LW Scientific, Inc.

Microscopes

Technical Terms and Features

Objectives

Achromatic -	Color corrected (without color) (physician & vet)	80-85% flat field of focus	**Rev 3A**
Semi Plan -	Better quality achromatic lenses (physician & vet)	90-95% flat field of focus	**Rev 3S / M2S**
Plan -	Best lenses available (laboratory)	100% flat field of focus	**M-Series**

100XR Oil - R is for retractable, and oil is required between slide and objective for high magnification. (Air refracts the light and loses image clarity)

DIN - Deutsch Industrie Norm, 160mm tube length between eyepieces and objectives. Standard size for parfocality. Interchangeable with other brands. Most LWS microscopes have DIN objectives.

Infinity - Advanced optics for laboratory applications…few manufacturers have it. Infinity microscopes have tube length longer than 160mm. Parallel optical path out of objective (not diverging) gives better clarity and allows for adding components below head. Infinity option is available on M-Series LabScope.

Parfocal - Specimen remains in focus as you switch between objective powers. Only a small fine adjustment is necessary when switching magnification. All LWS microscopes are parfocal.

Head

Seidentopf - Two eyetubes move apart like binoculars for interpupilary adjustment (width of eyes). All LWS binocular microscopes are Seidentopf.

Sliding - Two eyetubes slide outward for interpupilary adjustment. (available for Revelations)

Oculars - Another name for eyepieces. LWS microscopes include 10x oculars…16x available.

Monocular - One eye tube. All LWS microscopes are available with monoc. heads.

Binocular - Two eye tubes. Our Revelation 3 series and M-Series LabScopes come standard as binocular scopes.

Trinocular - Third tube for observation or photo. Available on all Revelations and M-Series LabScope.

Dual Binoc - Teaching scope with one binocular head facing front and one facing rear. Revelation only.

Diopter Adj. - Allows one eyepiece to be moved inward to compensate for eye focus.

Interpupillary Adjustment for width of eyes…all Revelations are 55-75mm, M-Series LabScope is 50-75mm.

Compound - Traditional type of microscope with objectives, used to look at glass slides at magnifications between 20x to 1500x. Observer, Revelation, and M-Series are compound microscopes.

Stereo - Microscopes that use paired objectives to create 3-D images of small objects at magnifications between 5x to 200x. Achiever, Paragon, Vision, and Z2 Zoom are stereo microscopes.

Nosepiece - 3, 4, or 5 position (holds 3, 4, or 5 objectives), rotates on ball bearing, forward-facing is common type (as on Rev III), and rear-facing allows easier access to slide (M-Series).

Focus - Coaxial (common type) means both coarse and fine are on same shaft (all Rev and M-Series). All LWS microscopes use all metal rack & pinion gearing for long life. Friction adjustment (torque) and adjustable stage stop are standard on all LWS scopes.

Condenser - Focuses light upward and inward toward specimen. All LWS scopes have moveable Abbe condensers (glass lens) with 1.25 numerical aperture and iris diaphragm for continuous light adjustment. Also known as “bright field” condenser.

Dark Field - Special condenser which brings light around subject from sides (dark in the middle). Available on all Revelations and M-Series LabScope.

Phase Contrast - Alters path of light for looking at crystals or live bacteria. Kit includes Phase objective, Phase condenser, and centering eyepiece. The condenser and objective must be matched magnifications (10x, 40x, or 100x). Available on all Revelations and M-Series LabScope.

Turret Condenser M-Series LabScope is available with a turret condenser that easily rotates between brightfield, darkfield, 10x phase, 40x phase, and 100x phase.

Polarization - Used for geology or to diagnose arthritis. Kits are available for all LWS microscopes.

Light Source - Variable halogen 12-volt 20-watt light sources are available on all LWS binocular scopes. The Revelation III will also accept 12 volt DC battery power for field use (special order). Koehler illumination is option for M2 LabScope, allowing for lighting alignment.

Filters - Used for contrast – blue is most common. Filters are included with all compound scopes.

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Parts of a Microscope