

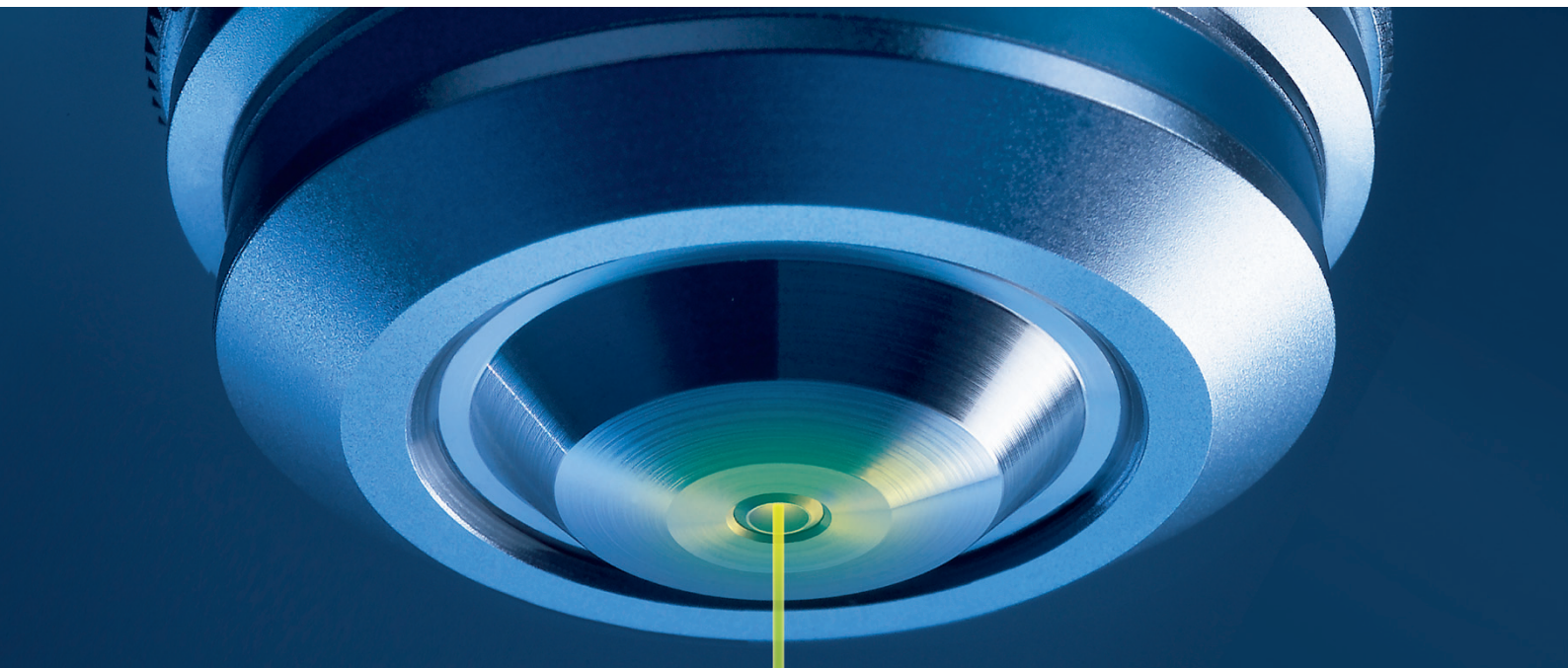
IC²S High Performance Objectives

for Biomedical Applications

with Laser Based Imaging Systems LSM, SD, ConfoCor, TIRF and ELYRA

Carl Zeiss offers a large range of IC²S-objectives especially suiting the needs of confocal microscopy. The objectives selected for this brochure offer some of the best optical correction and transmission properties on the market. Low longitudinal chromatic aberration, low chromatic magnification difference, corrected spherical aberration and transmission values of 85 – 90% in the main wavelength range (70% at the borders given) combined with

excellent image flatness create the best possible results. All this in combination with comfortable handling properties – that's Carl Zeiss, the pioneer of modern optics. Today, this pioneering spirit is as much alive as in the past: With objectives for ELYRA systems, offering resolution beyond the diffraction limit, and with objectives of outstanding light efficiency, for the latest GaAsP detection technology at the LSM.



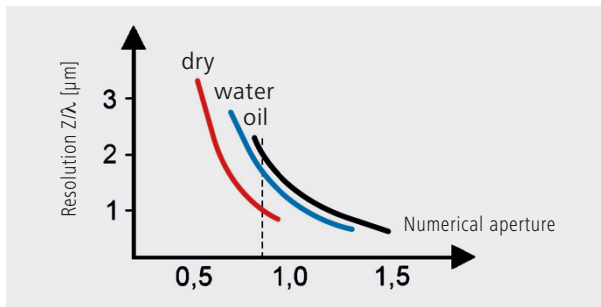
Superresolution Microscopy
Confocal and Multiphoton Microscopy
Fluorescence Correlation Spectroscopy



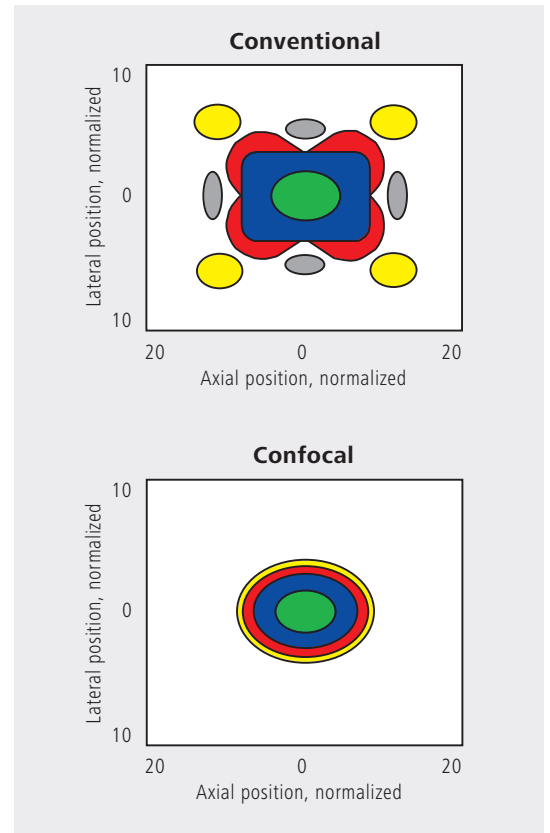
We make it visible.

Why Special Objectives for Superresolution and Confocal Microscopy?

In confocal microscopy, the requirements for objective design and quality are much higher than in conventional light microscopy. Due to the ability to obtain optical sections in Z and to collect high resolution data of one point in the specimen at various wavelengths simultaneously, confocal microscope objectives need a perfect correction of longitudinal chromatic and spherical errors over the full wavelength range.



Half width of axial resolution in relationship to the numerical aperture of objective types. Relatively seen, the axial resolution at a given numerical aperture is highest in dry objectives, whereas the maximal possible resolution is achieved in oil immersion objectives. A good compromise of both properties is available in water immersion objectives.



Maximum quality of point spread functions (PSF) in conventional (wide field) microscopy and in confocal microscopy. The almost ideal PSF in confocal microscopy is only available, of course, if perfectly corrected ("diffraction limited") objectives are used.

Recommendation of objective classes and biological specimen properties.

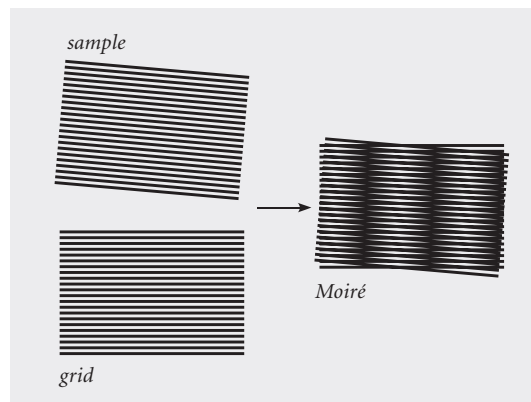
Application		Matching objectives regarding coverslip, media correction and working distances			
Subject	Optical property	Dry	Water immersion	Oil immersion	Water dipping
Cell Biology Microbiology	covered, thin	EC Plan-Neofluar, Fluor, LD Plan-Neofluar	C-Apochromat, LCI Plan-Neofluar	Plan-Apochromat, EC Plan-Neofluar, Fluor	
Developmental Biology	covered, in dish etc.	LD Plan-Neofluar 40x and others	C-Apochromat	LCI Plan-Neofluar 25x and others	
Zoology, Botany Neurobiology	covered, thick	Plan-Apochromat 20x and others	C-Apochromat	N-Achroplan 50x and others	
Physiology, Micromanipulation	uncovered	Fluar, EC Plan-Neofluar 2.5–10x range			W N-Achroplan, W Plan-Apochromat

Beyond the Diffraction Limit

Cell Biology Microbiology	Zoology, Botany Neurobiology
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Structured Illumination Microscopy

With SR-SIM (Superresolution Structured Illumination Microscopy) it is possible to image any fluorescent dye at a resolution up to twice as good as with conventional microscopes. Precondition for this are objectives with the best chromatic correction and PSF.

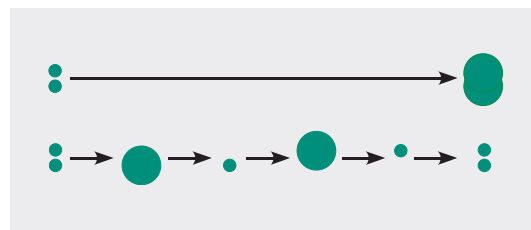


Moiré patterns formed by superimposed grids

	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
Plan-Apochromat 63x/1.40 Oil DIC M27	420782-9900-000	0.19	0.17	Oil	★★★ ★	★★★ ★	★★★ ★★	SR-SIM
α Plan-Apochromat 63x/1.46 Oil Korr M27	420780-9970-000	0.10	0.15-0.19	Oil	★★★ ★	★★★ ★★	★★★ ★★	SR-SIM
C-Apochromat 63x/1.20 W Korr UV-VIS-IR M27	421787-9970-000	0.28	0.14-0.19	W	★★★ ★	★★★ ★★	★★★ ★★★	SR-SIM

Photoactivation Localization Microscopy

PAL-M (Photoactivation Localization Microscopy) allows fluorescence imaging with single molecule detection and achieves a resolution down to 20 nanometers. For this, Carl Zeiss offers a choice of high aperture TIRF objectives, including a newly developed α Plan-Apochromat 100x/1.57 HI objective (special immersion oil, non toxic and non volatile).



Sequential localization measurements result in higher effective resolution.

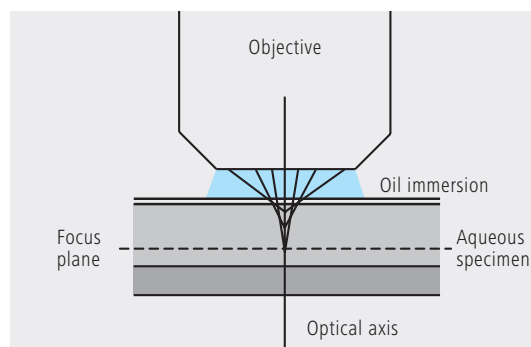
	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
α Plan-Apochromat 100x/1.46 Oil DIC M27	420792-9800-720	0.11	0.17	Oil	★★★ ★	★★★ ★★★	★★★ ★★	PAL-M
α Plan-Apochromat 100x/1.57 Oil DIC Korr M27	420792-9771-000	0.11	0.165-0.175	Oil	★★★	★★★ ★	★★★ ★★	PAL-M

Confocal Specialists

Cell Biology Microbiology	Developmental Biology	Zoology, Botany Neurobiology
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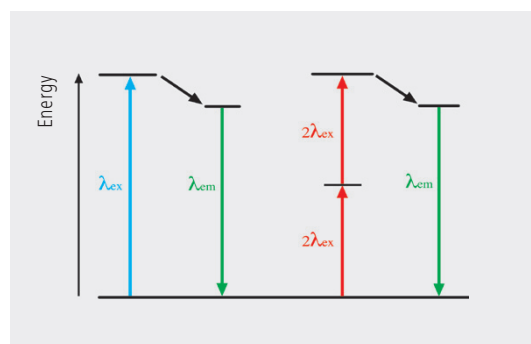
The C-Apochromat objectives (C for confocal) have been developed to match the requirements of diffraction limited optics. The C-Apochromat series water immersion objectives are corrected for an extended range of six wavelengths instead of three or four in conventional Apochromats, starting at 360 nm close to 1000 nm (e.g. for the C-Apochromat 63x UV-VIS-IR), and therefore they work especially well for extended Z-scans in biological tissue and for spectral imaging with the QUASAR detector. Magnifications of C-Apochromats range from 10x overview to 40x and 63x with adjustable coverslip and temperature correction.

For multiphoton applications and time lapse studies in living specimens, the LD C-Apochromat and C-Achroplan IR are available. These objectives with very high transmission in the near infrared offer an outstanding working distance even for deepest penetration of tissues.



Spherical aberration resulting from different refractive indices of sample and immersion media. This aberration is the greater, the deeper the focus goes into the sample.

Fluorescence excitation and resulting emission.
Left: excitation with 1 photon;
right: cumulated effect of 2 photons at the doubled wavelength.



	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
C-Apochromat 10x/0.45 W M27	421747-9900-000	1.8	0.17	W	★★★ ★	★★★ ★★	★★★ ★★	NLO
C-Achroplan 32x/0.85 W Korr Vis-IR M27	420967-9970-000	1.1	0-0.17	W	★★	★★★ ★★★	★★★	NLO, CARS
LD C-Apochromat 40x/1.1 W Korr UV-VIS-IR M27	421867-9970-000	0.62	0.14-0.19	W	★★★ ★	★★★ ★★	★★★ ★★★	NLO, FCS
C-Apochromat 40x/1.2 W Korr UV-VIS-IR M27	421767-9970-000	0.28	0.14-0.19	W	★★★ ★	★★★ ★★	★★★ ★★★	FCS
LD C-Apochromat 63x/1.15 W Korr UV-VIS-IR M27	421887-9970-000	0.58	0.14-0.19	W	★★★ ★	★★★ ★★	★★★ ★★★	
C-Apochromat 63x/1.20 W Korr UV-VIS-IR M27	421787-9970-000	0.28	0.14-0.19	W	★★★ ★	★★★ ★★	★★★ ★★★	FCS

Resolution Experts

Cell Biology
Microbiology

Zoology, Botany
Neurobiology

The Plan-Apochromat dry and oil immersion objectives of highest numerical apertures and perfect image flatness are experts for conventional thin specimens with multiple fluorescence preferentially in the VIS range (420 – 670 nm). Our legendary Plan-Apochromat 63x/1.40 Oil and Plan-Apochromat 20x/0.80 offer exceptional properties regarding fluorescence efficiency and free working distance. Many of these objectives offer an improved performance up to the IR range.



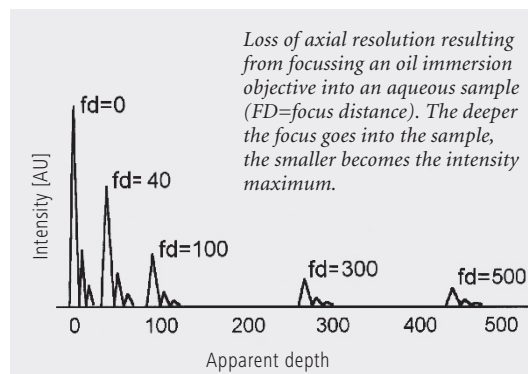
	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
Plan-Apochromat 10x/0.45 M27	420640-9900-000	2.0	0.17	--	***	*** ★	*** **	
Plan-Apochromat 20x/0.8 M27	420650-9901-000	0.55	0.17	--	***	*** **	*** **	NLO
Plan-Apochromat 40x/1.40 Oil DIC (UV) VIS-IR M27	420762-9900-000	0.13	0.17	Oil	***	***	*** **	SD
Plan-Apochromat 63x/1.40 Oil DIC M27	420782-9900-000	0.19	0.17	Oil	***	*** ★	*** **	SD
α Plan-Apochromat 63x/1.46 Oil Korr M27	420780-9970-000	0.10	0.15-0.19	Oil	*** ★	*** **	*** **	
Plan-Apochromat 100x/1.40 Oil DIC M27	420792-9900-000	0.17	0.17	Oil	***	*** ★	*** **	SD
α Plan-Apochromat 100x/1.46 Oil DIC M27	420792-9800-000	0.11	0.17	Oil	*** ★	*** ***	*** **	

Top Grade Optics

Developmental
Biology

Zoology, Botany
Neurobiology

Using water or glycerol immersion is the closest match to the refractive index of biological tissue and popular embedding media, and reduces spherical aberration even at very deep focus settings. That's why Carl Zeiss offers the LCI Plan-Apochromat objectives with outstanding correction and working distance for live cell imaging applications.



	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
LD LCI Plan-Apochromat 25x/0.8 Imm Korr DIC M27	420852-9870-000	0.57	0-0.17	Oil/ Glyc/W	***	*** **	*** **	SD
Plan-Apochromat 150x/1.35 Glyc DIC Korr M27	420792-9970-000	0.17	0.14-0.18	Glyc	*** ★	*** **	*** ***	

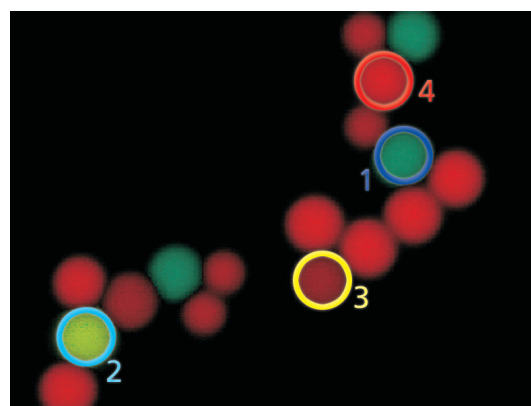
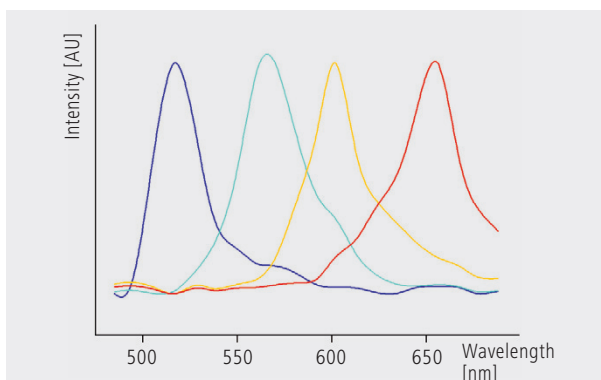
Universal Solutions

Cell Biology
Microbiology

Developmental
Biology

In addition to objectives dedicated to high end confocal microscopy, a universal objective solution is often required to match the properties of various specimens and protocols. The EC Plan-Neofluar objectives are perfectly designed for general fluorescence microscopy. The universal EC Plan-Neofluar dry and oil immersion objectives are corrected for an extended range from 435 nm up to 670 nm, sufficient even for 4-color fluorescence, with a correction level matching or even surpassing yesterday's finite system Apochromats.

Transmission even starts in the UV range at 340 nm. As a truly versatile solution, various types are available including the LCI Plan-Neofluar 25 x and 63 x Imm., which can be used with water and glycerol to match different refractive media indices.



Lambda- (wavelength-) coded view of multi-color fluorescence beads.

Spectral signature of a fluorescence emission. Four different fluorochromes alone can be matched into the VIS range of 450 – 670 nm.

	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
N-Achroplan 10x/0.25 M27	420940-9900-000	6.0	0.17	--	★★	★★★	★★★	
Plan-Neofluar 16x/0.50 Imm W 0.8"	440530-0000-000	0.17	0.17	Oil/ Glyc/W	★★★ ★	★★★	★★★ ★	
EC Plan-Neofluar 20x/0.50 M27	420350-9900-000	2.0	0.17	--	★★★ ★	★★★	★★★ ★	
LCI Plan-Neofluar 25x/0.8 Imm Korr DIC M27	420852-9972-000	0.21	0-0.17	Oil/ Glyc/W	★★★	★★★ ★	★★★ ★	
LD Plan-Neofluar 40x/0.6 Korr M27	421360-9970-000	2.9	0-1.5	--	★★★ ★	★★★	★★★ ★	
EC Plan-Neofluar 40x/0.75 M27	420360-9900-000	0.71	0.17	--	★★★ ★	★★★	★★★ ★	
EC Plan-Neofluar 40x/1.30 Oil DIC M27	420462-9900-000	0.21	0.17	Oil	★★★ ★	★★★ ★	★★★ ★	NLO
N-Achroplan 50x/1.0 Oil M27	420970-9900-000	0.23	0.17	Oil	★★	★★★	★★★	
LCI Plan-Neofluar 63x/1.3 Imm Korr DIC M27	420882-9970-000	0.17	0.15-0.19	Glyc/W	★★★	★★★ ★	★★★ ★	SD

Transmission Experts

Cell Biology Microbiology	Developmental Biology
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To offer ideal prerequisites for physiological measurements, photon collecting and TIRF microscopy, the Fluar series of dry and oil immersion objectives are available as the fluorescence specialists in the ZEISS objective range. Extended transmission from true UV 340 nm to 670 nm and special high numerical apertures are the hallmarks of the Fluars. The complementary N-Achroplan objectives offer a great combination of high transmission and long working distances, with a good correction for dual labelled samples in the visual range.



	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
Fluar 2.5x/0.12 M27	420120-9900-000	6.3	0.17	--	★★★★ ★★	★★★★ ★	★★	Macro
Fluar 40x/1.30 Oil M27	420260-9900-000	0.16	0.17	Oil	★★★★ ★★	★★★★ ★	★★	
α Plan-Fluar 100x/1.45 Oil M27	421190-9900-000	0.11	0.17	Oil	★★★★ ★★	★★★★	★★★★	

Dipping Objectives

Developmental Biology	Physiology, Micromanipulation
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For physiological experiments with fixed stage microscopes, the unique ZEISS W Plan-Apochromat and W N-Achroplan objectives are available. They combine long working distances in water with special inert coatings and excellent fluorescence transmission. The W Plan-Apochromat objectives are corrected for both, visual range and IR. Hence they are ideally suitable for IR-microscopy and for multiphoton excitation. The W Plan-Apochromat 20x/1,0 is also the ideal one objective solution.



	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
W Plan-Apochromat 20x/1.0 DIC d=0.17 VIS-IR M27	421452-9880-000	1.7	0.17	W	★★★★ ★	★★★★ ★★	★★★★ ★★	NLO
W Plan-Apochromat 20x/1.0 DIC VIS-IR M27	421452-9800-000	1.8	0	W	★★★★ ★	★★★★ ★★	★★★★ ★★	NLO
W N-Achroplan 40x/0.75 M 27	420967-9900-000	2.1	0	W	★★	★★★★	★★★★	
W Plan-Apochromat 40x/1.0 DIC VIS-IR M 27	421462-9900-000	2.5	0	W	★★★★	★★★★ ★	★★★★ ★★	NLO
W N-Achroplan 63x/0.9 M 27	420987-9900-000	2.2	0	W	★★	★★★★	★★★★	
W Plan-Apochromat 63x/1.0 VIS-IR M 27	421480-9900-000	2.1	0	W	★★★★	★★★★ ★★	★★★★ ★★	

Accessories for Confocal Objectives

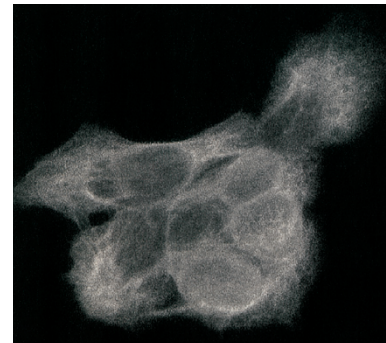
Developmental
Biology

Zoology, Botany
Neurobiology

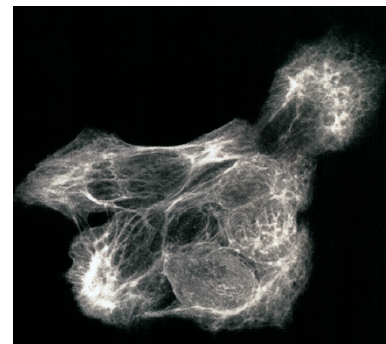
To match even advanced requirements in confocal imaging, Carl Zeiss offers a very unique range of accessories to complement the LSM dedicated range of objectives.

The immersion medium Immersol W with a refractive index of $n_e = 1.33$ exactly matches the C-Apochromat and LCI Plan-Neofluar multiimmersion range of objectives for demanding applications. While offering an ultimate solution for the effective reduction of spherical aberrations, it still maintains the physical advantages of immersion oils regarding evaporation and run-off behavior. Chromatic properties and temperature stability are nearly perfect, and handling even in inverted configurations is as easy as you ever wanted it to be. To additionally reduce spherical aberrations, ZEISS now offers high performance coverslips of the 1 ½ H type, which are more exact and vary much less in thickness than normal coverslips found on the market.

In case an extremely fine Z-focus capacity is required without moving the specimen, the ZEISS piezo focus attachment, especially for physiological applications, adds ultrafine objective focusing to every microscope stand.



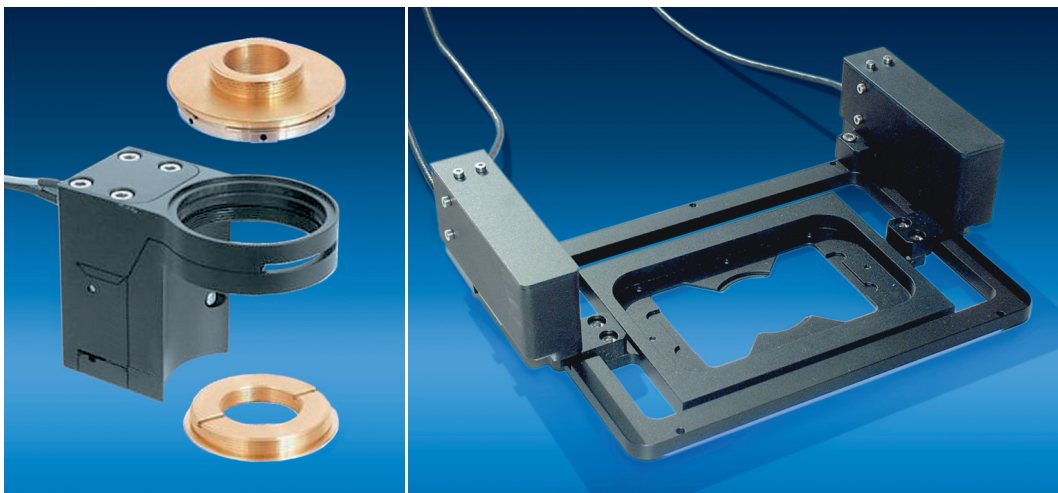
incorrect index – unsharp



correct index – sharp

Resulting image quality in an aqueous sample in case of the use of an immersion medium with incorrect refractive index (unsharp) and correct refractive index (sharp).

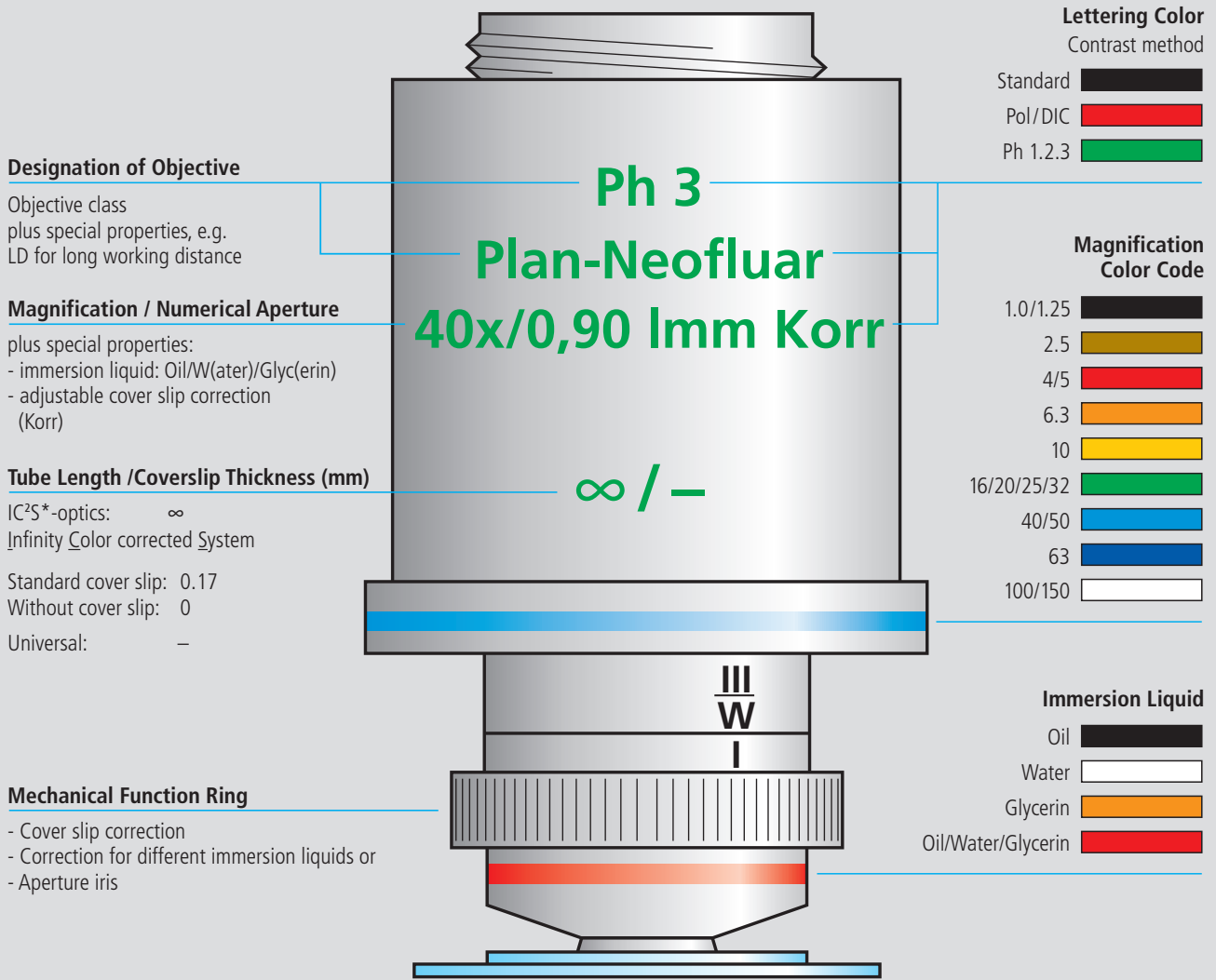
Immersol W matches the handling properties of conventional oil and the water-like refractive index of thick biological specimens.



Piezo devices for faster and more precise objective and sample focusing.

Markings on Objectives

(example)



*The IC²S beam path – innovation for higher quality

Newly designed for Axio Imager, this is the result of the systematic optimization of the proven ZEISS ICS infinity optics. Its outstanding benefits include high image contrast, perfect homogeneity and unprecedented resolution plus integrated light traps for impressive performance. IC²S - Infinity Contrast & Color Corrected System.

Overview

Objectives for the Laser Imaging Systems

LSM 700, LSM 710, LSM 780, ConfoCor, LSM 710 NLO, LSM 780 NLO, LSM 7 MP, LSM 7 LIVE, LSM 7 DUO, SD, TIRF and ELYRA from Carl Zeiss

Type dry								
	Order-no	w.d. (mm)	Cover- slip	Imm.	UV- Transm.	IR- Transm.	Color Corr.	Special Methods
Fluar 2.5x/0.12 M27	420120-9900-000	6.3	0.17	--	★★★★ ★★	★★★ ★	★★	Macro
N-Achroplan 10x/0.25 M27	420940-9900-000	6.0	0.17	--	★★	★★★	★★★	
Plan-Apochromat 10x/0.45 M27	420640-9900-000	2.0	0.17	--	★★★★	★★★ ★	★★★ ★★	
EC Plan-Neofluar 20x/0.50 M27	420350-9900-000	2.0	0.17	--	★★★★ ★	★★★	★★★ ★	
Plan-Apochromat 20x/0.8 M27	420650-9901-000	0.55	0.17	--	★★★★	★★★ ★★	★★★ ★★	NLO
LD Plan-Neofluar 40x/0.6 Korr M27	421360-9970-000	2.9	0-1.5	--	★★★★ ★	★★★	★★★ ★	
EC Plan-Neofluar 40x/0.75 M27	420360-9900-000	0.71	0.17	--	★★★★ ★	★★★	★★★ ★	

Type oil immersion								
	Order-no	w.d. (mm)	Cover- slip	Imm.	UV- Transm.	IR- Transm.	Color Corr.	Special Methods
Fluar 40x/1.30 Oil M27	420260-9900-000	0.16	0.17	Oil	★★★★ ★★	★★★ ★	★★	
EC Plan-Neofluar 40x/1.30 Oil DIC M27	420462-9900-000	0.21	0.17	Oil	★★★★ ★	★★★ ★	★★★ ★	NLO
Plan-Apochromat 40x/1.40 Oil DIC (UV) VIS-IR M27	420762-9900-000	0.13	0.17	Oil	★★★★	★★★	★★★ ★★	SD
N-Achroplan 50x/1.0 Oil M27	420970-9900-000	0.23	0.17	Oil	★★	★★★	★★★	
Plan-Apochromat 63x/1.40 Oil DIC M27	420782-9900-000	0.19	0.17	Oil	★★★★	★★★ ★	★★★ ★★	SR-SIM SD
α Plan-Apochromat 63x/1.46 Oil Korr M27	420780-9970-000	0.10	0.15-0.19	Oil	★★★★ ★	★★★ ★★	★★★ ★★	SR-SIM TIRF
Plan-Apochromat 100x/1.40 Oil DIC M27	420792-9900-000	0.17	0.17	Oil	★★★★	★★★ ★	★★★ ★★	SD
α Plan-Fluar 100x/1.45 Oil M27	421190-9900-000	0.11	0.17	Oil	★★★★ ★★	★★★	★★★	TIRF
α Plan-Apochromat 100x/1.46 Oil DIC M27	420792-9800-720	0.11	0.17	Oil	★★★★ ★	★★★ ★★★	★★★ ★★	PAL-M TIRF
α Plan-Apochromat 100x/1.57 Oil DIC Korr M27	420792-9771-000	0.11	0.165-0.175	HI-Oil	★★★★	★★★ ★	★★★ ★★	PAL-M TIRF

For good performance, LSM systems with UV405 lasers require objectives with good correction and UV transmission (e.g. C-Apochromat); NLO/MP systems require objectives with good correction and IR transmission.

Overview

Objectives for Laser Imaging Systems

LSM 700, LSM 710, LSM 780, ConfoCor, LSM 710 NLO, LSM 780 NLO, LSM 7 MP, LSM 7 LIVE, LSM 7 DUO, SD, TIRF and ELYRA from Carl Zeiss

Type water/glyc immersion	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
C-Apochromat 10x/0.45 W M27	421747-9900-000	1.8	0.17	W	★★★★ ★	★★★ ★★	★★★★ ★★	NLO
Plan-Neofluar 16x/0.50 Imm W 0,8"	440530-0000-000	0.17	0.17	Oil/ Glyc/W	★★★★ ★	★★★	★★★★ ★	
Plan-Neofluar 25x/0.8 Imm Korr DIC M27	420852-9972-000	0.21	0-0.17	Oil/ Glyc/W	★★★★	★★★ ★	★★★★ ★	
LD LCI Plan-Apochromat 25x/0.8 Imm Korr DIC M27	420852-9870-000	0.57	0-0.17	Oil/ Glyc/W	★★★★	★★★ ★★	★★★★ ★★	SD
C-Achroplan 32x/0.85 W Korr Vis-IR M27	420967-9970-000	1.1	0-0.17	W	★★	★★★ ★★★	★★★★	NLO, CARS
LD C-Apochromat" 40x/1.1 W Korr UV-VIS-IR M27	421867-9970-000	0.62	0.14-0.19	W	★★★★ ★	★★★ ★★	★★★★ ★★★★	NLO, FCS
C-Apochromat 40x/1.2 W Korr UV-VIS-IR M27	421767-9970-000	0.28	0.14-0.19	W	★★★★ ★	★★★ ★★	★★★★ ★★★★	FCS SD
LD C-Apochromat 63x/1.15 W Korr UV-VIS-IR M27	421887-9970-000	0.58	0.14-0.19	W	★★★★ ★	★★★ ★★	★★★★ ★★★★	
C-Apochromat 63x/1.20 W Korr UV-VIS-IR M27	421787-9970-000	0.28	0.14-0.19	W	★★★★ ★	★★★ ★★	★★★★ ★★★★	SR-SIM, FCS
LCI Plan-Neofluar 63x/1.3 Imm Korr DIC M27	420882-9970-000	0.17	0.15-0.19	Glyc/W	★★★★	★★★ ★	★★★★ ★	SD
Plan-Apochromat 150x/1.35 Glyc DIC Korr M27	420792-9970-000	0.17	0.14-0.18	Glyc	★★★★ ★	★★★ ★★	★★★★ ★★★★	

Type water dipping	Order-no	w.d. (mm)	Cover-slip	Imm.	UV-Transm.	IR-Transm.	Color Corr.	Special Methods
W Plan-Apochromat 20x/1.0 DIC d=0.17 VIS-IR M27	421452-9880-000	1.7	0.17	W	★★★★ ★	★★★ ★★	★★★★ ★★	NLO
W Plan-Apochromat 20x/1.0 DIC VIS-IR M27	421452-9800-000	1.8	0	W	★★★★ ★	★★★ ★★	★★★★ ★★	NLO
W N-Achroplan 40x/0.75 M 27	420967-9900-000	2.1	0	W	★★	★★★	★★★★	
W Plan-Apochromat 40x/1.0 DIC VIS-IR M 27	421462-9900-000	2.5	0	W	★★★★	★★★ ★	★★★★ ★★	NLO
W N-Achroplan 63x/0.9 M 27	420987-9900-000	2.4	0	W	★★	★★★	★★★★	
W Plan-Apochromat 63x/1.0 VIS-IR M 27	421480-9900-000	2.1	0	W	★★★★	★★★ ★★	★★★★ ★★	

For good performance, LSM systems with UV/405 lasers require objectives with good correction and UV transmission (e.g. C-Apochromat); NLO/MP systems require objectives with good correction and IR transmission.



Selected Objectives for Laser Scanning Microscopes and Superresolution Microscopes

Whether your research subject is in cell biology, developmental biology, neurobiology or physiology, Carl Zeiss offers you a wide range of objectives to fit the special properties of your specimen and the LSM.

GLOSSARY

CARS	<u>C</u> oherent <u>A</u> nti- <u>R</u> aman <u>S</u> tokes <u>S</u> hift
FCS	<u>F</u> luorescence <u>C</u> orrelation <u>S</u> pectroscopy
LSM	<u>L</u> aser <u>S</u> canning <u>M</u> icroscopy (confocal)
Macro	Macroscopic (large field) Fluorescence Imaging
NLO	<u>N</u> onlinear <u>O</u> ptics, e.g. Multiphoton Microscopy
PAL-M	<u>P</u> hoto <u>a</u> ctivation <u>L</u> ocalization <u>M</u> icroscopy
PSF	<u>P</u> oint <u>S</u> pread <u>F</u> unction
SD	<u>S</u> pinning <u>D</u> isc (Cell Observer SD)
SR-SIM	<u>S</u> uperresolution <u>S</u> tructured <u>I</u> llumination <u>M</u> icroscopy
TIRF	<u>T</u> otal <u>I</u> nternal <u>R</u> eflection <u>F</u> luorescence

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