# MACHINE VISION FILTER RECOMMENDATIONS

## COLOR BANDPASS

<table>
<thead>
<tr>
<th>Part No</th>
<th>Prefix</th>
<th>Filter Type &amp; Color &amp; Use</th>
<th>Common Applications/Benefits for Industrial Imaging</th>
<th>Light Source/Fluorescence Emission Range</th>
</tr>
</thead>
</table>
| BP470   |        | Blue Bandpass – UV Block                              | • Passes only blue light sources / UV-excited blue fluorescence  
• Tests the effects of blue lighting on an application  
• Improves resolution by focusing only on the blue portion of the spectrum | 420-500nm                                |
| BP505   |        | Green-Blue Bandpass                                   | • Passes only blue light sources / UV-excited blue fluorescence  
• Tests the effects of blue lighting on an application  
• Improves resolution by focusing only on the blue portion of the spectrum | 470-570nm                                |
| BP525   |        | Light Green Bandpass                                  | • Passes only green light sources / UV-excited green fluorescence  
• Tests the effects of green lighting on an application  
• Improves resolution by focusing only on the green portion of the spectrum | 490-570nm                                |
| BP580   |        | Orange Bandpass                                       | • Passes only amber/orange light sources / UV-excited amber/orange fluorescence  
• Tests the effects of blue lighting on an application  
• Improves resolution by focusing only on the amber/orange portion of the spectrum | 550-620nm                                |
| BP635   |        | Light Red Bandpass                                    | • Passes only light red light sources / UV-excited amber/orange fluorescence  
• Tests the effects of light red lighting on an application  
• Improves resolution by focusing only on the light red portion of the spectrum | 630-690nm                                |
| BP660   |        | Dark Red Bandpass                                     | • Passes only dark red light sources / UV-excited amber/orange fluorescence  
• Tests the effects of dark red lighting on an application  
• Improves resolution by focusing only on the red portion of the spectrum | 630-690nm                                |

## COLOR LIGHT BALANCING

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<tr>
<td>LA120</td>
<td></td>
<td>Light Balancing (Minus Blue +)</td>
<td>• Attenuates part of the blue spike in white LED's, creating a more natural white light color</td>
<td>525-1100nm</td>
</tr>
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## INFRARED PASS–VISIBLE BLOCK

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| LP920   |        | IR Dichroic Longpass                                   | • Most commonly used for covert IR applications (940nm LED's)  
• Blocks all UV+visible+some IR to enhance IR lighting/viewing  
• Shields the system from unwanted light | 920-1100nm                                |
| BP695   |        | IR Bandpass                                           | • Enhances IR lighting/fluorescence                                                                               | 695-1100nm                              |
| BP735   |        | IR Bandpass                                           | • Enhances IR lighting/fluorescence                                                                               | 695-785nm                                |
| LP780   |        | IR Bandpass                                           | • Blocks all UV+visible to enhance IR lighting/viewing  
• Most commonly used with Xenon strobe                                                                                     | 780-1100nm                              |
| BP830   |        | IR Bandpass                                           | • Passes only 850nm IR LED illuminations  
• Tests the effects of IR lighting on an application  
• Shields the system from unwanted light  
• Enhances contrast for improved viewing of desired features  
• Improves resolution by focusing only on the IR portion of the spectrum (chromatic aberration correction) | 800-1000nm                              |
| BP880   |        | IR Bandpass                                           | • Passes only 880nm IR LED illuminations  
• Tests the effects of dark IR lighting on an application  
• Shields the system from unwanted light  
• Enhances contrast for improved viewing of desired features  
• Improves resolution by focusing only on the IR portion of the spectrum (chromatic aberration correction) | 830-1000nm                              |

## INFRARED BLOCK–VISIBLE PASS

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| SP645   |        | Med. Red/NIR Dichroic Blocking                         | • Block red/IR from interfering with color rendition in color CCD/CMOS cameras  
• Commonly placed over the image sensor  
• Reduces IR radiation/camera bloom from hot metal/glass extrusion process | 375-645nm                                |
| SP675   |        | Deep Red/NIR Dichroic Blocking                         | • Block some red/IR from interfering with color rendition in CCD/CMOS cameras  
• Commonly placed over the image sensor  
• Reduces IR radiation/camera bloom from hot metal/glass extrusion process | 375-675nm                                |
| SP700   |        | Hot Mirror/NIR Dichroic Blocking Standard IR blocking | • Block IR light from interfering with color rendition in CCD/CMOS cameras  
• Commonly placed over the image sensor  
• Reduces IR radiation/camera bloom from hot metal/glass extrusion process | 380-700nm                                |
| SP730   |        | Hot Mirror/NIR Colorless Blocking Standard IR blocking| • Block IR light from interfering with color rendition in CCD/CMOS cameras  
• Commonly placed over the image sensor  
• Reduces IR radiation/camera bloom from hot metal/glass extrusion process | 360-730nm                                |
| BP550   |        | UV and NIR Blocking Block UV+IR                       | • Block ultraviolet and infrared  
• Passes all visible wavelengths                                                                                         | 400-700nm                                |
### MACHINE VISION FILTER RECOMMENDATIONS

#### PROTECTIVE WINDOW

<table>
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<tr>
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<tr>
<td>AC380</td>
<td></td>
<td>Protective window Scratch-Resistant Acrylic</td>
<td>• FDA applications – no glass over inspection area</td>
<td>380-1100nm</td>
</tr>
<tr>
<td>LP340</td>
<td></td>
<td>Protective window A/R Coated</td>
<td>• A/R (anti-reflection) coating provides higher transmission</td>
<td>340-1100nm</td>
</tr>
</tbody>
</table>

#### NEUTRAL DENSITY

<table>
<thead>
<tr>
<th>Part No</th>
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<th>OD (mm)</th>
<th>Common Applications/Benefits for Industrial Imaging</th>
<th>Light Source/Fluorescence Emission Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND030</td>
<td></td>
<td>Neutral Density</td>
<td>0.3</td>
<td>• Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>ND060</td>
<td></td>
<td>Neutral Density</td>
<td>0.6</td>
<td>• Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>ND080</td>
<td></td>
<td>Neutral Density</td>
<td>0.9</td>
<td>• Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>ND120</td>
<td></td>
<td>Neutral Density</td>
<td>1.2</td>
<td>• Reduces light intensity</td>
<td>400-700nm</td>
</tr>
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#### POLARIZING

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<tr>
<td>PR032</td>
<td></td>
<td>Linear Polarizer</td>
<td>Reduces reflections</td>
<td>• Rotating, with locking screw • Reduces glare from most reflective surfaces to improve contrast • Most common polarizer for machine vision applications • Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>PC052</td>
<td></td>
<td>Circular Polarizer</td>
<td>Reduces reflections</td>
<td>• Reduces glare from most reflective surfaces to improve contrast • 1/4-wave retarder compensates for twist in light created with auto-iris lenses or in-camera metering systems. • Most commonly used in consumer-type SLR cameras • Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>PS007</td>
<td></td>
<td>Linear Polarizing Sheet</td>
<td>Reduces reflections</td>
<td>• Reduces glare from most reflective surfaces to improve contrast • Plastic polarizing material used to mount over light source to further eliminate reflections caused by the light source in use • Reduces light intensity</td>
<td>400-700nm</td>
</tr>
<tr>
<td>PI035</td>
<td></td>
<td>Infrared Linear Polarizer</td>
<td>Reduces reflections</td>
<td>• Rotates the plane of polarization • Reduces glare from most reflective surfaces to improve contrast • Plastic polarizing material used to mount over light source to further eliminate reflections caused by the light source in use • Reduces light intensity</td>
<td>700-2200nm</td>
</tr>
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</table>

#### FILTER KITS

- **FK100** MACHINE VISION FILTERS
  - L1400
  - B335
  - B365
  - B380
  - B400
  - B405
  - B470
  - B525
  - B580
  - B585
  - B600
  - B610
  - B635
  - B680
  - B735
  - B800
  - B880

- **IK100** INFRARED FILTERS
  - L500
  - L505
  - L520
  - L590
  - L600
  - L680
  - L780
  - L920
  - L930
  - L940

- **BK100** BANDPASS FILTERS
  - B300
  - B350
  - B365
  - B380
  - B400
  - B470
  - B500
  - B525
  - B550
  - B590
  - B600
  - B635
  - B680
  - B735
  - B800
  - B880

- **NK100** NEUTRAL DENSITY FILTERS
  - ND050
  - ND060
  - ND090
  - ND120
  - ND200
  - ND300
  - ND400

**How to Order**

Filters: Use the prefix from the type charts with a suffix from the size chart at left. Ex: BP470-27 for a Blue Bandpass filter in a M27xP0.5 mount.

Filter Kits are ordered the same way. Ex: FK100-27.

Slip Mount adapters are available if your lens does not have threads for mounting a filter. Please call to order.

**Filter Kits**

- **FK100** MACHINE VISION FILTERS: L1400, B335, B365, B380, B400, B405, B470, B525, B580, B585, B600, B610, B635, B680, B735, B800, B880.

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