

# FQSS 213-50

Diode pumped passively Q-switched solid state laser

- 213 nm
- single pulse
- $\leq 1.3$  ns
- 1 – 30 Hz
- $> 50 \mu\text{J}$  @ 20Hz



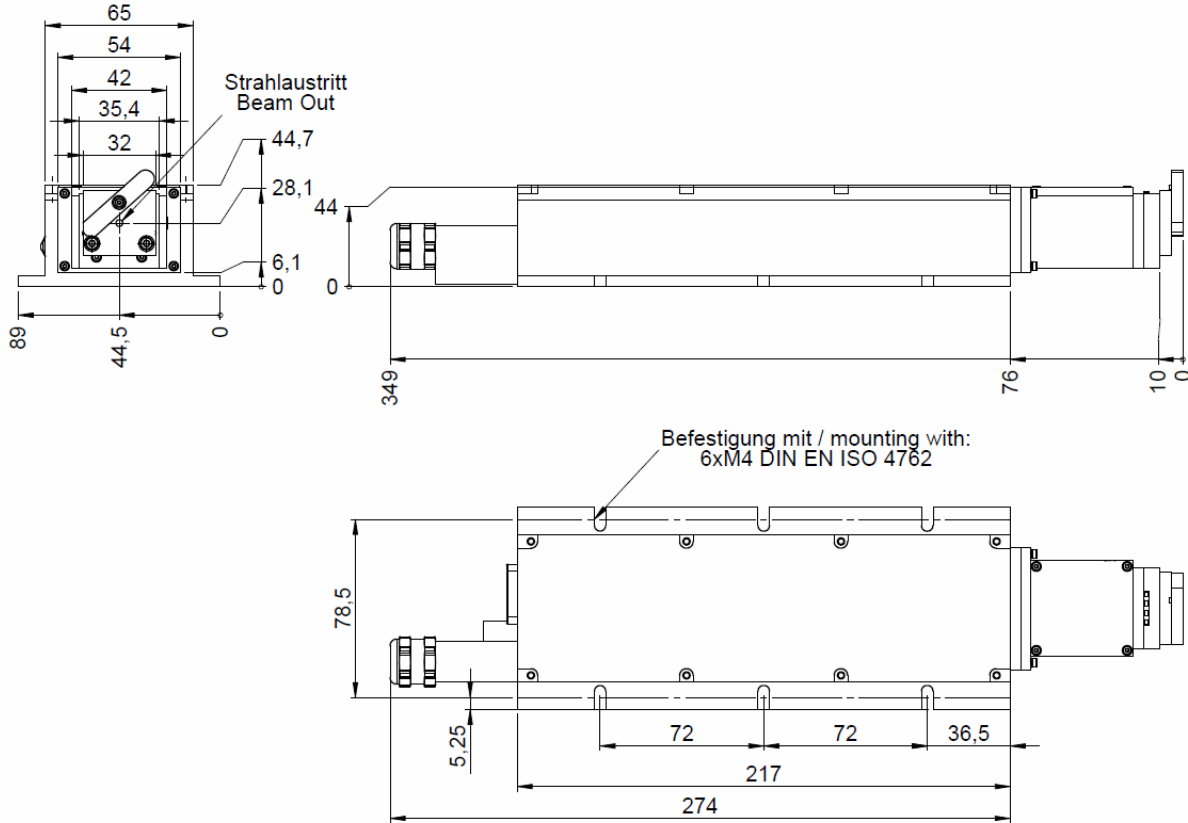
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|                        |   |   |
|------------------------|---|---|
| <b>Optical Data</b>    | Wavelength  | 213 nm                                    |
|                        | Beam Divergence (full angle)  | $< 1.5$ mrad                              |
|                        | Beam Ellipticity  | $< 2:1$                                   |
|                        | Beam Diameter   | $450 \pm 150 \mu\text{m}$ (at laser exit) |
|                        | Peak Power  | $> 40$ kW @ 20 Hz                         |
|                        | Pulse Energy  | $> 50 \mu\text{J}$ @ 20 Hz                |
|                        | Pulse Repetition Rate (with external trigger)   | 1 - 30 Hz                                 |
|                        | Pulse Width (FWHM)  | $\leq 1.3$ ns                             |
|                        | Polarization Ratio  | $> 100:1$ , horizontal                    |
|                        | Long term pulse energy stability (6 hours) <sup>1)</sup>                              | $< \pm 5 \%$                              |
|                        | Pulse-To-Pulse Stability <sup>2)</sup>  | $< 3 \%$ rms                              |
|                        | Laser Classification  | 4 / IV                                    |
|                        | Residual Emission (266nm, 532nm, 1064nm)  | $< 0.2 \mu\text{J}$                       |
| <b>Optical Output</b>  | Free Beam   |   |
| <b>Electrical Data</b> | Electrical Power Consumption  | $< 90$ W                                  |
|                        | Line Voltage  | 100 - 240 V AC (50-60 Hz) or 24 V DC      |
| <b>Interface</b>       | RS 232, USB   |   |
| <b>Miscellaneous</b>   | Warm-up Time  | $< 10$ min                                |
|                        | Operating Temperature   | 18 - 38 °C                                |
|                        | Laser Head Size   | 283 x 65 x 45 mm (core dimensions)        |
| <b>Options</b>         | Manual Shutter or Electrical Beam Blocker   |   |
|                        | External Telescope (e.g. M=5)   |   |
|                        | Stand Alone system (CDRH compliant; incl. key switch, heat sink, manual beam shutter) |   |
|                        |   |   |

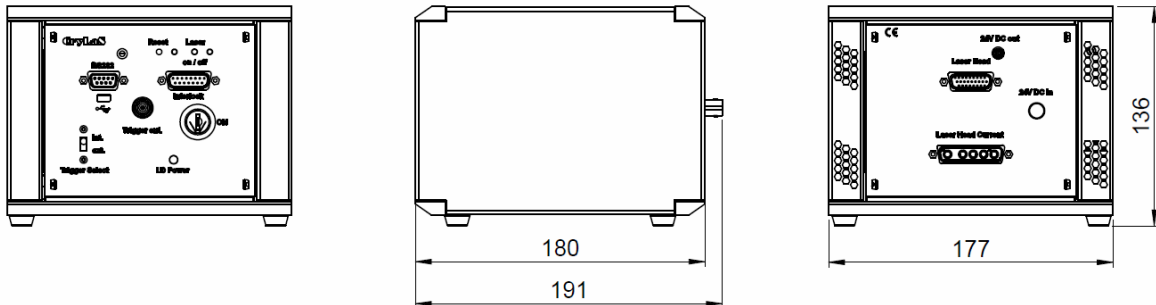
<sup>1)</sup> Drift over 6 hours, energy averaged over 10 sec after 5 min of continuous operation, temperature variation  $< 3$  °C/hour.

<sup>2)</sup> RMS over 1000 pulses after 5 min of continuous operation.

## Laser Head and Controller



### Stand Alone Controller



## Laser Safety Labels

The FQSS213-50 lasers is class 4 according to IEC 60825-1:2014

|   |   |   |
|---|---|---|
| <p>wavelength: 213 nm<br/> max. output: 100 µJ<br/> pulse duration: &lt;1.5 ns<br/> max. repetition rate: 60 Hz</p> <p>Complies with IEC 60825-1:2014<br/> Complies with 21CFR 1040.10 and 1040.11<br/> except for deviations pursuant to<br/> Laser Notice No. 50, dated July 26, 2001</p> | <p><b>DANGER - INVISIBLE<br/> LASER RADIATION</b><br/> <b>AVOID EYE OR SKIN<br/> EXPOSURE TO DIRECT OR<br/> SCATTERED RADIATION</b></p> <p><b>CLASS 4 LASER PRODUCT</b></p> | <p>IS EMITTED FROM THIS<br/> APERTURE</p> <p>LASER<br/> RADIATION</p> |
|---|---|---|

