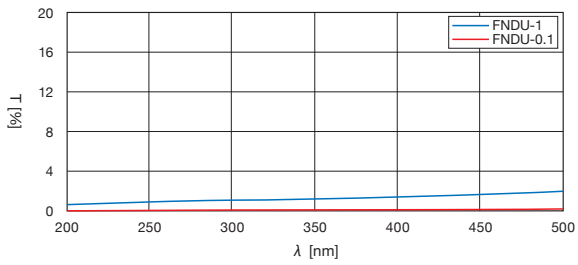


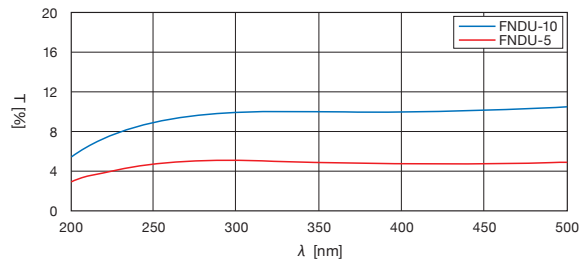
Typical Transmittance Data

T: Transmission

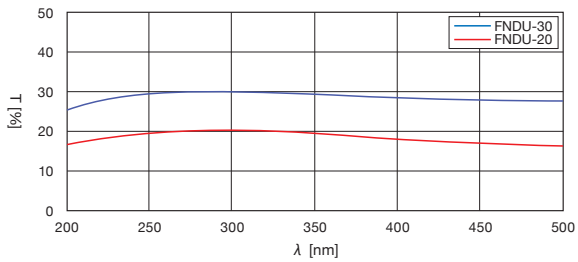
FNDU-0.1 · 1



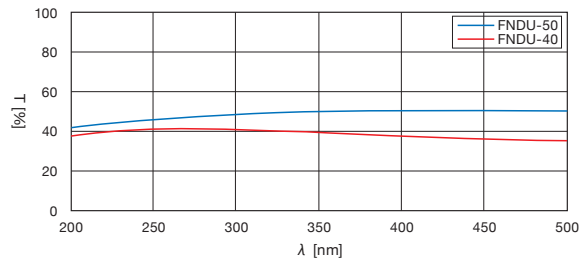
FNDU-5 · 10



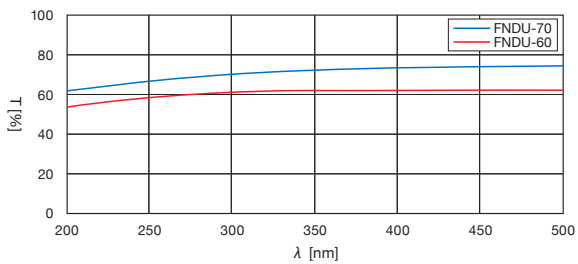
FNDU-20 · 30



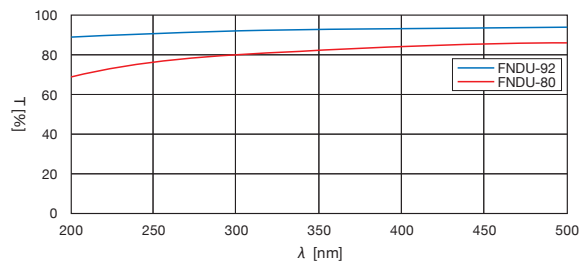
FNDU-40 · 50



FNDU-60 · 70



FNDU-80 · 92



Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

MotORIZED Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

Colored Glass Filters

Dielectric Filters

Etaion

# Reflective type of ND filter

## Rotating variable reflective ND filter holder

VND  
NDHN

RoHS  
RoHS

VND

Catalog Code W3100

Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

MotORIZED Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

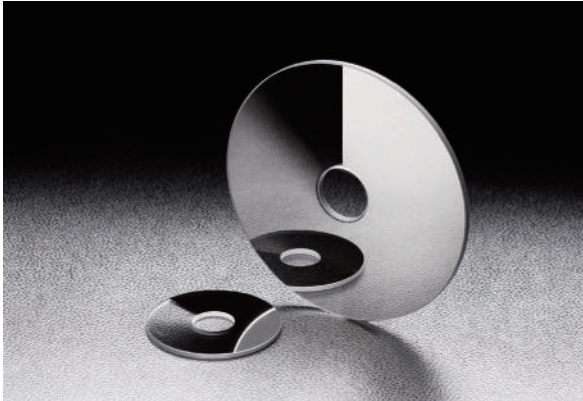
Colored Glass Filters

Dielectric Filters

Etalon

The VND is a reflective ND filter. The reflectivity or the transmittance varies by rotation. They are used mainly for light intensity adjustment in vision or illumination experiments.

Possible to adjust the intensity by rotation continuously or select light intensity position. The transmittance light can be adjusted logarithmically, it makes dynamic light intensity adjustment possible. Thin and space saving, it is easy to be placed in a narrow optical test set up. The VND-U model is adaptable for use at Ultraviolet bandwidth, it is made of fused silica.



### Specifications

#### Circle

Material	VND: BK7 VND-U: Synthetic fused silica
Coating	Cr (Chrome)
Transmittance	- 92%
Surface flatness of substrate	(Measurement area: 30mm)
Parallelism	<1
Surface Quality (Scratch-Dig)	60-40

#### Rectangle

Material	Soda Lime Glass
Coating	Cr (Chrome)
Wavelength Range	400 - 700nm
Transmittance	1 - 92%
Surface flatness of substrate	Both side: glossy surface (no polishing)
Surface Quality (Scratch-Dig)	80-50

### Guide

For AOI (Angle of Incident) changing, the transmittance can be also changed. We recommend to use with the VBS, Variable Beam Splitter. [Reference](#) B062

### Attention

The round shape variable ND filter is very fragile. The bore is made of glass. do not force on one surface of the bore when fix it on a holder, it could be broken. For a compatible ND filter holder (NDHN) for your optics replacement onto the holder, please contact our International Sales Division of assistance.

The Chromium film coating contents absorptive effects, please avoid to use with high power laser.

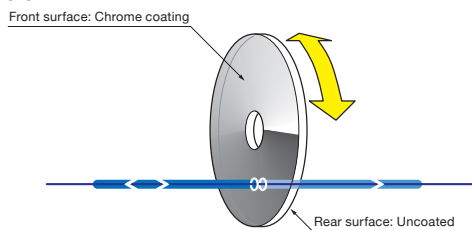
High power laser light incident can have thermal lens effects, please use (VBS) Variable Beam Splitter for high power and high energy laser application. [Reference](#) B062

The reflected laser light onto the filter is dangerous for eyes, the user must be aware and be prepared to use unreflective tools at the end of the laser beam.

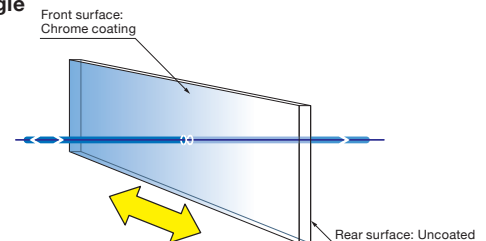
The normal incident of the laser beam may produce optical feedback, to avoid this situation please use it with a small incident angle. Incident light with large beam onto the Variable ND can produce a laser streak inside of the beam. Use the incident to the filter with a narrow beam.

### Schematic

#### ●Circle



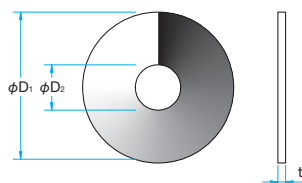
#### ●Rectangle



### Outline Drawing

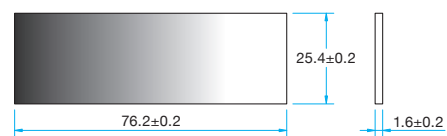
(in mm)

#### ●Circle



Tolerance	50
Diameter	$D_{1:0.1}^{+0.10}$
Inner diameter	$D_{2:0.1}^{+0.10}$
Thickness	$t \pm 0.1$
100	
Diameter	$D_{1:0.2}^{+0.10}$
Inner diameter	$D_{2:0.1}^{+0.10}$
Thickness	$t \pm 0.2$

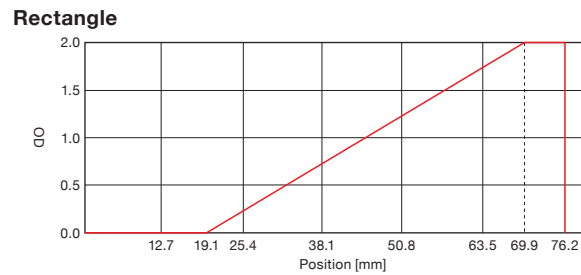
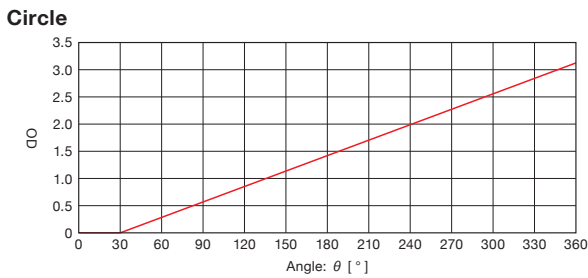
#### ●Rectangle



Circle				
Part Number	Wavelength Range [nm]	D <sub>1</sub> [mm]	D <sub>2</sub> [mm]	t [mm]
VND-50	400 – 2000	50	15	2
VND-100	400 – 2000	100	20	3
VND-50U	200 – 2000	50	15	2
VND-100U	200 – 2000	100	20	3

Rectangle	
Part Number	VND-13

Optical Density (Reference data) OD: Optical density

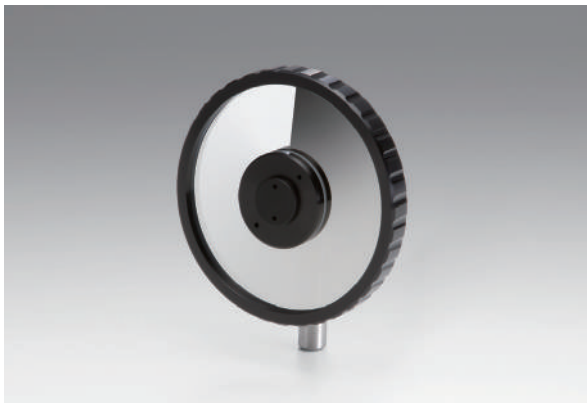


## NDHN

Catalog Code **W3101**

Round shape variable reflective ND filter mounted with its holder. Since the weak part of the glass is protected by the metal, it can be used safely.

The adjusted position can be fixed with a clamp  
The filter can be turned in 360 degrees without break  
NDHN-U is used with VND-U, the Ultraviolet ND filter.



### Attention

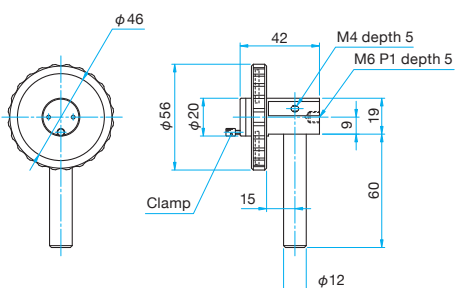
For ND filter change, please contact our International Sales Division.

Specifications		Primary material: Aluminum Finish: Black Anodized
Part Number	ND filter parts number	Weight [kg]
NDHN-50	VND-50	0.09
NDHN-100	VND-100	0.2
NDHN-U50	VND-50U	0.09
NDHN-U100	VND-100U	0.2

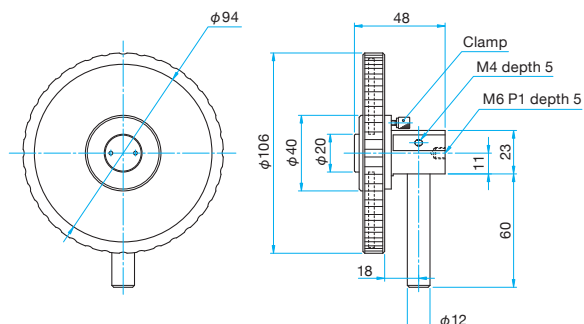
### Outline Drawing

(in mm)

NDHN-50/U50 M6 P1



NDHN-100/U100 M6 P1



Application Systems

Optics &amp; Optical Coatings

Holders

Bases

Manual Stages

Actuators

Motorized Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

Colored Glass Filters

Dielectric Filters

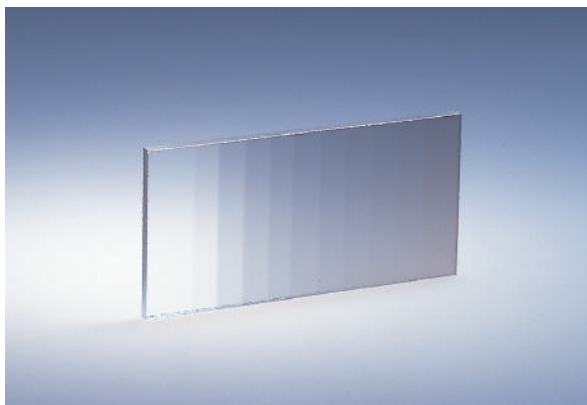
Etalon

## Adjusting the transmitting light at an equal intervals of optical density. Fit for densitometer and colorimeter calibration use.

Possible to select 11 steps of optical density intervals on one single plate. It allows to estimate roughly the optical density value that can not be recognized by human eyes.

With the chromic thin coating, it is applied to laser spot power adjustment.

With the chromic thin coating, the optical density can not be changed even if the wavelength is changed in the visible light range.



### Specifications

Part Number	<b>SND-12</b>
Material	Soda Lime Glass
Surface flatness of substrate	Both side: glossy surface (no polishing)
Coating	Cr (Chrome)
Wavelength Range	400 – 700nm
Transmittance	10 – 91.2% (Divided by 11 step)
Surface Quality (Scratch-Dig)	80-50

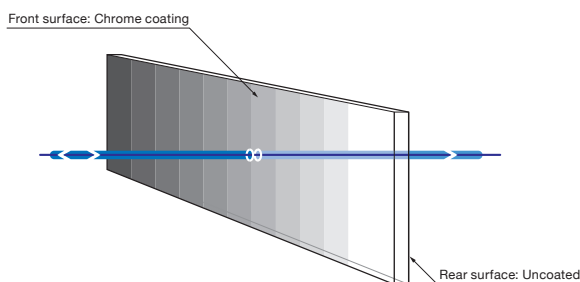
### Attention

The uniformity of the transmitted light is limit at 4.6mm×2.5mm, Please use for the beam size of 3mm or below.

The transmittance changes with a logarithm for quantity of movement. It is not a proportional movement.

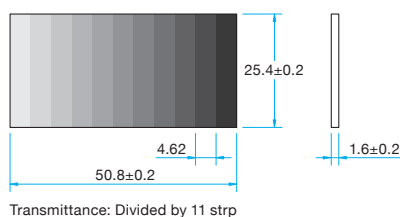
Can not be applied with high energy pulsed laser.

### Schematic



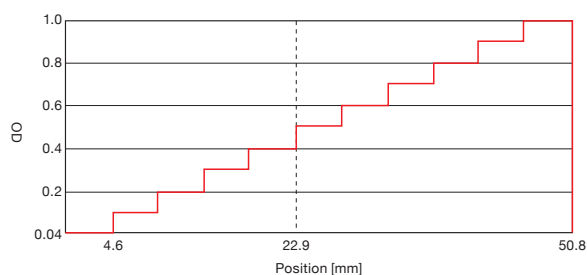
### Outline Drawing

(in mm)



### Optical Density (Reference data)

OD: Optical density



Position and relation of transmittance

Position [mm]	2.31	6.93	11.55	16.17	20.79	25.41	30.03	34.65	39.27	43.89	48.51
Optical density (OD)	0.04	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Transmittance [%]	91.2	79.4	63.1	50.1	39.8	31.6	25.1	20.0	15.8	12.6	10.0

### Compatible Optic Mounts

CHA-60 / FHS-50

This is a high transmittance diffuser comparing to the other product, we can obtain a wide diffusion light at a single direction.

It is used for sheet light and laser marking system for fluid observation.

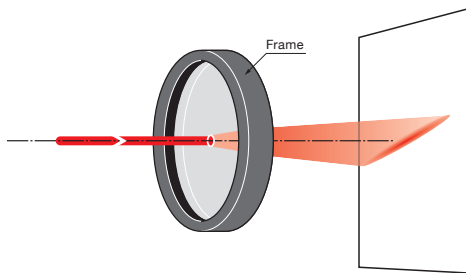
The beam shaping diffuser is made with many small lenses in random shape on its surface. The emitted light thru the small lenses form the beam into an ellipse shape. It cannot cause a big light quantity loss by dispersion or a reflection in the irrelevant direction.

There is no necessary to adjust the optical axis like a lens, the light incident can be projected onto anywhere of the beam shaping diffuser surface, the ellipse beam shape can be obtained.

When rotate the optics, the ellipse shape will rotate too.

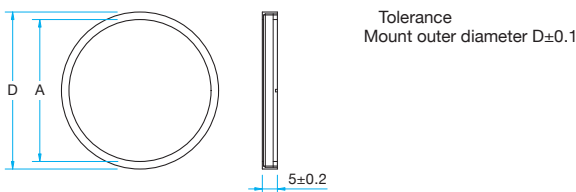


### Schematic



### Outline Drawing

(in mm)



### Specifications

Material	Polycarbonate
Optics diameter	About 0.25mm
Wavelength Range	400 – 1100nm
Transmittance	85 – 90% (But it depend on the diffusion angle)
Angle tolerance	±15% (Launch angle 10°) ±1.5° (Launch angle 10°)
Refractive index	1.586

### Guide

We accept to produce a product without frame and in different size.

We can produce the emitted light in circular distribution form.

### Attention

Can be used for laser light but the diffused light can not be returned to one focused spot light.

Clean the optics with appropriate lens cleaning alcohol or distilled water only.

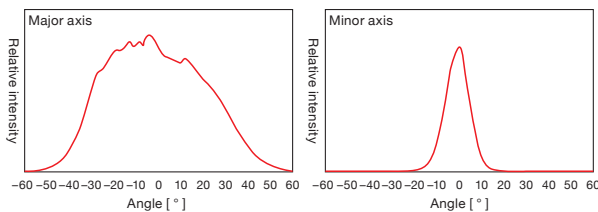
The surface of the optics is extremely delicate, please avoid any impulsion contact with hard material or rub the surface.

The optics can be deformed or melt, please avoid using it with high power laser or high energy pulsed laser.

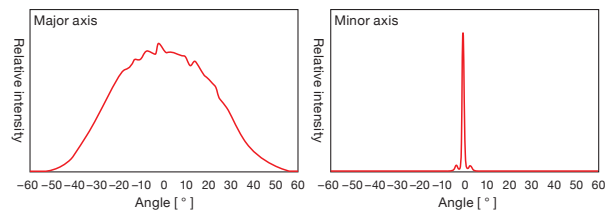
Part Number	Mount outer diameter D [mm]	Clear aperture A [mm]	Elliptic diffusion angle (diameter x minor axis) [°]
MDFPC-30-60/10D	30	22	60x10
MDFPC-30-60/1D	30	22	60x1
MDFPC-30-40/0.2D	30	22	40x0.2
MDFPC-30-30/5D	30	22	30x5
MDFPC-52-60/10D	52	47	60x10
MDFPC-52-60/1D	52	47	60x1
MDFPC-52-40/0.2D	52	47	40x0.2
MDFPC-52-30/5D	52	47	30x5

### Diffusion Angle Characteristics (Reference data)

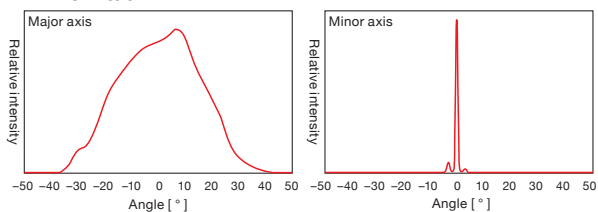
#### MDFPC-60/10D



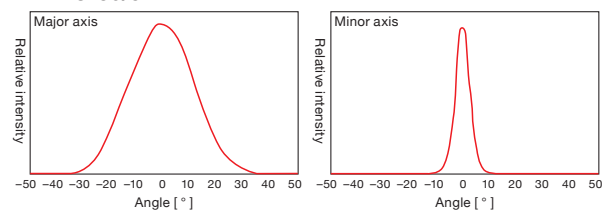
#### MDFPC-60/1D



#### MDFPC-40/0.2D



#### MDFPC-30/5D



### Compatible Optic Mounts

FH-50 / LHF-30 / LHA-60

# Ground Glass Diffusers | DFB1/DFSQ1

RoHS Catalog Code W3104

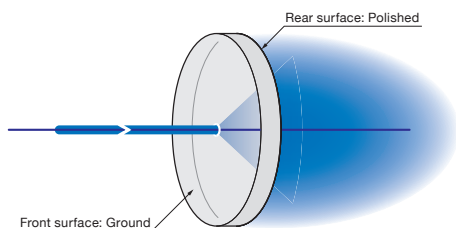
Ground glass diffuser has a large area diffusion of an incident light. It is widely used in prevention from imaging of lamp filament or to diffuse in a large area of projected light or used it as a screen.

The ground glass diffuser with sand abrasive surface at sand number range from #240 to #1500. More the number is big more the sand particle size is fine.

BK7 for visible and NIR, for Ultraviolet we recommend Synthetic fused silica substrates.



### Schematic



### Specifications

Material	DFB1: BK7 DFSQ1: Synthetic fused silica	
Surface condition	Front surface	Sand abrasive surface at various sand number range
	Rear surface	Polished (Surface flatness: about 4 )
Wavelength Range	DFB1: 400 – 2000nm BFSQ1: 200 – 2000nm	
Clear aperture	90% of Actual Aperture	

### Guide

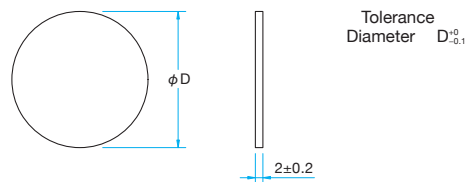
Ground glass on both surfaces or specific custom-made size substrates, please contact our International Sales Division.

### Attention

The characteristic graph shown below is just a reference of a measurement conditions. This is not a measured result of our products. Use the sand abrasive surface for screen application. The backside may have 4% reflectivity and it may cause a ghost imaging phenomena.

### Outline Drawing

(in mm)



### BK7

Part Number	Diameter D [mm]	Sand blasted surface (sand number range)
DFB1-30C02-240	30	#240
DFB1-30C02-400	30	#400
DFB1-30C02-600	30	#600
DFB1-30C02-800	30	#800
DFB1-30C02-1000	30	#1000
DFB1-30C02-1500	30	#1500
DFB1-50C02-240	50	#240
DFB1-50C02-400	50	#400
DFB1-50C02-600	50	#600
DFB1-50C02-800	50	#800
DFB1-50C02-1000	50	#1000
DFB1-50C02-1500	50	#1500

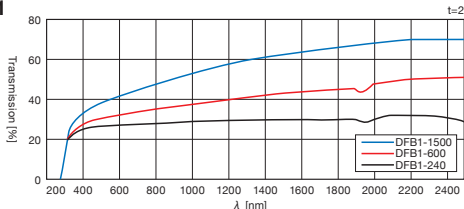
### Synthetic fused silica

Part Number	Diameter D [mm]	Sand blasted surface (sand number range)
DFSQ1-30C02-240	30	#240
DFSQ1-30C02-400	30	#400
DFSQ1-30C02-600	30	#600
DFSQ1-30C02-800	30	#800
DFSQ1-30C02-1000	30	#1000
DFSQ1-30C02-1500	30	#1500
DFSQ1-50C02-240	50	#240
DFSQ1-50C02-400	50	#400
DFSQ1-50C02-600	50	#600
DFSQ1-50C02-800	50	#800
DFSQ1-50C02-1000	50	#1000
DFSQ1-50C02-1500	50	#1500

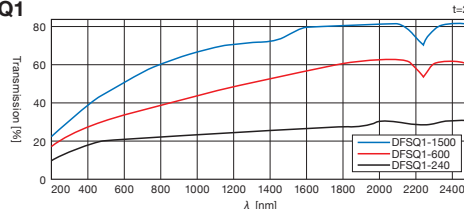
### Diffuser characteristics

The characteristic of the diffuser depends on the sandblast grit range. The sand number range at #240 & #400 with large surface roughness the light incident is strongly diffused and the transmitted light is projected onto larger area. The sand number range at #1000 & #1500 with small surface roughness the diffused light is weak and the transmitted beam diffuse gradually the surrounding of the beam. The diffusion of the light is different in accordance with the wavelength, the long wavelength light has lower diffusion capability. Please see the graph here below for your reference:

#### DFB1



#### DFSQ1



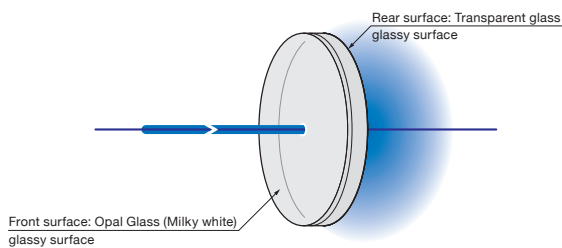


Scattered light into the layer of a milky white opal glass and strongly diffuse evenly. It is widely used in indirect lighting of the observation system or to uniformize brightness distribution of the light source.

The diffusion area is larger than ground glass diffuser.  
Tough, stable and hard to get scratched  
Opal diffusion glass has an extremely flat surface.



Schematic



Circle

Part Number	Diameter D [mm]	Thickness t [mm]
DFO-30C03-1	30	3.0
DFO-50C03-1	50	3.0

Specifications

Material	Opal Glass (Milky white) and transparent glass
Surface condition	Both side: glassy surface (no polishing)
Wavelength Range	400 - 2000nm
Clear aperture	Circle of 90% of the diameter or Circle inscribed in a square of 90% of the dimensions

Guide

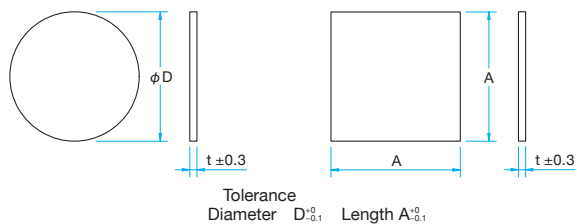
We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

Attention

The light diffuse into every directions, the transmitted light density loss is huge. For screen application, the distribution of imaging is on the depth direction, a sharp contour will not be obtained.

Outline Drawing

(in mm)

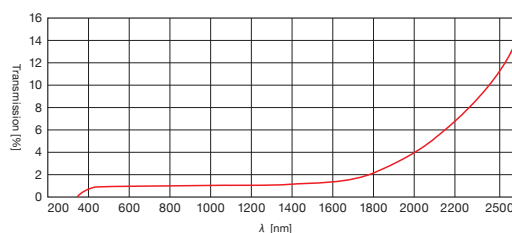


Square

	Length A [mm]	Thickness t [mm]
DFO-30S03-1	30	3.0
DFO-50S03-1	50	3.0

The diffuser characteristics

Scattered light into the layer of a milky white opal glass and strongly diffuse evenly. It is widely used in indirect lighting or to uniformize diffusion of lighting. The transmitted beam will be diffused and lost its beam principle, the light is diffused into different levels in the glass. The opal diffusion glass is different from the ground glass diffuser by its high transmittance at IR zone. Here enclosed a chart of the refractive of the opal diffusion glass and its base material. It shows the transmittance is high on the IR range.



Compatible Optic Mounts

LHA-60 / FHS-50 / CHA-60

# Short Wave Cutoff Filters | SCF

RoHS Catalog Code W3106

Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

MotORIZED Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

**Filters**

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

**Colored Glass Filters**

Dielectric Filters

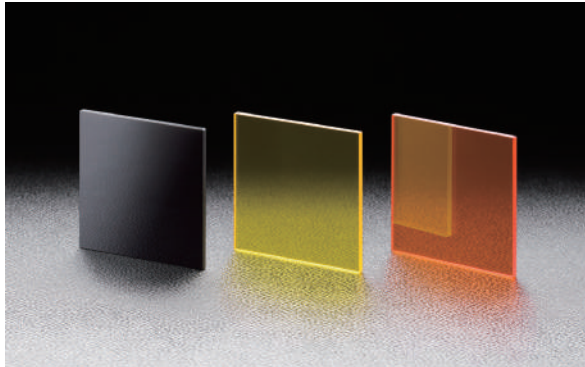
Etalon

Longpass filter that cuts the short wavelength and let the long wavelength transmit. It is mainly used for cutting the unused wavelength like the UV light when doing inspection and measurement experiments.

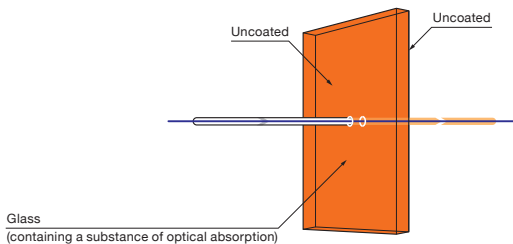
The cut wavelength range is well absorbed without leaking of transmitted light.

Can select the transmitted light with an accuracy notch as accurate as 10nm to 20nm.

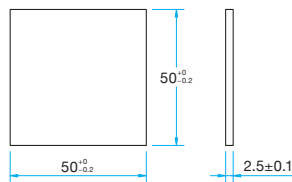
The transmitted wavelength range has no low absorption and no ripple, even at 2000nm without absorption, transmittance can be obtained.



### Schematic



### Outline Drawing (in mm)



### Guide

For Dichroic filter with smaller wavelength slope we recommend the (model SDM) in our catalog. [Reference](#) B248  
We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

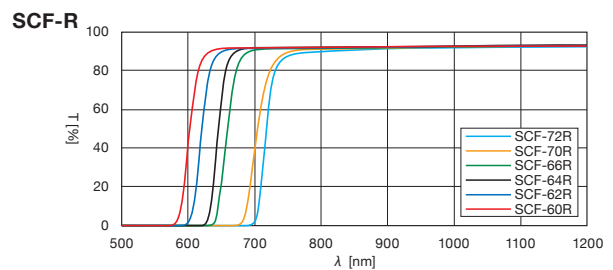
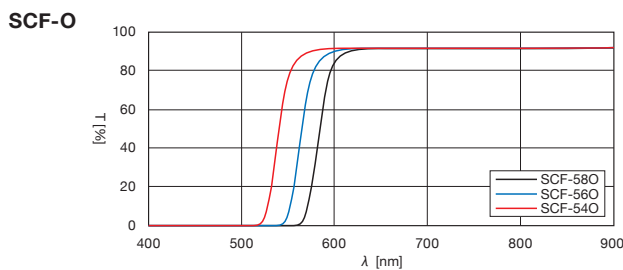
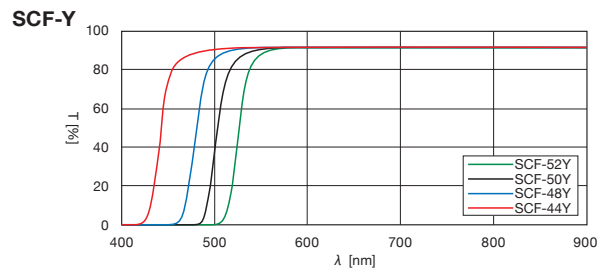
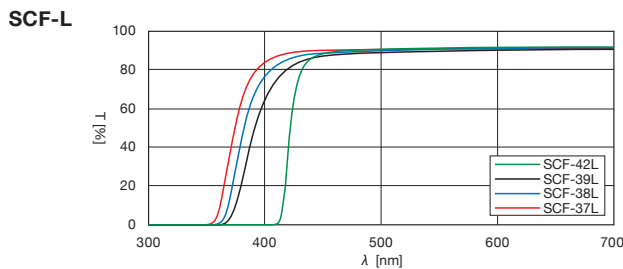
### Attention

The absorption wavelength range can not be used with high power laser and high energy pulsed laser.  
There is no coating on both surfaces of the filter, the transmittance loss of about 10% occurs.  
The model shown with a [ ] has been discontinued, serving until the end of our inventory.

### 370 – 720nm

Part Number	Transmittance limit wavelength T [nm]	Wavelength slope width Δ [nm]	Color tone
SCF-50S-37L	370±5	<35	Colorless
SCF-50S-38L	380±5	<35	Colorless
SCF-50S-39L	390±5	<35	Colorless
SCF-50S-42L	420±5	<25	Colorless
SCF-50S-44Y	440±5	<25	Yellow
SCF-50S-48Y	480±5	<25	Yellow
SCF-50S-50Y	500±5	<25	Yellow
SCF-50S-52Y	520±5	<25	Yellow
SCF-50S-54O	540±5	<25	Orange
SCF-50S-56O	560±5	<25	Orange
SCF-50S-58O	580±5	<25	Orange
SCF-50S-60R	600±5	<25	Red
SCF-50S-62R	620±5	<25	Red
SCF-50S-64R	640±5	<35	Red
SCF-50S-66R	660±5	<35	Red
SCF-50S-70R	700±10	<45	Black
SCF-50S-72R	720±10	<45	Black

### Typical Transmittance Data T: Transmission



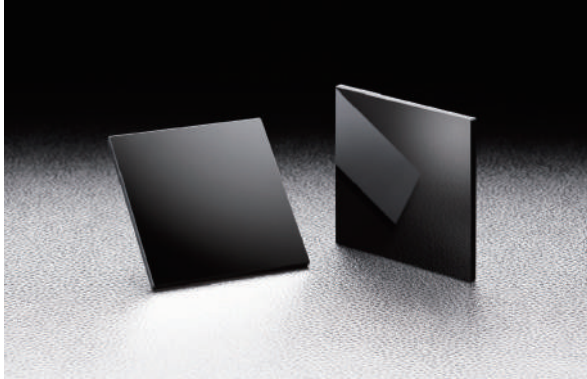
### Compatible Optic Mounts

FHS-50 / FH-50



A filter that transmits IR wavelength and absorbs the UV and Visible range. It is widely used in IR light selection from white light source and infrared alarm system or night vision system.


Transmission limit wavelength selectable at a range from 760nm to 985nm. It is used as IR sensing camera by adding an IR transmitting filter to semiconductor image sensor. The visible and the UV range can be shut and the sensibility of IR observation get higher by adding it to image sensor.



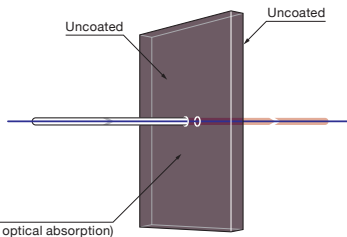
### Guide

For a reflective type of filter, "cold mirror" we recommend (model CLDM) in our catalog. [Reference](#) B243  
We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

### Attention

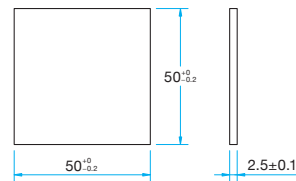
The absorption wavelength range can not be used with high power laser and high energy pulsed laser. There is no coating on both surfaces of the filter, the transmittance loss of about 10% occurs. The model shown with a  has been discontinued, serving until the end of our inventory.

### Schematic



### Outline Drawing

(in mm)



### 760 – 985nm

Part Number	Transmittance limit wavelength T [nm]	Wavelength slope width Δ [nm]	Color tone
ITF-50S-76IR	760±10	<60	Black
ITF-50S-80IR	800±10	<60	Black
ITF-50S-83IR	830±10	<60	Black
ITF-50S-85IR	850±10	<60	Black
ITF-50S-100RM	985±10	<222	Black

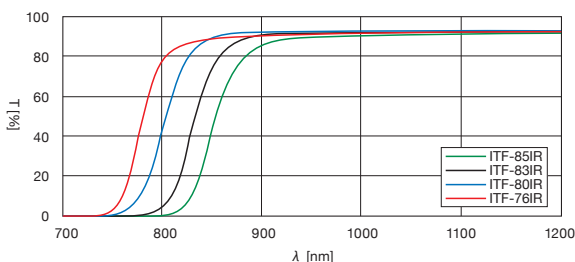
### 830nm

Part Number	Transmittance limit wavelength T [nm]	Wavelength slope width Δ [nm]	Central wavelength [nm]	Central transmittance rate [%]	Short-pass wavelength [nm]	Short-pass wavelength transmittance rate [%]	Longest wavelength [nm]	Longest wavelength transmittance rate [%]	Color tone
ITF-50S-83RT	730±10	<40	790±5	85±3	691	<0.1	1225	<0.2	Black

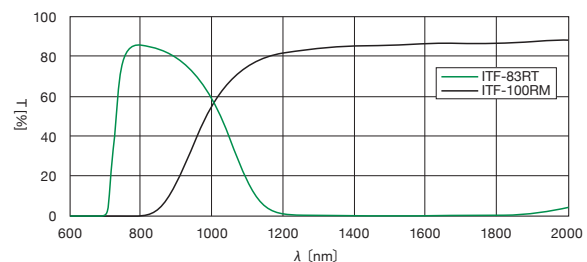
### Typical Transmittance Data

T: Transmission

#### ITF-76IR · 80IR · 83IR · 85IR



#### ITF-100RM · 83RT



### Compatible Optic Mounts

FHS-50 / FH-50

# UV Transmitting Filters | UTVAF

RoHS Catalog Code W3108

Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

MotORIZED Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

**Filters**

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

Colored Glass Filters

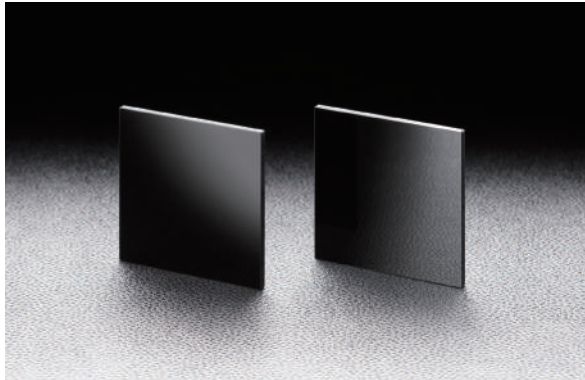
Dielectric Filters

Etalon

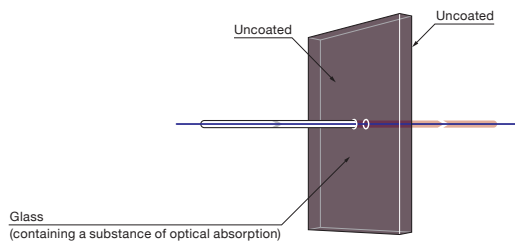
**A filter that transmits a specific wavelength at the UV range and cuts the visible range. It is used to select UV wavelength from white light source or select a specific wavelength from multi-wavelength.**

It is widely used in fluorescence imaging or select only a UV exposure from a visible light. UTVAF-36U is used for selecting the i line (365nm) of a mercury lamp.

Use the filter in a short wavelength detector and cut off the visible light of high brightness, and can increase the sensibility of the UV light.



### Schematic



### Guide

We are also providing bandpass filter at narrow wavelength (model VPF). [Reference](#) B254

We are also providing high transmittance filter for interference application (model YIF). [Reference](#) B252

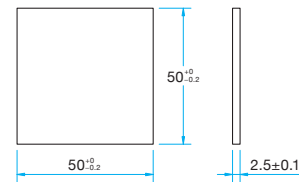
We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

### Attention

The absorption wavelength range can not be used with high power laser and high energy pulsed laser.

There is no coating on both surfaces of the filter, the transmittance loss of about 10% occurs.

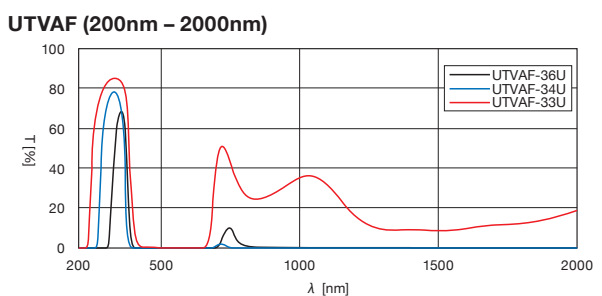
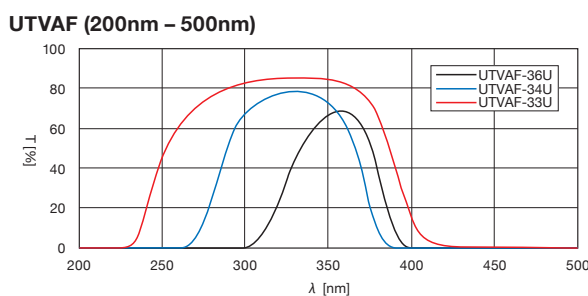
### Outline Drawing (in mm)



### Specifications

Part Number	Central wavelength [nm]	Central transmittance rate [%]	Short-pass wavelength [nm]	Short-pass wavelength transmittance rate [%]	Longest wavelength [nm]	Longest wavelength transmittance rate [%]	Average Transmittance (absorption limit long wavelength - 700nm) [%]
UTVAF-50S-33U	317	>85	233	<5	431	<0.3	<5.0
UTVAF-50S-34U	325	>73	251	<5	398	<0.1	<0.1
UTVAF-50S-36U	350	>72	288	<5	410	<0.1	<0.1

### Typical Transmittance Data T: Transmission

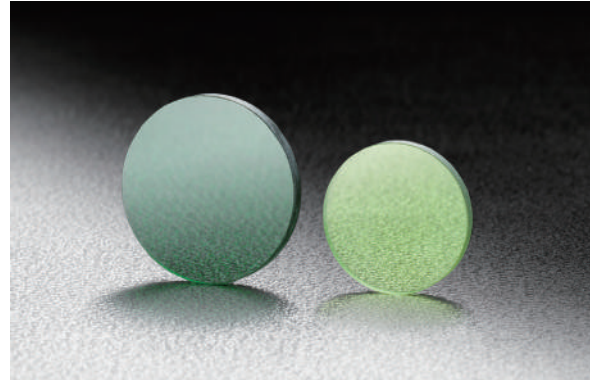
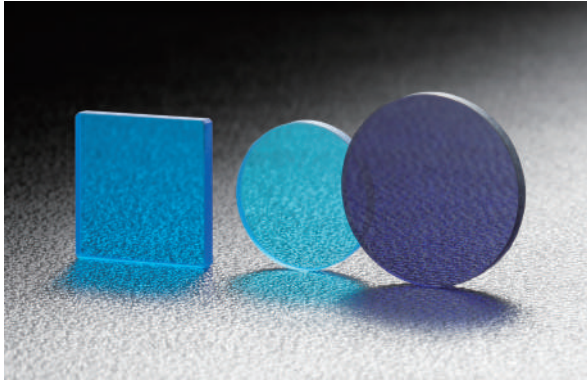


### Compatible Optic Mounts

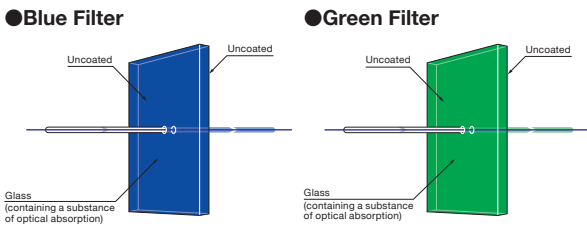
FHS-50 / FH-50

A filter that transmits a specific wavelength at from blue to green wavelength and cuts other wavelength of the visible range. It is used to select blue or green wavelength from white light source or select a specific wavelength from multi-wavelength.

A selection of various central wavelength and spectral width at the range from 370nm to 550nm. To select the emission line of a specific wavelength from various emission lamp. By insertion of the filter into microscope or CCD camera can have better contrast in a vision experiments.

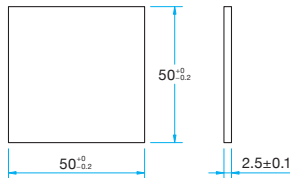


### Schematic



### Outline Drawing

(in mm)



### Guide

We are also providing bandpass filter at narrow wavelength (model VPF). [Reference](#) B254  
 We are also providing high transmittance filter for interference application (model YIF). [Reference](#) B252  
 We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

### Attention

The absorption wavelength range can not be used with high power laser and high energy pulsed laser. There is no coating on both surfaces of the filter, the transmittance loss of about 10% occurs. Due to the specifications of the glass material of the green filter, you can not obtain a high and sharp transmittance, we recommend to use the high transmittance interference filter (model YIF). [Reference](#) B252  
 The model shown with a has been discontinued, serving until the end of our inventory.

### Blue Filter

Part Number	Central wavelength [nm]	Central transmittance rate [%]	Short-pass wavelength [nm]	Short-pass wavelength transmittance rate [%]	Longest wavelength [nm]	Longest wavelength transmittance rate [%]	Average Transmittance (absorption limit long wavelength - 700nm) [%]
BLF-50S-370B	370	>82	289	<0.5	486	<0.1	<0.1
BLF-50S-390B	390	>78	309	<5	528	<0.1	<0.1
BLF-50S-410B	410	>92	261	<1	625	<0.5	<5 (555 - 700nm)
BLF-50S-440B	440	>44	358	<1	535	<0.5	<0.3
BLF-50S-460B	460	>84.5	324	<5	718	<1.0	<14 (555 - 700nm)

### Green Filter

Part Number	Central wavelength [nm]	Central transmittance rate [%]	Short-pass wavelength [nm]	Short-pass wavelength transmittance rate [%]	Longest wavelength [nm]	Longest wavelength transmittance rate [%]	Average Transmittance (absorption limit long wavelength - 700nm) [%]
GRF-50S-530G	526	>15	452	<0.1	615	<0.1	<0.1
GRF-50S-533G	533	>50	415	<0.1	668	<3.0	<3.0
GRF-50S-545G	541	>13	483	<0.1	621	<0.1	<0.1
GRF-50S-550G	548	>80	406	<0.1	637	<55	<55

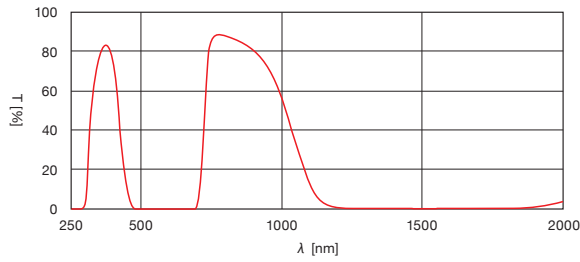
### Compatible Optic Mounts

FHS-50 / FH-50

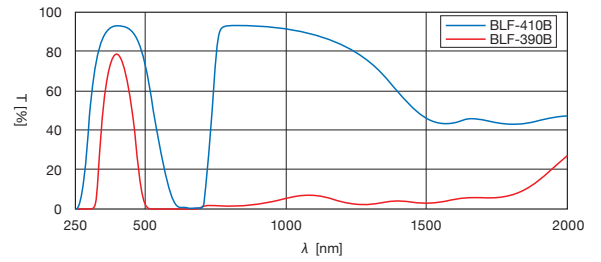
# Blue and Green Filters | BLF/GRF

Typical Transmittance Data T: Transmission

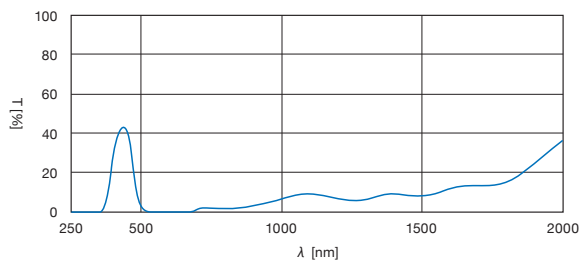
**BLF-370B**



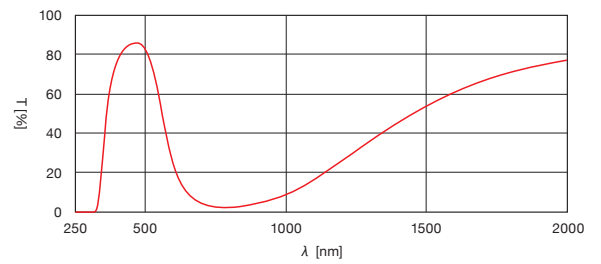
**BLF-390B · 410B**



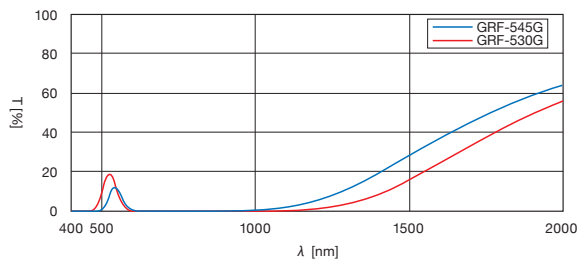
**BLF-440B**



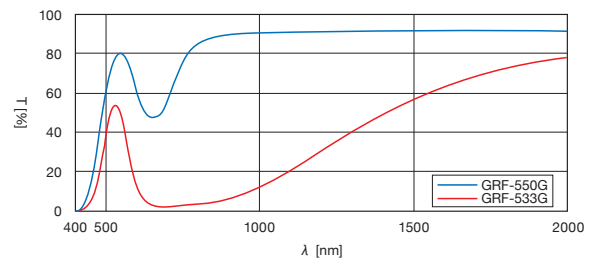
**BLF-460B**



**GRF-530G · 545G**



**GRF-533G · 550G**



Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

MotORIZED Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

**Filters**

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

Colored Glass Filters

Dielectric Filters

Etalon

This is widely used in absorbing heat from halogen light and xenon light for experiments that need to avoid UV or heat from those lightings.

Keep away the heat that liberate from the NIR and IR range and cut off the brightness of the NIR and IR light. It is also employed to cut-off spot light that liberate heat in microscope illumination. Light transmitted through the filter and does not darken the high transmitted visible light.

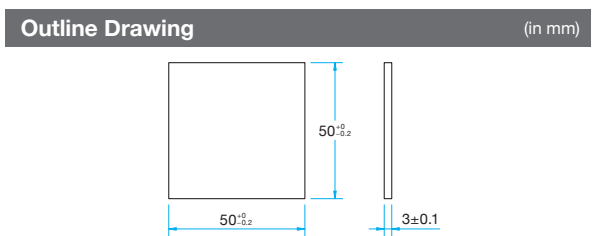
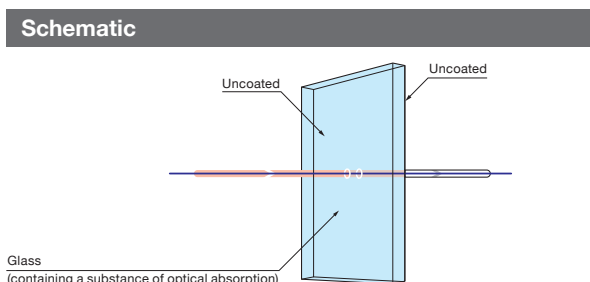


**Guide**

The filter can be broken if it is placed too close to a high brightness lamp with its sudden heat affection. We recommend to strengthening the glass before this operation. (Reference B213 for glass strengthening process)  
We can provide custom-made specification which is not mentioned on our catalog, please contact our International Sales Division.

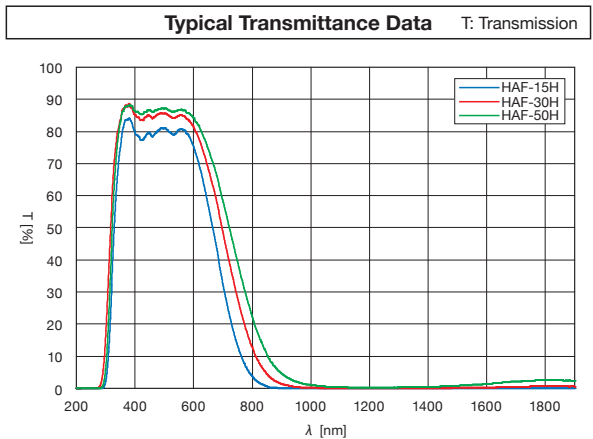
**Attention**

The absorption wavelength range can not be used with high power laser and high energy pulsed laser. There is no coating on both surfaces of the filter, the transmittance loss of about 10% occurs.  
These prices are valid exclusively for Japan only. For your country prices, please contact your local distributor or our International Sales Division for further information.



**Specifications**

Part Number	Average transmittance rate (visible range) [%]	Transmittance range wavelength [nm]	Transmissible range wavelength [nm]	Longest wavelength [nm]	Longest wavelength transmittance rate [%]	Average Transmittance (absorption limit long wavelength - 2000nm) [%]
HAF-50S-15H	>75	573	701±10	867	<0.5	<0.1
HAF-50S-30H	>80	558	743±10	975	<0.5	<0.5
HAF-50S-50H	>81	570	777±10	1052	<1.0	<3.0



**Compatible Optic Mounts**

FHS-50 / FH-50

Application Systems

Optics & Optical Coatings

Holders

Bases

Manual Stages

Actuators

Motoeized Stages

Light Sources

Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

**Filters**

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

ND Filters

Diffusers

**Colored Glass Filters**

Dielectric Filters

Etalon