

## Nikon H-TIRF

Versatile fluorescence inverted widefield microscope equipped with four lasers, epifluorescence lamp and EM-CCD and CMOS cameras. The microscope is designed for short and long live-cell imaging and experiments under standard or TIRF illumination.

Link to manufacturer website:

[https://www.nikoninstruments.com/cz\\_CZ/Vyrobky/Inverzni-mikroskopy/Eclipse-Ti-E](https://www.nikoninstruments.com/cz_CZ/Vyrobky/Inverzni-mikroskopy/Eclipse-Ti-E)

## Application

- Fast and sensitive multicolor widefield imaging with TIRF, HILO or EPI excitation option
- Option of simultaneous dual wavelength imaging by single camera
- Short or long term live-cell imaging available
- Various measurement options: z-stack, time series, tile scan, multi positions
- Brightfield and DIC microscopy

## Microscope

Inverted widefield microscope Nikon Eclipse Ti-E equipped with motorized XY stage, Perfect Focus System, H-TIRF module, module for environmental control Okolab (temperature controlled range room temperature up to 40°C; CO<sub>2</sub> 0-10%; humidity up to 95 %), insertable quarter-wave plate, insertable gradation neutral density filter, transmitted light lamp (100 W) and following units:

Software	<b>NIS-Elements Ar (v5.02)</b>
Epifluorescence	<b>Nikon Intensilight E</b>
Laser excitation wavelengths	<b>405 nm, 488 nm, 561 nm, 640 nm</b> (all cw)
Filter turret	<b>TagBFP</b> (excitation 395-415, emission 435-485) <b>EGFP</b> (483-493, 500-550) <b>mCherry</b> (556-566, 593-668) <b>Cy5</b> (632-652, 669-741) <b>Quad Band Set</b> - 405/488/561/640
Objectives	Nikon <b>CFI Apo TIRF 60x Oil, NA 1.49</b> , WD 0.12 mm, Correction Collar, DIC (motorized prism insertion) Nikon CFI <b>Plan Apo 60x WI, NA 1.27</b> , WD 0.17 mm, Correction Collar 0.15-0.19, DIC Nikon CFI <b>Plan Apo Lambda 20x, NA 0.75</b> , WD 1mm, DIC Nikon CFI <b>Plan Apo Lambda 10x, NA 0.45</b> , WD 4 mm
Tube lenses	1x 1.5x
Relay lens in front of EM CCD Camera	2.5x
Cameras	<b>EM CCD Andor iXon Ultra DU888</b> (Andor Technologies) <ul style="list-style-type: none"><li>• right port</li></ul>

	<ul style="list-style-type: none"> <li>• 1024 x 1024 pixels</li> <li>• pixel size: 13 <math>\mu\text{m}</math> x 13 <math>\mu\text{m}</math></li> <li>• 26 fps at 1024 x 1024 pixels, <math>QE_{\text{max}} &gt; 90\%</math></li> </ul> <p><b>CMOS Hamamatsu ORCA-flash4.0 LT</b> (Hamamatsu Photonics)</p> <ul style="list-style-type: none"> <li>• left port</li> <li>• 2048 x 2048 pixels</li> <li>• pixel size: 6.5 x 6.5 <math>\mu\text{m}</math></li> <li>• 30 fps 2048 x 2048 pixels</li> </ul>
Image splitter	<p><b>W-View Gemini</b> (Hamamatsu Photonics)</p> <ul style="list-style-type: none"> <li>• in front of Hamamatsu camera</li> <li>• available beamsplitters: 484 nm, 560 nm, 640 nm and 700 nm</li> </ul>