

INSTRUMENT SERVICE / REPAIR REPORT
RMA #: 14306
DATE RECEIVED IN HOUSE : 08/13/2013
PROJECT NO : 915-326

MODEL :	SERIAL NO :
OL730D	12309080
OL730-TE	12100079
OL730-PbSe	12100016
OL730D-CH	12100030

OWNER :
Rochester Inst. of Technology Mike Every mevery25@gmail.com - email
WARRANTY: Yes

SYMPTOMS: Items submitted for evaluation. The system is not behaving normally. The signal tends to drift drastically.

ANALYSIS:

OL730D S/N 12309080: The OL730D was tested and no defects were found.

OL730-TE COOLER S/N 12100079: The OL730-TE cooler was tested and no defects were found.

OL730-PbSe S/N 12100016: The OL730-PbS detector was tested and no defects were found.

OL730D-CH S/N 12100030: The OL730D-CH was tested and no defects were found.

REPAIRS MADE:

OL730D S/N 12309080: No repairs are required.

OL730-TE COOLER S/N 12100079: No repairs are required.

OL730-PbSe S/N 12100016: No repairs are required.

OL730D-CH S/N 12100030: No repairs are required.

NOTES: It was determined that the 730D was not set to the best settings for the application.

Issue 1:

The PbSe detector is sensitive to IR energy.

When shuttering for a dark measurement use something opaque to IR, e.g. aluminum foil.

The chopper blade emits IR energy that is usually greater than a dark aperture.

This causes a small AC signal of opposite phase to be detected.

If the 730D is set to "dual-phase" operation, this will be rectified and seen as a small positive reading.

However, as incoming light increases through the aperture, the reading will DECREASE until it is equal to the energy of the blade.

As incoming light continues to increase through the aperture, the reading will increase if it is

greater than the energy of the blade.

The recommended method is to use "single-phase" setting and adjust the phase offset as described in the manual.

Readjust the phase offset after warm-up and after changes of the chopper frequency.

Issue 2:

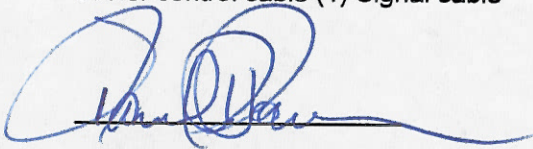
AC lock-in applications benefit from as much filtering as possible.

The recommend settings are:

Update Rate=10Hz.

Response Time = >3 seconds.

ACCESSORIES RECEIVED WITH INSTRUMENT: (2) Power cords (1) Chopper control cable (1) TE cooler control cable (1) Signal cable



DATE COMPLETED: August 16, 2013

Dan Powers
Electronic Technician

Visit our website at www.GoochAndHousego.com for more information on our products & services.

Setting up the OL 730D

730D set up.

Menu option 2 - Response time: seconds for all gain ranges

Menu option 3 - Select input source: AC Voltage, AC Coupling

Menu option 4 - Select Measurement: Square input, Pk-Pk

Menu option 5 - Select Reference: Chopper Reference

Menu option 7 - Select Dual/Single: Single : (When single is selected the 730D will prompt for an offset adjustment. (Instructions for this can be found in the manual)

Menu option 13 – Select update rate: 10Hz