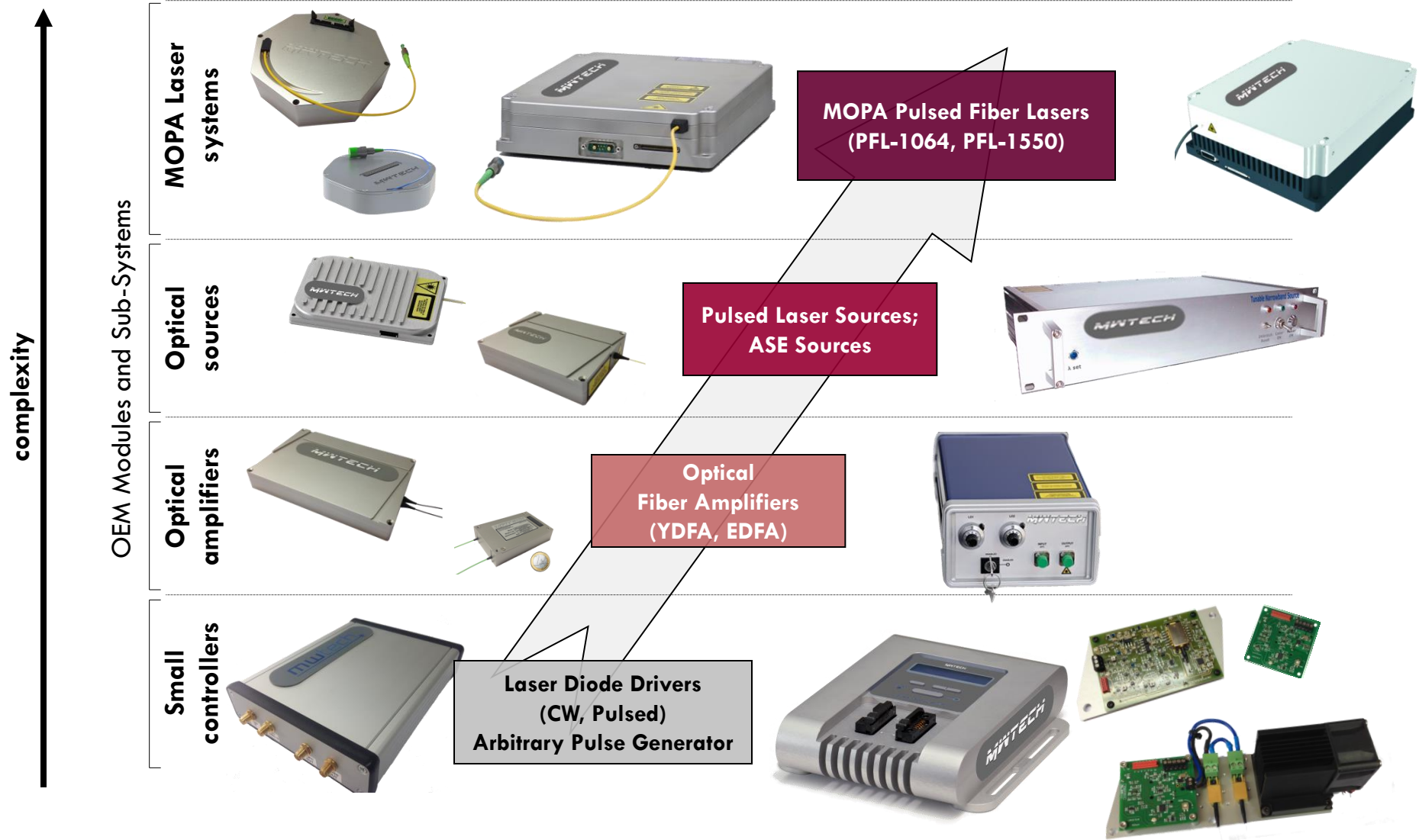


Truly Agile Fiber Lasers **with customizable pulse shaping and** **advanced gain control**

MWTECHNOLOGIES, LDA.
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4470 - 605 Moreira da Maia
Portugal

Miguel Melo
mmelo@mw-technologies.com

Product Portfolio



MOPA Pulsed Fiber Lasers

With integrated control electronics offered in 3 platforms
Highly customizable and scalable

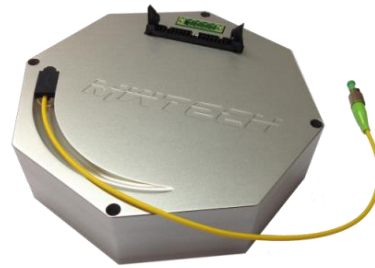
PFL



Dimensions:
205mm x 255mm x 95mm

- ❑ **Wavelength: 1064nm or 1550nm**
- ❑ **Average output power: up to 20W**
- ❑ **Output peak power: up to 15kW**
- ❑ **Pulsewidth: 5-250ns (user selectable)**
- ❑ **Repetition rate: Single-shot to 1MHz**

compact PFL



Dimensions:
160mm x 160mm x 35mm

- ❑ **Wavelength: 1064nm or 1550nm**
- ❑ **Average output power: up to 1W**
- ❑ **Output peak power: up to 1kW or 5kW**
- ❑ **Pulsewidth: 5-250ns (user selectable)**
- ❑ **Repetition rate: Single-shot to 1MHz**

ultra compact PFL

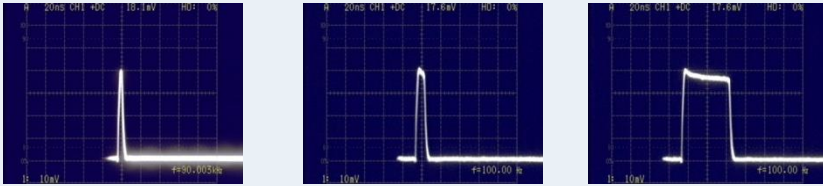


Dimensions:
90mm x 20mm

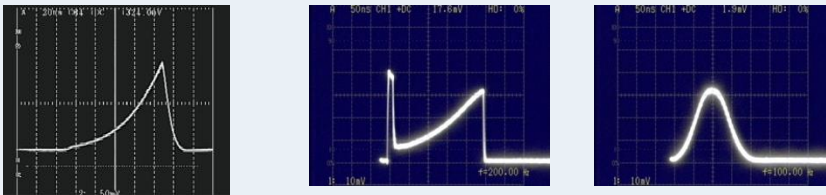
- ❑ **Wavelength: 1550nm**
- ❑ **Average output power: up to 1W**
- ❑ **Output peak power: up to 4kW**
- ❑ **Pulsewidth: 3-5ns (fixed)**
- ❑ **Repetition rate: Single-shot to 1MHz**

Pulse Shaping

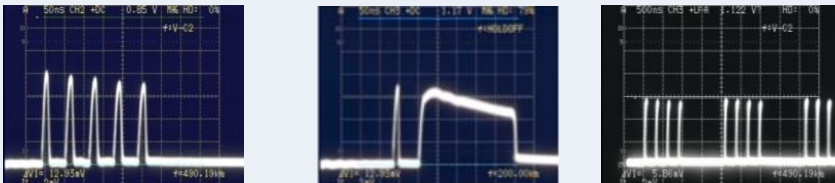
- Pre-defined single pulse selection



- Arbitrary / customizable waveform design



- Multi-pulsing / Pulse burst configuration



Ampl. Gain Control

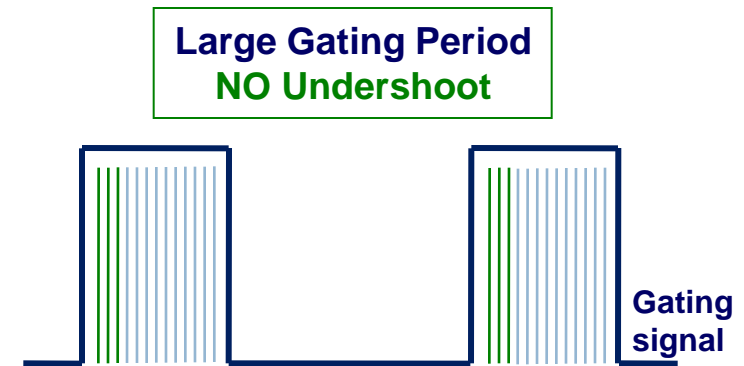
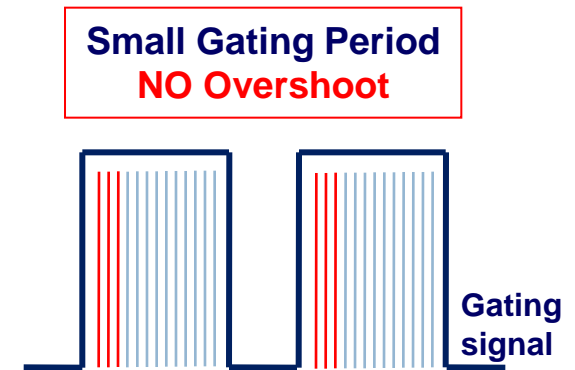
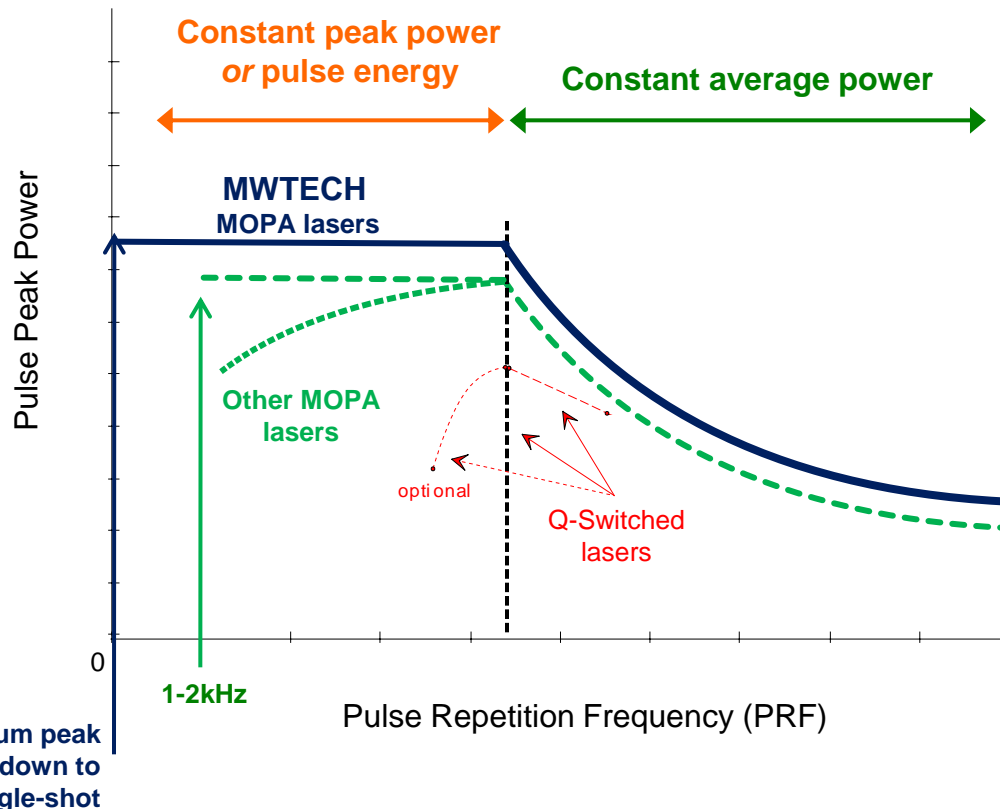
- Maximum Peak Power and Pulse Energy down to single-shot (Pulses-On-Demand)
- No user adjustments needed nor pre-calibrations
- Any pulse shape and duration at any pulse sequence and ON/OFF gating
- Pulse waveforms can be changed on the fly.

MWTECH Technology Advantages

- Widest Peak Power Range and Equalized Burst of Pulses

Maximum Peak Power and Pulse Energy down to single-shot

- Based in a real time laser rate equation solver
- Single-shot to MHz operation with no user adjustments needed nor pre-calibrations
- For any pulse shape and duration at any pulse sequence and ON/OFF gating

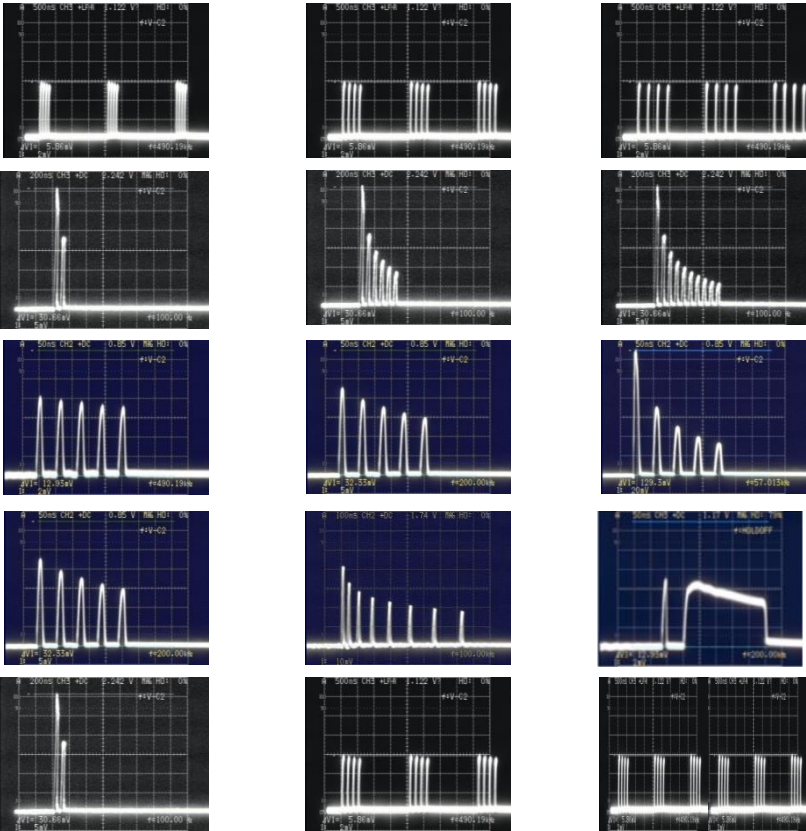


Possibilities of burst operation

- **Tailored Pulse Bursts:** Nanosecond laser pulses delivered in MHz pulse packets at kHz pulse packet repetition rate

Flexibility in Pulse Packet Configurations (Multi-Pulsing)

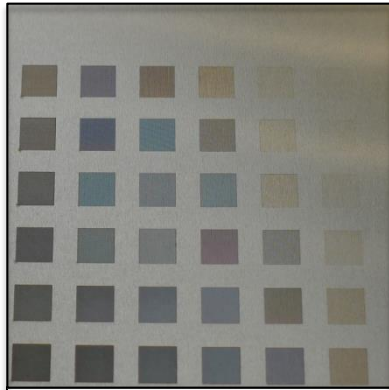
- Pulse Spacing
- Number of Pulses
- Pulse Amplitude and Transient Control
- Pulse Spacing and Uniformity
- Pulse Packet Repetition Rate



To increase material removal speeds and reduce thermal side effects

Micro Materials Processing

- Marking



Material: Stainless Steel
Pulse Width: Various
Repetition Rate: Various



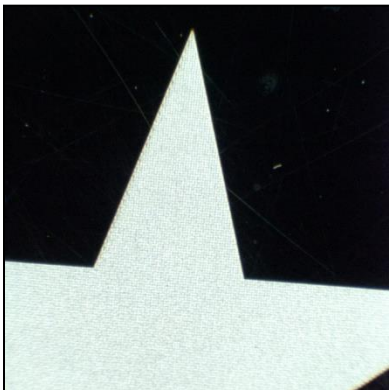
Material: Alumina
Pulse Width: 200 ns
Repetition Rate: 36 kHz, x10



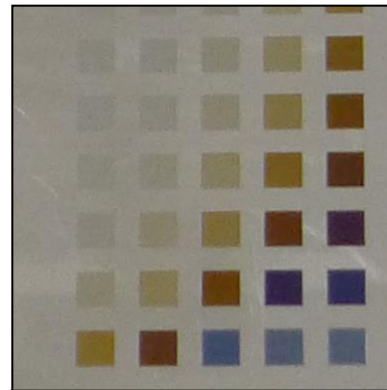
Material: Polycarbonate
Pulse Width: 100 ns
Repetition Rate: 44 kHz



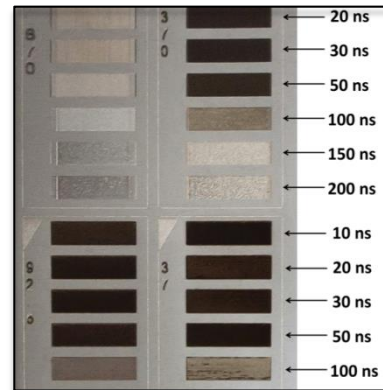
Material: Stainless Steel
Pulse Width: 200 ns
Repetition Rate: 200 kHz



Material: Stainless Steel
Pulse Width: 20 ns
Repetition Rate: 100 kHz



Material: Titanium
Pulse Width: Various
Repetition Rate: Various



Material: Stainless Steel
Pulse Width: Various
Repetition Rate: Various



Material: Stainless Steel
Pulse Width: 10 ns
Repetition Rate: 500 kHz

We offer...

- ❑ **Highly flexible and unique tool for processing different types of materials**
 - ❑ **Speed/enhanced performance in contours/corners (scanner acceleration/deceleration compensated with rep rate change while internal laser control keeps constant energy)**
- ❑ **Valuable technology/platform for fiber laser manufacturers addressing the materials processing market**

We look for...

- ❑ **Laser integrators/end-users to take advantage of our product benefits**
- ❑ **Laser manufacturers that want to improve their offer using/integrating our technology**
 - ❑ **Universal gain control concept that can be applied to a variety of lasers, with nano-, pico-, or femto -second pulse durations**

Headquarters

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