



3.5 Accessories for Beam Profiling

Introduction

Spiricon has the most extensive array of accessories for beam profiling existing. There are components for attenuating, filtering, beam splitting, magnifying, reducing and wavelength conversion. There are components for wavelengths from the deep UV to CO₂ wavelengths. Most of the components are modular so they can be mixed and matched with each other to solve almost any beam profiling requirement needed.

3.5.1 Neutral Density Attenuators/Filters

For almost all applications, the laser beam intensity is too high for the operating range of the CCD. Therefore ND glass attenuator filters are available to reduce the intensity to the proper level at the CCD. These filters are carefully designed not to affect beam quality or cause interference effects. One stackable ND1 filter and 2 ND2 filters are supplied standard with each c-mount camera.



Stackable ND filters

The individual filters come in three versions, the ND1 filter in the red housing with ~10% transmission in the visible, the ND2 filter in the black housing with ~1% transmission and the ND3 filter in the green housing with ~0.1% transmission. The individual filters can be screwed on top of each other and thus stacked and also can be combined with beam splitters.

They are set at a small wedge angle in the housing so as not to cause interference effects.



ND1_ND2 and ND3 stackable filters



Stackable filter showing wedge

Transmission vs. Wavelength

These bulk-absorbing "neutral density" or ND filters do not have a flat response in attenuation vs. wavelength. See the graph for typical transmission vs. wavelength characteristics.

Specifications

Model	ND1 Stackable Filter (Red housing)	ND2 Stackable Filter (Black housing)	ND3 Stackable Filter (Green housing)
Nominal ND (vis)	1	2	3
Transmission (1)	between 20% and 5%	between 7% and 0.5%	between 2% and 0.05%
Clear Aperture	Ø19mm		
Damage threshold	~50W/cm ² / 1J/cm ² for ns pulses		
Part number	SPZ08234 ⁽²⁾	SPZ08235 (3)	SPZ08253
Notes:	 Depending on spectral range. One ND1 filter is included in Ophir cameras. Two ND2 filters are included in Ophir cameras. 		



