

# Color Filters

## Blue, Green, Yellow, Orange, Red & NIR Color Filters

Blue and Green are band pass filters, transmitting wavelength in a corresponding color as seen by the human eye, while yellow, orange and red are long pass filters. IR pass filters are long pass filters, transmitting only IR light. The Cut-on wavelength is defined at 50% transmittance of maximum. IR filters are absorptive filters that are used in front of a NIR sensor or an image sensor for NIR imaging. Passes needed IR spectrum only. The Cut-on wavelength is defined at 50% transmittance of maximum. Color filters are absorptive filter that are used to increase contrast of a monochrome image, by isolating spectral regions and lighting colors. The type of the filter is thereby depending on two main factors: color of the object and illumination. Call for helping to select the best suitable filter.



Color filters are available unmounted in sizes from 10 mm to 74 mm diameter and mounted with common thread sizes M 25.5 to M 67.

We offer several AR coating options, depending on filter type.

Call us to discuss your OEM and custom requirements.

### Key Features

- red, orange, yellow, green and blue filter available
- Sizes 10 mm to 74mm diameter.
- Mounted with common thread sizes M 25.5 to M 67 available
- AR Coated
- Insensitive to angle of incidence
- Large CA, absence of vignetting
- Improve Contrast
- Isolate Colors

### Applications

- Traffic
- Process Control
- Night Vision
- Machine Vision Applications
- Line Inspection
- Food and Beverage Inspection
- NIR Imaging (IR pass)

### Technical Specifications

|                                    |  |
|------------------------------------|--|
| Filter type                        | Blue IF 039, Green IF 062, Yellow IF 022, Orange IF 041, Red IF 090, Dark Red IF 091 IR pass IF 092, IF098, IF 093 |
| Surface <sup>1</sup>               | 5/2 × 0.16   |
| Wave front distortion <sup>1</sup> | 10 - 30mm:13/1 (0.2)<br>31 - 50mm:13/1 (0.25)<br>51 – 74mm:13/1 (0.35)   |
| Parallelism                        | 1 arc minute   |
| Diameter tolerance                 | +0 - 0.3 mm  |
| Thickness                          | 2.0 ± 0.2 mm   |

<sup>1</sup> Specification according to ISO 10110

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# Blue Filter (IF 039)

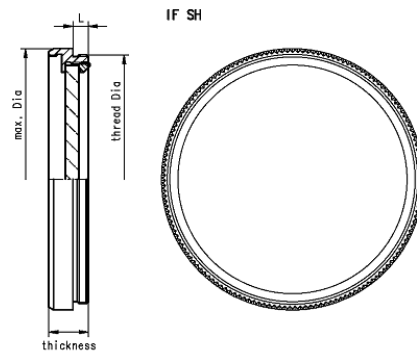
## IF 039 Blue Filter

Blue band pass filters, transmit wavelength between 380 nm and 580 nm. They are used to increase contrast of a monochrome image, by isolating that spectral region and so lighting blue parts of the image.

Blue filters are available unmounted in sizes from 10 mm to 74 mm diameter and mounted with common thread sizes M 25.5 to M 67.

The filters come with our superior broadband multilayer resistant AR coating MRC.

Call us to discuss your OEM and custom requirements.



### Key Features

- Sizes 10 mm to 74 mm diameter.
- Mounted with common thread sizes M 25.5 to M 67 available
- MRC multilayer resistant AR coated
- Insensitive to angle of incidence
- Large CA, absence of vignetting
- Improve Contrast
- Isolate Colors

### Applications

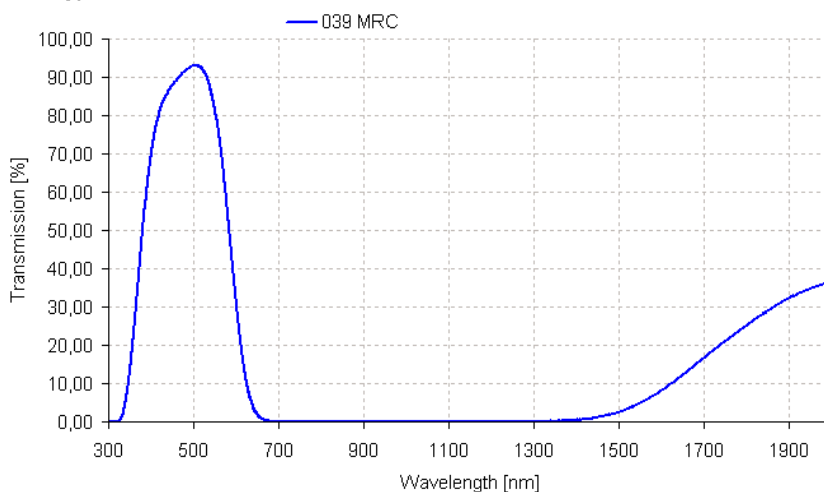
- Process Control
- Machine Vision Applications
- Line Inspection
- Food and Beverage Inspection

### Technical Specifications

|                      |                                  |                                    |              |
|----------------------|----------------------------------|------------------------------------|--------------|
| Filter type          | IF 039                           |                                    |              |
| Wavelength range     | 380 nm - 580 nm                  | Wave front distortion <sup>1</sup> | 13/1 (0.25)  |
| Wavelength tolerance | ± 10 nm                          | Parallelism                        | 1 arc minute |
| Peak transmittance   | > 90%                            | Diameter                           | 10 - 74 mm   |
| Blocking             | < 1% (300 - 330 & 660 - 1440 nm) | Diameter tolerance                 | +0 - 0.3 mm  |
| Surface <sup>1</sup> | 5/2 × 0.16                       | Thickness                          | 2.0 ± 0.2 mm |

<sup>1</sup> Specification according to ISO 10110

### Filtertypen



# Green Filter (IF 062)

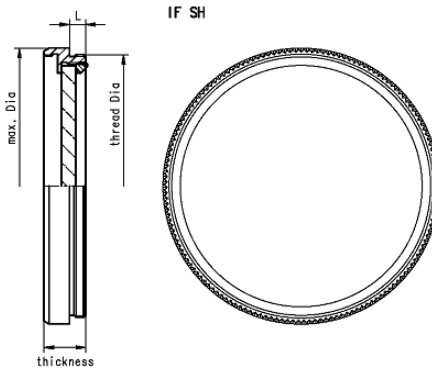
## IF 062 Green Filter

Green band pass filters, transmit wavelength between 490 nm and 580 nm. They are used to increase contrast of a monochrome image, by isolating that spectral region and so lighting green parts of the image.

UV-IR cut filters are available unmounted in sizes from 10 mm to 74 mm diameter and mounted with common thread sizes M 25.5 to M 67.

The filters come with our superior broadband multilayer resistant AR coating MRC.

Call us to discuss your OEM and custom requirements.



### Key Features

- Sizes 10 mm to 74 mm diameter.
- Mounted with common thread sizes M 25.5 to M 67 available
- MRC multilayer resistant AR coated
- Large CA, absence of vignetting
- Improve Contrast
- Isolate Colors

### Applications

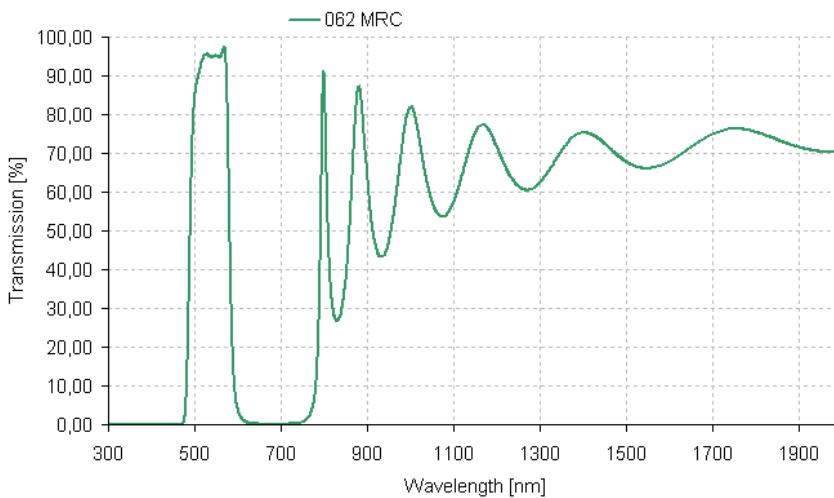
- Process Control
- Machine Vision Applications
- Line Inspection
- Food and Beverage Inspection

### Technical Specifications

|                      |                                 |                                    |              |
|----------------------|---------------------------------|------------------------------------|--------------|
| Filter type          | IF 062                          |                                    |              |
| Wavelength range     | 490 - 580 nm                    | Wave front distortion <sup>1</sup> | 13/1 (0.25)  |
| Wavelength tolerance | ± 10 nm                         | Parallelism                        | 1 arc minute |
| Peak transmittance   | > 90%                           | Diameter                           | 10 - 74 mm   |
| Blocking             | < 1% (475 - 615 & 615 - 755 nm) | Diameter tolerance                 | +0 - 0.3 mm  |
| Surface <sup>1</sup> | 5/2 × 0.16                      | Thickness                          | 2.0 ± 0.2 mm |

<sup>1</sup> Specification according to ISO 10110

### Filtertypen



# Yellow, Orange, Red Filters (IF 022, IF 041, IF 090, IF 091)

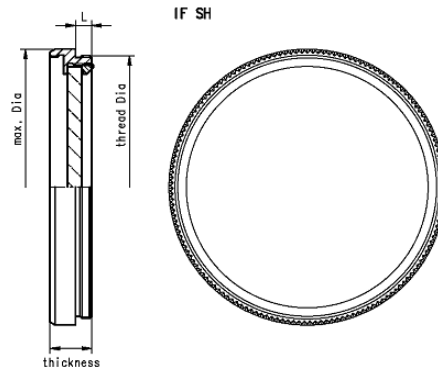
## Yellow, Orange & Red Color Filters

Yellow, orange and red are long pass filters, transmitting wavelength from a defined cut-on wavelength on. The cut-on wavelength is defined at 50% transmittance of maximum. Color filters are absorptive filter that are used to increase contrast of a monochrome image, by isolating spectral regions and lighting colors. Check out Schneider Kreuznach Edge Filter for red NIR pass filter.

Color filters are available unmounted in sizes from 10 mm to 74 mm diameter and mounted with common thread sizes M 25.5 to M 67.

Available with AR coating options: broadband coating (E) or multi resistance coating (MRC). IF 090 and IF 091 type additional with MRCIR coating, specialized for antireflection an NIR.

Call us to discuss your OEM and custom requirements.



### Key Features

- Sizes 10 mm to 74mm diameter.
- Mounted with common thread sizes M 25.5 to M 67 available
- AR coating options: broadband (E) or multi resistance (MRC)
- Insensitive to angle of incidence
- Large CA, absence of vignetting
- Improve Contrast
- Isolate Colors
- AR coated

### Applications

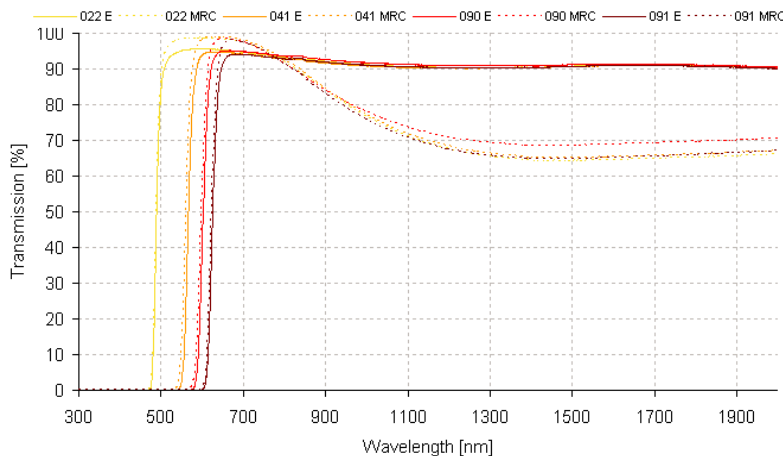
- Traffic
- Process Control
- Night Vision
- Machine Vision Applications
- Line Inspection
- Food and Beverage Inspection

### Technical Specifications

| Filter type: IR pass   | IF 022        | IF 041 | IF 090 | IF 091   |                                    |              |
|------------------------|---------------|--------|--------|----------|------------------------------------|--------------|
| Cut-on wavelength      | 490 nm        | 565 nm | 600 nm | 625 nm   | Wave front distortion <sup>1</sup> | 13/1 (0.25)  |
| Wavelength tolerance   | ± 10 nm       |        |        |          | Parallelism                        | 1 arc minute |
| Color                  | Yellow        | Orange | Red    | Dark Red | Diameter                           | 10 - 74 mm   |
| Transmittance Blocking | > 90 % / < 1% |        |        |          | Diameter tolerance                 | +0 - 0.3 mm  |
| Surface <sup>1</sup>   | 5/2 × 0.16    |        |        |          | Thickness                          | 2.0 ± 0.2 mm |

<sup>1</sup> Specification according to ISO 10110

### Filtertypen



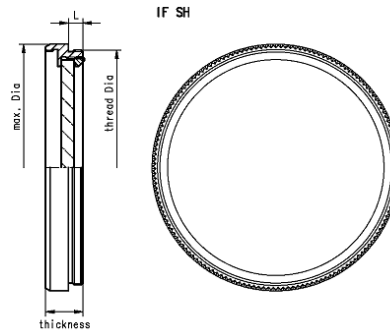
# IR Pass Filter (IF 092, IF 098, IF 093)

## Infrared (IR) Filters

IR filters are long pass filters, transmitting wavelength higher than 695 nm. The cut-on wavelength is defined at 50% transmittance of maximum. IR filters are absorptive filters that are used in front of a NIR sensor or an image sensor, for NIR imaging. Passes needed IR spectrum only.

IR filters are available unmounted in sizes 10 mm to 74 mm diameter and mounted with common thread sizes M 25.5 to M 67. Available uncoated and with your superior NIR multi resistance AR Coating, special designed to reduce reflects in NIR spectrum.

Call us to discuss your OEM and custom requirements.



### Key Features

- Unmounted 10 mm to 74 mm diameter.
- Mounted with common thread sizes M 25.5 to M 67 available
- MRCIR coated (up to 74 mm diameter) and uncoated versions available
- Insensitive to angle of incidence
- Large CA, absence of vignetting
- Passes IR spectrum only
- Block UV and VIS spectrum

### Applications

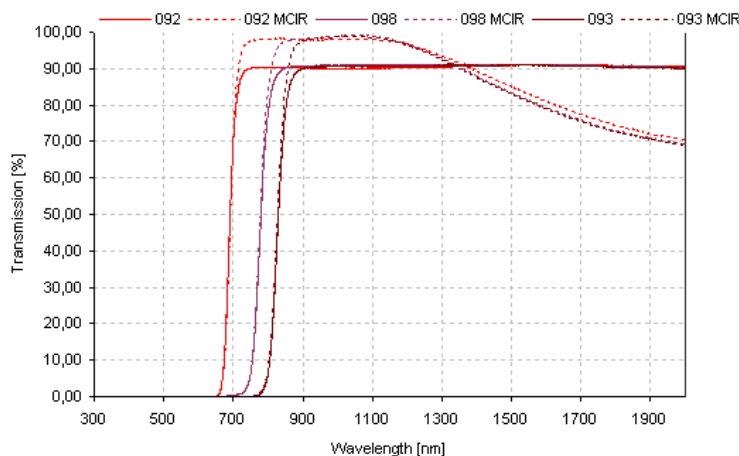
- Traffic
- Night Vision
- Solar
- NIR Imaging

### Technical Specifications

| Filter type:         | IF 092 | IF 098     | IF 093 |                                    |  |
|----------------------|--------|------------|--------|------------------------------------|--|
| Cut-on wavelength    | 695 nm | 775 nm     | 825 nm | Wave front distortion <sup>1</sup> | 10 - 30mm:13/1 (0.2)<br>31 - 50mm:13/1 (0.25)<br>51 - 74mm:13/1 (0.35) |
| Wavelength tolerance |        | ± 10 nm    |        | Parallelism                        | 1 arc minute   |
| Peak transmittance   |        | > 90%      |        | Diameter                           | 10 - 74 mm   |
| Blocking             |        | < 1%       |        | Diameter tolerance                 | +0 - 0.3 mm  |
| Surface <sup>1</sup> |        | 5/2 × 0.16 |        | Thickness                          | 2.0 ± 0.2 mm   |

<sup>1</sup> Specification according to ISO 10110

### IR Filter IF 093 098 093



| <b>Order Instructions:</b>     |  |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
|--------------------------------|--|-------------|-------------|-----------------|-------|------|----|-----|-----|----|------|-----------------|-------|-------------|-------------|-------|-----|-----|---|--|------|-------------------|--------|-----------|--|-----------------|
| <b>Mounted filter:</b>         | IF   |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Unmounted filter glass:</b> | IFG  |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Type:</b>                   | 039 Blue<br>062 Green<br>022 Yellow<br>041 Orange<br>090 Red, 091 Dark Red<br>092, 093, 098 NIR Pass   |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Coating:</b>                | E (broadband coating) - not for IF039 and IF062<br>MRC (multi resistant coating)   |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Mount:</b>                  | MRCIR- only IF090 and IF 091<br>SH (standard M- thread mounts)<br>SN-1 (only for 30.5mm)   |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Size:</b>                   | CMT (C-mount)<br>Thread of mount for mounted filters (IF) or<br>Diameter in mm for unmounted glass (IFG)   |             |             |                 |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| <b>Examples:</b>               | <table border="0"> <thead> <tr> <th>IFx</th> <th>type</th> <th>coating</th> <th>mount</th> <th>size</th> </tr> </thead> <tbody> <tr> <td>IF</td> <td>039</td> <td>MRC</td> <td>SH</td> <td>25.5</td> </tr> <tr> <td>Mounted filter,</td> <td>Blue,</td> <td>MRC coated,</td> <td>thread size</td> <td>M25.5</td> </tr> <tr> <td>IFG</td> <td>041</td> <td>E</td> <td></td> <td>30.0</td> </tr> <tr> <td>Unmounted filter,</td> <td>Orange</td> <td>E coated,</td> <td></td> <td>diameter 30.0mm</td> </tr> </tbody> </table> | IFx         | type        | coating         | mount | size | IF | 039 | MRC | SH | 25.5 | Mounted filter, | Blue, | MRC coated, | thread size | M25.5 | IFG | 041 | E |  | 30.0 | Unmounted filter, | Orange | E coated, |  | diameter 30.0mm |
| IFx                            | type   | coating     | mount       | size            |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| IF                             | 039  | MRC         | SH          | 25.5            |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| Mounted filter,                | Blue,  | MRC coated, | thread size | M25.5           |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| IFG                            | 041  | E           |             | 30.0            |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |
| Unmounted filter,              | Orange   | E coated,   |             | diameter 30.0mm |       |      |    |     |     |    |      |                 |       |             |             |       |     |     |   |  |      |                   |        |           |  |                 |