

Operating Instructions for the confocal microscopes SP5 and SP8 of the Faculties V and VI of the Carl von Ossietzky University Oldenburg

The terms of use and rules for the confocal microscopes, "Leica-STED-SP5" and "Leica-SP8", operated by Faculties V and VI, correspond to the guidelines for "Core Facilities" established by the DFG, published on 25.11.2011.

1. Access

Access to the microscopes is granted in agreement with the microscope representative or a superuser representing her (for telephone numbers and e-mail addresses see appendix). Before using the microscope for the first time, each user fills in a personal and project-related data sheet and receives training and safety instructions on the microscope by the microscope representative or one of the superusers. If one or both microscopes are in operation, access to the room is only permitted to persons who have received a laser safety instruction.

The "Leica-STED-SP5" is only used by the specially trained group of people, the "super users". The "Leica-SP8" can be used by PhD students and experienced scientists after training and safety instruction by a superuser. Users undertake to comply with the rules and regulations described in these instructions. For teaching purposes, the Leica SP2 is available to the Weiler/Greschner working group (see SP2 user regulations).

All users may use the corresponding computer workstation for deconvolution. Whoever wants to use this computer registers as a user in the logbook of the deconvolution computer, no fees are charged for this.

Every user fills out a data sheet during his first registration for the use of the device, which asks for general personal and project-related data. Furthermore, the person carrying out the experiment and the supervisor of the project must provide declarations on chemical and biological safety (e.g. staining reagents) and on working safety.

2. Booking

The usage times of the confocal microscopes, "Leica-STED-SP5" and "Leica-SP8" are recorded in the electronic booking calendar and confirmed after each session by the personal signature of the superuser or user in the logbook. An introduction to the booking system will be given by the microscope representative.

3. Cancellation

If a user is unable to keep an appointment, he/she must give notice in good time. Cancellation must be communicated by telephone to users booked before and after the appointment to be cancelled, as well as to the microscope representative or a superuser (tel. in the appendix). If nobody can be reached by telephone, an e-mail will be sent to the Microscope Representative. If a user does not appear at the device within 15 minutes after the start time of his/her booking and/or does not make a cancellation, or completes the use of the device/workplace before the end of his/her booked time, fees will be charged: Based on the current price list, fees of at least 50% (or up to 100% in case of repetition) of the reserved time will be charged. If a user completes the use of the device/workplace before the end of his/her booked time (is checked in regular spot checks by the electronic login data), user fees will still be charged for at least 50% of the time reserved by him/her, unless the following user also starts before, with a maximum interruption of 15 minutes.

4. Data storage

Experimental data can only be stored on the microscope computer to a limited extent. After the end of an experiment, no more than 15 GB of data may be stored for a maximum of three

months in the "User" folder on the microscopes' local computers. Users are obliged to transfer the data to their own storage media and then delete them from the hard disk if the data storage capacity exceeds 15 GB (or the storage period exceeds three months). As soon as the limit of 15 GB is exceeded, the data can be deleted after two written reminders. Data stored outside the designated storage locations is not subject to security and can be deleted at any time. No data may be stored on the C drive, the desktop or the local user-specific document folders. For data storage, only external storage media may be used which were connected to computers with current virus protection or which were checked for viruses on the deconvolution computer. This is necessary to prevent viruses etc. from being introduced, as the microscope computers cannot be equipped with sufficient virus protection.

5. Changes to the computer or microscope

It is strictly forbidden to change anything on the computer system (e.g. installing software). The use of the computers for private internet research is not allowed and will result in immediate exclusion from the use of the microscopes and computers. The computers connected to the microscopes have no virus protection and may under no circumstances be connected to the Internet.

The user is not allowed to change microscope components, such as lenses, on his/her own. If necessary, the microscope representative or one of the superusers must be informed.

6. Recording and storage of operating times

The individual use of the confocal microscopes "Leica-STED-SP5" and "Leica-SP8" is recorded in the logbook and the electronic booking calendar and confirmed after each session by the personal signature of the superuser or the user(s) in the logbook. This data is the basis for the calculation of the user fees. The data in the logbook is required and checked for documentation purposes for the maintenance of the equipment and is therefore kept for 5 years. Repeated incorrect entry or failure to complete the logbook will result in a warning and possibly exclusion from the use of the confocal microscopes.

7. Costs per hour of use

There are usage fees of 20€/hour for the SP8 and for the superusers at SP5. For the SP5, all non-super-users of faculties V or VI pay 40€ per hour of use (includes the supervision by a super-user). External users who are not members of faculties V and VI and/or who do not carry out work in connection with a collaboration (and thus joint publication of results) with a member of faculties V or VI pay 100€/hour.

The calculation of fees is based on the login books available at the respective microscope, the entries in the online booking calendar and the individual user login files, which are entered via the workstation login (for exact details see below).

The user fees will be evaluated by mutual agreement by the director together with the user advisory board and adjusted if necessary on the basis of the actual costs. Rebookings in the amount of the costs incurred are usually requested every three months and must be made within 14 days. They will be sent by Mrs. Gabriele Ahrens (Office of the Department of Neuroscience) to the responsible heads of department of the working group, who will also sign the data sheet of the respective users. As long as this is in accordance with German tax laws, no value added tax is charged within the university.

Important: The fees for the use of confocal microscopes can be financed through the DFG (individual proposals, scientific networks, Collaborative Research Centre (SFB), Emmy-Noether- or Heisenberg), the BMBF or EU funding proposals. For example, hours for confocal microscopy can be claimed in one application. DFG proposals must be accompanied by the user code as a PDF document. More information can be found on the DFG website at

http://www.dfg.de/formulare/55_04/55_04_de.pdf or

http://www.dfg.de/formulare/52_01/52_01_en.pdf

8. Overbooking

Should there be periods of bottlenecks, in which not all usage requests can be fulfilled due to overbooking, the individual usage time should not exceed 5 hours per day or 15 hours per week. Times-of-use after 6 p.m. and on weekends are excluded. The working groups that were involved in the purchase of the microscopes have the right to at least 50% of the microscope time in case of heavy overbooking. In case of doubt, the microscope commissioner will decide. In particularly controversial cases, the head of the group makes the final decision on the allocation of the usage times in agreement with the user advisory board.

9. Conduct in the event of damage

Each user is responsible for the proper use of the equipment during the booked period and can be held liable for any damage caused (for details on liability, see user regulations). Damage or functional restrictions must be reported immediately to the microscope representative or a superuser. In order to prevent damage to other users or equipment, the Microscope Representative and/or Superuser must be notified immediately if any hazardous solutions have been released from the microscopes or other chemical and/or biological contamination.

10. User responsibilities

The users are obliged to operate the device on the basis of the manner of handling learned in their first instruction at the workplace and to comply with the provisions of the operating instructions.

The respective working group leader is responsible for the employees with regard to their behaviour at the microscopes, general instruction in basic experimental work, general safety requirements and special introductions to questions of biological safety. The microscope representative is authorized to give instructions to all users of the confocal microscopes regarding operational and/or safety-related questions.

11. Publications

The use of tools for data collection or analysis shall be appropriately mentioned in any publication. Superusers shall be given the written sections on microscopy methods in the draft publication for reading and correction, if necessary, to ensure a correct description of the methods and instruments used. PDF files of all publications must be sent by the author in charge to the Microscope Commissioners after final publication.

Depending on the intensity of supervision and scientific input, a possible co-authorship of the microscope commissioner or superuser must be discussed. If the microscope representative or another superuser only assists in the use of the equipment, no recording as co-author is expected. If the Supervisor (or another superuser) contributes a significant scientific contribution in terms of many working hours and/or crucial scientific ideas, the Supervisor (or superuser) has to be added to the list of authors of a resulting publication. The superusers are informed that they must notify the respective user when the amount of input approaches this threshold. Then the individual user can decide whether he/she wants to receive further input from the superuser. If he/she requests further input from the superuser after this announcement, he/she must add the respective superuser to the list of authors of the resulting publication. This question must be clarified in writing with the microscope commissioner or the respective superuser and the responsible working group leader. In case of disputes the head or the user advisory board can be involved.

12. Liability and insurance

The users of the confocal microscopes or the working group involved are responsible for any damage caused by incorrect operation. In this case, the user or the working group involved must pay the repair costs incurred. The head is entitled to exclude the user from further operation in case of intentionally wrong operation. Users who are employed by the University of Oldenburg are recommended to take out a private business liability insurance to cover the residual risk of damages caused, since in case of gross negligence the costs will not be covered by the University of Oldenburg. In any case, the user is personally liable for intentional damages.

The assumption of liability of the university applies only to employees. All users who are not employed by the University of Oldenburg, e.g. scholarship holders, are strongly recommended to take out professional liability insurance (approx. 60 to 120 € per year), as the University is not liable for any damages incurred. The damage must then be paid in full by the person causing the damage. Since in such a case the sums involved can be very high, persons who are not employees of the University of Oldenburg and do not have the above-mentioned insurance cover cannot be permitted to use SP5 and SP8. Such persons must submit a valid copy of their insurance policy to the microscope officer before they can be granted access to the equipment. A copy of the new policy must be submitted to the Microscope Commissioner for policy extensions.

13. Instructions for proper operation of the SP8 microscope

13.1 To switch on...

- socket board
- scanner and laser power, key
- fluorescence lamp
- software (while the software starts up do not use the microscope!)
- laser
- Please use only a small amount of oil...

13.2 To switch off:

- cleaning of the objectives: please clean the lens carefully (and without pressure) with lens paper, do not rub!
- deactivate the lasers
- close the software (do not use the microscope while shutting down!)
- shut down the computer
- turn off the fluorescence lamp (after turning-off the fluorescence lamp, wait at least 1/2h before starting it again!)
- switch off scanner and laser power, key
- socket board
- cover the microscope with the hood
- fill in name, time etc. (in the book)
- please keep the working place clean!

13.3 To avoid damage of the microscopes:

- if your sample has touched any toxic or carcinogenic substances (Dapi, DAB, PFA, Natriumazid), please use gloves to put your coverslip under the microscope and to remove it. Do NOT touch anything else with the gloves!
- Hybrid Detektor (HyD): Start with a laserpower below „1“! Never place the HyD detector under the laserline. The automatic switch-off is stored and can be attributed to the user!
- when changing the objectives, be careful not to hit the microscope table! Remove the oil before changing the objectives to avoid dripping!

- Do not change anything in the software (do not install any programs etc.) The computer is not connected to the Internet and should not be connected to any network!
- Please do not disassemble or modify any parts of the microscopes (except polarizing filters and clamps for fixing the slides)
- the fluorescent lamp (mercury!) should have been switched off for half an hour before being switched on again. If the fluorescent lamp burns out: Please leave the room immediately, lock it and inform the superuser. Mercury vapors are released.

13.4 Laser safety

If one or both microscopes are in operation, access to the room is only permitted to persons who have received laser instruction! Due to the risk of laser deflection and subsequent eye injury on both microscopes (SP5 and SP8), the following instructions must be followed:

- do not look into the laser light during the scanning process
- Keep hands and objects away from the object table during the scanning process
- do not use broken or cracked slides and cover slips
- do not scan near the edge of the slide or coverglass
- before each use, make sure that no objects, especially cover glasses or glass splinters, are in the path of the beam

14. Appendix

Superuser phone numbers:

Petra Bolte	798-3478 (0160-8279083)	petra.bolte@uni-oldenburg.de
Karin Dedek	798-3425	karin.dedek@uni-oldenburg.de