pulseSlicer
Controlled Narrowing of the Spectral Bandwidth of Ultrashort Laser Pulses

Spectral Cutting with pulseSlicer

Despite an obvious need, few ultrashort lasers offer a widely variable bandwidth or pulse width. APE's pulseSlicer acts as spectrum slicer (or laser monochromator) and is a simple solution for narrowing broadband laser pulses by spectral cutting.

Inside pulseSlicer, an optical system disperses the spectral components of the pulse spatially and applies a filter in the plane where the spectral components are optimally separated. Afterwards, the components of the pulse are recombined.

A narrowing of the spectrum results in pulses with the desired, longer duration. Naturally, the input power has to be adjusted correspondingly since the spectral cutting reduces the pulses' power.

- Easily variable output bandwidth / pulse duration
- Simple solution for narrowing broadband laser pulses
- Automated and software controlled
- TCP/IP software interface for easy remote automation

pulseSlicer
Specifications

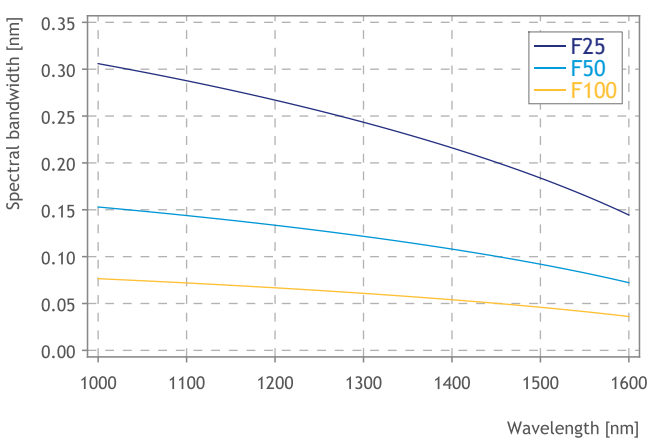
pulseSlicer NIR	F25	F50	F100
Wavelength range	650 nm … 1080 nm (others on request)		
Minimal bandwidth at 1000 nm	0.11 nm	0.06 nm	0.03 nm
Static transmission	50% … 70% between 700 nm … 1050 nm		
Total transmission	proportional to slicing ratio*		

pulseSlicer IR	F25	F50	F100
Wavelength range	1000 nm … 1600 nm (others on request)		
Minimal bandwidth at 1550 nm	0.17 nm	0.08 nm	0.04 nm
Static transmission	50% … 70% between 1050 nm … 1600 nm		
Total transmission	proportional to slicing ratio*		

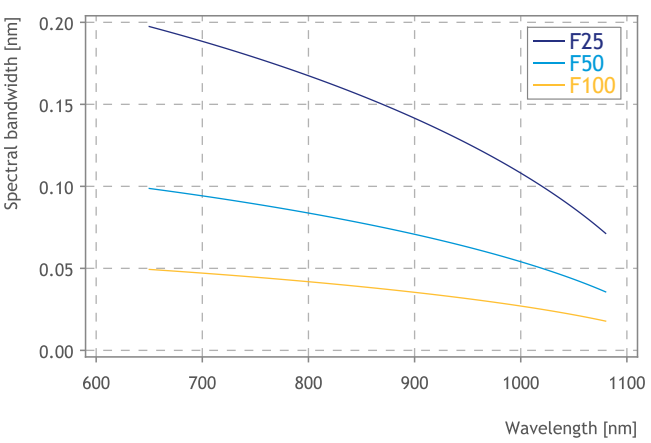
Features for all pulseSlicer models

Input beam polarization	Linear, horizontal (polarization rotator optional)
Software and automation	Included
Remote control	Possible via TCP/IP interface

pulseSlicer IR – Minimal output bandwidth (FWHM)



pulseSlicer NIR – Minimal output bandwidth (FWHM)



pulseSlicer in Combination with Laser Sources by APE

- Automated, narrow-band laser source
- Wide wavelength tuning range
- User adjustable spectral bandwidth and output pulse durations
- High spectral power density compared to common lasers or OPOs

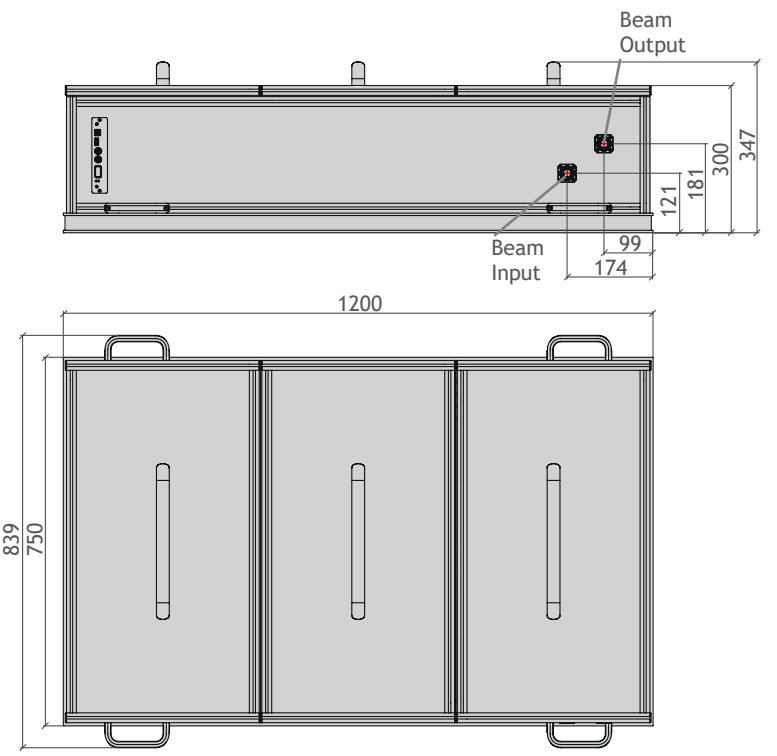
* The slicing ratio is defined as = $\frac{\text{output bandwidth}}{\text{input bandwidth}}$

Appendix Technical Drawings

All dimensions in mm

pulseSlicer 100

- spectral slicer

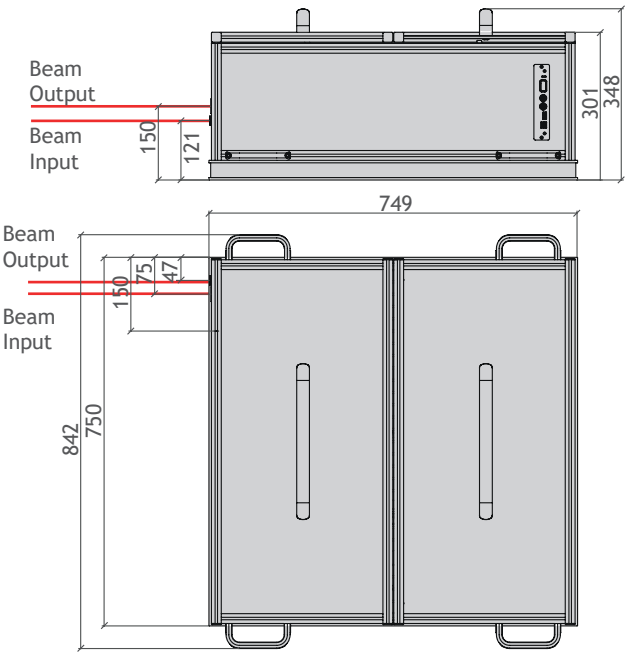


Appendix Technical Drawings

All dimensions in mm

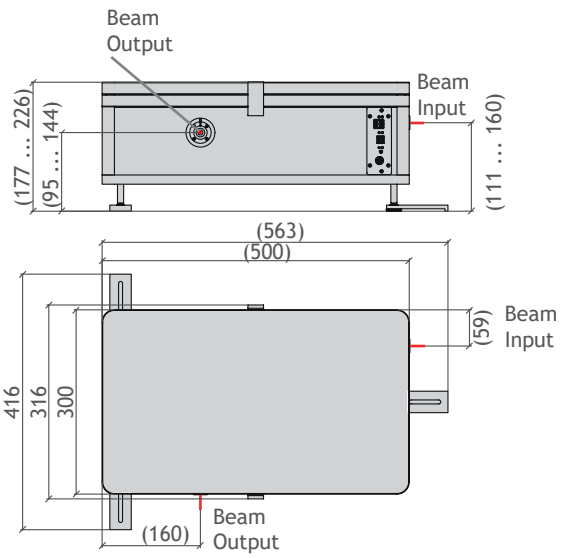
pulseSlicer 50

- spectral slicer



pulseSlicer 25

- spectral slicer



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