

SPGM

SHORT PULSE FIBER AMPLIFIERS



Features

- High-power gain module based on tapered double clad fiber
- Single mode output, $M^2 < 1.3$
- Can operate with seed power as low as 10 mW
- Gain as high as 40 dB
- Out-of-fiber peak power as high as 1.5 MW
- Large mode area, low level of nonlinear effects
- Ideal for amplification of narrow line width signals
- Slim and rigid metal housing
- Ready to splice to pump and seed source
- Easy thermal management
- Thermistors for temperature monitoring

Applications

- To be used for direct amplification of short optical pulses
- Higher order harmonic generation
- Marking and structuring
- Micromachining of brittle materials
- Biological Imaging
- Pumping of femtosecond OPO/OPA
- Microscopy

Description

EVOLASE SHORT PULSE MODULE is an amplifying module containing all the needed optical components packaged inside an aluminum housing. The unit is ready-to-splice to pump diodes and seed source. The pump coupling unit inside the housing is directly water cooled, and the baseplate of the unit can be easily mounted onto an external heat sink for high power applications.

This module is ideal for customers who want to have fully assembled, ready-to-splice gain unit, but prefer to use their own pump diodes or integrate the module inside a larger system.

The module is fully tested and shipped with a complete test report.

Ordering information

SPGM-PM-C2-“wavelength”-“signal fiber”-
“pump fiber”-“built in base cooling”

Signal fiber: 10/125

Pump fiber: 105/125 NA 0.22 or 200/220 NA 0.22
or 220/240 NA 0.22

Built in base cooling to support high power operation more than 50 W output and eliminates the need to attach the module base to an external heat sink:
0 – no built-in base cooling, 1 – built-in base cooling.

Specifications

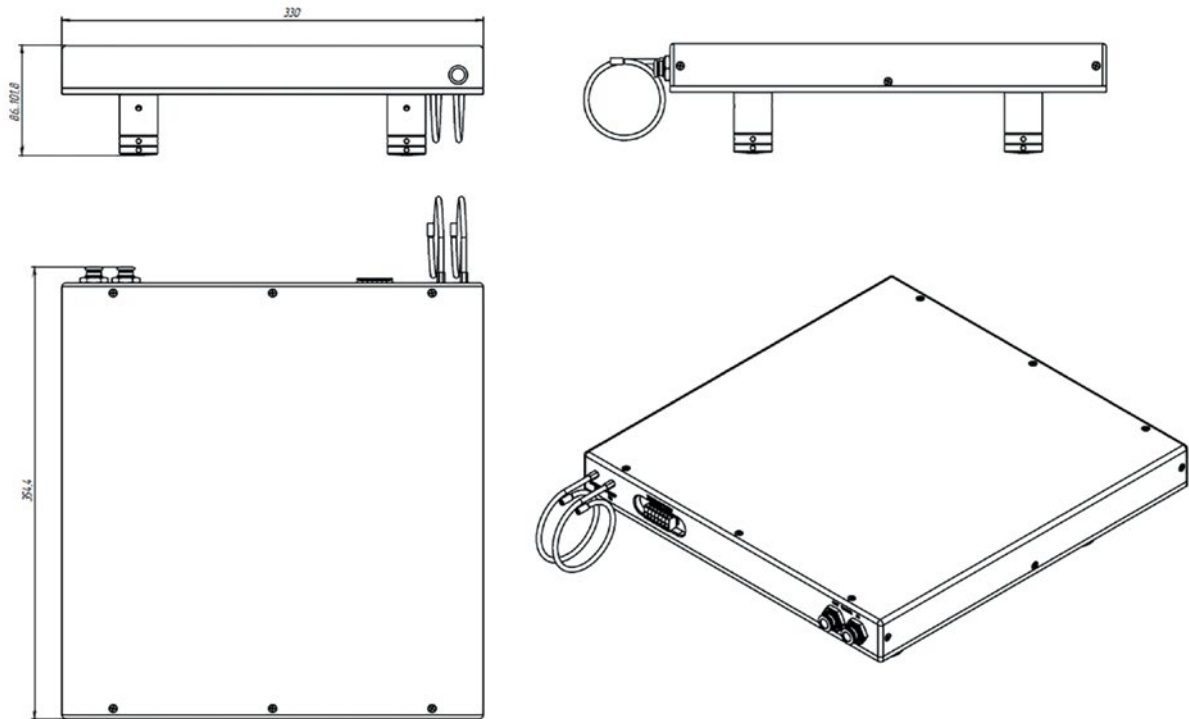
Parameter	Min.	Typ.	Max.	Units
INPUT				
Wavelength	1030	1040	1065	nm
Input signal power	5	30	-	mW
Pump power ¹⁾			180	W
Pump wavelength		976		nm
Pulse energy			60	µJ
OUTPUT				
Max output power ²⁾		100		W
Mode field diameter ³⁾	30	35	40	µm
Polarization extinction ratio (PER)	13	15		
M ²	1.05	1.2	1.3	
FIBERS				
Input signal fiber	PM 10/125			
Pump fiber	200/220 NA 0.22 150 W, 105/125 NA 0.22 100 W, others upon request			
MECHANICAL				
Dimensions	355 × 330 × 38 mm			
Water flow	5		10	l/min

¹⁾ Maximum allowed pump power depends on operation wavelength and seed signal parameters

²⁾ Maximum output power depends on operation wavelength and seed signal parameters

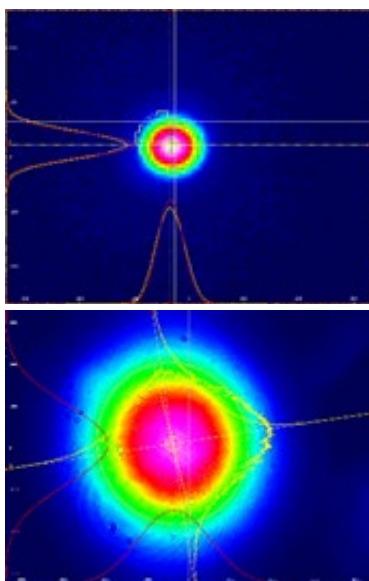
³⁾ Maximum mode field diameter depends on operation wavelength

Drawings

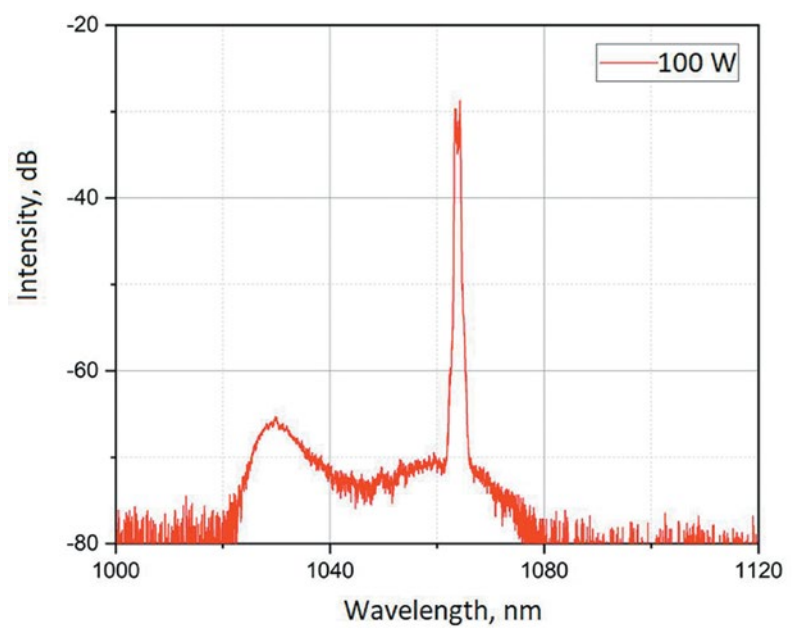


Short Pulse Gain Module laser dimensions

Performance



Typical 1064 nm beam profile



Typical spectrum at 100 W at 1064 nm