Light Source

Compound microscopes used at college/university levels are equipped with either tungsten-halogen (20W-30W) or LED (3W/5W) illumination. Both illumination systems are recommended and suggested for college/university and professional level instruction. Each lighting system allows for adjustments and control of light intensity, ensuring capabilities for a variety of different contrast techniques essential for microscopy.

30W tungsten-halogen and 5W LED Illumination systems both provide powerful light sources. They emit bright, sharp lighting and help to provide the precise, detailed and accurate clarity required for microscopy.

Why Choose 3W/5W LED Over tungsten-halogen?

Unlike tungsten-halogen illumination systems, LED lighting maintains a clear and crisp white light that is cool-to-touch and run at a significantly lower temperature. This prevents damage, not only to the slides and specimens being viewed, but also to the internal parts of the microscope. These parts can be damaged over time due to excessive heat emitted from the older traditional illumination systems, like tungsten-halogen. With their high efficiency, long service life, and low operating costs, LED systems have quickly become the ideal choice for microscope illumination.

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LED Illumination provides a natural, cool, white light with a lighting output of 6500K or greater providing light that is similar to daylight. LED Illumination runs silently and is flicker and vibration free. LED are also insensitive to voltage fluctuation.

Did You Know?

Bigger Isn’t Necessarily Better

Small wattage does not necessarily mean lower brightness. A 5W LED is equivalent to a 30W tungsten-halogen lamp. Both are amongst some of the most powerful light sources available for compound microscopes.

Applications for Halogen Illumination

Despite the many advantages of LED Illumination, there are still several applications where halogen illumination is recommended. For example, some metal samples are much easier to view with halogen illumination, as standard LEDs are often to bright. Due to the fact that the Color Refracting Index is better in halogen than that of LEDs, halogen illumination may also offer advantages in forensics. In applications requiring infrared light or the measurement of color spectra, halogen or xenon lamps are suggested.

Lastly, for metallurgical and polarizing, halogen illumination is also required, as it provides a better image quality.