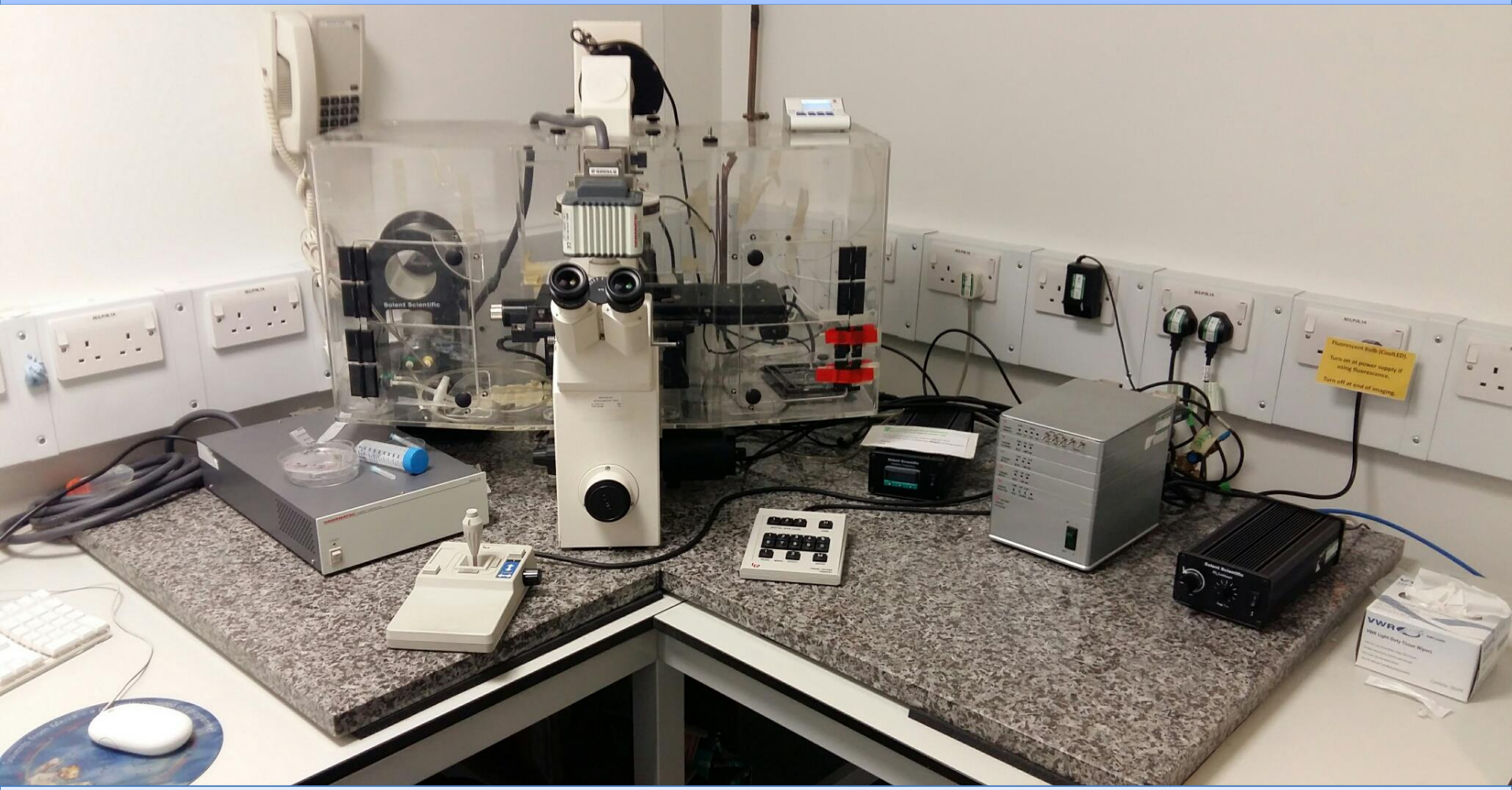
Zeiss Axiovert 135 Live Imaging System Technical Details & Specs



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Updated Nov 2018

Access to the microscope

- How to book online: https://ppms.eu/ucl/?ICHFCI
- How to get training: contact Dale d.moulding@ucl.ac.uk
- Login: Axiovert135 / Password: Axiovert135

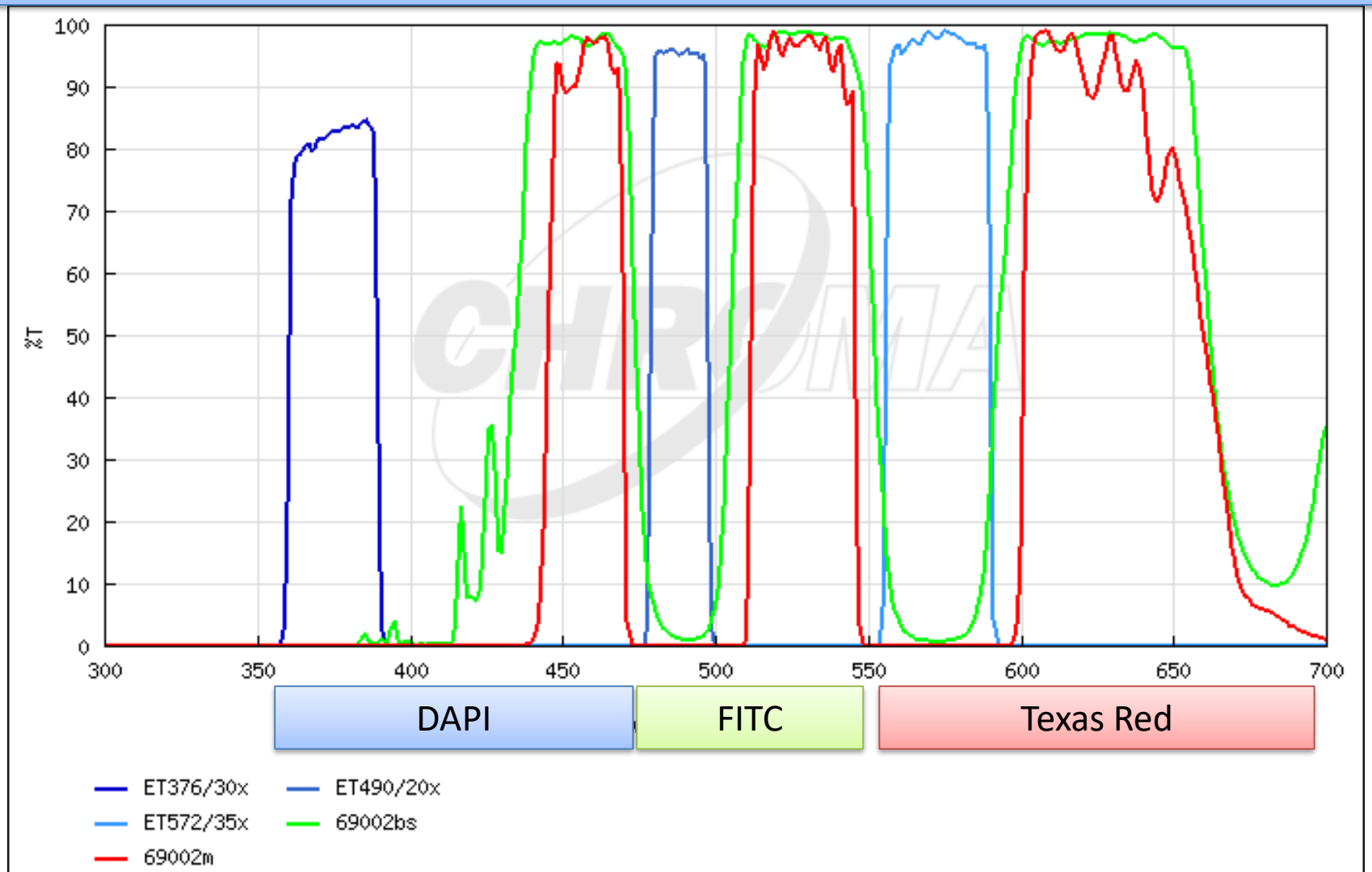
Health & Safety

- No food and drink in the room
- CO2 compressed gas cylinder:
  - asphyxiation risk
  - compressed gas risk
- CO2 alarm in the room
- Needles must be kept in the tube provided
- Take your rubbish away with you

The microscope

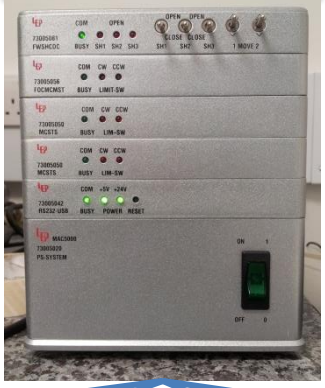
- Range of objectives available
- Brightfield, phase contrast and fluorescence
- Hamamatsu monochrome camera
- Motorised XY stage and Z focus
- Environmental chamber (temperature and 5% CO2)

Fluorescence filters



XYZ & shutters/filters control

LEP MAC5000 controller



LEP XY stage joystick

XY movement

Z Focus

Shutters/Filters selector

1 = Fluo shutter
2 = Brightfield shutter

1 = DAPI
2 = FITC
3 = TxRd

Heidenhain Length gauge

Length gauge to prevent Z drift

Motorised focus

Focus Motor on/off

Environmental chamber control

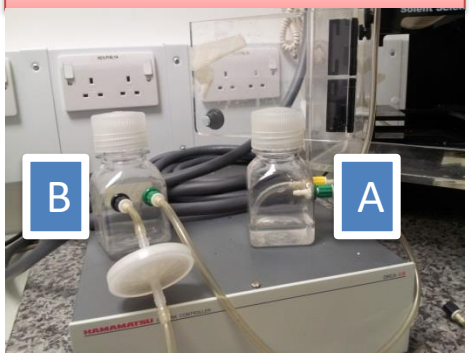
Hold to set temperature

Incubator Temperature controller

CO2 enrichment controller

Environmental chamber

Gas humidifier bottles



- Both bottle caps must closed when in use.
- Open the cap of bottle B when not in use.

Bottle A = filled with clean distilled water up to the 50 mL mark
Bottle B = must be empty

Light sources

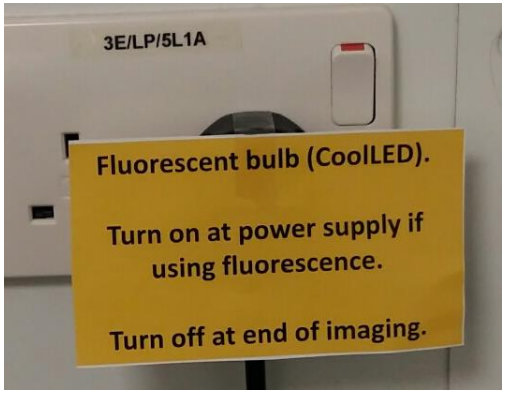
Brightfield (Phase contrast)

Green switch back left of scope

Halogen Lamp

Fluorescence
CoolLED pe300 White

Turn on at wall socket.
Display on top of scope will turn on.
All software controlled.

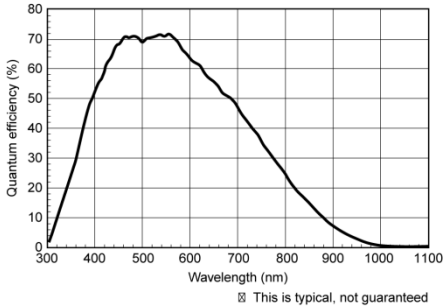


Hamamatsu Monochrome Camera

Hamamatsu Camera controller

Hamamatsu Camera

SPECTRAL RESPONSE CHARACTERISTIC



☒ This is typical, not guaranteed

☒ SPECIFICATIONS

Type number			C4742-80-12AG
Camera head type			Hermetic vacuum-sealed air-cooled head
Imaging device			ER-150 progressive scan interline CCD
Effective number of pixels			1344 (H) ☒ 1024 (V)
Cell size			6.45 µm (H) ☒ 6.45 µm (V)
Effective area			8.67 mm (H) ☒ 6.60 mm (V)
Pixel clock rate			14.75 MHz/pixel
Frame rate	1 ☒ 1		8.8 frame/s
	binning	2 ☒ 2	16 frame/s
		4 ☒ 4	27 frame/s
		8 ☒ 8	41 frame/s
Readout noise (r.m.s.) typ.			6 electrons
Full well capacity typ.			18000 electrons
Dynamic range* typ.			3000 : 1
Cooling method			Forced air peltier cooling, with hermetic sealing
Cooling temperature			- 30 ˚C
Dark current			0.03 electrons/pixel/s
A/D converter			12 bit
Exposure time			10 µs to 4200 s
Sub-array			yes
Contrast enhancement			Analog gain (10times max.) and offset function
External trigger			yes
Lens mount			C-mount
Interface / Output signal (digital output)			IEEE1394-1995 / Non-compressed data (Mono 16)
External control			IIDC 1394-Based Digital Camera Specification Ver.1.30
Line voltage			AC 100 V / AC 117 V / AC 220 V/ AC 240 V, 50/60 Hz
Power comsumption			approx. 90VA
Ambient storage temperature			- 10 ˚C to + 50 ˚C
Ambient operating temperature			0 ˚C to + 40 ˚C
Ambient storage/operating humidity			70 % max. (no condensation)

Ocular/Camera light path switch

Ocular

Camera

Scale

	Hamamatsu
Axiovert 135	Full Frame bin 1x1
objective	µm/pixel
x10 NA	1.031
x20 NA	0.467
x32 NA	0.318
x40 NA	0.228

Change image unit in Fiji/ImageJ:
Image>Properties …