

Frequently Asked Questions (FAQ)

CytoSMART Lux3 FL

This Frequently Asked Questions document has been designed to help answer some of the most asked questions related to CytoSMART live-cell imaging. Here you can find detailed answers on the following subjects:

- Compatible stains, dyes, and culture vessels
- System applications
- Technical specifications
- Software and hardware requirements

Q 1. What is the CytoSMART Lux3 FL?

The CytoSMART Lux3 FL is a small fluorescence live-cell imaging microscope equipped with one brightfield and two fluorescent channels (green and red). The device allows users to track dynamic cellular processes with high specificity by taking high-quality fluorescence images to create real-time, time-lapse movies. Experimental data can be accessed and analyzed remotely via the CytoSMART Cloud portal.

Q 2. What are the applications of the Lux3 FL?

The applications of the Lux3 FL include but are not limited to - monitoring cell viability, measuring transfection efficiency, investigating co-cultures, and studying dynamic cellular processes. Researchers working in the fields of drug discovery, tissue engineering, immunology, immunotherapy, and cancer research can benefit from fluorescence live-cell imaging.

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Q 3. Which fluorescent dyes are recommended to use with the Lux3 FL?

Many different fluorescent dyes can be used, if the fluorescent dye's excitation and emission spectra correspond with the fluorescent filters of the Lux3 FL (green – excitation: 452/45 nm, emission: 512/23 nm; red – excitation: 561/14 nm, emission: 630/90 nm). Some examples are propidium iodide (PI) and red fluorescent protein (RFP) for the red channel, and acridine orange (AO), calcein-AM, and green fluorescent protein (GFP) for the green channel.

It is essential to match the fluorescent dye to the optical filter specifications of the device. In addition, it is important to ensure that the dye is not toxic to live cells.

Q 4. What is the Lux3 magnification?

Magnification is equal to a standard microscope with a 10x fixed objective and 20x digital zoom.

Q 5. Are both fluorescent channels (red & green) included, or do I need to choose one when purchasing the device?

Both fluorescent channels are included in the device. Researchers can make time-lapse videos with the brightfield, red and green channel imaging in parallel. Of course, it is also possible to choose just one of the fluorescent channels, depending on the experimental goal and the researcher's preferences.

Q 6. Can I specify the recording interval?

Images can be recorded at pre-defined intervals. At the start of a new experiment, you can specify the interval rate anywhere between 5 min and 12 hours.

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Q 7. What culture dishes and flasks are compatible with the Lux3 FL?

The CytoSMART Lux3 FL allows monitoring of a wide range of different culture dishes and flasks, such as:

- T-flasks: T-25 up to T-250
- Single well, multi-well plates (6 - 384-well plates)
- Microfluidic chips
- Flat tubes
- Petri dishes
- Slides

Q 8. Is a computer required?

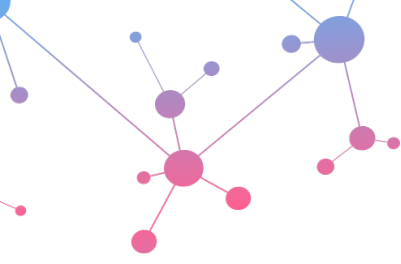
The system requires a dedicated PC or laptop running on Windows 10 or above, with a USB3 port and an active internet connection.

Q 9. What are the software requirements?

The CytoSMART Lux3 FL remote functionality runs on cloud-based software. In this cloud-environment, the images and videos are stored and can be accessed using user-specific login details. Next to unlimited data storage, automated image analysis can be performed in the CytoSMART Cloud portal.

Q 10. How do I clean the Lux3 FL device?

The devices are easy to clean using lint-free wipes and ethanol (70%) or isopropyl alcohol (IPA). Do not use acetone to clean the device. Please be aware that the device cannot be autoclaved. After sterilizing with ethanol or IPA, the device can be used in a cleanroom.



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Lux3 FL

Real-time fluorescence cell culture monitoring and analysis whenever and wherever

