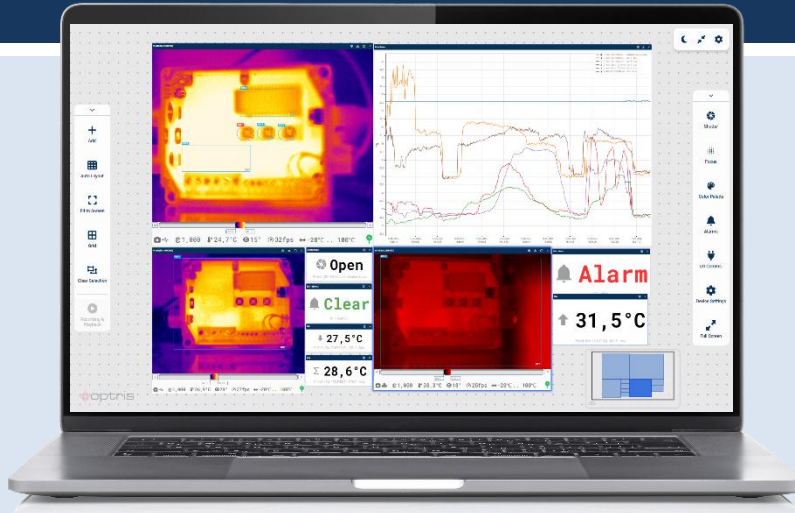


optris® Connect

Software for Thermal Image Visualization of Optris Thermal Cameras



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Welcome!

Thank you for choosing the Optris infrared camera and corresponding Optris Connect software!

The Optris PI or Xi calculates the surface temperature based on the emitted infrared energy of objects [► **Basics of Infrared Thermometry**]. The two-dimensional detector (FPA - Focal Plane Array) or (CMOS - Complementary metal-oxide-semiconductor) allows a measurement depending on the device max. pixels and will be shown as thermographic image using standardized or customized color palettes.

Optris Connect offers you a quick and easy way to operate our infrared cameras and see the thermal image. With this basic software, it is very easy to generate infrared images, define measurement fields, and configure alarms or additional analog or digital outputs.

For additional advanced functions, please use the **PIX Connect** software to perform a detailed process analysis and enable process control.

Legal disclaimer

All products are warranted against defective materials and workmanship for a period of two (2) years from the delivery date of the original purchase, provided such products have been under normal storage, use and service, and in accordance with the instruction. This warranty expires in case of inappropriate use of all delivered components.

Any products that we include in our systems but do not manufacture ourselves are covered only by the warranty provided by their original supplier (if one exists). We are not responsible for any issues or claims related to these products. The manufacturer is not responsible or liable for any use of the Optris Connect software. The manufacturer does not carry liability for error-free operation of the software in any hardware and operating system.

The warranty is not expressed for possible quality changes, errors when presenting the software, defects occurring during operation or insufficiencies in certain applications. The user is liable for any defects or data processing insufficiencies when using the software.

The manufacturer has no other liability inside the scope of supply other than mentioned above. The manufacturer shall not be liable for any business loss or claim for compensation, loss of the computer software, possible loss of data, additional costs for replacement software, claims of third parties or other occurring costs or failures and deficits.

The software is protected by copyright and is not allowed to be changed or sold to third parties.



Note

Read the manual carefully before you start the device. The manufacturer reserves the right to change the herein described specifications in case of technical advance of the product.

1. Minimum hardware requirements

Optris Connect is designed for optimal performance even on minimal hardware. Whether used on low-cost hardware or an industrial PC with limited processing power, the software can still be operated. Nevertheless, certain minimum hardware requirements must be met.

Memory: 8 GB (recommended: 16 GB)

CPU: Intel Core 6th generation (recommended: 10th generation or higher), or AMD Ryzen (all generations)

Graphics Card:

- Nvidia 900 Series or newer
- AMD Radeon HD 7000 or newer
- AMD APU: all Ryzen-based models
- Intel Discrete: all models
- Intel iGPU: 6th generation or higher (recommended: at least 10th generation)

Operating System: Windows 10 (recommended: Windows 11), Debian/Ubuntu

Optris Connect also runs on the Raspberry Pi 5 mini-computer.

2. Getting started

1.1. Downloading the software

Please download the software from the Optris website <https://optris.com/software/> or use the QR-code



Please fill out the fields and accept the privacy statement.

Complete the form to download the file

Fields marked * are required

First Name *	Last Name *
Company or Organisation *	Email *
Part number *	Serial number *

Enter part number (OPF...)

Serial number can be found on the device and starts with 3, 5, 6. Please enter the digits without 000.

☐ I agree to receive further product information and updates via email or other communication channels.

☒ I have read and understood the [data privacy statement](#)

Request Download

1.2. Installing the software



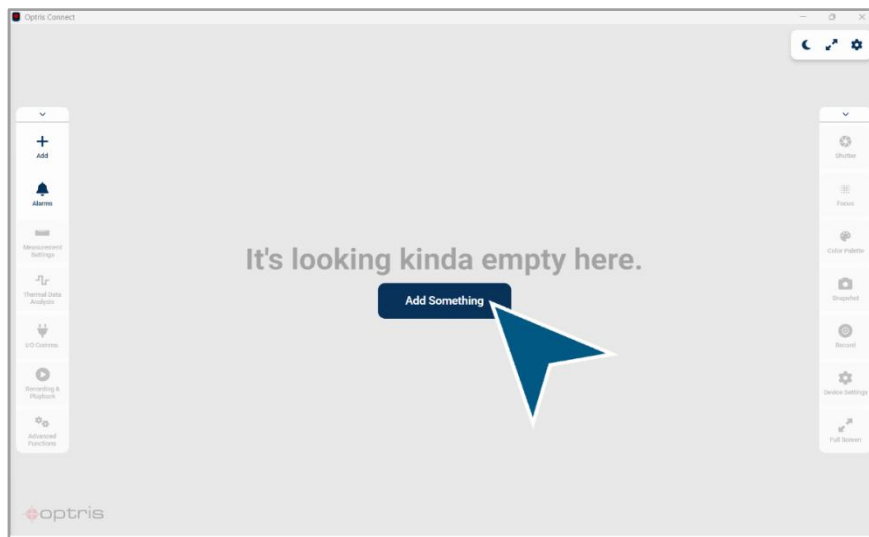
After downloading the software, install it by double-clicking the icon .



After installing the software, click the icon to open it. The software checks automatically for updates and installs them after starting. Also, all missing packages will be installed automatically. Please ensure Internet access on your computer.

2. First steps

Connect your camera(s) via USB cable for USB cameras or ETH cameras or via Ethernet cable for ETH cameras. The default IP address for the ETH series cameras is 192.168.0.101. For usage of an ETH series camera over Ethernet, your computer has to be in the same network like the camera, e.g. 192.168.0.1.



By opening the software, the main window will appear. For adding a thermal view of connected cameras click on the icon in the left toggle bar or on *Add Something* like shown in Figure 1.

Figure 1: Optris Connect first step, open software

After clicking on Add something you have the choice to add a camera or a widget. To see the thermal image of the connected camera, click on Camera.

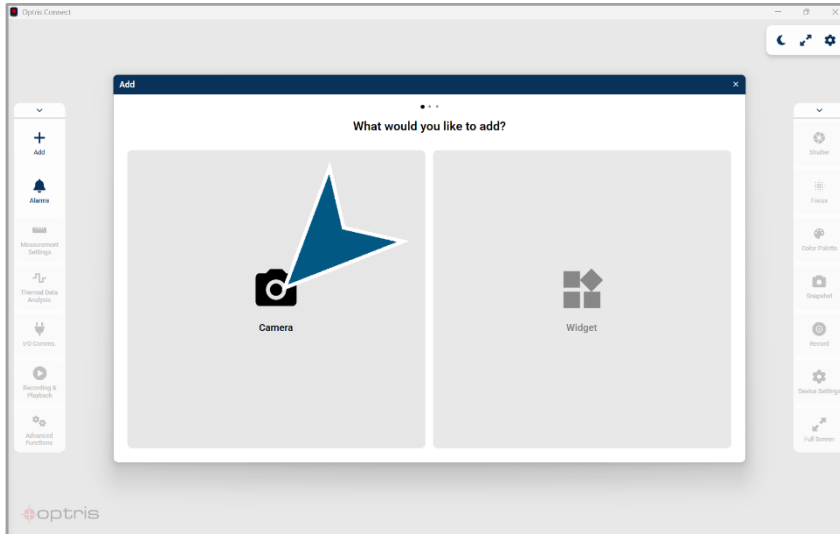


Figure 2: Optris connect, connecting camera

After clicking on Camera all cameras connected via USB or Ethernet which are in the same network will appear.

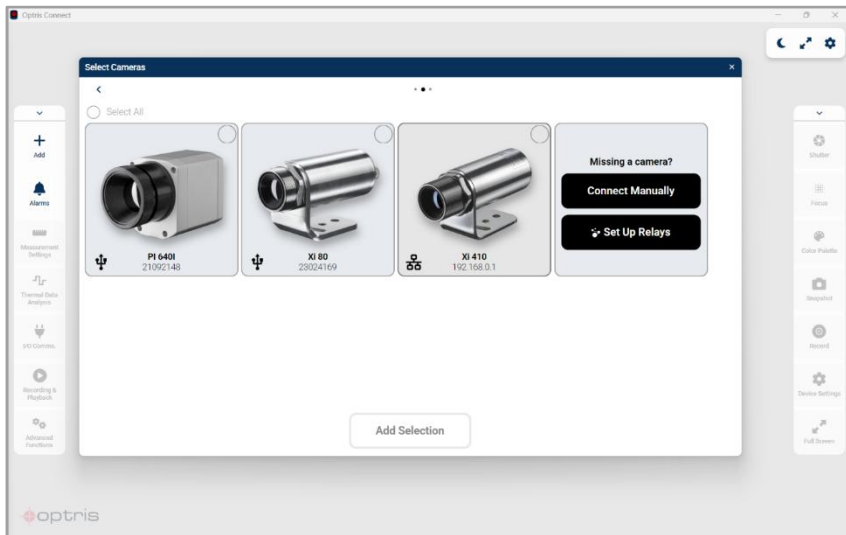


Figure 3: connected cameras

Under each camera you will also find the USB or Ethernet symbol, as the camera connected and the serial number of the camera.

Click on the cameras you want to see the thermal image. And click on *Add Selection*.

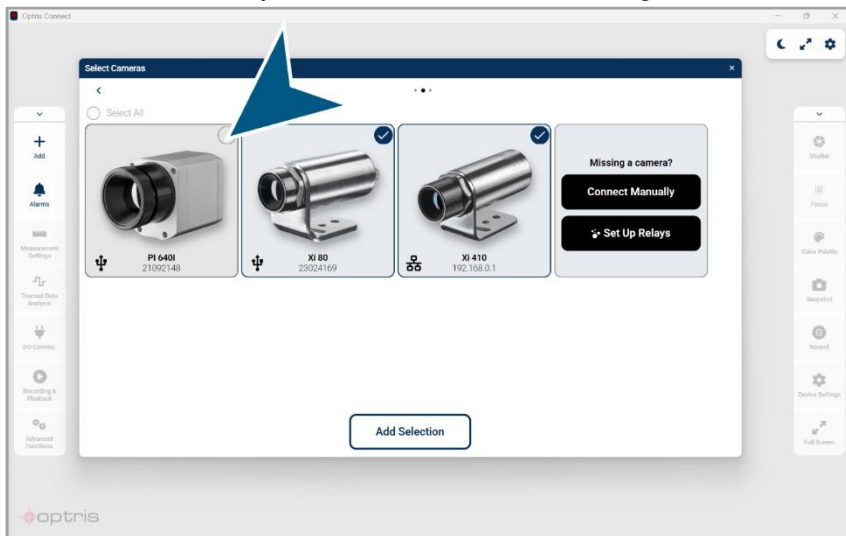
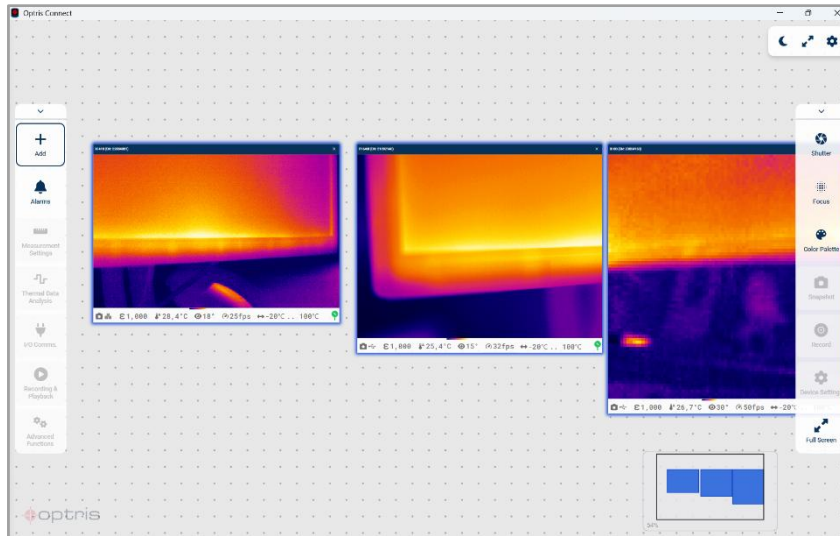


Figure 4: Selecting connected cameras

3. Main view

After selecting cameras, the cameras will be initialized and in case of missing calibration files, those will be downloaded.

After initialization you get the thermal image from all selected cameras in the infinity screen.



In the lower-right corner you will find the small infinity screen for the place where your thermal images are located. Click with the right mouse button on the small infinity screen to center the position of your thermal images.

Figure 5: Infinity screen, thermal images

Now you can position and resize the individual thermal images from the cameras. Click on the image and move it per click-and-drop. Resize the image by clicking on the image corner.

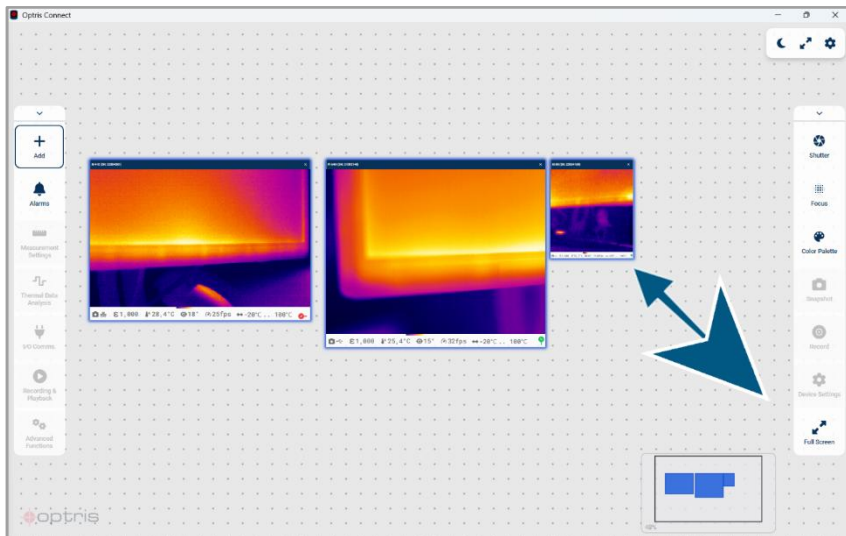


Figure 6: Positioning thermal images

4. Application Settings

In the main view you will find in left and right corner a toggle bar with setting buttons for camera settings. You can minimize the toggle bar by clicking on the arrow. The second clicking on the arrow the toggle bar will hide for a better view on your thermal image or the infinity screen.

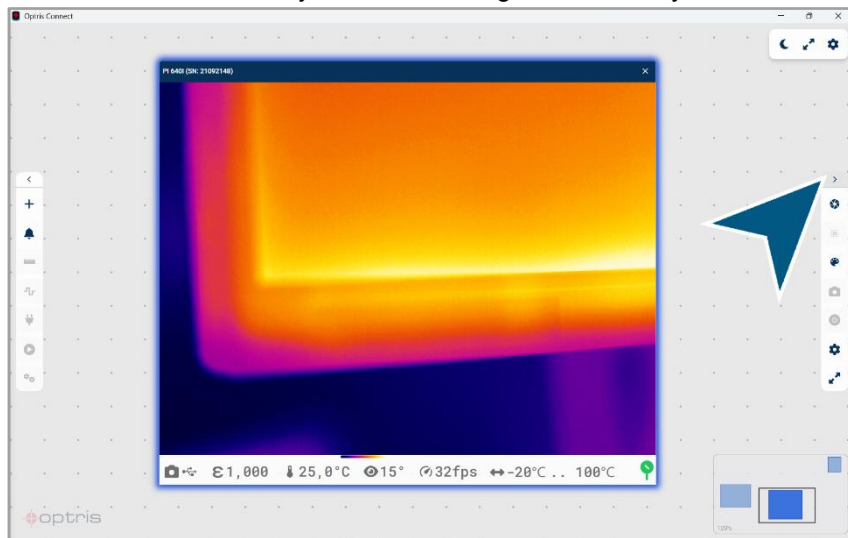
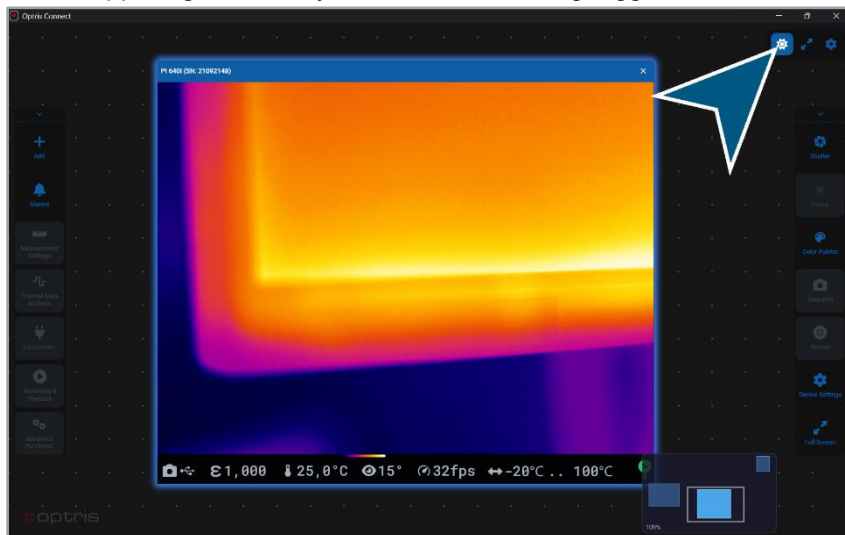


Figure 7: Toggle bar

In the upper right corner, you will find the setting toggle bar with three setting buttons.



With the first button you can switch between dark and light mode.

Figure 8: Switching to dark mode

With the second icon you can activate the full screen mode of the application (do not confuse it with the full screen mode of a thermal image).

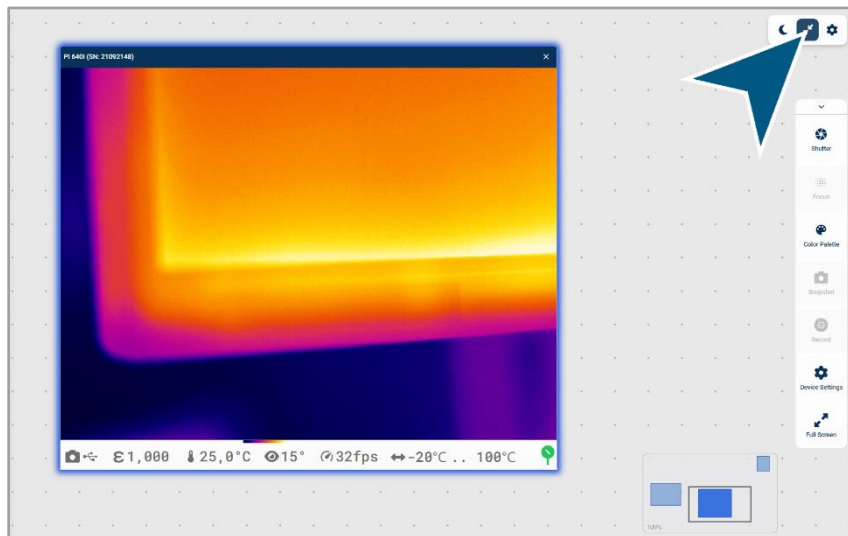


Figure 9: Application full screen

With the third button you can open the system settings.

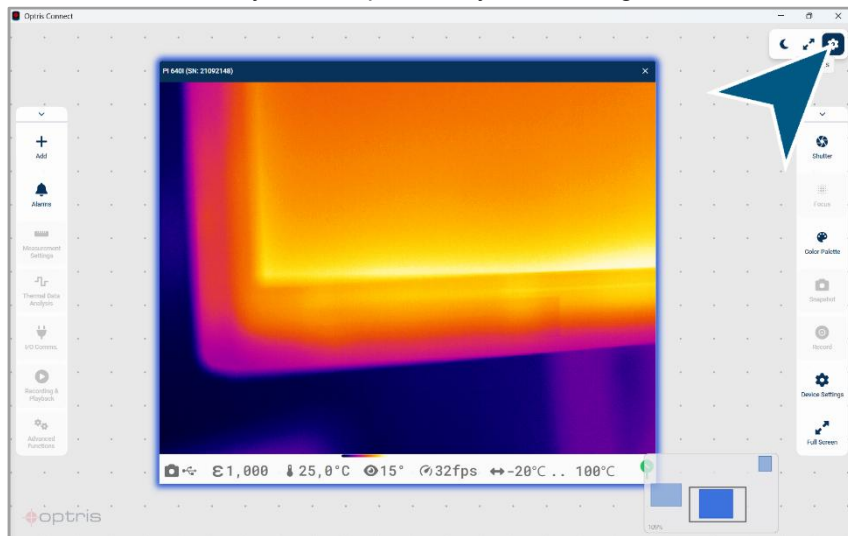


Figure 10: System settings

4.1. System settings

In the system settings you have following possibilities:

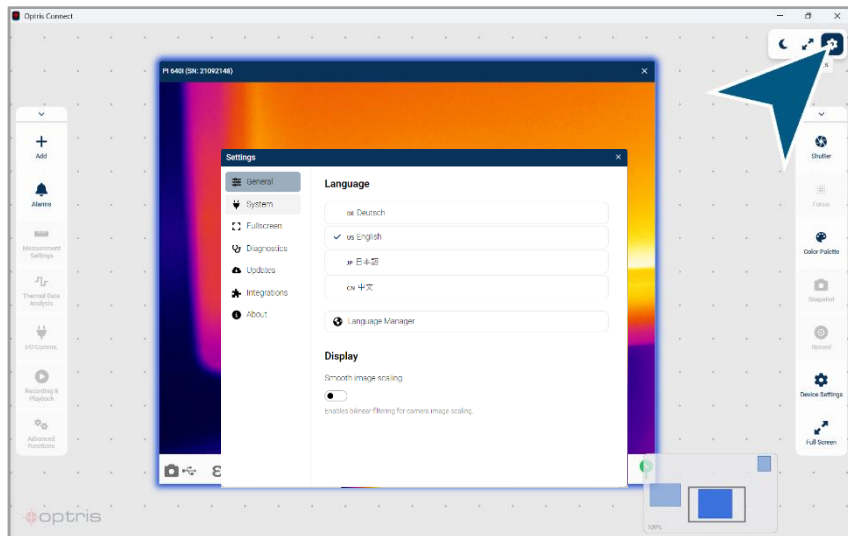


Figure 11: General System Settings

- General
 - Choose your application Languages
 - Display: activate or deactivate smooth image scaling
- System
 - activate or deactivate prevention of system shutdown while running
 - activate or deactivate prevention of system and display sleep while running
 - ...
- Fullscreen: Optris logo settings
- Diagnostics: Log settings
- Updates: Current Version information and Update settings
- Integrations: External tools, services and LLM client settings
- About: Diagnostics and SDK information

5. Camera and thermal image settings

Activate the thermal image or the camera you want to change the settings by clicking on the upper blue bar of the thermal image.

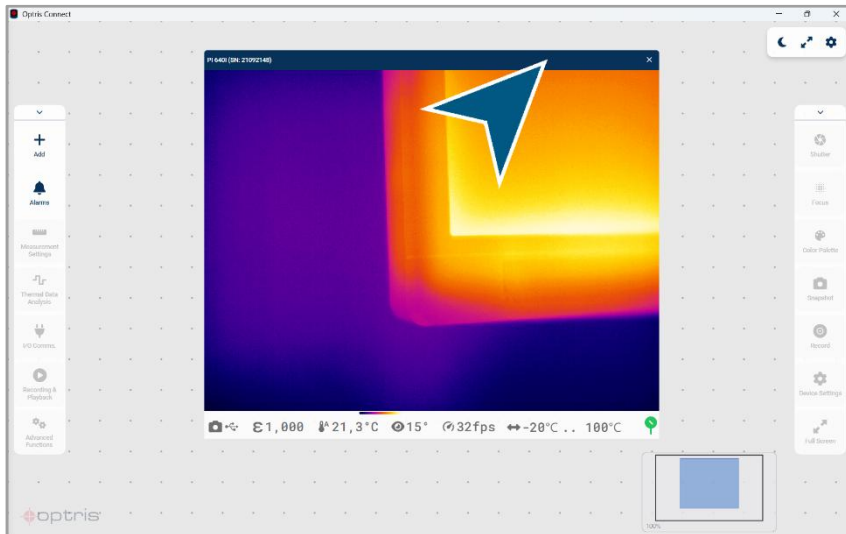


Figure 12: Activating thermal image for settings

The frame of the chosen thermal image turns blue as an indicator for chosen image. To deactivate your choice, click any empty place in the infinity screen.

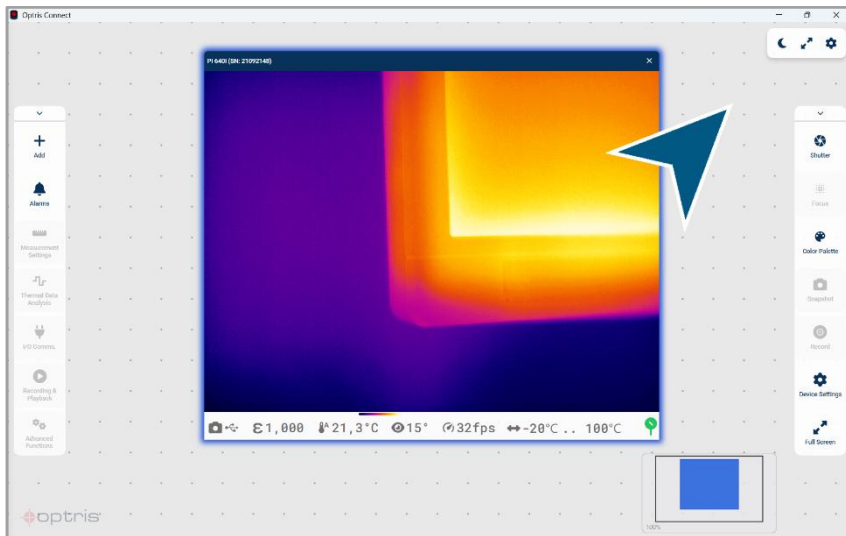
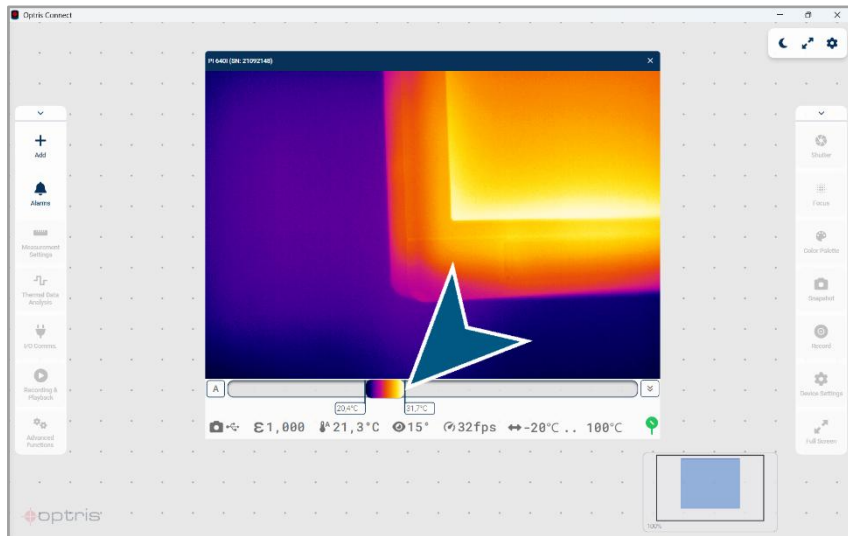


Figure 13: Deactivating thermal image

In the thermal image of a chosen camera, you have the possibility to change the intensity of the color palette. Click on the color bar at the bottom of the thermal image.



You can even click and drop the corners of the color palettes as you wish or directly type in the corresponding temperatures.

Figure 14: Adjusting color intensity to temperatures

Click on the left side to adjust the intensity of the colors manually or automatically with predefined settings (Auto min/max, Auto 1 Sigma, Auto 3 Sigma, or Manual)

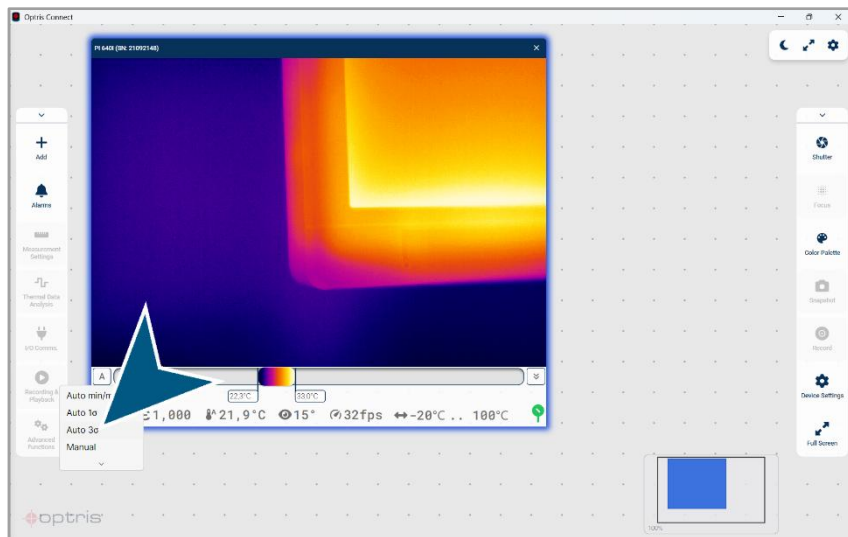


Figure 15: Auto adjusting colors

5.1. Imager Quick settings

In the lower area of the thermal image you will find quick settings of the imager.

Here you can see and change following settings:

1. Information about camera (Model, Serial number, f/w and h/w version, Connection)
2. Global emission settings
3. Ambient temperature compensation
4. Optics
5. Framerate
6. Temperature range
7. Shutter (status and control by clicking)

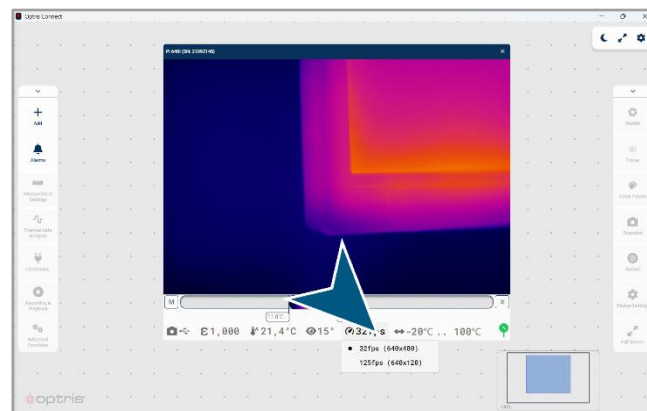
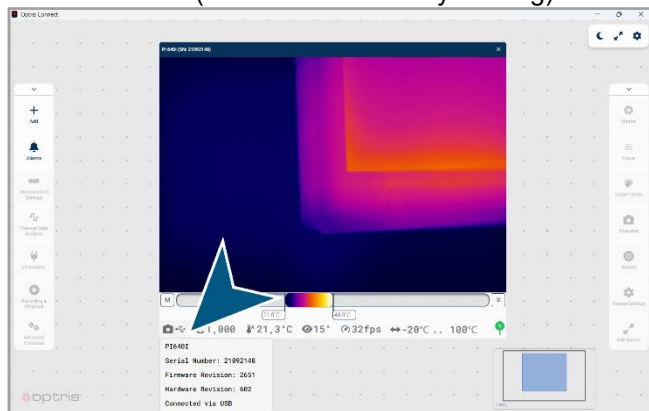


Figure 16: Imager quick settings

5.2. Imager Detailed Settings

On the right side of the screen, you will find the toggle bar for the camera settings. Here you can control the shutter. The shutter can be also controlled synchronous for all chosen imagers.

Click on Color Palette to change the color palette of the chosen thermal image. Here you can choose one of 11 color palettes.

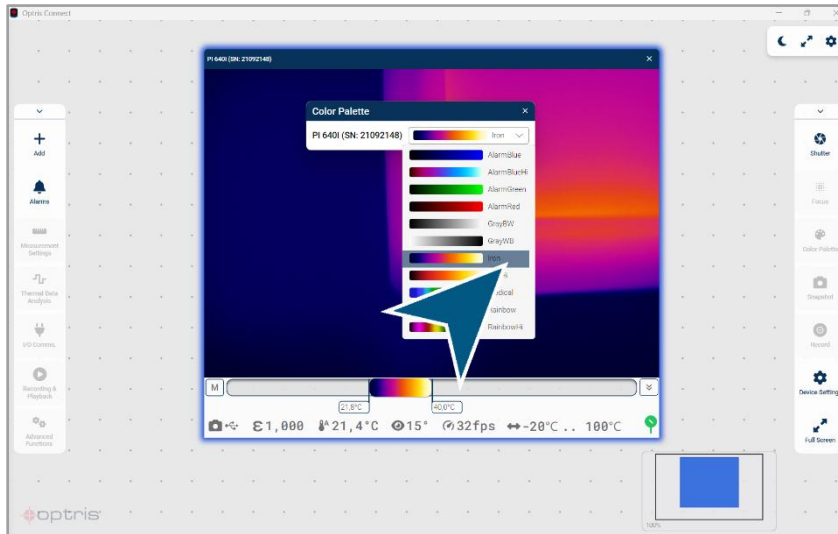


Figure 17: Change color palettes

By clicking on Full screen, you will get the thermal image full screen view. If you have more than one thermal image in your application, you can change between the full screens of each thermal image by clicking on the arrows on your keyboard.

Click on Device Settings to get the settings of your imager.

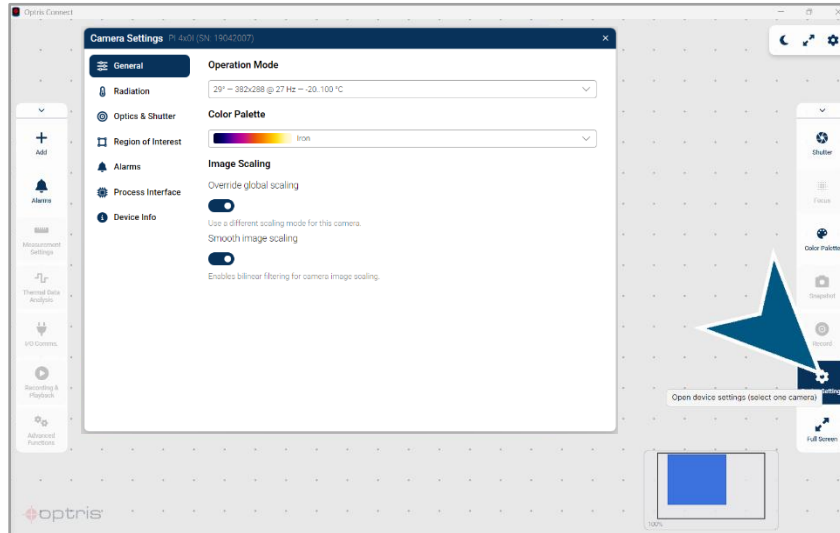


Figure 18: Open device settings

Here you have following possibilities:

1. General

- a. Choose the optics, resolution and temperature range
- b. Color Palette
- c. Image scaling

2. Radiation

- a. Emissivity and Transmissivity settings
- b. Emissivity Calculation

3. Optics & Shutter:

- a. Radial Distortion Correction
- b. Shutter information / Shutter control
- c. Shutter closing interval settings

4. Region of interest

- a. Name
- b. Emissivity settings
- c. Temperature statistics
- d. Positioning and size
- e. Alarms on ROI

5. Alarms: Alarm and Pre-alarm settings

6. Process Interface: Settings for Signal In- and Outputs

7. Device Info: Information about your connected and selected device

6. Measure Area

To create a measure Area, select the thermal image by clicking on the upper blue bar. Move the mouse over the thermal image until the bar for measure area appears. Choose your wished shape of the measure area. You have the choice between a rectangle, an ellipse or circle and a polygon.

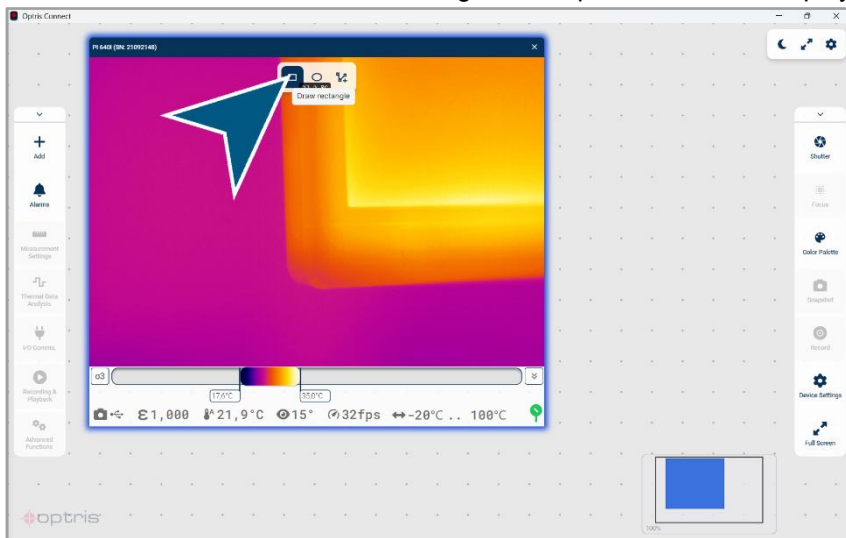


Figure 19: Choose shape of measure area

After choosing the shape draw the measure area per click and drop directly in the thermal image.

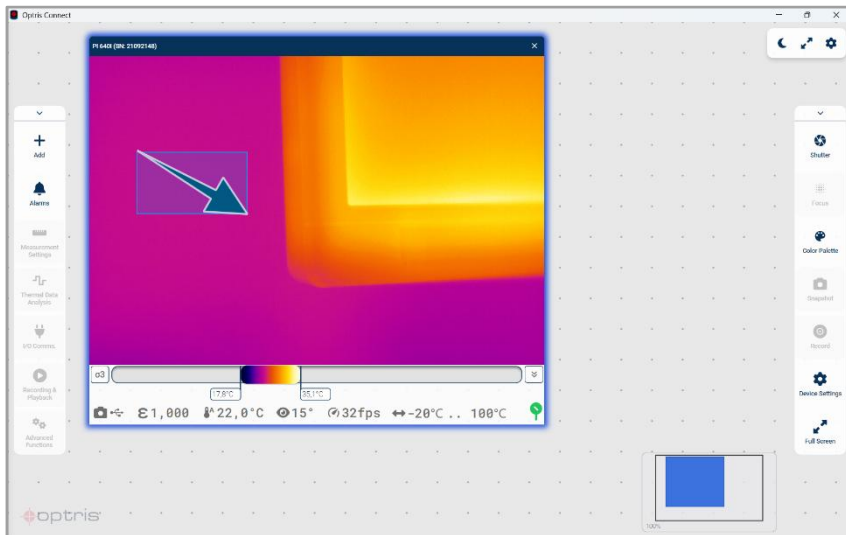
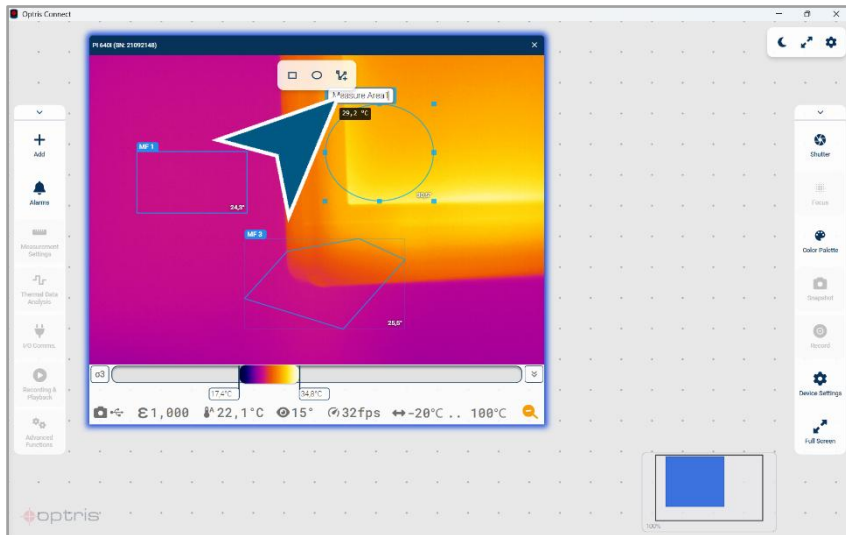


Figure 20: Draw measure area

You can edit the settings or rename the measure area directly by clicking on the measure area name. A menu of settings appears.



By clicking on settings you have following possibilities to set up your measure area.

1. Rename your measure area
2. Set the emissivity
3. Show MIN, MAX, AVG values
4. Change position of the values shown (see Figure 21)
5. Change size and position of the measure area

Figure 21: Edit measure area

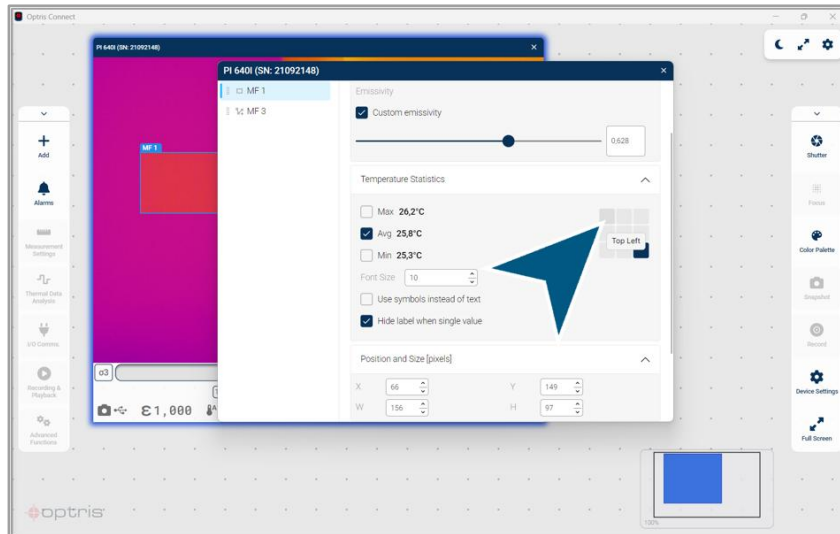


Figure 22: Changing position of values of the measure area

7. Widgets

On the infinity screen you can position several Widgets. Widgets are additional information about different Regions of Interests (ROI) or the current Alarm status or the shutter position. A widget can be a temperature value of your ROI, or an alarm indication or a temperature time Diagram.

To create a widget go to the left toggle bar on the left side of your infinity screen and click on add and widget.

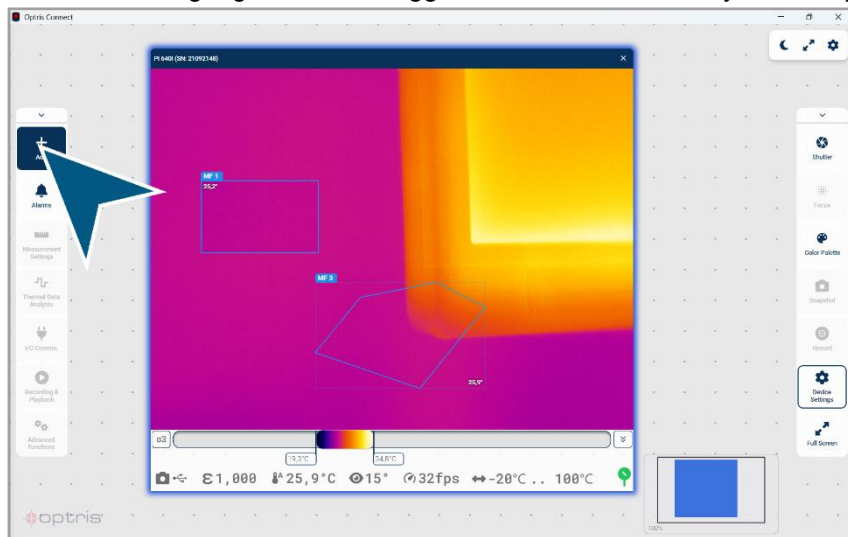
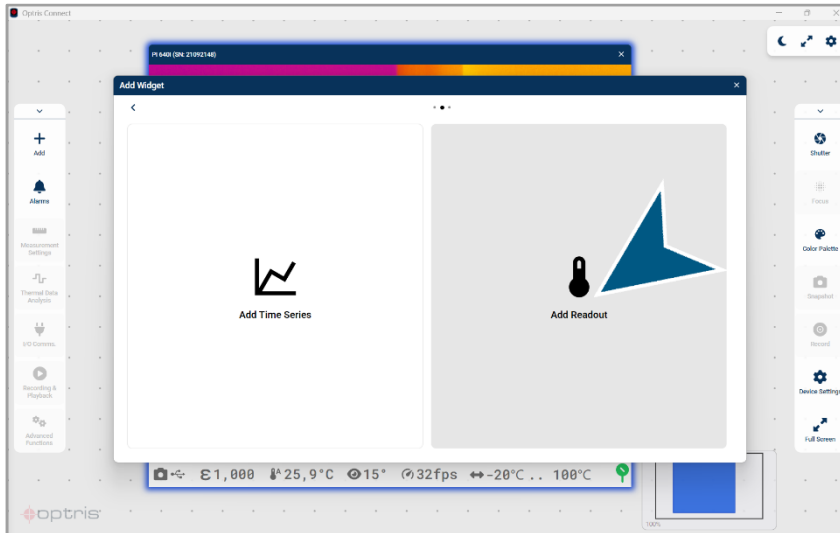


Figure 23: Add a widget

Here you have the choice between Add Time Series or Add Readout.

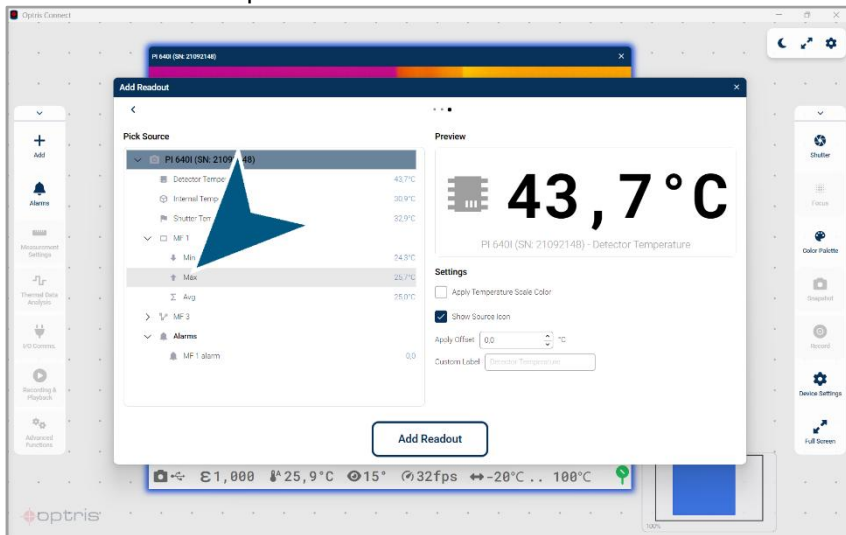


For a temperature time diagram click on **Add Time Series** and for Alarm indication or temperature values click on **Add Readout**.

7.1. Temperature Widget

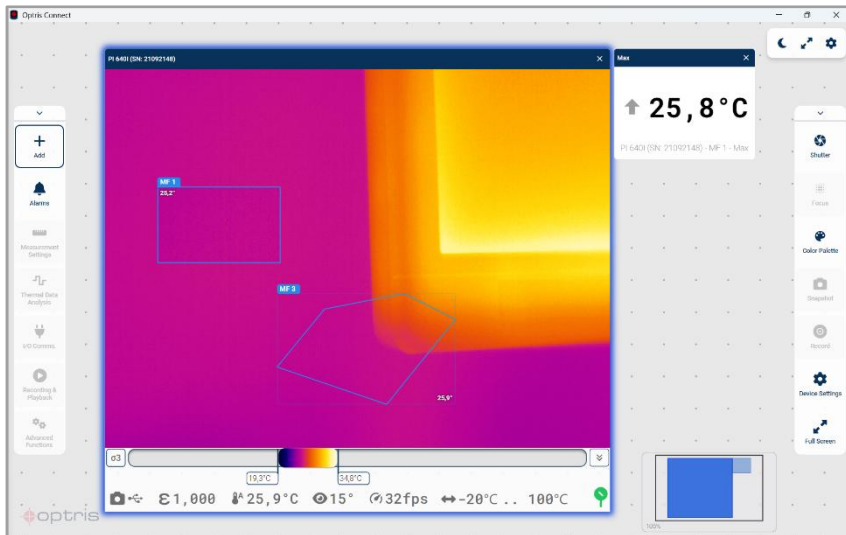
To get the temperature widget click on source, here all cameras connected will be shown. Click on the camera from which you wish to have the widget and click the source. You have the possibilities to choose between:

1. ROI
 - a. MIN, MAX or AVG
2. Detector Temperature
3. Internal Temperature
4. Shutter Temperature



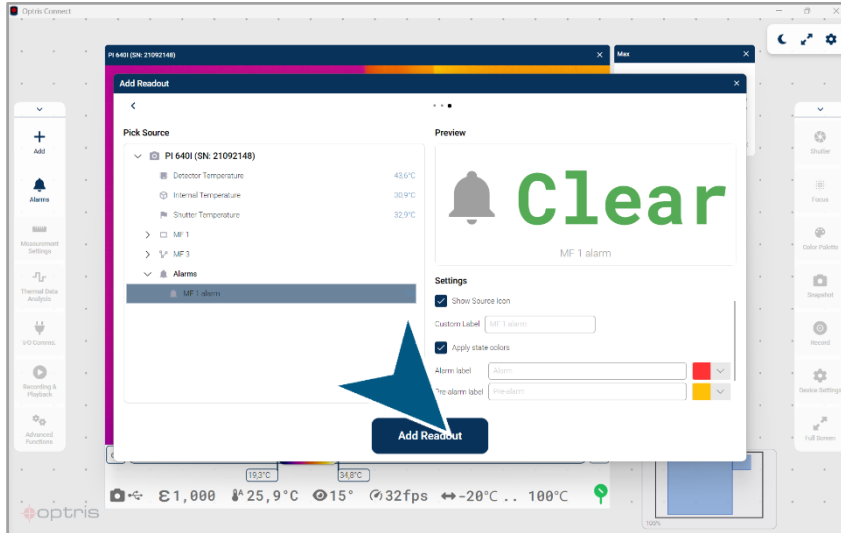
Click on **Add Readout** and you will find the widget on your infinity screen.

Figure 24: Add temperature Widget



7.2. Alarm Widget

To have an alarm indication as a widget go to **Add, Add Readout** and Pick the camera as source. Choose your wished Measure area for Alarm.



Click on Add Readout and you will find the widget on your infinity screen.

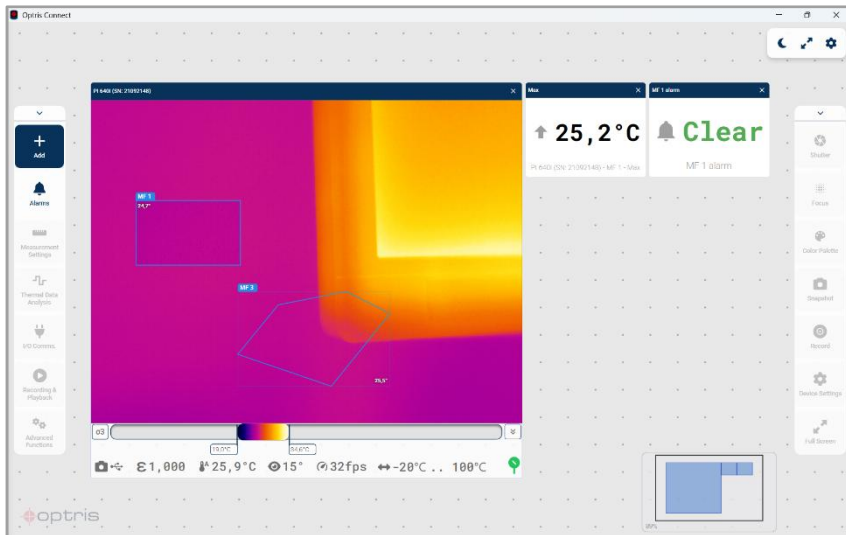


Figure 25: Alarm Widget

7.3. Temperature Time Diagram Widget

To get a temperature time diagram go again in the left corner to the toggle bar and click on Add, Add Widget and Add Time Series.

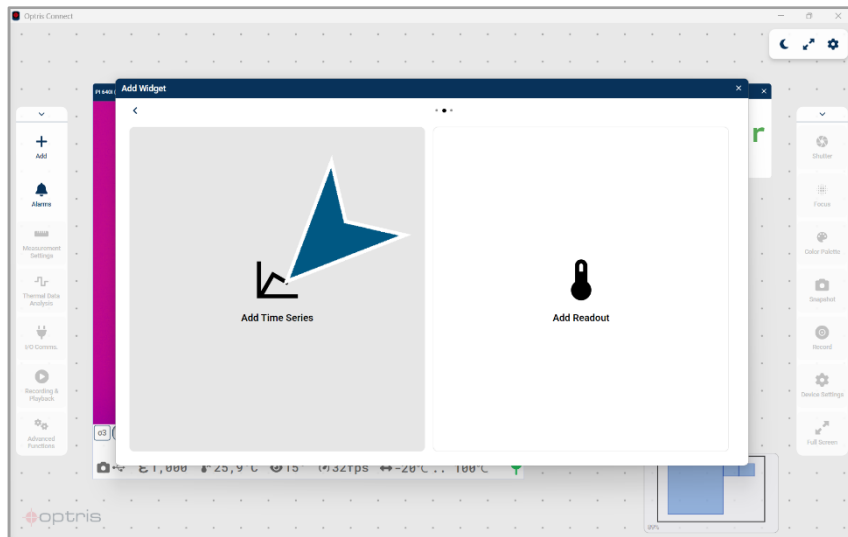
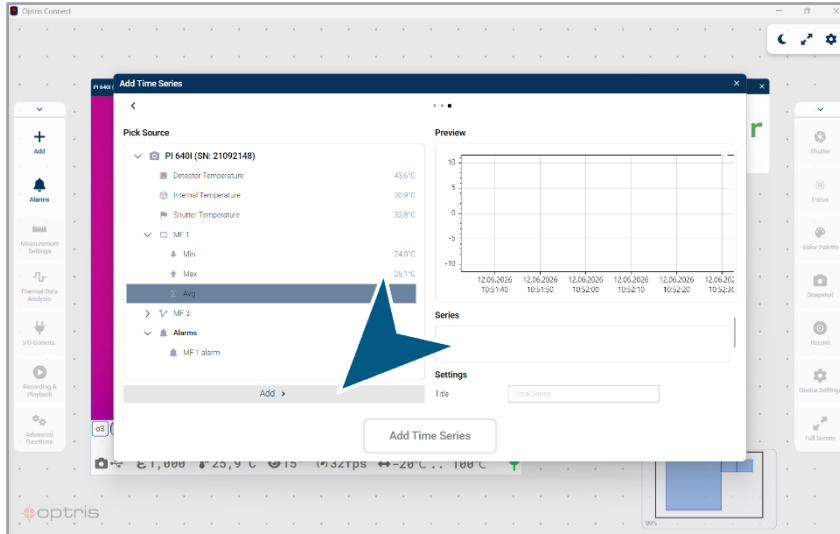


Figure 26: Adding Temperature time diagram Widget

Choose the camera from which you wish to see the temperature time diagram, choose the source, for example **Measure Area AVG** and click on **Add**.

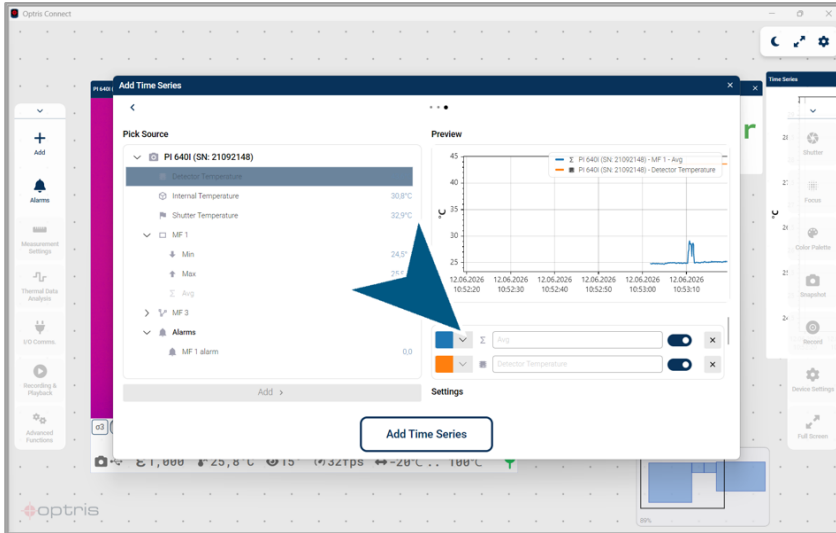


On the right side you already see the temperature time diagram of desired source.

You can have more than one source in one temperature time diagram. Click again on wished source, for example the **Detector Temperature** and click on **Add**.

Figure 27: Adding source for Temperature time diagram

Now you see the two graphs from selected sources in the setting view.



Under the graph you can change the colors and rename the single lines. The timestamp of the diagram is the current computer time.

Click on **Add Time Series** to get the Widget temperature time diagram into your infinity screen.

Figure 28. Changing the settings for Temperature time diagram

Now you see the two graphs from selected sources on your infinity screen.



In the right upper corner of the Temperature-time diagram you can find a download button to export your data as a csv file.

Figure 29: Temperature time diagram on the infinity screen