



Koheron CTL300P is a rugged type 1 laser diode controller with the following features:

- High-efficiency current driver up to 2800 mA.
- ± 4.5 V / 3 A high-efficiency TEC controller.
- Wide input supply voltage range: 6 V to 33 V.
- -40 °C to 85 °C operating temperature range.
- On-board monitoring and diagnostics.
- Modulation input port with 100 kHz bandwidth.
- Mates with the [TB300 breakout board](#) sold separately.
- Interface compatible with the [CTL300E industrial laser diode controller](#)

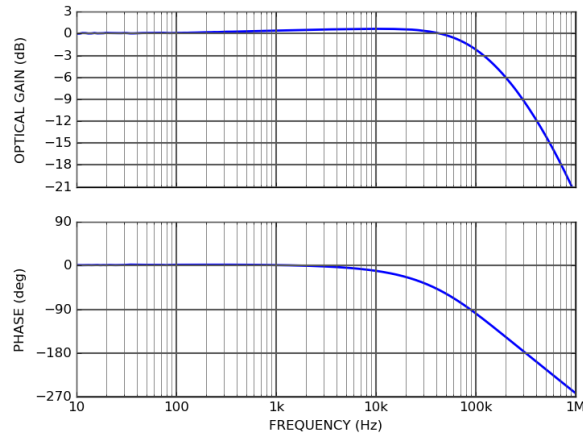
Specifications

	2000	2800
Current driver		
Laser current	5 mA to 2050 mA	8 mA to 2900 mA
Laser current resolution	32 μ A	47 μ A
Compliance voltage	3.7 V	3.7 V
RMS noise 10 Hz to 1 MHz	2 μ A _{rms}	3 μ A _{rms}
Current noise density 10 kHz	5 nA/ $\sqrt{\text{Hz}}$	8 nA/ $\sqrt{\text{Hz}}$
Temperature coefficient	20 ppm/ $^{\circ}\text{C}$	20 ppm/ $^{\circ}\text{C}$
Modulation gain	119 mA/V	190 mA/V
3 dB modulation bandwidth	100 kHz	100 kHz
Modulation input range	-0.5 V to 4 V	-0.5 V to 4 V
Modulation input impedance	1 k Ω	1 k Ω
TEC controller		
Maximum current	3 A	3 A
Compliance voltage	-4 V to 4 V	-4 V to 4 V
Temperature stability	0.002 $^{\circ}\text{C}/^{\circ}\text{C}$	0.002 $^{\circ}\text{C}/^{\circ}\text{C}$
Laser power monitor		
Photodiode current	0 mA to 2.5 mA	0 mA to 2.5 mA
Other		
Outside dimensions	131 mm x 42 mm x 28 mm	131 mm x 42 mm x 28 mm
Weight	95 g	95 g
Supply voltage	6 V to 33 V	6 V to 33 V
Operating temperature	-40 $^{\circ}\text{C}$ to 85 $^{\circ}\text{C}$	-40 $^{\circ}\text{C}$ to 85 $^{\circ}\text{C}$
Compatible lasers	Floating diodes / Type 1	Floating diodes / Type 1

Current driver

Modulation frequency response

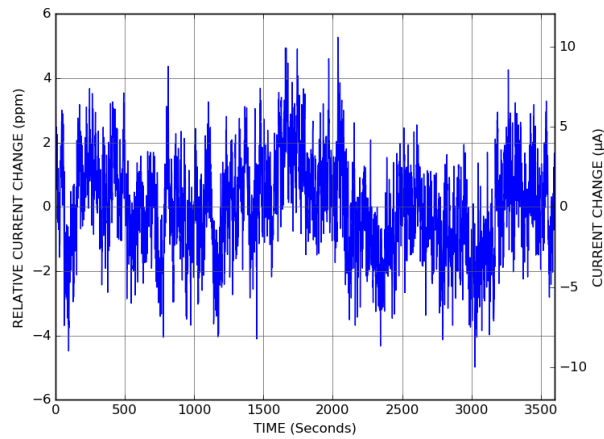
The figure below shows the modulation frequency response of the CTL300P-1-2000 controller driving 500 mA with 500 mV laser driver voltage drop.



CTL300P modulation frequency response

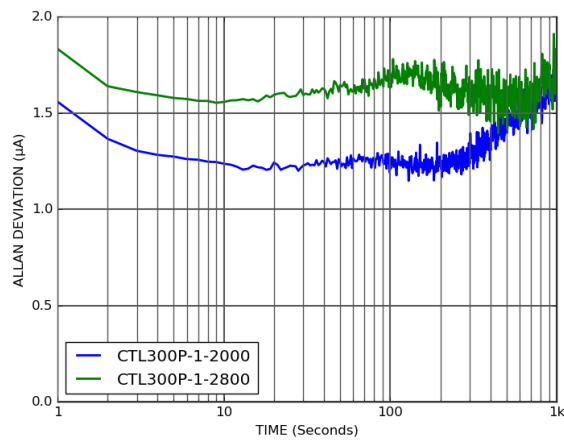
Stability

The figure below shows the current stability of the CTL300P-1-2000 controller operated at 2000 mA.



CTL300P-1-2000 one hour current stability

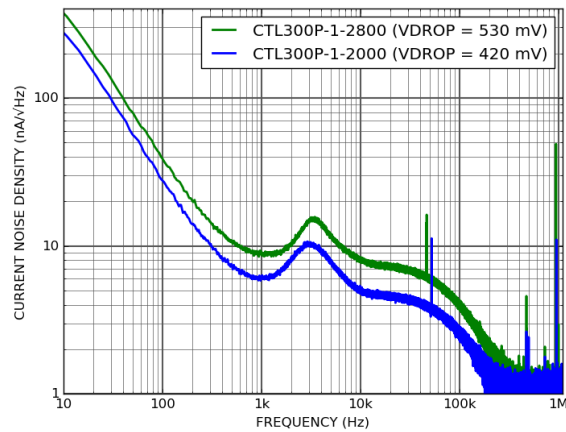
The figure below shows the Allan deviation of the CTL300P controller operating at rated current.



CTL300P allan deviation

Current noise density

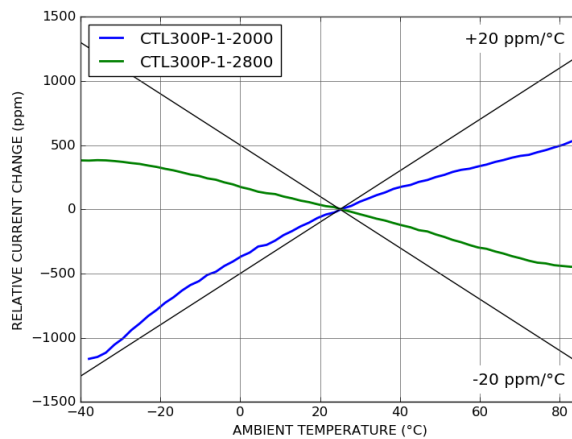
The figure below shows the current noise density of the CTL300P controller operating at rated current.



CTL300P current noise density

Temperature stability

The figure below shows the variation of the output current against the ambient temperature of the CTL300P controller operating at rated current.



CTL300P temperature coefficient

Ordering codes

PRODUCT NUMBER	ATTRIBUTE
CTL300P-1-2000	Laser mount Butterfly ZIF socket / Laser current 2000 mA
CTL300P-1-2800	Laser mount Butterfly ZIF socket / Laser current 2800 mA
CTL300P-1-2000-NOZIF	Laser mount Butterfly no socket / Laser current 2000 mA
CTL300P-1-2800-NOZIF	Laser mount Butterfly no socket / Laser current 2800 mA