

## **DM3000 LED for transmitted light** DM3000 (Class E )

Leica DM3000 LED for transmitted light;

Ergonomic system microscope Leica DM3000 LED with long-life, bright, similar to daylight LED illumination (transmitted light), automated objective nosepiece and condenser head, as well as memory function for the light intensity for comfortable work in many applications delivers excellent optical performance for reliable results.

Extremely versatile microscope system, can be optionally equipped for dark field, phase contrast, polarization contrast, fluorescence, and DIC to suit the needs of modern laboratories.

The ergonomic features like height adjustable focus knobs, symmetrical operation of focus and coaxial drive, optional ergotubes and a wide range of ergonomic accessories help to ensure fatigue-free work at the microscope.

The motorized 6fold objective nosepiece offers plenty of positions for different objectives to feature efficient work and can be operated by convenient buttons or an optional foot pedal. The reliable 2- or the optional 3step focusing mechanism allows adaptation of the focusing to the properties of the specimen. Illumination intensity is memorized for each objective and the automated condenser head swings in and out automatically with regard to the objective in use.

### **Microscope Platform**

#### ***1188844 Leica DM3000 LED***

Leica DM3000 automated stand for Biology and Medicine for transmitted light LED illumination, with 6-fold automated nosepiece, automatic adjustment of light intensity, with height adjustability of focus knobs, integrated LED and stage carrier, with centrable condenser holder for vertical adjustment, right- and left-hand operation and clamp screw, with adjustable height stop, Mains 100-250V, commutable 50-60 Hz.

#### ***11888143 Focusing drive 2-step***

Focusing drive 2-step DM2000-3000 for coarse and fine focussing and adjustable focus stop and focus torque adjustment, including focus knobs coarse

#### ***11888137 Rubber focus knobs for DM2000/2500/3000***

Set of focus knobs fine with rubber surface for DM2000-3000.

### **Transmitted Light Illumination**

#### ***11501231 Condenser lens CL/LS***

### ***11505322 Condenser A0.9 (P), auto***

Automated condenser Achr.apl. A 0.9(P) with automated switchable condenser top for DM3000/DM3000 LED, with color coding, for BF,DF,PH & Pol.

## **Microscope Stage**

### ***11888186 ErgoStage with Ceramic Plate f. DM2-3000***

ErgoStage for DM2000/2500/3000 for right- or left-hand operation. Stage plate with ultrahard ceramic surface, travel range 76mm x 25mm, with vernier reading.

### ***11505196 Slide holder one hand slide change***

Slideholder for ergostages DM1000/DM2000/DM2500/DM3000 for one standard slide, easy operation, one hand slide exchange

### ***11888153 XY-stage control standard***

X/Y stage control standard for ergostages DM1000/DM2000/DM2500/DM3000 with removable rubber covers

## **Tube and Eyepieces**

### ***11507820 Eyepiece HC PLAN s 10x/22 Br. M***

Eyepieces with 10x magnification and 22mm field of view. Ideal for fatigue-proof screening. Useable with or without glasses. Dioptic adjustment. A reticule can be added.

### ***11501500 Phototube HC L1T 4/5/7, trinocular***

Phototube HC L 1T 4/5/7, with 30° viewing angle, with interpupillary adjustment 55-75 mm, beamsplitter positions vis/phot: 50%:50%, fixed, fixed photoport for one camera

### Objectives

|                                      |                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>11506302 Obj. N PLAN 5x/0.12</b>  | <b>Objective N PLAN 5x/0.12</b><br>Free working distance: 14.0 mm<br>For use with and without Cover Glass<br>Suitable for DIC (prism B1,B2)                                                                                                         |
| <b>11506405 Obj. N PLAN 10x/0.25</b> | <b>Objective N PLAN 20x/0.40</b><br>Free working distance: 0.39 mm<br>For use with a 0.17 mm Cover Glass (DIN/ISO)<br>Not suitable for Incident Light, except Fluorescence<br>Useful and recommended for Integrated Leica Modulation Contrast (IMC) |
| <b>11506096 Obj. N PLAN 20x/0.40</b> | <b>Objective N PLAN 20x/0.40</b><br>Free working distance: 0.39 mm<br>For use with a 0.17 mm Cover Glass (DIN/ISO)<br>Not suitable for Incident Light, except Fluorescence<br>Useful and recommended for Integrated Leica Modulation Contrast (IMC) |
| <b>11506097 Obj. N PLAN 40x/0.65</b> | <b>Objective N PLAN 40x/0.65</b><br>Free working distance: 0.36 mm<br>For use with a 0.17 mm Cover Glass (DIN/ISO)<br>Not suitable for Incident Light, except Fluorescence<br>Useful and recommended for Integrated Leica Modulation Contrast (IMC) |
| <b>11506184 Obj. N PLAN 63x/0.80</b> | <b>Objective N PLAN 63x/0.80</b><br>Free working distance: 0.26 mm<br>For use with a 0.17 mm Cover Glass (DIN/ISO)<br>Suitable for DIC (prism D)                                                                                                    |

## Camera

### **12730533 Flexacam C3 Camera**

Flexacam C3 Camera

- Digital color camera with CMOS sensor (1/2.3)"
  - stand alone operation possible\*
  - 4k 60fps live image via HDMI\*
  - JPG images with up to 12 MP
  - Full HD MJPG Video recording with 30 fps
  - Camera control via computer (PC mode) or via USB Mouse (not included)
  - Capture directly to USB Stick or send images via E-Mail\*
  - USB3.1 type C connection
  - Including: USB C to A cable
  - Supported OS: Win 10, 11
  - Recommended c-mount adapter 0.5x/0.55x.
- \*- Stand Alone Kit 12730534 needed to enable Stand alone operation (Mouse, USB Stick, HDMI Cable and Power Supply)

Recommended c-mount adapters:

Stereo Microscope: 0.50x No 10450528

Compound Microscope: 0.55x No: 11541544

### **11541544 C-Mount HC 0.55x**

C-mount adapter 0.55x HC, for 1/2" and 0.55" cameras

## Image Acquisition and Analysis Software

LAS X integrated imaging system solution based on the Leica software platform LAS X (Leica Application Suite X). LAS X is ideal for the whole spectrum of fluorescence applications from routine work to sophisticated tasks in biomedical research such as live cell time-lapse experiments, multi-positioning, z-stacking, stitching, deconvolution and real time 3D visualization. The wizard based interface guides users safely and intuitively through the experiment and the necessary configuration settings. All system parameters can be exactly reproduced and used for further experiments.

The LAS X software platform supports the Leica widefield and the Leica confocal systems. The identical software architecture in all Leica systems creates ideal conditions for fast and effective work, particularly in imaging facilities.

### ***11640599 LAS X Software Licence Container***

Software License Container to run optional LAS X modules on one Computer. Licenses are valid for one Computer only and cannot be transferred. No Hardware Dongle included.

### ***11640878 LAS X Core***

LAS X Core

LAS X core software for widefield systems operates without the need for a dongle and offers the following functionality:

For microscopes & cameras

- Control of one or more compatible Leica DFC cameras for image acquisition
- Full control of camera features exposure, gain, binning, gamma, region of interest
- Leica Hardware Configurator, enabling configuration of compatible microscopes

Experimental setup and user interface

- Workflow oriented user interface for ease of use and ergonomics
- Intuitive setup of experiment conditions for fast setup and acquisition
- Optimized data handling for fast acquisition and large data set display
- Automatic recording of experimental parameters for reference or reloading for subsequent experiments
- Customized user and system settings
- Configuration of objectives and filter cubes within LAS X
- Easy Operation Mode for user specific layout of the user interface

Viewing, organising and exporting data

- Full image viewer including annotations, image overlay, image gallery and image comparison
- Review capability for all acquisition parameters
- Project tree for data management save, rename, copy, delete, export as Tiff, JPEG, QuickTime, AVI, MPEG-4, WMV, ASCII
- Access to project conditions for export as XML or applying to another experiment

#### Image Processing & Measurement:

- Adjust contrast, brightness and gamma on every image
- Merge, crop and image arithmetic
- Intensity, length and area measurements
- Measurement of area intensities through image stacks
- Online measurement whilst displaying a live image
- Parallax correction

#### Modular Structure

- Possibility to add additional application modules, fully integrated into core application
- Additional modules will be protected by a hardware license key

#### Additional components

- Features context sensitive Help. Includes User Manual.

### ***11640558 LAS X 2D Analysis***

#### LAS X 2D Analysis

A workflow guides researchers step by step through 2D image analysis from applying filters, thresholding, and binary image processing to measurements, tracking, classification and reporting. The image viewer provides immediate feedback on the applied settings. Results are obtained easily, quickly, and reproducibly even on multi dimensional data sets like time series or Z stacks. Each analysis step offers a set of tools that the researcher can choose according to the analysis requirements. In addition, analysis protocols can be combined with ImageJ macros. The 2D tracking function display particle trajectories. Objects can be followed along their trajectories over time.

Analysis workflows can be saved as a user-defined protocol and applied to other data sets. The analysis results can be saved with the experiment or exported as Excel reports together with histograms and images of intermediate steps for documentation or further analysis. For statistical purposes, users can analyze several data sets of experiments in one run, adding the data to a batch list.

With the classifier function unbiased and reproducible classification results are obtained even in situations where thresholding or filtering is not suitable. The Classifier is based on a Support Vector Machine. First, a training data set is used ("supervised learning") where objects are manually assigned to predefined classes. During the subsequent training, numerical properties of various image feature are analyzed. The classifier can now be applied to further data sets in order to assign unknown objects to the predefined classes.

### **Computer and Monitor**

#### ***Computer – system compatible with Leica LAS X software requirements***

Storage capacity: minimum 500 GB

Monitor size: minimum 24 inch / Monitor resolution: 4K