Leica MZ75

Modular high-performance
stereomicroscope with zoom 7.9:1

Leica
MICROSYSTEMS

For wafer, metal sections and thin sections

Increasingly complex tasks in science and industry demand top grade customer-specific solutions. Leica Microsystems is a leading company in the development of innovative quality optics and enjoys an excellent reputation in research labs and enterprises.

High fidelity at any magnification

The Leica M series consists of a high-quality and convincing stereomicroscope program for all applications. The Common Main Objective design consists of two parallel beam paths with a common main objective. This elaborate optics system guarantees viewing without tiring, constant sharpness during magnification change and allows for simple adaptation of all types of accessories.

Unprecedented imaging

The high-performance stereomicroscope Leica MZ7$_5$ with 0.63× to 5× zoom offers state-of-the-art optical technology, high imaging performance and ergonomics at a surprisingly affordable price. The 1× plane objective displays wafers, metal sections and thin sections absolutely plane and distortion-free and resolves details up to 246 Lp/mm crystal clear and high in contrast.

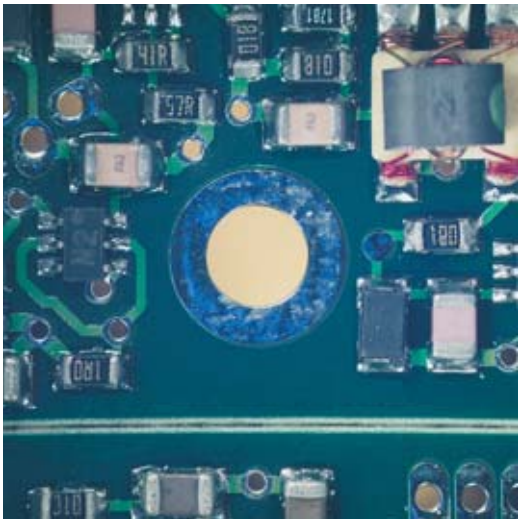
Versatility

The Leica MZ7$_5$ is antistatic and lead-free and features the widest selection of ergonomics accessories, binocular tubes, objectives and accessories for digital imaging, video, photomicrography, second-observer tube, drawings, etc.

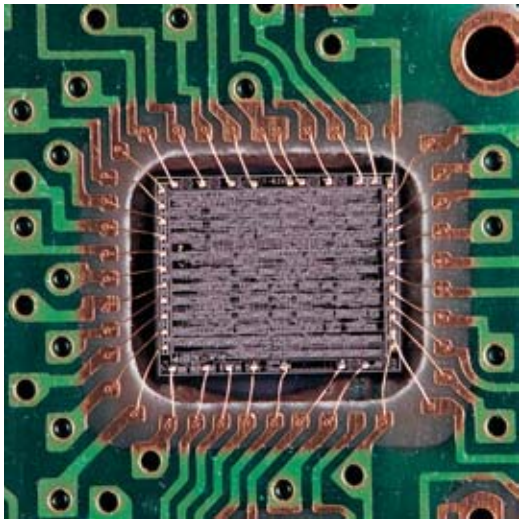
The elegant design of the Leica MZ7$_5$ defines ergonomic. The contoured shapes and modern antistatic materials combine to promote comfort and convenient handling.

Right: Leica MZ7$_5$ with 45° inclined binocular tube, 1× plano objective, incident-light stand and focusing drive (coarse/fine)

Circuit board

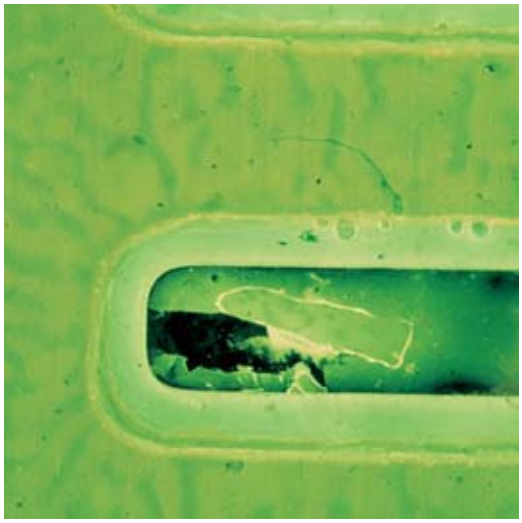


Integrated circuit



Willow herb

Epoxy layer



Leica MZ7₅ with ErgoTube™ 10° – 50°, 1× plano objective, high-performance stand HL for transmitted-light (bright field), and focusing drive (coarse/fine)

Leica Design
by Ernest Igl/Christophe Apothéloz


Leica


LEICA MZ7 5
PLAN 1.0x

Perfect image information

Zoom 7.9:1
The Leica MZ7₅ delivers significantly more image information in the magnification range from 6.3× to 50× than comparable instruments. The parfocally adjusted optics system guarantees constants image sharpness over the complete zoom range from lowest to highest magnification.

High-performance 1× plano objective
The Leica MZ7₅ is routinely supplied with the five-lens plano objective 1×, which has a comfortable working distance of 81 mm. Its optical performance and its light gathering properties have been upgraded by applying innovative technologies to its development, manufacture and inspection. The high resolution, (up to 246 line pairs per millimeter), extremely fine contrast, and image sharpness make it the instrument of choice for critical inspection.

Resolution 615 Lp/mm
The **2× planapochromatic objective** ensures unsurpassed color correction and reproduction of the most minute details. The instrument is ideally suited for observing transparent, low-contrast objects in medicine and biology.

Ergonomic objective
The Ergo objective 0.4× – 0.63× allows ergonomical and fine focusing in the 90 mm range (working distance 63.5 – 153.5 mm) without changing the viewing height. At the time, magnification and working distance can be changed without time-consuming objective change.

Innovative Rottermann Contrast™:
The Invisible Made Visible
With a new technology, the HL RC™ high-performance transmitted-light base achieves a sensational increase in contrast of invisible structures in positive, inverted, and dynamic relief contrast. The refraction index of structures, which are invisible in their environment, are portrayed as a variation in brightness. In positive relief contrast, phase structures then appear elevated, while in inverted relief contrast, they appear as depressions. The dynamic relief contrast allows you to toggle between positive and inverted relief contrast, making it easy to distinguish phase structures of absorbent structures. Other illumination techniques include bright field transmitted light with high or low degree of diffusion, oblique transmitted light and single-side dark field.

The 2× planapochromatic objective can produce a total magnification of 500× when used with 40× eyepieces. It has a numerical aperture of 0.2 and a resolution of 615 line pairs per millimeter. The working distance of the 0.5× plano objective is 135 mm, offering ample space for tools to manipulate the object. All objectives are lead-free.


Leica

Unlimited applications

With its modular construction, complete range of accessories, and ergonomics design, the Leica MZ7$_5$ is suitable for all applications involving examination, training and documentation.

The user as the measure of things

Users of the Leica MZ7$_5$ have at their fingertips, a unique choice of observation tubes and ErgoModules™. From the **ErgoWedge™ to the ErgoTube™** with continuously adjustable viewing angle (10° to 50°) and extended eyetubes, all of the Leica ErgoModules adapt with millimeter accuracy to the needs of each observer. The comfort achieved has a positive impact on workplace performance and productivity.

ErgoTubus® and ErgoModul® are registered with the "United States Patent and Trademark Office."

More space, more light for work

The complete range of Leica stereomicroscope stands and illuminators allows the Leica MZ7$_5$ to be equipped for any task. Voluminous objects, for example, can be handled without space restrictions under the **swinging-arm stand**. The spacious **incident and transmitted-light stands** provide space for comfortable specialty stages such as the gliding stage and cup stage and the new thermo stage Leica MATS. The **Thermocontrol System Leica MATS** allows observation of temperature-sensitive specimens and living cells in biology, medicine and pharmaceutics under exact temperature conditions.

The coaxial illuminator shows the surface contrasts of flat, highly- reflecting objects such as wafers or polished metal sections. **Fiber-optic light guides** in various designs ensure expressive modeling of three-dimensional objects. **The fluorescence illuminator**, combines with various filter sets (e.g. GFP), to facilitate the differentiation of highly detailed fluorescing structures.

Protection against ESD

The Leica MZ7$_5$ optics carrier, 45° binocular tube, ErgoTube™, ErgoWedge™ 5°–25°, ESD swinging-arm stand and Leica L2 and Leica CLS cold light sources consist of patented ESD-conducting material. Expensive damages through electrostatic discharges during assembly and quality control of sensitive electronic components such as circuit boards, integrated circuits and read heads are avoided.

1 Motor focus for effortless focusing and for repetitive tasks
2 Leica IC A integrated analog video camera
3 Coaxial illuminator for flat, highly-reflecting surfaces, e.g. polished metal sections and wafers
4 Fluorescence module with various filter combinations (e.g. GFP) for the differential observation of fine fluorescing structures
5 ErgoWedge™ and 45° binocular tube for a viewing angle variable from 20° to 40°
6 Attachment for vertical and oblique observation™: All-round, bird's-eye view without tilting or turning the object
7 High-performance transmitted-light stands for the efficient illumination of transparent specimens. Example: Transmitted-light stand for bright- and dark field
8 Leica MPS60 photoautomat (shutter piece with 1% spot measurement)

The Leica MZ75: A fine example of ergonomics and versatility

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Documentation and training

Thanks to its modular design, the Leica MZ7$_5$ is perfectly prepared for the demands of tomorrow. Leica offers an extensive accessory program for all possible examination, training and documentation tasks. The six video/photo tubes can universally be used for Leica photomicrographic systems, and digital, video, film or SLR cameras.

Leica DC camera line for professional microscopy

Digital image processing designs the workflow from the scanning to the reprocessing – faster, most cost-efficient, more flexible and more efficient. The Leica DC camera line allows the rational creation, processing, reprocessing and archiving of digitized images and is intended for professional microphotographers in medicine, natural science, research, development and industry. Our product line ranges from standard camera for universal application to high-end camera and is best suited for all microscopic procedures – for incident light and transmitted light microscopy under low contrast and illumination as well as low-light fluorescence procedures.

The Leica software "Image Manager" includes various modules for activities ranging from the storage and post-processing of images right up to complex networking.

Leica IC A video system

The Leica IC A, an integrated module of the high-end class, enables workstations to be equipped economically and ergonomically and without needing an additional adapter. The Leica IC A opens up new possibilities for image analysis in the natural sciences, for industrial quality control, and for live presentations to large audiences and for digital post-processing.

Photoautomat Leica MPS60

If documentation is to be on conventional film material, Leica offers advanced systems. For example, the Leica MPS60 uses 1% spot metering and directs 100% of the light to the highly-sensitive measuring diode, enabling perfect photographs to be taken using short exposure times, even under the low-light conditions of fluorescence applications.

Leica DC digital imaging system, Leica MZ7$_5$ with trinocular video/phototube

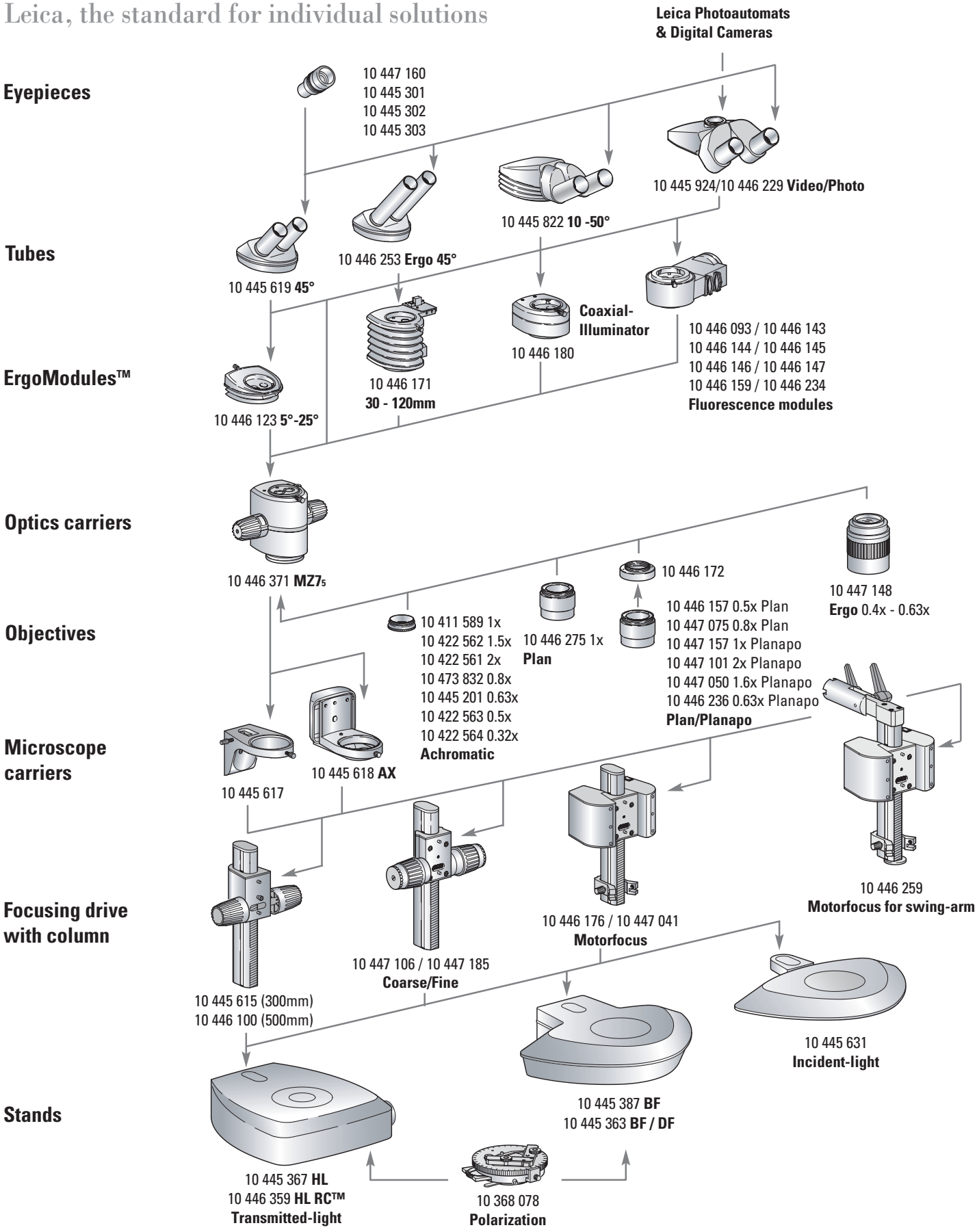

LEICA DC 200
LEICA MZ75

Leica MZ75 stereomicroscope	
Design principle	Multiple-coated, parfocal high-performance optical system with 2 parallel beam paths and 1 main objective (CMO), lead-free
Surface resistance of antistatic material	$<10^{11}$ Ohm/square centimeter, discharge time <2 seconds from 1000V to 100V
Numeric aperture	0.2 with planapo objective 2×, 0.164 with planapo objective 1.6×, 0.082 with planapo objective 1×, 0.103 planapo 1×
Resolution	615 Lp/mm with planapo objective 2×, 492 Lp/mm with planapo objective 1.6×, 246 Lp/mm with planapo objective 1×, 309 Lp/mm with planapo 1×
Magnification changer	7.9:1 zoom, 0.63× to 5
8 engageable ratchet positions	at 0.8, 1, 1.25, 1.6, 2, 2.5, 3.2, 4, 5
Magnifications	6.3× to 50× (with 1× objective and 10× eyepieces)
Total magnification	2× to 500×
Field diameter	0.5 mm to 104 mm
Working distances	81 mm (1× plano), 112 mm (0.8× plano), 97 mm (0.63× planapo), 135 mm (0.5× plano), 27 mm–297 mm (achromats)
Planachromatic and planapochromatic objectives	1× (plan, planapo), 0.5× (plan), 0.8× (plan), 0.63× (planapo), 1.6× (planapo), 2× (planapo), lead-free
Ergo objective 0.4× – 0.63×	90 mm adjustment range (working distance 63.5 – 153.5 mm)
Interchangeable achromatic objectives	1×, 1.5×, 2×, 0.8×, 0.63, 0.5, 0.32
Eyepieces	Distortion-free wide-field eyepieces for persons wearing glasses, 10×/21B, 16×/14B, 25×/9.5B, 40×/6B, economical wide-field eyepieces 10×/21, soft eyecups
Dioptric correction	+5 to –5
Binocular tubes	Apochromatic ErgoTube™ 10° to 50° with synchronized interpupillary adjustment Various ErgoModules™
Interpupillary distance	52 to 76 mm
Stands, illuminators	
Focusing drive	Coarse, fine, manual and motorized, tiltable for OEM adaptations (bonders)
Length of column	300 mm and 500 mm, side-faced profile
Microscope carrier	Two basic heights, optics carrier rotatable through 360°, stereoscopic or vertical observation
Swing-arm stand	ESD version with 400/25m column, large stand with 550/50 mm column, alternative with clamp for 20–50 mm thick table tops
Universal stand	450/50 mm or 800/50 mm column, 52 cm 34 cm base plate, magnetic carrier for stages
Transmitted-light stands	Bright field, bright and dark field, high-performance base for innovative contrasting
Stages	Various, incl. rotating polarization stage, Leica MATS thermocontrol system with thermo stage
Illuminations	Various, oblique, coaxial, vertical, fiber-optic light guide and cold light sources, ESD-conducting, LED illumination (Laser Emitting Diode), fluorescence module
Accessories	
Photomicrographic systems	Leica MPS30 and MPS60, fully automatic, with data back
Video, filming, software for archiving and for image processing	Various configurations, Leica IC A integrated video module, Leica DC digital imaging systems, Image Manager
Discussion tube	For training and education
Drawing tube	For both left- and right-handed users
Double-iris diaphragm	For increasing the depth of field
Measuring graticules	For measuring lengths and for counting
Vertical and oblique observation	45° view by moving the optics rather than the specimen

For the latest information and updates, please visit our homepage: **www.stereomicroscopy.com**

Quality comes first: Leica has established sophisticated manufacturing processes that meet the most stringent performance and specification criteria, without compromise. Perfection is ensured not only by our certified quality assurance standards but also by Leica's own exacting requirements.

Leica, the standard for individual solutions

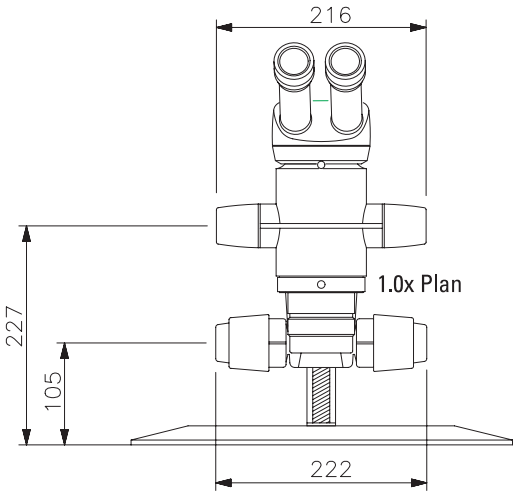


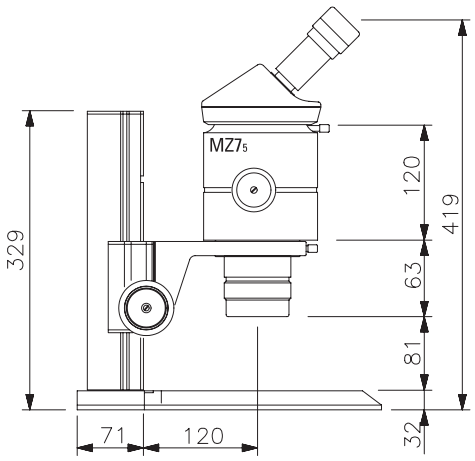
Optical data

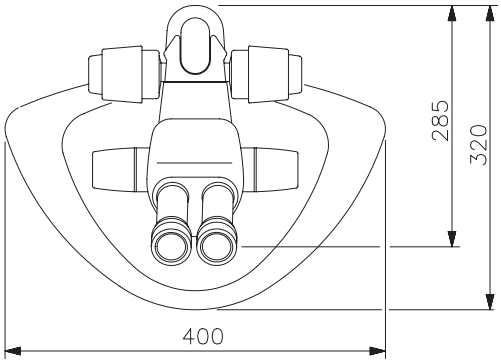
Objectives		1 × Plan 1 × Achromat 0.8× Plan*		1 × Planapo*		1.6× Planapo* 2× Achromat		0.63 × Planapo* 0.8 × Achromat		0.5× Plan* 0.63× Achromat		0.32 Achromat		0.5 Achromat		1.5 Achromat		0.4× – 0.63× Ergo objective			
Eyepieces	Magnification changer position	Working distance (mm)																			
		81 Plan 89 Achromat 112 Plan		55 Planapo		19 Planapo 27 Achromat		97 Planapo 112 Achromat		135 Plan 149 Achromat		297 Achromat		187 Achromat		49 Achromat		63.5 Achromat		153.5 Achromat	
		Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)	Total magnification	Field diameter (mm)
10/21B	0.63	6.3	33.3	7.9	26.6	12.6	16.7	5	42	3.9	53.8	2	105	3.2	65.6	9.4	22.3	4	52.5	2.6	80.8
	0.8	8	26.3	10	21	16	13.1	6.4	32.8	5	42	2.5	84	4	52.5	11.9	17.6	5	41.2	3.3	63.6
	1	10	21	12.5	16.8	20	10.5	8	26.3	6.3	33.3	3.1	67.7	5	42	14.9	14.1	6.4	32.8	4	51.2
	1.25	12.5	16.8	15.6	13.5	25	8.4	10	21	7.8	26.9	3.9	53.8	6.3	33.3	18.7	11.2	8.0	26.3	5	41.2
	1.6	16	13.1	20	10.5	32	6.6	12.8	16.4	10	21	5	42	8	26.3	23.9	8.8	10.2	20.6	6.6	31.8
	2	20	10.5	25	8.4	40	5.3	16	13.1	12.5	16.8	6.3	33.3	10	21	29.9	7	12.7	16.5	8.2	25.6
	2.5	25	8.4	31.3	6.7	50	4.2	20	10.5	15.6	13.5	7.8	26.9	12.5	16.8	37.3	5.6	15.9	13.2	10.3	20.4
	3.2	32	6.6	40	5.3	64	3.3	25.6	8.2	20	10.5	10	21	16	13.1	47.8	4.4	20.4	10.3	13.2	15.9
	4	40	5.3	50	4.2	80	2.6	32	6.6	25	8.4	12.5	16.8	20	10.5	59.7	3.5	25.5	8.2	16.5	12.7
	5	50	4.2	62.5	3.4	100	2.1	40	5.3	31.3	6.7	15.6	13.5	25	8.4	74.6	2.8	31.8	6.6	20.6	10.2
16/14B	0.63	10.1	22.2	12.6	17.8	20.2	11.1	8.1	27.7	6.3	35.6	3.2	70	5	44.8	15	14.9	6.4	35	4	54.6
	0.8	12.8	17.5	16	14	25.6	8.8	10.2	22	8	28	4	56	6.4	35	19.1	11.7	8.2	27.3	5.3	42.3
	1	16	14	20	11.2	32	7	12.8	17.5	10	22.4	5	44.8	8	28	23.9	9.4	10.2	22	6.6	33.9
	1.25	20	11.2	25	9	40	5.6	16	14	12.5	17.9	6.3	35.6	10	22.4	29.9	7.5	12.7	17.6	8.2	27.3
	1.6	25.6	8.8	32	7	51.2	4.4	20.5	10.9	16	14	8	28	12.8	17.5	38.2	5.9	16.3	13.7	10.5	21.3
	2	32	7	40	5.6	64	3.5	25.6	8.8	20	11.2	10	22.4	16	14	47.8	4.7	20.4	11	13.2	17
	2.5	40	5.6	50	4.5	80	2.8	32	7	25	9	12.5	17.9	20	11.2	59.7	3.8	25.5	8.8	16.5	13.6
	3.2	51.2	4.4	64	3.5	102.4	2.2	41	5.5	32	7	16	14	25.6	8.8	76.4	2.9	32.6	6.9	21	10.6
	4	64	3.5	80	2.8	128	1.8	51.2	4.4	40	5.6	20	11.2	32	7	95.5	2.3	40.8	5.5	26.3	8.5
	5	80	2.8	100	2.2	160	1.4	64	3.5	50	4.5	25	9	40	5.6	119.4	1.9	51	4.4	32.9	6.8
25/9.5B	0.63	15.8	15	19.7	12.1	31.5	7.5	12.6	18.8	9.8	24.2	4.9	48.5	7.9	30.1	23.5	10.1	10	23.8	6.5	36.5
	0.8	20	11.9	25	9.5	40	5.9	16	14.8	12.5	19	6.3	37.7	10	23.8	29.9	7.9	12.7	18.7	8.2	29
	1	25	9.5	31.3	7.6	50	4.8	20	11.9	15.6	15.2	7.8	30.4	12.5	19	37.3	6.4	15.9	14.9	10.3	23
	1.25	31.3	7.6	39.1	6.1	62.5	3.8	25	9.5	19.5	12.2	9.8	24.2	15.6	15.2	46.6	5.1	19.9	11.9	12.9	18.4
	1.6	40	5.9	50	4.8	80	3	32	7.4	25	9.5	12.5	19	20	11.9	59.7	4	25.5	9.3	16.5	14.4
	2	50	4.8	62.5	3.8	100	2.4	40	5.9	31.3	7.6	15.6	15.2	25	9.5	74.6	3.2	31.8	7.5	20.6	11.5
	2.5	62.5	3.8	78.1	3	125	1.9	50	4.8	39.1	6.1	19.5	12.2	31.3	7.6	93.3	2.5	39.8	6	25.7	9.2
	3.2	80	3	100	2.4	160	1.5	64	3.7	50	4.8	25	9.5	40	5.9	119.4	2	51	4.7	32.9	7.2
	4	100	2.4	125	1.9	200	1.2	80	3	62.5	3.8	31.3	7.6	50	4.8	149.3	1.6	63.7	3.7	41.2	5.8
	5	125	1.9	156.3	1.5	250	1	100	2.4	78.1	3	39.1	6.1	62.5	3.8	186.6	1.3	79.6	3	51.4	4.6
40/6B	0.63	25.2	9.5	31.5	7.6	50.4	4.8	20.2	11.9	15.8	15.2	7.9	30.4	12.6	19	37.6	6.4	16	14.9	10.4	23
	0.8	32	7.5	40	6	64	3.8	25.6	9.4	20	12	10	24	16	15	47.8	5	20.4	11.8	13.2	18.2
	1	40	6	50	4.8	80	3	32	7.5	25	9.6	12.5	19.2	20	12	59.7	4	25.5	9.4	16.5	14.5
	1.25	50	4.8	62.5	3.8	100	2.4	40	6	31.3	7.7	15.6	15.4	25	9.6	74.6	3.2	31.8	7.5	20.6	11.7
	1.6	64	3.8	80	3	128	1.9	51.2	4.7	40	6	20	12	32	7.5	95.5	2.5	40.8	5.9	26.3	9
	2	80	3	100	2.4	160	1.5	64	3.8	50	4.8	25	9.6	40	6	119.4	2	51	4.7	32.9	7.3
	2.5	100	2.4	125	1.9	200	1.2	80	3	62.5	3.8	31.3	7.7	50	4.8	149.3	1.6	63.7	3.8	41.2	5.8
	3.2	128	1.9	160	1.5	256	0.9	102.4	2.3	80	3	40	6	64	3.8	191	1.3	81.5	2.9	52.7	4.6
	4	160	1.5	200	1.2	320	0.8	128	1.9	100	2.4	50	4.8	80	3	238.8	1	101.9	2.4	65.8	3.6
	5	200	1.2	250	1	400	0.6	160	1.5	125	1.9	62.5	3.8	100	2.4	298.5	0.8	127.4	1.9	82.3	2.9

* When using the planachromatic and planapochromatic objectives MZ12$_5$, the magnification is increased by the factor 1.25×.

Leica MZ75: The dimensions







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