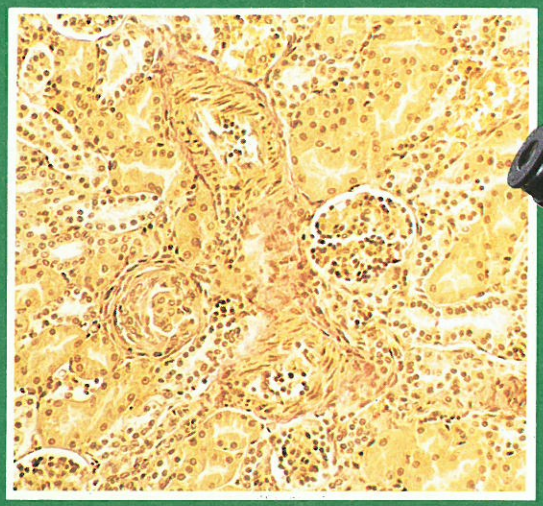
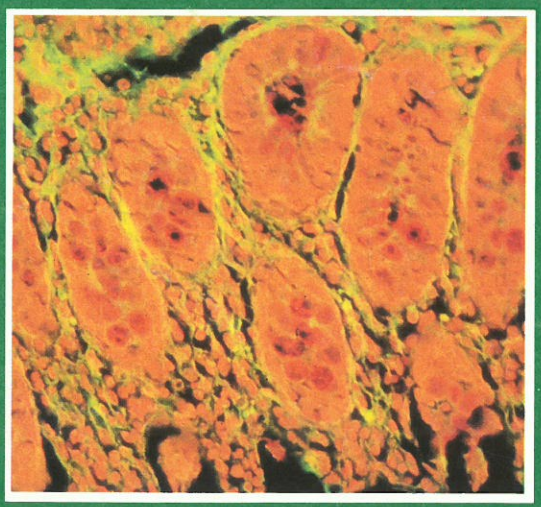
LEITZ LABORLUX 12

Laboratory microscope for biology and medicine

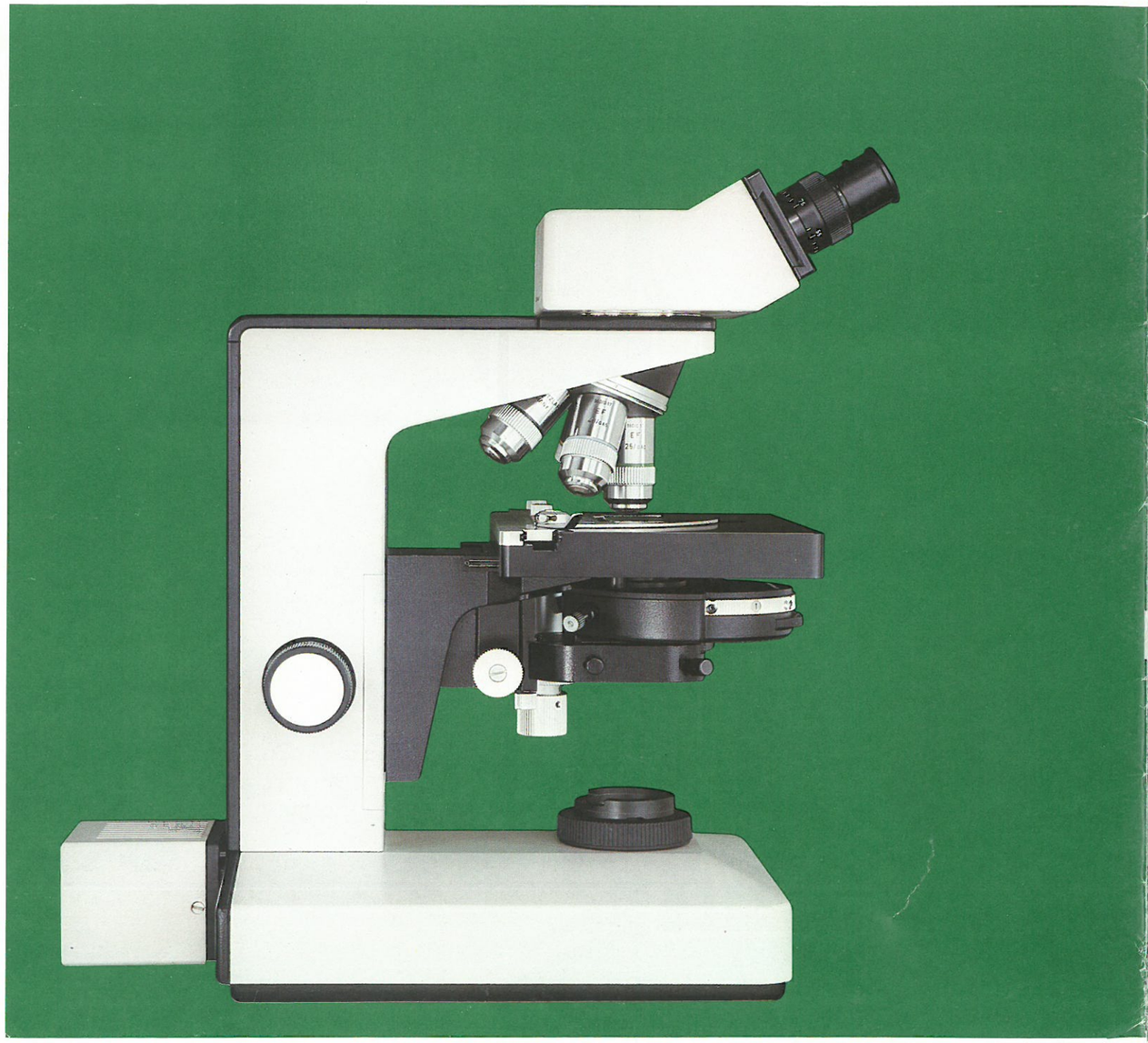




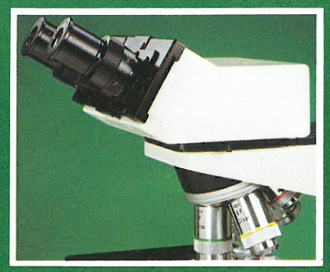
Code-Nr. 913 073

LEITZ LABORLUX 12

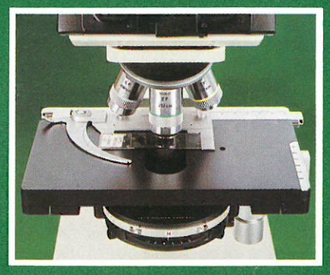
LABORLUX 12
with binocular tube S (30°), Mechanical Stage No. 78, and UKL universal condenser



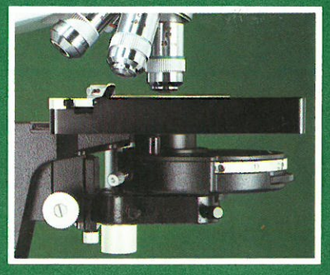
The LABORLUX 12 is a new microscope for biological and medical investigations. Versatile extension facilities make it suitable for use both in the clinical laboratory and in practical examinations.



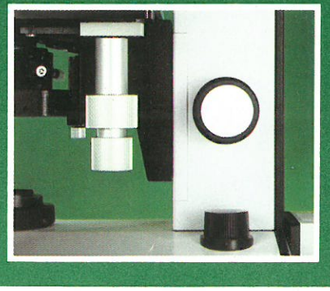
Optimum viewing level and angle are essential to relaxed posture during microscopy.



Excellent flatness of field, outstanding contrast rendering and high resolving power are characteristics of the new EF series of flatfield objectives for observation in bright-field, darkground, and phase contrast.



The condensers available for the LABORLUX 12 present no problems in the use of the conventional laboratory methods of microscope illumination and contrasting.



Single-knob control or the also available dual-knob control on both sides of the stand ensure quick and accurate focusing of the microscope image.
With the coaxial knurled knobs of the object guide arranged close to the focusing control the specimen can be moved reliably and conveniently in the x- and y-directions even at the highest magnification.
The control of the built-in transformer is situated equally conveniently above the handrest on the right, permitting continuous adjustment of the image brightness to the density of the object and the method of illumination used.

Compact design: Stylish – robust – extensible

Microscope stand

The compact design of the LABORLUX 12 and the additional webbing inside the stand have produced a microscope of outstanding stability. The large base with the built-in transformer adds to the rigidity of the instrument; it is sealed, protecting the optical illuminating system against dust and dirt.
Four non-slip, vibration-damping feet prevent the transmission of shocks to the microscope.
The object is focused by means of the single-knob or the coaxial dual-knob control, whichever had been ordered, on both sides of the stand, with combined coarse- and fine adjustment.
In the version with single-knob control coarse and fine focusing adjustment is combined in a single control; these functions are separate in the version with two coaxial control knobs.

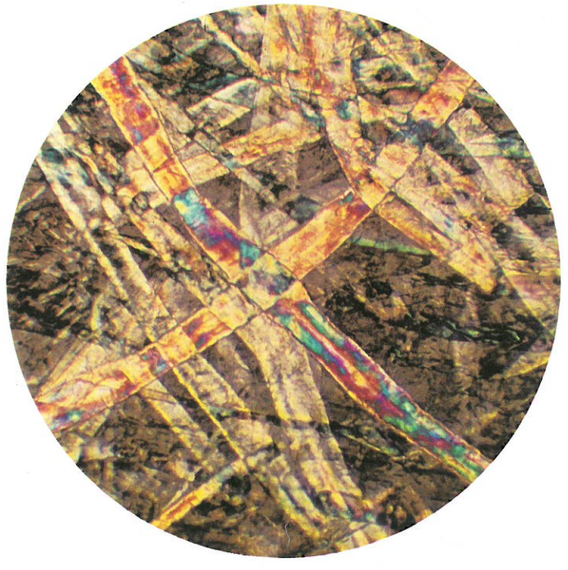
The fixed, quintuple revolving nosepiece runs on ball bearings and has precision internal click-stops; this means that even after a change of magnification the previously lined-up object area remains in the field of view.
The rapid tube changer is hard-chromed and withstands the heaviest wear.
The observation and photo tubes can be rotated through 360° and clamped in any position.

		Code No.
Stand with	simple stage plate	512 662
	rotating sliding stage	512 647
	Mechanical Stage No. 78	
	for right-hand operation	512 645
	for left-hand operation	512 646
Lamp Housing 20 with tungsten-halogen lamp		514 602

LABORLUX 12
with binocular tube S, Large Mechanical Stage No. 78 and LK condenser

Ret. Nr. L 24 136–512

Section through paper in polarized light



Tubes

Monocular tube P

This tube with inclined observation tube offers a simple and reasonably priced possibility of observation.
Code No. 512 660

Binocular tubes S

Two binocular tubes, observation angles of 30° or 45°, are the result of the most up-to-date ergonomic research, for convenient binocular viewing of the microscope image.
The interpupillary distance setting is adjustable between 55 and 75mm. Changes in the mechanical tube length caused by interpupillary distance adjustment are compensated through adjustment of the eyepiece tubes.
30° tube Code No. 512 582
45° tube Code No. 512 661

Binocular phototube FSA

This tube combines the functions of a binocular observation tube and of a photo tube. As the observation eyepieces are being adjusted for the user's interpupillary distance the mechanical tube length is automatically compensated. As a result image sharpness is the same in the observation- and in the photographic plane.
The photographic setting of the Leitz and Wild attachment cameras is adjusted solely on the binocular tube.
The beam-splitting system built into the tube allows three different settings:

a) 100% of the light coming from the objective is available for observation.
b) 90% of the light coming from the objective passes through the phototube, 10% serves for binocular observation.
c) 50% of the light coming from the objective is directed into the binocular tube, 50% into the photo-tube.
Code No. 512 583

Binocular photo-tube FSA with reflecting mirror device

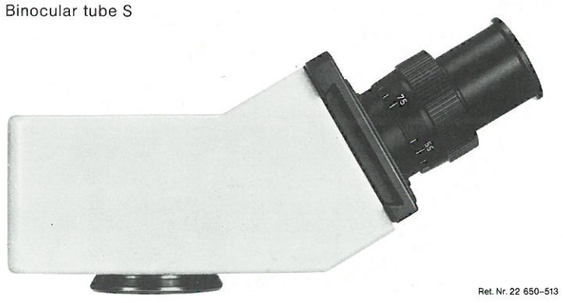
This tube has all the advantages of the FSA tube. A built-in reflecting device optically superimposes the outline markings of the various photographic formats as luminous lines on the microscope image when the VARIO ORTHOMAT camera system is used. Code No. 512 612

Vertical monocular tube O

Simplest possibilities of using the WILD MPS attachment cameras with focusing telescope Code No. 512 736

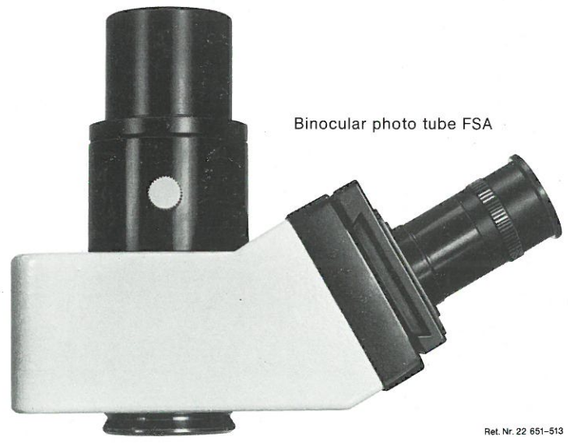
Television cameras can be used on all the tubes described here.

Binocular tube S



Ret. Nr. 22 650–513

Binocular photo tube FSA



Ret. Nr. 22 651–513

The new EF flatfield objectives for optimum image quality

Revolving nosepiece

The quintuple revolving nosepiece has been constructed so that all the objectives not in the optical path point towards the microscope limb. This arrangement provides ready access to the object and offers a great advantage especially with frequent changes of specimens, serial investigations, and work with immersion objectives.
The precision internal click-stops ensure that the centre of the chosen image area remains in place with all five objectives after each turn of the revolving nosepiece.

Objectives

The EF flatfield objectives have been newly developed for the LABORLUX 12 and matched for 160mm tube length. They represent a top achievement of optical computation and mechanical engineering. The result is high image quality at amazingly low cost.
Their excellent flatness of field, faithful contrast rendering, and high resolving power offer all the conditions essential to strain-free observation in all ranges of magnification.
The outward characteristics of the Leitz optical systems are also present in the EF flatfield objectives:

- The knurled screw-on ring is conveniently located above the front lens mount.
- Marking with coloured rings facilitates the identification of the objective magnification (for details see Table). The rotatable outer sleeve allows convenient reading of the details engraved on the objective in use (see revolving nosepiece).
- For the protection of the specimen and of the front lens at medium to highest magnifications the front lens mount is telescopically sprung.

EF flatfield objectives for brightfield and dark-ground (black engraving)
Tube length 160mm
Adjustment length 45mm

Description/aperture	Free working distance mm	Cover-glass correc-tion*	Colour code for magni-fication/ immersion	Code No.
EF 4/0.12	24.00	DO	red	519 759
EF 10/0.25	6.80	DO	yellow	519 760
EF 25/0.50	0.50	D	dark green	519 761
EF 40/0.65	0.50	D	light blue	519 762
EF 40/0.65	0.50	O	light blue	519 763
EF 63/0.85	0.15	D	dark blue	519 765
EF 100/1.25 OIL	0.10	D	white/black	519 804
EF 100/1.25–0.60 OIL **)	0.10	D	white black	519 781

NPL FLUOTAR objectives for brightfield and dark-ground (black engraving)
Tube length 160mm
Adjustment length 45mm

Description/aperture	Free working distance mm	Cover-glass correc-tion*	Colour code for magni-fication/ immersion	Code No.
NPL FLUOTAR 6.3/0.20	2.30	DO	orange	519 493
NPL FLUOTAR 10/0.30	0.75	DO	yellow	519 496
NPL FLUOTAR 16/0.45	0.58	D	light green	519 500
NPL FLUOTAR 25/0.55	0.36	D	dark green	519 501
NPL FLUOTAR 40/0.70	0.45	D	light blue	519 737
NPL FLUOTAR 50/1.00 OIL	0.20	D	light blue/ black	519 693
NPL FLUOTAR 63/0.90	0.11	O	dark blue	519 503
NPL FLUOTAR 100/1.32 OIL	0.17	D	white/black	519 504
NPL FLUOTAR 100/1.32–0.60 OIL**)	0.17	D	white/black	519 652

Objectives for fluorescence and phase contrast microscopy see pp. 12 and 14.

*) D: To be used with coverglass (adhere to coverglass thickness of 0,17mm to an accuracy of ±0.05mm)
O: without coverglass
DO: can be used with and without coverglass
**) oil immersion objective with iris diaphragm

Object stages
for very heavy-duty use

Eyepieces

PERIPLAN eyepieces of 6.3x to 12.5x magnification are provided for the LABORLUX 12. The pair of 10x eyepieces is available also for spectacle wearers.
Various graticules for microscopic measurement and counting can be inserted in eyepieces with focusing eyelenses.

Tube length 160mm

PERIPLAN® eyepieces (dia. 23.2mm)			
Magnification	Field-of-view index	Code No. single	Code No. pair
6.3x	18	519 625	519 627
6.3x	18 M	519 626	519 628
6.3x	18 M*	519 626	519 629
10x	18 ⊂	519 748	519 744**
10x	18 ⊂ M	519 750	519 745**
10x	18 ⊂ M*	519 750	519 746**

PERIPLAN GF eyepieces (dia. 23.2mm)			
Magnification	Field-of-view index	Code No. single	Code No. pair
GF 10x	18	519 620	519 622
GF 10x	18 M	519 621	519 623
GF 10x	18 M*	519 621	519 624
GF 12.5x	18	519 630	519 634
GF 12.5x	18 M	519 631	519 635
GF 12.5x	18 M*	519 631	519 636

Special eyepieces (dia. 23.2mm)			
Magnification	Field-of-view index	Description	Code No.
10	18 ⊂ Z	High-point eyepiece with fixed pointer	519 792

M = eyepiece with focusing eyelens, and suitable for accepting a graticule. The paired eyepieces have only one eyepiece with adjustable eyelens.
*) both eyepieces of the pair have a focusing eyelens
**) = with soft rubber reversible eyecup, fully suitable also for persons of normal eye sight. Do not use with NPL FLUOTAR objectives.
⊂ = high-point eyepieces

Object stages

The required object stage is mounted on the LABORLUX 12.

Simple object stage No. 11

This object stage consists of a 125mm x 140mm stage plate and 2 stage clips.

Mechanical Stage No. 13

Attachment of the Object Guide No. 12, Code No. 513 544, converts the simple object stage into the Mechanical Stage No. 13. The adjustment range is 76mm x 26mm in the x- and y-directions. Vernier scale to 0.1mm accuracy.

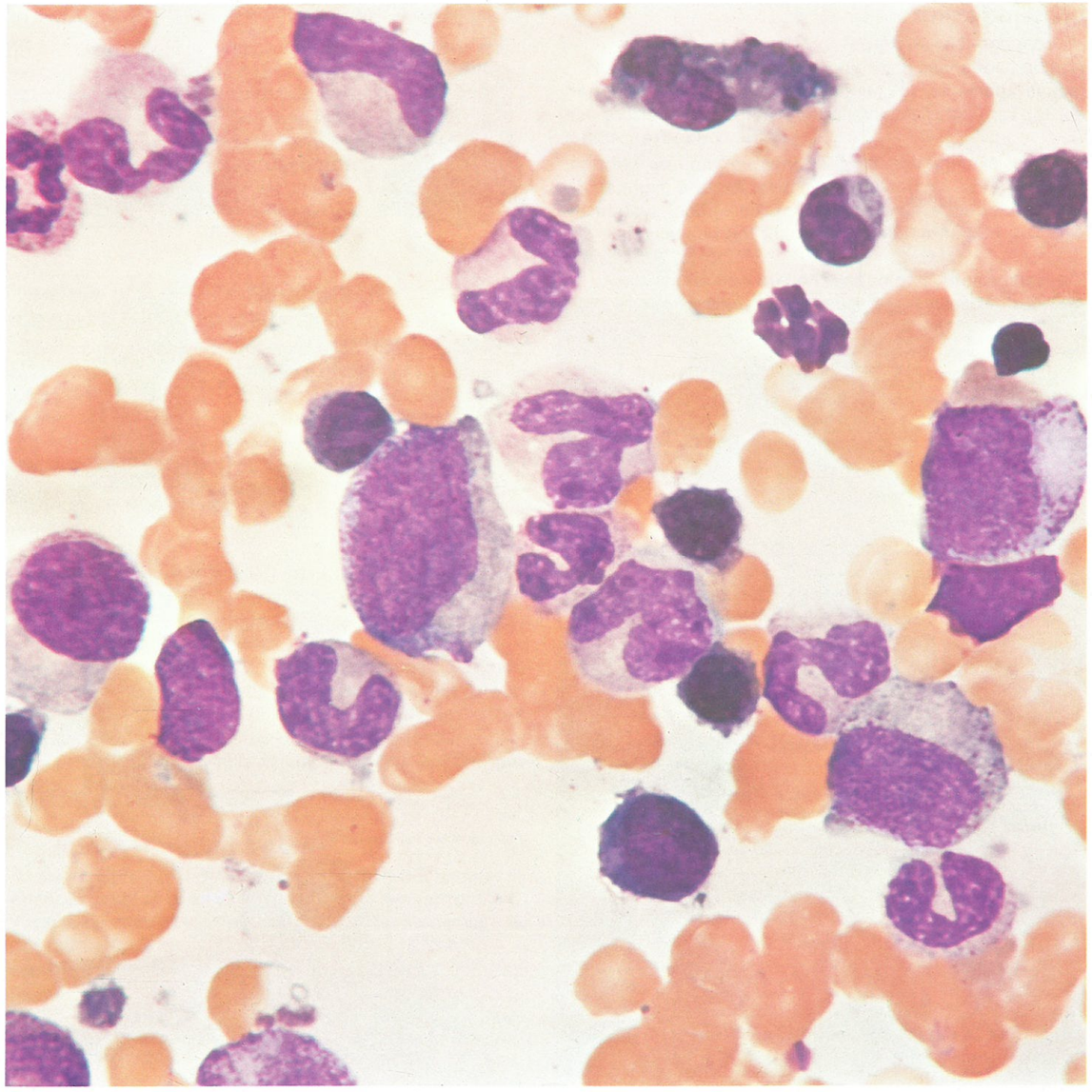
Rotary Sliding Stage No. 67

The LABORLUX 12 with the Rotary Sliding Stage No. 67 for quick scanning of the object and for lining it up with the camera format in photomicrography. The object can be moved circularly within a range of 20mm. The stage has a diameter of 150mm.

Large Mechanical Stage No. 78

Stage area 200mm x 140mm. The coaxial controls for object movement are ergonomically arranged above the hand rest on the right of the microscope base.
Guide tracks moving on ball bearing facilitate precision alignment of the finest object structures up to the highest magnification.
The adjustment range is 76mm x 50mm. Graduations and verniers permit reading of the position of lined-up object details in both directions to an accuracy of 0.1mm.

Sternal fluid, obtained by puncture, human, brightfield
PL APO 63/1.40 objective, PERIPLAN 10x eyepiece



The choice of a condenser is determined by the demands made of it and by the frequency of its use.

LK condenser

Interchangeable swing-out condenser tops are provided for this condenser, providing uniform illumination of all objective apertures. LK condenser with aspherical condenser top for brightfield illumination, numerical aperture 0.90
Code No. 513 549

For the examination of the finest structures with the 100/1.32 OEL immersion objective for the highest demands of the resolving power of the optical system the APL OIL 1.32 immersion condenser top is available.
Code No. 513 476

For darkground illumination the two condenser tops
D 0.80–0.95 S 1.1 Code No. 513 465
or D 1.19–1.44 OIL S 1.1 513 466
can be screwed into the condenser.

Condenser tops for long intercept distances:
A 0.70 S 4 Code No. 513 501
A 0.55 S 15 Code No. 513 502
A 0.35 S 30 Code No. 513 538

Phase contrast

For investigations in phase contrast the LK condenser can be equipped with push-in stops 1 or 2/LK S 1.1,
Code-No. 513 555 and 513 556 respectively.

Darkground condensers

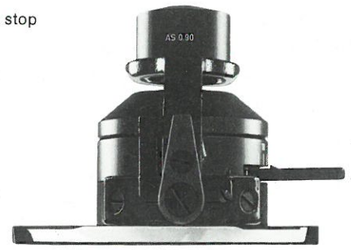
The microscope can be quickly converted for darkground illumination. There is a choice of two condensers:
Dry darkground condenser No. 94 D 0.80 S 1.1 for objectives of up to 40x Code No. 513 546
Immersion darkground condenser No. 92 D 1.19–1.44 OIL S 1.1 for objectives of apertures of 0.60 plus 513 545

UKL universal condenser

Condenser UKL Ph, A 0.90 with fixed condenser top for phase contrast – brightfield – darkground
The built-in light rings 1, 2, 3 for phase contrast and the central stop for darkground can be centred by the user.
This condenser is designed mainly for work which calls for a quick change of the optical illumination methods to render all the information of the object visible.
Code No. 513 557

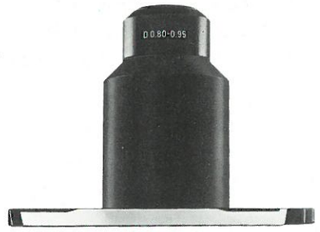
LK condenser with push-in stop

Ret. Nr. 24 149–519



Ret. Nr. 24 132–513

Darkground Condenser No. 94
D 0.80–0.95

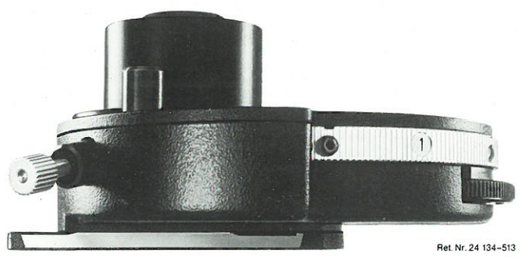


Ret. Nr. 24 130–513

Darkground Condenser No. 92
D 1.19–1.44 OIL

Ret. Nr. 24 131–513

UKL universal condenser



Ret. Nr. 24 134–513

High light output at low heat transfer to the stand illumination

Illumination

The Lamp Housing 20 is attached to the outside of the stand and contains the powerful 6v 20W low-voltage tungsten halogen lamp; the lamp is precentred, and therefore instantly ready for use and quickly exchanged.
The mains current is interrupted with a separate switch.
The principle of Köhler's Illumination in the LABORLUX 12 provides uniform illumination of the object field at optimum utilization of the 6v 20W low-voltage tungsten halogen lamp.

Principle of Köhler's Illumination – intertwined optical path

Köhler's Illumination ensures even illumination of the object field with optimum utilization of the light source. To achieve this, an image of the light source must be formed in the rear focal plane of the objective, and every point of the light source must illuminate the entire object field on its own. In the LABORLUX 12 microscope these conditions are met for all objective/eyepiece combinations and their different sizes of field of view and aperture.

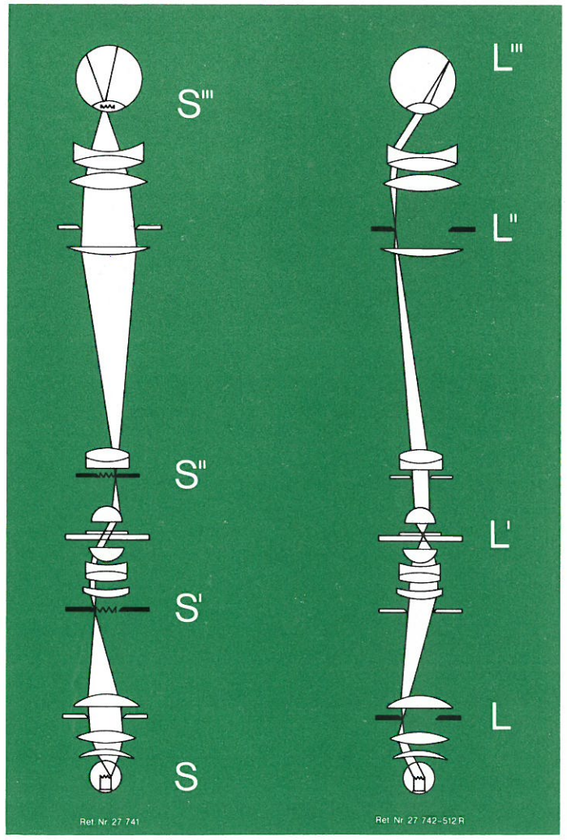
The illuminating beam

Formation of an image of the light source S in the front focal plane S' (plane of the aperture diaphragm) of the condenser by the lamp condenser.
Formation of an image of S' in the rear focal plane S'' of the objective by the condenser and objective and finally formation of an image of S'' in the plane S''' of the exit pupil of the eyepiece (where the observer's pupil is situated).
S, S', S'', and S''' are optically conjugated images of the light source.

The image-forming beam

The field diaphragm L limits the aperture of the lamp condenser. Formation of an image of L in the specimen plane L' by the lamp condenser. Formation of a magnified image of specimen and field diaphragm in L'' by the objective.
Second magnification of the image by the eyepiece and image formation in the plane L''' of the retina by the eye. L, L', L'', and L''' are optically conjugated images of the specimen (object). Their location alternates with that of the conjugated planes of the illuminating beam.
The optical path of Köhler's Illumination is "intertwined".

Köhler's Principle of Illumination – intertwined optical path



Rapid and convenient work with the LEITZ LABORLUX 12 incident-light fluorescence microscope

Human chromosomes
QM labelled, blue excitation
NPL FLUOTAR 100/1.32 OIL, 6.3x eyepiece

Fluorescence investigation with incident-light excitation

Combined with the PLOEMOPAK® for 3 excitation wave lengths the LABORLUX 12 can be used for fluorescence investigation with incident-light excitation. The illuminator is inserted in the rapid changing device between the top of the stand and the tube. The 50W Hg ultra-high-pressure mercury lamp in the Lamp Housing 102Z serves for fluorescence excitation. The changing device accepts three filter blocks and permits instant change of the spectral excitation region.

Each filter block can be exchanged separately and is automatically adjusted in the optical path; exchange is very simple.

A special clamping facility of the changing device permits alternation between two neighbouring filter blocks whenever necessary. This facility is particularly useful where the specimen to be examined had been treated with two fluorochromes that have to be excited with different light wave lengths.

With the filter blocks available all the fluorescence methods known today can be employed. In place of the third filter block the PLOEMOPAK for 3 excitation wave lengths can be equipped with a transmitted-light insert

Code No. 513 616

which extends the use of the microscope to brightfield, darkground, and phase contrast illumination alternatively, i.e. without the need for converting it.

Measles, FITC-labelled,
blue excitation
40/0.75 objective,
6.3x eyepiece

Special objectives
for fluorescence (black engraving)

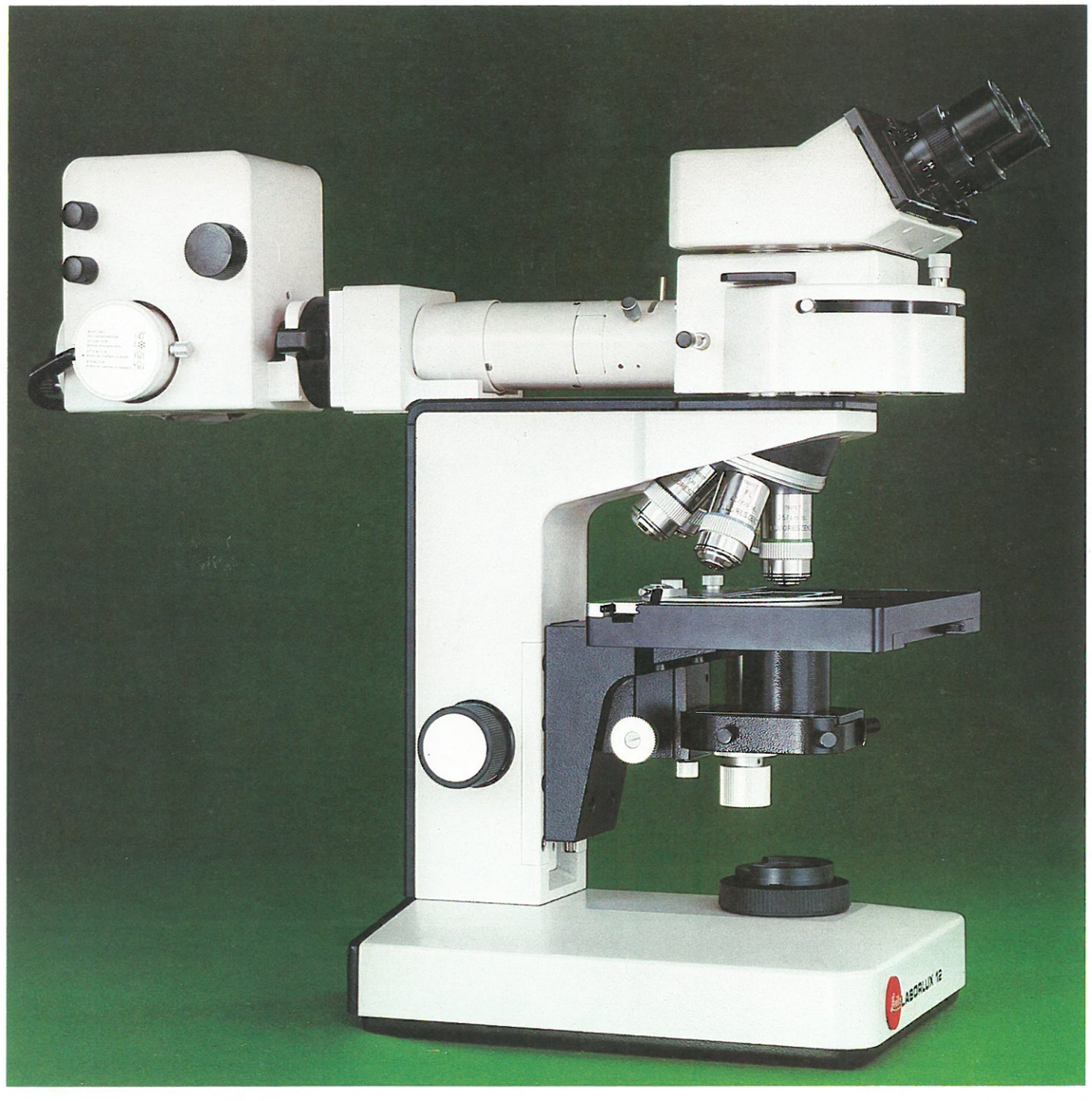
Tube length 160mm
Adjustment length 45mm

Designation Reproduction ratio/aperture		Free working distance mm	Coverglass correction	Code No.
40/0.75	FLUORESCENCE	0.26	D	519 705
10/0.45 OIL	FLUORESCENCE	0.39	DO	519 645
25/0.75 OIL	FLUORESCENCE	0.36	D	519 646
FL 40/1.30 OIL	FLUORESCENCE	0.21	D	519 473
63/1.30 OIL	FLUORESCENCE	0.14	D	519 474
25/0.60 W*	FLUORESCENCE	0.30	D	519 647
50/1.00 W	FLUORESCENCE	0.68	D	519 802
NPL FLUOTAR 100/1.20 W	FLUORESCENCE	0.18	D	519 803

* W = water immersion

PERIPLAN eyepiece

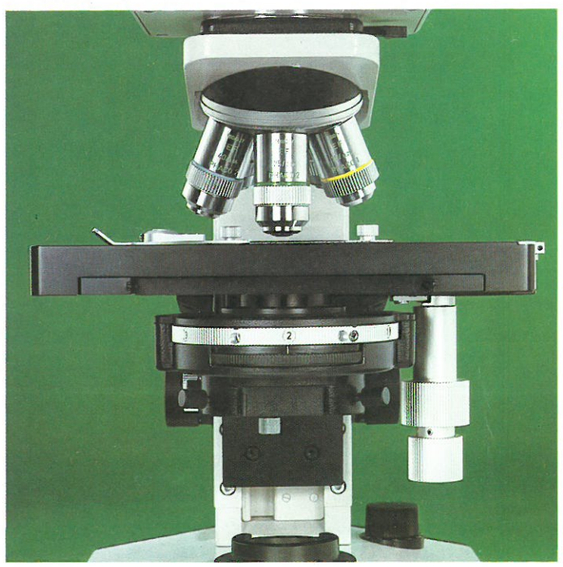
Magnification	Field-of-view index	Code No. single	Code No. pair
6,3x	18	519 625	519 627



Phase contrast
Brightfield
Darkground

This device permits the examination especially of unstained specimens at good contrast in phase contrast as well as in brightfield and in darkground. Because a specific setting of the light ring turret is associated with each objective the setting of the illumination is precisely adjusted after the device has been switched to the light ring to be used. In this device light rings and phase rings have been chosen so that even thick objects can be rendered at good contrast and without disturbing halation. The device offers the following advantages for routine investigations:
It obviates time-wasting preparation of the specimen.
The specimen remains in its original state because it is not stained and fixed.
Comparison with brightfield and darkground illumination without conversion of the microscope.

Condenser UKL Ph, n.a. 0.90 for phase contrast, brightfield and darkground Code No. 513 557
Phase contrast objectives: see Tables.



EF flatfield objectives for phase contrast (green engraving)

Tube length 160mm
Adjustment length 45mm

Designation Reproduction/aperture	Free working distance mm	Coverglass correction*	Code No.
Achromats			
EF 10/0.25 PHACO 1	6.80	DO	519 767
EF 25/0.50 PHACO 2	0.50	D	519 768
EF 40/0.65 PHACO 2	0.45	D	519 769
EF 100/1.25 OIL PHACO 3	0.10	D	519 806

NPL FLUOTAR objectives for phase contrast (green engraving)

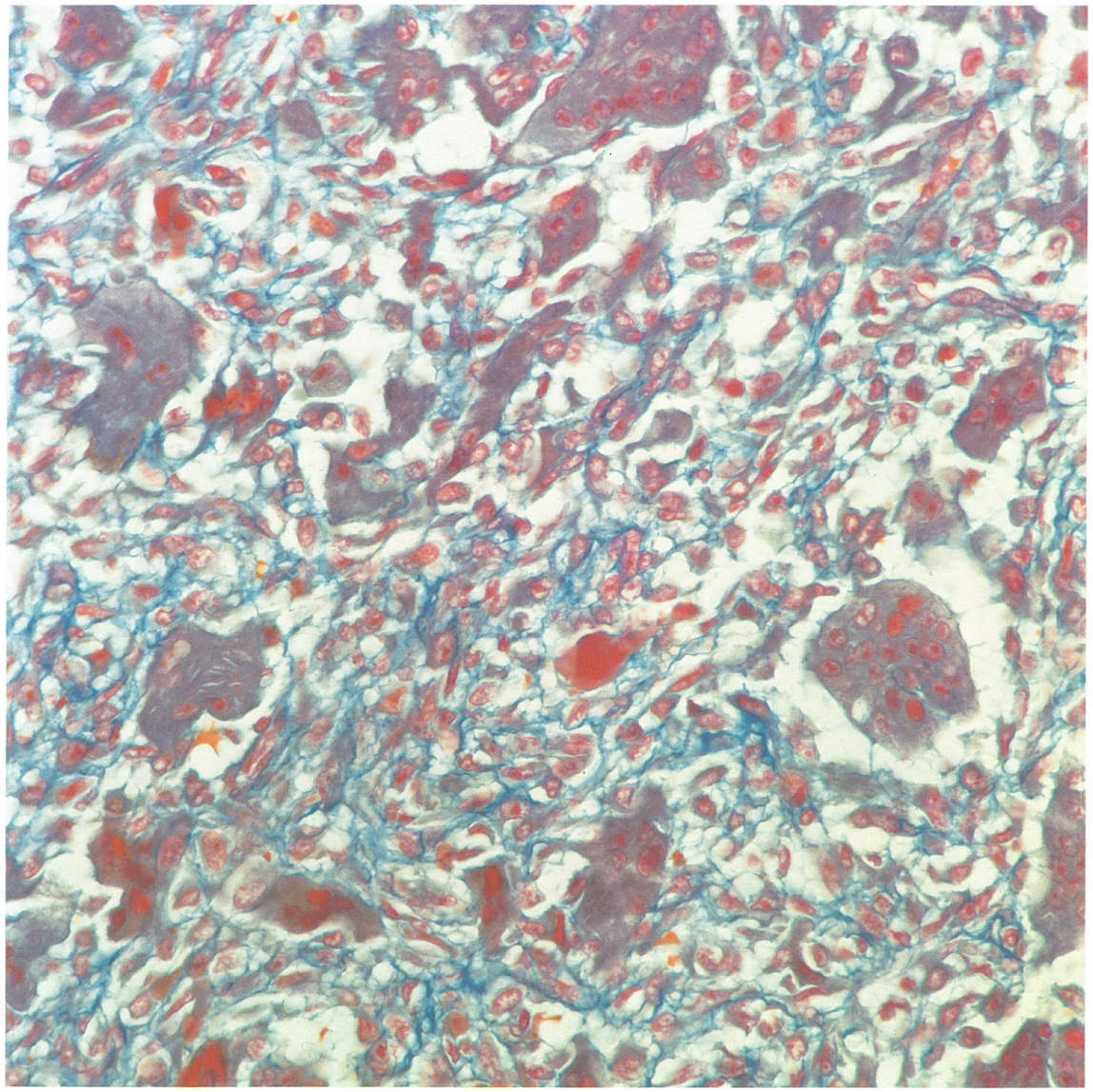
Tube length 160 mm
Adjustment length 45 mm

Designation Reproduction ratio/aperture	Free working distance mm	Coverglass correction*	Code No.
NPL FLUOTAR 10/0.30 PHACO 1	0.73	DO	519 497
NPL FLUOTAR 16/0.45 PHACO 1	0.57	DO	519 505
NPL FLUOTAR 25/0.55 PHACO 2	0.36	D	519 506
NPL FLUOTAR 40/0.70 PHACO 2	0.24	D	519 507
NPL FLUOTAR 50/1.00 OIL PHACO 3	0.18	D	519 694
NPL FLUOTAR 100/1.32 OIL PHACO 3	0.16	D	519 508

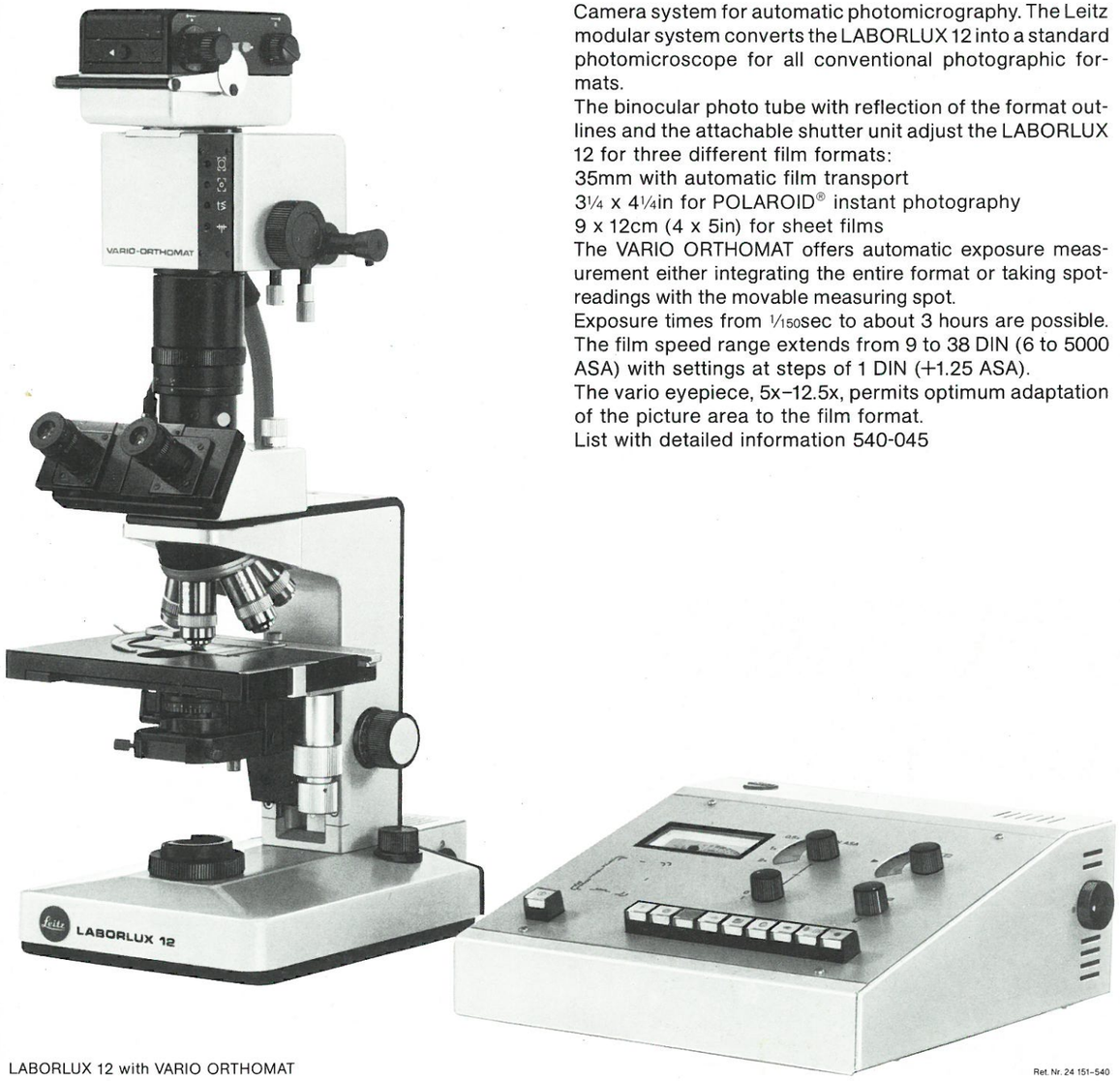
* D: to be used with coverglass (adhere to coverglass thickness of 0.17 mm to an accuracy of ±0.05mm)
DO: can be used with and without coverglass

Focusing telescope
for checking the centration of the light and phase rings
Code No. 513 468

Giant-cell sarcoma of the upper jaw, brightfield, 40x objective, 6.3x eyepiece



Photomicrography with the LEITZ VARIO-ORTHOMAT and WILD MPS camera systems



LABORLUX 12 with VARIO ORTHOMAT

The LEITZ VARIO ORTHOMAT®

Camera system for automatic photomicrography. The Leitz modular system converts the LABORLUX 12 into a standard photomicroscope for all conventional photographic formats.
The binocular photo tube with reflection of the format outlines and the attachable shutter unit adjust the LABORLUX 12 for three different film formats:
35mm with automatic film transport
3¼ x 4¼in for POLAROID® instant photography
9 x 12cm (4 x 5in) for sheet films
The VARIO ORTHOMAT offers automatic exposure measurement either integrating the entire format or taking spot-readings with the movable measuring spot.
Exposure times from 1/150sec to about 3 hours are possible.
The film speed range extends from 9 to 38 DIN (6 to 5000 ASA) with settings at steps of 1 DIN (+1.25 ASA).
The vario eyepiece, 5x–12.5x, permits optimum adaptation of the picture area to the film format.
List with detailed information 540-045

Ret. Nr. 24 151-540

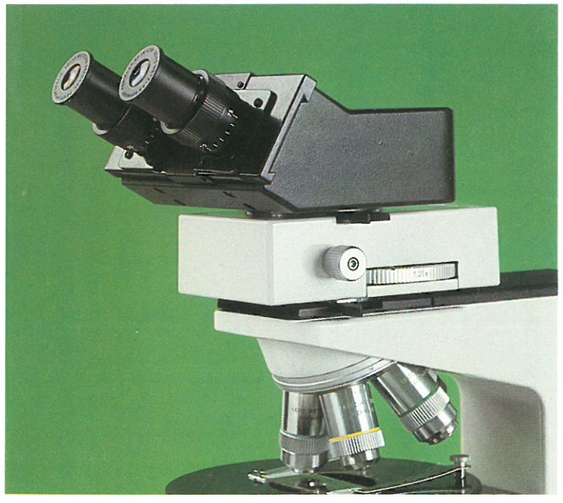
Magnification changer

can be adjusted for 1x, 1.25x, 1.6x and 2x magnification change. The built-in focusing eyelens serves for the centring of the light rings in phase contrast microscopy.
Code No. 512 683

Ergonomy tube SV

On the ergonomy tube SV the viewing angle can be continuously set between 0 and 40° through vertical tilting of the eyepiece tubes. This also changes the viewing level, so that the user can always assume the working and sitting position most convenient to him or her. Even during long hours of serial investigations physical strain is therefore reduced to a natural minimum. An optical image erector has been built into the ergonomy tube SV. This is a valuable aid to orientation when the user adjusts the specimen, because manipulations here can be observed right-way-up and right-way-round.

Magnification changer



The ergonomic handrest

allows a completely relaxed posture of the forearms during microscopy, particularly during hour-long serial investigations. The flexible surface profile of this accessory prevents a lateral sliding-off of the arms.

LEITZ LABODESK

The microscopist's work bench that automatically ensures occupationally correct posture.
The size of the bench conforms to the average physiological dimensions of the users, resulting in a working area which is easy to survey and readily accessible. In addition the bench offers sufficient space for all accessories used in routine work.
For detailed information see List 513-198.

Accessories

WILD MPS micro-photo system

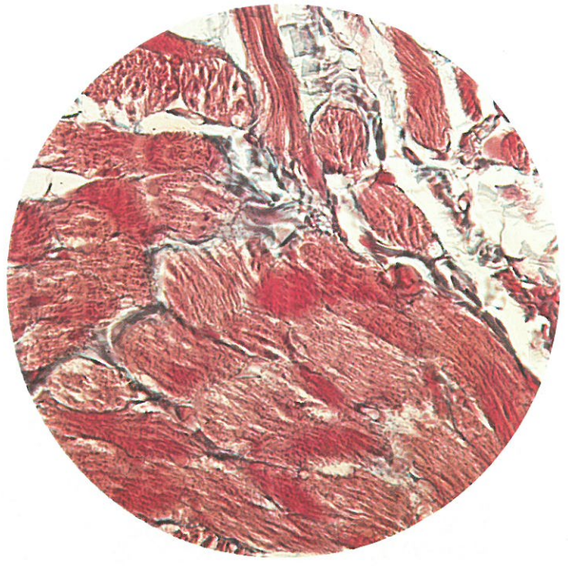
The WILD MPS micro-photo system offers the choice of different attachments for all conventional film formats:
MPS 11 micro-camera – without exposure measurement. It is particularly suitable where exposure can be based on experience. Shutter speeds from 1/125 to 1sec, B, and T.
MPS 05/11: microphoto outfit, consisting of MPS 11 camera body and MPS 05 exposure meter.
MPS 15/11 semi-photomat – semi-automatic exposure. This outfit includes the MPS 11 camera body with the MPS 15 exposure meter. Measuring value with or without reciprocity law failure compensation.
MPS 55/51 photo-automat – with electronic exposure control and automatic film transport for the 35mm format.
MPS 45 photo-automat with camera bodies MPS 51 (integr. measurement) or MPS 51 S (spot measurement) with automatic exposure for the 35mm and large format photomicrography.

For photography with polarized light the quartz plate (386 686) is required with the MPS 11, MPS 51, and MPS 51 S.
For details see special brochure.

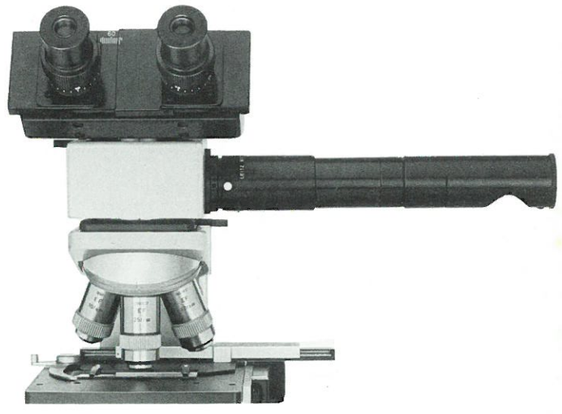
Tracing device

The tracing device is inserted between the top of the stand and the observation tube, and used for tracing the contours of microscope images and their details.
The function of this device is based on the coincidence method: tracing area and stylus are visible in the tube simultaneously with the microscope image. A desk lamp serves as the light source. The reproduction scale of the tracing can be continuously varied up to 2x. The work room needs not be darkened for tracing. Code No. 513 536
PERIPLAN GF 12.5x/18 eyepiece for same 519 630

Muscle tissue, brightfield



Tracing device



Polarizing device

The filter polarizing device is used for orientating observation in polarized light. It consists of the following items:

Polarizer in mount	Code No. 513 560
Analyser, for insertion in the tube slot	513 561
Filter holder	513 511
Filter polarizing device complete	513 563
Other items:	
λ-plate	513 570
and λ/4-plate	513 569

Heating and Freezing Stage 80

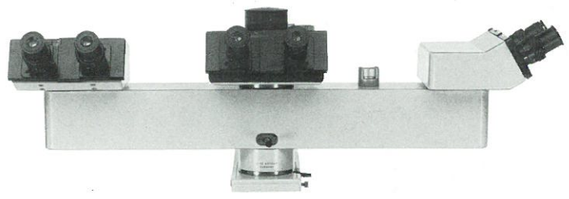
for temperatures between –20°C and 80°C in combination with the Large Mechanical Stage No. 78. For detailed information see List No. 515-008.

Microscope Heating Stage 350

for temperatures between –20°C and 360°C in combination with the Large Mechanical Stage No. 78. For detailed information see List No. 515-033. The KRYOMAT®* electroautomatic cryostat is used for freezing.

* Trademark of Messgeraetewerk Lauda

Discussion device for 3 persons



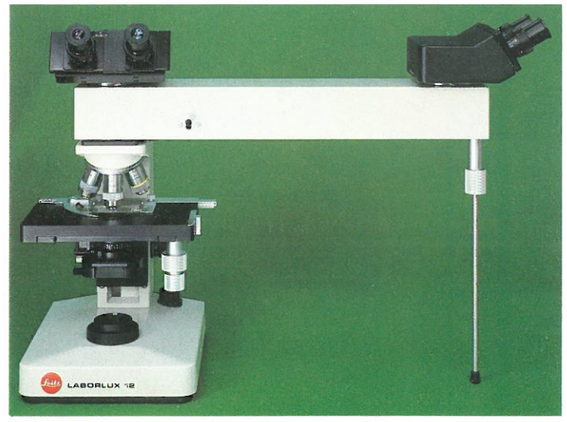
Discussion device

for simultaneous observation of the microscope image by three persons. The distance between the three tubes is large enough to prevent mutual obstruction of the observers. A pointer in the centre of the device can be set at any point of the field of view. Code No. 513 513
Recommended for the discussion device:
Two 45° observation tubes Code No. 512 661
Eyepieces see p 8.
Seven persons can observe the microscopic image simultaneously when three of these discussion tubes are mounted on top of each other.

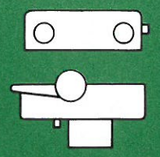
Asymmetrical discussion tube

for all Leitz microscopes with 42mm tube changer can be swivelled to the left or to the right of the microscope as required. An adjustable mechanical support permits individual adaptation to the stand of the microscope used.
Code No. 513 758

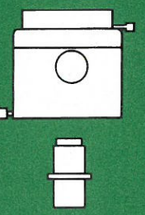
Asymmetrical discussion tube



LEITZ LABORLUX 12 modular system



Interchangeable cassette and cassette adapter

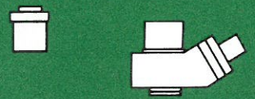


WILD MPS-system

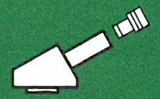
Camera body with focusing telescope and eyepiece tube

Television adapter

Monocular tube O



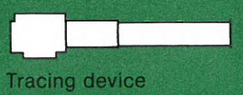
Binocular photo tube FSA



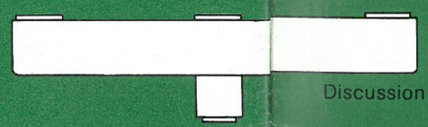
Monocular tube P

Binocular tube S 45°

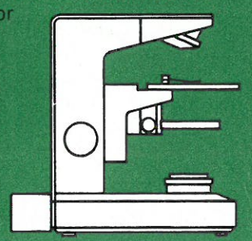
PLOEMOPAK fluorescence incident-light illuminator



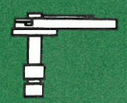
Tracing device



Discussion tube



Stand with simple stage top



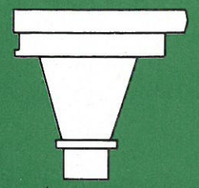
Large Mechanical Stage No. 78

Sliding rotary stage

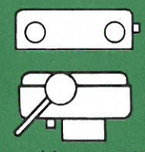
Attachable Object Guide No. 12 for simple stage top

Condenser LK

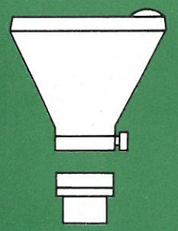
Push-in phase contrast stop



3¼in x 4¼in POLAROID camera attachment

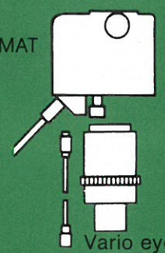


Interchangeable cassette and power adapter



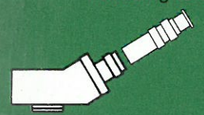
9cm x 12cm/4in x 5in camera attachment

VARIO ORTHOMAT



Clamping collar for eyepiece of fixed magnification

Focusing telescope (PHACO)



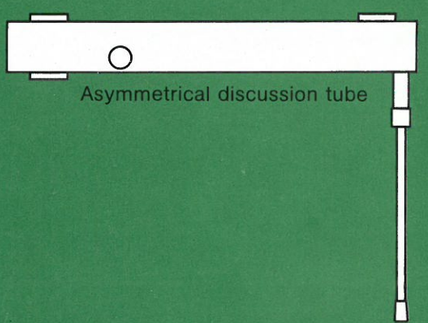
Vario eyepiece

Binocular tube S 30°

Ergonomy tube SV (without fig.)

Binocular photo tube FSA with reflection of format outlines

Magnification changer



Asymmetrical discussion tube

Darkground condensers Nos. 94 and 92

UKL universal condenser

Leitz means Precision World-wide

Cover pictures:
Top left: Human kidney, brightfield
Top right: Pavement epithelium in phase contrast
Bottom left: Intestine, Guinea pig, fluorescence photograph
Bottom: Thyrocytes transformed into tumour cells.
NPL FLUOTAR 40/0.70, PERIPLAN 10x eyepiece.
Specimen and photograph: Prof. H.J. Kracht, Dept. of Pathology, University of Giessen.

ERNST LEITZ WETZLAR GMBH

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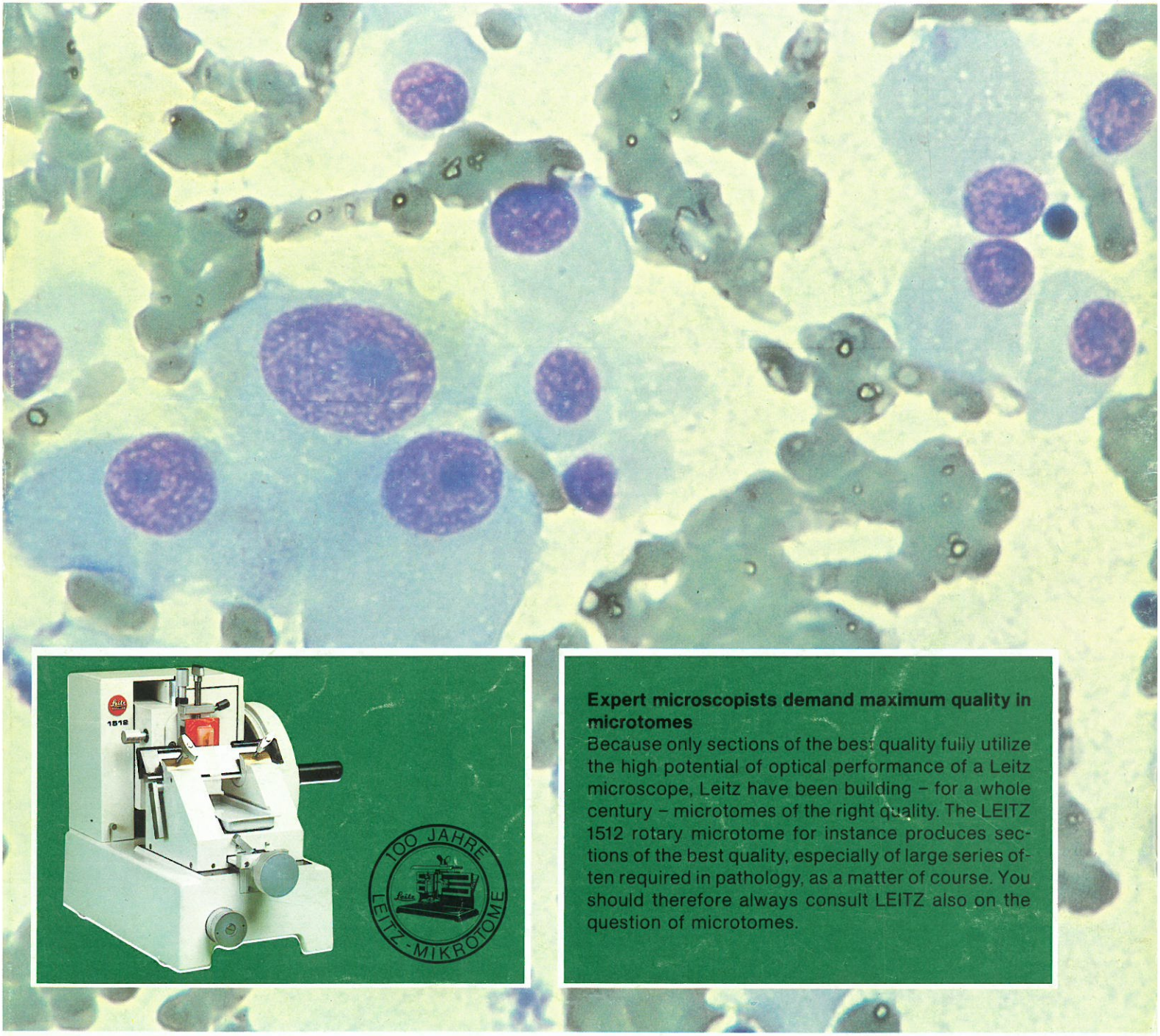
Two enterprises of worldwide reputation – manufacturers of the leading range of microscopes and measuring instruments.
Worldwide co-operation in research, production, distribution, and service assures you of the best possible performance range of optical, precision-mechanical, electronic systems.



Expert microscopists demand maximum quality in microtomes
Because only sections of the best quality fully utilize the high potential of optical performance of a Leitz microscope, Leitz have been building – for a whole century – microtomes of the right quality. The LEITZ 1512 rotary microtome for instance produces sections of the best quality, especially of large series often required in pathology, as a matter of course. You should therefore always consult LEITZ also on the question of microtomes.

List 512-170 d Engl. Printed in W-Germany VII/83/GW/w.