

# OLYMPUS

OLYMPUS AMERICA INC.  
PRECISION INSTRUMENT DIVISION

## Eyepieces

LECO No.	Cat. #	Product Description
910-040-202	2-U1002	WH10X-2 Eyepiece: high eyepoint, widefield, F.N. 22, 30mm diameter, with shelf for 24mm reticle
910-040-203	2-U100H2	WH10XH-2 Eyepiece: high eyepoint, widefield, F.N. 22, helical focusing, 30mm diameter, with shelf for 24mm reticle
910-040-204	2-U1022	Cross WH10X-2 Eyepiece: high eyepoint, widefield, F.N. 22, focusing eyepiece with crosshairs, 30mm diameter
910-040-205	2-U1032	35WH10X-2 Eyepiece: high eyepoint, widefield, F.N. 22, focusing eyepiece with photomask reticle for 35mm film, 30mm diameter
910-040-206	2-U1052	P-WH10X-2 Eyepiece: high eyepoint, widefield, F.N. 22, focusing eyepiece with photomask reticle for Polaroid film, 3-1/4 x 4-1/4, 30mm diameter
910-040-031	2-U120	WH12.5X Eyepiece: high eyepoint, F.N. 18, 30mm diameter, with shelf for 24mm reticle
910-040-032	2-U120H	WH12.5X-H Eyepiece: high eyepoint, F.N. 18, helical focusing, 30mm diameter, with shelf for 24mm reticle
910-040-033	2-U150	WH15X Eyepiece: high eyepoint, F.N. 14, 30mm diameter, with shelf for 24mm reticle

## Super Widefield Eyepieces

LECO No.	Cat. #	Product Description
910-050-016	2-U500H	SWH10X-H Eyepiece: high eyepoint, super widefield, F.N. 26.5, helical focusing, 30mm diameter
910-050-017	2-U503	35-SWH10X Eyepiece: high eyepoint, super widefield, F.N. 26.5, helical focusing, with 35mm photomask reticle, 30mm diameter
910-040-262	2-U504	MICRO-SWH10X 10X Eyepiece: high eyepoint, super widefield, F.N. 26.5, helical focusing eyepiece with built-in 10/100 micrometer reticle, 30mm diameter
910-050-018	2-U505	P-SWH10X Eyepiece: high eyepoint, super widefield, F.N. 26.5, focusing eyepiece with photomask reticle for Polaroid 3-1/4 x 4-1/4 film pack format, 30mm diameter

# OLYMPUS

OLYMPUS AMERICA INC.  
PRECISION INSTRUMENT DIVISION



## U.I.S. OPTICS

### Infinity-Corrected Optics for the B-Max Microscopes

#### SPECIFICATION SHEET

EFFECTIVE: March 1, 1996  
(Revised 10/99)

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SS-3303962UIS  
Form No. 203-973-001 REV2

## U.I.S. Optical System features:

### Infinity Correction

The infinity correction optical system permits the distance between the objective lens and telan lens to be greatly extended. The system can accommodate the simultaneous mounting of two intermediate attachments. This fully modular design gives the user the flexibility to build the microscope system that exactly meets their observation needs, from a wide variety of optional components and accessories. The U.I.S. addresses the full array of existing applications, and is possible the ideal system to meet the needs of the future.

### Magnification

Magnification is unaffected by insertion of intermediate attachments. The attachment of any intermediate tube has no effect on the final magnification. Image quality and uniformity of magnification between all observation methods is assured.

### Universal Objective Lenses

With a single universal objective lens, observations can be performed in fluorescence, polarized light, Nomarski DIC, phase contrast, darkfield and of course brightfield (U Plan Apo and U Plan Fluorite series).

With universal objectives, it is unnecessary to change the objectives when changing observation methods. This represents a significant advance in observation efficiency and can be an economical solution for customers who require many observation methods.

### Highest Resolution and Contrast

The highest image resolution and contrast have been achieved for all observation methods; brightfield, darkfield, fluorescence, polarized light, Nomarski DIC and phase contrast.

### Field Number 22 Eyepiece Lens

The field number of 10X eyepiece lenses have been increased from F.N. 20 to the new standard of F.N. 22. Total viewing area of the specimen has increased 21%, greatly improving observation efficiency.

### Full Aberration Correction in the Objective Lens

Chromatic aberration is completely corrected through the objective lens alone, independent from the eyepiece lens. This has eliminated the orange color fringe of the field periphery and allows the direct projection of corrected images with unmatched clarity.

LECO No.	Cat. #	Product Description
910-030-032	1-UN354	LMPLFL100XBD: Long-Working-Distance M Plan Fluorite 100X Dry Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.80, W.D. 3.30mm

### U M Plan Fluorite Brightfield/Darkfield Objectives

LECO No.	Cat. #	Product Description
910-030-033	1-UN522	UMPLFL5XBD: Universal Plan Fluorite 5X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.15, W.D. 12.00mm
910-030-034	1-UN523	UMPLFL10XBD: Universal Plan Fluorite 10X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.30, W.D. 6.50mm
910-030-035	1-UN525	UMPLFL20XBD: Universal Plan Fluorite 20X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5 N.A. 0.46, W.D. 3.00mm
910-030-036	1-UN530	UMPLFL50XBD: Universal Plan Fluorite 50X Brightfield/Darkfield Objective infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.80, W.D. 0.66mm, spring-loaded
910-030-037	1-UN534	UMPLFL100XBD: Universal Plan Fluorite 100X Dry Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.90, W.D. 0.31mm, spring-loaded

### Long-Working-Distance Achromat Brightfield/Darkfield Objectives

LECO No.	Cat. #	Product Description
—	1-UN958	LMPLAPO150XBD: Long-Working-Distance M Plan Achromat 150X Dry Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.90, W.D. 1.00mm, spring-loaded
910-030-038	1-UN959	LMPLAPO250XBD: Long-Working-Distance M Plan Achromat 250X Dry Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.90, W.D. 0.80mm, spring-loaded

### U M Plan Fluorite Polarizing Brightfield/Darkfield Objectives

LECO No.	Cat. #	Product Description
910-040-279	1-UR522	UMPLFL5XBDP: Universal Plan Fluorite 5X Reflected Light Brightfield/Darkfield Polarized Light Strain-Free Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.15, W.D. 12.00mm
910-040-237	1-UR523	UMPLFL10XBDP: Universal Plan Fluorite 10X Reflected Light Brightfield/Darkfield Polarized Light Strain-Free Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.25, W.D. 6.50mm
910-040-238	1-UR525	UMPLFL20XBDP: Universal Plan Fluorite 20X Reflected Light Brightfield/Darkfield Polarized Light Strain-Free Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.40, W.D. 3.00mm
910-040-239	1-UR530	UMPLFL50XBDP: Universal Plan Fluorite 50X Reflected Light Brightfield/Darkfield Polarized Light Strain-Free Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.75, W.D. 0.66mm, spring-loaded
910-040-240	1-UR534	UMPLFL100XBDP: Universal Plan Fluorite 100X Dry Reflected Light Brightfield/Darkfield Polarized Light Strain-Free Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.90, W.D. 0.31mm, spring-loaded

LECO No.	Cat. #	Product Description
910-030-021	1-UM530	UMPLFL50X: Universal Plan Fluorite 50X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.80, W.D. 0.66mm, spring-loaded
910-030-022	1-UM534	UMPLFL100X: Universal Plan Fluorite 100X Dry Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.95, W.D. 0.31mm, spring-loaded

## M Plan Apochromat Brightfield Objectives

LECO No.	Cat. #	Product Description
910-030-048	1-UM920	MPLAPO1.25X: M Plan Apochromat 1.25X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.04, W.D. 3.60mm; Parfocal with all other U.I.S. objectives; requires analyzer and polarizer for reflected light
910-030-049	1-UM921	MPLAPO2.5X: M Plan Apochromat 2.5X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.08, W.D. 11.30mm; Parfocal with all other U.I.S. objectives; requires analyzer and polarizer for reflected light
910-030-050	1-UM930	MPLAPO50X: M Plan Apochromat 50X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.95, W.D. 0.30mm, spring-loaded
—	1-UM931	MPLAPO60X: M Plan Apochromat 60X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.9, W.D. 0.40mm, spring-loaded
910-030-023	1-UM935	MPLAPO100XO: M Plan Apochromat 100X Oil Immersion Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 1.40, W.D. 0.08mm, spring-loaded

## Long-Working-Distance M Plan Apochromat Objectives

LECO No.	Cat. #	Product Description
—	1-UM958	LMPLAPO150X: Long-Working-Distance M Plan Apochromat 150X Dry Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.90, W.D. 1.0mm, spring-loaded
910-030-024	1-UM959	LMPLAPO250X: Long-Working-Distance M Plan Apochromat 250X Dry Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.90, W.D. 0.80mm, spring-loaded

## M Plan Achromat Brightfield/Darkfield Objectives

LECO No.	Cat. #	Product Description
910-030-025	1-UN222	MPL5XBD: M Plan Achromat 5X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 22, N.A. 0.10, W.D. 12.00mm
910-030-026	1-UN223	MPL10XBD: M Plan Achromat 10X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 22, N.A. 0.25, W.D. 6.50mm
910-030-027	1-UN225	MPL20XBD: M Plan Achromat 20X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 22, N.A. 0.40, W.D. 1.30mm, spring-loaded
910-030-028	1-UN230	MPL50XBD: M Plan Achromat 50X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 22, N.A. 0.75, W.D. 0.38mm, spring-loaded
910-030-029	1-UN234	MPL100XBD: M Plan Achromat 100X Dry Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 22, N.A. 0.90, W.D. 0.21mm, spring-loaded

## Long-Working-Distance M Plan Fluorite Brightfield/Darkfield Objectives

LECO No.	Cat. #	Product Description
910-030-030	1-UN345	LMPLFL20XBD: Long-Working-Distance M Plan Fluorite 209X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.40, W.D. 12.00mm
910-030-031	1-UN350	LMPLFL50XBD: Long-Working-Distance M Plan Fluorite 50X Brightfield/Darkfield Objective, infinity-corrected, NEO thread, F.N. 26.5, N.A. 0.50, W.D. 10.60mm

## Objective Series

### Plan Apochromat Series

Plan Apochromatic objectives achieve the highest resolution and contrast for transmitted light brightfield observation.

- Extremely high resolution, contrast and field flatness for ultra-low power (through 1.25X) and high power objectives (40X/60X/100X)
- Perfect chromatic correction
- Superwide field capability, F.N. 26.5

### U Plan Apochromat Series

Universal Plan Apochromatic objectives with very high fluorescence capability, characterized by the highest resolution, contrast and field flatness.

- High contrast observation of fluorescence images. High transmission efficiency for the visible and UV range
- Flawlessly corrected for chromatic aberration, U-PL APO objectives provide excellent performance in transmitted light brightfield, Nomarski DIC and incident light fluorescence applications
- Superb flatness over the entire superwide field of view F.N. 26.5

### U Plan Fluorite Series

Universal Plan Fluorite objectives for transmitted light brightfield, Nomarski DIC, phase contrast, polarized light and incident light fluorescence observations.

- Semi-apochromat design with superior correction of chromatic aberration
- High performance fluorescence observation, including UV excitation
- Superb image flatness over the entire superwide field for all observation methods
- High contrast Nomarski DIC observation
- High contrast phase images through a wide specimen thickness range
- Superwide field of view, F.N. 26.5

### Plan Achromat Series

Plan achromatic objective series for transmitted light brightfield observation providing excellent field flatness for clinical observations. Increased field size, F.N. 22.

- Excellent cost/performance ratio
- Outstanding field flatness
- Widefield, F.N. 22

### Achromat Series

Achromatic objective series for transmitted light brightfield and phase contrast observation in clinical and educational microscopy.

- Achromatic correction
- Outstanding cost performance
- Widefield, F.N. 22

## U Apochromat/340 UV Series

U Apochromatic/340 objectives achieve the highest transmission at 340 nm, resolution and contrast for UV fluorescence.

- Highest transmission in the UV range for Fura work or other UV fluorochromes
- Perfect Chromatic Correction
- Superwide field capability, F.N. 26.5

## Long-Working-Distance C Plan Fluorite Series

Long-Working-Distance C Plan Fluorite objectives optimize working distance with resolution and contrast for brightfield, Nomarski DIC, phase contrast and incident light fluorescence.

- Semi-apochromatic design with superior correction of chromatic aberration
- High performance fluorescence observation, including UV excitation
- Superb image flatness over the entire superwide field for all observation methods
- High contrast Nomarski DIC observation
- High contrast phase images through a wide range of specimen and container thickness
- Superwide field of view, F.N. 26.5

## Polarizing Achromat Series

Polarizing Achromat objectives for brightfield and polarized light observation for lab and educational polarizing microscopy.

- Totally strain-free
- Achromatic correction
- Outstanding cost performance
- Widefield F.N. 22

## Polarizing U Plan Fluorite Series

Polarizing U Plan Fluorite objectives for brightfield, polarizing, Nomarski DIC and incident light fluorescence observations. Recommended for research polarizing light.

- Totally strain-free
- Semi-apochromatic design with superior correction of chromatic aberration
- Superb image flatness over the entire superwide field
- Superwide field of view, F.N. 26.5

## M Plan Achromat Series

Plan Achromat objectives for reflected light. Two versions, one for brightfield only and one for brightfield and darkfield observations. Excellent flatness over entire field of view, F.N. 22.

- Excellent cost/performance ratio
- Outstanding field flatness
- Widefield, F.N. 22

LECO No.	Cat. #	Product Description
910-030-051	1-UM587	LUMPLFL40XW: 40X Long-Working-Distance Water Immersion Universal M Plan Fluorite objective, infinity-corrected, F.N. 26.5, N.A. 0.80, W.D. 3.3mm; Polybutylene Terephthalate coated front objective barrel, 43 degree access angle for manipulator microtool
910-050-035	1-UM592	LUMPLFL60XW: 60X Long-Working-Distance Water Immersion Universal M Plan Fluorite objective, infinity-corrected, F.N. 26.5, N.A. 0.90, W.D. 2.0mm; Polybutylene Terephthalate coated front objective barrel, 34.5 degree access angle for manipulator microtool

## INDUSTRIAL, REFLECTED LIGHT OBJECTIVES

### M Plan Achromat Brightfield Objectives

LECO No.	Cat. #	Product Description
910-030-010	1-UM222	MPL5X: M Plan Achromat 5X Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.10, W.D. 19.60mm
910-030-011	1-UM223	MPL10X: M Plan Achromat 10X Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.25, W.D. 10.60mm
910-030-012	1-UM225	MPL20X: M Plan Achromat 20X Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.40, W.D. 1.30mm, spring-loaded
910-030-013	1-UM230	MPL50X: M Plan Achromat 50X Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.75, W.D. 0.38mm, spring-loaded
910-030-014	1-UM234	MPL100X: M Plan Achromat 100X Dry Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.90, W.D. 0.21mm, spring-loaded

### Long-Working-Distance M Plan Fluorite Brightfield Objectives

LECO No.	Cat. #	Product Description
910-030-015	1-UM345	LMPLFL20X: Long-Working-Distance M Plan Fluorite 20X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.40, W.D. 12.00mm
910-030-016	1-UM350	LMPLFL50X: Long-Working-Distance M Plan Fluorite 50X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.50, W.D. 10.60mm
910-030-017	1-UM354	LMPLFL100X: Long-Working-Distance M Plan Fluorite 100X Dry Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.80, W.D. 3.40mm

### U M Plan Fluorite Brightfield Objectives

LECO No.	Cat. #	Product Description
910-030-018	1-UM522	UMPLFL5X: Universal Plan Fluorite 5X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.15, W.D. 20.00mm
910-030-019	1-UM523	UMPLFL10X: Universal Plan Fluorite 10X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.30, W.D. 10.10mm
910-030-020	1-UM525	UMPLFL20X: Universal Plan Fluorite 20X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.46, W.D. 3.10mm
910-040-199	1-UM527	UMPLFL40X: Universal Plan Fluorite 40X Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.75, W.D. 0.63mm, spring-loaded

## Phase Contrast Objectives - Plan Apochromat

LECO No.	Cat. #	Product Description
910-040-284	1-UC932	PLAPO60XOPH: 60X Plan Apochromat Oil Immersion "Universal" Phase Contrast Objective, infinity-corrected, F.N. 26.5, N.A. 1.40, W.D. 0.10mm, spring-loaded; for brightfield, phase contrast and high UV transmission fluorescence; for use with the IX-PH3 Phase Annulus with the IX-LWUCD Condenser and the U-PH3 Phase Annulus with the U-UCD (0.9 N.A.) Condenser

## Polarizing Objectives - Achromat

LECO No.	Cat. #	Product Description
910-040-266	1-UD123	ACH10XP: Achromat Flatfield 10X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.25, W.D. 6.10mm
910-040-267	1-UD125	ACH20XP: Achromat Flatfield 20X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.40, W.D. 3.00mm
910-040-268	1-UD127	ACH40XP: Achromat Flatfield 40X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.65, W.D. 0.45mm, spring-loaded
910-040-281	1-UD135	ACH100XP: Achromat Flatfield 100X Oil Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 1.25, W.D. 0.13mm, spring-loaded

## Polarizing Objectives - Plan

LECO No.	Cat. #	Product Description
910-040-269	1-UD222	PL4XP: Plan Achromat 4X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 22, N.A. 0.10, W.D. 22.00mm

## Polarizing Objectives - U Plan Fluorite

LECO No.	Cat. #	Product Description
910-040-283	1-UD522	UPLFL4XP: Universal Plan Fluorite 4X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.13, W.D. 13.00mm
910-040-234	1-UD523	UPLFL10XP: Universal Plan Fluorite 10X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.30, W.D. 3.10mm
910-040-235	1-UD525	UPLFL20XP: Universal Plan Fluorite 20X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.50, W.D. 1.60mm, spring-loaded
910-040-236	1-UD527	UPLFL40XP: Universal Plan Fluorite 40X Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 0.75, W.D. 0.51mm, spring-loaded
910-040-286	1-UD535	UPLFL100XP: Universal Plan Fluorite 100X Oil Polarized Light Strain-Free Objective, infinity-corrected, RMS thread, F.N. 26.5, N.A. 1.30, W.D. 0.10mm, spring-loaded

## Water Immersion Objectives

LECO No.	Cat. #	Product Description
910-050-043	1-UM583	UMPLFL10XW: 10X Water Immersion Universal M Plan Fluorite objective, infinity-corrected, F.N. 26.5, N.A. 0.30, W.D. 3.3mm; Polybutylene Terephthalate coated front objective barrel, 44 degree access angle for manipulator microtool
910-050-044	1-UM585	UMPLFL20XW: 20X Water Immersion Universal M Plan Fluorite Objective, infinity-corrected, F.N. 26.5, N.A. 0.50, W.D. 3.3mm; Polybutylene Terephthalate coated front objective barrel, 44 degree access angle for manipulator microtool

## Long-Working-Distance M Plan Fluorite Series

Long-Working-Distance M Plan Fluorite objectives for reflected light. Two versions, one for brightfield only and one for brightfield and darkfield. They optimize working distance with resolution and contrast for brightfield, Nomarski DIC, polarized light and darkfield in darkfield version.

- Semi-apochromatic design with superior correction of chromatic aberration
- Superb image flatness over the entire superwide field for all observation methods
- High contrast Nomarski DIC observation
- Superwide field of view, F.N. 26.5

## M Plan Fluorite Series

M Plan Fluorite objectives for reflected light. Two versions, one for brightfield only and one for brightfield and darkfield. They achieve superior resolution and contrast for brightfield, Nomarski DIC, polarized light and darkfield in the darkfield version.

- Semi-apochromatic design with superior correction of chromatic aberration
- Superb image flatness over the entire superwide field for all observation methods
- High contrast Nomarski DIC observation
- Superwide field of view, F.N. 26.5

## M Plan Apochromat Series

M Plan Apochromat objectives achieve the highest resolution and contrast for reflected light brightfield observation.

- Extremely high resolution, contrast and field flatness for ultra low (through 1.25X) and high power objectives (50X/60X/100X)
- Perfect chromatic correction
- Superwide field capability, F.N. 26.5

## Polarizing U M Plan Fluorite Series

Polarizing U M Plan Fluorite objectives for reflected light polarized light, brightfield, Nomarski DIC and darkfield observations.

- Totally strain-free
- Semi-apochromatic design with superior correction of chromatic aberration
- Superb image flatness over the entire superwide field
- Superwide field of view, F.N. 26.5

## Water Immersion U M Plan Fluorite Series

Water immersion U M Plan Fluorite objectives for transmitted light brightfield, Nomarski DIC, and incident light fluorescence in electrophysiology and other applications with micromanipulators.

- Semi-apochromatic design with superior correction of chromatic aberration
- Working distance of 3.30mm and access angle of 43 degrees that allows sufficient room for microinjection and microprobes
- Teflon coated front objective barrels to be inert towards buffers and other solutions
- Superwide field of view, F.N. 26.5

## Achromat Objectives

LECO No.	Cat. #	Product Description
910-040-003	1-UB123	ACH10X: 10X Achromat Flatfield Objective, infinity-corrected, F.N. 22, N.A. 0.25, W.D. 6.10mm
910-040-004	1-UB125	ACH20X: 20X Achromat Flatfield Objective, infinity-corrected, F.N. 22, N.A. 0.40, W.D. 3.00mm
910-040-005	1-UB127	ACH40X: 40X Achromat Flatfield Objective, infinity-corrected, F.N. 22, N.A. 0.65, W.D. 0.45mm, spring-loaded
910-040-006	1-UB131	ACH60X: 60X Achromat Flatfield Dry Objective, infinity-corrected, F.N. 22, N.A. 0.80, W.D. 0.15mm, spring-loaded
910-040-007	1-UB135	ACH100XO: 100X Achromat Flatfield Oil Immersion Objective, infinity-corrected, F.N. 22, N.A. 1.25, W.D. 0.13mm, spring-loaded
910-040-198	1-UB136	ACH100XOI: Achromat Flatfield 100X Oil Objective with Iris, infinity-corrected, F.N. 22, N.A. variable from 0.55 to 1.25, W.D. 0.13mm, spring-loaded

## Plan Achromat Objectives

LECO No.	Cat. #	Product Description
910-040-265	1-UB221	PL2X: 2X Plan Achromat Objective, infinity-corrected, F.N. 22, N.A. 0.05, W.D. 5.00mm
910-040-008	1-UB222	PL4X: 4X Plan Achromat Objective, infinity-corrected, F.N. 22, N.A. 0.10, W.D. 22.00mm
910-040-009	1-UB223	PL10X: 10X Plan Achromat Objective, infinity-corrected, F.N. 22, N.A. 0.25, W.D. 10.50mm
910-040-010	1-UB225	PL20X: 20X Plan Achromat Objective, infinity-corrected, F.N. 22, N.A. 0.40, W.D. 1.20mm, spring-loaded
910-040-011	1-UB227	PL40X: 40X Plan Achromat Objective, infinity-corrected, F.N. 22, N.A. 0.65, W.D. 0.56mm, spring-loaded
910-040-012	1-UB230	PL50XOI: 50X Plan Achromat Oil Immersion Objective with Iris, infinity-corrected, F.N. 22, N.A. variable from 0.90 to 0.50, W.D. 0.20mm, spring-loaded
910-040-013	1-UB235	PL100XO: 100X Plan Achromat Oil Immersion Objective, infinity-corrected, F.N. 22, N.A. 1.25, W.D. 0.15mm, spring-loaded

## Plan Apochromat Objectives

LECO No.	Cat. #	Product Description
910-050-033	1-UB920	PLAPO1.25X: Plan Apochromat 1.25X Objective, infinity-corrected, F.N. 26.5, N.A. 0.04, W.D. 5.10mm; Parfocal with all other U.I.S. objectives
910-050-008	1-UB921	PLAPO2X: 2X Plan Apochromat Objective, infinity-corrected, F.N. 26.5, N.A. 0.08, W.D. 6.20mm; Parfocal with the 1.25X and all higher magnification objectives
910-050-009	1-UB927	PLAPO40X: 40X Plan Apochromat Dry Objective, infinity-corrected, F.N. 26.5, N.A. 0.95, W.D. 0.13mm, spring-loaded, correction collar
910-050-010	1-UB932	PLAPO60XO: 60X Plan Apochromat Oil Immersion Objective, infinity-corrected, F.N. 26.5, N.A. 1.40, W.D. 0.10mm, spring-loaded
910-050-011	1-UB935	PLAPO100XO: 100X Plan Apochromat Oil Immersion Objective, infinity-corrected, F.N. 26.5, N.A. 1.40, W.D. 0.10mm, spring-loaded

910-040-021	1-UC523	UPLFL10XPH: 10X U Plan Fluorite Phase Contrast "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.30, W.D. 10.00mm; for brightfield, darkfield, phase contrast, Nomarski DIC, polarization and high UV transmission fluorescence; for use with PH1 Phase Annulus
910-040-022	1-UC525	UPLFL20XPH: 20X U Plan Fluorite Phase Contrast "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.50, W.D. 1.60mm, spring-loaded; for brightfield, darkfield, phase contrast, Nomarski DIC, polarization and high UV transmission fluorescence; for use with PH1 Phase Annulus
910-040-023	1-UC527	UPLFL40XPH: 40X U Plan Fluorite Phase Contrast "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.75, W.D. 0.51mm, spring-loaded; for brightfield, darkfield, phase contrast, Nomarski DIC, polarization and high UV transmission fluorescence; for use with PH2 Phase Annulus
910-040-024	1-UC535	UPLFL100XOPH: 100X U Plan Fluorite Phase Contrast Oil Immersion "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 1.30, W.D. 0.10mm, spring-loaded; for brightfield, phase contrast, Nomarski DIC, polarization and high UV transmission fluorescence; for use with PH3 Phase Annulus

## Phase Contrast Objectives - U Plan Apochromat

LECO No.	Cat. #	Product Description
—	1-UC823	UPLAPO10XPH: 10X U Plan Apochromat "Universal" Phase Contrast Objective, infinity-corrected, F.N. 26.5, N.A. 0.40, W.D. 3.10mm; for brightfield, darkfield, phase contrast, and high UV transmission fluorescence; for use with the IX-PH1U Phase Annulus with the IX-ULWCD Condenser, the IX-PH1 Phase Annulus with the IX-LWUCD Condenser and the U-PH1 Phase Annulus with the U-UCD (0.9 N.A.) Condenser
910-040-274	1-UC825	UPLAPO20XPH: 20X U Plan Apochromat Dry "Universal" Phase Contrast Objective, infinity-corrected, F.N. 26.5, N.A. 0.70, W.D. 0.65mm, spring-loaded; for brightfield, darkfield, phase contrast and high UV transmission fluorescence; for use with the PH2 Phase Annulus included with the IX-ULWCD Condenser, the IX-PH2 Phase Annulus with the IX-LWUCD Condenser and the U-PH2 Phase Annulus with the U-UCD (0.9 N.A.) Condenser
910-040-272	1-UC828	UPLAPO40XOIPH: 40X U Plan Apochromat Oil Immersion "Universal" Phase Contrast Objective with Iris, infinity-corrected, F.N. 26.5, N.A. variable from 1.00 to 0.50, W.D. 0.12mm, spring-loaded; for brightfield, darkfield, phase contrast and high UV transmission fluorescence; for use with the IX-PH3 Phase Annulus for the IX-LWUCD Condenser and the U-PH3 Phase Annulus with the U-UCD (0.9 N.A.) Condenser
910-040-273	1-UC836	UPLAPO100XOIPH: 100X U Plan Apochromat Oil Immersion "Universal" Phase Contrast Objective with Iris, infinity-corrected, F.N. 26.5, N.A. variable from 1.35 to 0.50, W.D. 0.10mm, spring-loaded; for brightfield, darkfield, phase contrast and high UV transmission fluorescence; for use with the IX-PH3 Phase Annulus with the IX-LWUCD Condenser and the U-PH3 Phase Annulus with the U-UCD (0.9 N.A.) Condenser

## Phase Contrast Objectives - C Plan Fluorite

LECO No.	Cat. #	Product Description
910-003-192	1-UC543	CPLFL10XPHC: 10X C Plan Fluorite Phase Contrast Objective with unique phase plate for Multi-Well Tissue Culture applications, infinity-corrected, F.N. 26.5, N.A. 0.30, W.D. 9.5mm; for brightfield, phase contrast, Nomarski DIC, polarization and fluorescence; for use with the IX-PHCU Phase Annulus with the IX-ULWCD Condenser, the IX-PHC Phase Annulus with the IX-LWUCD Condenser and the PHC Phase Annulus with the IX-SLWCD Condenser

## Phase Contrast Objectives - Long-Working-Distance C Plan Fluorite

LECO No.	Cat. #	Product Description
910-003-189	1-UC345	LCPLFL20XPH: 20X Long-Working-Distance, infinity-corrected C Plan Fluorite Phase Contrast Objective with correction collar to adjust for vessel thickness $\pm 0.5$ mm, includes correction cap for plastic thickness of 1.1mm, F.N. 22, N.A. 0.40, W.D. 6.75 to 7.55mm; additional correction caps available for plastic thickness of 0.5mm and 2mm and glass thickness of 0.5mm, 1.2mm and 2mm; for phase contrast, brightfield, Nomarski DIC and visible light fluorescence; for use with the IX-PH1U Phase Annulus with the IX-ULWCD Condenser, the IX-PH1 Phase Annulus with the IX-LWUCD Condenser and the U-PH1 Phase Annulus with the U-UCD (0.9 N.A.) Condenser
910-003-190	1-UC347	LCPLFL40XPH: 40X Long-Working-Distance, infinity-corrected C Plan Fluorite Phase Contrast Objective with correction collar to adjust for vessel thickness $\pm 0.5$ mm, includes a correction cap for plastic thickness of 1.1mm, F.N. 22, N.A. 0.60, W.D. 2.15 to 2.89mm; additional correction caps available for plastic thickness of 0.5mm and 2mm and glass thickness of 0.5mm, 1.2mm and 2mm; for phase contrast, brightfield, Nomarski DIC and visible light fluorescence; for use with the PH2U Annulus included with the IX-ULWCD Condenser, the IX-PH2 Phase Annulus with the IX-LWUCD Condenser and the U-PH2 Phase Annulus with the U-UCD (0.9 N.A.) Condenser
910-003-191	1-UC351	LCPLFL60XPH: 60X Long-Working-Distance, infinity-corrected C Plan Fluorite Phase Contrast Objective with correction collar to adjust for vessel thickness $\pm 0.5$ mm, includes a correction cap for plastic thickness of 1.1mm, F.N. 22, N.A. 0.70, W.D. 1.1 to 1.89mm; for phase contrast, brightfield, Nomarski DIC and visible fluorescence; additional correction caps available for plastic thickness of 0.5mm and 2mm and glass thickness of 0.5mm, 1.2mm and 2mm; for use with the PH2U Phase Annulus included with the IX-ULWCD Condenser, the IX-PH2 Phase Annulus with the IX-LWUCD Condenser and the U-PH2 Phase Annulus with the U-UCD (0.9 N.A.) Condenser

## Phase Contrast Objectives - U Plan Fluorite

LECO No.	Cat. #	Product Description
910-040-020	1-UC522	UPLFL4XPH: 4X U Plan Fluorite Phase Contrast "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.13, W.D. 17.00mm; for brightfield, phase contrast, polarization and high UV transmission fluorescence; for use with the PHLU Phase Annulus included with the IX-ULWCD Condenser, the IX-PHL included with the IX-LWUCD Condenser and the PHL Phase Annulus included with the IX-SLWCD Condenser

## Universal Plan Fluorite Objectives

LECO No.	Cat. #	Product Description
910-040-014	1-UB522	UPLFL4X: 4X U Plan Fluorite "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.13, W.D. 17.00mm; for brightfield, polarization and high UV transmission fluorescence
910-040-015	1-UB523	UPLFL10X: 10X Plan Fluorite "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.30, W.D. 10.00mm; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-040-016	1-UB525	UPLFL20X: 20X U Plan Fluorite "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.50, W.D. 1.60mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-040-017	1-UB527	UPLFL40X: 40X U Plan Fluorite Dry "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.75, W.D. 0.51mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-040-280	1-UB532	UPLFL60XOI: 60X U Plan Fluorite Oil/Iris "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 1.25, W.D. 0.10mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-040-018	1-UB535	UPLFL100XO: 100X U Plan Fluorite Oil Immersion "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 1.30, W.D. 0.10mm, spring-loaded; for brightfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-040-019	1-UB536	UPLFL100XOI: 100X U Plan Fluorite Oil Immersion "Universal" Objective with Iris, infinity-corrected, F.N. 26.5, N.A. variable from 1.30 to 0.60, W.D. 0.10mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence

## Universal Plan Achromat Objectives

LECO No.	Cat. #	Product Description
910-050-002	1-UB822	UPLAPO4X: 4X U Plan Achromat "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.16, W.D. 13.00mm; for brightfield, polarization and high UV transmission fluorescence
910-050-003	1-UB823	UPLAPO10X: 10X U Plan Achromat "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.40, W.D. 3.10mm; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-050-004	1-UB825	UPLAPO20X: 20X U Plan Achromat Dry "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.70, W.D. 0.65mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-050-061	1-UB826	UPLAPO20XO: 20X U Plan Achromat Oil "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.80, W.D. 0.19mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-050-005	1-UB827	UPLAPO40X: 40X U Plan Achromat Dry "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.85, W.D. 0.20mm, correction collar, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-050-006	1-UB828	UPLAPO40XOI: 40X U Plan Apochromat Oil Immersion "Universal" Objective with Iris, infinity-corrected, F.N. 26.5, N.A. variable from 1.0 to 0.5, W.D. 0.12mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-050-007	1-UB836	UPLAPO100XOI: 100X U Plan Apochromat Oil Immersion "Universal" Objective with Iris, infinity-corrected, F.N. 26.5, N.A. variable from 1.35 to 0.50, W.D. 0.10mm, spring-loaded; for brightfield, darkfield, Nomarski DIC, polarization and high UV transmission fluorescence
910-003-185	1-UB891	UPLAPO60XW/PSF: 60X U Plan Apochromat Water Immersion Objective, infinity-corrected, F.N. 26.5, N.A. 1.2, W.D. 0.25mm, spring-loaded; for brightfield, Nomarski DIC, polarization and high UV fluorescence

## U Apochromat/340 UV Objectives

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-003-182	1-UB765	UAPO20X/340: 20X U Apochromat "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.75, W.D. 0.55mm; for brightfield, polarization and high 340nm transmission fluorescence
910-003-183	1-UB767	UAPO40X/340: 40X U Apochromat, "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. 0.90, W.D. 0.20mm; for brightfield, polarization and high 340nm transmission fluorescence
910-003-184	1-UB768	UAPO40XOI/340: 40X Oil/Iris U Apochromat, "Universal" Objective, infinity-corrected, F.N. 26.5, N.A. variable from 0.65 to 1.35, W.D. 0.10mm; for brightfield, polarization and high 340nm transmission fluorescence

## Long-Working-Distance C Plan Fluorite Objectives

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-003-179	1-UB345	LCPLFL20X: 20X Long-Working-Distance infinity-corrected C Plan Fluorite Objective with correction collar to adjust for vessel thickness $\pm 0.5$ mm; includes correction cap for glass thickness of 1.2mm, F.N. 22, N.A. 0.40, W.D. 6.75 to 7.55mm; additional correction caps available for 0.5mm and 2mm glass thickness and 0.5mm, 1.1mm and 2mm plastic thickness; for brightfield, Nomarski DIC and visible light fluorescence
910-003-180	1-UB347	LCPLFL40X: 40X Long-Working-Distance infinity-corrected C Plan Fluorite Objective with correction collar to adjust for vessel thickness $\pm 0.5$ mm; includes a cap corrected for glass thickness of 1.2mm, F.N. 22, N.A. 0.60, W.D. 2.15 to 2.89mm; additional correction caps available for glass thickness of 0.5mm and 2mm and plastic thickness of 0.5mm, 1.1mm and 2mm; for brightfield, Nomarski DIC and visible light fluorescence
910-003-181	1-UB351	LCPLFL60X: 60X Long-Working-Distance infinity-corrected C Plan Fluorite Objective with correction collar to adjust the vessel thickness $\pm 0.5$ mm; includes a cap corrected for glass thickness of 1.2mm, F.N. 22, N.A. 0.70, W.D. 1.1 to 1.89mm; additional correction caps available for glass thickness of 0.5mm and 2mm and plastic thickness of 0.5mm, 1.1mm and 2mm; for brightfield, Nomarski DIC and visible light fluorescence

## Phase Contrast Objectives - Achromat

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-050-012	1-UC123	ACH10XPH: 10X Achromat Flatfield Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.25, W.D. 6.10mm; for use with PH1 Phase Annulus
910-050-013	1-UC125	ACH20XPH: 20X Achromat Flatfield Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.40, W.D. 3.00mm; for use with PH1 Phase Annulus
910-050-014	1-UC127	ACH40XPH: 40X Achromat Flatfield Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.65, W.D. 0.45mm, spring-loaded; for use with PH2 Phase Annulus
910-050-015	1-UC135	ACH100XOPH: 100X Achromat Flatfield Phase Contrast Oil Immersion Objective, infinity-corrected, F.N. 22, N.A. 1.25, W.D. 0.13mm, spring-loaded; for use with PH3 Phase Annulus

## Phase Contrast Objectives - Plan Achromat

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-040-183	1-UC223	PL10XPH: Plan Achromat 10X Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.25, W.D. 10.50mm; for use with PH1 Phase Annulus
910-040-184	1-UC225	PL20XPH: Plan Achromat 20X Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.40, W.D. 1.20mm, spring-loaded; for use with PH1 Phase Annulus
910-040-185	1-UC227	PL40XPH: Plan Achromat 40X Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 0.65, W.D. 0.56mm, spring-loaded; for use with PH2 Phase Annulus
910-040-186	1-UC235	PL100XPH: Plan Achromat 100X Oil Phase Contrast Objective, infinity-corrected, F.N. 22, N.A. 1.25, W.D. 0.15mm, spring-loaded; for use with PH3 Phase Annulus

## Phase Contrast Objectives - Long-Working-Distance C Achromat

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-003-186	1-UC145	LCACH20XPHC: 20X Long-Working-Distance C Achromat Flatfield Phase Contrast Objective with unique phase plate for Multi-Well Tissue Culture applications, infinity-corrected, F.N. 22, N.A. 0.40, W.D. 3.20mm; for use with the IX-PHCU Phase Annulus with the IX-ULWCD Condenser, the IX-PHC Phase Annulus with the IX-LWUCD Condenser and the PHC Phase Annulus included with the IX-SLWCD
910-003-187	1-UC147	LCACH40XPH: 40X Long-Working-Distance C Achromat Flatfield Phase Contrast Objective with unique phase plate for Multi-Well Tissue Culture applications, infinity-corrected, F.N. 22, N.A. 0.55, W.D. 1.20mm; for use with the PH2U Phase Annulus included with the IX-ULWCD Condenser, the IX-PH2 Phase Annulus with the IX-LWUCD Condenser, the IX-PH2 Phase Annulus with the IX-LWUCD Condenser and the U-PH2 Phase Annulus with the U-UCD (N.A. 0.9) Condenser

## Phase Contrast Objectives - C Plan Achromat

<i>LECO No.</i>	<i>Cat. #</i>	<i>Product Description</i>
910-003-188	1-UC243	CPL10XPHC: 10X C Plan Achromat Phase Contrast Objective with unique phase plate for Multi-Well Tissue Culture applications, infinity-corrected, F.N. 22, N.A. 0.25, W.D. 9.80mm; for use with the IX-PHCU Phase Annulus with the IX-ULWCD Condenser, the IX-PHC Phase Annulus with the IX-LWUCD Condenser and the PHC Phase Annulus included with the IX-SLWCD