

# Broadly Tunable Femtosecond Mid-IR Laser

Fully-integrated OPO-Laser for the Mid-IR with wide tuning across 1270 - 1290 nm and 6000 - 7000 nm

## MIRage™



### KEY FEATURES —

- High output power with >500 mW at peak of the signal and >100 mW at peak of the idler range.
- Two simultaneous outputs available: 1) Signal and 2) Idler.
- Dispersion adjustment independent for each wavelength for minimum pulse duration.
- Excellent beam pointing stability across the complete spectral range with TEM<sub>00</sub> 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.

**TUNE YOUR WAVELENGTH**

Broadly Tunable Laser Systems for Science & Technology

## Description

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 - 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.

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.

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

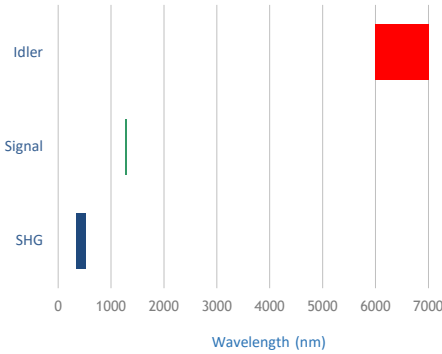
## Specifications<sup>(1)</sup>

Output Characteristics	MIRage
Idler Tuning Range	6000 - 7000 nm
Signal Tuning Range	1270 - 1290 nm
Idler Output Power <sup>(2)</sup>	> 100 mW
Signal Output Power <sup>(2)</sup>	> 450 mW
Signal Pulse Width	< 200 fs at 1205 nm
Idler Pulse Width	< 200 fs
Beam Diameter	3 mm +/- 10 %
Spatial Mode	TEM <sub>00</sub>
Noise	< 1 % rms
Output Ports	1) Signal 2) Idler
Power Stability	< 5 %
Polarization	Linear
Size (W x L x H)	652 x 320 x 150 mm (25.7 x 12.6 x 6 inch)
Output ports	1) 100% signal and idler with no pump bypass. 2) Partial signal and idler with 20% pump bypass. 3) 100% pump bypass.

Notes: (1) Specifications are subject to change without notice. (2) At peak of pump and OPO tuning range.

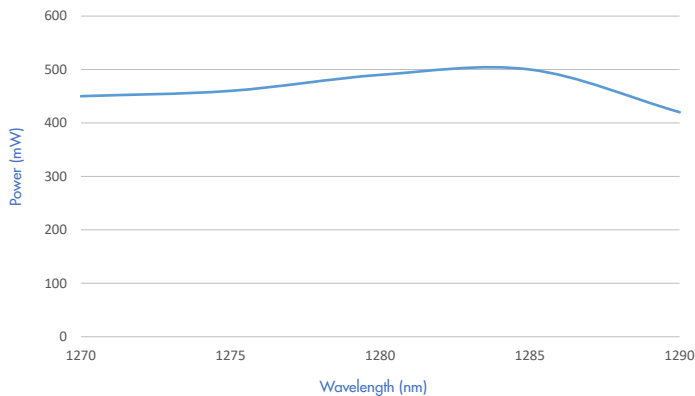
## MIRage Wavelength Coverage

### Output Ports

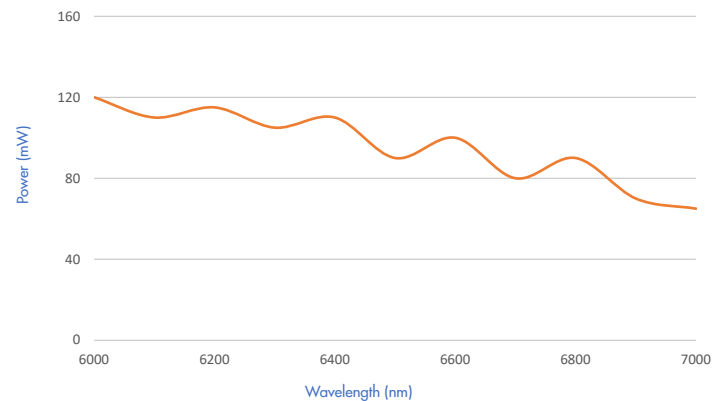


Three output ports deliver 1) the signal; 2) the idler; and 3) the pump (at 1064 nm). An incorporated pump bypass enables the selection of 100% of the pump (with no signal or idler power); 2) a percentage of the pump (simultaneously with partial signal and idler power); 3) 100% of the signal and idler power (simultaneous) with 0% of the pump.

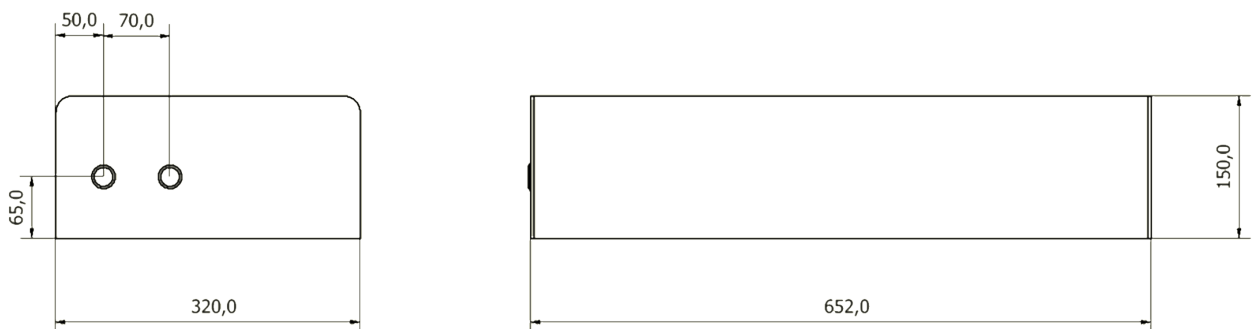
## Typical Signal Tuning Curve



## Typical Idler Tuning Curve



## Dimensions



Notes: Dimensions in mm