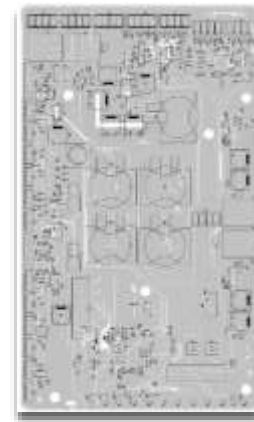


# Datasheet NEOLD-2-15, 2 x 15 A Laser driver with quad motor drivers

## 1 Features

- 2 x 15 A laser drivers (Modulated and continuous)
  - < 5 ns fall time, 0 – 100 kHz pulses\* (switch time: load to GND)
- Laser Class 4 safety features
  - Interlock input
  - emergency input
  - dual power HW safety
  - dual red laser-active LEDs
- ARM® 32-bit Cortex®-M7 CPU
- Watchdog
- External control interface (Key, button, Emergency stop etc.)
- Relay with 12 V output (white light/laser pointer etc.)
- Arbitrarily programmable pulse patterns and multiplexing features
- SMA Coax Sync/Strobe input and Internal programmable clock generation
- Internal 3.3 V and 5 V drivers
- Adjustable laser current (mA-A)
- Adjustable compliance voltage for optimal power performance
- UART/USB communication
- Temperature monitoring of driver
- 4 x 2-phase stepper motors
  - Drive Capability up to 4 x 1.1 A coil current
  - Motion Controller with sixPoint ramp
  - Voltage range 5 V - 12 V
  - Highest Resolution is 256 microsteps per full step
  - Full Protection & Diagnostics
  - High precision sensor-less motor load detection
  - Limit detection in software, i.e., no need for hard end-limit switches.
  - High-precision chopper for best current sine wave form and zero crossing
- SWD interface
- Optional
  - 2 x 120 W TEC driver
  - NTC integrated with PID controller for temperature control
  - SPI interface for peripheral use (communication, modules)
  - I2C interface for peripheral use (communication, modules)
  - 10 x digital 5 V tolerant inputs/outputs
  - Inputs can be configured as 12-bit ADCs at 2.4 MSPS time multiplexed sampling



\* Minimum verified range.

## 2 Applications

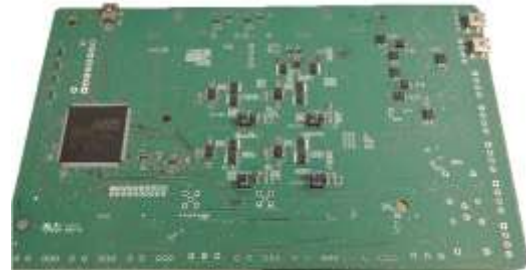
- Advanced LIDAR systems
- Industrial laser systems
- Research laser systems
- Auto-calibrating and auto-aligning system

## 3 Description

The NEO Laser Driver (NEOLD) is a fully featured and flexible system driver able to handle a large number of different types of laser diodes and stepper motors. The NEOLD provides exceptional performance in high performance and/or high-current laser systems.



Top-side



Bottom-side

#### 4 Electrical Characteristics

Supply Voltage	Min	Max
$V_{in}$	10 V	15 V

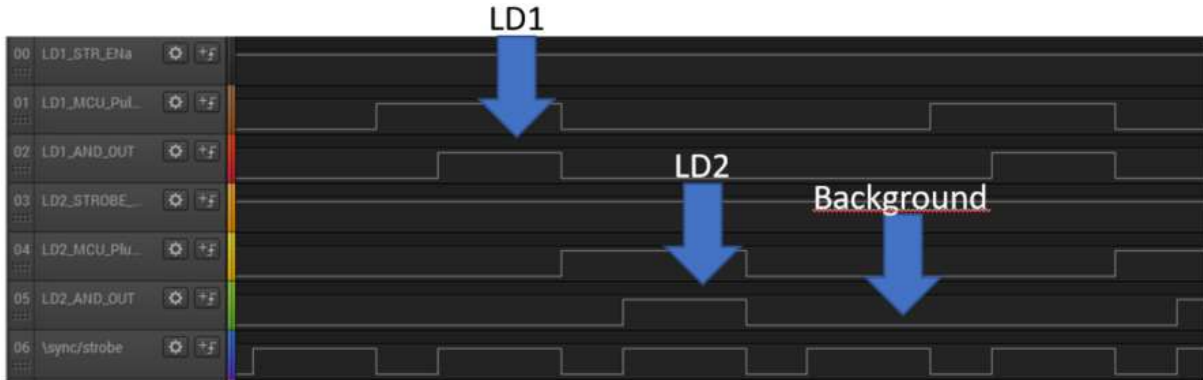
Laser Current	Min	Max
Laser1 or Laser2 - Continuous	3 mA	15 A
Laser1 - Pulsed	3 mA	15 A
Laser2 - Pulsed	3 mA	15 A

Temporal property	LD1	LD2
Rise Time	< 15 ns	< 15 ns
Fall Time	< 5 ns	< 5 ns
f	0 – 100 kHz	0 – 100 kHz
T	Variable in SW	Variable in SW

Mode example of pulse shape data\*:

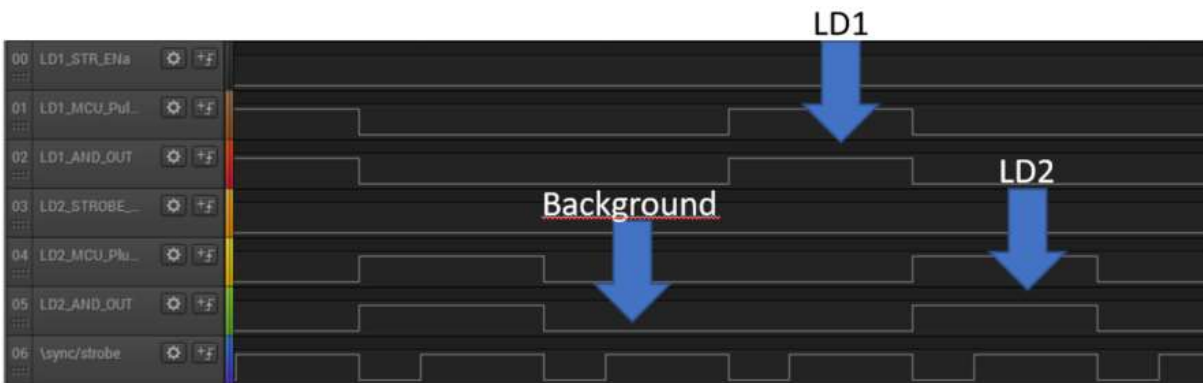
Mode

1



Mode

2



Mode 3

LD1 on, LD2 off

Mode 4

LD2 on, LD1 off

Mode 5 – 8

Configurable in SW

\* Mode operation sequences are easily programmable and only standard examples are shown here.

## 5 MECHANICAL DATA

Mechanical dimension	X	Y
Size	130 mm	220 mm