

Long-Term Output Drift of an LDX-3620 Ultra-Low Noise Laser Diode Current Source

This technical note presents the results of output drift measurements performed on a typical production model LDX-3620 Ultra-Low Noise Laser Diode Current Source.

RESULTS

It can be seen from the results in Figure 2 that the LDX-3620 maintained a stability of better than ± 10 ppm for a period of over 14 hours.

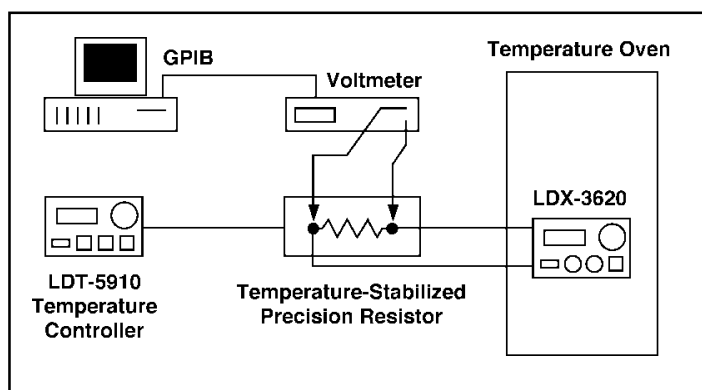


Figure 1. Measurement Setup Diagram.

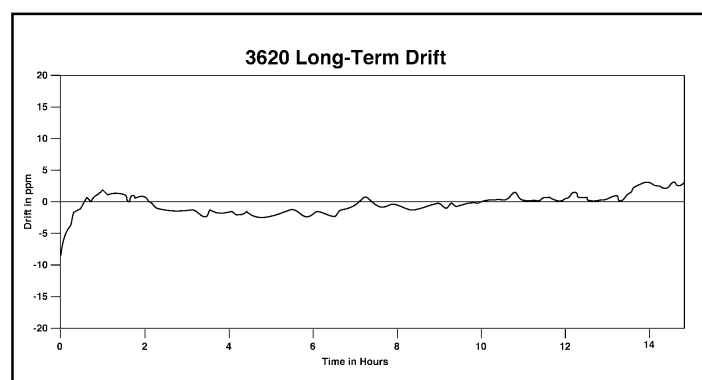


Figure 2. LDX-3620 Long-Term Drift Measurement Results.

MEASUREMENT SETUP

The measurement setup is shown in Figure 1. The LDX-3620 was placed in a temperature controlled oven and stabilized for one hour at 20°C. Current measurements were taken by measuring the voltage across an ultra-stable precision resistor which was also temperature controlled. The starting current was 100 mA, and the LDX-3620 battery charger (AC) was on. Raw data was fed to a computer and converted to drift data in parts per million (ppm). The results were graphed, as shown in Figure 2.