

## Microscope Objectives

Microscope objectives are a key component of a microscope that are used to magnify and resolve the specimen being viewed. They are typically located near the bottom of the microscope's body tube and consist of a series of lenses that are carefully designed to achieve specific magnification levels and optical properties.

Each objective has a different magnification power, ranging from low magnification (2x-10x) to high magnification (40x-100x or more), and can be interchanged to suit the user's needs. The magnification power of an objective lens is usually indicated by a number printed on its casing, known as the "numerical aperture" (NA).

Higher numerical aperture lenses typically have a higher magnification and a narrower field of view, while lower numerical aperture lenses have a wider field of view and lower magnification. Objective lenses can also be designed for specific types of microscopy, such as phase contrast or fluorescence microscopy, depending on the intended application.

## E-Plan IOS Objectives

E-Plan IOS objectives are commonly used in a variety of biological and medical imaging applications, such as in the examination of cell cultures or tissue sections. They are particularly well-suited for imaging large, flat specimens, as the flat field of view ensures that the entire sample is in focus.

The E-Plan IOS is a type of infinity-corrected objective lens that has a flat field of view and a high numerical aperture (NA). The "IOS" in the name stands for "infinity optical system," which means that it is designed to work with an infinity-corrected microscope, which allows for additional optical components to be added to the system without affecting the image quality.

The "E" in E-Plan stands for "excellent," which reflects the high quality of this objective lens. The flat field of view means that the entire image is in focus, even at the edges of the field of view. The high NA allows for high-resolution imaging with good contrast, particularly in low light conditions.

## Plan IOS Objectives

Plan IOS objectives are a type of microscope objective lens that is commonly used in high-quality research and medical microscopes. "Plan" refers to the fact that these objectives have been designed with a flat field of view, meaning that the image appears sharp and in focus across the entire field of view.

"IOS" stands for "Infinity Optical System," which refers to the design of the microscope system that uses infinity-corrected optics. With this system, the objective lens is designed to produce an intermediate image at infinity, which allows other components of the microscope to manipulate and adjust the image without interfering with the quality.

Plan IOS objectives are commonly used in applications where high resolution and clarity are required, such as in medical research, metallurgical analysis, and materials science. They offer a high degree of chromatic and spherical aberration correction, which helps to produce clear, accurate images even at high magnifications.

Plan IOS objectives are available in a variety of magnifications and numerical apertures, which determine the amount of light that can be collected and the resolving power of the lens. They are often used in conjunction with other high-quality microscope components, such as fluorescence filters, to produce detailed and accurate images.

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## Plan Phase IOS Objectives

Plan Phase IOS objectives are a type of microscope objective lens that combines the benefits of plan and phase contrast microscopy. Like Plan IOS objectives, they are designed to produce a flat field of view and use infinity-corrected optics to produce high-resolution, high-contrast images.

In addition, Plan Phase IOS objectives include a phase plate that introduces a phase shift to the light passing through the specimen. This phase shift allows for the visualization of transparent or semi-transparent specimens, such as living cells, that would otherwise be difficult to see with traditional brightfield microscopy.

Plan Phase IOS objectives are commonly used in biological and medical research, as well as in clinical settings, for the examination of biological specimens that are difficult to see with traditional brightfield microscopy. They can be used to visualize cells, bacteria, and other microorganisms in real-time and in their natural state, without the need for staining or other sample preparation techniques.

Plan Phase IOS objectives are available in a variety of magnifications and numerical apertures, and can be used in combination with other high-quality microscope components, such as fluorescence filters, to produce detailed and accurate images.

## Plan PH IOS Objectives

Plan PH IOS objectives are a type of microscope objective lens that combines the benefits of plan and phase contrast microscopy with the ability to observe fluorescent samples. "Plan" refers to the flat field of view provided by the lens, and "IOS" stands for infinity-corrected optical system, which allows for the manipulation and adjustment of the image without sacrificing quality.

"PH" stands for phase contrast and fluorescence, which means that the lens is capable of both phase contrast and fluorescence microscopy. This is achieved through the use of a phase ring and a filter cube that allows the observer to switch between phase contrast and fluorescence modes.

Plan PH IOS objectives are commonly used in medical and biological research, as well as in clinical settings, for the examination of biological specimens that require both phase contrast and fluorescence imaging. They are particularly useful for the observation of living cells, bacteria, and other microorganisms in real-time and in their natural state, as they allow for the visualization of both structural and functional information simultaneously.

Plan PH IOS objectives are available in a range of magnifications and numerical apertures, and are often used in conjunction with other high-quality microscope components, such as high-resolution cameras, to produce detailed and accurate images.

## Plan Achromatic Objectives

Plan Achromatic objectives are a type of microscope objective lens that is commonly used in research and clinical settings for high-quality imaging of biological specimens. "Plan" refers to the fact that these objectives have a flat field of view, meaning that the image appears sharp and in focus across the entire field of view. "Achromatic" refers to the lens's ability to produce images with little or no chromatic aberration, meaning that colors are not distorted or blurred.

Plan Achromatic objectives are designed to produce high-quality images with high contrast and resolution, even at high magnifications. They are often used for observing biological specimens, such as tissue samples or microorganisms, and are particularly useful for applications where accurate color reproduction is important.

Plan Achromatic objectives are available in a range of magnifications and numerical apertures, and can be used in conjunction with other high-quality microscope components, such as filters and cameras, to produce detailed and accurate images. They are commonly used in research and clinical settings for a variety of applications, including pathology, hematology, and microbiology.

## Plan PLPOLRI IOS Objectives

Plan PLPOLRI IOS objectives are a type of microscope objective lens that combines the benefits of polarized light microscopy and infinity-corrected optics. "Plan" refers to the flat field of view provided by the lens, while "IOS" stands for infinity-corrected optical system, which allows for the manipulation and adjustment of the image without sacrificing quality.

"PLPOLRI" refers to the fact that these objectives are designed for polarized light microscopy, which is a technique used to observe the birefringent properties of materials. Birefringence occurs when light passes through certain materials, such as crystals or biological tissues, causing the light waves to split into two perpendicular waves with different refractive indices. This can be visualized using polarized light microscopy, which uses polarizers to selectively block or pass polarized light waves.

Plan PLPOLRI IOS objectives are commonly used in materials science, geology, and biology for the observation of materials with birefringent properties. They are particularly useful for the observation of minerals, fibers, and biological tissues, and can provide detailed information about the material's optical properties.

Plan PLPOLRI IOS objectives are available in a range of magnifications and numerical apertures and can be used in conjunction with other high-quality microscope components, such as polarizers and compensators, to produce detailed and accurate images of birefringent materials.

## Plan Fluarex IOS Objectives

Plan Fluarex IOS objectives are a type of microscope objective lens that combines the benefits of infinity-corrected optics and fluorescence microscopy. "Plan" refers to the flat field of view provided by the lens, while "IOS" stands for infinity-corrected optical system, which allows for the manipulation and adjustment of the image without sacrificing quality.

"Fluarex" refers to the fact that these objectives are designed for fluorescence microscopy, which is a technique used to observe fluorescent materials. Fluorescent materials absorb light at one wavelength and emit light at a longer wavelength, which can be visualized using fluorescence microscopy.

Plan Fluarex IOS objectives are commonly used in biological and medical research for the observation of fluorescently-labeled samples. They are particularly useful for the observation of living cells and tissues, as they allow for the visualization of specific molecules and structures within the sample.

Plan Fluarex IOS objectives are available in a range of magnifications and numerical apertures and can be used in conjunction with other high-quality microscope components, such as filter cubes and high-resolution cameras, to produce detailed and accurate images of fluorescent samples. They are an important tool in the study of cellular processes and the development of new therapies for diseases.