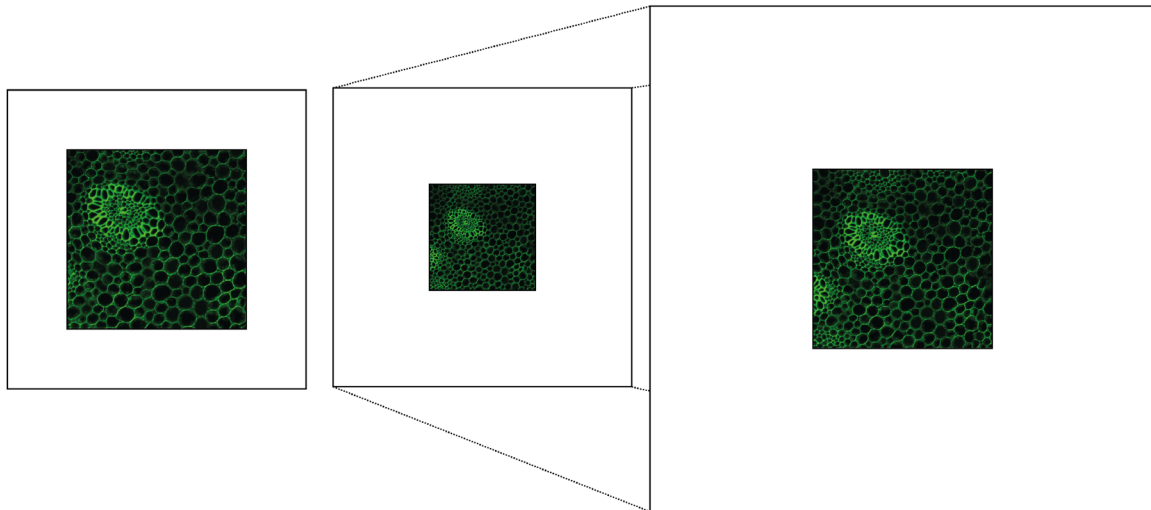


# Are Large Image Sensors a perfect fit for Large Field of View Microscope Applications?

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In the last years nearly all microscope manufacturers used image circles with 18 mm diameter to image their field of view to cameras connected to their microscopes. Only recently some microscope manufacturers increased their field of view to offer more information to their customers. However, this also resulted in larger image circles to be covered by cameras with their image sensors. Therefore, a high interest for cameras with appropriate image sensors started, and soon large image sensors were advertised. Such that the questions arose: are larger image sensors a perfect fit for large field-of-view (FOV) microscope applications? Before the question can be answered, we will have a look to the relationship between resolution, magnification, spectral range and pixel size of image sensors.



Comparison the same fluorescence microscope image of a convallaria slice on the left: 25 mm image circle and an image sensor with 2048 x 2048 pixel and 11  $\mu\text{m}$  pitch which had to be image with a camera adapter magnification of 2x to not to be undersampled due the Rayleigh criterion, and on the right the same image obtained with an image sensor with 2048 x 2048 pixel and 6.5  $\mu\text{m}$  pitch and a camera adapter magnification of 1x.

Some new results of large resolution sCMOS image sensor will also be shown.

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