

ND

Neutral density (ND) filters - up to 1 W



KEY FEATURES

> FOR ALL BEAMAGE MODELS

We offer various SM1-threaded absorptive ND filters that can be fixed directly on the aperture of the Beamage camera via a SM1 to C-mount adaptor. We also offer SM2-threaded filters that can be fixed on the Beamage-4M-FOCUS via a SM2 to T-Mount adaptor.

> HIGH-QUALITY OPTICS

These filters reduce the intensity of all wavelengths without affecting the wavefront of the beam or distorting the image.

> STACKABLE ATTENUATION

Subsequent filters can be stacked directly on each other. Sets of 3 filters or 6 filters as well as individual filters are available.

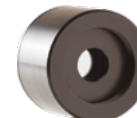
COMPATIBLE PRODUCTS



BEAMAGE-4M



BEAMAGE-4M-FOCUS
(for BA32-1KW only)




PH series

OVERVIEW OF THE MODELS

MODEL NAME		EQUIVALENT ATTENUATION	TRANSMITTANCE AT 633 NM
SM1 FILTERS	SM2 FILTERS		
ND0.5	ND0.5-FOCUS	(1/3.16)	~32%
ND1.0	ND1.0-FOCUS	(1/10)	~10%
ND2.0	ND2.0-FOCUS	(1/100)	~1%
ND3.0	ND3.0-FOCUS	(1/1000)	~0.1%
ND4.0	ND4.0-FOCUS	(1/10 000)	~0.01%
ND5.0	ND5.0-FOCUS	(1/100 000)	~0.001%
NDSET-6 (Set of 6 filters)			
NDSET-3 (Set of 3 filters: ND1, ND2, ND3)			
ND-H (ND filter holder)			



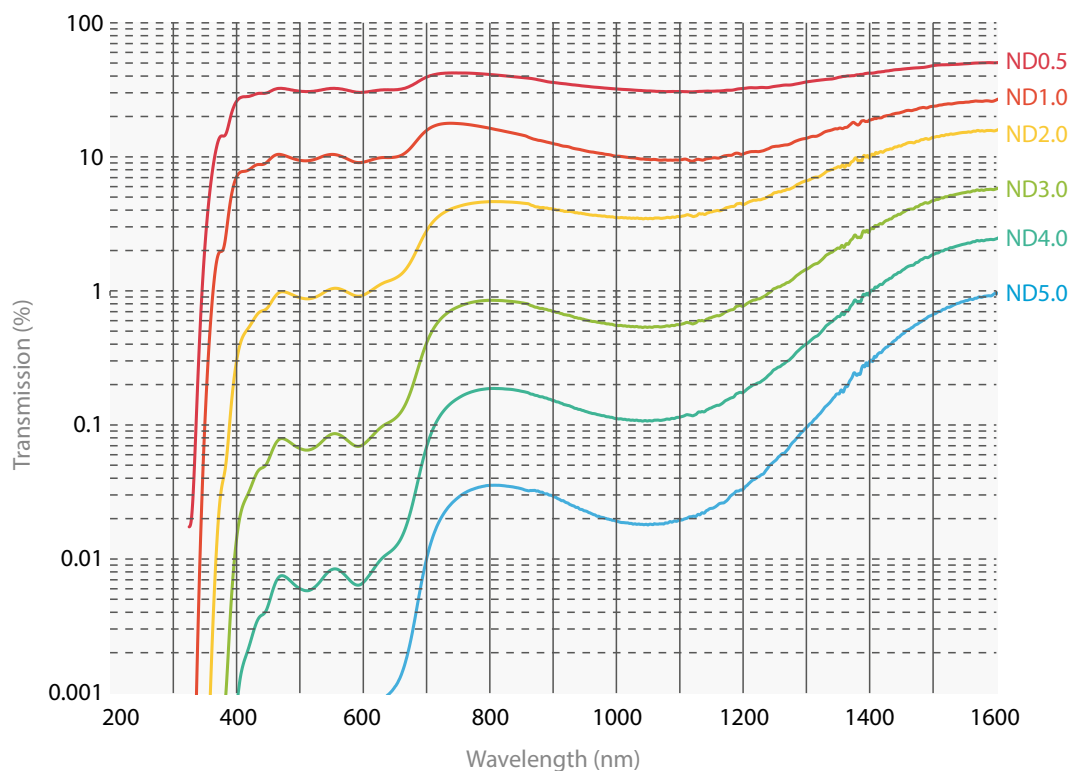
ND0.5 TO ND5.0

Spectral range	400 nm ^a - 1595 nm
Filter diameter	25 mm Ø
Clear aperture	22.5 mm Ø (90% of diameter)
Dimensional tolerance	+0.0/-0.25 mm
Optical density tolerance	± 5%
Parallelism	< 10 arcsec
Transmitted wavefront error	< $\lambda/10$ at 633 nm
Surface flatness	< $\lambda/4$
Surface quality	40 - 20 Scratch-Dig
Maximum power	1 W
Damage thresholds	100 W/cm ² or 3 J/cm ²
Product page	

* Data specified at 633 nm

a. For ND4.0 filter, lower limit with other models.

SPECTRAL TRANSMISSION OF ALL FILTERS



BA

Optical attenuators - up to 1 kW

New product



KEY FEATURES

- > **MANAGE THE LASER POWER**
CMOS sensors have low saturation levels as well as low damage thresholds. It is thus very important that you control your laser power to get the best measurement possible and avoid damaging the BEAMAGE camera.
- > **SAMPLE YOUR LASER BEAM**
The BA series optical attenuators use Fresnel reflections on two orthogonal wedges to pick off a small fraction of the input beam. The incoming beam polarization state and irradiance are preserved.

MULTIPLES USES

- > Monitor power and beam profile simultaneously
- > Polarization insensitive beam-splitter with no back-reflections
- > Optical pick-off for use with our energy or power detectors
- > Attenuator for our high sensitivity detectors like M6 series and PH series

COMPATIBLE PRODUCTS



BEAMAGE-4M



BEAMAGE-4M-FOCUS
(for BA32-1KW only)



UP55N-40S-H9
(for BA32-1KW only)



PH series



M6 series

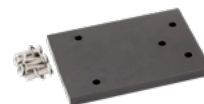
ACCESSORIES



BA32 mounting kit for
BEAMAGE-4M



BA32 mounting kit for
BEAMAGE-4M-FOCUS



BA32 mounting kit for
UP55N-40S-H9



	BA16-60S	BA16K-150S-H5-D0	BA16K-500F-H9-D0	BA32-1KW
MAXIMUM POWER	60 W	150 W	500 W	1000 W
EFFECTIVE APERTURE	16 mm ϕ	16 mm ϕ	16 mm ϕ	32 mm ϕ
COOLING METHOD	Convection	Convection	Fan	Water
MEASUREMENT CAPABILITY				
Spectral range	200 - 2100 nm	200 - 2100 nm	200 - 2100 nm	200 - 2100 nm
Integrated power detector	N/A	UP19K-15S-H5-D0	UP19K-110F-H5-D0	Compatible with UP55 series (not included)
Fan input voltage	N/A	N/A	12 VDC	N/A
Equivalent attenuation	1/1700 @ 1064 nm	1/1700 @ 1064 nm	1/1700 @ 1064 nm	1/1900 @ 1064 nm
Optical wedges material	UV fused silica (uncoated)	UV fused silica (uncoated)	UV fused silica (uncoated)	UV fused silica (uncoated)
Residual beam deviation	5.6°	5.6°	5.6°	3.6° @ 1064 nm
Polarization correction	Yes (pair of orthogonal wedges)	Yes (pair of orthogonal wedges)	Yes (pair of orthogonal wedges)	Yes (pair of orthogonal wedges)
DAMAGE THRESHOLDS				
Maximum power	60 W	150 W	500 W	1000 W
Maximum average power density	10 MW/cm ²	10 MW/cm ²	10 MW/cm ²	10 MW/cm ²
Maximum energy density	10 J/cm ²	10 J/cm ²	10 J/cm ²	10 J/cm ²
PHYSICAL CHARACTERISTICS				
Aperture diameter	16 mm ϕ	16 mm ϕ	16 mm ϕ	32 mm ϕ
Dimensions	45H x 47W x 81D mm	54H x 50W x 91D mm	54H x 54H x 126D mm	145H x 250W x 132D mm
Weight	0.26 kg	0.37 kg	0.46 kg	5.5 kg
Mounting thread	SM1	SM1	SM1	SM2
Included adaptor	SM1 external threaded tube	SM1 external threaded tube	SM1 external threaded tube	N/A
ORDERING INFORMATION				
Compatible Stand	STAND-S-233	STAND-S-233	STAND-S-233	2x STAND-S-443-C-M
Product Page				