

**TEM<sub>00</sub> Beam Profile, Diode Laser Pumped, Q-Switched Solid-State Laser  
Single-Frequency Wavelength 193 nm**



## General Description

The IXION-193 is a single-frequency all-solid-state laser system for applications such as optical metrology, calibration of 193 nm stepper optics or bandwidth control of high power ArF excimer lasers. The spectral bandwidth is near its theoretical Fourier limit.

The center wavelength of the system is customizable in a range between 190 and 194 nm and can be pre-configured to a fixed wavelength at the time of purchase.

As an option a high precision spectrometer with an absolute spectral accuracy of 0.001 nm is integrated into the system. This allows maximum control of the spectral tuning of the laser.

## Applications

- 193 nm metrology
- Spectrometer calibration
- Interferometry
- Injection seeding of Excimer lasers

## Features

- Industrial proved frequency conversion
- Diode laser pumped
- Sealed housing
- Slot mounted laser diode
- Excellent TEM<sub>00</sub> beam profile
- Low pulse-to-pulse fluctuation ( $\sigma < 3\%$ )
- Maintenance-free thermo-electrical heat management
- 19"-rack power supply and chiller
- LabVIEW drivers
- Integrated Spectrometer for online wavelength control (optional)

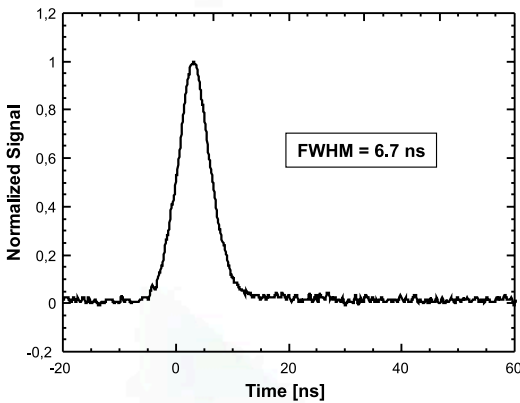
## Product Specifications

| Model               | IXION-193 SLM   |
|---------------------|---|
| Wavelength          | 193.368 nm  |
| Average Power       | 10 mW   |
| Pulse Duration      | typ. 6-8 ns   |
| Energy per Pulse    | 1.6 $\mu$ J   |
| Repetition Rate     | 6 kHz   |
| Beam quality        | M <sup>2</sup> < 1.6  |
| Spectral Bandwidth  | < 100 MHz $\Leftrightarrow$ 0.012 pm $\Leftrightarrow$ 0.003 cm <sup>-1</sup> |
| Spectral Tunability | > 80 GHz $\Leftrightarrow$ 10 pm $\Leftrightarrow$ 2.6 cm <sup>-1</sup>       |
| Coherence Length    | > 1 m   |

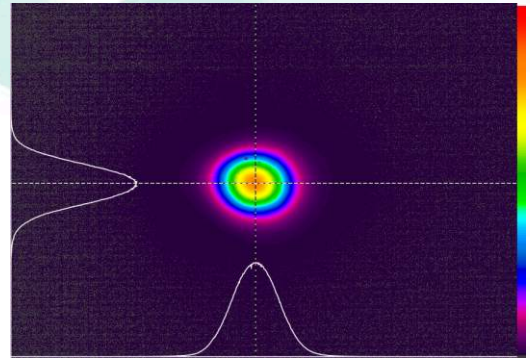
Specifications are subject to change without notice due to product improvement.

## Typical Performance

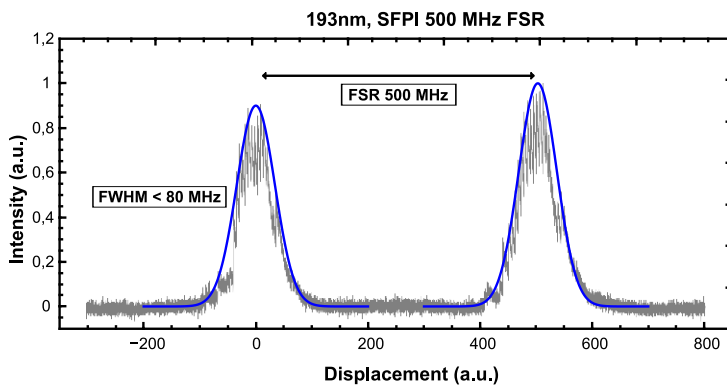
### Pulse Duration



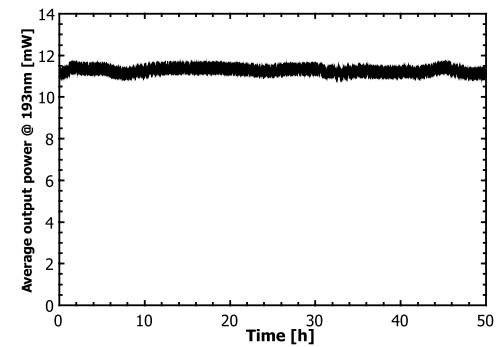
### Beam Profile



### Spectral Bandwidth



### Long Term Stability



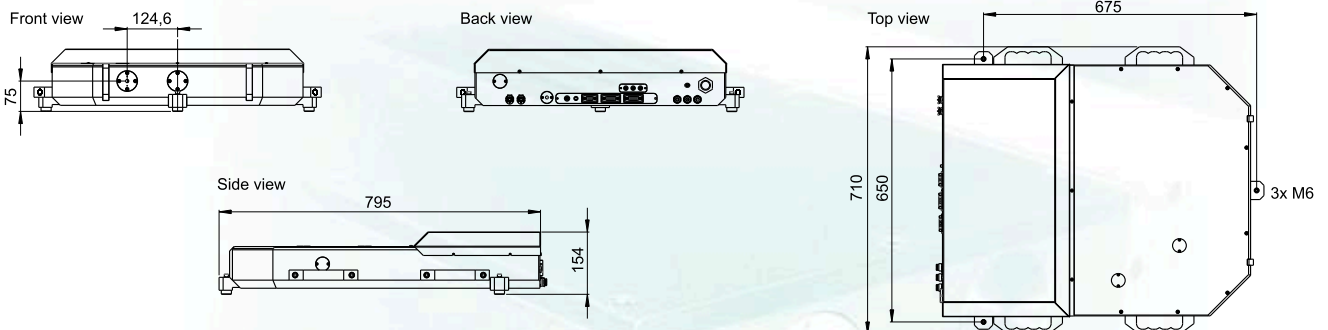
## System Dimensions (L x W x H), weight

|   |                                 |       |
|---|---------------------------------|-------|
| <b>Laser head</b>                       | 795 x 710 x 154 mm <sup>3</sup> | 74 kg |
| <b>Power supply (including Chiller)</b> | 600 x 600 x 600 mm <sup>3</sup> | 45 kg |

## Electrical Characteristics

|            |
|------------|
| 85-264 VAC |
| 47 – 63 Hz |
| 650 W typ. |

## Dimensions Laser Head



Visible and/or invisible laser radiation. Avoid eye or skin exposure to direct or scattered radiation.  
Class 4 laser ( IEC-825)



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