Living up to Life

Leica
MICROSYSTEMS

Leica FS C, FS M

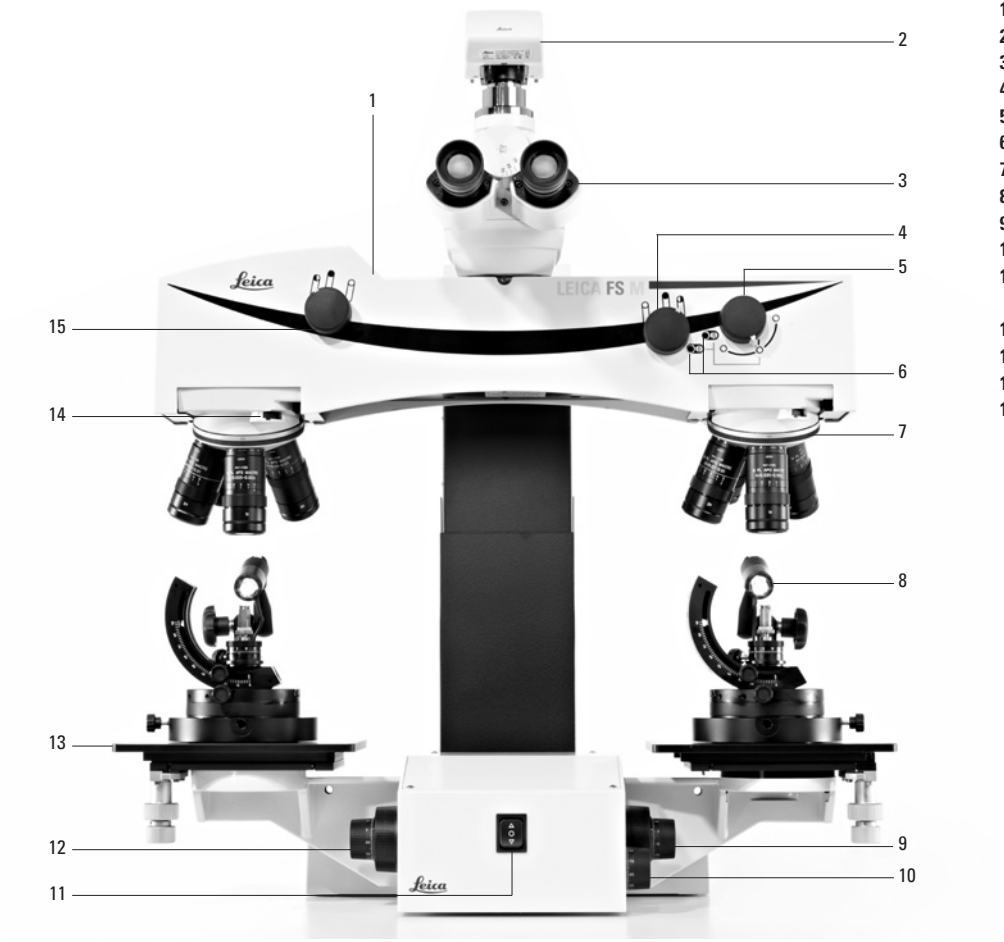
Modular System Comparison Macroscopes

Comparison bridge, stand, modules, accessories

November 2013

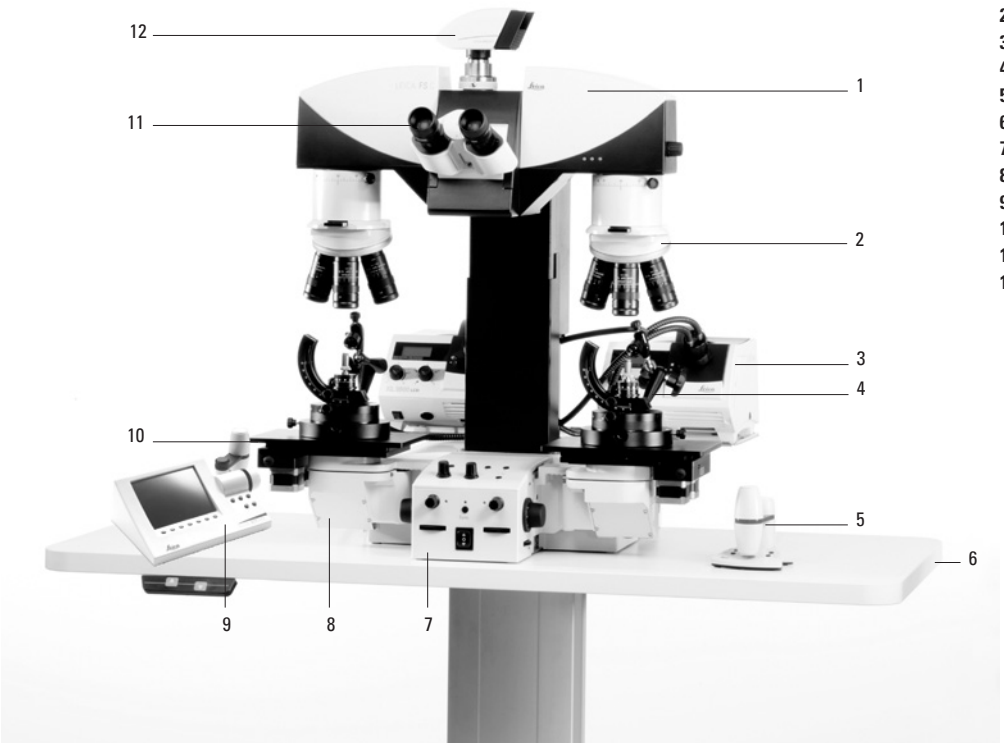
Comparison bridge, stand, modules, accessories

November 2013



Leica FS M

1 Comparison bridge
2 Leica DFC digital camera
3 Tube with eyepieces
4 Knob for setting bridge mode, right
5 Positioning of dividing line
6 Adjustment screws for dividing line
7 Objective turret with objectives
8 LED spot illumination
9 Coarse and fine focusing, right
10 Synchronized movement of both stages in x direction
11 Rocker switch for motorized adjustment of comparison bridge height
12 Coarse and fine focusing, left
13 Specimen stage with coaxial drive
14 Mount for filter slides
15 Knob for setting bridge mode, left



Leica FS C with motorized work table

1 Comparison bridge
2 Objective turret with objectives
3 Universal cold light source
4 Holder for oblique incident illumination
5 SmartMove control panel
6 Motorized work table
7 Control unit
8 Transmitted illuminator
9 Leica STP6000 control panel
10 Motorized stage
11 Tube with eyepieces
12 Leica DFC digital camera

Leica FS M
– Manual comparison macroscope

Fig. 1: Leica FS M

Fig. 2: Manual comparison bridge Leica FS M

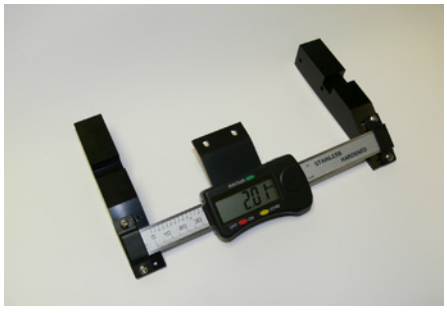


Fig. 3: Measuring device for microscope stage (x)

with manual stages 11581113

Leica FS M comparison macroscope consists of the base stand with height-adjustable motorized column, the manual comparison bridge, two macro carrier with macro tube lens, filter slots and 5-fold objective turret with M 32x0.75 thread, two mechanical X-Y stages, independent manual fine/coarse focussing for the left and right stage and mechanical synchronous movement of the entire lower base in x-direction.

Following are additional details:

Base stand Leica FS M (Fig. 1, p. 4)

The Leica FS M base stand consists of a stand column and stand base with transport handles. The comparison bridge is attached to the automatically adjustable column and can be telescopically adjusted in height over a travel range of 255 mm.
The base of the stand contains the manual object stages (160 x 220 mm and travel range = 50 x 50 mm), independent manual fine/coarse focussing for the left and right stage (25 mm) and mechanical synchronous movement of the entire lower base in x-direction.

Manual comparison bridge Leica FS M (Fig. 2, p. 4)

The manual comparison bridge incorporates 3 knobs to operate the comparison modes: Full right, Full left, Split image, superimposed image and the traverse of the dividing line. Additionally, the width and image position of the dividing lines can be variably adjusted by hand.

Two macroscope carriers with macroscope tube lens

The macroscope carriers are mounted on the right and left beneath the comparison bridge and contain two 5-place objective turrets with objective thread M32x0.75 and filter slots for the (optional) CRA, CGA filter slides.
At the rear of the comparison bridge are holes that accommodate the articulated arms (11581003) for holding and positioning the flexible light guides, Fluo lights, Ring lights or LED spot illuminators. The light can be rotated and tilted in every direction.

Two mechanical 3 plate stages

Stage 202 mm x 140 mm with glass insert (opening 68 mm x 68 mm). Low positioned coaxial drive Knobs for x-y adjustment (50 mm x 50 mm) with analogous drive sense and bore holes to attach the universal holder, the ball joint stages as well as the large format stages (letter size).

Measuring device for microscope stage (x) (Fig. 3, p. 4)

11581116

The Leica FS M optical system includes a variety of optional binocular and trinocular observation tubes for comfortable, long-term viewing. The focusable 10x eyepieces compensate for differences in visual acuity between different users or an individual's eyes, offer a large 22 mm field of view, and provide a high eyepoint for eyeglass wearers.

Ergonomic phototube HC L 1 VT 0/4/4 (Fig. 4, p. 5)

with variable viewing angle 0-35° for comfortable work, with interpupillary adjustment 55-75 mm, with constant focus and beamsplitter positions vis/phot: 50/50%, fixed, fixed photoport for one camera 11501502

Eyepiece HC PLAN 10x/20 BR.M 11507802

Fig. 4: Photo tube HC L 2TU 4/5/7

Magnification Changer 1x, 1.5x, 2.0x

The magnification changer fits between the Leica FS M stand and the tube, or between the Leica DM Multi Viewing system and the tube. It provides additional calibrated magnifications and applies factors 1.0×, 1.5× and 2.0×. 11505252

Leica DM Multiple Viewing System

2 station, side by side, LED pointer with power supply, power cord, support leg, and leg extension 11622020

Support Side-by-Side w. Mag. Changer 11581119

Standard tube HC –/4/4 (Fig. 5, p. 5) 11505193

30° viewing angle

Eyepiece HC PLAN 10x/20 BR.M 11507802

Fig. 5: Standard tube HC –/4/4

Leica FS C – Motorized comparison macroscope

with motorized stages	11581105
with manual stages	11581108

The Leica FS C comparison macroscope consists of the base stand, comparison bridge with ergo binocular tube, two macroscope carriers with macroscope tube lens, t wo motorized stages, control panel for central control of the motorized functions, special articulated arms for light guide, revolving with scales, filter slots for color balancing filters and polarizing filters.

Fig. 6: Base stand Leica FS C

Following are additional details:

Base stand Leica FS C (Fig. 6, p. 6)

The Leica FS C base stand consists of a stand column and stand base with transport handles. The comparison bridge with observation tube is attached to the automatically adjustable column and can be telescopically adjusted in height over a travel range of 255 mm.

The base of the stand contains the motorized (optional manual) object stages, the central control panel and the optional transmitted light illuminator. The stages have separate automatic X, Y and Z adjustment for the fine-adjusting the specimen. (Travel range approx. 25 mm). The focusing speed for the stage adjustments is adjusted automatically to the current objective magnification level via the encoded objective turret.

Fig. 7: Comparison bridge FS C

Comparison bridge FS C (Fig. 7, p. 6)

The comparison bridge switches automatically between split image, composite image and exclusive image of left or right beam path. You can switch over to any of these four methods at the touch of a button. Additionally, the width and image position of the dividing lines can be variably adjusted by hand using two additional push buttons. The automatic magnification changer has two levels, 1x/1.5x, which control both part-images. An adjustment dial located on the side of the bridge allows exact magnification calibration of both partial images in the range of +/– 4% when adjusting for thermally changed specimens. Three light-emitting diodes (green = calibrated, red= zoom in/zoom out) show the current status of the comparison bridge.

Fig. 8: Ergo binocular tube for field of view 22

Ergo binocular tube for field of view 22 (Fig. 8, p. 6)

The tube provides an image in portrait and landscape orientation. It has a variable viewing angle (approx. 5°-35°), a documentation output for C-mount adapters from 0.35x to 1x for digital imaging via various DFC-Cameras from the Leica product line. Optionally, a documentation output with two image outputs with 50%/50% image splitting can be attached to the existing interface.

Two macroscope carriers with macroscope tube lens (Fig. 9, p. 7)

The macroscope carriers are mounted on the right and left beneath the comparison bridge and contain a 6x encoded objective turret with objective thread M32x0.75, a filter slot (1 Fig. 9, p. 7), for the CRA, CGA filter slides and the analyzer slide.
Directly underneath the comparison bridge is the 360° revolving receptacle for the articulated light guide arms for holding and positioning the flexible light guides. The light bundle can be rotated and tilted in every direction (2 Fig. 9, p. 7); the receptacle for the coaxial incident illuminator is located behind and below this.

Two motorized 3 plate stages (Fig. 10, p. 7)

The 160 mm x 220 mm stage plates with 80 mm x 80 mm glass stage plates have an adjustment range of 50 x 50 mm in the x + y directions. Each stage has automatic x-y-z movement for finefocusing the specimens (travel range approx. 25 mm) and x-y adjustment of the specimens. (Positioning accuracy < 20 µm).
The x-y-z movement is adjusted automatically to the current objective magnification using the encoded objective turret. The x-y-z movement of both stages can be synchronized at the touch of a button. Both stages move together in x, y and z direction.

Two mechanical 3 plate stages (not pictured)

Stage 202 mm x 140 mm with glass insert (opening 68 mm x 68 mm). Low positioned coaxial drive Knobs for x-y adjustment (50 mm x 50 mm) with analogous drive sense and bore holes to attach the universal holder, the ball joint stages as well as the large format stages (letter size).

Control panel for central control of the motorized functions (Fig. 11, p. 7)

The top buttons control the functions of the comparison bridge, such as the magnification changer 1x/1.5x as well as switching between composite image, comparison image and dividing line. The lower and side buttons on the control panel control stand functions, such as x/y/z stage movement either individually or simultaneously, the light setting and the column lift.

Filter slots for color balancing filters and polarizing filters (1 Fig. 9, p. 7)

The filter slots are used to accommodate the CRA = red compensation (11581068) and CGA = green compensation (11581067) filter slides for color balancing using the superimposed imaging of the comparison bridge, or the analyzer slide for POL-contrasting. The filter slots are arranged at the front for easy access.

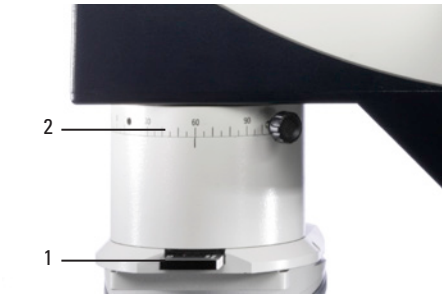


Fig. 9: Macroscope carriers with macroscope tube lens

Fig. 10: Motorized 3 plate stages

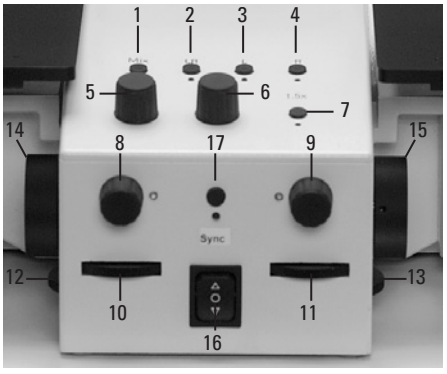


Fig. 11: 1 Mix, 2 Split, 3 left side, 4 right side, 5/6 Changing the position and width of the dividing lines, 7 VW 1.5x, 8/9 light intensity left/right, 10/11 x adjustment of stages left/right, 12/13 y adjustment of stages left/right, 14/15 z adjustment of stages left/right, 16 column lift, 17 synchronous movement of stage x/y/

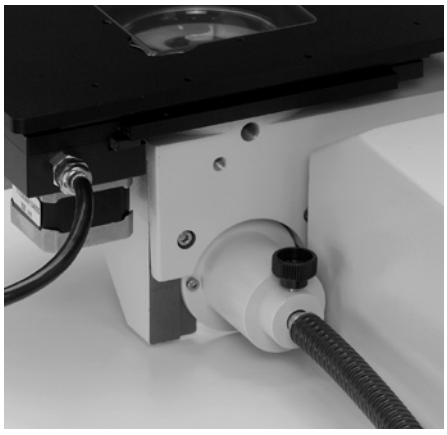


Fig. 12: Transmitted light illumination, right

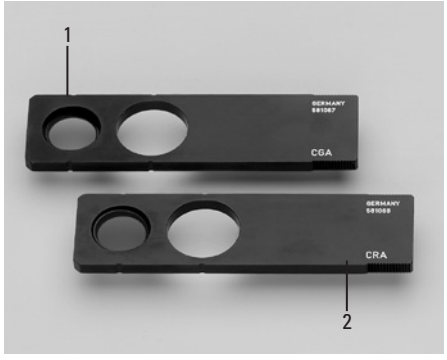


Fig. 13: 1 Filter CGA
2 Filter CRA

Fig. 14: Leica CLS250 LED-A

Transmitted light illumination

The transmitted light illuminator is intended for all transparent specimens, such as textiles, hair, films and documents.

Transmitted light illuminator, left 11581062
Transmitted light illuminator, right (Fig. 12, p. 8) 11581054

Additionally required:
Cold light source Leica CLS250 LED-A or LED-Spots.
The cold light source can be adapted for various illumination methods. However, two cold light sources can also be adapted to the instrument for two illumination methods.

Light filter for color contrasting for composite image comparisons: (1 Fig. 9, p. 7)
The filter slots are used to accommodate the CRA = red compensation (11581068) and CGA = green compensation (11581067) filter slides for color balancing using the superimposed imaging of the comparison bridge, or the analyzer slide for POL-contrasting. The filter slots are arranged at the front for easy access.

Slide bar with filter CGA (1 Fig. 13, p. 8) 11581067
Green compensation (1x)

Slide bar with filter CRA (2 Fig. 13, p. 8) 11581068
Red compensation (1x)

Alternative for cold light illumination
LED Spot Ø 25mm 33000076
3W, 6500K (2x)

Adapter for Power-LED 30000044
(fits in transmitted light mounting) 2x

CoolControl standard 33000073
LED-Controler (2-channel) for 2x Spot & 2x Ring light or 2x Line illumination & 2x Ring light

CoolControl advanced 33000074
LED-Controller (3-channel) for 4x Spot & 2x Ring light oder 2x Spot & 2x Line illumination & 2x Ring light

or:

Cold light source Leica CLS250 LED-A (Fig. 14, p. 8) 11581127
The performance of the Leica CLS250 LED-A is comparable to a 180-W xenon light source, which is significantly lighter than a 250 W halogen lamp as it is still used in the Leica KL2500 LCD. It is high luminous efficiency ensured by optimal coupling into the dedicated optical fiber. In combination with the cold light illumination bars (11581089), the diffuser attachment (11532730) or the coaxial incident-light (11581053) this light source is ideally suited for low-reflective, high-diffuse illumination of metallic and gloss samples. The CLS250 LED-A is in compliance with the CE regulations (power supply CE, UL, PSE). Manufactured in the EU

Silicone-coated optical fiber bundle (Fig. 15, p. 9) 11581128
two-branched, Ø 3.5 mm active/arm, length 1000/1000 mm

Antireflex cap (Fig. 16, p. 9) 11581091
For attaching to the objectives for coaxial illumination. In combination with the incident light polarizers, the cap protects against bothersome residual reflections, thus optimizing the image contrast in coaxial incident light.

Installation plate for two cold light lamps
(Fig. 17, p. 9) 11581086

Alternatively for coaxial illumination with cold light lamps
Power-LED illumination 3 Watt 33000075
Spot 25 mm coax 6500K

or
Power-LED illumination 3 Watt 33000088
Spot 25 mm coax 4000K. Noise- and vibrationfree, free of ripple and flicker, cold light, daylight, long life-time

Adapter for Power-LED 30000044
(to fit above LED into Coax-Illumination)

LED-Controler CoolControl standard (2-channel) 33000073

or
LED-Controler CoolControl advanced (3-channel) 33000074

Antireflex cap (Fig. 16, p. 9) 11581091
For attaching to the objectives for coaxial illumination. In combination with the incident light polarizers, the cap protects against bothersome residual reflections, thus optimizing the image contrast in coaxial incident light.

Fig. 15: Flexible light guide

Fig. 16: Antireflex cap

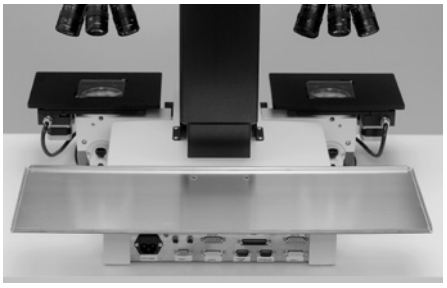


Fig. 17: Installation plate

Fig. 18: Coaxial incident light illumination

Fig. 19: Flexible light guide

Fig. 20: LED Spots with Adapter

Fig. 21: Leica CLS250 LED-A

Coaxial incident light illumination

Coaxial incident illumination (2x) (Fig. 18, p. 10)

The coaxial incident illuminator generates vertical coaxial incident illumination. The illumination is guided through the objective. This allows particularly contrast-rich display of smooth, highly reflective surfaces such as toolmarks, metallic form and material marks. The modular coaxial illuminator includes the special illumination optics, the reflector system with polarizing device for reflection protection and the receptacle for light guides or LED-Spots. 11581053

This requires:

LED-Coldlight illuminator Leica CLS250 LED-A (Fig. 21, p. 10)

The performance of the Leica CLS250 LED-A is comparable to a 180-W xenon light source, which is significantly lighter than a 250 W halogen lamp as it is still used in the Leica KL 2500 LCD. It is high luminous efficiency ensured by optimal coupling into the dedicated optical fiber. In combination with the cold light illumination bars (11581089), the diffuser attachment (11532730) or the coaxial incident-light (11581053) this light source is ideally suited for low-reflective, high-diffuse illumination of metallic and gloss samples. 11581127

Flexible light guide (Fig. 19, p. 10)

two-branched, Ø 2 x 3.5 mm active/arm, length 1000/1000 mm 11581128

Alternatively for coaxial illumination with LED Spots (Fig. 20, p. 10)

Power-LED illumination 3 Watt 33000075
Spot 25 mm coax 6500K

or

Power-LED illumination 3 Watt 33000088
Spot 25 mm coax 4000K. Noise- and vibrationfree, free of ripple and flicker, cold light, daylight, long life-time

Adapter for Power-LED 30000044
(to fit above LED into Coax-Illumination)

LED-Controler CoolControl standard (2-channel) 33000073

or

LED-Controler CoolControl advanced (3-channel) 33000074

Antireflex cap (Fig. 16, p. 9) 11581091
For attaching to the objectives for coaxial illumination. In combination with the incident light polarizers, the cap protects against bothersome residual reflections, thus optimizing the image contrast in coaxial incident light.

Fig. 22: Supplementary lens 0,33x:1

Fig. 23: M PL APO MACRO 8x/0.22 – 0.03

Fig. 24: Antireflex cap

Objectives, eyepieces, graticules and stage micrometers

The b.m. objectives and supplementary lenses are available for the Leica FS C and Leica FS M. For the direct comparison of the split image or composite image, a lens pair is required (1x left and 1x right).

Objectives

Supplementary lens 0,33x for 1:1 Imaging (FOV 160 mm)
(Fig. 22, p. 12)requires M PLAN APO MACRO 0,4x 11532301

M PL APO MACRO 0,4x/0.014 – 0.003 11581046

M PL APO MACRO 1x/0.035 – 0.006 11581047

M PL APO MACRO 2x/0.07 – 0.01 11581048

M PL APO MACRO 4x/0.14 – 0.03 11581049

M PL APO MACRO 8x/0.22 – 0.03 (Fig. 23, p. 12) 11581097

The objectives of the M PL APO Macro series are state-of-the-art, apochromatic corrected, high performance objectives. Based on the Leica principle of infinity distance correction of optics, the microscope objectives are infinity (∞) corrected for 180 mm reference focal lengths. The cover glass correction (-) allows the use of specimens with or without cover glass. A uniform calibration length of 135 mm guarantees the parfocality of the objectives with each other. The lenses are telecentric from 1x to 8x. The built-in iris aperture diaphragm allows optimum depth of field and image contrast. The aperture diaphragms can be continuously adjusted, with five notch positions for reproducibility of settings.

Antireflex cap Fig. 24, p. 12 11581091
For attaching to the objectives for coaxial illumination. In combination with the incident light polarizers, the cap protects against bothersome residual reflections, thus optimizing the image contrast in coaxial incident light. It is particularly recommended for use with darker, poorly reflective specimens.

Eyepieces Fig. 25, p. 13

Eyepieces for fields of view up to a maximum of 22 mm:

Eyepiece HC PLAN 10x/20 BR. (1x) 11507801

Eyepiece HC PLAN 10x/20 BR.M (1x) 11507802

Eyepiece HC PLAN S 10x/22 Br.M (2x) 11507807

Magnification and field of view

DFC-Camera 2/3 Zoll (Sensor = 8,81 x 6,61) C-mount 0,63x						
Mag. changer	**Macro Objective**	**FWD**	**Field of view Eyepiece 10 x**	**Total Mag. Eyepiece 10 x**	**Field of view 19“ Monitor**	**Total Mag. 19“ Monitor**
1 x	0,33:1	100 mm	166,0 mm	1,32 x	130,70 mm	3,38 x
1 x	0,4 x	60 mm	55,0 mm	4 x	43,60 mm	10,1 x
1,5 x	0,4 x	60 mm	36,6 mm	6 x	29,00 mm	15,2 x
1 x	1 x	60 mm	22,0 mm	10 x	17,44 mm	25,4 x
1,5 x	1 x	60 mm	14,6 mm	15 x	11,60 mm	37,9 x
1 x	2 x	60 mm	11,0 mm	20 x	8,70 mm	50,6 x
1,5 x	2 x	60 mm	7,3 mm	30 x	5,80 mm	75,9 x
1 x	4 x	60 mm	5,5 mm	40 x	4,35 mm	101,3 x
1,5 x	4 x	60 mm	3,6 mm	60 x	2,90 mm	152,0 x
1 x	8 x	45 mm	2,75 mm	80 x	2,17 mm	202,5 x
1,5 x	8 x	45 mm	1,80 mm	120 x	1,45 mm	303,8 x

Fig. 25: Eyepieces

Graticules

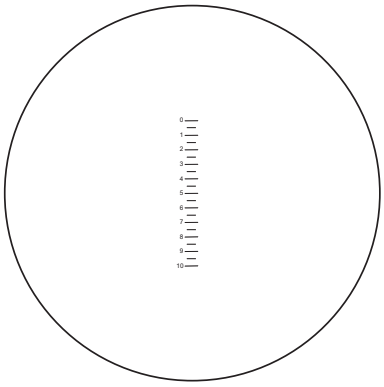
for insertion into the eyepieces:

Graticule 10 mm=100 increments, 26 mm Ø 1x	11506950
Graticule 10 mm=200 increments, 26 mm Ø 1x	11506951
Graticule w. cross line + graduation 10 mm=100 increments 26 mm Ø 1x	11506952
Graticule with cross line, 26 mm 1x	11506953
Graticule with grid 10x10 mm, 0.1 mm increments 26 mm Ø 1x	11506954
Graticule with grid 10x10 mm,1.0 mm increments 26 mm Ø 1x	11506955

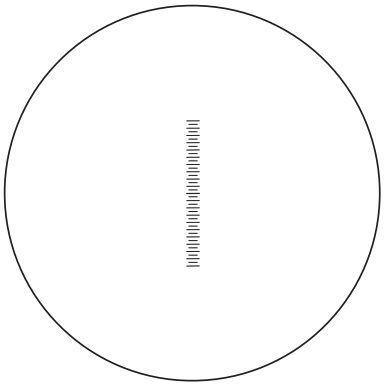
Stage micrometer (Fig. 59, p. 31)

Stage micrometer for calibration of the graticule scales and for comparison measurements

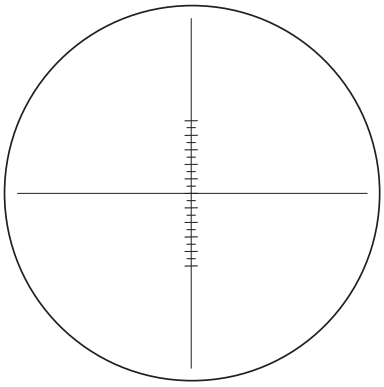
Micrometer 10 mm=100 increments (2x)	11519963
Calibration standard (1 Pair in a Box)	11581080
Klarman Rulings Standard KR 815 (NIST traceable)	in preparation



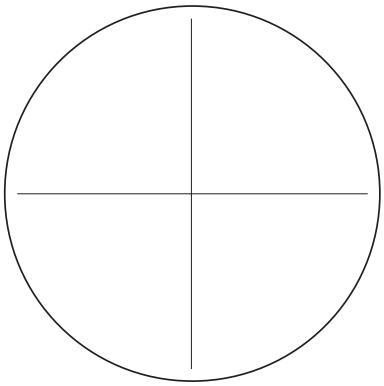
Graticule 11 506 950



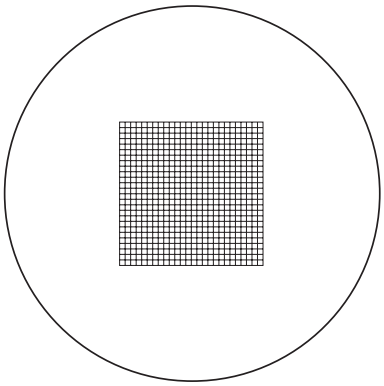
Graticule 11 506 951



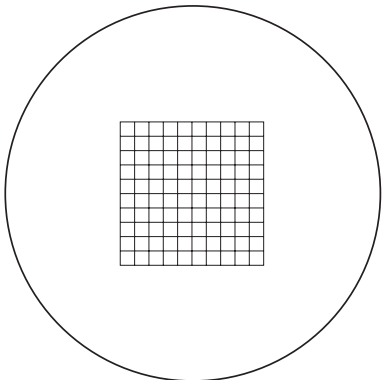
Graticule 11 506 952



Graticule 11 506 953



Graticule 11 506 954



Graticule 11 506 955

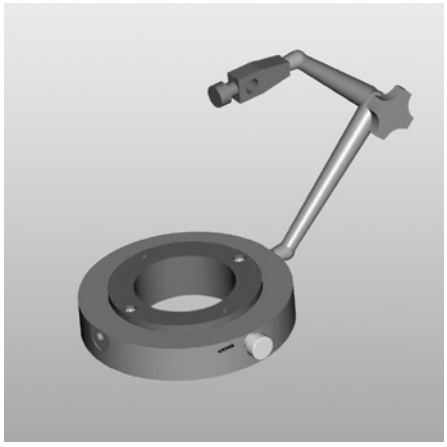


Fig. 26: Platform, rotatable with short articulating arm

Fig. 27: Flexible light guide

Fig. 28: 1 LED-Spot

Oblique incident illumination

Oblique incident illumination is particularly suited for the examination of gun marks on bullets and casing bases, toolmarks, other form and material marks, forensic textile examinations etc.

Rotating receptacle with articulated arms 200 mm for mounting on stages

For mounting and alignment of: Light guides, LED lighting components, Fluorescent lights and cold light bars as well as UV lighting components. The device can be attached to the motorized and mechanical XY-stages and combines with the rocking ball bearing stage (11581031), the universal holder (11581056) and the large-format table (11581055). Unit consists of rotary device (360 degree rotatable) and short articulating arm (240 mm, microscope side M8, illumination side M6). Two rotating receptacles are required per instrument. 11581088

Articulated arms, flexible holders and adaptors

Articulated arm with central clamp bolt 400 mm long
(M8 microscope side, M6 illumination side) 11581003

Articulated arm with central clamp bolt 240 mm long
(M8 microscope side, M6 illumination side) 11600181

Articulated arms with scaling for oblique illumination (left, right) 11581094, 11581095

Flexible gooseneck holder
(M8 microscope side, M6 illumination side) 11581120

Segment for joint arm (M8)

For bolting to the macro carrier or to the rotary device 11581088. Using this segment-adapter, the articulated arms or goosenecks can be mounted. Two segment adapters are included with each basic unit (11581105 or 11581108) and are already attached on the rotator of the macro carrier. Order code stands for single item - for pairwise use two segment adapters must be ordered. 11581092

Flexible light guide (Fig. 27, p. 16) 11581128
two-branched, Ø 2 x 3.5 mm active/arm, length 1000/1000 mm

Focusing optics 30161102
for light guide (2x)

Diffuser for focusing lens 30101109

Filter polarizing device for oblique incident illumination for reflection protection consisting of:
Polarizer 30161108
attachable to the focusing optics (2x)

Additionally required:
Cold light sources 11581127
The cold light source can be adapted for various illumination methods. However, two cold light sources can also be adapted to the instrument for two illumination methods.

Alternatively for cold light oblique illumination:
Oblique illumination with LED
Noise- and vibration free, free of ripple and flicker, cold light, day light (coax 5000 K), long life-time, consists of:

Platform, rotatable (Fig. 26, p. 16) 11581088
with short articulating arm (2x)

Following LED-Spots (Fig. 28, p. 16) with different color temperatures are available. 2 LED-Spots are necessary for oblique illumination

LED-Spot Ø 25 mm, 3W, 6500K 33000076
for diffused illumination

LED-Spot Ø 25 mm, 3W, 4000K 33000086
for diffused illumination

LED-Spot Ø 25 mm, 3W, 3200K 33000082
for diffused illumination

Diffusor attachment 11532730
for LED-Spot

Microprism lens 33000083
for LED Spots (can be combined with the above diffusor)

Line lens 33000084
for LED Spots

Adapter 10 mm 33000044
for Power-LEDs for adaptation of section converter.
Fits to all LED-Spots.

Section Converter (Fig. 31, p. 19) 30170121
adapts also to the lightguide 11581128

Alternative:
Illumination Set without Coax Illumination 33000204
Consisting of:
- **CoolControl advanced** (1x) 33000074
- **LED-Spot Ø 25 mm, 3W, 4000K (2x)** 33000086
- **Diffusor attachment (2x)** 11532730
- **LED Line illumination (2x)** 33000077
- **Mini DIN Y-connector 2x 3.5“ plug (1x)** 33000091
- **M6 Allen Screw (4x**)

Alternative:
Illumination Set including Coax Illumination 33000206
Consisting of:
- **CoolControl advanced** (1x) 33000074
- **LED-Spot Ø 25 mm, 3W, 4000K (2x)** 33000086
- **Diffusor attachment (2x)** 11532730
- **LED-Spot 3 Watt, aspheric (2x)** 33000088
- **Adapter for LED-Spot, aspheric (2x)** 30000044
- **LED Line illumination (2x)** 33000077
- **Mini DIN Y-connector 2x 3.5“ plug (1x)** 33000091
- **M6 Allen Screw (6x**)

Alternative:
LED Line illumination 33000077

LED Ring light 20 LEDs (38 mm) 30230001
for FS C Objectives

conY-2Ring Mini-DIN 2x 33000092
(1 DIN male 2 x DIN female)
to connect two ring lights (see above) to the CoolControl controller

Mini DIN Y-connector 2x 3.5“ plug 33000091
(1 DIN male 2 x 3.5“ female)
to connect two LED-Spots or LED Line illumination (see above) to the DIN socket of the CoolControl controller

Connector 2x 3.5“ plug 33000090
(1 male, 2 female)
to connect two LED-Spots or LED Line illumination (see above) to the phone jack of the CoolControl controller. Both are controlled simultaneously.

CoolControl standard 33000073
LED-Controler (2-channel) for 2x Spot & 2x Ring light
or 2x Line illumination & 2x Ring light

CoolControl advanced 33000074
LED-Controller (3-channel) for 4x Spot & 2x Ring light
oder 2x Spot & 2x Line illumination & 2x Ring light

LED-Ring light set 11600199
consisting of: 2 ring lights control unit and power supply fits to FS C and FS M objectives (38mm) country specific power cord not included
The Set of ring lights is ideally suited for the investigation of Cartridge cases, core pins, wire ends, etc.
Segment control allows control of: full circle, half circle, quarter-circle and 2x quarter circle.

Line light 11581066
with division 50 x 1,2 mm
For mounting on revolving receptacle 11581088 or on special articulated arms. With adjustable attachment optics, adjustable tilt angle with flexible, 1000 mm long light guide for coupling to cold light lamps source Leica CLS150 and CLS250 LED-A. Requires adapter 30221016. Particularly suitable for grazing illumination of toolmarks.

Cold light bar, diffuse illumination (Fig. 29, p. 19) 11581089
for diffused illumination. Including connector plate for mounting on revolving receptacle 11581088 or special articulated arms. For wide-surface, homogenous illumination of toolmarks and bullet marks. Illuminated area 80 x 30 mm. Works with lightguide 11581128

Fluo tube illumination, pair (FS M only) (Fig. 30, p. 19)
including power supply and holder
110V 11581114
230 V 11581115

Section Converter (Fig. 31, p. 19) 30170121
for fibre optics light guide

Fig. 29: Cold light bar

Fig. 30: Fluo tube illumination

Fig. 31: Section Converter

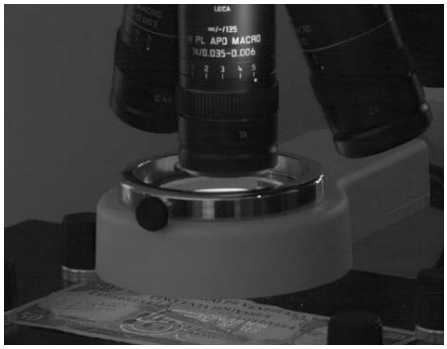


Fig. 32: Fluorescent ring light with control unit UV

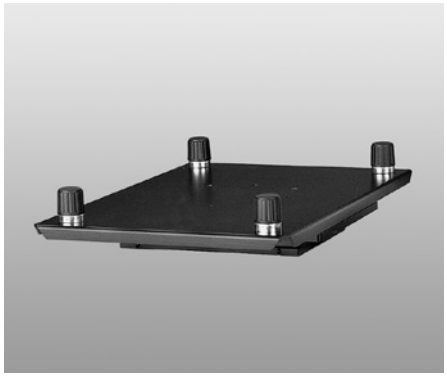


Fig. 33: Large specimen stage

UV illumination device, large specimen stage for document examination

The UV illumination device is intended particularly for surface specimens in forensic document and textile examinations. The device consists of:

Power supply 100-240 V, 24 VDC / 0,5 A	30211022
Fluorescent ring light with control unit (Standard)	30310001
Fluorescent ring light with control unit HP (more brightness)	30310009
Fluorescent ring light with control unit UV	30310010
ESD protection grating	30310003
Adapter for ring light with goose neck holder	30320001
Goose neck for ring light	30320002
Cast foot + power cable	30221008

Spareparts:

Replacement bulb (Standard)	30310002
Replacement bulb (HP)	30310008
Replacement bulb (UV)	30310007

(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

Large specimen stage (Fig. 33, p. 20) 11581055
for document examinations (2x)
Can be used in transmitted light and incident light. The large specimen stage is mounted on the stage or the rotatable platform (11581088). The documents can be fastened using the magnetic clamps provided.
(Mat. No. stands for single part–for use as a pair, the No. must be ordered twice)

Filter polarizing device for transmitted light

For polarized optical examinations of transparent foils, adhesive tape etc.

Rotating stage (Fig. 34, p. 21) 11581002
d = 118 mm with glass stage plate d = 50 mm and threaded bore holes
(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)
This rotating stage also has bore holes for attaching the adjustable universal holder. It has holes for inserting stage clips for holding down flat specimens:

Object clamps 11512650

For polarized optical examinations with this stage, the following are required:
Polarizer with lambda plate (Fig. 35, p. 21) 11581008
rotating d = 37 mm in holder for insertion into the rotating stage attachment
(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

Analyzer in slide bare (Fig. 36, p. 21) 11555045
for insertion into the slot of the macroscope carrier
(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

Rocking ball bearing stage

Rocking ball bearing stage (Fig. 37, p. 21) 11581031
The ball bearing tilting table is the standard platform for the investigation of toolmarks. Table surface d = 89 mm, tilt + / - 45° with fixation, attachable to motorized or manual object table, rotary illumination device (11581088) and rotary table d = 118 mm (11581002).
(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

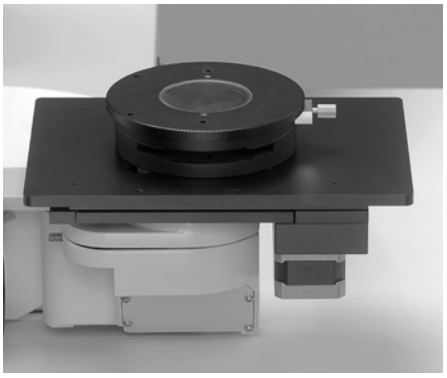


Fig. 34: Rotating stage


Fig. 35: Polarizer


Fig. 36: Analyzer

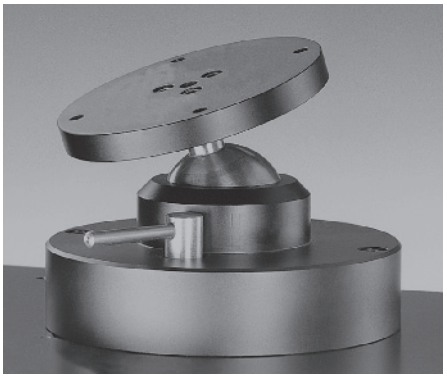


Fig. 37: Rocking ball bearing stage

Fig. 38: Adjustable holder (universal holder)

Adjustable holder (universal holder) with rotating base

Adjustable holder (universal holder) (Fig. 38, p. 22) 11581056
with rotating base
For mounting and positioning bullets, shell casings and ammunition. The universal holder is screwed into the receptacle drill holes of the stage or rotatable platform 11581088. It can be rotated by 360° and moved horizontally on its base.
The mounted pieces of ammunition can be tilted by 90°. All movements can be stopped with stop buttons.
The following special receptacles are available for mounting pieces of ammunition in the universal holder:
(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

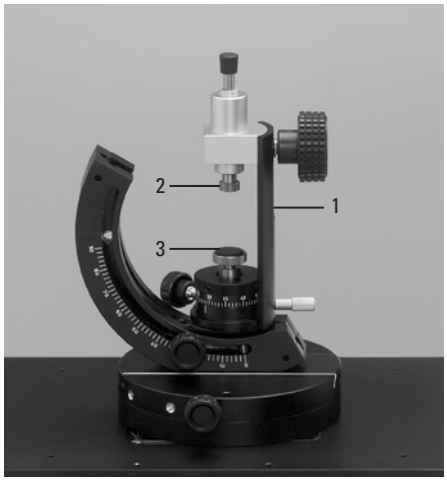


Fig. 39: 1 Bullet holder
2 Centering insert with spring system
3 Pressure plate

Bullet receptacle set, complete, with centering insert for mounting in the universal holder

Consisting of the following parts:
Bullet holder (1 Fig. 39, p. 22) 11520220

Centering insert with spring system (2 Fig. 39, p. 22) 11520221

Pressure plate, rubber-coated (3 Fig. 39, p. 22) 11520222

(Mat. No. stands for single part – for use as a pair, the No. must be ordered twice)

Bullet receptacle set for mounting in universal holder

Consisting of:

Receptacle sleeve for deformed bullets, pair, (Fig. 40, p. 23)	11520229
Plug receptacle for air rifle ammunition, pair (Fig. 41, p. 23)	11520684
Paste-on cylinder for bullets d = 5 mm, pair (Fig. 42, p. 23)	11520277
Paste-on cylinder for bullets d = 6 mm, pair	11520278
Paste-on cylinder for bullets d = 8 mm, pair	11520279
Paste-on cylinder for bullets d = 10 mm, pair	11520280
Paste-on stage d = 20 mm, pair (Fig. 43, p. 23)	11520276

Fig. 40: Receptacle sleeve for deformed bullets

Fig. 41: Plug receptacle for air rifle ammunition

Fig. 42: Paste-on cylinder

Fig. 43: Paste-on stage


Fig. 44: Holding arbor for hunting-rifle ammunition


Fig. 45: Holding arbor for 0.22 caliber shell casings


Fig. 46: Joint holders

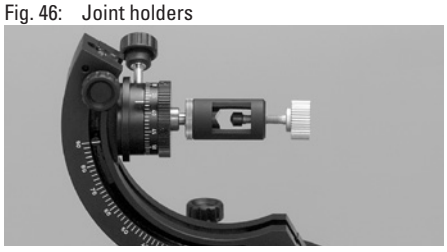


Fig. 47: Wire holder


Fig. 48: Stage

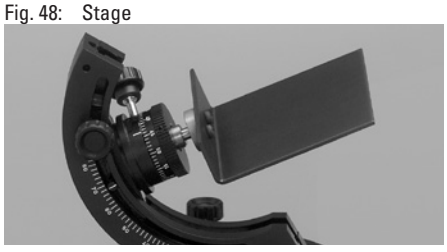


Fig. 49: Receptacles for lock cylinders


Fig. 50: Cup stage

Holding arbor set for shell casings for mounting in universal holder

Consisting of:

Holding arbor for hunting-rifle ammunition, pair (Fig. 44, p. 24)	11520686
Holding arbor for 0.22 caliber shell casings, pair (Fig. 45, p. 24)	11520223
Holding arbor for 6.35 caliber shell casings, pair	11520224
Holding arbor for 7.65 caliber shell casings, pair	11520225
Holding arbor for 7.63 mm caliber shell casings, pair	11520226
Holding arbor for 9 caliber shell casings, pair	11520227
Holding arbor for 10 caliber shell casings, pair	11581085
Holding arbor for 0.45 caliber shell casings, pair	11520228
Alternative to the above mentioned holding arbors, **Universal Shell Holder,rotatable** for round specimens up to ∅ 30mm	11532565
Brushes for cartidge cases	11581111

Receptacle set for specimens bearing toolmarks for mounting in universal holder

Consisting of:

Joint holders (Fig. 46, p. 24) for additional rotation and tilt of shell casings, pair	11520328
Wire holders, pair (Fig. 47, p. 24)	11520260
Stages d = 60 mm, pair (Fig. 48, p. 24)	11520261)
Receptacles for lock cylinders, pair (Fig. 49, p. 24)	11520685
Cup stage, 25 mm with stop, pair (Fig. 50, p. 24)	11520687
Vice large (1x)	11581125
Vice small (1x)	11581124
Cone shaped adapter (1x)	11581126

Fig. 51: Vice large/small, Cone shaped adapter

Ergonomic, system-integrated workstation

Consisting of:

Ergonomic work table with motorized height adjustment, stage surface: 1200 mm x 560 mm, stage height: 619 mm + 300 mm height adjustment, lifting speed approx. 12 mm/sec, lifting force 2000 N, dual-voltage 120V/60 Hz 230V/50 Hz

Ergonomic work table (580x1200mm) (Fig. 52, p. 25)	11600272
Ergonomic work table (600x1000mm) (Fig. 52, p. 25)	11532782
Ergonomic work table (580x915mm) (Fig. 52, p. 25)	11532781
Front operating unit (Fig. 53, p. 25) for height adjustment	11532783
Foot switch for height adjustment of ergonomic work table	11532790
Ergonomic chair	11581073

Fig. 52: Ergonomic work table

Fig. 53: Front operating unit

Fig. 54: Leica DFC digital camera

Leica DFC Digital Cameras

(Fig. 54, p. 26)
Recommended camera sets

Leica DFC290 HD Digital Camera & SW Kit 12730202
Leica DFC290 HD digital camera with sw kit, High Definition Multimedia Interface (HDMI), dual live video stream on PC and HDMI screen, supports HD-ready (720p) and Full-HD (1080p) screen resolution, color digital camera for on-screen microscope image display, resolution 2048x1536 (3Mpixels), CMOS sensor progressive scan, Pixel size 3.2 µm x 3.2 µm, exposure time 0.1 msec - 2 sec, A/D converter 10 bit, dynamic range >55dB, gain 1x - 3x, shading correction, full size fast live image, (12 to 25 fps, depending on image size and computer) supported operating systems PC WinXP, WinVista, Firewire 1394b interface, Firewire a-b cable 3 m, HDMI cable 3 m, C-mount interface, Leica DFC Twain Software for PC, Leica LAS application suite for PC.
Recommended:
C-Mount HC 0.70x 11541543

Leica DFC450 Digital Camera & SW Kit 12730411
Leica DFC450 digital microscope camera with sw kit, Firewire-B connection, resolution 5Mpixels, 2/3" CCD sensor, pixel size 3.4 µm x 3.4 µm, color filter RGB (Bayer), color depth 3x12 bits, exposure time 1msec - 600sec, A/D converter 14 bit, dynamic range >59dB, fast live image 1280x960pixel with approx. 18 frames per sec (depending on the PC performance and exposure time), gain 1x - 10x, 25MHz/50MHz pixel clock, supported operating systems WinXP/Vista/Windows7 The camera kit contains: Leica DFCTwain Software for PC, Leica LAS application suite for PC, Firewire B-B cable 2.5 m with screw-lock connectors, PCI-express card with 2 Firewire-B connections (screw-lock), recommended c-mount adapter 0.63x,
Recommended:
C-Mount HC 0.70x 11541543

Leica DFC450 C Digital Camera & SW Kit 12730412
Leica DFC450 C digital microscope camera with sw kit, Firewire-B connection, resolution 5Mpixels, active cooling delta 20°C for reduced noise / improved image qualtiy, 2/3" CCD sensor, pixel size 3.4 µm x 3.4 µm, colour filter RGB (Bayer), color depth 3x12 bits, exposure time 1msec - 600sec, A/D converter 14 bit, dynamic range >59dB, fast live image 1280x960pixel with approx. 18 frames per sec (depending on the PC performance and exposure time), gain 1x - 10x, 25MHz/50MHz pixel clock, supported operating systems WinXP/Vista/Windows7 The camera kit contains: Leica DFCTwain Software for PC, Leica LAS application suite for PC, Firewire B-B cable 2.5m with screw-lock connectors, PCI-express card with 2 Firewire-B connections (screw-lock), recommended c-mount adapter 0.63x,
Recommended:
C-Mount HC 0.70x 11541543

Leica DFC495 Digital Camera & SW Kit 12730223
Leica DFC495 digital microscope camera with sw kit, resolution 8Mpixels, peltier cooled for reduced noise, 2/3" CCD sensor, progressive scan, pixel size 2.7 µm x 2.7 µm, color filter RGB (Bayer), color depth 3x12 bits, exposure time 1msec- 600sec, A/D converter 14 bit, dynamic range > 58dB, fast SXGA live image with approx 15 frames per sec (depending on the PC performance), gain 1x - 10x, shading correction, recommended c- mount adapter 0.63x, supported operating systems WindowsXP or WindowsVista, single cable Firewire # IEEE1394b 9-pin connection, Leica DFC Twain Software for PC, Leica LAS application suite for PC, 3 m bilingual Firewire cable (6pin-9pin)
Recommended:
C-Mount HC 0.70x 11541543

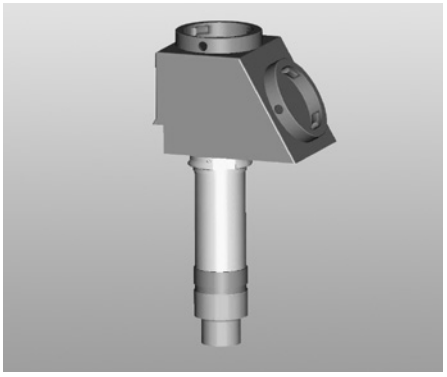


Fig. 55: Double TV adapter

TV-Adpater

Double TV adapter (Fig. 55, p. 27) 11581057
2 outputs for TV camera and photo system.
Permanent beamsplitting 50%:50%

TV adapter (Fig. 56, p. 27)
You can adapt analog and digital cameras to all tubes with documentation output. The C- and B-mount adapters are aligned to the dimensions of the holder thread. The various fixed and variable magnification factors allow adjustment of the rendering of the microscopic image on the camera chip. In order to display the largest possible portion of the field of view on the monitor, the magnification factor of the adapter must fit the chip size of the camera. If the magnification is too low, there will be a lack of uniformity to the illuminated area (shading) and/or vignetting


Fig. 56: TV adapter

	Recorded picture diagonal in mm with				
	1-inch camera	2/3-inch camera	1/2-inch camera	1/3-inch camera	Order No.
Without zoom magnification, for 1-chip cameras only:					
C-mount adapter 1x HC	16	11	8	6	11 541 510
C-mount adapter 0.7x HC	–	15.7	11.4	7.8	11 541 543
C-mount adapter 0.55x HC	–	–	14.5	10.9	11 541 544
C-mount adapter 0.35x HC	–	–	–	17.1	11 541 512
With variable magnification level (Vario TV adapter) for 1–3 chip cameras:					
C-mount 0.32–1.6x HC	–	–	19*–5	18–3.8	11 541 517
Without variable magnification level, for 1-3 chip cameras:					
C-mount adapter 1x	–	–	16	12	11 543 706
B-mount adapter 1x	–	–	16	12	11 543 702
required for each: TV optics 0.7x HC					11 541 545
* available beginning with Vario factor 0.42 x!					

Leica System Software LAS

Allows the configuration of the FS C, the comfortable acquisition of images, to take measurements even in the live image mode and to control the automated functions of the micro and macroscope via mouse or remote control module.

For training purposes and for simultaneous observation the comparison Macroscope Leica FS C can be fully independently operated via software and the remote module Leica STP6000/Smart Move.

The motorized stages and focusing drives of the Leica FS C in conjunction with the device-specific Software, enable entirely new applications e.g. the large-scale scanning of the sample while Imaging in the “mosaic” mode. The “multi-focus mode” allows automatic recording of a plurality of images in the z-direction. It then computes them into one single “depth of field optimized” Image that can even be displayed and rotated using 3D technology. This mode is specifically of interest for deformed Projectiles, core pins or all non-planar objects.

LAS Module ideally suited for the Leica FS C/FS M.

There are a variety of additional software modules for the Leica FS C and FS M. For a complete overview see Special brochures Leica LAS.

LAS Interactive Measurement 12730072

Using the mouse, measurements made by manually drawing on selected image. Types include - Linear distance, Curved length, Area, Angle, Count, Grey level. All measurements shown in real units. Width and color of drawn lines can be adjusted and labelled with measurements. Grouping so that objects that consist of multiple fragments are measured as one. Results can apply to a single image or can be accumulated over multiple images. Tracings can be stored and recalled for re-measurement by editing. Results can be assigned to user-defined classes (user defined name, color code) Results are displayed individually and as a statistical summary in tabular form. Measurement data can be exported MS Excel or Word or saved in Ascii file. Save/recall measurement configurations to named files

LAS MultiFocus 12730064

The LAS MultiFocus Module is used to acquire color or monochrome images at different Z-positions and to combine these into a single extended focus image representing the in-focus points. Normally used with a microscope equipped with a motorized Z-axis that is compatible with LAS, while a manual operation mode is provided for non-motorized microscopes. Compatible with Leica DFC cameras. Requires PC with minimum 1GB RAM depending on image resolution.

LAS MultiStep 12730074

Used to acquire color or monochrome images at different XY-positions. Provides means for establishing XY scan pattern where images are acquired. Individual XY-position images may be optionally saved and displayed in gallery. Combines these into a single overview or mosaic image by stitching. A microscope equipped with a motorized stage is essential. Provides predictive focus for use with motorized Z-axis. Requires PC with minimum 1GB RAM depending on image resolution. Automation with suitably equipped microscope that is compatible with LAS. Compatible with Leica DFC cameras.

LAS Extended Annotation Module 12730073

Provides extensive facilities for annotating images with freely drawn elements. Each element is shown both on the image and in a list on the annotation panel. Text objects can be added in any position with defined font, color, background color (including transparent) and outline. Multiple straight lines can be drawn optionally with arrowhead, label and distance. Multiple rectangular, square, elliptical or circular shapes can be drawn on the image. The properties of the elements are individually controlled by a floating panel. All actions can be reversed by means of Undo. Images (or Logo) may be placed in a freely positioned and sized rectangular region. Merge to fix the tracing into the image – a warning is given before this is done. Annotation can be copied an applied to another image. The annotation layer is saved and recalled for each image automatically.

LAS Montage MultiFocus 12730070

LAS Montage provides advanced, versatile features for producing excellent extended depth-of-focus images from images acquired at different Z-positions. Image Acquisition and microscope control is the same as in LAS MultiFocus. Uses the renowned technology of Auto-Montage from Synchroscopy. Includes 8 tuneable Montage methods with a fast preview facility. Individual images can be excluded from the result. Creates corresponding Depthmap and Confidence Image. Montage and Depthmap enhancement based on combination with Confidence image. Anaglyph, Stereo-pair and Color Relief images can be created. Automatic alignment of images obtained from non-telecentric optics. Normally used with a microscope equipped with a motorized Z-axis. Automation with suitably equipped microscope that is compatible with LAS Montage is compatible with Leica DFC cameras

LAS Archive Basic 12730206

An easy-to-use image database in the LAS digital microscopy environment Ideal for any microscopy field, uses an integrated customisable database Extreme ease-of-use provided by the LAS environment Image information can be added to user defined text fields Microscope and camera settings are saved in database fields when image captured Database adapts automatically to store data from connected microscope Images can be saved under freely defined categories, dual level hierarchy Image can be displayed and selected from thumbnails in a gallery The administrator can freely define database content using text fields Record data can be displayed in a data grid from where images can be selected Quick search function is provided to find images and data in specified fields Any record data can be selected to show on a data form Audio-record function to add an audio commentary to the image Data files such as in Microsoft Word format can be linked to the image Virtually unlimited number of images can be stored Single-PC operation Compatible with all Leica DFC cameras Supports all current generation of Leica microscopes and Stereomicroscopes Image sequences such as Z-stacks, movies stored from optional modules .

LAS Store and Recall 11595045

Software Package Store and Recall. Software module for Leica Application Suite LAS. The current status of microscope and camera can be stored together with each image and can be recalled anytime. That means, that for each image which has been acquired the exact conditions of the microscope and DFC camera can be restored. Highly recommended for quality control and research labs. Designed for motorized microscopes (Leica DM4000-6000, Leica FS C etc.).

Other accessories

Leica SmartMove (Fig. 57, p. 31) 11501197
X/Y/Z control for control of focusing and motorized stage drive

Leica STP6000 (Fig. 58, p. 31) 11501255
X/Y/Z -control with touchscreen
Control and status display for the Leica FS C

Calibration standard 11581080
for magnification calibration, pair

Stage micrometer 10 mm = 100 increments
(Fig. 59, p. 31) for calibration of the graticule 11519963

Dust cover for Leica FS C 11581083

Klarman Rulings Standard KR 815 in preparation
(NIST traceable)

Accessory case (Fig. 60, p. 31) 11581084
With foam insert to accommodate a variety of accessories (excluding accessories)

Replacement holding arbor for 0.22 caliber 11 020-460.037-002
(for 11520223)

Replacement holding arbor for 6.35 caliber 11 020-460.038-002
(for 11520224)

Replacement holding arbor for 7.63 caliber 11 020-460.040-002
(for 11520226)

Replacement holding arbor for 7.65 caliber 11 020-460.039-002
(for 11520225)

Replacement holding arbor for 9 caliber 11 020-460.041-002
(for 520227)

Replacement holding arbor for 0.45 caliber 11 020-460.042-002
(for 520228)

Fig. 57: Leica SmartMove

Fig. 58: Leica STP6000

Fig. 59: Stage micrometer

Fig. 60: Accessory case

Dimensions, weights, technical data

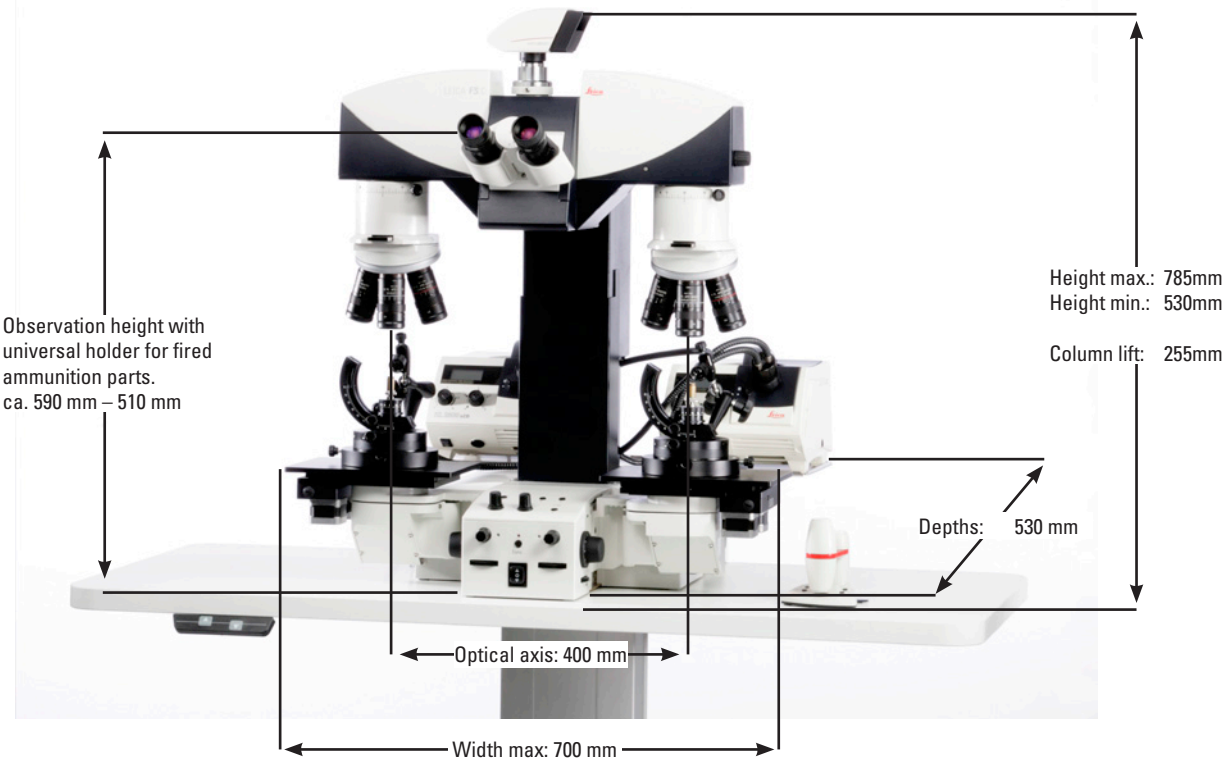
Dimensions and weights Leica FS C

Dimensions	
Width with fully extended oblique light articulated arms:	700 mm
Height at max. column lift:	785 mm
Height at min. column lift:	530 mm
Depth:	530 mm
Distance between optical shafts:	400 mm
Viewing height for ballistic specimens in universal holder:	approx. 590 mm – 510 mm

Weights:	
Comparison bridge	approx. 15 kg
Macroscope stand with table	approx. 32 kg
Ergonomic work table	approx. 50 kg

Technical Data Leica FS C

Technical Data	
Operating voltage:	90-254V
Frequency:	50/60 Hz
Power consumption	max. 125 VA
Operating temperature:	10°C – 36°C
Relative humidity:	0-80% at 30°C



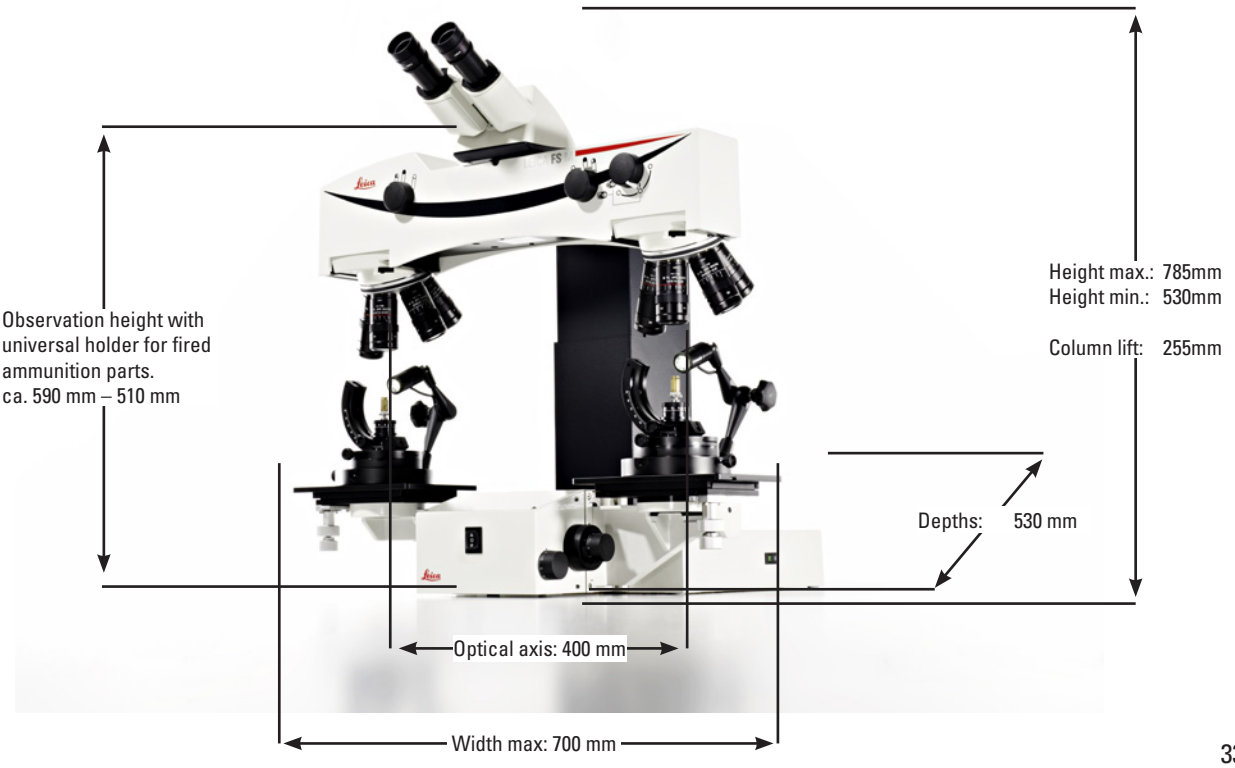
Dimensions and weights Leica FS M

Dimensions	
Width with fully extended oblique light articulated arms:	700 mm
Height at max. column lift:	785 mm
Height at min. column lift:	530 mm
Depth:	530 mm
Distance between optical shafts:	400 mm
Viewing height for ballistic specimens in universal holder:	approx. 590 mm – 510 mm

Weights:	
Comparison bridge	approx. 15 kg
Macroscope stand with table	approx. 32 kg
Ergonomic work table	approx. 50 kg

Technical Data Leica FS M

Technical Data	
Operating voltage:	90-254V
Frequency:	50/60 Hz
Power consumption	max. 125 VA
Operating temperature:	10°C – 36°C
Relative humidity:	0-80% at 30°C



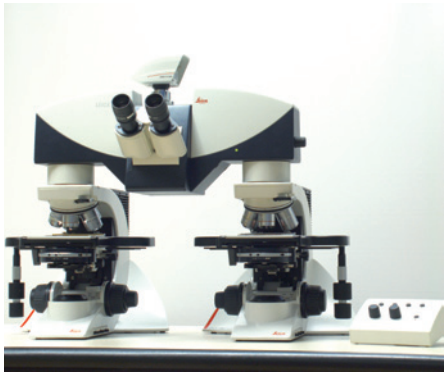


Fig. 61: Leica FS CB

Leica FS CB - Comparison bridge for microscopes

Leica FS CB (Fig. 61, p. 34) 11581109

Prerequisite for the use of the comparison bridge are two identically equipped microscopes e.g. the Leica DM2700 M (see configurations Leica FS2700 under Leica DM2700 M) with HC eyepieces with max. 22 mm field of view but without observation and photo / TV tube. For training purposes, for example universities teaching forensic sciences, it is also possible to equip the FS CB with two Leica DM750 P/M microscopes.
The comparison bridge is motorized and automatically switches between split image and superimposed image.
In the split image mode (side-by-side comparison), the dividing line can manually be adjusted for width and position using two rotary knobs.
The motorized magnification changer adds a factor of 1.5x to the physical magnification of the lenses and affects both the eyepieces and the camera port.
An accurate magnification calibration of the two partial images in the range of + / - 5% allows the adjustment knob which is mounted at the side of the comparison bridge. The integrated Ergo binocular tube with Fov=22 provides an upright none-reversed image. It has a variable viewing angle (5 ° -35 °) and a documentation port to combine digital cameras e.g. the Leica DFC cameras with the Leica comparison bridge.
Optionally, a documentation output with two outlets with permanent 50% / 50% split is available. The supplied control panel is the central control unit of the motorized functions. The buttons control the functions of the comparison bridge, e.g. the magnification changer 1x / 1.5x, the switching between split image mode and superimposed mode and allow for the traverse and the adjustment of the width of the split line.

Leica FS4000 LED - Comparison microscope system

Fig. 62: Leica FS4000

(Fig. 62, p. 35)
with built-in color compensation system VARIOLUX COLOR

Leica FS4000 LED TL
for transmitted light 11581122
Consisting of:
Motorized comparison bridge (as above) with two base stands Leica DM4000 B LED, like 11888080, but with Variolux Color compensation system with variably adjustable light filters for compensation of the finest color differences in the illumination systems. With coarse and fine drive 11888084, baseplate without filter magazine 11888098, upper part of stand Leica DM4000 B LED, empty with encoded 6x objective turret M25 11888089 and cover 11888095. (Stands are identical in construction, i.e. there are no separate left or right versions.)

Leica FS4000 LED TL & FL
for transmitted light and incident light fluorescence 11581121

Consisting of:
Automatic comparison bridge (as above) with two base stands Leica DM4000 B LED, like 11888080, but with Variolux Color compensation system with variably adjustable light filters for compensation of the finest color differences in the illumination systems. With coarse and fine drive 11888084, baseplate without filter magazine 11888098, upper part of stand Leica DM4000 B LED, with encoded 5x disk for fluorescence blocks and encoded 6x objective turret M25 11888088, with cover 11888095. (Stands are identical in construction, i.e. there are no separate left or right versions.)

Leica FS4000 M RL & TL
for transmitted light, incident light and fluorescence 11581123

Consisting of:
Motorized comparison bridge with two Leica DM4000 M LED microscopes but with integrated adjustable variolux color balance system with variably adjustable light filters to compensate for subtle color differences in the lighting system. With coarse and fine drive, base plate without filter magazine, stand top Leica DM4000 M, with coded 4-position turret for fluo-blocks and beam splitters,coded 6-position nosepiece M32, with cover. (Stands are identical in construction, i.e. there are no separate left or right versions.)

System overview

Leica FS C/FS M Stage Accessories

Stage accessories for bullets
11520220 Attachm. for mounting and fixing bullets
11520221 Spring loaded centering device f.bullets
11520222 Rubber armored pressure plate f. bullets
11520229 Pair of receptacles for deformed bullets
11520276 Cementing stages dia. 20 mm, pair
11520328 Pair of articulated holder
11520684 Pair of Mount for air-gun ammunition
11520277 Pair of cementing cylinders dia. 5mm
11520278 Pair of cementing cylinders dia. 6mm
11520279 Pair of cementing cylinders dia. 8mm
11520280 Pair of cementing cylinders dia. 10mm

Stage accessories
11581056 Universal adjustable holder
11581088 Platform, rotatable w. articulating arm

Stage accessories for cartrige cases
11520686 Pair of spring mounts f.hunt.cartr.cases
11520223 Pair of receptacle f. caliber 0.22
11520225 Pair of receptacle f. caliber 7.65
11520226 Pair of receptacle f. caliber 7.63 M
11520227 Pair of receptacle f. caliber 9
11520228 Pair of receptacle f. caliber 0.45
11581085 Pair of pin mounts for caliber 10
11581111 Brushes for cartidge cases

Stage accessories for toolmarks
11581031 Tilting stage 75mm, attachable, single
11553408 Object clamp Pol
11520261 Object stages 60mm, pair
11520685 Pair of holder for lock cylinders
11520560 Pair of wire holders

Leica FS C/FS M Illumination

Illumination Ringlight set
11600199 LED Ringlight set

Illumination LED Powerspots
33000074 MV CoolContol Advanced 3-Channel
33000091 MV mini DIN Y-connector 2 x 3.5" plug
33000086 MV LED Spot illuminator 4000K
33000082 MV LED Spot illuminator 3200K
33000076 MV LED Spot illuminator 6500K
33000077 LED linelight
33000083 Microprism lens for LED Spots
11532730 Diffusor for LED Spots

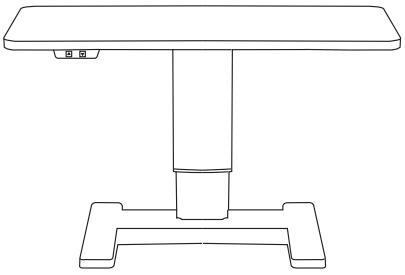
Illumination Fluorescence lamps for FS M
11581115 Fluorescence light pair with holders, 230V
11581114 Fluorescence light pair with holders, 110V

LED Illumination for FS M
11581127 LED-Coldlight illuminator Leica CLS 250 LED-A
11581127 Flexible light guide

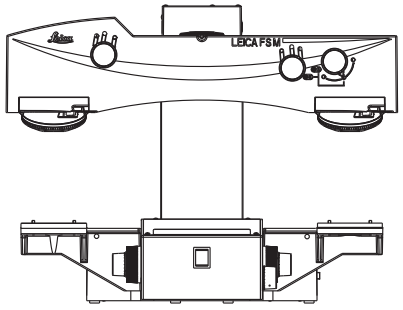
Accessories
11519963 Micrometer f. DMC 10mm=100 divisions
11581080 Calibration standard (1 Pair in a Box)
11581084 Accessory case - Leica FSC

Objectives
11581046 Obj.PL APO MACRO 0.4x/0.014-0.003-/ 62.0
11581047 Obj.M PL APO MACRO 1x/0.035-0.006-/ 62.0
11581048 Obj. M PL APO MACRO 2x/0.07-0.01-/ 62.0
11581049 Obj. M PL APO MACRO 4x/0.14-0.13 -/
11581097 Obj. M PL APO MACRO 8x/0.22-0.03
11523301 Supplementary lens 0,33x for PL APO Macro 0,4x

Camera Options
11541543 C-Mount HC 0.70x
Leica DFC Digital Camera (see special brochure)



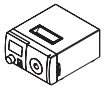
11600272 Motorized height-adjust. ergo-workbench
11532783 Front operating unit f. workbench
11581073 Ergonomic chair



Basic Stand Leica FS M
11581113 FS M Stand with Comparison Bridge
11581083 Dust cover for Leica FSC
11501502 Ergon. tilting phototube HC L1VT 0/4/4
11507807 Eyepiece HC PLAN s 10x/22 Br. M
11505252 Magnification Changer 1x, 1.5x, 2.0x
11581116 Measuring device for microscope stage(x)

Leica FS C Accessories for Illumination

Coaxial illumination for FSC without lightsource
11581053 Coaxial light equipment, RL
11581091 Anti reflection module lambda/4 filter



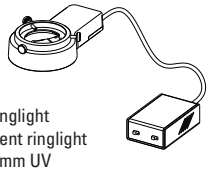
LED Illumination
11581127 LED-Coldlight illuminator Leica CLS 250 LED-A
11581127 Flexible light guide

Coaxial Illumination with LED Spots
33000088 MV LED Spot illuminator 4000K asph.
33000044 LED Spot adapter 10mm
33000082 MV LED Spot illuminator 3200K asph.
33000076 MV LED Spot illuminator 6500K asph.

Other Illumination holders
11600181 Short articulating arm f. FO light guide
11581003 Joint arm w. holder f. fibre-optic light
11581094 Oblique light holder, right with scales
11581095 Oblique light holder, left with scales

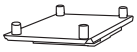
Leica FS C Accessories for Documentation

Illumination with Fluorescent RL
30320001 Holder for fluorescent ringlight
30320002 Goose neck for fluorescent ringlight
30310009 Fluorescent ringlight 66 mm HP



UV illumination with Fluorescent RL
30320001 Holder for fluorescent ringlight
30320002 Goose neck for fluorescent ringlight
30310010 Fluorescent ringlight 66 mm UV

Accessories for documents

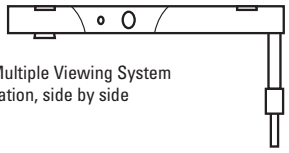


11581055 Large specimen stage for documents
11581002 Rotating stage attachment D=118mm
11581008 Polarizer with lambda plate for 11581002
11513900 Analyzer in slide bar

11581068 Slide bar with filter CRA, red compensation
11581067 Slide bar with filter CGA, green compensation
11581062 Transmitted light illuminator left incl. Light guide 9mm
11581054 Transmitted light illuminator right incl. Light guide 9mm

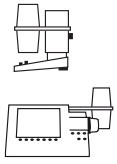
Accessoiries for Light guides
11581066 Fiberoptic based line light 50 x 1.2
11581089 Cold light illumination bar for 9mm light guide

Leica FS M Multiview

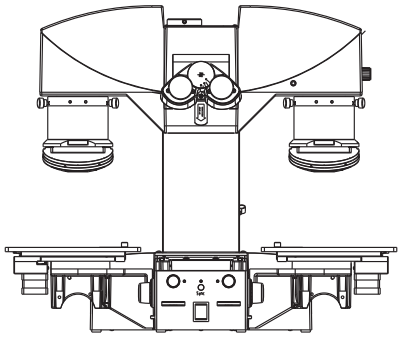


Leica DM Multiple Viewing System
11622020 station, side by side

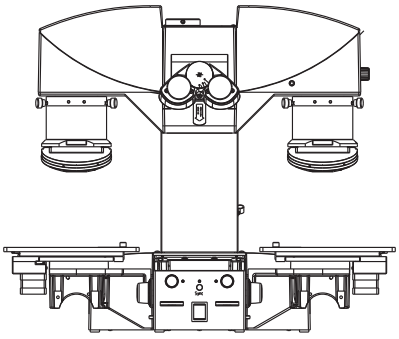
Leica FS C X/Y/Z-Control



11581099 Smart Move for Leica FS C
11501255 Leica STP6000 SmartTouch Panel



Basic Stand Leica FS C motorized Stage
11581105 FSC Stand with Comparison Bridge and motorized Stage
11507807 Eyepiece HC PLAN s 10x/22 Br. M
11581083 Dust cover for Leica FS C



Basic Stand Leica FS C manual Stage
11581108 FSC Stand with Comparison Bridge and manual Stage
11507807 Eyepiece HC PLAN s 10x/22 Br. M
11581083 Dust cover for Leica FS C

www.leica-microsystems.com

The statement by Ernst Leitz in 1907, "With the User, For the User," describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: Living up to Life.

Leica Microsystems operates globally in four divisions, where we rank with the market leaders.

LIFE SCIENCE DIVISION

The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems' customers at the leading edge of science.

INDUSTRY DIVISION

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

MEDICAL DIVISION

The Leica Microsystems Medical Division's focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

Leica Microsystems – an international company with a strong network of worldwide customer services:

Active worldwide		Tel.	Fax
Australia · North Ryde	+61	2 8870 3500	2 9878 1055
Austria · Vienna	+43	1 486 80 50 0	1 486 80 50 30
Belgium · Groot Bijgaarden	+32	2 790 98 50	2 790 98 68
Canada · Concord/Ontario	+1	800 248 0123	847 405 0164
Denmark · Ballerup	+45	4454 0101	4454 0111
France · Nanterre Cedex	+33	811 000 664	1 56 05 23 23
Germany · Wetzlar	+49	64 41 29 40 00	64 41 29 41 55
Italy · Milan	+39	02 574 861	02 574 03392
Japan · Tokyo	+81	3 5421 2800	3 5421 2896
Korea · Seoul	+82	2 514 65 43	2 514 65 48
Netherlands · Rijswijk	+31	70 4132 100	70 4132 109
People's Rep. of China · Hong Kong	+852	2564 6699	2564 4163
· Shanghai	+86	21 6387 6606	21 6387 6698
Portugal · Lisbon	+351	21 388 9112	21 385 4668
Singapore	+65	6779 7823	6773 0628
Spain · Barcelona	+34	93 494 95 30	93 494 95 32
Sweden · Kista	+46	8 625 45 45	8 625 45 10
Switzerland · Heerbrugg	+41	71 726 34 34	71 726 34 44
United Kingdom · Milton Keynes	+44	800 298 2344	1908 246312
USA · Buffalo Grove/Illinois	+1	800 248 0123	847 405 0164