



## INTERLAB OMEGA DETECTORS

Clarity Control Module

ENG

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To facilitate the orientation in the **Interlab Omega Detectors** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

**Instrument** (blue text) marks the name of the window to which the text refers.

*Open File* (italics) describes the commands and names of fields in **Clarity**, parameters that can be entered into them or a window or dialog name (when you already are in the topic describing the window).

WORK1 (capitals) indicates the name of the file and/or directory.

*ACTIVE* (capital italics) marks the state of the station or its part.

The bold text is sometimes also used for important parts of the text and the name of the **Clarity** station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

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**Note:** Notifies the reader of relevant information.

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**Caution:** Warns the user of possibly dangerous or very important information.

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**■ Marks the problem statement or trouble question.**

**Description:** Presents more detailed information on the problem, describes its causes, etc.

**Solution:** Marks the response to the question, presents a procedure how to remove it.

# 1 Interlab Omega Detectors

This manual describes the setting of the Interlab Omega detectors.



*Fig 1: Interlab Omega detector*

Direct control means that the detector can be completely controlled from the **Clarity** environment, including the digital data acquisition. That way, no A/D converter is needed. Instrument method controlling the analysis conditions will be saved in the measured chromatograms.

## 2 Requirements

- **Clarity** Installation medium or **Clarity** installer file with LC Control module (p/n A24).
- Free serial USB port in the PC.
- USB A-B cable (p/n SK06) in case of the USB connection. After connecting the instrument to the PC a virtual COM port is created in Windows.

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*Note:* Cables are not part of **Clarity** Control Module. It is strongly recommended to order required cables together with the Control Module.

# 3 Installation Procedure

## 3.1 Hardware - Wiring

**Interlab Omega** detectors are controlled via USB communication, it uses standard USB A-B cable.

## 3.2 Clarity Configuration - Interlab Omega UV-Vis Detector

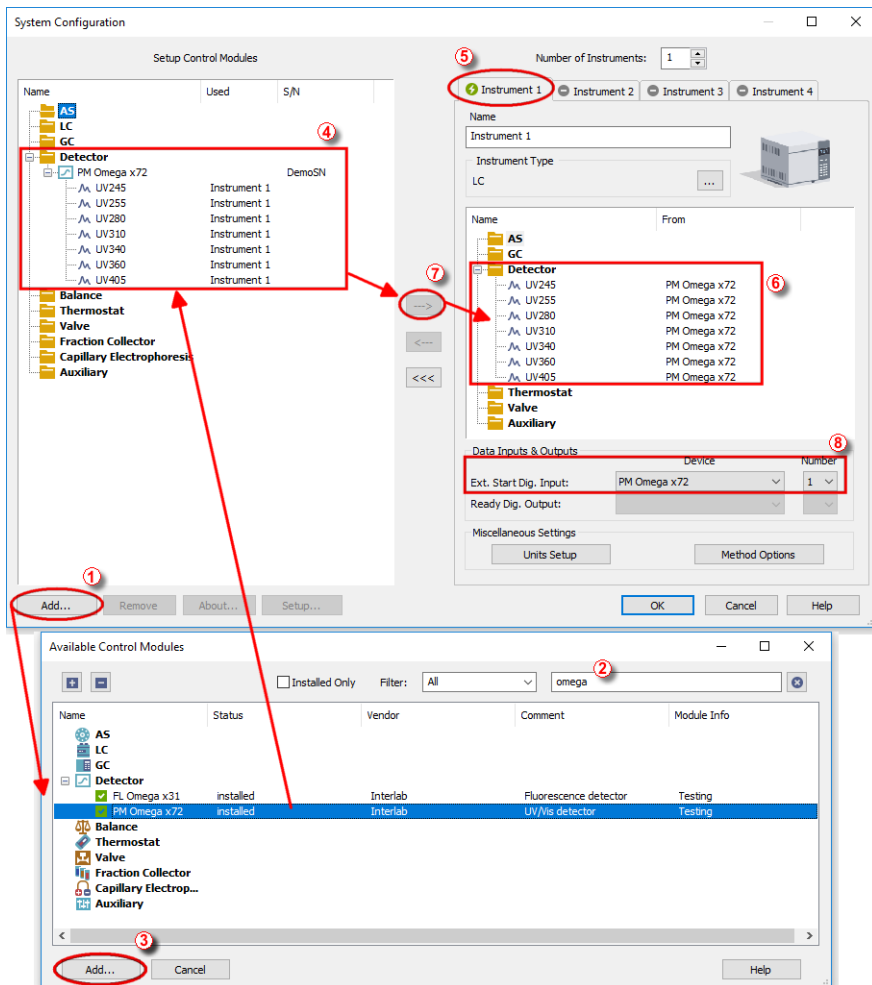


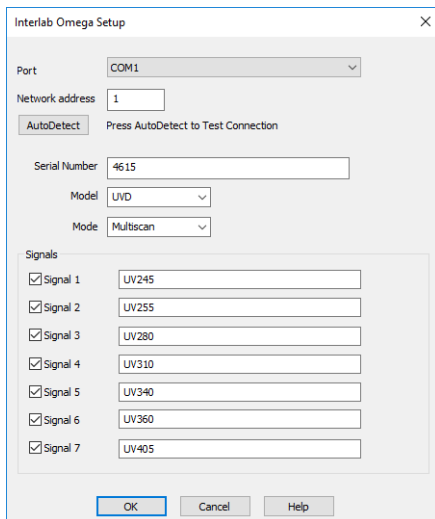
Fig 2: System Configuration - UV-Vis Detector

- Connect the **Interlab Omega UV-VIS detector** to the USB port of the computer and wait until Windows installs all required drivers. New COM port should manifest on the computer.
- Start the **Clarity** station by clicking on the  icon on the desktop.
- Invoke the **System Configuration** dialog accessible from the **Clarity** window using the *System - Configuration...* command.



- Press the *Add* button ① (see **Fig 2** on pg 4.) to invoke the **Available Control Modules** dialog.
- You can specify the searching filter ② to simplify the finding of the driver.
- Select the **PM Omega x72** and press the *Add* ③ button.


The **Interlab Omega UV-Vis** dialog will appear (see **Fig 3** on pg 6.).



*Fig 3: Interlab Omega UV-Vis Setup*

- Select the correct *Port* and press the *Autodetect* button. If the detector is connected correctly, the serial number will be displayed.
- Choose the mode and fill in the signal names.
- Press the *OK* button.

The **PM Omega x72** will appear in the *Setup Control Modules* list ④ of the **System Configuration** dialog.

- Drag and drop the **PM Omega x72** icon from the *Setup Control Modules* list ④ on the left side of the **System Configuration** dialog to the desired *Instrument* ⑤ tab on the right side ⑥ (or use the  button ⑦ to do so).
- Set the *Ext. Start Dig. Input* to *PM Omega x72 Device* and appropriate *Number* ⑧ for external start of acquisition.

*Note:* The configuration dialog of the **Interlab Omega UV-VIS** detector (**Interlab Omega UV-Vis**) can be displayed any time by double-clicking on its icon or using the *Setup* button.

### 3.3 Clarity Configuration - Interlab Omega FLD Detector

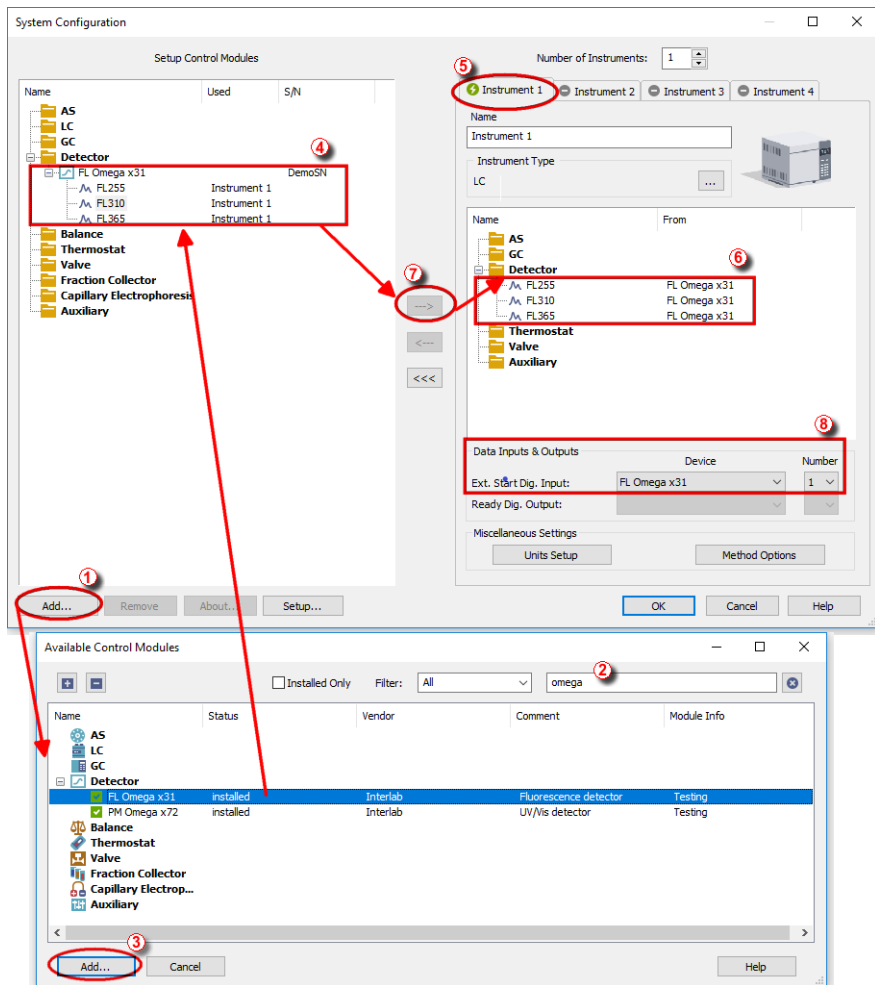



Fig 4: System Configuration - FLD Detector

- Connect the **Interlab Omega FLD detector** to the USB port of the computer and wait until Windows installs all required FL drivers. New COM port should manifest on the computer.



- Start the **Clarity** station by clicking on the  icon on the desktop.
- Invoke the **System Configuration** dialog accessible from the **Clarity** window using the *System - Configuration...* command.

- Press the *Add* button ① (see **Fig 4** on pg 7.) to invoke the **Available Control Modules** dialog.
- You can specify the searching filter ② to simplify the finding of the driver.
- Select the **FL Omega x31** and press the *Add* ③ button.

The **Interlab Omega FLD** dialog will appear (see **Fig 5** on pg **9**).

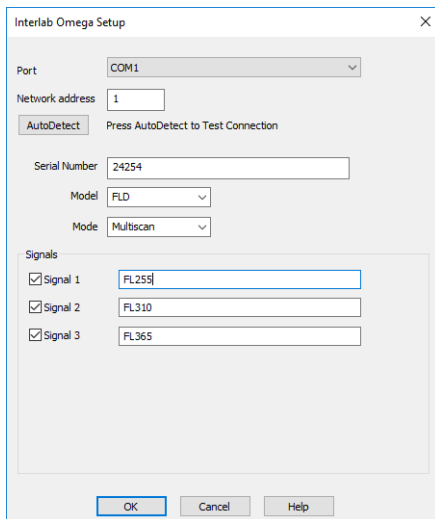


Fig 5: Interlab Omega FLD Setup

- Select the correct *Port* and press the *Autodetect* button. If the detector is connected correctly, the serial number will be displayed.
- Choose the mode and fill in the signal names.
- Press the *OK* button.

The **FL Omega x31** will appear in the *Setup Control Modules* list **④** of the **System Configuration** dialog.

- Drag and drop the **FL Omega x31** icon from the *Setup Control Modules* list **④** on the left side of the **System Configuration** dialog to the desired *Instrument* **⑤** tab on the right side **⑥** (or use the **→** button **⑦** to do so).
- Set the *Ext. Start Dig. Input* to *FL Omega x31 Device* and appropriate *Number* **⑧** for external start of acquisition.

*Note:* The configuration dialog of the **Omega Interlab FLD** detector (**Interlab Omega FLD**) can be displayed any time by double-clicking on its icon or using the *Setup* button.

## 4 Using the control module - UV-Vis Detector

New **Acquisition** tab is created in the **Method Setup** dialog. If there are any other detectors configured on the instrument, then the **Interlab Omega UV-Vis** detector can be accessed by switching to the desired signal in the *Select Detector* section on the top of the dialog.

### 4.1 Interlab Omega UV-Vis Detector Setup

The **Interlab Omega UV-Vis Setup** dialog serves for the correct setting of the communication between **Clarity** and the detector.

Interlab Omega Setup

Port: COM1

Network address: 1

AutoDetect: Press AutoDetect to Test Connection

Serial Number: 4615

Model: UVD

Mode: Multiscan

Signals

<input checked="" type="checkbox"/>	Signal 1	UV245
<input checked="" type="checkbox"/>	Signal 2	UV255
<input checked="" type="checkbox"/>	Signal 3	UV280
<input checked="" type="checkbox"/>	Signal 4	UV310
<input checked="" type="checkbox"/>	Signal 5	UV340
<input checked="" type="checkbox"/>	Signal 6	UV360
<input checked="" type="checkbox"/>	Signal 7	UV405

OK Cancel Help

Fig 6: Interlab Omega UV-Vis Setup

#### Port

Selection of the communication port. Only COM ports with number in range 1 to 99 can be used.

#### Network address

Sets the network address of particular detector.

#### Autodetect

This button is used to test the connection to the **Interlab Omega** detector using the previously set *COM Port*. Obtained data about the detector are then displayed in the dialog. Be aware that clicking *Autodetect* results in resetting signal names to default values.

**Serial Number**

Displays the serial number of the detector. In case that autodetection was successful it is not necessary to set it manually.

**Model**

Sets the type of the detector.

**Mode**

Sets the scanning mode of the detector.

**Signals**

Enables to set the detector signals names. In *Multiscan* mode the names are prefilled automatically with wavelengths, in *Monoscan* mode it is suggested to fill in some neutral name (e.g. UV-Vis Signal), as the actual wavelength can be changed during the analysis.

## 4.2 Method Setup - Acquisition - UV-Vis detector

The *Method Setup - Acquisition* tab is dedicated to setting and viewing parameters of the method. All parameters set on those sub-tabs are automatically sent to the **Interlab Omega UV-Vis** detector prior to each injection in the *ACTIVE* sequence and may be sent there manually by using the *Send Method* button in the lower part of this tab or in the [Single Analysis](#) dialog.

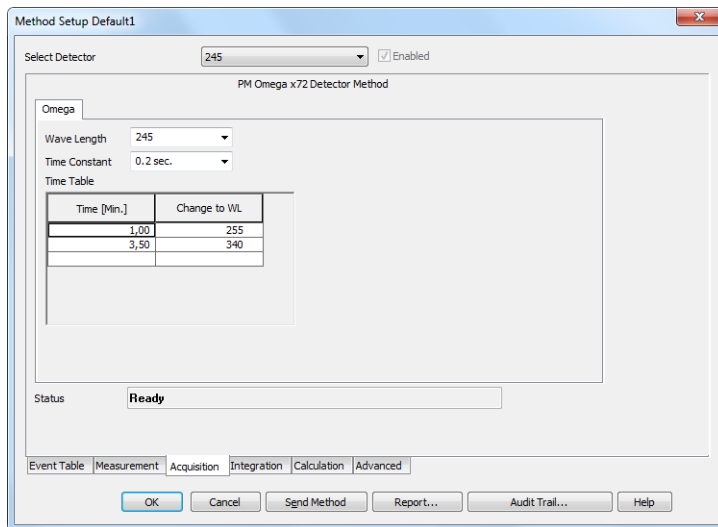


Fig 7: Method Setup - Acquisition - UV Vis detector

### Wavelength

Sets or displays the wavelength used for acquisition of this signal. In *Multiscan* mode this value cannot be changed.

### Time Constant

Sets the time constant used for filtering this signal.

### Time Table

Time Table serves for programming the changes of wavelength during the analysis. It is available only in *Monoscan* mode of the detector (see [Interlab Omega UV-Vis Setup](#)).

When a time event occurs, it is indicated in the chromatogram

#### Time [Min.]


Enter the time in which the wavelength changes. Time is entered in minutes and tenths of minute.

#### Change to WL

Select the wavelength to which it will switch at the specified time.



### 4.3 Device Monitor - UV-Vis Detector

The window with the detector status can be invoked by the *Monitor - Device Monitor* command from the **Instrument** window or using the  *LC Monitor* icon. It displays the actual signal values for all used wavelengths.

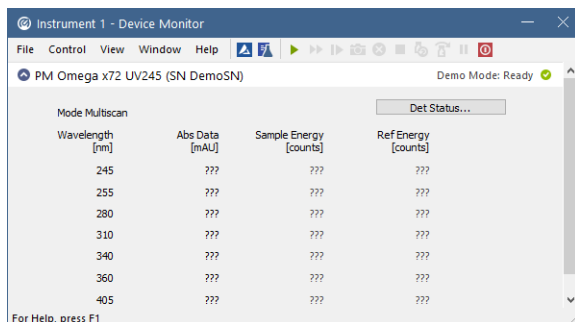


Fig 8: Device Monitor UV-Vis Detector

**Note:** Sample and Reference Energy values out of correct working limits are highlighted in red.

#### Det Status...

Opens the **Hardware Configuration** dialogue, displaying detail information about the connected device.

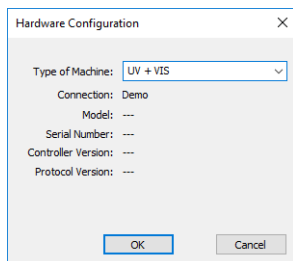


Fig 9: Hardware Configuration UV-Vis detector

## 5 Using the control module - FLD Detector

New **Acquisition** tab is created in the **Method Setup** dialog. If there are any other detectors configured on the instrument, then the **Interlab Omega FLD** detector can be accessed by switching to the desired signal in the *Select Detector* section on the top of the dialog.

### 5.1 Interlab Omega FLD Detector Setup

The **Interlab Omega FLD Setup** dialog serves for the correct setting of the communication between **Clarity** and the detector.

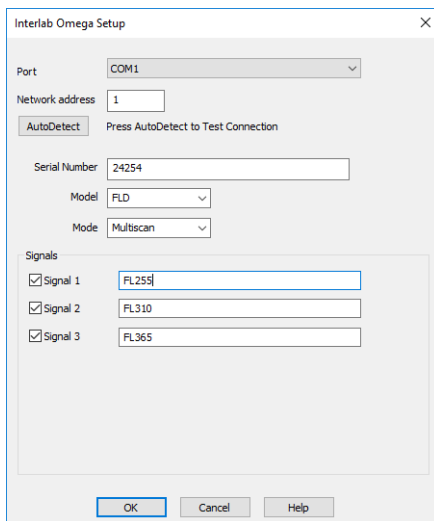


Fig 10: Interlab Omega FLD Setup

#### Port

Selection of the communication port. Only COM ports with number in range 1 to 99 can be used.

#### Network address

Sets the network address of particular detector.

#### Autodetect

This button is used to test the connection to the **Interlab Omega** detector using the previously set *COM Port*. Obtained data about the detector are then displayed in the dialog. Be aware that clicking *Autodetect* results in resetting signal names to default values.

**Serial Number**

Displays the serial number of the detector. In case that autodetection was successful it is not necessary to set it manually.

**Model**

Sets the type of the detector.

**Mode**

Sets the scanning mode of the detector.

**Signals**

Enables to set the detector signals names. In *Multiscan* mode the names are prefilled automatically with wavelengths, in *Monoscan* mode it is suggested to fill in some neutral name (e.g. FL Signal), as the actual wavelength can be changed during the analysis.

## 5.2 Method Setup - Acquisition - FLD detector

The *Method Setup - Acquisition* tab is dedicated to setting and viewing parameters of the method. All parameters set on those sub-tabs are automatically sent to the **Interlab Omega FLD** detector prior to each injection in the *ACTIVE* sequence and may be sent there manually by using the *Send Method* button in the lower part of this tab or in the [Single Analysis](#) dialog.

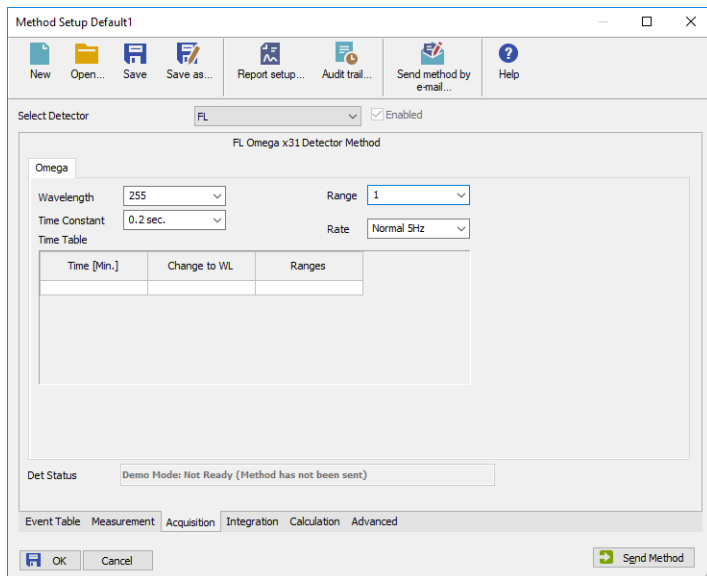


Fig 11: Method Setup - Acquisition - FLD detector - Monoscan Mode

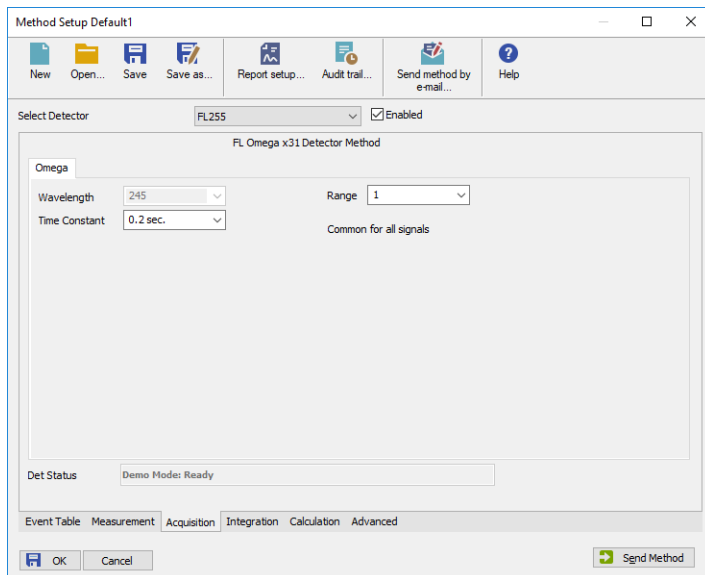


Fig 12: Method Setup - Acquisition - FLD detector - Multiscan Mode

### Wavelength

Sets or displays the wavelength used for excitation of the selected detector signal. In *Multiscan* mode this value cannot be changed.

### Time Constant

Sets the time constant used for filtering this signal.

### Range

Sets the range for the selected detector signal.

### Rate

Sets the acquisition rate of detector signal. This option is available only in *Monoscan* mode of the FLD detector.

### Time Table

Time Table serves for programming the changes of excitation wavelengths during the analysis. It is available only in *Monoscan* mode of the FLD detector.

When a time event occurs, it is indicated in the chromatogram

#### Time [Min.]

Enter the time in which the wavelength changes. Time is entered in minutes and tenths of minute.


#### Change to WL

Select the wavelength to which it will switch at the specified time.

#### Ranges

Select the range to which it will switch at the specified time.

### 5.3 Device Monitor - FLD Detector

The window with the detector status can be invoked by the *Monitor - Device Monitor* command from the **Instrument** window or using the  *LC Monitor* icon. It displays the actual signal values for all used wavelengths.

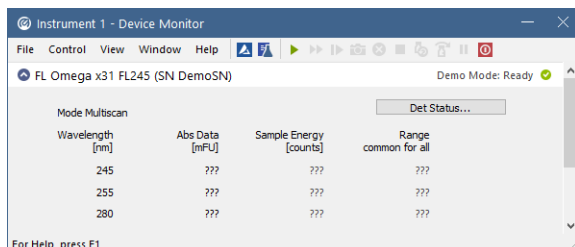


Fig 13: Device Monitor FLD Detector

**Note:** Sample and Reference Energy values out of correct working limits are highlighted in red.

#### Det Status...

Opens the **Hardware Configuration** dialogue, displaying detail information about the connected device.

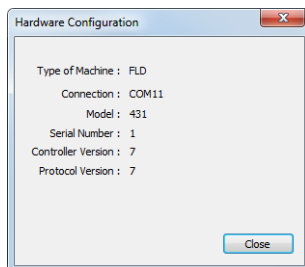


Fig 14: Hardware Configuration FLD detector

# 6 Report Setup - Interlab Omega Detectors

All of the detector settings accessible on the [Method Setup - Acquisition](#) tab for the given signal are reported. To do so, the *Instrument Control* parameter on the [Method](#) tab of the [Report Setup](#) dialog must be checked.

## 6.1 Report Setup - UV-Vis Detector

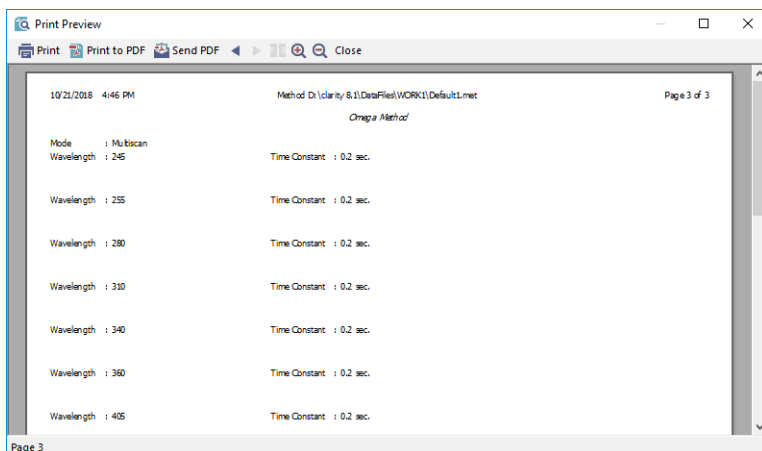


Fig 15: Print Preview of the Report Setup - UV Vis Detector

## 6.2 Report Setup - FLD Detector

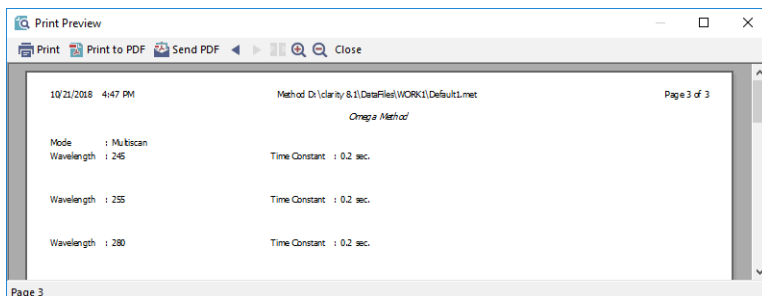


Fig 16: Print Preview of the Report Setup - FLD Detector

## 7 Troubleshooting

When the remedy for some problem cannot be discovered easily, the recording of communication between **Clarity** and the detector can significantly help the **DataApex** support to discover the cause of the problem.

The recording can be enabled by adding or amending the COMMDRV.INI file in the **Clarity** installation directory (C:\CLARITY\CFG by default). The file can be edited in any text editor (e.g. Notepad). Following section should be edited or added:

```
[COM1]
echo=on
textmode=on
filename=Omega_Comm_%D.txt
reset=off
```

---

*Note:* Instead of COM1 type the correct serial port used to communicate with the **Interlab Omega** detector. This port number is displayed when the *Det Status* button in the [Device Monitor](#) is invoked.

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*Note:* %D (or %d) in the filename parameter means that the log will be created separately for each day. The *reset=off* parameter disables deleting the content of the log each time the station is started during the same day.

The created \*.TXT files will greatly help in diagnosis of unrecognized errors and problems in communication.