

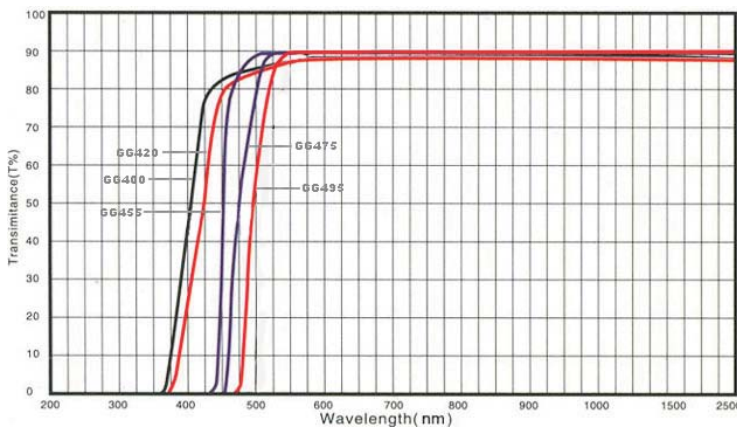
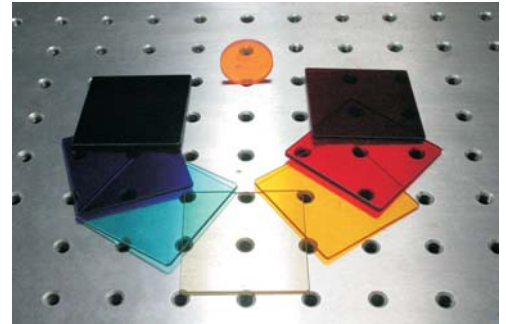


# Filter

## Color Glass Filter

Due to its selective absorption in visible wavelength range, color glass filter will exhibit various color depending the glass type. Color glass filter provides an economical filter for various applications. Optical glass filters are widely used in safety glasses, industrial measurement, regulation technology and environment protection.

Union Optic can provide various color glass filters or its substitutes. Here is a list of frequently used filters.

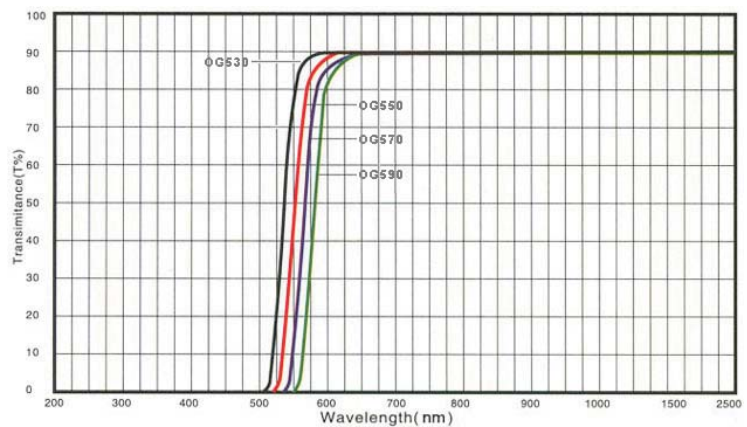


GG Series:  
Yellow glass

- GG400
- GG420
- GG455
- GG475
- GG495

OG Series:  
Orange glass

- OG530
- OG550
- OG570
- OG590



Optical Material

Lens

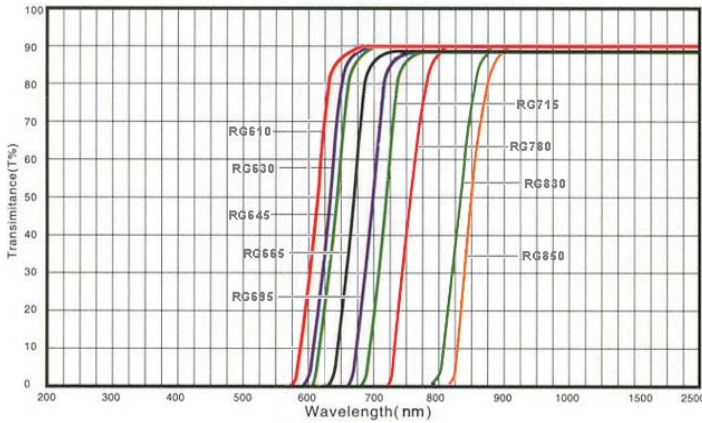
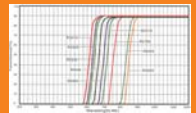
Window

Mirror

Beamsplitter

Prism

Filter

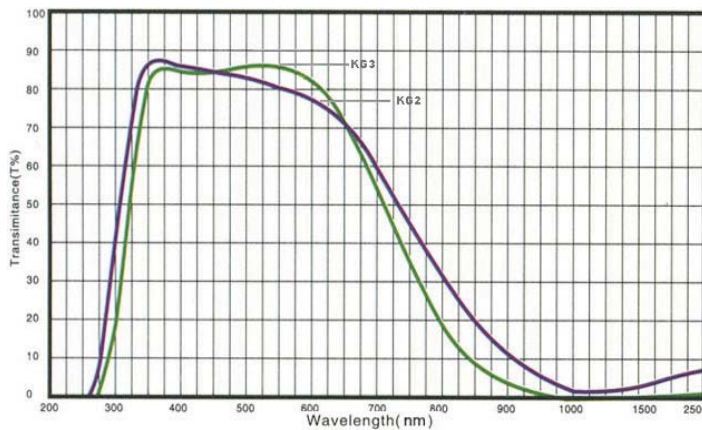
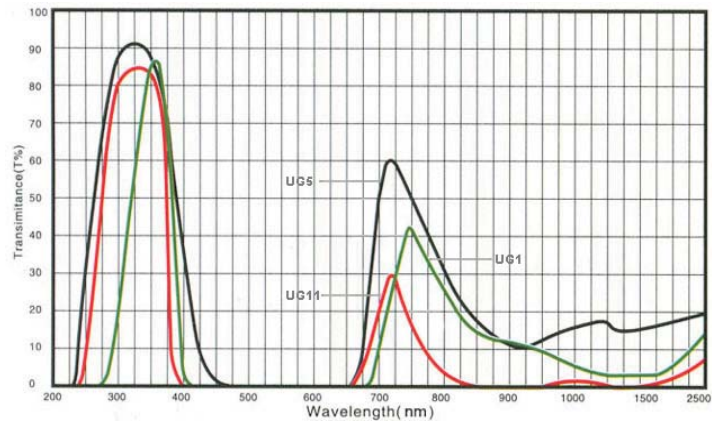


RG Series:  
Red and black glass,  
IR transmitting

- RG610, RG630
- RG645, RG665
- RG695, RG715
- RG780, RG830
- RG850

UG Series:  
Black blue glasses,  
ultraviolet transmitting

- UG1, UG5, UG11

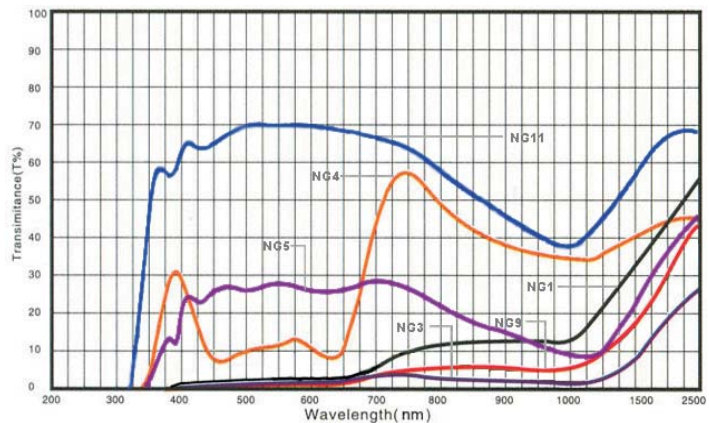


KG Series:  
Colorless glass with high transmission  
in the visible and absorption in the IR  
range (heat protection filters)

- KG1, KG2, KG3

NG Series:  
Neutral glass with uniform attenuation  
in the visible range

- NG1, NG3, NG4, NG5, NG9, NG11



Optical Material

Lens

Window

Mirror

Beamsplitter

Prism

Filter



## Specifications

|                     |                       |
|---------------------|-----------------------|
| Dimension Tolerance | +0.0/-0.2mm           |
| Thickness Tolerance | ±0.2mm                |
| Flatness            | 2λ@632.8nm            |
| Surface Quality     | 80/50 scratch and dig |
| Parallelism         | <5 arc minutes        |
| Clear Aperture      | >90%                  |

## Order Information

**CFT** — **RG610** — **25.4** — **2** → CFT-Glass Name-Dimension-Thickness

Frequently Used Glasses are listed below.

WG: WG280, WG295, WG320, WG345, WG360

GG: GG375, GG400, GG420, GG455, GG475, GG495

OG: OG515, OG530, OG550, OG570, OG590

RG: RG610, RG630, RG645, RG665, RG695, RG715, RG780, RG830, RG850

UG: UG1, UG5, UG11

BG: BG3, BG4, BG7, BG12, BG14, BG18, BG20, BG25, BG38, BG39

VG: VG5, VG6, VG8, VG9, VG10, VG11

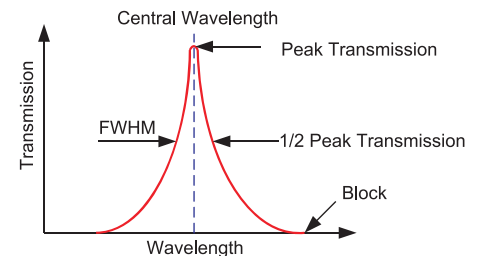
KG: KG1, KG2, KG3, KG5

NG: NG1, NG3, NG4, NG5, NG9, NG11

## Interference Bandpass Filter

### Specifications

|                   |                  |
|-------------------|------------------|
| Mount Diameter    | 25.4+0/-0.2mm    |
| Clear Aperture    | >80%             |
| Thickness         | <10mm            |
| CWL Tolerance     | ±2nm             |
| FWHM              | 10nm             |
| Peak Transmission | >45%             |
| Block             | <0.1%@200-1100nm |
| CWL Shift         | <0.02nm/°C       |



### Standard Product

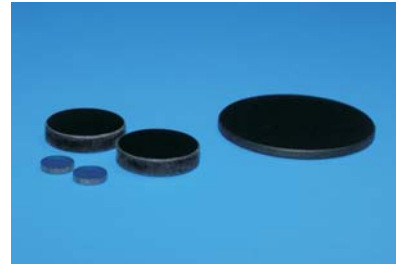
| Part No.     | Mount Diameter (mm) | Thickness(mm) | Clear Aperture | Central Wavelength (nm) |
|--------------|---------------------|---------------|----------------|-------------------------|
| ITF9125-532  | 25.4                | 6.0           | 18.0           | 532                     |
| ITF9125-633  | 25.4                | 6.0           | 18.0           | 633                     |
| ITF9125-1064 | 25.4                | 6.0           | 18.0           | 1064                    |



## Neutral Density Filter-Absorptive

### Specifications

|                     |                       |
|---------------------|-----------------------|
| Material            | Absorptive Glass      |
| Dimension Tolerance | +0.0/-0.2mm           |
| Thickness Tolerance | ±0.2mm                |
| Flatness            | 2λ@632.8nm            |
| Surface Quality     | 80/50 scratch and dig |
| Parallelism         | <5 arc minutes        |
| Clear Aperture      | >90%                  |
| OD Tolerance        | ±10%                  |



Optical Density: OD

Transmission: T

$$OD=Lg(1/T)$$

### Standard Product

| Part No.  | Dimension(mm) | Optical Density(400-700nm) |
|-----------|---------------|----------------------------|
| NDT9125   | Φ25.4         | 0.1, 0.2, 0.3, 0.4, 0.5,   |
| NDT9150-S | 50.0x50.0     | 0.8, 1.0, 2.0, 3.0         |

### Order Information

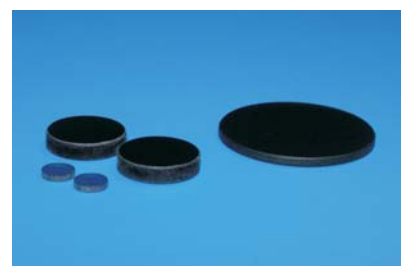
NDT9125 — 1.0

↻ Part No.-Optical Density

## Neutral Density Filter-Reflective

### Specifications

|                     |                             |
|---------------------|-----------------------------|
| Material            | B270 Glass                  |
| Dimension Tolerance | +0.0/-0.2mm                 |
| Thickness           | 2.0±0.2mm                   |
| Flatness            | 2λ@632.8nm                  |
| Surface Quality     | 80/50 scratch and dig       |
| Parallelism         | <5 arc minutes              |
| Clear Aperture      | >90%                        |
| Design Wavelength   | 400-700nm                   |
| Coating             | Metallic reflective coating |
| OD Tolerance        | ±10% of OD                  |



Optical Density: OD

Transmission: T

$$OD=Lg(1/T)$$

Optical Material

Lens

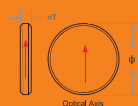
Window

Mirror

Beamsplitter

Prism

Filter



### Standard Product

| Part No. | Dimension(mm) | Optical Density(400-700nm)          |
|----------|---------------|-------------------------------------|
| NDR9125  | 25.4          | 0.1,0.2,0.3,0.4,0.5,0.8,1.0,2.0,3.0 |

### Order Information

**NDR9125** — **1.0**    Part No.-Optical Density

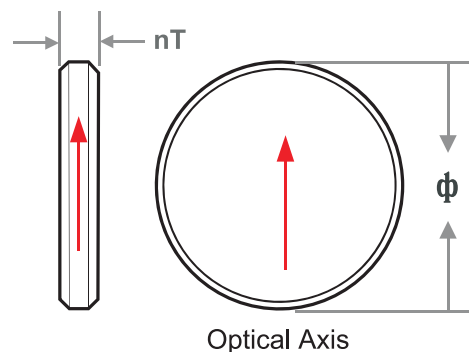
## Birefringent Filter

### Specifications

|                      |                              |
|----------------------|------------------------------|
| Material             | Crystal Quartz               |
| Dimension Tolerance  | +0.0/-0.2mm                  |
| Thickness Tolerance  | ±0.005mm                     |
| Wavefront Distortion | < $\lambda/8@632.8\text{nm}$ |
| Surface Quality      | 20/10 scratch and dig        |
| Parallelism          | <5 arc seconds               |
| Clear Aperture       | >90%                         |
| Thickness            | T=0.5mm, 1.0mm, 1.5mm, 2.0mm |
| Coating              | None                         |

### Standard Product

| Part No.    | Dimension(mm) | Thickness(mm) |
|-------------|---------------|---------------|
| BIF3012-0.5 | 12.7          | 0.5           |
| BIF3012-1   | 12.7          | 1.0           |
| BIF3012-2   | 12.7          | 2.0           |
| BIF3012-4   | 12.7          | 4.0           |
| BIF3025-0.5 | 25.4          | 0.5           |
| BIF3025-1   | 25.4          | 1.0           |
| BIF3025-2   | 25.4          | 2.0           |
| BIF3025-4   | 25.4          | 4.0           |



Optical Material

Lens

Window

Mirror

Beamsplitter

Prism

Filter