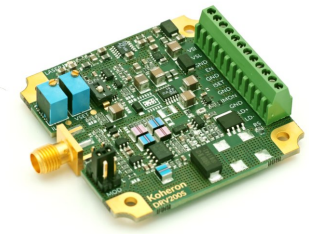
Low noise laser driver with external setpoint



Koheron DRV200S is an ultra-low noise current driver on which the current setpoint is controlled by an externally applied voltage. The DRV200S has variable current limit and compliance voltage. It also features a DC to 5 MHz modulation input with adjustable modulation gain.

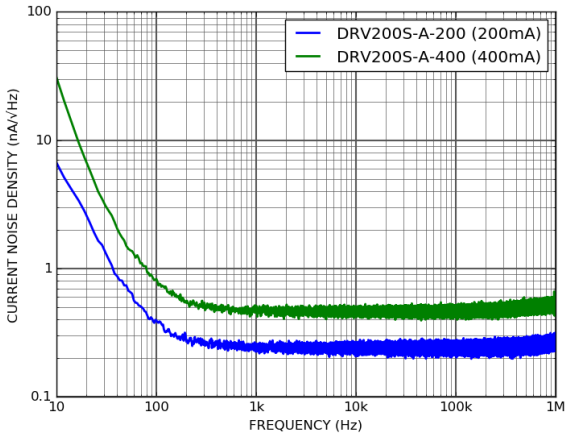
Specifications

	DRV200S-A-40	DRV200S-A-200	DRV200S-A-400
Laser current	0 - 40 mA	0 - 200 mA	0 - 400 mA
Internal supply voltage (VSI)	4.8 V - 6 V	4.8 V - 6 V	4.8 V - 6 V
Laser supply voltage (VSL)	3 V - 19 V	3 V - 19 V	3 V - 19 V
Maximum compliance voltage	15.5 V	15.5 V	15.5 V
3 db modulation bandwidth	8 MHz	6 MHz	6 MHz
Current monitor gain	50 mV/mA	10 mV/mA	5 mV/mA
Temperature coefficient	30 ppm/°C	30 ppm/°C	30 ppm/°C
RMS noise (10 Hz - 1 MHz)	65 nA_{rms}	265 nA_{rms}	530 nA_{rms}
Current limit	13 - 60 mA	65 - 300 mA	130 - 600 mA
Modulation gains	200 µA/V, 2 mA/V, 20 mA/V	1 mA/V, 10 mA/V, 100 mA/V	2 mA/V, 20 mA/V, 200 mA/V
Outside Dimensions	58 mm x 50 mm x 14 mm	58 mm x 50 mm x 14 mm	58 mm x 50 mm x 14 mm
Weight	19 g	19 g	19 g
Operating temperature	0 - 50 °C	0 - 50 °C	0 - 50 °C
Compatible lasers	Floating diodes	Floating diodes	Floating diodes

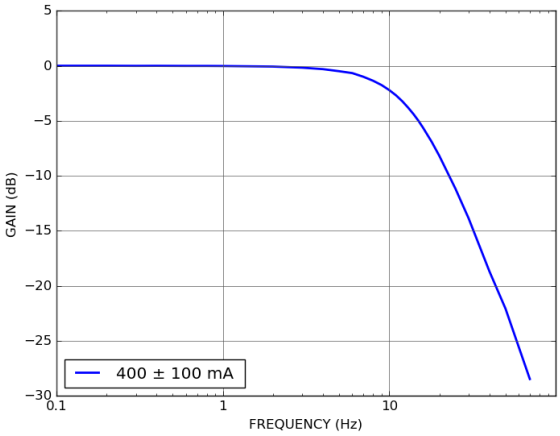
Characterization

Current noise

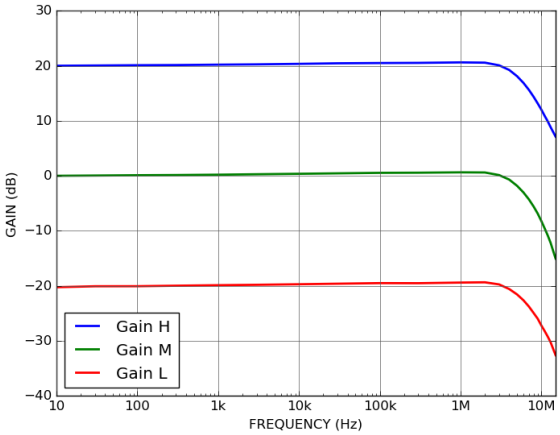
The figure below shows the current noise of the DRV200S laser driver. The setpoint is produced by a VREF100 voltage source.



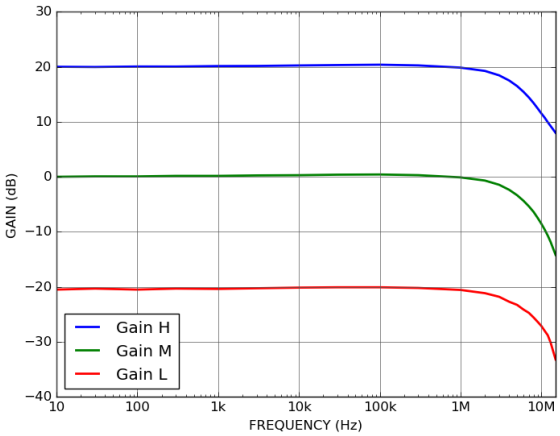
Setpoint frequency reponse



DC current modulation input



Transfer functions of the modulation input. 200 mA laser current version (A-200)



Transfer functions of the modulation input. 400 mA laser current version (A-400)

Modulation performance are characterized using a DFB laser operated at 80 mA. The gain high modulation (H) is measured at 200 mV_{pp} and the gains medium (M) and low (L) are measured at 2 V_{pp}. Gains are normalized to the medium modulation gain at DC.

Ordering codes

- **DRV200S-A-40:** Laser current 40 mA
- **DRV200S-A-200:** Laser current 200 mA
- **DRV200S-A-400:** Laser current 400 mA