

MIRage™ a new Mid-IR Age

Broadly Tunable Femtosecond Mid-IR Laser System



Key Features

- Fully-integrated OPO-based laser system for the mid-IR with wide tuning across 1270 – 1290 nm and 6000 – 7000 nm without any change of optics
- High output power with >500 mW at peak of the signal and >100 mW at peak of the idler range
- 2 simultaneous outputs available: 1) signal and 2) idler
- Femtosecond pulse duration across the range
- Dispersion adjustment independent for each wavelength for minimum pulse duration
- Excellent beam pointing stability across the complete spectral range with TEM₀₀ spatial profile
- Hands-free operation with dedicated control software. Control drivers available
- Sealed, compact, and virtually maintenance-free

Applications

- Time-resolved spectroscopy in the mid-IR
- Single and dual-comb spectroscopy
- Vibrational overtone spectroscopy
- Semiconductor research and spectroscopy
- Multiple wavelength pump-probe experiments

Radiantis introduces the MIRage™, the first commercial mid-IR (>4000 nm) OPO-based laser system. MIRage™ offers unprecedented tuning coverage and power levels in the mid-IR (>100 mW across 6000 – 7000 nm and >500 mW across 1270 and 1290 nm), in a sealed and fully-automated laser enclosure for maximum reliability and usability.

The MIRage™ incorporates, for the first time, a fiber pump laser and a mid-IR (>4000 nm) OPO in a single platform, providing maximum power stability in a compact design.

Two output ports deliver 1) the signal and 2) the idler. To ensure shortest pulse durations across the spectral range, an advanced dynamic dispersion compensation module is included within the MIRage™, allowing independent optimisation of the pulse length for different wavelengths. Additionally, excellent beam pointing stability with time and wavelength is provided which increases usability in applications where reduced beam misalignment due to laser beam displacement is required.

The MIRage™ is a fully-automated ultrafast OPO-based laser system which is offered with a dedicated control software and drivers. The sealed and hands-free design of the MIRage™, combined with virtual maintenance-free operation, provides a superior laser system for scientific applications in the mid-IR.

Specifications¹

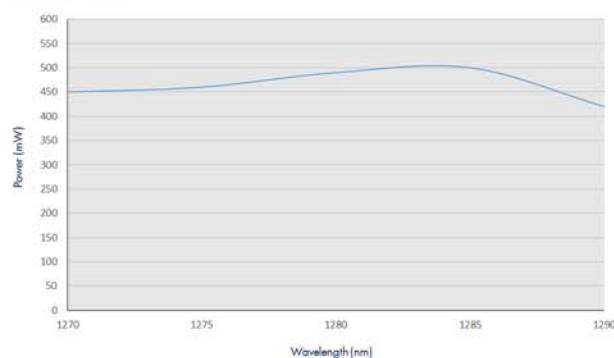
Output Characteristics	MIRage
Output 1: Idler tuning range	6000 – 7000 nm
Output 2: Signal tuning range	1270 – 1290 nm
Idler output power ^[2]	>100 mW
Signal output power ^[2]	>450 mW
Signal pulse width	<200 fs at 1205 nm
Idler pulse width	<200 fs
Beam diameter	3 mm +/- 10%
Spatial mode	TEM ₀₀
Noise	<1% rms
Output ports	1) Signal 2) Idler
Power stability	< 5%
Polarization	Linear (>100:1)
Repetition rate	40 - 200 MHz
Size (W x L x H)	652 x 320 x 150 mm (25.7 x 12.6 x 6 inch)

Notes

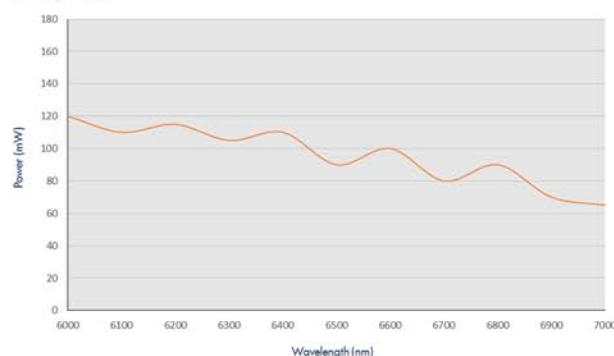
- ^[1] Specifications are subject to change without notice
^[2] At peak of pump and OPO tuning range

MIRage™ Typical Tuning Curves

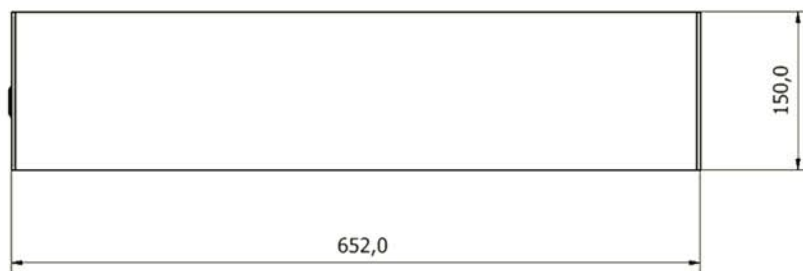
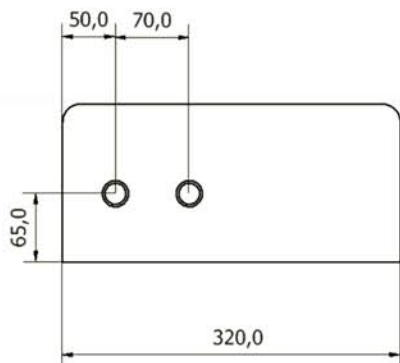
MIRage™ Signal



MIRage™ Idler



MIRage™ Dimensions



Dimensions in mm