

Variable Reflective ND Filter

Rotating Variable Reflective ND Filter Holder

VND
NDHN

RoHS
RoHS

VND

The VND is a reflective ND filter. The reflectivity and the transmittance vary 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 made of fused silica.



Specifications

Circle

Material	VND: BK7 VND-U: Synthetic fused silica
Coating	Cr (Chrome)
Transmittance	0.1 – 92%
Surface flatness of substrate	λ (Measurement area: $\phi 30\text{mm}$)
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

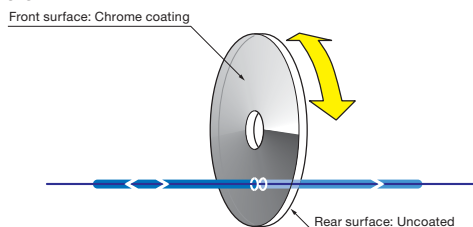
- ▶ For AOI (Angle of Incident) changing, the transmittance can be also changed. We recommend to use with the VBS, Variable Beam Splitter.

Attention

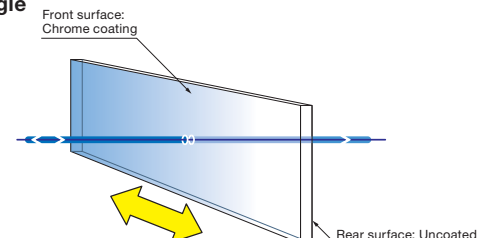
- ▶ The round shape variable ND filter is very fragile. The bore is made of glass. Do not force on one surface of the bore when fixed in a holder, it could be broken. For a compatible ND filter holder (NDHN) for your optics replacement on to the holder, please contact our Sales Division for assistance.
- ▶ The Chromium film coating is absorptive, please avoid to use with high power laser.
- ▶ High power laser light can have thermal lens effects, please use (VBS) Variable Beam Splitter for high power and high energy laser applications.
- ▶ The reflected laser beam 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 strength inside of the beam. Use incident light to the filter with a narrow beam.

Schematic

● Circle



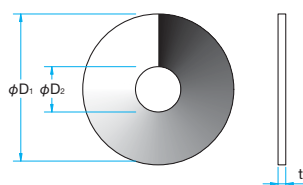
● Rectangle



Outline Drawing

(in mm)

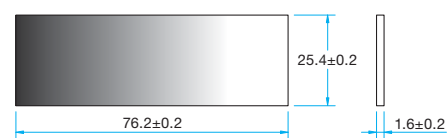
● Circle



● Tolerance

$\phi 50$	Diameter	$\phi D_1^{+0.1}$
	Inner diameter	$\phi D_2^{+0.1}$
	Thickness	$t \pm 0.1$
$\phi 100$	Diameter	$\phi D_1^{+0.2}$
	Inner diameter	$\phi D_2^{+0.1}$
	Thickness	$t \pm 0.2$

● Rectangle



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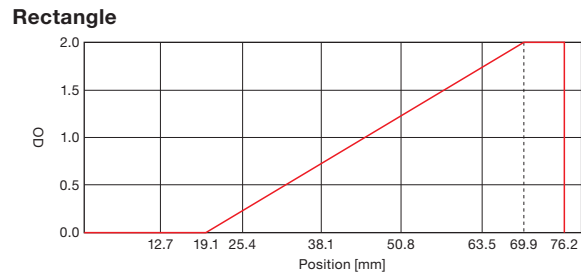
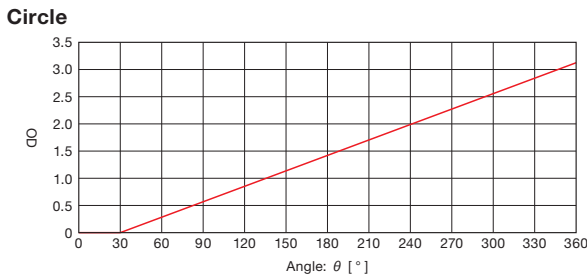
Dielectric Filters

Etalon

Circle				
Part Number	Wavelength Range [nm]	ϕD_1 [mm]	ϕD_2 [mm]	t [mm]
VND-50	400 – 2000	$\phi 50$	$\phi 15$	2
VND-100	400 – 2000	$\phi 100$	$\phi 20$	3
VND-50U	200 – 2000	$\phi 50$	$\phi 15$	2
VND-100U	200 – 2000	$\phi 100$	$\phi 20$	3

Rectangle	
Part Number	VND-13

Optical Density (Reference data) OD: Optical density



NDHN

Catalog Code **W3101**

Round shape variable reflective ND filter is mounted with its holder. The glass part to the metal part is safely mounted and ready to be used.

- 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

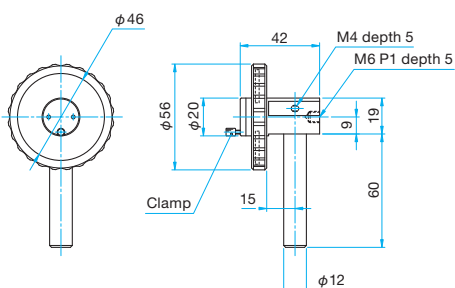
▶ For ND filter change, please contact our Sales Division.

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

