

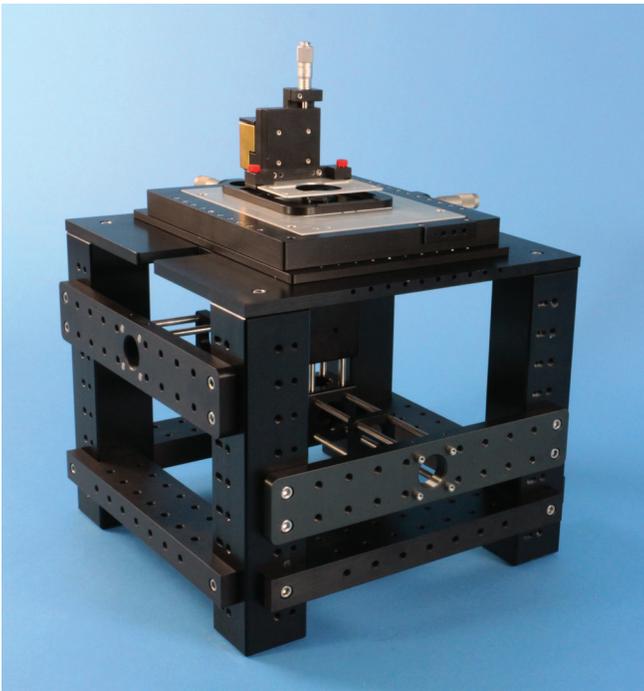
RM21™ Versa Microscope

Supported Methods

- ▶ *Epi-fluorescence microscopy*
- ▶ *Single Molecule Localization Microscopy*
- ▶ *Dichroic TIRF* †
- ▶ *Köhler Illumination* †
- ▶ *Z-axis focus correction* †

Microscope Advantages

- ▶ *Direct optical access*
- ▶ *Integrated Z-axis piezo nan positioning*
- ▶ *Fixed objective lens for maximum stability*
- ▶ *High stability microscope designed for nanoscopy*
- ▶ *Manual XY microscope stage*
- ▶ *Simple to use*



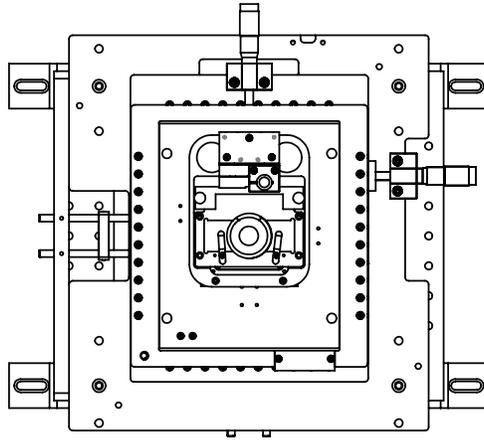
Product Description

The RM21™ Versa Microscope is an inverted optical microscope with a fixed objective lens position for maximum stability. The RM21™ Versa microscope is ideal for single molecule localization microscopy (e.g. STORM/PALM) and epifluorescence microscopy where sub-nanometer precision is only required in the Z-axis.

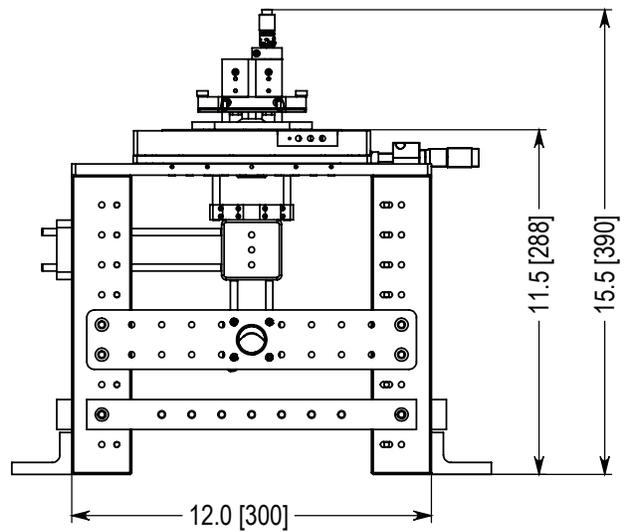
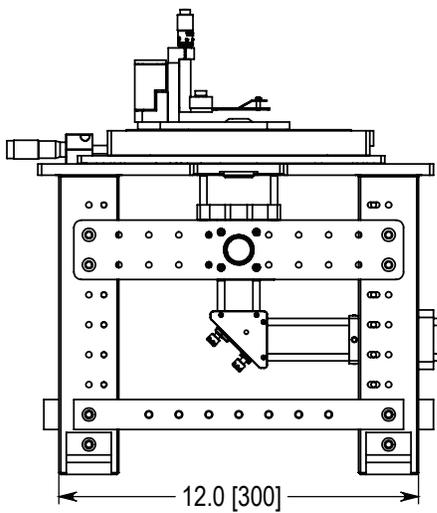
In common with all RM21™ microscopes, there is direct access to the optical pathway and the microscope has been engineered for precision alignment and nanoscale stability in all three axes. All RM21™ microscopes are compatible with 30mm and 60mm[‡] cage systems and are designed to be mounted on standard optical tables.

The RM21™ Versa Microscope includes a sub-nanometer precision, Z-axis closed loop piezo nan positioning system designed to meet the requirements of super resolution microscopy. The objective lens position is fixed and precision aligned with the optical axis of the microscope and accommodates one lens. The position of the lens is fixed to maximize the stability of the microscope. The manual XY microscope stage has been specifically designed for use with closed loop nan positioners and travels 25mm per axis.

The RM21™ Versa microscope use can be extended to additional techniques by simply adding standard options. In addition to the supported methods listed above, this microscope is also suitable for applications such as optical and magnetic tweezers, and AFM integration.



Top View



Above: Dimensions (in inches) of the RM21™ Versa Microscope. Dimensions of the metric model are shown in [].

RM21™ Versa Microscope

Microscope Specifications

Micropositioning Axes	X, Y
Range of motion (XY)	25 mm
Threaded hole size	1/4"-20 or M6
Threaded hole spacing.....	1" or 25mm
Precision aligned shelves	4
Side breadboards	2
Foot brackets.....	4
Body Material	Anodized Aluminum

Nanopositioning Specifications

Range of motion	200 μm
Resolution.....	0.4 nm
Resonant Frequencies	
Z axis	110 Hz ±20%
Stiffness	1.0 N/μm
$\theta_{roll}, \theta_{pitch}$ (typical)	$\leq 1 \mu rad$
θ_{yaw} (typical)	$\leq 3 \mu rad$
Recommended max. load (horizontal)*	0.5 kg
Recommended max. load (vertical)*	0.2 kg
Body Material	Anodized Aluminum
Controller	Nano-Drive®

* Larger load requirements should be discussed with our engineering staff.

Additional Notes

All models available in imperial (-I) or metric (-M).

Supported lens threads: RMS, M25, M26, M27, M32. Please specify at time of order.

Side breadboards compatible with SM1/30mm. ‡Compatibility with 60mm cage system available as an option.

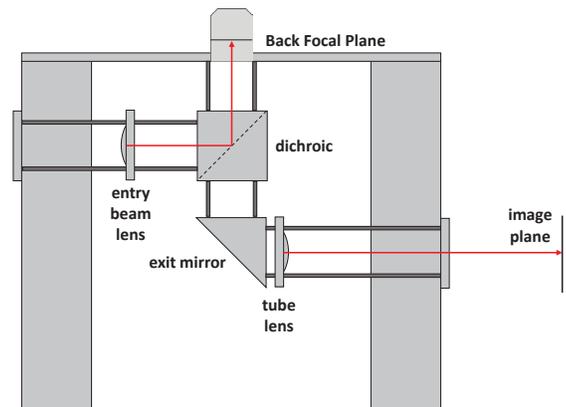
Due to the multiplicity of supported methods, user specific optics are not included.

User must specify parfocal distance of lens at time of order.

† Applications require additional options.

Available options

- TIRF Module - manual or motorized
- TIRF Lock
- Köhler Illumination



Above: Optical pathway of the RM21™ Versa Microscope

Compatible Software Packages

 Examples, tutorial, and Nano-Route 3D supplied with Nano-Drive* USB interfaces.	 USB and analog motion control	 THE OPEN SOURCE MICROSCOPY SOFTWARE USB motion control
 USB and analog motion control	 Analog motion control, 1 or 2 axes.	