

WE IMPROVE YOUR IMAGING EXPERIENCE

Discover our live cell
imaging solutions
without limits

CONFOCAL.NL

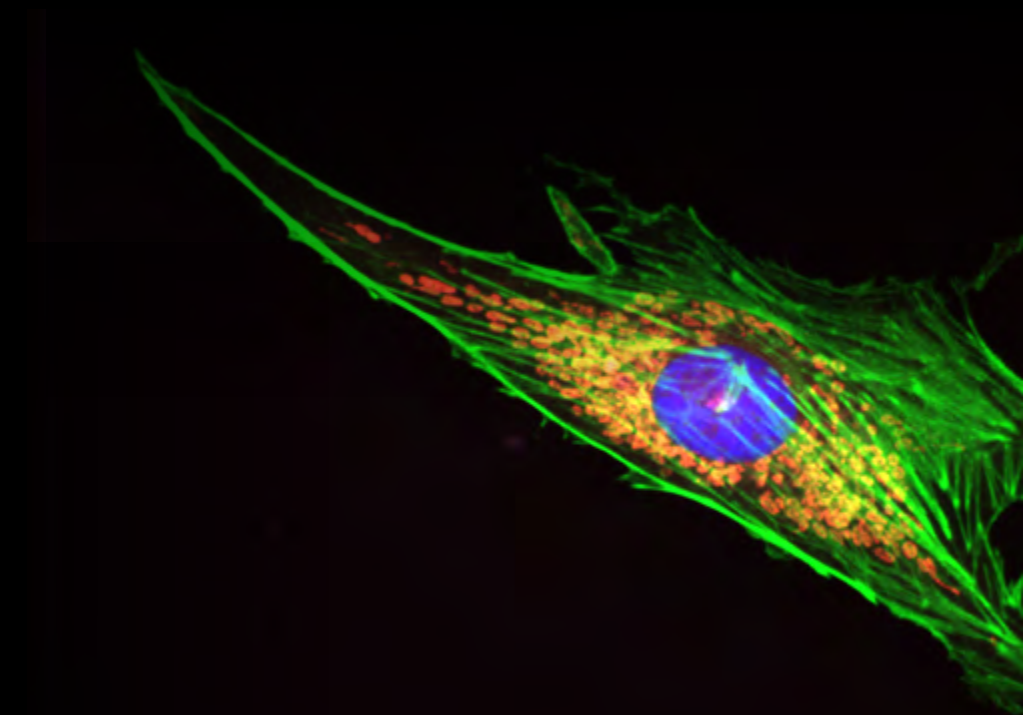
THE WINNING STRATEGY IN LIVE CELL IMAGING

Confocal.nl improves your imaging experience. Our top-notch solutions are very versatile and **easy to use**. You can use them for a wide range of applications and research. All our technologies are excellent add-ons for upgrading your existing widefield research microscope to a super-resolution or fast confocal microscopy system. The fact that Confocal.nl allows for super-resolution in combination with very low laser intensity will be the winning strategy in live cell imaging. Now you can study living organisms in vivid, fruitful conditions.

In this brochure, we will discuss various applications for confocal research purposes. We are aware of the fact that the world of confocal microscopy is wide-ranging and offers many opportunities for different research! Therefore, we compiled a top 5 of our applications, which are easily approachable by one or more of our solutions. Curious which application suits your confocal research best? Discover it in this brochure.

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#1

LONG-TERM IMAGING OVER A LARGE FIELD OF VIEW

Unbeatable! The largest field of view (FOV) in super-resolution imaging, using only NANO-WATTS of laser intensity! For long-term 3D imaging over a large field of view, you need optics that are suitable for super-resolution imaging with high-NA objectives in the low magnification range, like 40x 1.4. A lower magnification allows for a bigger field of view (FOV), brighter images, and even lower laser power. With all our technologies, you can see more cells at full resolution at once.

APPLICATION EXAMPLES

- Cell-cell interactions
- Cell division
- 4D imaging
- Single molecule detection
- Stem cell research
- Developmental biology

PRODUCTS

- RCM2
- RCM2.5
- NL5



PRODUCTS FOR LONG-TERM IMAGING OVER A LARGE FIELD OF VIEW

RCM2, RCM2.5, and NL5 provide high-resolution imaging over a large field of view and use ultra-low laser power to prevent phototoxicity allowing for long-term time-lapses. This increases your chances of getting the results you need!

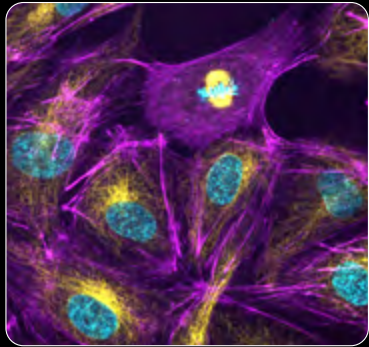
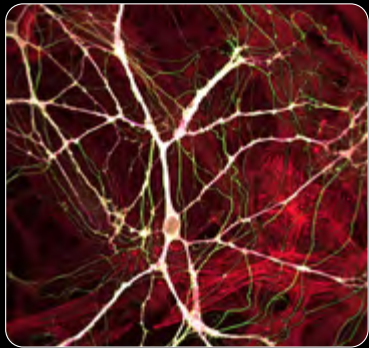
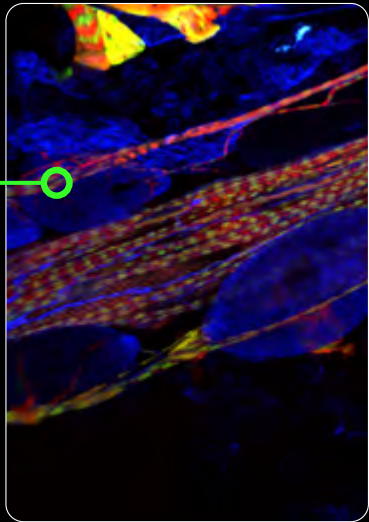
RCM2

BRIGHTER IMAGES, LARGER FOV

RCM2 is our second generation RCM, a highly sensitive super-resolution confocal system based on the Re-scan Confocal Microscope (RCM) principle. It captures datasets with 170 nm raw resolution (120 nm after deconvolution) while keeping the laser intensity at a minimum. RCM2 has demonstrated imaging at the nano-watt range of excitation power!

RCM2 uses a digital scanner technology that makes bi-directional scanning the standard and allows a speed of 2fps at 512x512 pixels. Furthermore, improvements of sCMOS cameras allow you to sample the resolution of low-magnification objectives effectively, without increasing the exposure time. In a regular PMT-based confocal microscope this is not possible. Would you like to learn more about the specifications of RCM2, or do you want further information?

I want to know more



#2

FAST 3D LIVE CELL IMAGING

Looking to conduct fast live cell imaging with high resolution and perfect sensitivity? With Confocal.nl, you can capture 3D live samples with minimal phototoxicity, high resolution, and high contrast. With high scanning speed and low levels of phototoxicity, you can keep up with natural processes that happen fast, like cell and protein dynamics and cell-cell interactions. With fast scanning, you are able to see more in a shorter amount of time.

APPLICATION EXAMPLES

- High-content screening
- Single cell imaging
- Neural communication and axonal transport
- Vesicle transport
- Protein dynamics
- Fast live cell dynamics

PRODUCTS

- NL5

NL5



PRODUCTS FOR FAST 3D LIVE CELL IMAGING

To cater to the needs of research that demands fast live cell imaging, we would like you to get to know one of our top-tier solutions when it comes to speed: NL5!

NL5:

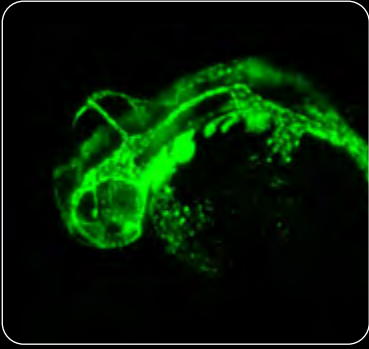
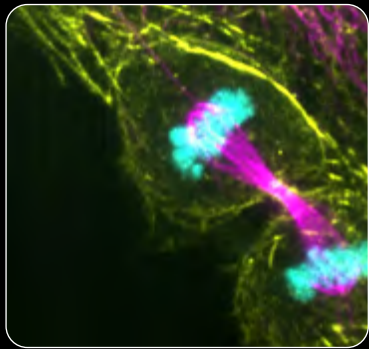
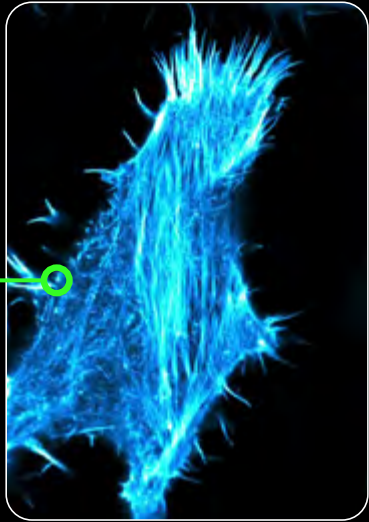
FAST & DEEP 3D LIVE CELL IMAGING

NL5 uses vintage technology from the eighties, now combined with modern cutting-edge digital technology. This combination creates a fast confocal microscope, running at a speed of 25 fps with high resolution and sensitivity. A slit pinhole, together with an extremely sensitive sCMOS camera as detector, make NL5 the ideal tool for fast and deep 3D live cell imaging.

NL5 is a fast line-scanning confocal system that allows you to screen a multi-well plate with multicolour images, from which you can select the most promising ones. Capture 3D live samples with minimal phototoxicity, high resolution, and contrast. Like RCM, NL5 is also an easy to use system that keeps your samples happy under the microscope for a longer period of time. Convert your research microscope into a fast-scanning confocal microscope that provides very gentle conditions for your live samples.

Would you like to learn more about the specifications of NL5, or do you want further information?

I want to know more



#3

SUPER-RESOLUTION NEAR-INFRARED (NIR) IMAGING

We have developed a solution that can utilize up to 5 lasers, extending over the Visible and Near-Infrared (NIR). Moreover, it enables you to use the latest advances in NIR dye development and look much deeper into your specimen with an increased signal-to-noise ratio and better spatial resolution. It works with an extra 785 nm laser, which is less phototoxic and penetrates much better into biological samples due to the longer wavelength. Experience complete experimental freedom and flexibility with Confocal.nl!

APPLICATION EXAMPLES

- Deep tissue imaging
- Biomedical research such as cancer detection
- Clinical applications

PRODUCTS

- RCM2.5

RCM2.5



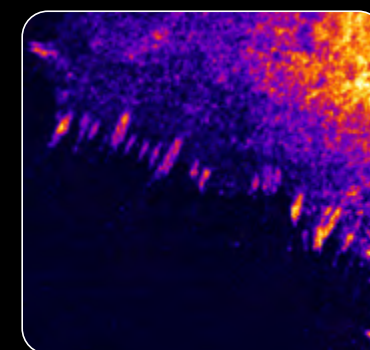
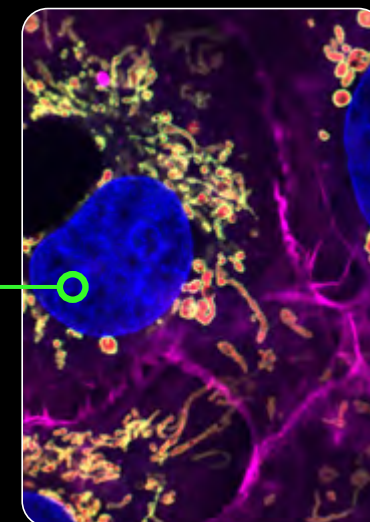
RCM2.5:

5 CHANNELS, VISIBLE PLUS NEAR-INFRARED (NIR) IMAGING

RCM2.5 is the next big thing in confocal microscopy. Building on the existing RCM2 platform, we have developed a version that can utilize up to 5 lasers, extending over the Visible and Near-Infrared (NIR). RCM2.5 facilitates deep tissue imaging, achieving much higher sensitivity in the near-infrared wavelengths than other systems. With a 5th channel, you can expand your experiment with an extra label, enabling you to see more details and gather even more relevant information. The NIR window allows for deeper imaging in biological specimens. Compared to traditional confocal microscopes, our re-scanning technology improves the lateral resolution of the microscope also at the NIR range, providing a unique opportunity for high contrast super-resolution imaging even in thicker samples.

Would you like to learn more about the specifications of RCM2.5, or do you want further information?

[I want to know more](#)



#4

DEEP TISSUE IMAGING

Are you looking to perform high contrast deep 3D imaging with minimal aberrations? To overcome the challenges of imaging thick, scattering biological samples, at Confocal.nl, we have developed two alternative solutions with outstanding performance during 3D volumetric imaging experiments. For imaging fast biological processes in thick specimens in the visible range, NL5 provides a unique slit scanning technology solution, making it ideal amongst others for organoid imaging, C. elegans, zebrafish and other more volumes samples. Moreover, RCM2.5 provides high contrast, super-resolution images even in thicker samples using a NIR wavelength laser.

APPLICATION EXAMPLES

- Developmental biology
- Organoid and spheroid imaging
- Deep tissue imaging such as brain slices
- Cell tracking in the model organism

PRODUCTS

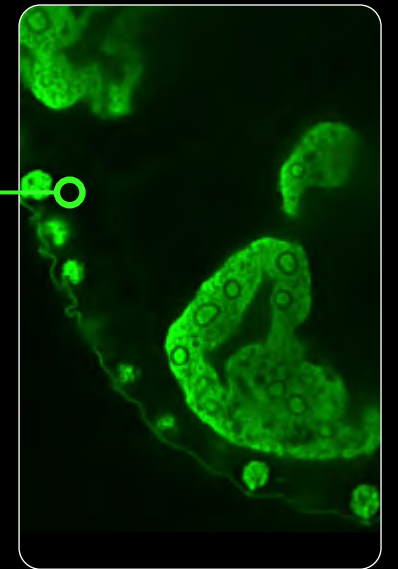
- NL5
- RCM2.5



NL5:

DEEP TISSUE IMAGING WITH HIGH UNIFORMITY

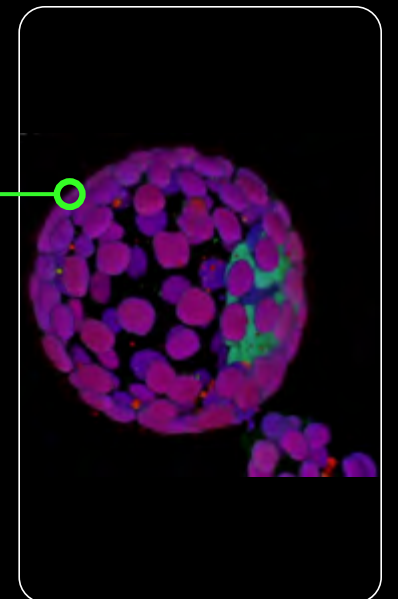
Besides the fast scanning capability of NL5, it offers high contrast deep 3D imaging. Since NL5 uses a single slit-pinhole, there is no pinhole crosstalk issue when going deeper in the specimen. In addition, due to the unique line scanning technology, NL5 provides high uniformity over the whole frame.



RCM2.5:

DEEP TISSUE IMAGING WITH SUPER-RESOLUTION

With an extra 785 nm laser which, due to the longer wavelength, is less phototoxic and penetrates much better into biological samples, RCM2.5 also shows high potentials for deep 3D imaging complementing all this with super-resolution capability. If you are hesitating about the perfect solution for you, do not hesitate to contact us!



Get in contact

#5

ULTRA LOW LIGHT HIGH-RESOLUTION CONFOCAL IMAGING

Use even lower laser power to minimize phototoxicity and photobleaching during live cell imaging! Obtain sharp images with a high signal-to-noise ratio even in samples with a low amount of epitopes or weak stainings. Get more from your samples. The high sensitivity of the camera that we use for all our products makes RCM - just as NL5 - exceptionally suitable for challenging biological applications where the signal is limited.

Decrease the laser power with our products to increase cell survival and minimize photobleaching during long-term time-lapses providing more relevant results!

APPLICATION EXAMPLES

- Live cell dynamics
- Mitochondria dynamics and structure analysis

PRODUCTS

- RCM1
- RCM2
- RCM2.5
- NL5



RCM1:

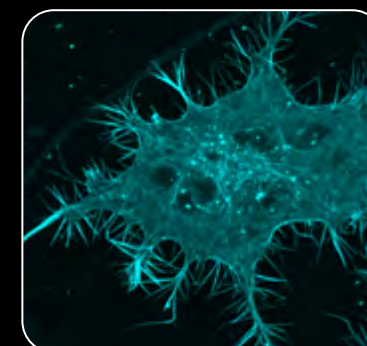
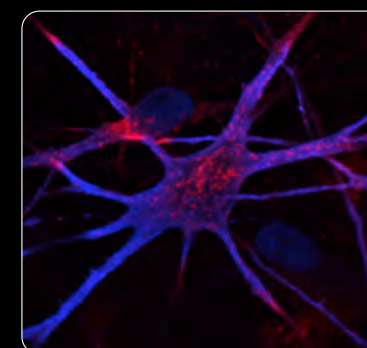
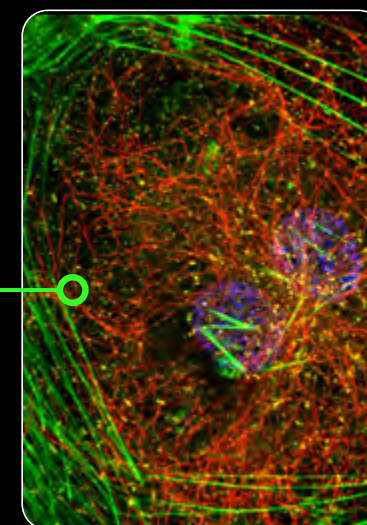
HIGH CONTRAST IMAGING, LOW LASER POWER

Our first Re-scan Confocal Microscopy (RCM) technology is a super-resolution confocal system based on standard confocal microscopy extended with an optical re-scanning unit coupled with a highly sensitive CCD/sCMOS camera as a detector. RCM1 uses low laser power to increase cell survival and minimizes photobleaching during long-term time-lapses. Unlike other super-resolution microscopy techniques, the RCM requires minimal light exposure for your samples!

Without averaging or integration, sharper and even higher contrast images reduce the acquisition time and allow for a more precise analysis of the subcellular structures.

Would you like to learn more about the specifications of RCM1, or do you want further information?

[I want to know more](#)





START IMPROVING YOUR OWN IMAGING EXPERIENCE

Thank you for reading our brochure! Want to discover for yourself how we improve your imaging experience at Confocal.nl? Request your personalized demo! You can request one for free on our website or send an email to sales@confocal.nl. During a demo, our experts show you how our products perform live.

[Request a personalized demo](#)

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