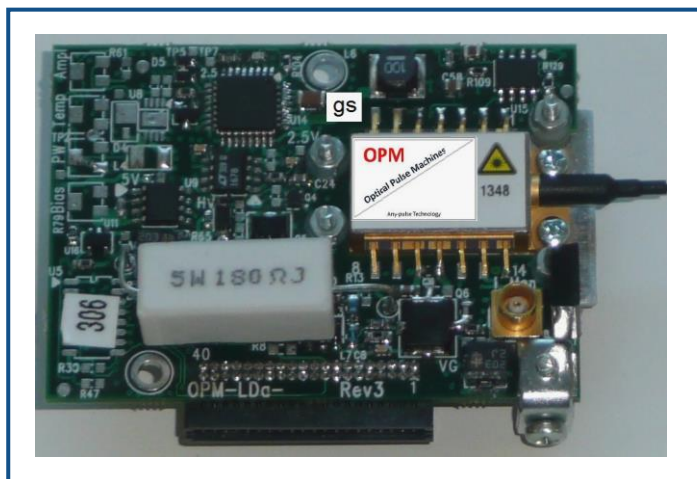


## OPM-LDa-gs

### Seed Laser / Optical Pulser Assembly

#### Features

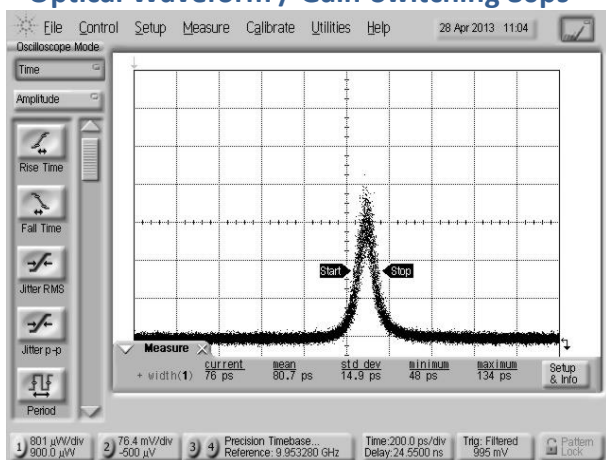
- All seeder's functions integrated in one assembly:
  - Adjustable pulse generator from gain-switched operation (~60ps) to 1ns
  - Pulse driver
  - Efficient TEC controller
  - Laser diode
  - Designed for OEM in laser systems
- Compact: 62mm x 45mm
- Typical optical peak power of 0.5W
- Bias current control
- Efficient protection on the laser diode
- On board potentiometers or external controls
- Wide selection of laser diodes in wavelengths of 1064nm, 1550nm and more
- Monitoring of all key parameters
- An evaluation board is available for quick evaluation and a cable assembly is available for connecting to customer's system



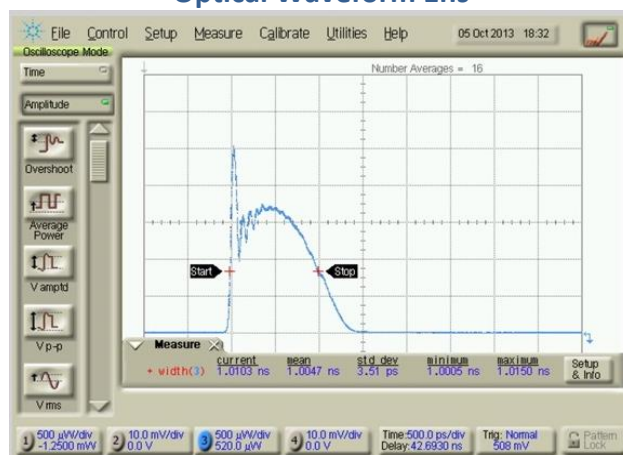
#### Product Applications

- Seed Laser for Fiber Lasers
- Optical pulser for LIDAR target simulators
- 3D Vision systems
- Characterization of high speed optical receivers

#### Optical Waveform / Gain-Switching 80ps



#### Optical Waveform 1ns



#### Description

The OPM-LDa-gs seed laser assembly is an integrated solution for the seed (oscillator) part of pulsed MOPA fiber lasers systems. The assembly includes all the key functions needed in a high performance seeder, including an adjustable pulse-width generator, laser driver, TEC controller and an integrated laser diode.

Each incoming trigger signal (rising edge) results in a generation of a single pulse.

An on-board trigger generator is an optional feature.

An analog input control signal is provided to tune the optical pulse-width in the range from gain-switching mode to over 1ns. The module has analog control inputs: Pulse-width, bias current and set temperature (also optional amplitude control). Each of the input analog control signals can be replaced by an on-board potentiometer so that the module can either be controlled externally or have internal settings.

With the bias current control the user can impact the optical spectral width or to change the extinction ratio.

The product is designed to operate in a wide temperature range and in maintenance-free conditions – making it a good choice for OEM integration in commercial and industrial laser systems.

Various product options are being offered – See ordering information.



## Specifications / Technical Data

Parameter	Value	Comments
<b>Pulse width range in gain-switched mode</b>	30ps to 150ps	Depends on laser diode type
<b>Peak power</b>	300mW to over 1W	Depends on laser diode type
<b>Bias current</b>	0 to 50mA	Can be increased to 100mA upon request
<b>Pulse frequency range</b>	Single shot to 20MHz	Can be optimized to 20MHz ~ 100MHz operation
<b>Trigger input</b>	TTL/LVTTL	Rising edge, high impedance
<b>Enable module controls</b>	TTL/LVTTL	Laser enable, TEC enable
<b>TEC driver current</b>	In range of -2.5A to +2.5A	
<b>Laser temperature accuracy</b>	Better than 0.1C	After stabilization
<b>Operating temperature range</b>	0 to 60C	Other range - upon request
<b>Supply voltages</b>	5V / 12V or 5V / 24V	Single 5V power option
<b>Dimensions</b>	62mm x 45mm	
<b>Installation options</b>	Vertical or horizontal	
<b>Main connector</b>	Samtec TFM-120 series	40 pin

## Suitable Laser Diodes

Various laser diodes are available to be used with the OPM-LDa-gs: DFB, FP or FBG types; wavelengths of 1030nm, 1064nm, 1310nm, 1480nm, 1550nm or other custom wavelengths. Butterfly package (industrial type – see pin-out) or Coaxial package

Pin	Function	Pin	Function
1	Cooler (+)	8	nc
2	Thermistor	9	nc
3	PD Anode (+)	10	LD Anode (+)
4	PD Cathode (+)	11	LD Cathode (-)
5	Thermistor	12	nc
6	nc	13	Case Ground
7	nc	14	Cooler (-)

## Ordering Information

	Power Supply	Mounting	TEC Controller	Trigger Generator	Potentiometers	Laser Diode
OPM-LDa-gs	5/5V (5) or 5/12V (12) or 5/24V (24)	Horizontal (H) / Vertical (V)	Yes (T) / No (X)	Yes (G) / No (X)	Yes (P) / No (X)	Laser diode description
<b>Example of a product code</b> for an OPM-LDa-gs module that operates on power supply of 24V, vertical mounting, with TEC controller, no trigger generator, no potentiometers and a 1064 DFB laser diode: <b>OPM-LDa-gs-24-V-T-X-X-1064DFB</b>						
OPM-LDa-gs	24 V (24)	Vertical (V)	Yes (T)	No (X)	No (X)	1064 DFB laser diode

**For a comprehensive description of module's pin-out and controls please refer to documents:**

- Application note for OPM-LDa-3 and OPM-LDa-gs modules
- User manual for test jig for OPM-LD-yyy modules