



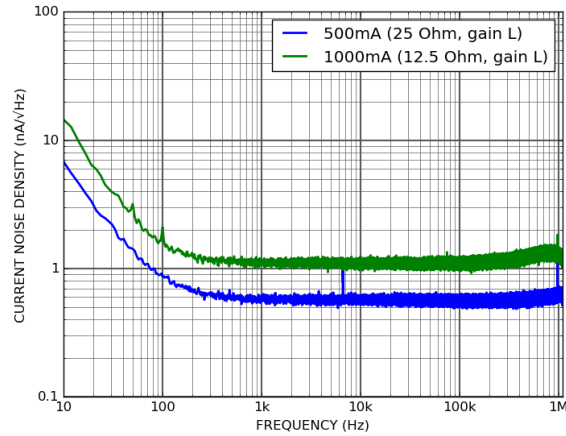
Koheron QCL100 is a high-performance current driver designed to drive high-voltage loads such as Quantum Cascade Lasers. It operates as a current sink, allowing the laser anode to be connected to the ground. The QCL100 driver provides a compliance voltage adjustable up to 13.5 V and an adjustable precision current limit. The board features a 5 MHz modulation input and a 10 Hz trimming input. It is supplied from a single 24 V input and comes with an aluminum base plate.

## Specifications

	QCL100-A-500	QCL100-A-1000
Laser current	0 mA to 650 mA	0 mA to 1300 mA
Supply voltage	19 V to 26 V	19 V to 26 V
Compliance voltage	13.5 V	13 V
3 dB modulation bandwidth	5 MHz	5 MHz
Current monitor gain	2 V/A	1 V/A
RMS noise 10 Hz to 1 MHz	680 nA <sub>rms</sub>	1350 nA <sub>rms</sub>
Current noise density 1 kHz	650 pA/√Hz	1300 pA/√Hz
Modulation gain Lo setting	10 mA/V	20 mA/V
Modulation gain Hi setting	50 mA/V	100 mA/V
Operating temperature	0 °C to 50 °C	0 °C to 50 °C
Outside dimensions	100 mm x 68 mm x 16 mm	100 mm x 68 mm x 16 mm
Weight	130 g	130 g
Compatible lasers	Anode-grounded / Floating diodes	Anode-grounded / Floating diodes

## Characterization

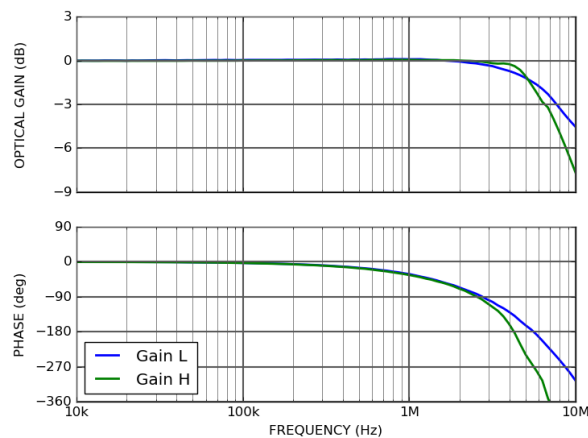
### Current noise



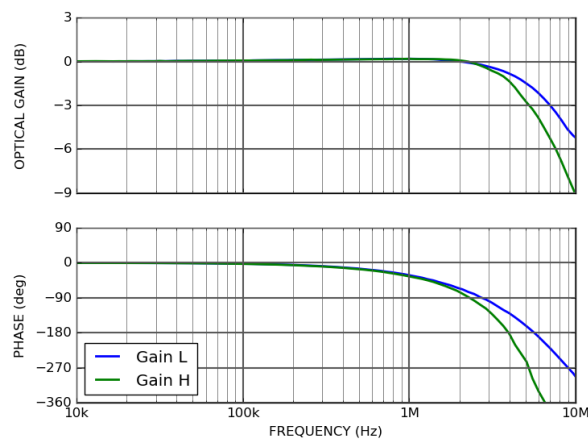
QCL100 current noise

## Modulation

Modulation transfer function measured across a 25  $\Omega$  load at 400 mA (QCL100-A-500) and 12.5  $\Omega$  load at 1000 mA (QCL100-A-1000). Modulation input voltage amplitude is 2 V<sub>pp</sub>.

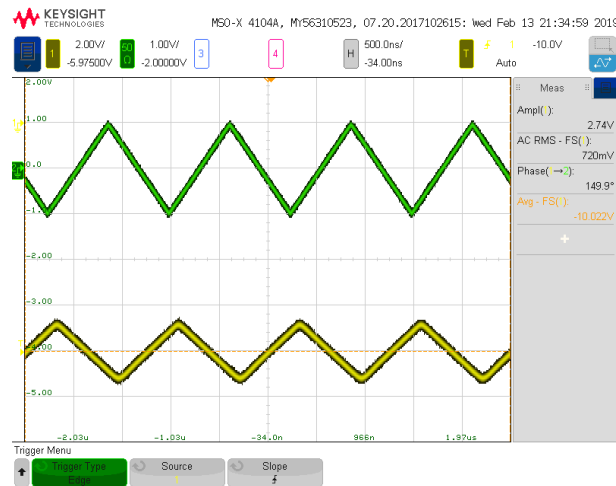


QCL100-A-500 modulation response



QCL100-A-1000 modulation response

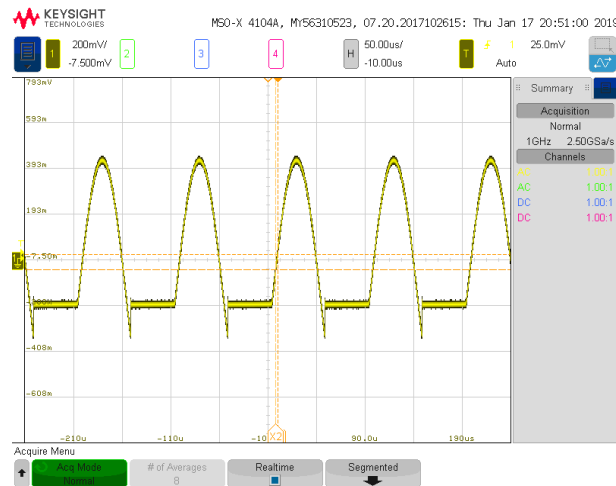
The figure below shows the response (yellow) of the QCL100-A-500 driver to a 2 V<sub>pp</sub> triangle modulation (green):



QCL100-A-500 triangular modulation response

## Current limit

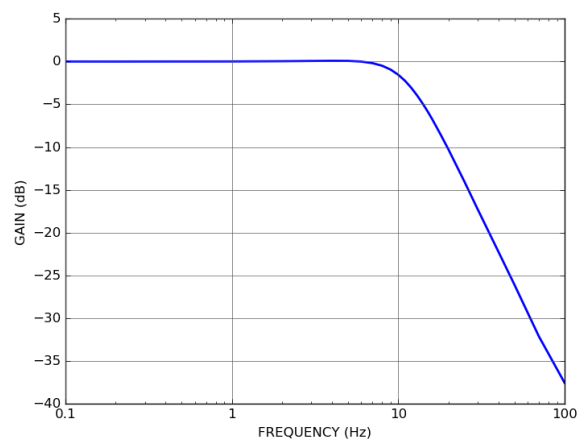
The QCL100 driver integrates a fast and precise current limit. Here the current limit clamps a 10 kHz sine wave at 400 mA:



QCL100 current limit

## External setpoint trimming input

The external trimming input can be use to perform a low frequency modulation with a 10 Hz bandwidth.



QCL100 external setpoint modulation

## Ordering codes

PRODUCT NUMBER	ATTRIBUTE
QCL100-A-500	Max. output current 650 mA
QCL100-A-1000	Max. output current 1300 mA