

Multiphoton Beam Conditioner

NEW
product



MPM-BCU



Power Controller
Included

The Multiphoton Beam Conditioner (MPM-BCU), which optimizes a laser beam for use in a multiphoton imaging system, is designed to be seamlessly integrated into the MPM200 Series of Multiphoton Imaging Systems. The beam conditioner automates both the attenuation and expansion of the laser beam. Thus, the user can optimize these parameters directly from the ThorImageLS™ graphical user interface (GUI).

The diameter of the laser beam output from the beam conditioner can be continuously varied from 1 to 4 times the diameter of the input laser beam to match the back focal aperture of the objective selected. After setup, getting the correct beam diameter is as simple as selecting the objective lens being used from a drop-down menu in the ThorImageLS™ GUI. The power of the laser at the sample can be adjusted to be any value between 0 and 100% (the purity of the input polarization state limits the minimum power value). Power adjustment is achieved either through the software interface (pictured below) or through the top panel controls on the external controller (included) for the variable attenuator.

The software reads the variable attenuator controller, so it updates the GUI no matter which method of control is used. The software also provides a power ramping function (see the screen shot) that allows the user to increase the laser power as the system images deeper into a sample. This is done to compensate for scattering losses and intensity reductions from PSF (point spread function) degradation as the image depth increases. The power ramp works in conjunction with the Z-stack function. To create an image, set the top plane of the Z-stack and the power in the top plane with the attenuator tab. Then focus through the sample and define the bottom plane and the power required at the bottom plane so that both the top and bottom planes produce similar signal levels. The software then applies an exponential fit of the power ramp to the Z-stack when the image is acquired.

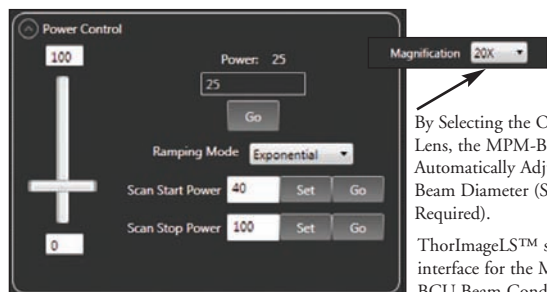
When ordering the MPM-BCU, please specify the input beam height (4.25" or 4.75"). When the beam conditioner is used in an imaging system with a femtosecond laser source, both the attenuation optics and the beam expander will broaden the pulse due to dispersion. Therefore, we recommend using this conditioner in combination with the Dispersion Compensation Unit (COMP6300) featured on the next page. Both units are equipped with 1.035"-40 input and output apertures, allowing the beam paths to be easily enclosed using Thorlabs' SM1 lens tubes (see page 134).

SPECIFICATIONS	
Wavelength Range	680 – 1400 nm
Beam Expansion	1X – 4X
Attenuation*	0 to 100% at Sample
Input Beam Height	4.25" or 4.75" (Please Specify when Placing an Order)
Output Beam Height	4.5"
Dimensions (L x W x H)	21.25" x 10.75" x 7"

*The purity of the laser source polarization state limits the minimum power.

Features

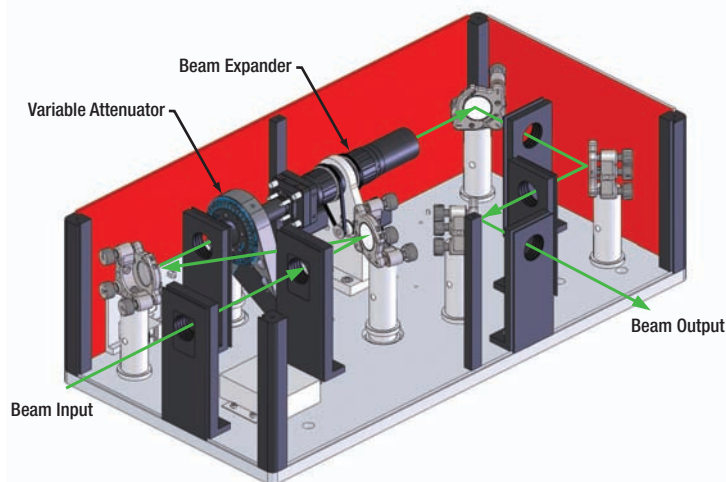
- Automated Control of Laser Power and Beam Diameter
- Fully Integrated into the ThorImageLS™ Software
- Automated Power Ramp Function for Creating Z-Stacks
- 1/4" (M6) Holes in Base Allow Mounting to a Standard Optical Table



By Selecting the Objective Lens, the MPM-BCU Automatically Adjusts the Beam Diameter (Setup Required).

ThorImageLS™ software interface for the MPM-BCU Beam Conditioner

Multiphoton Beam Conditioner Light Path



ITEM #	\$	£	€	RMB	DESCRIPTION
MPM-BCU	\$ 15,000.00	£ 10,800.00	€ 13,050.00	¥ 119,550.00	Beam Conditioner Unit for MPM200 Multiphoton Systems