

# MIR10

## SIMPLE MID-INFRARED FUSING AND HEATING



Versatile method of sampling and analyzing solids for noble gas and isotope-ratio mass spectrometry

### Features

30W continuous wave laser

Programmable energy stepping

Floating gantry for ease of access

Large spot size range

High power at the sample surface

Heat samples slowly for smooth energy transition

Perfect for stationary/high vacuum cells

Software-controlled iris for smooth transitions from 100 $\mu$ m to 3000 $\mu$ m

# MIR10

## Specifications summary

### Performance Specifications

Laser	Coherent Diamond C-30
Beam profile	Gaussian
Wavelength	10.6µm
Firing mode	Continuous Wave
XYZ Stage	50mm x 50mm x 50mm Floating gantry
Spot Sizes	Software controlled iris 100µm to 3000µm
Energy measurement	Realtime energy readout, calibrated to sample surface
Primary viewing system	On-axis camera for accurate scan placement
Zoom	6x software-controlled optical zoom

### General Specifications

Safety Classification	Class 4 system
Warranty	12 months
Dimensions (Laser Module)	69cm x 31cm x 61cm (27" x 12" x 24") DxDxH
Weight (Laser Module)	42kg (90lb)
Dimensions (Power Supply)	28cm x 24cm x 19cm (11" x 10" x 8") DxDxH
Weight (Power Supply)	9kg (20lb)
Cooling	Closed loop distilled water system (not supplied with system)

### Site Requirements

Temperature	21°C ±3°C (70°F ±10°F)
Relative Humidity	20% - 65% non-condensing
Power Requirements	100-110V (AC), 10A, 50/60Hz 220-240V (AC), 5A, 50/60Hz

### Additional Options

PC and Monitor	Supplied separately
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## Applications

Laser fluorination (e.g.  $^{18}\text{O}/^{17}\text{O}/^{16}\text{O}$  and  $^{34}\text{S}/^{33}\text{S}/^{32}\text{S}$ )

Laser heating (e.g.  $^{13}\text{C}/^{12}\text{C}$  and  $^{18}\text{O}/^{16}\text{O}$ )

Rare-gas isotope ratio measurements (e.g.  $^{40}\text{Ar}/^{39}\text{Ar}$ )

Ocean circulation dating using Pb isotopes

Atmospheric chemistry through isotopic analysis of rocks

In-situ dating of geological materials by  $^{40}\text{Ar}/^{39}\text{Ar}$

Tracing paleoclimates through isotopic analysis of mammal teeth