



Operating Instructions

of the Neuroscience Research Center (NWFZ) at the Charité -
Universitätsmedizin Berlin

Operating instructions apply to laser classes 3B and 4, which belong to the NWFZ and are located on the premises of the CCO of the Charité Campus Mitte as listed below:

Systems with laser class 3B

STED microscope Leica lab 01/327	Inv.Nr. 3086641
SP5 microscope Leica lab 01/327	Inv.Nr. 3120966
SPE microscope Leica lab 01/307	Inv.Nr. 3067829
Spinning disc Yokogawa lab 03/111	Inv.Nr. 3043404
DPSS laser cw lab 03/202	Inv.Nr. 3110446
DPSS (MBL. III) laser lab 02/246	Inv.Nr. 3147403
DPSS laser lab 02/104	Inv.Nr. 3147403
SP8 microscope Leica lab 01/307	Inv.Nr. 3134348
DPSS laser lab 02/246	Inv.Nr. 3158810

Systems with laser class 4

2-photon system Femtonics with two lasers lab 03/111	Inv.Nr. 108823+3093367
UV uncaging system lab 03/109	Inv.Nr. 3060390

Wavelengths: Class 3B visible cw (continuous wave) and pulsed (μs) light from 405nm (violet) to 635nm (red)
Class 4 near infrared pulsed light (fs) from 700nm to 1080nm and pulsed (ns) uv light of 355nm

Laser power: Class 3B from 1mW to 500mW cw and pulsed (μs) WLL (white light laser)
Class 4 from 1W to 4W integrated, in pulse up to approx. 400kW near infrared light

Hazards for humans and the environment

Class 3B: The achievable laser power is dangerous to the eye. Diffuse scattered radiation can also be dangerous.

Class 4: The achievable laser power is very dangerous to the eye and dangerous for the skin. Diffuse scattered radiation can also be dangerous. This laser power is sufficient to create a fire and explosion hazard.

Protective measures and rules of conduct

- The laser area must be clearly and permanently marked, laboratories with class 3B lasers by a sticker, class 4 laboratories by a sticker and additionally by a warning light
- The users of the systems must be trained in the use of the laser
- Unauthorized persons are not permitted to enter the laser area unless accompanied by trained users
- If the laser is not needed, put the system in "stand-by" mode or switch it off
- Avoid reflections of laser light!
- When adjusting the laser beam, use tools with a matt surface
- Optical superstructures must be screwed tightly to prevent them from tipping over
- **Eye protection! Wear laser safety goggles (DIN EN 207) or laser adjustment goggles (DIN EN 208) when adjusting the beam path of the laser or coupling optical fibers into the laser beam. The goggles must correspond to the wavelength range of the laser to be adjusted and must be undamaged. In case of doubt, consult the laser protection officer**
- There is a fire hazard with laser power above 0.5W
- Eliminate potential fire and explosion hazards
- Beam paths that run at table or waist height must be shielded. Beam paths at eye level must always be shielded and marked
- The workplace must be secured in the event of interruptions to adjustment work. Close the laser shutter

Behavior in case of malfunctions or danger

- Switch off laser immediately in case of malfunctions or unusual operating conditions
- Laser safety officers (Dr. Rösner or Dr. Jochenning) must be informed immediately
- In case of fire, if possible, fight the cause with CO₂ extinguisher, warn employees, and, if necessary, trigger fire alarm

Conduct in case of accidents, first aid

- Switch off lasers, provide immediate assistance
- In the event of eye injuries, consult an ophthalmologist

- If necessary, inform the rescue service
- Inform the director of the NWFZ
- Document accident and first aid services

Maintenance and service

This work may only be carried out by authorized persons. These primarily include the service facilities of the manufacturers of the existing systems. The adjustment of the beam path of the lasers may also be carried out by the laser protection officers.

Date: 01.02.2020

Director of the NWFZ:

Prof. Dietmar Schmitz