

Laser servo controller

Koheron PI200 is a laser servo controller with PI² loop filter.



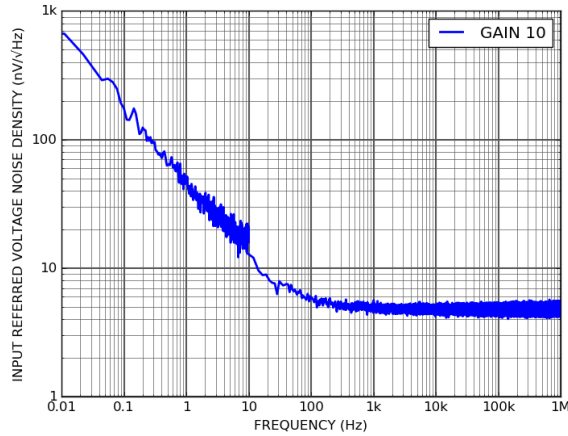
Specifications

	PI200	PI200-T
Servo		
Control bandwidth	5 MHz	5 MHz
Loop delay	20 ns	20 ns
Slow integrator frequency range	800 mHz to 800 Hz	8 mHz to 8 Hz
Fast integrator frequency range	47 kHz to 4.7 MHz	47 kHz to 4.7 MHz
Output voltage noise (0 dB gain)	5 nV/ $\sqrt{\text{Hz}}$	5 nV/ $\sqrt{\text{Hz}}$
Input voltage range	-2 V to 2 V	-2 V to 2 V
Input impedance	50 Ω	50 Ω
Output voltage range (50 Ω)	-2 V to 2 V	-2 V to 2 V
Power supply		
Positive supply voltage	4.75 V to 6 V	4.75 V to 6 V
Negative supply voltage	-6 V to -4.75 V	-6 V to -4.75 V
Supply current	220 mA per rail	220 mA per rail
Quiescent current	45 mA per rail	45 mA per rail
Other		
Outside dimensions	75 mm x 60 mm x 14 mm	75 mm x 60 mm x 14 mm
Weight	40 g	40 g
Operating temperature	0 °C to 50 °C	0 °C to 50 °C

Characterization

Input referred voltage noise

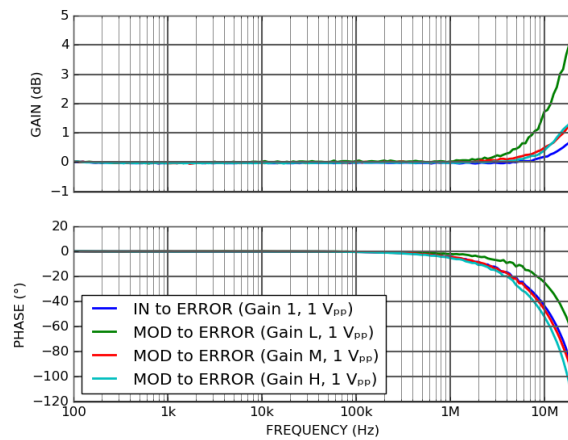
Input voltage noise measured for a gain of 10 between the input and the error signal output.



Transfer functions

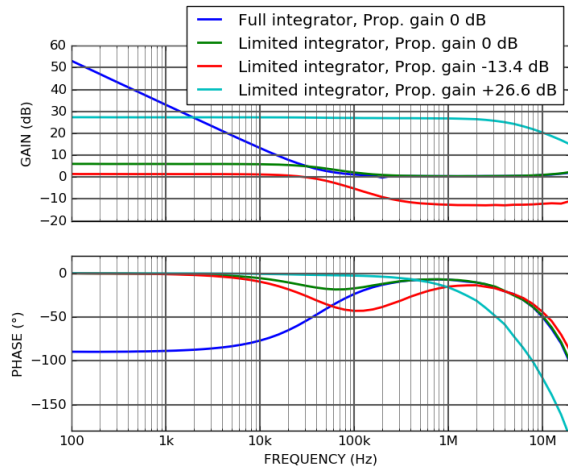
Error signal

Bode plot of the transfer functions from the signal and modulation inputs to the error output:



Fast output

Transfer functions between the input and the fast output. Fast integrator gain is set to its minimum value (47 kHz). Global gain is -20 dB and input signal is 150 mV_{pp}.



Ordering codes

REFERENCE	ATTRIBUTE
PI200	Slow integrator 800 mHz - 800 Hz
PI200-T	Slow integrator 8 mHz - 8 Hz