Leitz DIAPLAN



Versatile scientific and clinical microscope

Leica

Leitz DIAPLAN
A model for the benefits of modular design

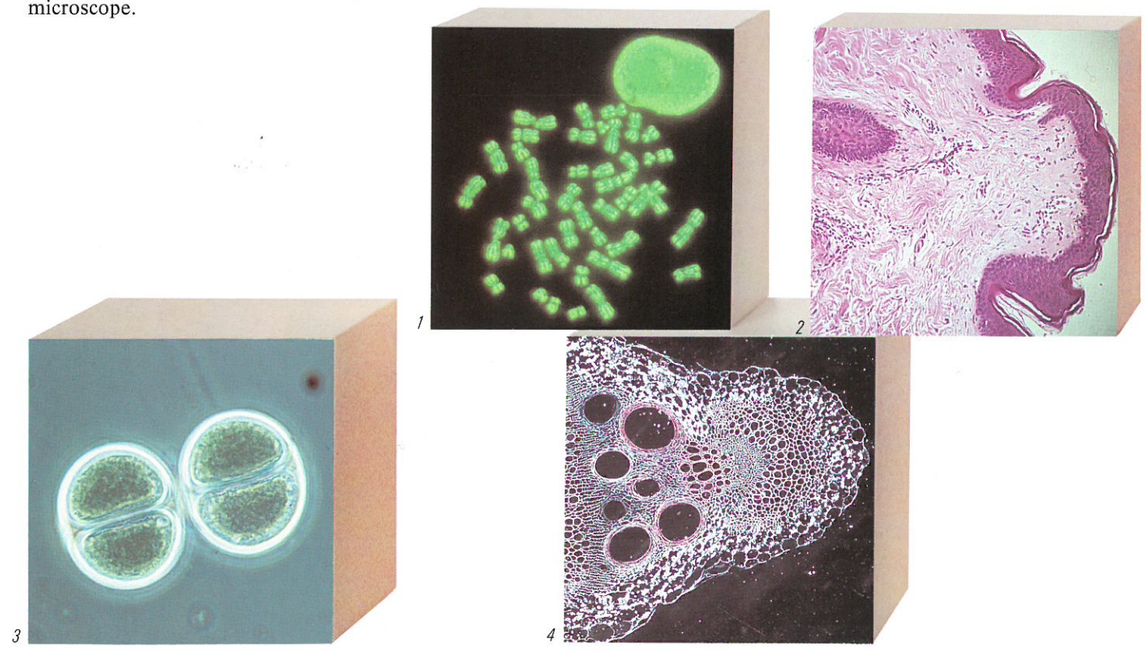
High performance, perfect ergonomy, unmatched versatility, attractive price. The hallmarks of the Leitz DIAPLAN®.
Never before has a microscope offered so much for so little. Top performance and perfect human engineering are backed up by a modular design which allows you to select exactly the equipment to match your own particular needs. You don't have to pay for features that you don't need (although they can always be added later if your requirements change). Designed in close collaboration with leading microscopists throughout the world, the Leitz DIAPLAN was perfected in the Leitz Applications Laboratory and represents the ideal as far as user comfort and ease of use are concerned, and with all the optical quality one expects from a Leitz product.



Everybody is different. Everyone who uses microscopes has different needs. Some demand a large field of view, others only need a standard one. For some applications, fluorescence is essential, while for others, it would be completely superfluous.
So why buy a microscope which includes all possible features (and pay for them all, whether you need them or not) when, with the Leitz DIAPLAN, you can choose exactly the capabilities you need? You can tailor the equipment precisely to match your own particular field. And get all the performance for less outlay. And if you decide later that you do need a certain capability after all, you can simply add it on. The Leitz modular system sees to that.
Take the field of view, for example. You can begin with the standard field of view and, if the need arises, upgrade later. Or, alternatively, choose a larger field from the start. Whether 20, 25 or 28 mm (the latter unique to Leitz), the image is pin-sharp right to the edges.
The Leitz DIAPLAN is just as versatile when it comes to the illumination. Whether brightfield, darkfield, phase contrast, interference contrast, fluorescence or polarized light, a few simple adjustments and you have the ideal microscope.

Add to this the enormous range of accessories, the choice of observation and photo tubes, the interchangeable lamphousings, and so on, and you can see that the Leitz DIAPLAN is a truly versatile microscope system with multi-application capability.

Of course, versatility wouldn't be much use without optical performance, but the Leitz DIAPLAN is a Leitz microscope, so there's no need to worry on that score. The range of objectives upholds, even enhances, Leitz' long-standing reputation for outstanding optical standards.



1 Chromosomes, 100 : 1 objective
Fluorescence

2 Melanoma, metastasis, 16 : 1 objective
Brightfield

3 Chroococcus sp., 40 : 1 objective
Specimen: W. Büdel, Bot. Inst. Marburg

4 Curcubita pepa, cross section of wood, 4 : 1 objective
Specimen: Prof. Dr. A. R. Kranz, Frankfurt

Leitz DIAPLAN

The fusion of performance and convenience

"User-friendly performance" is the constant aim of Leitz designers. It's relatively simple to produce a microscope that is easy to use, just as well-performing instruments are becoming more common, but it requires something special to blend the two. The Leitz DIAPLAN is the latest testimony to the success of Leitz in this area.

Versatile universal condenser

The Leitz DIAPLAN is fitted with a newly-developed universal condenser as standard, with the emphasis on the word "universal". No matter which illumination method, objective, working distance, field of view, etc., the one and same condenser can handle everything, making time-consuming condenser changes a thing of the past when moving from scanning to high magnifications, for example, or when switching from brightfield to phase contrast.

User-tailored turret

The condenser turret accommodates the stops for darkfield, phase contrast and interference contrast. The user decides which illumination he is likely to use, then fits the corresponding stops himself, if desired mixing those for different illumination methods on the same turret. The condenser can thus be tailored precisely to the individual needs of the microscopist. The various illumination and contrast methods are selected quickly and easily by rotating the turret to the appropriate stop. It couldn't be simpler. And, when changing from high to low magnifications, the condenser doesn't even have to be lowered, let alone replaced as is still necessary with some microscopes, a compensation lens automatically engaging to ensure that Koehler illumination is fully retained.

Simple to use

Even those contrasting methods which can be extremely complicated with lesser microscopes are simple with the Leitz DIAPLAN. For example, incident light fluorescence, one of the most important methods available in diagnostics, especially in such areas as immunology, is provided simply by the addition of a PLOEMOPAK® illuminator, available for three filter blocks or for one depending on the application. The polarized light device is backed up by the built-in 90° rotation capability of the stage. Darkfield, phase contrast and interference contrast T are selected simply by rotating the condenser turret. The latter, incidentally, is accessible on the Leitz DIAPLAN at a fraction of the cost that other systems entail. The objective Wollaston prisms necessary are housed in special adapters which are mounted between each objective and the nosepiece, hence avoiding the need for expensive special interference contrast objectives.

Innovative aperture diaphragm

There is, however, one thing missing in the universal condenser; the aperture diaphragm. But this is no oversight. In keeping with the LEITZ tradition of practical innovation, it has been moved to the microscope base, bringing the considerable advantage that its function is fully retained for all objectives from 2.5x. The contrast, resolution and depth of field can all be optimized even for lower magnifications. Photomicrographers know what this is worth.

High-performance optics

A vast range of high-quality objectives are available for the Leitz DIAPLAN, matching each application, illumination method, etc. with the perfect optics. The new PL FLUOTAR® series provides high contrast and resolution, absolutely neutral color reproduction and a flat field to 25 mm. The high near-UV transmission, minimal autofluorescence and negligible strain make them ideal for fluorescence microscopy and interference contrast work. 28 mm flattened fields are provided by the PL 1.6x and 2.5x scanning objectives and the PL apochromats. And then there are the new PLAN objectives, with fields flattened to at least 20 mm, which offer excellent performance at a most attractive price. The range is completed by special immersion objectives for fluorescence. Each series has corresponding phase contrast versions. With matching eyepiece quality and meticulous mechanical engineering, which is the basis for the proven long-term reliability of all Leitz products, the Leitz DIAPLAN is a microscope which combines versatility with superb quality.



1 FSA-GW-R binocular phototube for attachment of two image recording systems.

2 Chlamydia trachomatis, 100x objective, FITC, 12/3 filter.

3 WILD MPS micro camera system with 35 mm magazine.

4 1-Lambda PLOEMOPAK.

5 3-Lambda PLOEMOPAK.

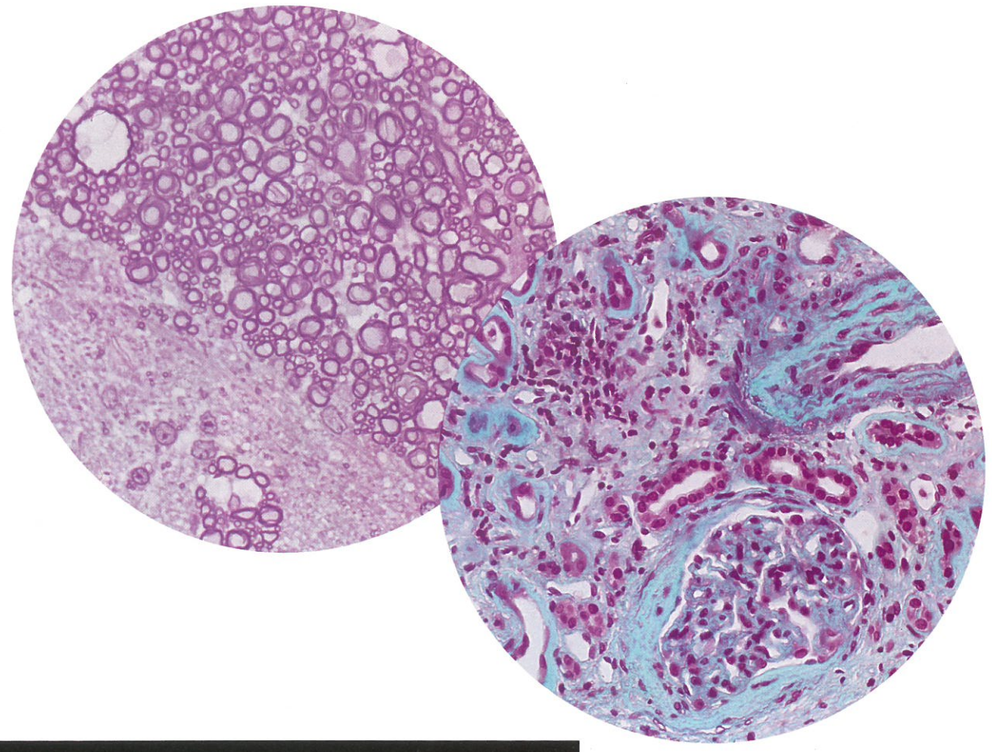
6 PLAN objectives.

7 Epidermis and hypodermis, von Gieson, 6.3x objective. Specimen: Dr. S. Storkel, Institut für Pathologie, Mainz.

8 Interference contrast T device.

9 PL FLUOTAR objectives.

10 Gall bladder, deer, 20x objective.





PLAN objectives.

Leitz DIAPLAN
The efficient microscope system

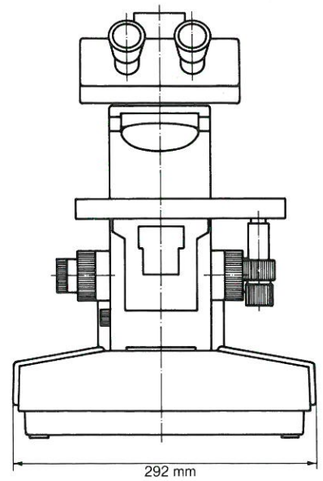
The Leitz DIAPLAN is an exceptionally efficient microscope system. Efficient in terms of performance for the price, and efficient in terms of making the most of the microscopist's time. Human engineering was placed in the forefront during design so that even long working periods cause a minimum of fatigue, resulting in a compact but stable instrument which meets the highest demands regarding ergonomy.

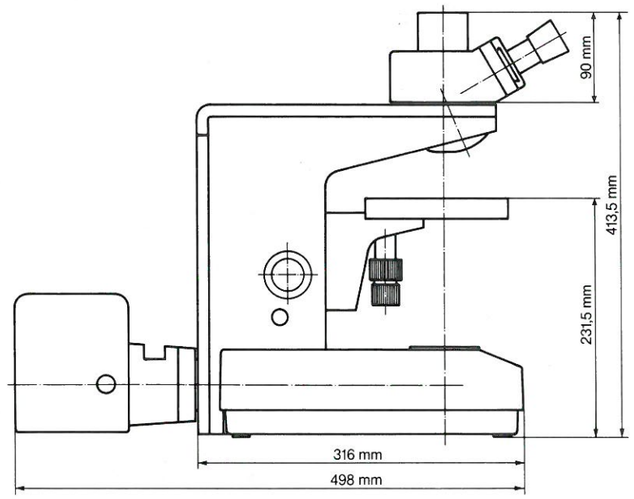
The quality of the optics plays a large part in efficiency. Clear, bright images are far less tiring over extended work periods, and the availability of 28 mm fields of view, complete with scanning objectives, means that much more information can be gathered at a single glance (over 140 % more than 18 mm fields, to be precise).

The newly-developed electronic voltage regulator built into the microscope base brings all the benefits of an integrated transformer (e.g. more bench space) without the disadvantages of heat transfer to the microscope. A digital voltage read out provides fast, reliable and reproducible setting.

The stage can be rotated through 90°, enabling the specimen to be aligned quickly and easily in interference contrast or polarized light, or for photomicrography.

The universal condenser, choice of field of view size, and the extensive accessory program all play their part in making the Leitz DIAPLAN easier and less tiring to use.





Leitz DIAPLAN
The accessories make the system

A microscope, more than most other scientific instruments, depends on the range of accessories to fully realise its capabilities. Leitz microscopes are true system products. No matter what you want to do, from photomicrography to instruction, there's a suitable Leitz accessory which makes the Leitz DIAPLAN the perfect instrument.

Photomicrography

Photographic documentation has become an almost indispensible extension to microscopy in recent years, providing a permanent record, a means for dissemination of research results, or originals for reproduction in journals.
The Leitz ORTHOMAT® E automatic microscope camera ensures correctly exposed photographs, the movable metering spot allowing the light to be measured from any detail without having to move the specimen.
The WILD MPS micro camera system accepts film magazines for all usual formats, from 35mm to 4 x 5".

VARIOLUM illumination adapter

Allows the illumination brightness, color temperature and contrast to be steplessly varied.

CCTV and projection attachments

These permit a larger group to observe the image.

Magnification changer

For stepwise alteration of the magnification from 1.25x through 1.6x to 2x.

Tracing attachment

Simple tracing of the specimen with an enlargement factor of up to 2x.

Discussion tubes

Symmetric or asymmetric, for simultaneous observation by two or three persons. A pointer can be used to indicate details of interest.

Comparison bridge

Designed to allow the comparison of two specimens using the light section and coincidence methods and two microscopes.

Leitz DIAPLAN with ORTHOMAT E.



Technical Data

Stand:	- coaxial coarse and fine focus controls - adjustable focus stop - bayonet lamphousing mount - rapid-change observation tube mount - field and aperture diaphragms built into base
Stage:	Non-interchangeable, height range 52 x 76 mm, 90° rotation
Power supply:	100 W, built into base, electronically controlled. Digital voltage display. Dual voltage (115/230 V, 50/60 Hz).
Illumination:	Choice of two lamphousings - LH 103 precentred for 12 V 100 W halogen lamps - LH 103 Z centrable for incandescent and gas discharge lamps up to 100 W.
Condensers:	Dovetail mount with adjustable upper stop and clamp. No aperture diaphragm. - universal condenser, n.a. 0.90 (1.40) for brightfield, darkfield, phase contrast and transmitted light interference contrast. - condenser tops for long working distances. - D 0.80 - 0.95 and D 1.19 - 1.44 Oil darkfield condensers.
Objective nosepiece:	Interchangeable, for 5 objectives, either with 0.8x or no tube lens.
Objectives:	- PL FLUOTAR series, 6.3 - 100x (also in phase contrast versions), field of view index 25 - PL 1.6/0.05 and 2.5/0.08 scanning objectives, field of view index 28. - PLAN series, 4 - 100x (phase contrast 10 - 100x), field of view index 20. - PL apochromat series, 4 - 100x (phase contrast 16 - 100x), field of view index 28 - special fluorescence objectives (also in phase contrast versions), field of view index 25.
Observation tubes:	For eyepieces with field of view index 20: - S binocular observation tube - SV binocular ergonomy tube (with adjustable viewing angle) - FSA binocular phototube - FSA-R binocular phototube - FSA-VR binocular ergonomy phototube For large field eyepieces with field of view index 26 or 28: - FSA-GW-R large field binocular phototube (1.25x) - FSA-GW-R large field binocular phototube (1.25x) with 2nd photo port.
Eyepieces:	GF 10x/20 60° GF 10x/20 60° M GF 12.5x/20 M GF 12.5x/20 60° GF 12.5x/20 60° M GW 8x/28 60° M GW 10x/26 60° M
Fluorescence:	Choice of 1 λ or 3 λ PLOEMOPAKS.
Weight:	about 20 kg.

Leitz DIAPLAN
Recommended objectives for the DIAPLAN

PL scanning objectives

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL 1,6/0.05	7.2	CO
PL 2,5/0.08	11.8	CO

PL FLUOTAR objectives for bright/darkfield

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL FLUOTAR 6,3/0.20	6.87	CO
PL FLUOTAR 10/0.30	7.60	CO
PL FLUOTAR 16/0.45	0.70	C
PL FLUOTAR 25/0.60	0.50	C
PL FLUOTAR 40/0.70	0.45	C
PL FLUOTAR 100/1.32 OEL[3]	0.19	C
PL FLUOTAR 100/1.32 – 0.60 OEL[4]	0.19	C

PL FLUOTAR objectives for phase contrast

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL FLUOTAR 10/0.30 PHACO 1	7.60	CO
PL FLUOTAR 16/0.45 PHACO 1	0.70	C
PL FLUOTAR 25/0.60 PHACO 2	0.50	C
PL FLUOTAR 40/0.70 PHACO 2	0.45	C
PL FLUOTAR 100/1.32 OEL PHACO 3	0.19	C

NPL FLUOTAR objectives for bright/darkfield

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
NPL FLUOTAR 50/1.00 OEL	0.20	CO
NPL FLUOTAR 63/0.90	0.11	O
NPL FLUOTAR 63/0.90 Korr.[4]	0.11	C

NPL FLUOTAR objectives for phase contrast

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
NPL FLUOTAR 50/1.00 OEL PHACO 3	0.20	CO
NPL FLUOTAR 63/0.90 Korr.[5] PHACO 4	0.11	C

PLAN objectives for bright/darkfield

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PLAN 4/0.10	14.54	CO
PLAN 10/0.25	0.62	CO
PLAN 20/0.45	0.73	C
PLAN 40/0.65	0.21	C
PLAN 100/1.25 OEL	0.19	C

PLAN objectives for phase contrast

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PLAN 10/0.25 PHACO 1	0.62	CO
PLAN 20/0.45 PHACO 2	0.73	C
PLAN 40/0.65 PHACO 2	0.21	C
PLAN 100/1.25 OEL PHACO 3	0.19	C

PL Apochromat objectives for bright/darkfield

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL APO 4/0.14	13.4	CO
PL APO 6.3/0.20	9.2	CO
PL APO 16/0.40	1.19	C
PL APO 25/0.65	0.65	C
PL APO 40/0.75	0.45	C
PL APO 40/1.00 OEL	0.22	C
PL APO 63/1.40 OEL	0.15	C
PL APO 100/1.32 OEL	0.15	C
PL APO 100/1.32 - 0.60 OEL[4]	0.15	C

PL Apochromat objectives for phase contrast

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL APO 16/0.40 PHACO 1	1.19	C
PL APO 25/0.65 PHACO 2	0.65	C
PL APO 40/0.75 PHACO 2	0.44	C
PL APO 63/1.40 OEL PHACO 4	0.14	C
PL APO 100/1.32 OEL PHACO 3	0.15	C

Fluorescence objectives

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
40/0.75 FLUORESZENZ	0.30	C
NPL FLUOTAR 10/0.45 OEL[7] FLUORESZENZ	0.30	CO
NPL FLUOTAR 25/0.75 OEL[7] FLUORESZENZ	0.14	CO
NPL FLUOTAR 40/1.30 OEL[7] FLUORESZENZ	0.16	C
63/1.30 – 0.60 OEL FLUORESZENZ	0.14	C
25/0.60 W[2] FLUORESZENZ	0.30	C
50/1.00 W FLUORESZENZ	0.68	C
NPL FLUOTAR 100/1.20 W FLUORESZENZ	0.16	C

Fluorescence/phase contrast objectives

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
NPL FLUOTAR 10/0.45 OEL[7] FLUORESZENZ PHACO 1	0.30	CO
NPL FLUOTAR 25/0.75 OEL[7] FLUORESZENZ PHACO 2	0.14	CO
NPL FLUOTAR 40/1.30 OEL[7] FLUORESZENZ PHACO 3	0.16	C
63/1.30 OEL FLUORESZENZ PHACO 3	0.14	C

PL FLUOTAR objectives for interference contrast T[5])

Objective Magnification/Aperture	Free working distance mm	Coverglass correction[1]
PL FLUOTAR 10/0.30	7.60	CO
PL FLUOTAR 25/0.60	0.50	C
PL FLUOTAR 40/0.70	0.45	C
PL FLUOTAR 100/1.32 OEL	0.12	C

PERIPLAN® high-point eyepieces

GF 10x/20 ⊙
GF 10x/20 ⊙ M
GF 12.5x/20 M
GF 12.5x/20 ⊙
GF 12.5x/20 ⊙ M
GW 8x/28 ⊙ M
GW 10x/26 ⊙ M

[1]) C: should be used with coverglass of thickness 0.17 ± 0.05 mm
O: should be used without coverglass
CO: may be used with or without coverglass

[2]) W = water immersion

[3]) OEL = oil immersion

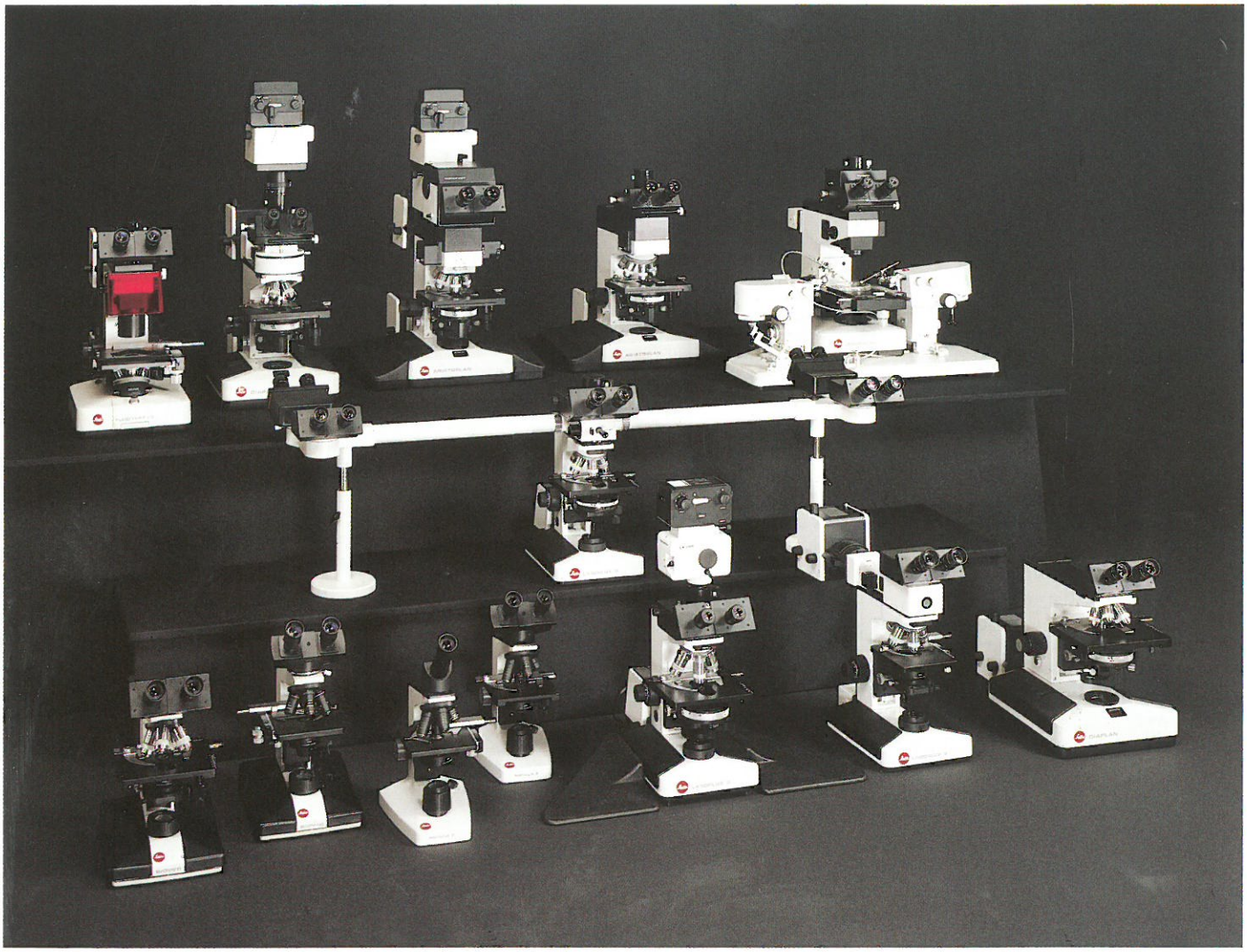
[4]) Oil immersion with iris diaphragm

[5]) KORR = correction mount, can be adjusted for coverglasses of thicknesses from 0.11 to 0.23 mm

[6]) also in phase contrast version

[7]) also for interference contrast

Leitz – new standards in microscopy for biology and medicine



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