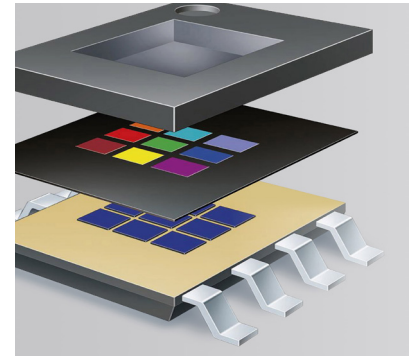


# Ultra-Thin Ambient Light Sensor Filter

## Optical Filters for Ambient Light Sensors

Materion Balzers Optics provides customized optical filters that have been adapted for use in ambient light sensors which mimics-the human eye's perception and provides accurate color display under a variety of lighting conditions. The ultra-thin coatings allow for small form factor sensor devices that provide excellent spectral filtering and ensure the best resolution under all lighting condition, even in low-light conditions.



## Benefits

- Thin coating solution is able to achieve thickness <math><1\mu\text{m}</math>, to accommodate thin substrates for compact sensors.
- Exceptional coating performance for highest quality image
- Integration of multiple coating layers and photolithographic patterns
- Coating can be applied directly on the silicon wafer with sensors, to minimize the distance from pixel to filter

## Applications

Smartphones incorporate multiple optical sensors in order to measure light and color. The ambient light sensors are used to adjust the device display's back-light for better readability, power saving or for color correction in images taken with a smartphone camera. Our customizable dielectric and metallic coatings allow the design of sophisticated filter characteristics for accurate ambient light and color measurements. These optical filters are ideal for use in mobile devices and other consumer electronics.

## Technical Data

### Wavelength

From 300 nm to NIR range

### Peak Transmittance

$T > 90\%$

### Angle of Incidence

standard  $0^\circ$  (different AOI on request)

### Substrate

Glass or silicon wafer

### Dimensions

Customizable

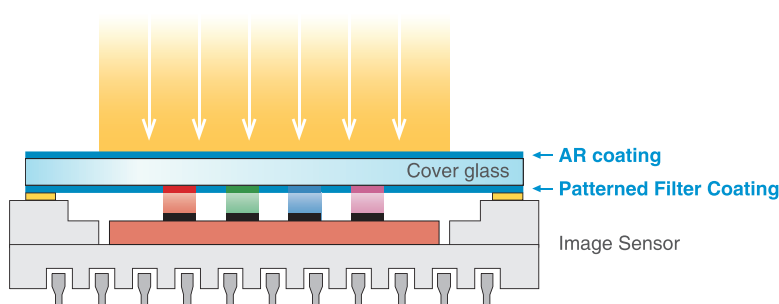
### Surface Quality

60/40 Scratch/Dig or better for lower defect applications

### Environmental Stability

MIL-C-675C

## Sketch of multiple spectral ambient light sensor with patterned filter coating



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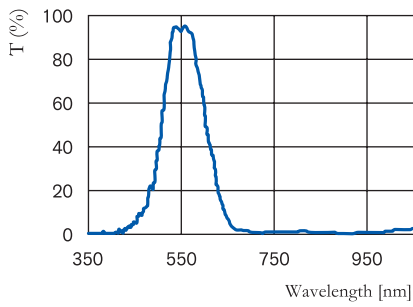
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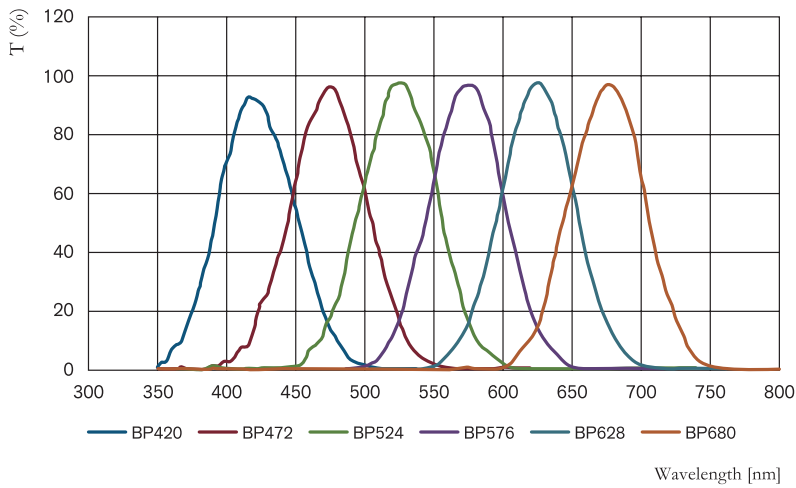
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### Spectrum of Single Channel Ambient Light Filter



### Spectrum of Multiple Channels Ambient Light Filter



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