Sample servo diagrams and Bode plots
Aousto optic performance plots

- Unlock servo
- Measure gain and phase vs drive input

Photodiode output divided by voltage input to microwave AOM driver

Phase of photodiode output referenced to voltage input to microwave AOM driver
Fabry-Perot driver performance

- Unlock servo -- use high voltage, divide by 10 scope probe
- Measure gain and phase vs drive input

**Graphs:**
- HV amp output divided by voltage input to HV amp
- Phase of HV amp output referenced to phase on HV amp input
Servo performance plots

- Measure difference amp output and integrator output

**Difference amp output voltage**

- Minimum measurable signal

**Integrator output voltage**

- Minimum measurable signal

Frequency (Hz):

1 2 5 10 20 50 100 200 500 1K 2K 5K 10K 20K 50K 100K 200K
Servo phase plots

- Measure phase difference between integrator and difference amp output
Differential amplifier stage

Labels in **bold** are for connections or adjustments on the outside of the box
Integrator stage

Labels in **bold** are for connections or adjustments on the outside of the box.

- Integrator drift compensation 100K
- +15V
- -15V
- 1 M
- 100Ω
- 10 pF
- 100 pF
- 1,000 pF
- 10,000 pF
- 0.1 μF
- 100K
- log pot
- Lock/unlock switch
- Rotary switch

From diff amp out

To summing amp

Integrator output
Summing amplifier stage

Labels in **bold** are for connections or adjustments on the outside of the box.
Servo box

- Bus lines for power and ground
- One solder lug per box for grounding case
- Trim pots for diff amp balance and integrator zero
Corrected servo

Open circles are for BNC connectors on front of box
All potentiometers on box unless otherwise noted
All switches on box