OMEGA OPTICAL | OMEGA OPTICAL HOLDINGS

LASER COMPONENTS®

- Full Width Half Max (FWHM) or bandwidth (BW) of 40 nm
- Transmission >90%

QUANTAMAX™ MACHINE VISION FILTERS

QuantaMAX

When designing or improving a vision system, light management is a critical consideration. Using optical filters to control light selection is a simple and affordable solution to improving contrast, resolution and stability. Historically, photographic filters have been used in vision systems, but they lack the desired performance characteristics for today's systems.

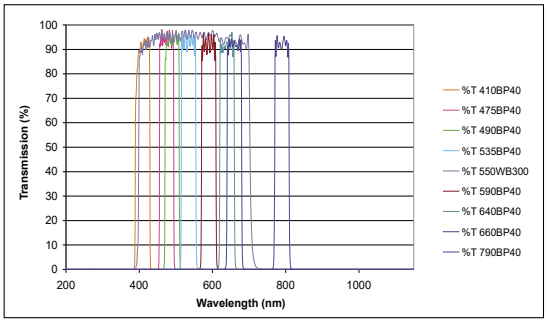
With many years of experience behind us we have developed optical filters for Machine Vision applications with superior physical and spectral attributes. Typically produced with robust sputtered oxide coatings these filters have a virtually unlimited lifetime as they are resistant to heat, humidity, vibration and cleaning solvents. The use of single substrates results in low TWD (transmitted wavefront distortion). Spectral properties include high in-band transmission, deep blocking out of band, and a high level of stability. Systems can benefit from the high transmission when using lower power LED light sources or viewing faint signals such as in fluorescence applications where UV excitation is used to view visible fluorescence. LED sources can vary from the specified peak output therefore it is important that the bandwidth of the filter takes this into consideration. The width of the band as well as the wavelength location can also be optimized to accommodate "blue shift" associated with viewing light at angles off normal as is common in machine vision applications. The controlled passband also serves to limit the wavelength range the lens needs to focus on resulting in greater resolution. Photographic filters generally block light in the region of 400-700 nm in relation to the film which they were designed to be used with. Current CCD and CMOS detectors have sensitivity from the UV to 1100 nm. Our optical filters for Machine Vision provide deep density blocking over this full range resulting in greater contrast and stability in changing ambient light conditions therefore improving accuracy and speed.

For these reasons optical filters should be considered a critical element in controlling the variable of light in a vision system. **For assistance in designing the appropriate solution for your application, please contact us. We will be happy to assist.**

Specifications

Physical	**Size**	Stock and custom sizes available
	Thickness	2 mm
Transmission	> 90 %	
Blocking	OD 5	
Surface Quality	E/E per MIL-C-48497A	
Filter Construction	Single substrate surface coated	

Omega Optical Filters for Machine Vision



- **Machine Vision - the Application of Computer Vision and Analysis**

Common uses of the technology span many industries and applications including:

- Industries: Pharmaceutical, Automotive, Food/Beverage Inspection, Recycling, Life Sciences, Medical Diagnostics, Aerospace, Security.
- Applications: Image Processing, Biometrics, Printing, Robot Guidance, Pattern Recognition, Diagnostics.

In many instances, machine vision performs roles previously handled by human beings. Often times, they can be found in inspection systems requiring high speed, high magnification, 24-hour operation and/or repeatable measurements.

Frequently, sensors used in Machine Vision have detection wavelengths over a broad range of the spectrum from the UV through near infrared. Without proper filtering and attenuation of unwanted signal, the sensors would be ineffective as the registration of unwanted light creates high levels of noise. Interference filters increase the signal to noise ratio allowing for proper discrimination of desired wavelengths while blocking all other light.

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