

Neutral Density (ND) Filters

Neutral Density (ND) Filters

ND filters reduce evenly the transmittance of light over the entire VIS spectrum. They decrease the brightness of an image without changing the depth of field (DoF). They attenuate light by absorbing a part of the energy of the VIS wavelength, without influence on the color balance. ND filters are used to control the intensity of light going through an optical system to avoid overexposure, blooming on imaging sensors and prevent damages on light sensitive measuring sensors.



ND filters are available mounted with common thread sizes M 25.5 to M 67 and unmounted in sizes 27 mm to 74 mm diameter. Intermediate size down to 10 mm possible on request.

Call us to discuss your OEM and custom requirements.

Key Features

- Insensitive to angle of incidence
- Decrease brightness without changing Depth of Field
- Stackable, combine ND-filters to achieve OD needed
- Even attenuate avoid effects on color balance

Applications

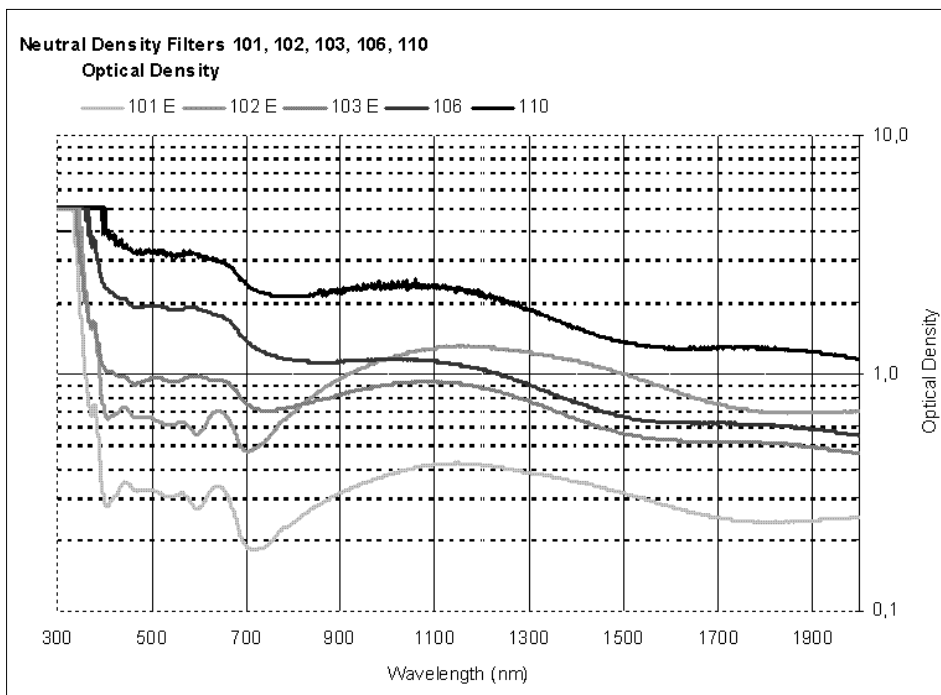
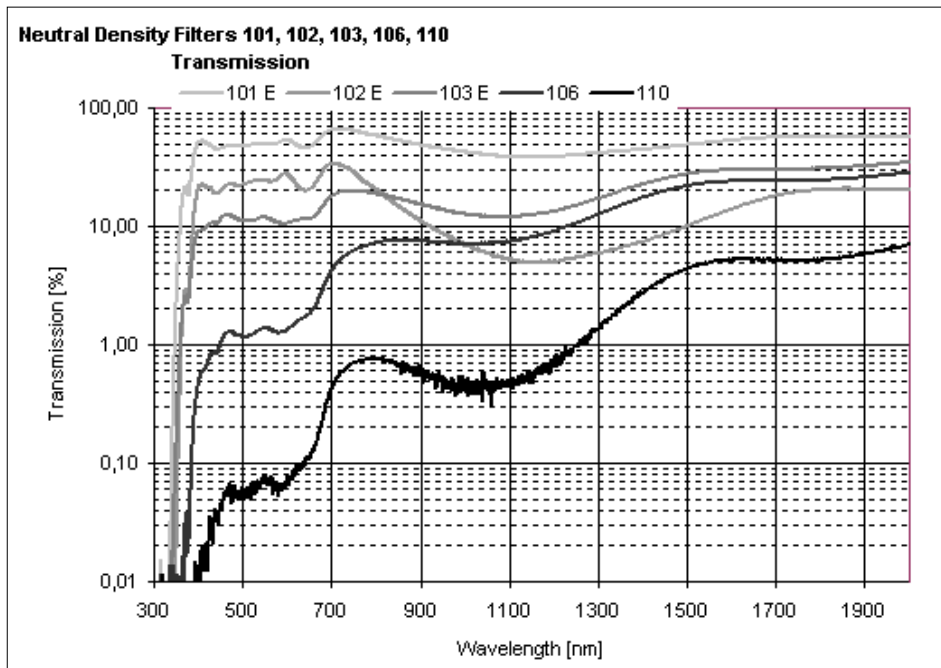
- Welding
- Measuring Instruments
- R&D
- Laser Measurement

General technical specifications

according to ISO 10110

Wavelength range	400 – 700 nm
Parallelism	1'
Surface	19-30mm: 5/2x0,10 C2 x 0,10 L3x0,008 31-50mm: 5/2x0,16 C1 x 0,16 L3x0,008 51-64mm: 5/3x0,16 C3 x 0,16 L3x0,008
Wavefront distortion	19 – 30 mm:13/1 (0.2) 31 – 50 mm:13/1 (0.25) 51 – 64 mm:13/1 (0.35)
Climate Testing	
Slow temperature cycling	DIN ISO 9022-2-14-03 -1
Damp heat, cyclic	DIN ISO 9022-2-16-01-1
Chemical resistant	DIN ISO 9011-4-04-05
Adhesive strength	DIN ISO 9211-4-02-03

Neutral Density (ND) Filter 101, 102, 103, 106, 110



Technical Specifications

Filter type	IF 101	IF 102	IF 103	IF 106	IF 110
Optical density	0.3	0.6	0.9	1.8	3.0
Transmittance	50 %	25 %	12.5 %	1.6 %	0.15 % +/- 0.05%
Thickness	2.0 mm	2.3 mm	1.65 mm	1.8 mm	2.15 mm +/- 0.05
AR coating	E	E	E	N/A	N/A

Neutral Density (ND) Filter 101, 102, 103, 106, 110

unmounted	filter glass	ID	mounted	filter	ID
27 mm	IFG 101 E 27,0	1088100	CMT	IF 101 E CMT	1077649
34 mm	IFG 101 E 34,0	1086472	SH 25.5	IF 101 E SH 25.5	1001935
40 mm	IFG 101 E 40,0	1080119	SH 27.0	IF 101 E SH 27.0	1001936
43 mm	IFG 101 E 43,0	1088492	SN1 30.5	IF 101 E SN1 30.5	1006983
46 mm	IFG 101 E 46,0		SH 35.5	IF 101 E SH 35.5	1084477
49 mm	IFG 101 E 49,0		SH 37.0	IF 101 E SH 37.0	1076071
52 mm	IFG 101 E 52,0		SH 39.0	IF 101 E SH 39.0	
55 mm	IFG 101 E 55,0		SH 40.5	IF 101 E SH 40.5	1053794
64 mm	IFG 101 E 64,0		SH 43.0	IF 101 E SH 43.0	
74 mm	IFG 101 E 74,0		SH 46.0	IF 101 E SH 46.0	
			SH 49.0	IF 101 E SH 49.0	1053793
			SH 52.0	IF 101 E SH 52.0	1001937
			SH 55.0	IF 101 E SH 55.0	
			SH 58.0	IF 101 E SH 58.0	1075422
			SH 62.0	IF 101 E SH 62.0	1083564
			SH 67.0	IF 101 E SH 67.0	1073858

unmounted	filter glass	ID	mounted	filter	ID
27 mm	IFG 102 E 27,0	1088101	CMT	IF 102 E CMT	1077650
34 mm	IFG 102 E 34,0		SH 25.5	IF 102 E SH 25.5	1001938
40 mm	IFG 102 E 40,0	1083813	SH 27.0	IF 102 E SH 27.0	1001939
43 mm	IFG 102 E 43,0	1083812	SN1 30.5	IF 102 E SN1 30.5	1006984
46 mm	IFG 102 E 46,0		SH 35.5	IF 102 E SH 35.5	1078720
49 mm	IFG 102 E 49,0		SH 37.0	IF 102 E SH 37.0	1076072
52 mm	IFG 102 E 52,0		SH 39.0	IF 102 E SH 39.0	
55 mm	IFG 102 E 55,0		SH 40.5	IF 102 E SH 40.5	1053795
64 mm	IFG 102 E 64,0		SH 43.0	IF 102 E SH 43.0	1075139
74 mm	IFG 102 E 74,0		SH 46.0	IF 102 E SH 46.0	1012481
			SH 49.0	IF 102 E SH 49.0	1001947
			SH 52.0	IF 102 E SH 52.0	1001940
			SH 55.0	IF 102 E SH 55.0	
			SH 58.0	IF 102 E SH 58.0	1075422
			SH 62.0	IF 102 E SH 62.0	1083563
			SH 67.0	IF 102 E SH 67.0	1073859

unmounted	filter glass	ID	mounted	filter	ID
27 mm	IFG 103 E 27,0		CMT	IF 103 E CMT	1084478
34 mm	IFG 103 E 34,0		SH 25.5	IF 103 E SH 25.5	1001941
40 mm	IFG 103 E 40,0		SH 27.0	IF 103 E SH 27.0	1001942
43 mm	IFG 103 E 43,0	1088489	SN1 30.5	IF 103 E SN1 30.5	1006985
46 mm	IFG 103 E 46,0		SH 35.5	IF 103 E SH 35.5	1081868
49 mm	IFG 103 E 49,0	1071784	SH 37.0	IF 103 E SH 37.0	1053796
52 mm	IFG 103 E 52,0		SH 39.0	IF 103 E SH 39.0	
55 mm	IFG 103 E 55,0		SH 40.5	IF 103 E SH 40.5	1011654
64 mm	IFG 103 E 64,0		SH 43.0	IF 103 E SH 43.0	1080226
74 mm	IFG 103 E 74,0	1071786	SH 46.0	IF 103 E SH 46.0	1012482
			SH 49.0	IF 103 E SH 49.0	1001943
			SH 52.0	IF 103 E SH 52.0	1011926
			SH 55.0	IF 103 E SH 55.0	1011927
			SH 58.0	IF 103 E SH 58.0	1085768
			SH 62.0	IF 103 E SH 62.0	1083562
			SH 67.0	IF 103 E SH 67.0	1073860

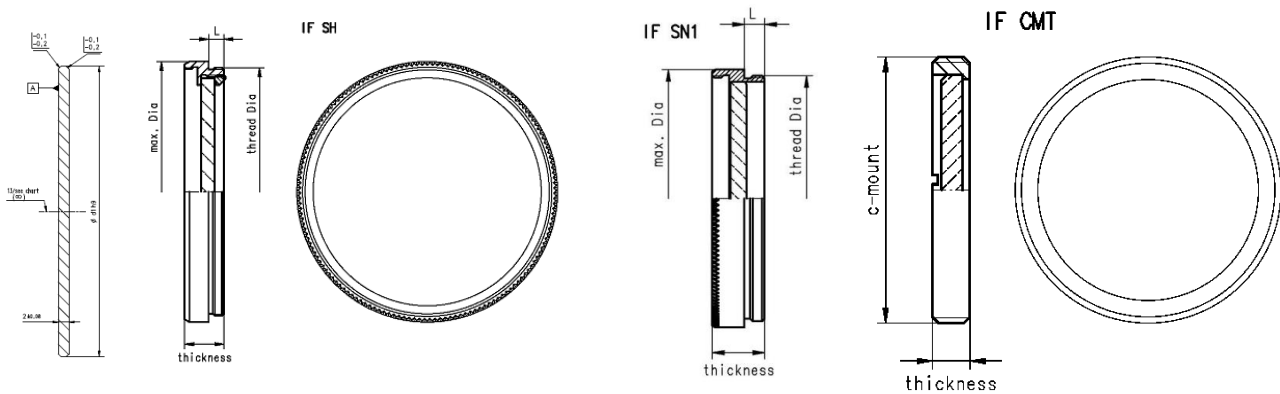
Neutral Density (ND) Filter 101, 102, 103, 106, 110

unmounted	filter glass	ID	mounted	filter	ID
27 mm	IFG 106 27,0		CMT	IF 106 CMT	1078556
34 mm	IFG 106 34,0		SH 25.5	IF 106 SH 25.5	1013282
40 mm	IFG 106 40,0		SH 27.0	IF 106 SH 27.0	1001944
43 mm	IFG 106 43,0	1088490	SN1 30.5	IF 106 SN1 30.5	1075423
46 mm	IFG 106 46,0		SH 35.5	IF 106 SH 35.5	1081871
49 mm	IFG 106 49,0	1069336	SH 37.0	IF 106 SH 37.0	1078557
52 mm	IFG 106 52,0		SH 39.0	IF 106 SH 39.0	
55 mm	IFG 106 55,0		SH 40.5	IF 106 SH 40.5	1019191
64 mm	IFG 106 64,0		SH 43.0	IF 106 SH 43.0	
74 mm	IFG 106 74,0	1069338	SH 46.0	IF 106 SH 46.0	1012483
			SH 49.0	IF 106 SH 49.0	1036561
			SH 52.0	IF 106 SH 52.0	1001945
			SH 55.0	IF 106 SH 55.0	1005751
			SH 58.0	IF 106 SH 58.0	
			SH 62.0	IF 106 SH 62.0	1081871
			SH 67.0	IF 106 SH 67.0	1073861

unmounted	filter glass	ID	mounted	filter	ID
27 mm	IFG 110 27,0	1083307	CMT	IF 110 CMT	1080147
34 mm	IFG 110 34,0		SH 25.5	IF 110 SH 25.5	1076073
40 mm	IFG 110 40,0		SH 27.0	IF 110 SH 27.0	1074053
43 mm	IFG 110 43,0	1088491	SN1 30.5	IF 110 SN1 30.5	15422
46 mm	IFG 110 46,0		SH 35.5	IF 110 SH 35.5	1081063
49 mm	IFG 110 49,0	1069339	SH 37.0	IF 110 SH 37.0	1085093
52 mm	IFG 110 52,0		SH 39.0	IF 110 SH 39.0	
55 mm	IFG 110 55,0		SH 40.5	IF 110 SH 40.5	
64 mm	IFG 110 64,0		SH 43.0	IF 110 SH 43.0	
74 mm	IFG 110 74,0	1069341	SH 46.0	IF 110 SH 46.0	
			SH 49.0	IF 110 SH 49.0	1077273
			SH 52.0	IF 110 SH 52.0	1011928
			SH 55.0	IF 110 SH 55.0	1005752
			SH 58.0	IF 110 SH 58.0	1080451
			SH 62.0	IF 110 SH 62.0	1080148
			SH 67.0	IF 110 SH 67.0	1073862

Neutral Density (ND) Filter 101, 102, 103, 106, 110

Next to the standard sizes we offer more on request. Schneider-Kreuznach provides professional highly accurate μ water jet cutting capability. This technology allows cutting almost any needed shape. More mounted diameters are available for high volume on request.



Contact

Jos. Schneider Optische Werke GmbH
 Ringstraße 132
 55543 Bad Kreuznach
 Germany
 Phone +49 671 601-205
 Fax +49 671 601-81-205
www.schneiderkreuznach.com
industrie@schneiderkreuznach.com

Schneider Optical Technologies Co., Ltd.
 Rm. A505 Yingdali Science Park, Hongmian Rd.,
 Futian Free Trade Zone, Shenzhen 518038,
 P.R. China
 Phone: +86 755 88 32 11 70
 Fax: +86 755 88 32 11 75
www.schneiderkreuznach.com
info@schneider-asiapacific.com

Schneider Optics Inc.
 285 Oser Ave.
 Hauppauge, NY 11788
 USA
 Phone +1 631 761-5000
 Fax +1 631 761-5090
www.schneideroptics.com
oem@schneideroptics.com