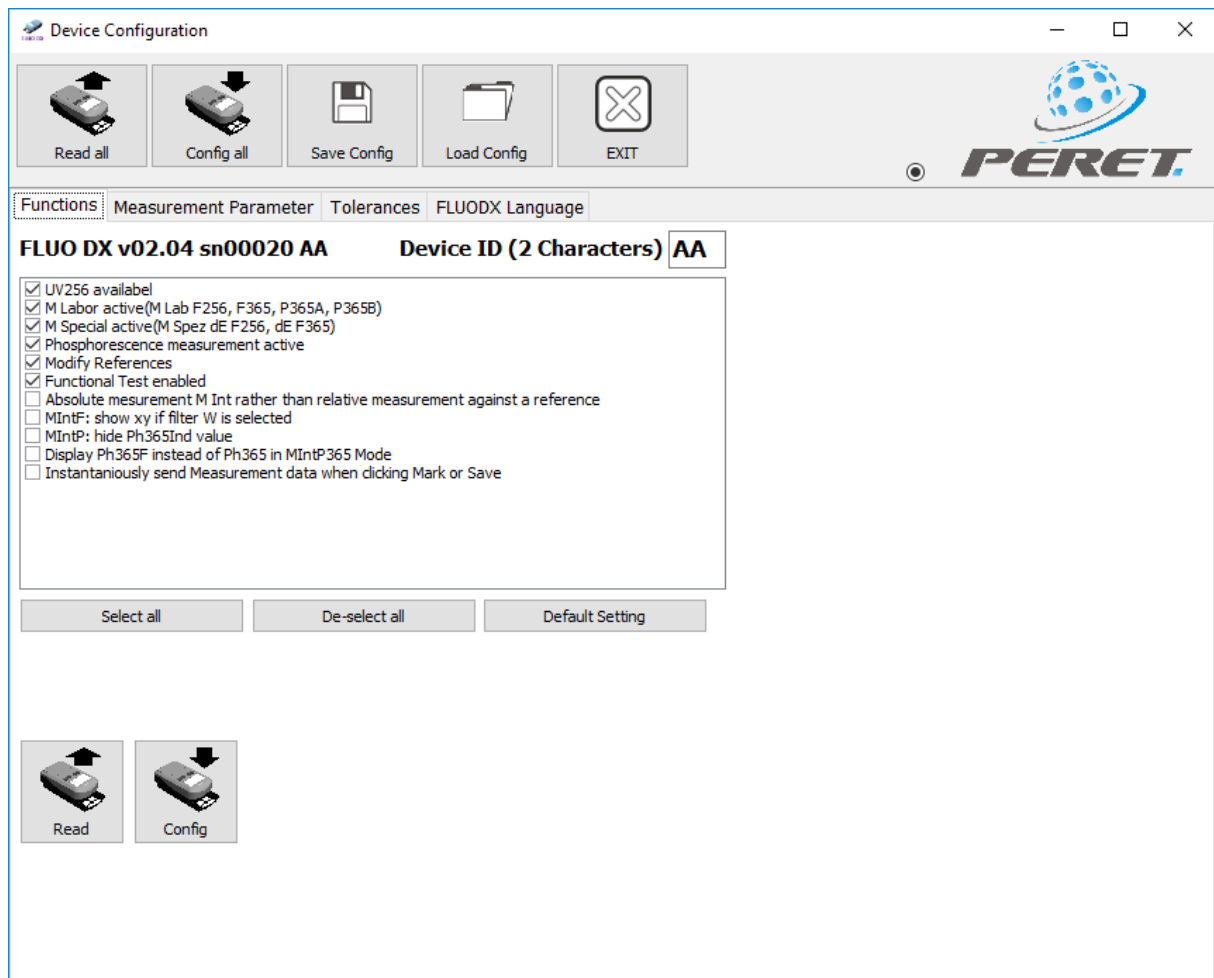
Average: Std.Dev: Max: Min:

COM4 FLUO DX v0.58 sn00020 AA IRDA NC

FLUODX Device Configuration



Click the Configuration Icon to open the configuration Window.



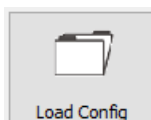
Download the current configuration from the connected FLUODX to the tables of the software.



Upload the configuration of all tables on any page of the configuration Window to the connected FLUODX. The configuration of the FLUODX is permanently updated.



Save the current configuration to a file.



Load a configuration from a file.



All of the configuration pages also offer the possibility to just download or upload the configuration settings of the current configuration Page. Note the difference between this and Read All and Config All shown above.

Function settings

Select the functions according to your needs, set a two character Device ID and click the Config button below the functions list to configure the FLOUDX.

FLUO DX v02.04 sn00020 AA

Device ID (2 Characters) AA

- ☒ UV256 available
- ☒ M Labor active(M Lab F256, F365, P365A, P365B)
- ☒ M Special active(M Spez dE F256, dE F365)
- ☒ Phosphorescence measurement active
- ☒ Modify References
- ☒ Functional Test enabled
- ☐ Absolute measurement M Int rather than relative measurement against a reference
- ☐ MIntF: show xy if filter W is selected
- ☐ MIntP: hide Ph365Ind value
- ☐ Display Ph365F instead of Ph365 in MIntP365 Mode
- ☐ Instantaneously send Measurement data when clicking Mark or Save

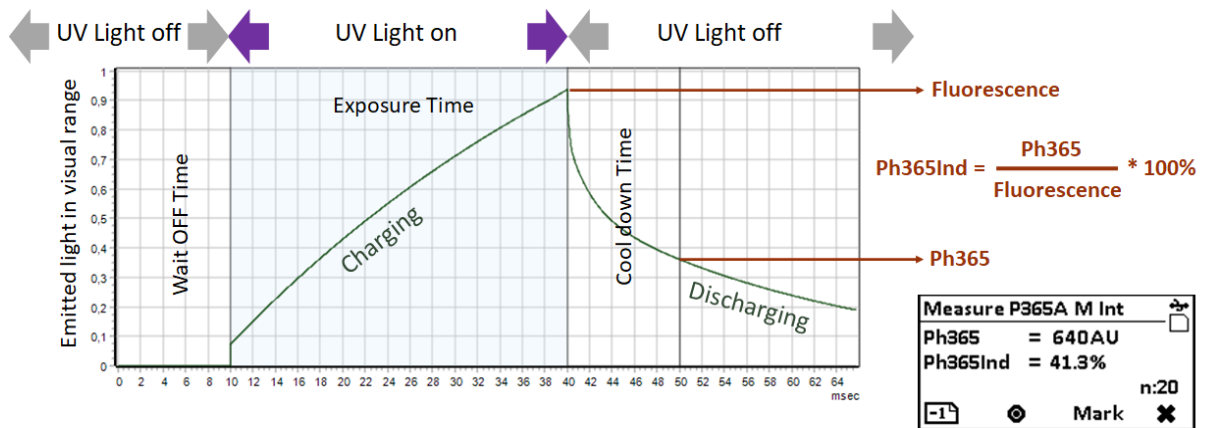
Measurement parameters

Select the time settings for the measurement modes, the filter, and the UV LED Power. In the case of Fluorescence measurement, the UV LED Power can be set to 0.0. In this case the optimum power will be detected automatically set by the FLUODX.

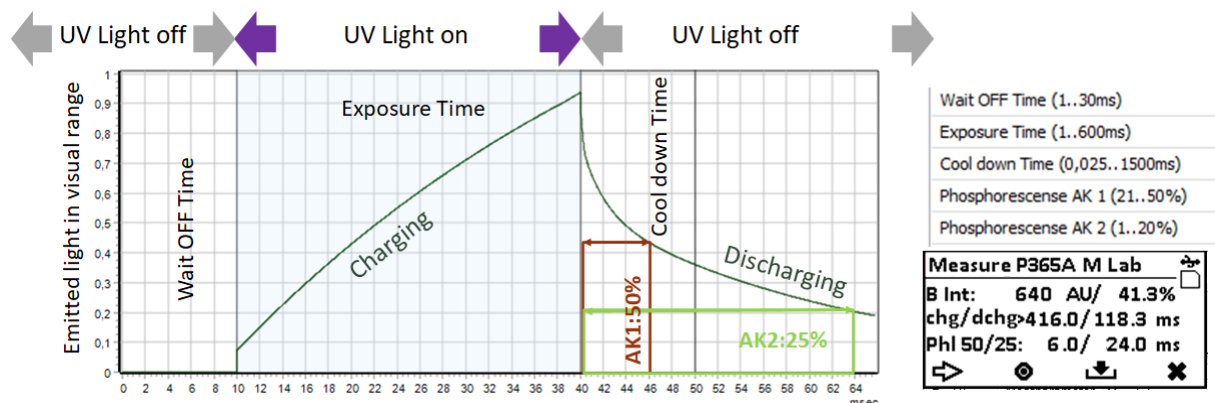
Functions	Measurement Parameter	Tolerances	FLUODX Language
Phosphorescence parameter			
M Int	PH365A	PH365B	
Wait OFF Time (1..30ms)	5,000	5,000	
Exposure Time (1..600ms)	30,000	50,000	
Cool down Time (0,025..1500ms)	1,000	1,000	
Filter (R,G,B) Absolute	G	G	
Light intensity (1%..100%)	60	20	
Average Counts (1..10)	1	1	
Number of Zones (0=free, 1..20)	0	0	
Fluorescence parameter			
M Int	F256	F365	
Selectable Filter in ABS (R,G,B,W)	RGB	RGB	
Light intensity (0=Auto, 1%..100%)	0	0	
Average Counts (1..10)	1	1	
Number of Zones (0=free, 1..20)	0	0	
White Filter W = (R+G+B) / 3			
Phosphorescence parameter			
M Lab	PH365A	PH365B	
Wait OFF Time (1..30ms)	5,000	5,000	
Exposure Time (1..600ms)	50,000	50,000	
Cool down Time (0,025..1500ms)	1,000	1,000	
Phosphorescence AK 1 (21..50%)	50	50	
Phosphorescence AK 2 (1..20%)	20	20	
Tau intervall min (0,025..10ms)	0,400	0,400	
Tau intervall max (0,1..10ms)	1,200	1,200	
Filter (R,G,B)	G	G	
Light intensity (1%..100%)	20	20	

Write the configuration to the FLUODX by clicking the config button.

Phosphorescence Parameter



- The *Wait OFF Time* is the minimum Time delay the device is waiting after the measurement process has started before switching the UV Light source on. During this time the dark measurement reference is taken.
- The *Exposure Time* is the time where the UV Light source is on. The charging behavior of the phosphorescent sample is measured with a 40kHz sample rate.
- The *Cool down Time* is the time between UV Light switch off and the measurement value expressed as PHInd (Phosphorescence indirect) or Ph365 (Phosphorescence signal).



- The *AK1* value defines a fixed % Signal level. The time required after UV Light off to reach this level is measured.
- The *AK2* value defines a second fixed % Signal level. The time required after UV Light off to reach this level is measured.
- *Filter*: Phosphorescence can be measured only for one filter R,G,B. The filter has to be pre-selected in this configuration Window. In case of reference relative measurements, the filter can be selected before measuring the reference.
- Phosphorescence is depending on the UV light energy it is exposed to. The *Light Intensity* value is a percentage of the maximum available light intensity that can be emitted. If Light intensity is low, an underflow error message can arise. If light intensity is high, an overflow error message can arise.
- Average Counts determines the number of measurements to take inside a test patch, before the average of those measurements is copied to the memory of the device.

Fluorescence Parameter

- Filter: The filter for MInt (Measure Intensity) measurements is determined when measuring the reference. If no reference is available or the FLUODX uses the filter K = R+G+B as the default. In absolute mode the filter can be selected from the filters configured in the configuration Window. You can configure the device to offer just one filter, or all filters, RGBK.
- The UV Light intensity for the measurement can be preset. A setting of 0.0 results in an automatic detection of the best light intensity for the sample that's going to be measured.

Tolerances

For the MInt measurement modes, you can set tolerances. The tolerance window is used for the green and red flashing status LED. They are also used to draw upper and lower tolerance frame in bar diagrams and to display the statistics.

Functions	Measurement Parameter	Tolerances	FLUODX Language
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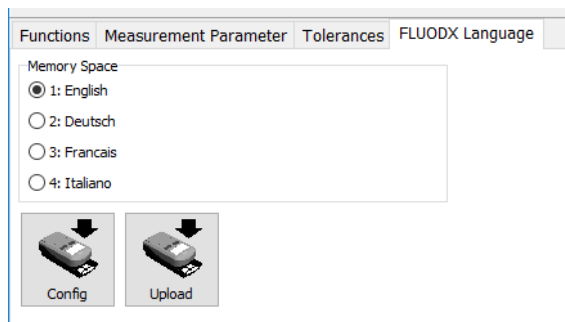
Function	- Value [%]	+ Value [%]
M Int F256 (5..50)	15	5
M Int F365 (5..50)	15	5
M Int P365A (5..50)	15	5
M Int P365B (5..50)	15	5

In case the M Int F mode is using the W (white) filter, there can also be specified tolerances for the xy measurement.

Function	- Value 0.01	+ Value 0.01
M Int F256 (W) x	0,05	0,05
M Int F256 (W) y	0,05	0,05
M Int F365 (W) x	0,05	0,05
M Int F365 (W) y	0,05	0,05

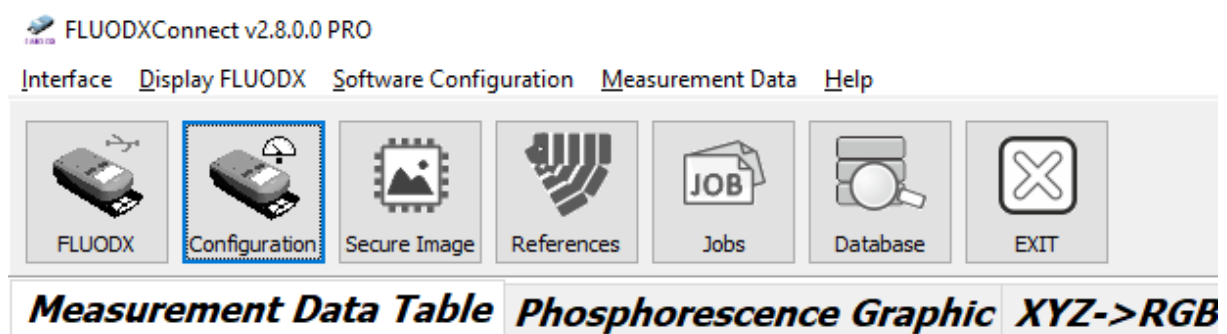
Device Language Setting

The Language Page enables you to configure the language of the Device. There are 4 languages permanently stored and listed in the Window. Select one of the languages and click the Config button to set the FLUODX device language properly.



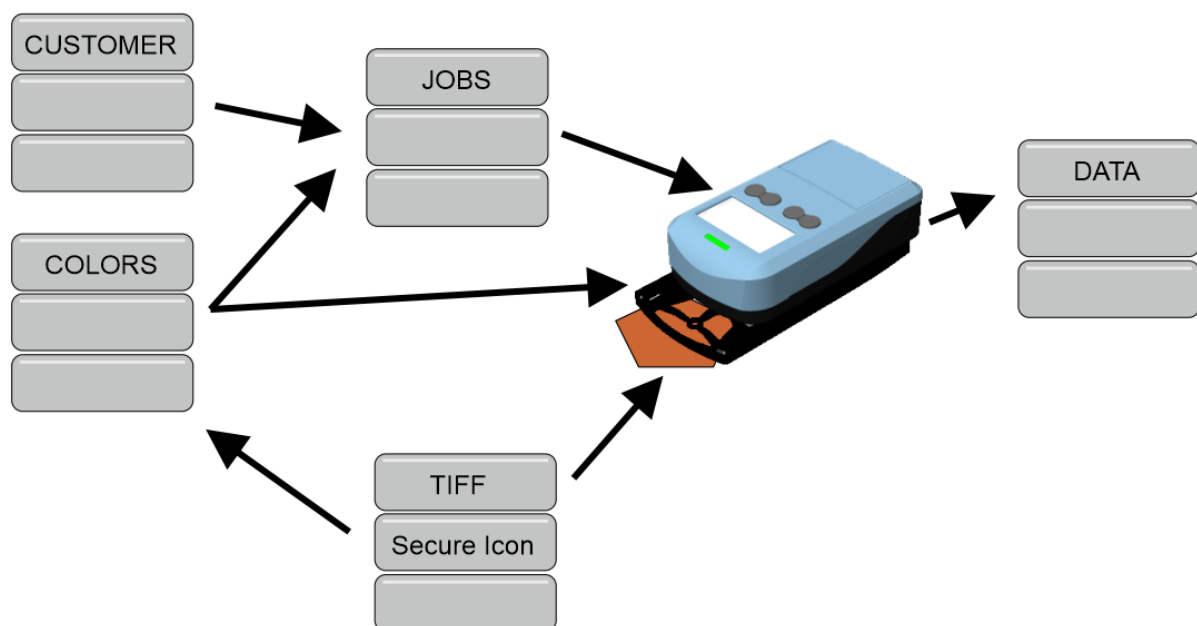
Any language can be replaced by a new language. Select the language you would like to install. Click the Upload Icon. You will be prompted to select a language file on your computer. The new language file will be uploaded to the device and permanently replace the selected one.

FLUODXConnect PRO Functions



The FLUODXConnect PRO functions simplify the application of security elements on any type of packaging. The software supports you in starting to print fluorescent ink-based security elements.

Further the PRO function set will support you in handling references, job specifications, and analyze measurement data collected in a database.



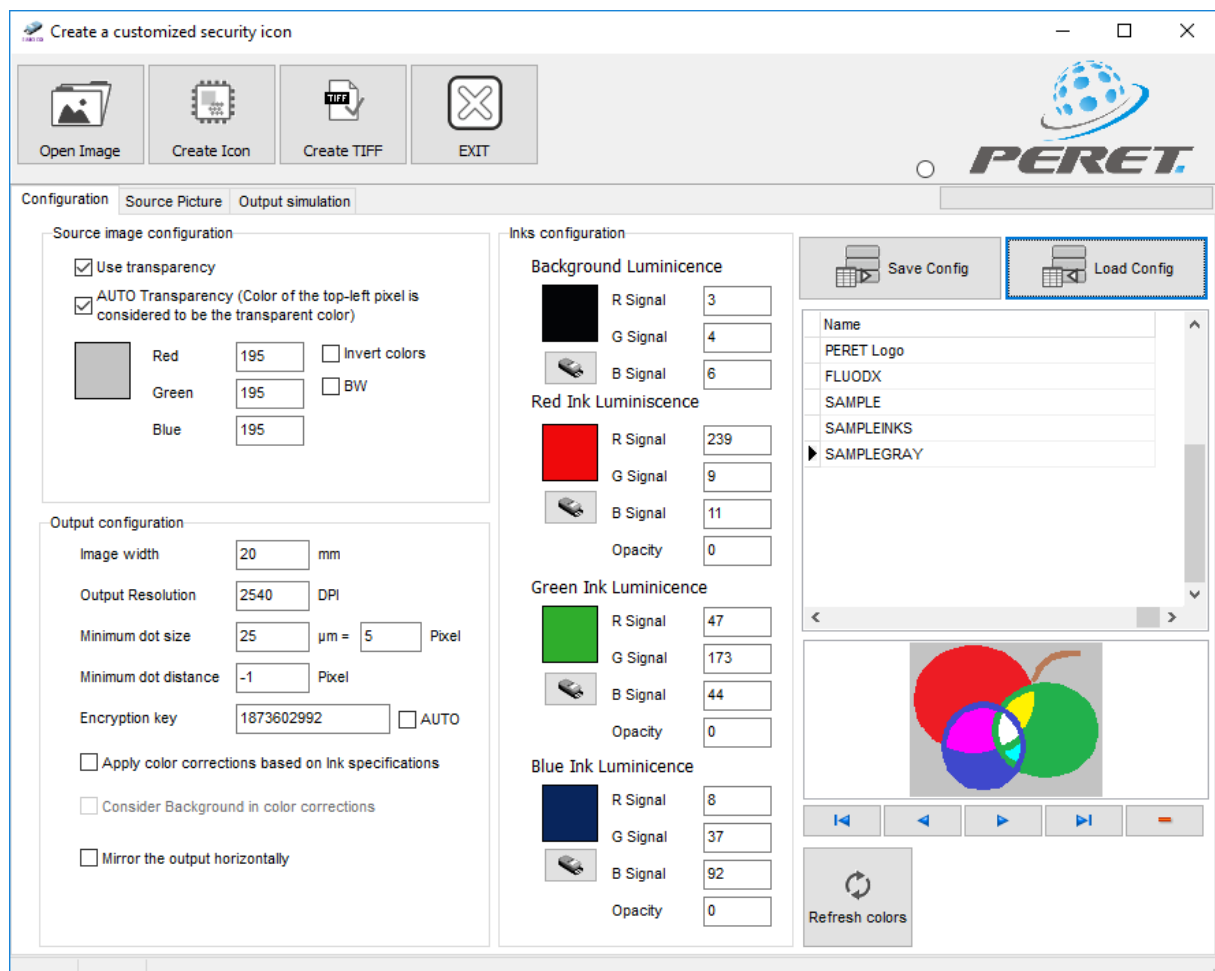
Secure Image Icon creator

The secure image Icon Creator will create a unique set of TIFF files for three colors that can directly be used to make printing plates. Click the Secure Image Icon from the main screen to open the Secure Image Utility.

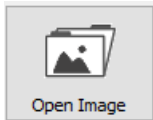


A Secure Image Icon is created performing the following steps;

- Create your icon using any drawing application like Photoshop, or simply Windows Paint. Save it in PNG, BMP or JPG format. You can also use an existing picture if available.
- Load the picture into the FLUODX Icon application
- Set the output parameter
- Create the security icon
- Evaluate the output simulation of the result
- Change parameters if required and create the security icon again until you are satisfied with the result
- Save the configuration to the database
- Create the TIFF files
- Create the plates based on the TIFF files
- Print the security element when printing the packaging in one single process



Load an existing image



Click the Open Image Icon to load an existing .jpg, .png, or .bmp format file. Example:



Specify how the source image should be used to create the TIFF files for plate making.

Source image configuration

☒ Use transparency

☒ AUTO Transparency (Color of the top-left pixel is considered to be the transparent color)

☐ Invert colors

☐ BW

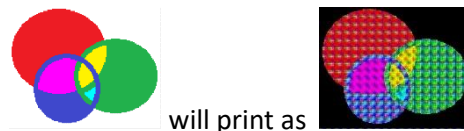
Red: 255

Green: 255

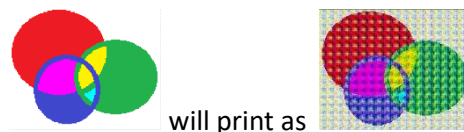
Blue: 255

When printing UV fluorescent invisible inks, the non-printed background will be black, as there will not be any fluorescence there.

- If the <Use transparency> flag is set, one single RGB color is interpreted as transparent color. The area with this color will not be printed at all. The example below is using white as the transparent color. Therefore whatever is white will not be covered by printing dots.

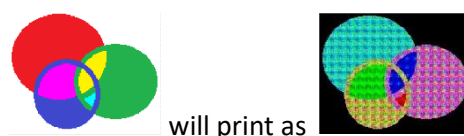


If the <Use transparency> flag is not set, the entire image will print, such as the white background will shine white if exposed to UV light.

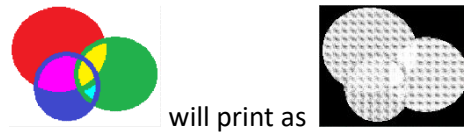


The transparent color can be detected automatically by the software in case the AUTO Transparency flag is set. The transparent color selected is displayed within the Frame next to the RGB color values

- The colors of the source image can be inverted by selecting the <Invert colors> flag



- The Icon can be printed in single color by automatically converting it into gray scales. Select the <BW> Flag in this case.



Specify your inks in terms of color luminescence

The FLUODX is equipped with an RGB receiver and can measure three signals for the different spectral ranges: red, green, and blue. This function can be used to characterize the background and the fluorescent inks. This makes the printed result more color accurate.

The background can be characterized separately, or as an integral part of the invisible fluorescent color inks. If fluorescent ink samples are available on non-fluorescent substrate, the inks can be characterized independently from the substrate. The color characterization can be ported from one substrate to the next by simply characterizing the background.



If there are not available ink samples on non-fluorescent substrate, print a color patch of each ink on the target substrate and set the background specification in the software to zero.





Any color can be measured using the FLUODX device. Position the FLUODX aperture on the target color patch and move it into measurement position. Click the measure icon to measure and transfer the RGB values.

Inks configuration



Background Luminescence

	R Signal	0
	G Signal	0
	B Signal	0



Red Ink Luminescence

	R Signal	255
	G Signal	0
	B Signal	0
	Opacity	0

Green Ink Luminescence

	R Signal	0
	G Signal	255
	B Signal	0
	Opacity	0



Blue Ink Luminescence

	R Signal	0
	G Signal	0
	B Signal	255
	Opacity	0



Default pure ink setting

Inks configuration



Background Luminescence

	R Signal	3
	G Signal	4
	B Signal	6



Red Ink Luminescence

	R Signal	239
	G Signal	9
	B Signal	11
	Opacity	0

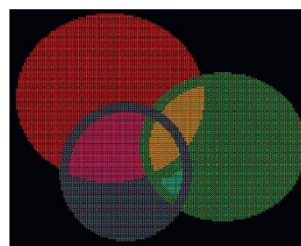
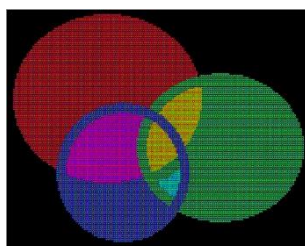
Green Ink Luminescence

	R Signal	47
	G Signal	173
	B Signal	44
	Opacity	0

Blue Ink Luminescence

	R Signal	8
	G Signal	37
	B Signal	92
	Opacity	0

real inks specification



Configuration of the output screening

Selecting specific, unique parameter for the creation of the output screen will provide an extra security level to your secure icon.

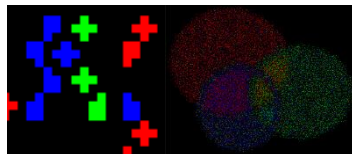
Output configuration

Image width	15	mm
Output Resolution	2540	DPI
Minimum dot size	20	μm = 4 Pixel
Minimum dot distance	-1	Pixel
Encryption key	687360483	<input checked="" type="checkbox"/> AUTO
<input type="checkbox"/> Apply color corrections based on Ink specifications		
<input type="checkbox"/> Consider Background in color corrections		
<input type="checkbox"/> Mirror the output horizontally		

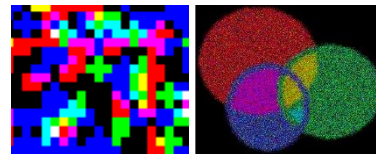
Select the target size of the secure image by specifying the image width in mm. The image height will be calculated automatically maintaining the proportions of the source image.

Specify the output resolution of your Image setter in DPI and the minimum dot size that can be reliably printed. The software will automatically calculate the minimum number of Laser spot pixels required to form a dot equal or larger than the minimum dot size.

Use the minimum dot distance to specify the dot overlap. If the number is greater than zero, there will always be a space between one dot of one color and one dot of the next color. If it is less than zero, the dots of different colors can partially overlap.



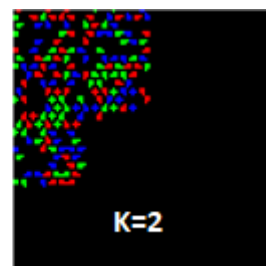
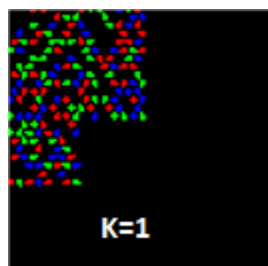
+1 Pixel



-1 Pixel

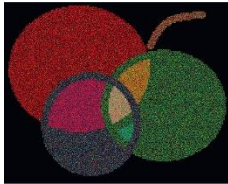
If your inks are translucent in terms of luminescence, you can use an overlap. Insert a negative distance in this case. If your fluorescent inks are opaque in terms of luminescence make sure one dot is printed next to the other without any overlap. This will result in darker, but more saturated images.

The application of an encryption key for the screen calculation makes your secure icon even more secure. If you keep this key confidential, it will be almost impossible to copy your screen. Select the AUTO to let the software create a random encryption key for you.

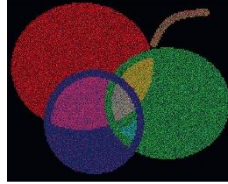


While the color impression is the same, the screens and pixel location is totally different between encryption key = 1 and encryption key = 2.

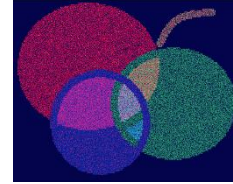
Color correction can be applied, such that the software makes the colors look as close to pure RGB color combinations as possible. Additionally, the background luminescence can be taken into consideration. For example, if the background shines slightly blue, the blue component of colors will be reduced when printing. Printing invisible inks on a bluish fluorescent substrate will always shine somehow bluish. It can not be corrected perfectly, but the blue component can be reduced.



Original image

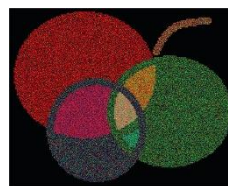
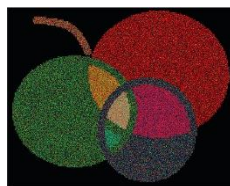


color corrected



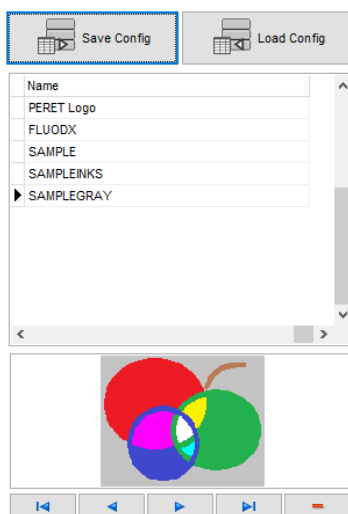
background corrected

Select the Mirror Flag if the TIFFs should automatically be mirrored on the vertical axis.



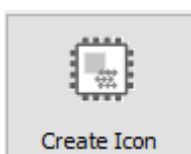
[Save the configuration in the database](#)

The Secure Image Tool implements a database that can hold as many configurations as required. Once a configuration is set up and tested, save the configuration to the database by clicking the Save Config Icon.

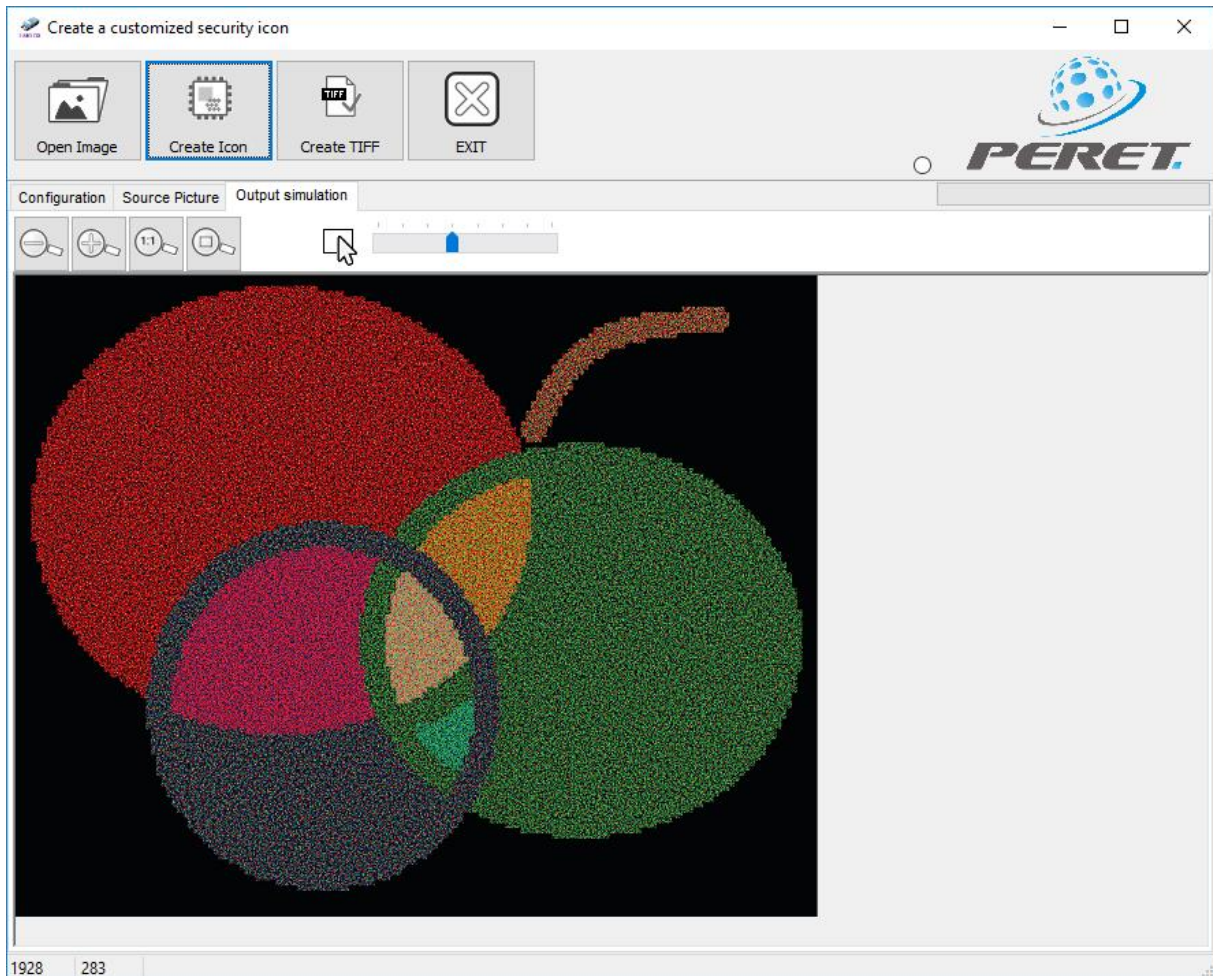


The Software will prompt for a unique name. Insert a name and click ok. At any point in time you can re-load a configuration from the database by clicking the Load Config button.

[Create a secure image](#)



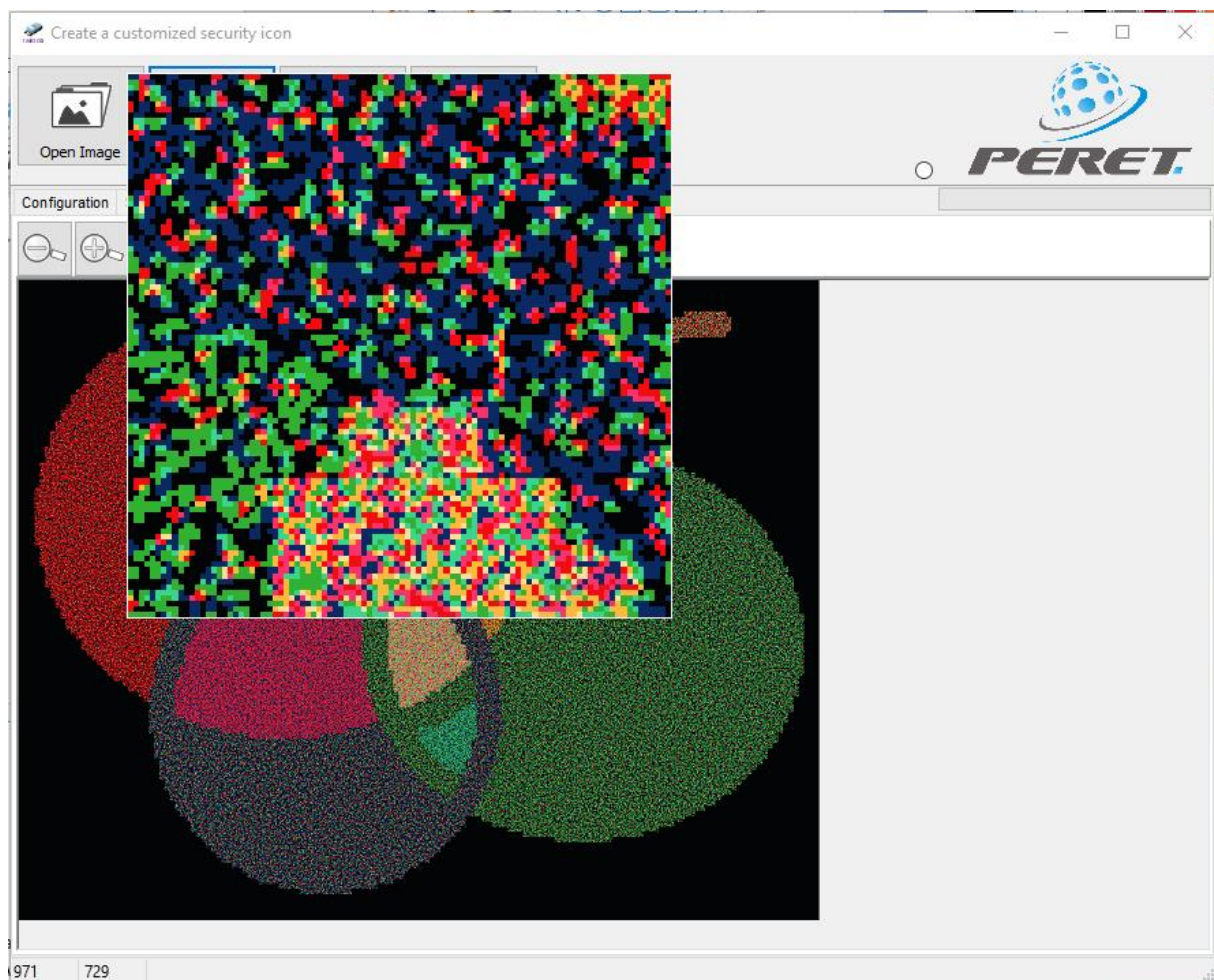
Click the Create Icon Symbol on the main tool bar to create the secure image based on a unique screening type. The Output simulation page will automatically be selected and the simulation is displayed.



You can zoom in or zoom out to view details or to get the overview of the entire image.



Use the ruler to set the magnification of the mouse pointer lens function. If you click a location of the image, a zoom of that section will be created and automatically copied to the Windows clipboard.

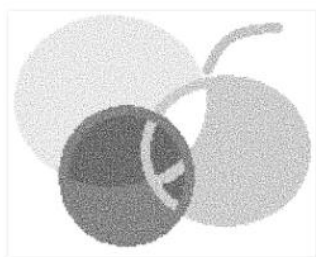


Select a location that is easy to find if you need to compare the screen details of your secure image with a print sample that could be a counterfeited one.

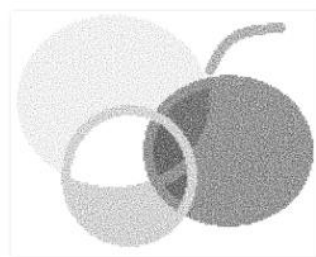
Create TIFF files



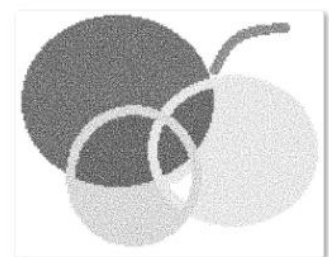
Click the Create TIFF Icon to create three TIFF files, one for Red, one for Green, and one for Blue. If you have selected BW (black&white), only one TIFF file will be created.



samplegrayB.tif



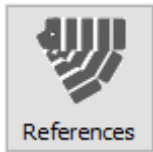
samplegrayG.tif



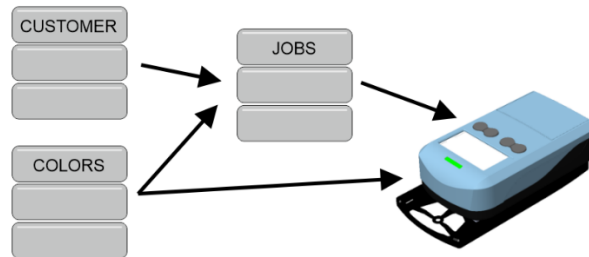
samplegrayR.tif

The Reference Library

The FLUODX can hold up to 12 reference specifications for one single measurement mode. The Software Reference database can be used to hold as many reference specifications as required.



Click the Reference Icon from the main window to open the Reference database Window.



The reference database contains three tables. The Customer table can hold customer information such as company name and address. The Colors table contains color specifications like UV LED energy, RGB Signals etc. The Job table combines up to 12 reference colors from the color table with a customer. The references to upload to the FLUODX can be configured individually by drag & drop from the colors table or as a group by drag & drop from the job table.

References Database

Read all Report Jobs EXIT

PERET

F256 F365 P365A P365B

Active References

4 Upload Clear Download

	Short Name	Filter	RGB	LED Power	R Signal	G Signal	B Signal	RGB	-Tol%	+Tol%	Temperature	Device
1	GNEU	Abs	G	18,1%	150	1347	498		15%	10%	273,0°	sn00020
2	BNEU	Abs	R	46,8%	1029	731	101		15%	10%	274,0°	sn00020
3	Rot	R	R	14,6%	3306	144	150		10%	10%	23,6°	sn00020
4	WNEU	White	G	11,2%	2436	2159	1283		10%	10%	28,3°	sn00020

Reference colors

RGB	Short Name	Reference Name
	GNEU	Green Sample 1
	BNEU	Brown Sample 1
	WNEU	WNEU
	Rot	Rote Farbe

Jobs

Job ID	Date
Demo Job Number 10	26.01.2021 15:01:35
Magenta Job	26.01.2021 15:01:40
Bunter Job	26.01.2021 15:01:43
test	26.01.2021 15:01:35

FLUODXREF.abs FLUODX sn00020

The table (1) contains up to 12 color specifications that have been uploaded from the FLUODX or that can be downloaded to the FLUODX device by clicking the Upload button or the Download button respectively. Click the Clear button to clear that table and all references currently stored in the FLUODX memory.



The table (2) lists the Reference colors stored in the color database. Move a color from device table (1) to the Reference colors database table (2) by drag & drop. The Software will prompt for a color name and save the new color to the Reference color database. Move a color from the Reference color table (2) to the device table (1) by drag & drop to prepare that specific color for the download to the FLUODX.

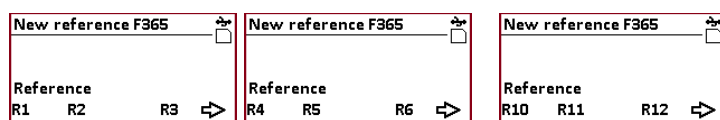
The table (3) lists the prepared job specifications containing up to 12 reference colors per job. Move a job by drag & drop from table (3) to prepare the job color specifications for the download to the FLUODX.

Set the number of active references

Active References



The FLUODX can be configured to list up to 12 references per measurement mode (MInt256, MInt365, P365A and P365B) (Measure Intensity with 256nm illumination, Measure Intensity with 365nm illumination, Measure Phosphorescence Intensity with settings A, Measure Phosphorescence Intensity with settings B). The proper reference is selected by clicking through the FLUODX menu. Press the right button of the device to display the next set of references.

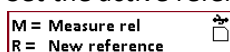


Set the number of active references to a number you really intend to use. Any number greater than what you need will slow down the operation of the device by requiring additional button clicks.

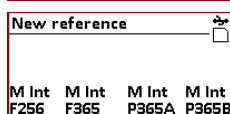
Create a new reference

References have to be measured on a physical sample. To create references for use in the database, execute the following steps:

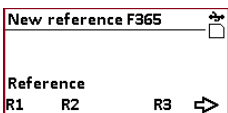
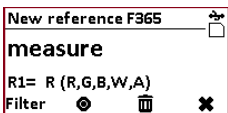
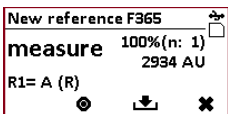
1. Connect the FLUODX to the FLUODXConnect Software and open the Reference Window
2. Set the active references to the number of references you are looking forward to create



3. M Int M Lab M Spez R Press key D to open the reference screen of the FLUODX

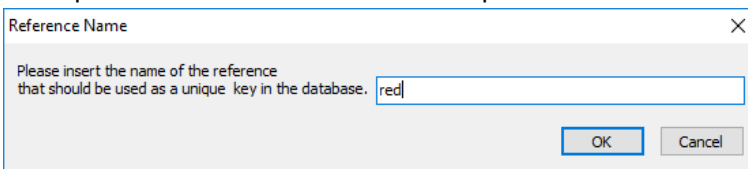
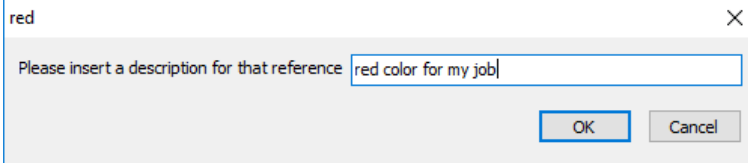


4. Select the mode by pressing the proper key of the FLUODX (for example key B for F365)

5.  Select the reference to be measured
6.  Select the filter to be used
7.  Measure on different locations of the reference sample to obtain a solid average and press key C to save the reference
8. Measure the other references accordingly
9. Click the Upload Icon of the Reference Window

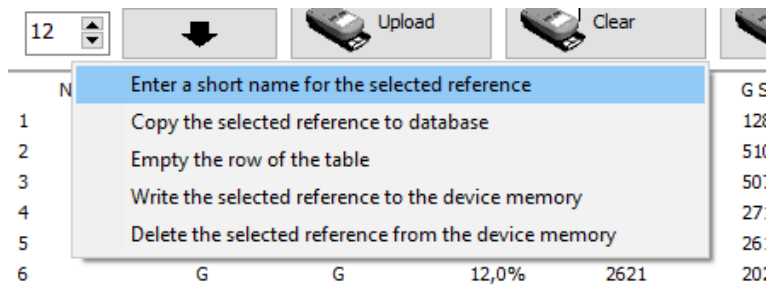
F256 F365 P365A P365B										
Active References										
12		Upload		Clear		Download				
Name	Filter	RGB	LED Power	R Signal	G Signal	B Signal	RGB	Temperature	Device	
1	AUTO	R	16,4%	2933	128	147		29,2°	sn00020	
2	R	R	18,9%	2552	510	1253		29,3°	sn00020	
3	B	B	14,6%	102	507	1292		29,3°	sn00020	
4	B	B	11,8%	614	2718	1590		29,3°	sn00020	
5	G	G	9,3%	585	2615	536		29,3°	sn00020	
6	G	G	12,0%	2621	2022	467		29,2°	sn00020	
7	White	G	11,8%	2304	2052	1223		29,2°	sn00020	

- a.
10. Drag & drop any single color from the device table to the reference table. The software will prompt for a reference short name and a reference description. The short name can be composed of max. 5 characters.

11. 
12. 

The reference specification now is saved permanently in the reference database and can be used to configure jobs or to directly configure the FLUODX reference library.

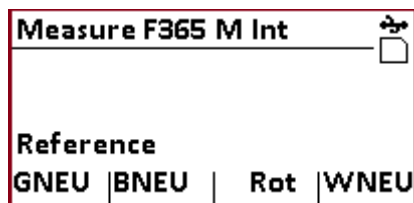
Click the right mouse button on a row of the references of the reference table to open a popup menu.



Select by moving the mouse the function from the menu list. You can perform the following actions:

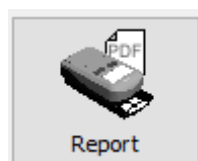
- Enter a short name for the selected reference that will appear in the FLUODX display in place of R1-R12. The short name can be 5 characters long.
- Copy the selected reference to the database, the same as the drag & drop explained above.
- Empty the row of the table to remove the proper reference specifications from the table.
- Write the selected reference to the device memory to download a single reference and not override or delete any other reference currently saved in the FLUODX memory.
- Delete the selected reference from the device memory to delete a single reference from the FLUODX memory and keep all other references unchanged.

The short name will be displayed in place of R1..R12



Create a report of the current reference setting in the device memory

Click the Report Icon to create a PDF Report about the currently saved references and tolerances.



The PDF will be created and automatically saved in the folder that has been specified in the Software Settings.

FLUODX 00020 REFERENCE SETTINGS

FLUODX AA sn:00020

Report date 2021.02.16



M Int F256

Ri	Short Name	Filter	RGB	LED Power	R Signal	G Signal	B Signal	RGB	-Tol%	+Tol%	-Tol% x	+Tol% x	-Tol% y	+Tol% y	Temperature
R1		White		100.0%	3	18	75		10%	10%	0.05	0.05	0.05	0.05	19.2°

M Int F365

Ri	Short Name	Filter	RGB	LED Power	R Signal	G Signal	B Signal	RGB	-Tol%	+Tol%	-Tol% x	+Tol% x	-Tol% y	+Tol% y	Temperature
R1	GNEU	Abs	G	18.1%	150	1347	498		10%	10%					273.0°
R2	BNEU	Abs	R	46.8%	1029	731	291		10%	10%					274.0°
R3	Rot	R		14.6%	3306	144	150		0%	0%					23.6°
R4	WNEU	White		11.2%	2436	2159	1283		0%	0%	0.00	0.00	0.00	0.00	28.3°

M Int P365A

Ri	Short Name	Filter	LED Power	Wait OFF	Exposure	Cool down	PH365	PH365Ind	PH FI	RGB	-Tol%	+Tol%	Temperature
R1		G	59.9%	5.000ms	30.000ms	1.000ms	570	16.4%	3478		10%	10%	23.9°
R2		G	59.9%	5.000ms	30.000ms	1.000ms	551	17.1%	3222		10%	10%	31.0°

M Int P365B

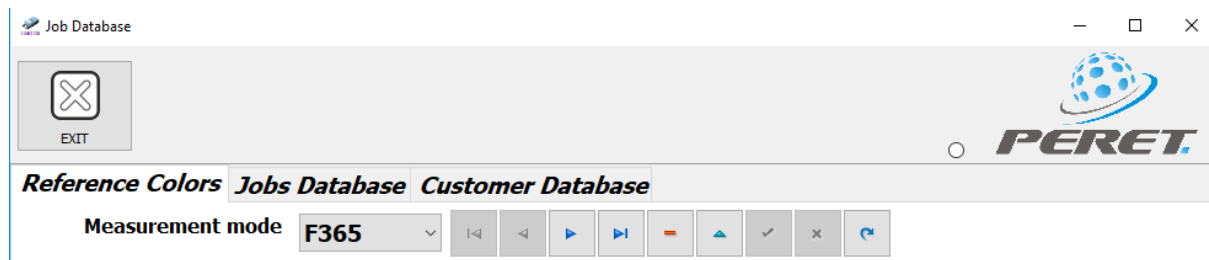
Ri	Short Name	Filter	LED Power	Wait OFF	Exposure	Cool down	PH365	PH365Ind	PH FI	RGB	-Tol%	+Tol%	Temperature
----	------------	--------	-----------	----------	----------	-----------	-------	----------	-------	-----	-------	-------	-------------

Organize references by customers and jobs

Click the Jobs Icon to open the Job Window:

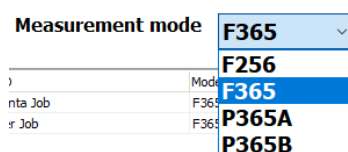


The Job window has three pages.



Reference colors database

Open the Reference colors page. Select the Measurement Mode from the List.



The references available for that measurement mode will be listed in the table. If you would like to add information or to modify tolerances, proceed as follows:



Select a reference from the List. Click the Edit Icon. The field on the right hand will turn blue. Now the information can be changed.

RGB	Reference Name	Short Name	Filter	R Signal	G Signal	B Signal	Color Number	Lot Number
Green	Green Sample 1	GNEU	1	150	1347	498	5468	14AA
Brown	Brown Sample 1	BNEU	0	1029	731	291	1541	AA7
White	WNEU	WNEU	3	2436	2159	1283	1234	AA5
White	wk	WNEU	W	2436	2159	1283		
Black	rr	BNEU	R	1029	731	291		
Red	Rote Farbe	Rot	R	3306	144	150		

Reference Name: Green Sample 1
Short Name: GNEU
Color Number: 5468
Lot Number: 14AA
Manufacturer: SICPA
Description: GNEU
- Tolerance% +
M Int F: 15 10
M Int F (Filter W) x *100: 5 5
M Int F (Filter W) y *100: 5 5



Click the Check Icon to confirm your modifications and to store the data permanently in the database.

Customer database

Insert the customer details in your database. Select the Customer database page.

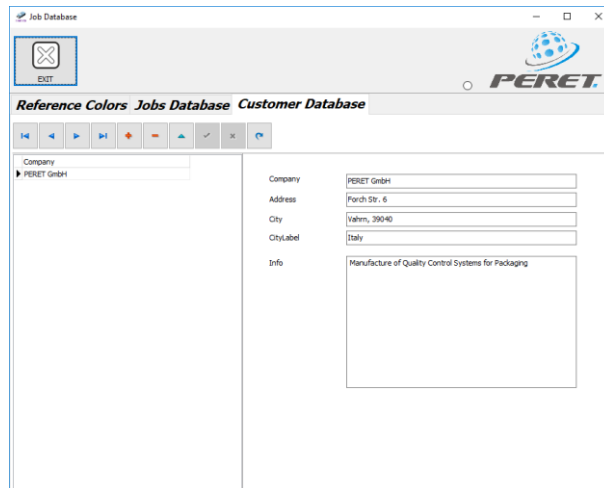


Click the Add Icon to add a new record.

Insert the customer company name and details.

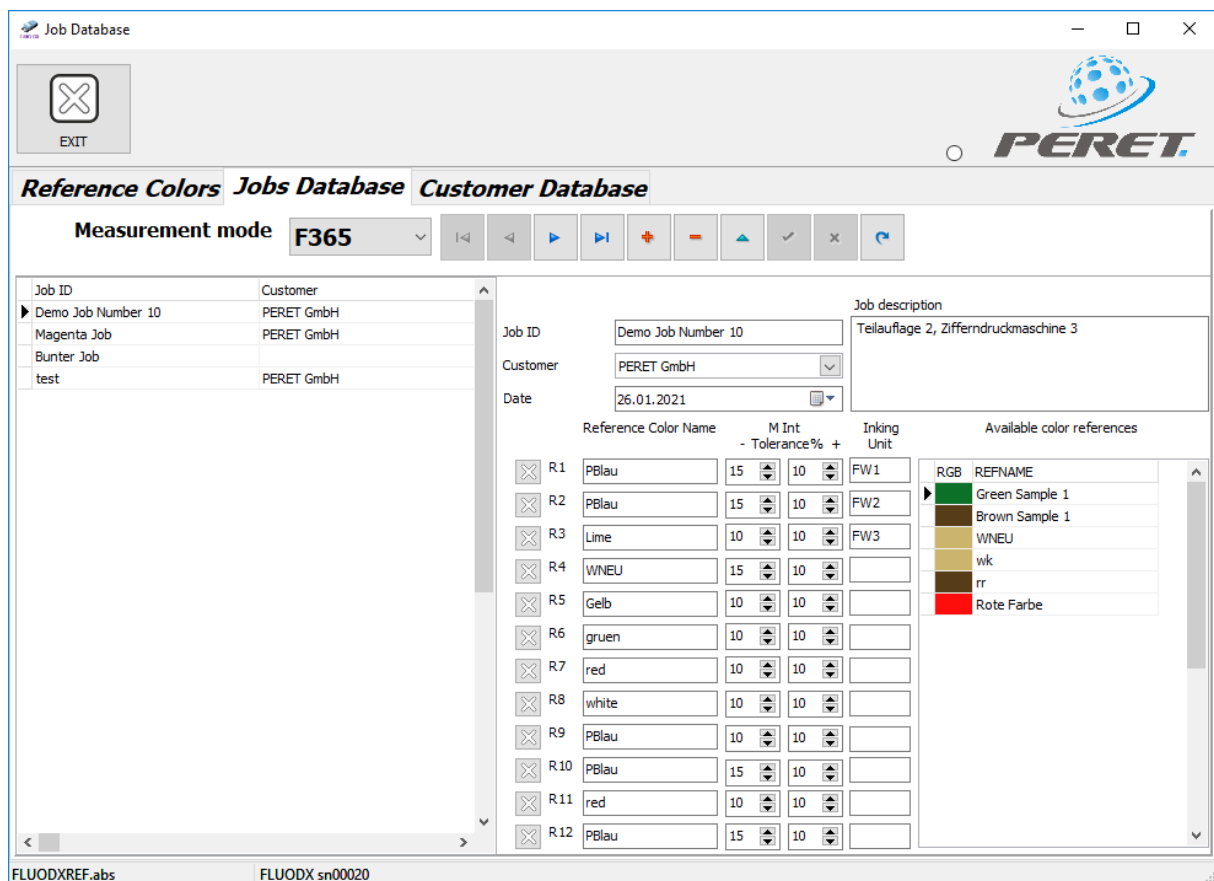


Click the Check Icon to confirm your modifications and to store the data permanently in the database.

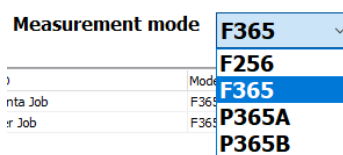


Job database

Open the Jobs Database page



Select the measurement mode from the Measurement Mode List



Click the Add Icon to add a new Job

- Drag & drop references from the reference list to the fields R1..R2
- Edit tolerances if required
- Add additional information like inking unit and description



Click the Check Icon to confirm your modifications and to store the data permanently in the database.

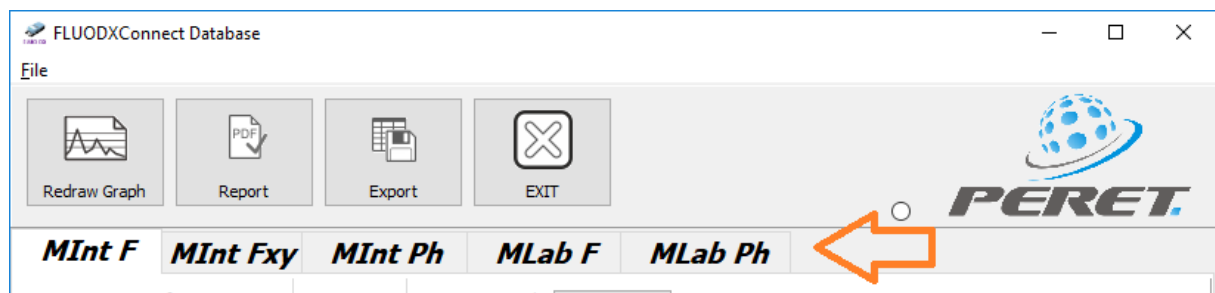
The new Job is now ready for download to the device.

Measurement Database

The FLUODXConnect PRO Software saves any uploaded measurement to a measurement database. Click the Database Icon to open the Database Window that will give access to the saved measurements.

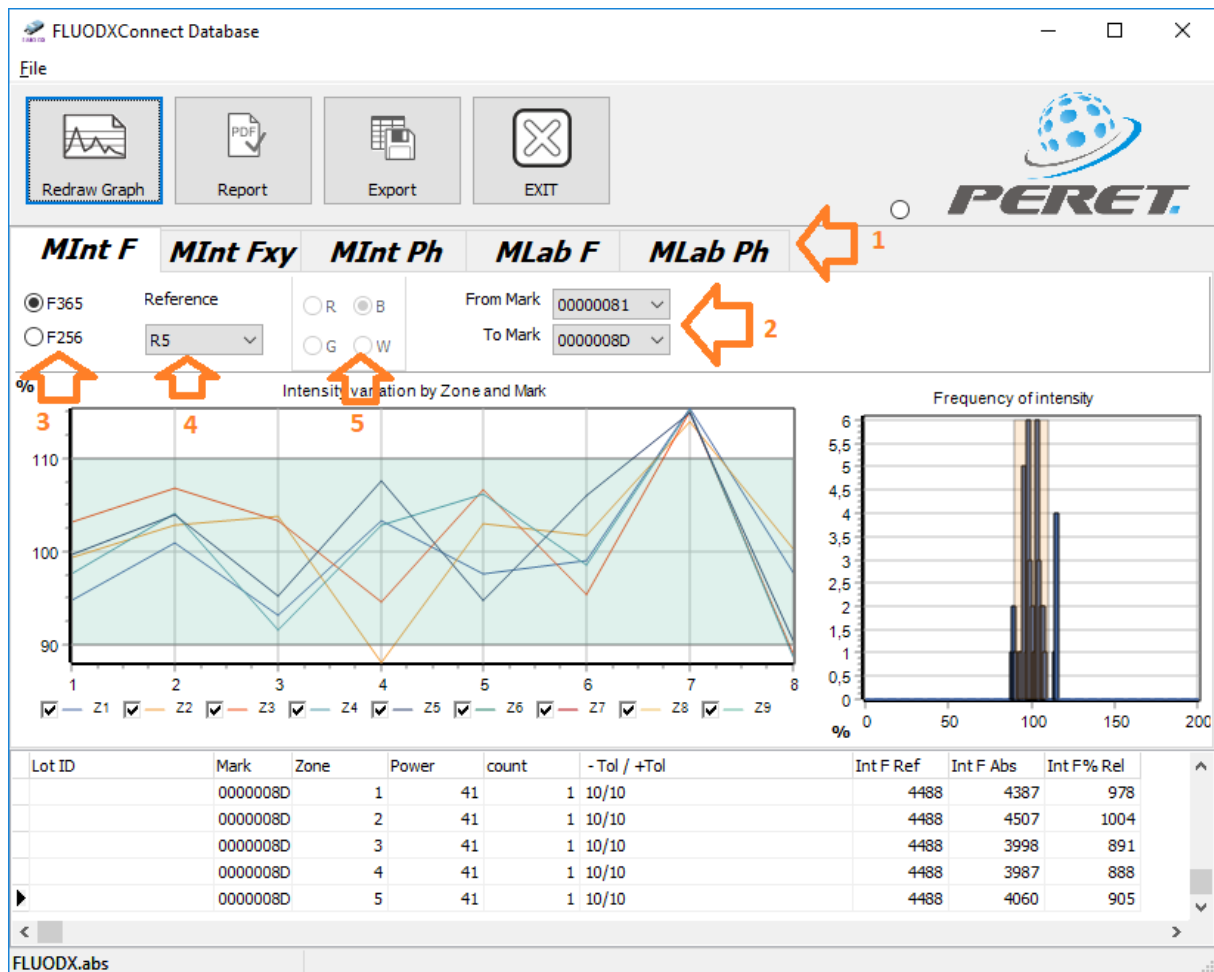


The Database Window gives access to the measurement data taken in a specific measurement mode (1). Select the proper page you would like to create reports of.



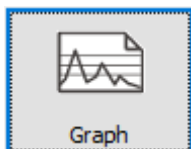
- MInt F: Measurement data of Fluorescence Intensity with 256nm or 365nm illumination)
- MInt Fxy: Measurement data of Fluorescence Intensity taken with filter W (white) and xy measurement for both illuminations, 256nm and 365nm.
- MInt Ph: Measurement data of Phosphorescence Intensity with setting A or setting B
- MLab F: Measurement data taken in Laboratory Fluorescence Measurement mode
- MLab Ph: Measurement data taken in Laboratory Phosphorescence Measurement mode

M Int Report generation

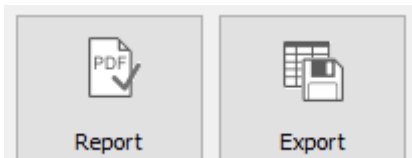


1. Select the MIntF Page to analyze MInt Measurement data and create MInt reports
2. Select the time frame in terms of Mark Identifier
3. Select the light source F365 or F256
4. Select the Reference used or ABS in case of absolute measurements
5. Select the Filter R,G,B,W in case of absolute measurements. In case of measurements related to a reference, the filter of the reference is selected automatically.

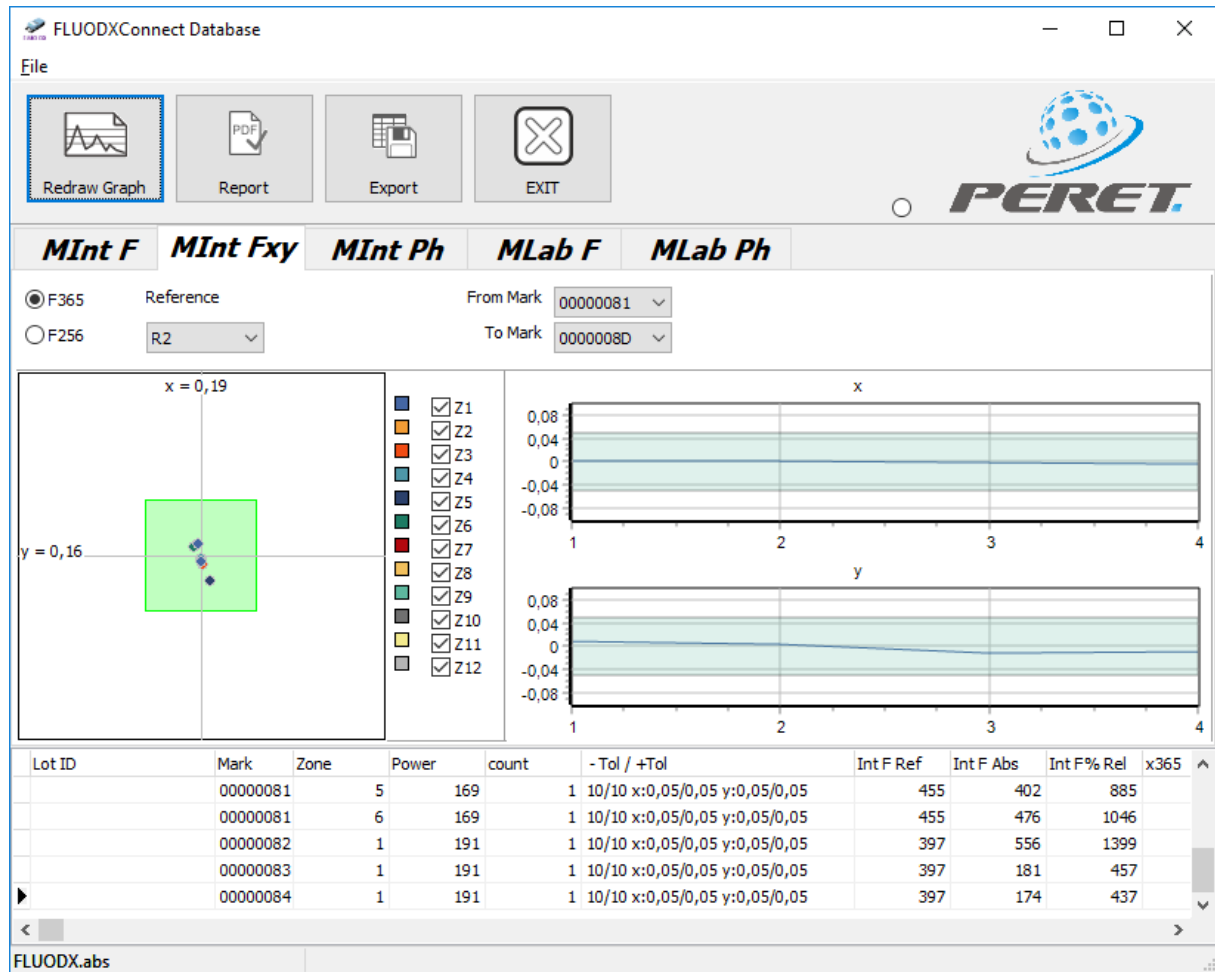
Click the Graph Icon to filter the data in the database according to your settings and display the graphs.



Click the report Icon to create a PDF report or the Export Icon to save the data to an EXCEL file.

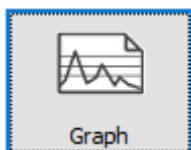


MInt F xy Report generation

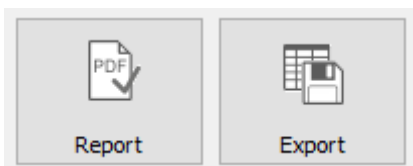


1. Select the MIntFxy Page to analyze MInt Fxy Measurement data and create MInt Fxy reports
2. Select the time frame in terms of Mark Identifier
3. Select the light source F365 or F256
4. Select the Reference that has been configured to use the W (white) filter

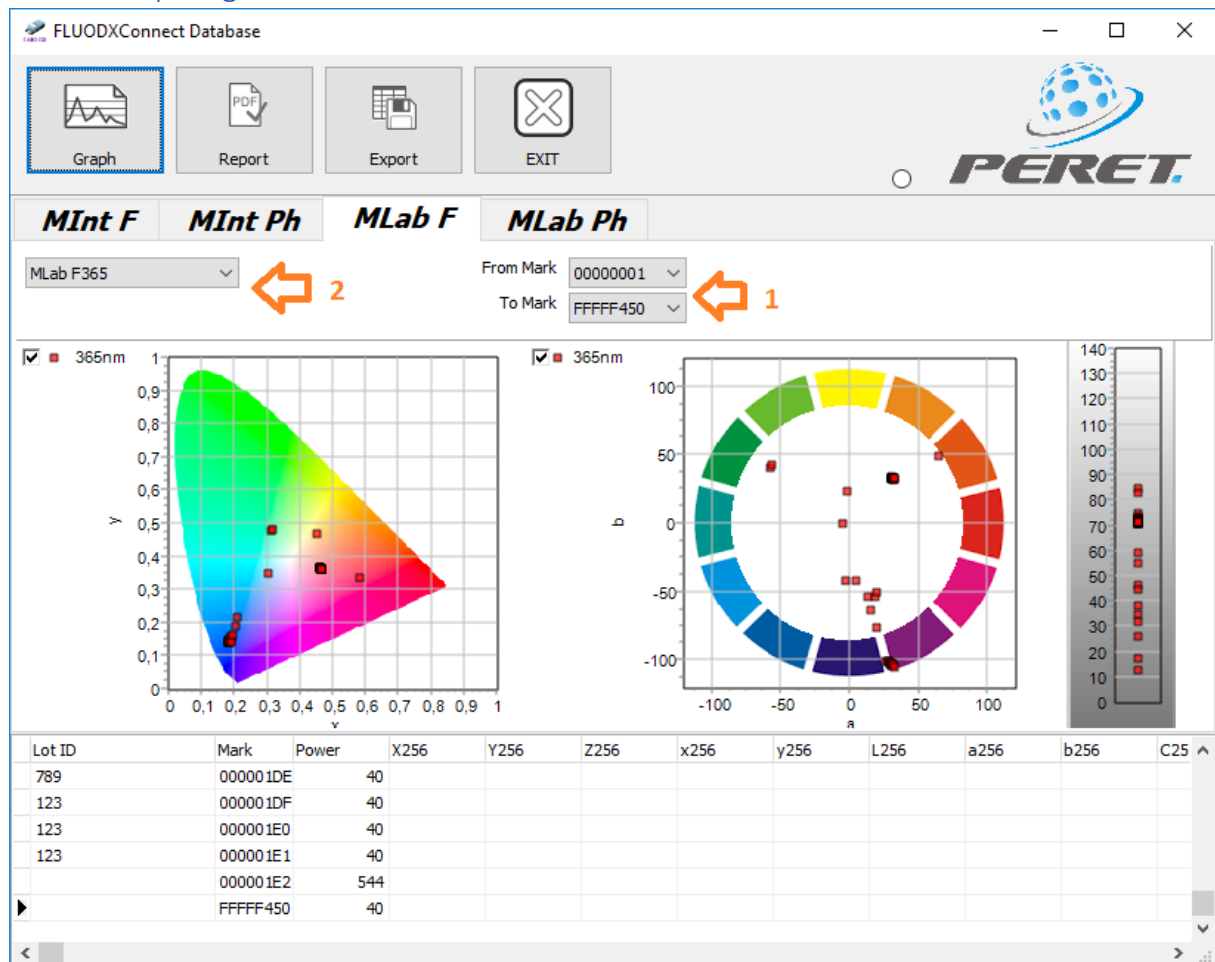
Click the Graph Icon to filter the data in the database according to your settings and display the graphs.



Click the report Icon to create a PDF report or the Export Icon to save the data to an EXCEL file.

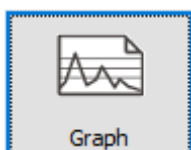


MLab F Report generation

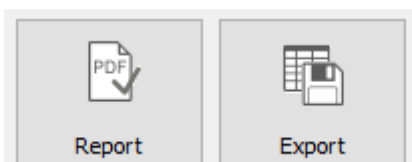


1. Select the time frame in terms of Mark identifiers
2. Select the Measurement function

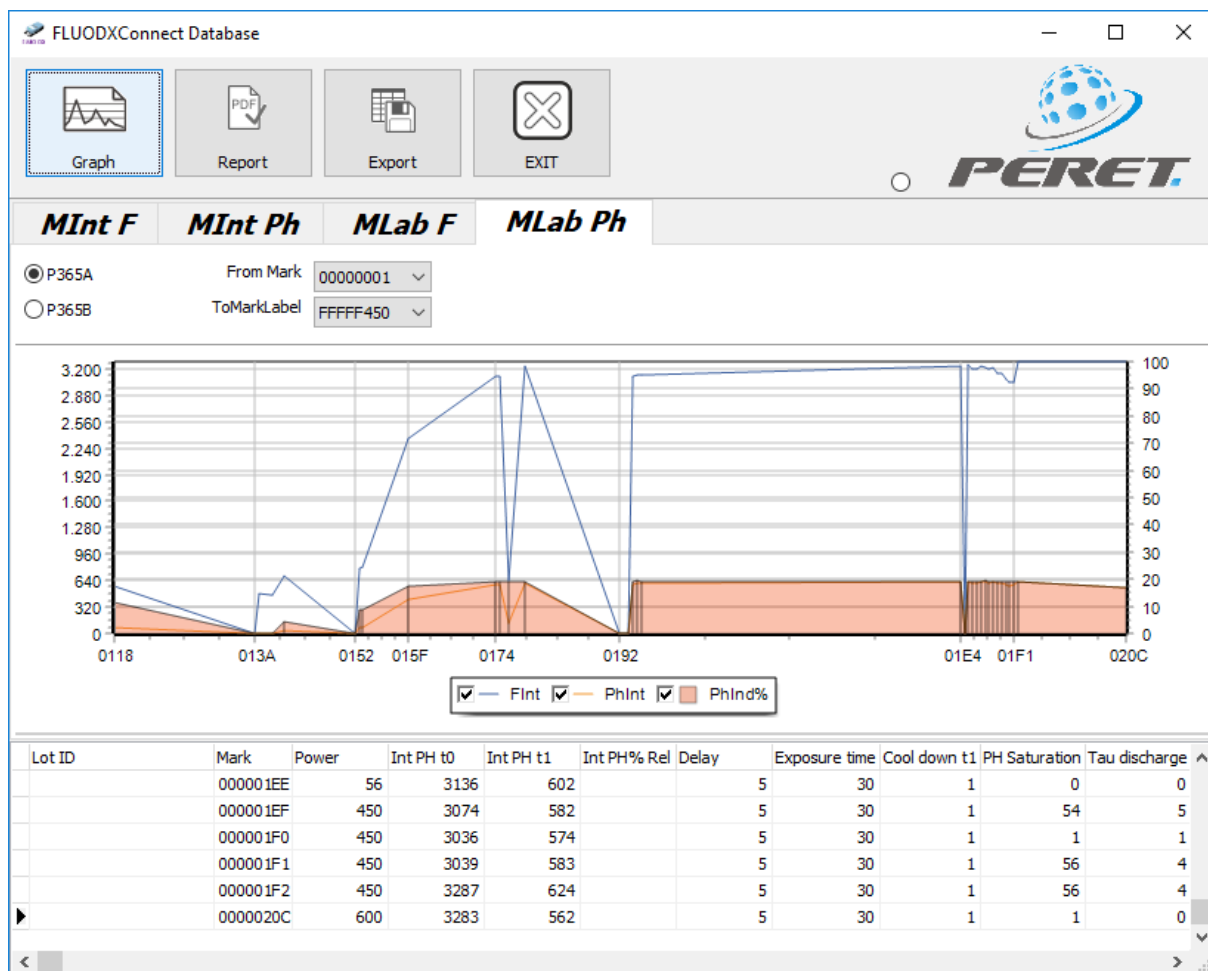
Click the Graph Icon to filter the data in the database according to your settings and display the graphs.



Click the Report Icon to create a PDF report or the Export Icon to save the data to an EXCEL file.

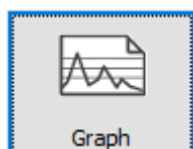


MLab PH report generation



Select the Settings P365A or P365B

Click the Graph Icon to filter the data in the database according to your settings and display the graphs.



Click the Report Icon to create a PDF report or the Export Icon to save the data to an EXCEL file.

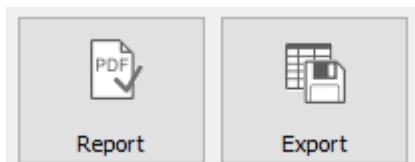


Table of Abbreviations

MInt256	Measure Intensity with 256nm illumination
MInt365	Measure Intensity with 365nm illumination
P365A	Measure Phosphorescence Intensity with settings A
P365B	Measure Phosphorescence Intensity with settings B
MInt F	Measurement data of Fluorescence Intensity measurements with 256nm or 365nm illumination)
MInt Fxy	Measurement data of Fluorescence Intensity measurements taken with filter W (white) and xy measurement on for both illuminations, 256nm and 365nm
MInt Ph	Measurement data of Phosphorescence Intensity measurements with setting A or setting B
MLab F	Measurement data taken in Laboratory Fluorescence Measurement mode
MLab Ph	Measurement data taken in Laboratory Phosphorescence Measurement mode