

## Ultraview ERS Spinning Disk System Specifications

### Microscope

Our Ultraview ERS system is mounted on a Zeiss Axiovert 200M inverted microscope. It contains DAPI, CFP, FITC and Rhodamine filter cubes for conventional epifluorescence illumination, and is implemented with a piezo focusing motor and all necessary accessories (Temperature, CO2) for high speed live cell imaging. The scope is mounted with a high precision motorized stage for monitoring of multiple positions in a single sample holder, and is equipped with the following objectives:

Objectives	Oil	DIC	Num. Ap. (NA)	Phase contrast	Specifications
<b>10X</b>	NO	NO	0.25	Ph1	0.25 A-PLAN Ph1 $\infty$ /-
<b>20X</b>	NO	NO	0.75		0.75 PLAN-APOCHROMAT $\infty$ /0.17
<b>40X</b>	NO	NO	0.60	Ph2	0.60 KORR Ph2 LD ACHROMPLAN $\infty$ /0-2
<b>40x</b>	YES	YES	1.30		1.30 OIL DIC PLAN-NEOFLUAR $\infty$ /0.17
<b>63X</b>	YES	YES	1.40		1.40 OIL DIC PLAN-APOCHROMAT $\infty$ /0.17
<b>100x</b>	YES	YES	1.40		1.40 OIL DIC PLAN-APOCHROMAT

### Lasers

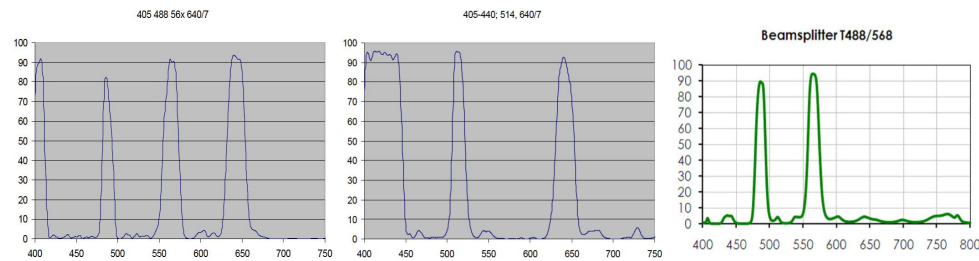
The system uses the following laser lines for excitation of fluorophores:

- Argon multiline gas laser (Melles Griot): 488nm, 514nm.
- DPSS solid state laser (Coherent): 568nm.
- Solid State Diode lasers (Melles Griot): 405nm, 440nm, 640nm.

### Scan head

The scan head is based on the Yokogawa CSU22 model, whose dichroic mirrors (DMs) have been customized to increase detection in the red emission spectra. It contains the following DMs and emission filters:

- **405/488/568/640**, 80% transmission 95% reflection, for combinations of fluorophores with excitation/emission spectra in the range of DAPI, GFP, dsRED and DRAQ5.
- **405-440/514/640**, 80% transmission 95% reflection, for combinations of fluorophores with excitation/emission spectra in the range of CFP, YFP and DRAQ5.
- **488/568**, 80% transmission 95% reflection, specific for live acquisitions of GFP and dsRED/red shifted dsRED derivatives. The absence of a 640 transmission band allows for the detection of any red dye all along the spectra, specially when combined with the customized LP575 emission filter.



- **Emission filters:**

POSITION	EMISSION FILTER	FLUOROPHORES
1	Empty	BF
2	527(W55)	GFP
3	445(W60), 615(W70)	Dapi, DsRed
4	455(W60), 705(W90)	CFP, Cy5
5	535(W55)	YFP
6	LP587	mCherry, mPlum

### Camera

1000x1000 pixels, 14bit Hamamatsu (C9100-50) electron-multiplied, charge-coupled device (EMCCD). Pixel size: 8umx8um.

### Additional modules

The system is equipped with a Photokinesis Accessory, that allows you to direct high intensity laser light at specific regions on your sample to perform FRAP or Photoconversion experiments.

### Acquisition Software

The hardware is controlled under the Volocity 6.1 software.