



# QDPA Series

## High Energy DPSS Q-Switched Lasers

Data Sheet



### Overview

The QDPA Series is a family of high-energy, diode-pumped all-solid-state (DPSS) Q-switched lasers designed to deliver high single-pulse energy, short pulse duration, and high peak power in a compact and reliable package.

The series is available in 532 nm, 1064 nm, and 1573 nm wavelength configurations, with single-pulse energy up to 10 mJ depending on the wavelength and configuration. Pulse durations are typically less than 10 ns, with adjustable repetition rates from 1 to 10 Hz.

The QDPA Series is well suited for applications requiring high peak power and controlled pulsed laser energy, including spectroscopy, remote sensing, scientific research, measurement, and material processing.

### Features

- High-energy diode-pumped all-solid-state (DPSS) Q-switched laser
- Available at 532 nm, 1064 nm, and 1573 nm
- Single-pulse energy from 1 mJ up to 10 mJ, depending on model
- Short pulse duration of <10 ns
- High peak power
- Adjustable repetition rate from 1 to 10 Hz
- Low timing jitter, typically <1 ns
- High pulse-to-pulse energy stability
- Internal and external trigger capability
- Compact laser-head design

### Applications

- LIBS
- LIF
- PIV
- ICP-MS
- LCD repair
- Scientific research
- Laser processing

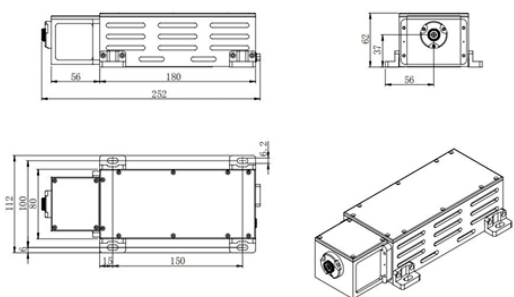
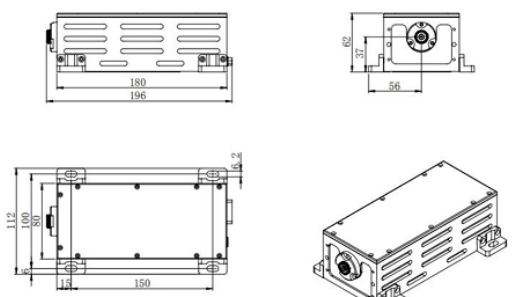
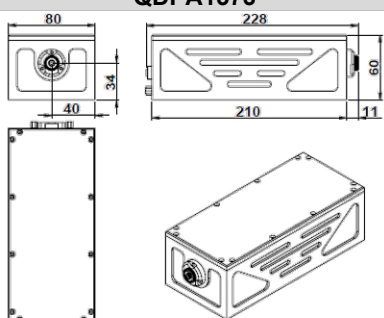
**532-1573 nm Specifications**

| Parameter                   | QDPA532                | QDPA1064          | QDPA1064          | QDPA1573   |
|-----------------------------|------------------------|-------------------|-------------------|------------|
| Wavelength                  | 532±1 nm               | 1064±1 nm         | 1064±1 nm         | 1573±1 nm  |
| Operating mode              | Actively               |                   |                   |            |
| Pulse energy                | 1-5 mJ                 | 1-5 mJ            | 5-10 mJ           | 1-5 mJ     |
| Pulse duration              | <10 ns                 |                   |                   |            |
| Jitter (ns, sdev)           | <1 ns (Int)            |                   |                   |            |
| Repetition rate             | 1-10 Hz (adjustable)   |                   |                   |            |
| Energy stability            | <5%, <3%               | <5%, <3%, <2%     | <3%, <2%          | <5%, <3%   |
| Beam divergence, full angle | <3 mrad                | <3 mrad           | <3 mrad           | ≤8 mrad    |
| Beam diameter               | ~2.5 mm                | ~2.5 mm           | ~3 mm             | ~2.5 mm    |
| Warm-up time                | <15 min                |                   |                   |            |
| Operating temperature       | 15-30°C                |                   |                   |            |
| Cooling method              | Conduction cooled      | Conduction cooled | Conduction cooled | Air cooled |
| Expected lifetime           | 10 <sup>9</sup> pulses |                   |                   |            |

## Remarks:

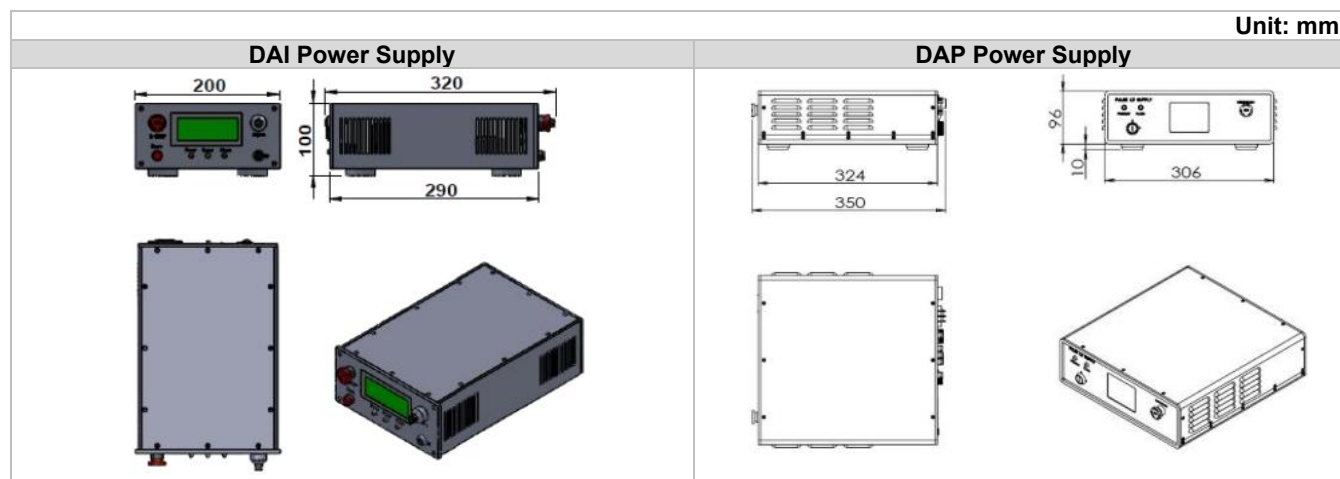
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.
- The above specifications are subject to change without notice.

## QDPA Series Laser Head Dimensions

|                                                                                   |  | Unit: mm                                                                           |  |
|-----------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------|--|
| QDPA532                                                                           |  | QDPA1064                                                                           |  |
|  |  |  |  |
| QDPA1573                                                                          |  |                                                                                    |  |
|  |  |                                                                                    |  |

| Parameter                   | QDPA532                                 | QDPA1064                                | QDPA1573                               |
|-----------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|
| Dimensions                  | 252(L) × 112(W) × 62(H) mm <sup>3</sup> | 196(L) × 112(W) × 62(H) mm <sup>3</sup> | 228(L) × 80(W) × 60(H) mm <sup>3</sup> |
| Weight                      | 2.5 kg                                  | 1.5 kg                                  | 1.5 kg                                 |
| Beam height from base plate | 37 mm                                   | 37 mm                                   | 34 mm                                  |
| Beam exit (from side)       | 56 mm                                   | 56 mm                                   | 40 mm                                  |

## QDPA Series Power Supply Dimensions



| Parameter     | DAI Power Supply                                                | DAP Power Supply                                             |
|---------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| Dimensions    | 320(L) × 200(W) × 100(H) mm <sup>3</sup>                        | 350(L) × 306(W) × 106(H) mm <sup>3</sup>                     |
| Weight        | 4 kg                                                            | 6 kg                                                         |
| Input voltage | 110/220V AC                                                     | 110/220V AC                                                  |
| Feature       | Repetition rate and current can be adjusted by adjustable knob. | Repetition rate and current can be adjusted by touch screen. |

## Ordering Information

For more information, please contact Lasermate directly at [sales@lasermate.com](mailto:sales@lasermate.com).

| Part Number Configuration<br>QDPA[1]-[2][3][4] |                                            |                                                  |                                                |                            |
|------------------------------------------------|--------------------------------------------|--------------------------------------------------|------------------------------------------------|----------------------------|
| QDPA = Laser Model Series                      | [1] = Wavelength                           | [2] = Single Pulse Energy                        | [3] = Power Supply                             | [4] = Power Stability      |
|                                                | 532= 532nm<br>1064= 1064nm<br>1573= 1573nm | 1= 1mJ<br>2= 2mJ<br>3= 3mJ<br>5= 5mJ<br>10= 10mJ | DAI= DAI Power Supply<br>DAP= DAP Power Supply | A= <5%<br>E= <3%<br>2= <2% |

Note: The above specifications are subject to change without notice.

