B+W 486 UV-IR Cut Filter

The special B+W 486 filter blocks undesirable ultraviolet and infrared rays that may interfere with the image. The filter can therefore be used for **video films**, **digital photography** and **special technical applications**.

It leads to sharpener and clearer images, since without the filter so-called ghost images caused by **IR radiation** and the **relatively high sensitivity of the camera sensors** in this bandwidth have a negative influence on image sharpness. Further positive characteristics are greater detail, three-dimensional quality and finer color gradation. The colors appear more natural.

How does a complex filter such as the 486-type UV-IR barrier filter work? The filter is based on absolutely **color-neutral substrate glass**. Like all B+W photo filters, the surfaces of the carrier glass are fine-ground and polished in order to meet the high optical requirements. Several **interference coatings** are vapor-deposited on both sides. The diagram below illustrates the operating principle. The steep rising edge of the B+W 486 ensures that all **UV radiation** is filtered out while rays in the visible wavelength range can pass through almost completely. The steep falling edge at the transition to the **near infrared** range blocks interfering longwave radiation.

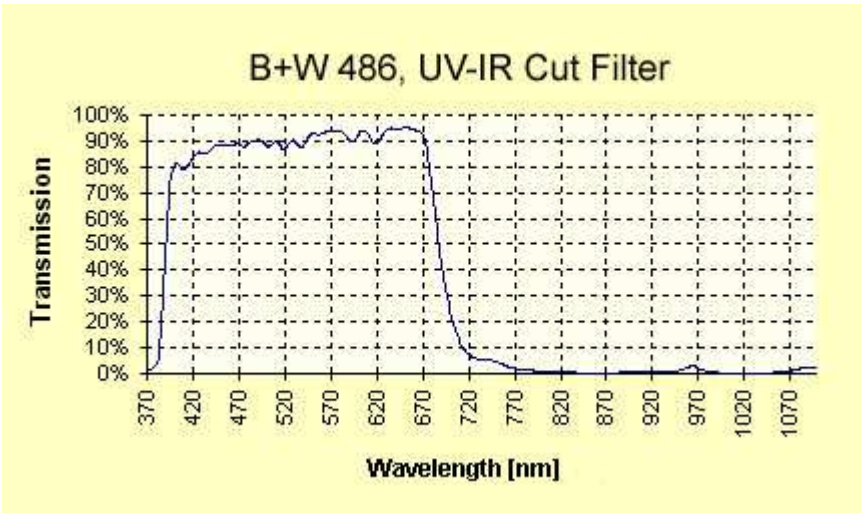

Fig. 1. Spectral transmission diagram

Please note however that, in contrast to mass-colored (integrally colored) filter glass, the UV-IR barrier filter is based on **thin-film technology**. More than 30 interference coatings are vapor-deposited on one side, while the opposite side is MRC-coated. In wide-angle lenses, the laws of physics lead to shallower incidence angles for peripheral rays. For geometric reasons these rays have to travel further through the interference coatings than rays traveling vertically through the coatings in the centre of the lens. With increasing **angle of incidence**, this leads to a change in light color towards blue. This effect can clearly be seen by looking at an UV-IR barrier filter from an angle. The color of the reflected light changes, with a similar effect on the light traveling through the filter.

The filter is therefore not suitable for lens systems with an angle of view of more than 60°.

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