

## IR CUT FILTER - ALD PRODUCT BRIEF

API Nanotronics Introduces Low Edge Shift IR Cut Filters from its **NanoOpto** Division based on Atomic Layer Deposition. Ideal for high performance digital imaging applications, they are fabricated with a conformal atomic layer deposition (ALD) process which produces a higher quality filter than conventional techniques.

These ALD-based IR Cut Filters are ideal for applications requiring sharp turn on and cutoffs, very high visible range transmission, and reduced edge shift for optimum viewing angle performance.

Current advanced imaging applications:

- Medical
- Security
- Military
- Consumer

### Transmission

- Pass wavelength range 420-625 nm
- Transmission in the visible pass range of >95% for normal incidence

### Angular Performance

- Edge shift of <23 nm @ 30° incidence
- Best performance over wider angular field of view

### IR Blocking

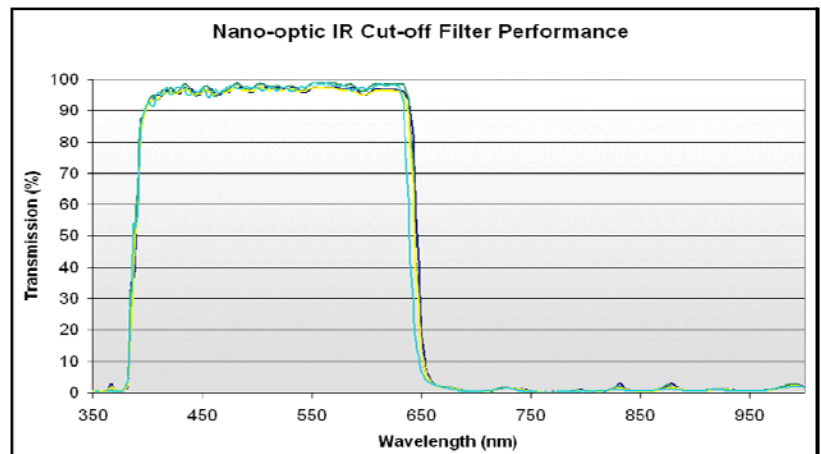
- Cut off wavelength 675-1000 nm
- Customizable blocking transmissions
- Sharp cut off bands, 50% cutoff at designed wavelengths

### Substrate

- Thickness from 0.1 mm to over 2 mm
- Large sizes available

### Operating temperature range

- -40° to 80°C
- Wider range capable



## High Performance IR Cut Filters for Demanding Applications

Parameter	Specification	Comments
<i>Optical performance</i>	<i>Standard</i>	
Pass wavelength range	420 nm to 625 nm	Wavelength ranges can be adjusted to meet specific application
Transmission in pass range	> 90%	Nominally > 95% for normal incidence
Cut-off wavelength range	675 nm to 1100 nm	Extended cut-off range available
Transmission in cut-off range	< 3%	Increased cut-off extinction available
Cut-off wavelength	650 nm $\pm$ 10 nm	Measured at normal incidence
Edge shift	< 23 nm	Measured at 30° incidence
<i>Physical specifications</i>		
Die size - x, y dimensions	From 1 mm to 25 mm	Also available as wafers, ready to dice
Die size - thickness	0.2 mm to 2.0 mm	
Field of view	0° $\pm$ 35°	
Substrate	D263 or equivalent	Substrates may be application specific
<i>Environmental specifications</i>		
Operating temperature	-40° to 80° C	
Standards	---	Environmental robustness exceeds general consumer electronics requirements
Standards	Per customer requirement	Device is compliant to general consumer electronics environmental requirements

Find out more about NanoOpto at:  
[www.nanoopto.com](http://www.nanoopto.com)

Technical Contact:  
 Thomas Tombler, Ph.D.  
 732-627-0808 x2295  
 Email: [ttombler@nanoopto.com](mailto:ttombler@nanoopto.com)

Sales Contact:  
 732-627-0808  
[sales@nanoopto.com](mailto:sales@nanoopto.com)

