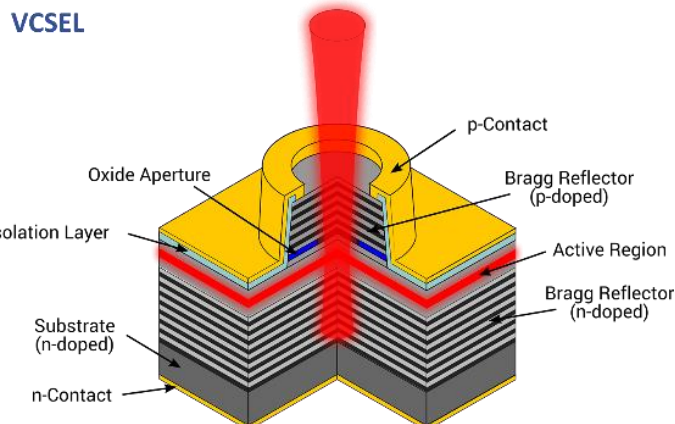
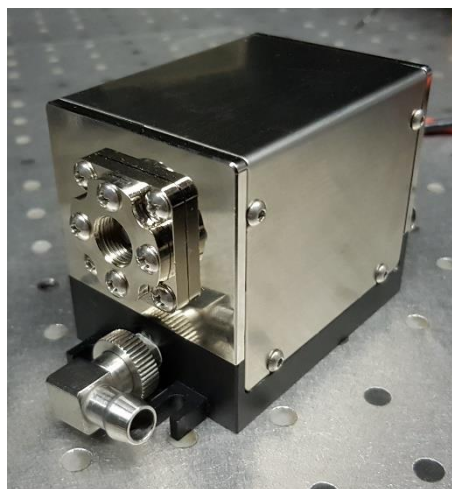


# Laser Gain Modules (Water cooled)

The DATASHEET, April 2023



## Water cooled Laser Gain Modules



A heart of Diode-Pumped Solid-State (DPSS) lasers or laser amplifiers are **Laser Gain Module** (pump chamber). By evolving laser gain modules, Geola Digital can provide DPSS laser gain modules based on **Vertical Cavity Surface Emitting Laser (VCSEL)** pumping engine technology. Our DPSS laser gain module engines assures uniform gain distribution, high pumping efficiency and long life time. We have two types of gain modules, namely **Water cooled gain module** and **Passively cooled gain modules**. Typical air cooled DPSS Gain modules can be applicable for Nd:YAG Master Oscillator or Nd:YAG laser amplifier. The customized laser gain modules can be also designed and provided on request.

### Main advantages

- Low wavelength shift (**0.07 nm/K**)
- Wide operation temperature range **-20 °C — +75 °C**
- High temperature working **up to 75°C**
- Up to **>20G shots** life-time
- Stored energy is **up to 30%** from optical pump energy
- Uniform pumping distribution
- Good power/size form factor

### Application

- Gain module for air cooled DPSS master oscillator
- Gain module for air cooled DPSS Nd:YAG laser amplifier
- Gain module for potential military application

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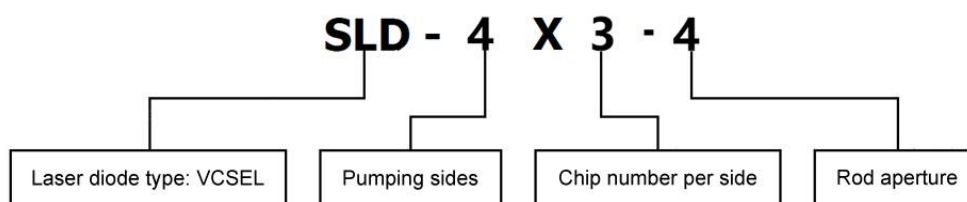


## Typical Water Cooled Laser Gain Models\*

| Model No.      | Nd:YAG crystal, mm | SLD chips, pcs | Electrical Pump Power, W | Optical Pump Energy (200μs), mJ |
|----------------|--------------------|----------------|--------------------------|---------------------------------|
| SLD-3×3-3      | ∅3                 | 9              | 1350                     | >108                            |
| SLD-3×5-3      | ∅3                 | 15             | 2250                     | >180                            |
| SLD-3×7-3      | ∅3                 | 21             | 3150                     | >252                            |
| SLD-3×6-4      | ∅4                 | 18             | 2700                     | >216                            |
| SLD-3×10-4     | ∅4                 | 30             | 4500                     | >360                            |
| SLD-5×7-6      | ∅6                 | 35             | 5250                     | >420                            |
| SLD-5×9-6      | ∅6                 | 45             | 6750                     | >540                            |
| SLD-5×10-6     | ∅6                 | 50             | 7500                     | >600                            |
| SLD-5×15-6     | ∅6                 | 75             | 11250                    | >900                            |
| SLD-5×7-8      | ∅8                 | 35             | 5250                     | >420                            |
| SLD-5×9-8      | ∅8                 | 45             | 6750                     | >540                            |
| SLD-5×13-8     | ∅8                 | 65             | 9750                     | >780                            |
| SLD-7×6-10     | ∅10                | 42             | 6300                     | >504                            |
| SLD-7×11-10    | ∅10                | 77             | 11550                    | >924                            |
| SLD-7×15-10    | ∅10                | 105            | 15750                    | >1260                           |
| SLD-7×10-12    | ∅12                | 70             | 10500                    | >840                            |
| SLD-7×15-12    | ∅12                | 105            | 15750                    | >1260                           |
| SLD-9×10-12    | ∅12                | 90             | 13500                    | >1080                           |
| SLD-9×15-12    | ∅12                | 135            | 20250                    | >1620                           |
| SLD-9X10-15    | ∅15                | 90             | 13500                    | >1080                           |
| SLD-10×14-15   | ∅15                | 140            | 21000                    | >1680                           |
| SLD-10×8-25.4  | ∅25.4              | 80             | 12000                    | >960                            |
| SLD-10×24-25.4 | ∅25.4              | 240            | 36000                    | >2880                           |
| SLD-12×20-25.4 | ∅25.4              | 240            | 36000                    | >2880                           |
| SLD-15×16-25.4 | ∅25.4              | 240            | 36000                    | >2880                           |

\* Specifications marked 'typical' are indications of typical performance and will vary with each unit we manufacture

## Ordering information



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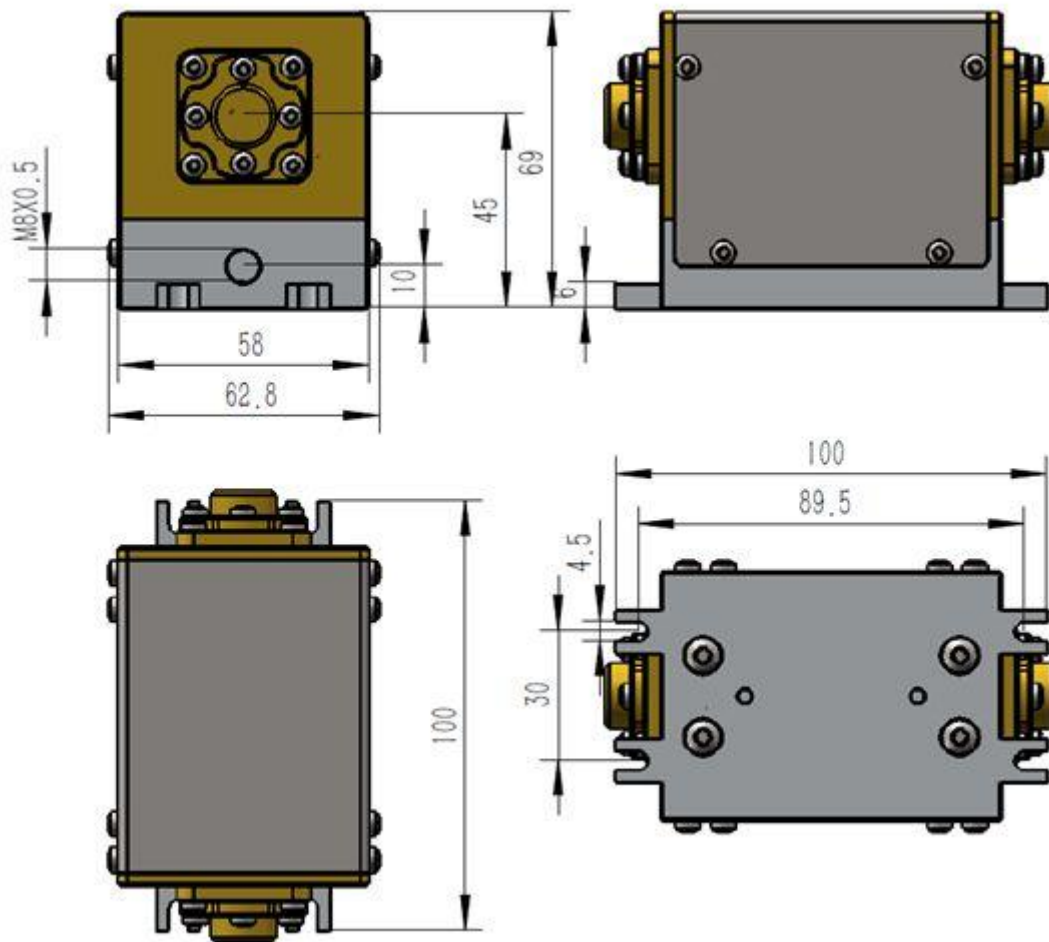
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## Dimensions\*\*



\*\* one of design example