

Laser Data Viewer Users Guide

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Introduction

The Laser Data Viewer program is a small utility that will show the contents of laser measurement files from API Sensor and Renishaw. The data from this utility is sorted and averaged so that transferring mean values to other software is very easy.

The Laser Data Viewer is cross platform and can be compiled to run on GNU/Linux, OSX, and Windows.

Overview

The Laser Data Viewer utility is a single dialog window with a floatable control dock. The view of the data is split into a text and graphical section.

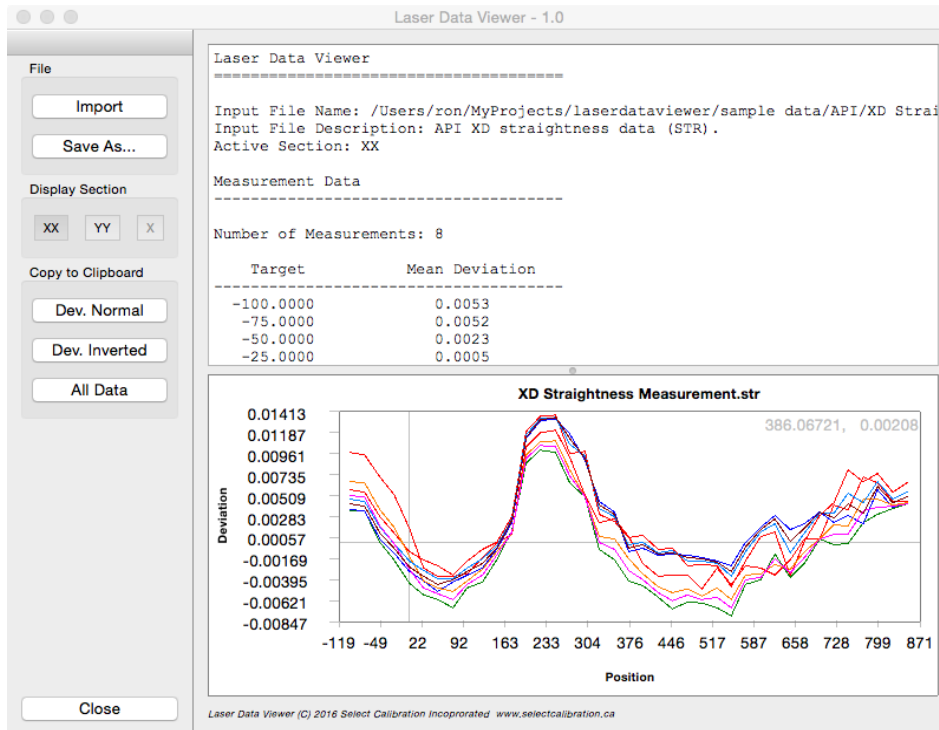


Illustration 1: The Laser Data Viewer program with an API straightness measurement file loaded. This file contains horizontal and vertical straightness measurements.

The Laser Data Viewer can import API and Renishaw linear, straightness, and angular files. For API the file extensions are *.POS, *.STR, and *.ANG. For Renishaw these are files with extensions of *.RTL, *.RTA, *.STX, *.STY, and *.STZ.

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Dock Options

The dock control has the following options

<i>Option</i>	<i>Description</i>
Import	Open a laser measurement using a standard file selection dialog. <i>Data files can be dragged and dropped onto the main window of the Laser Data Viewer as an alternate method to open a file.</i>
Save As ...	Save the active measurement data to a CSV text file. This includes targets and all individual measurements. <i>Only data from the active measurement section is saved.</i>
Display Section	This option sets the active measurement section. Depending on the type of measurement file there may be up to three separate sets of data. For example, the API angular data files contain measurements for RA, RB, and RC angular deviations in one file so this option will allow selection of the active data. <i>Renishaw data files do not contain multiple datasets.</i>
Copy to Clipboard – Dev. Normal	Places the mean deviation of all measurements from the active display onto the clipboard.
Copy to Clipboard – Dev. Inverted	Places the inverted mean deviation of all measurements from the active display onto the clipboard.
Copy to Clipboard – All Data	Places the target position and all individual measurements from the active display onto the clipboard.
Close	Close the Laser Data Viewer program.

Text View

The text display contains variable sections of data depending on the contents of the input file. An example of a typical data display is shown in the following section:

```
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=====

Input File Name: /Users/ron/MyProjects/laserdataviewer/sample data/API/Demo6D-2.pos
Input File Description: API XD scale data (POS).
Active Section: L1

Environmental Data
-----
```

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Air Temperature: 20.23 °C
Air Pressure : 97.699 kPa
Air Humidity : 50.7 %
Mat Temperature: 20.19 °C

Measurement Data

Number of Measurements: 4

Target	Mean Deviation
-----	-----
-475.0000	-0.0026
-450.0000	-0.0047
-425.0000	-0.0033
-400.0000	-0.0069
-375.0000	-0.0093
-350.0000	-0.0091
-325.0000	-0.0123
...	

The first section of the text display shows information about the input file and file type. If environmental data exists in the file this information in a separate section. The final part of the text data shows the number of measurement samples followed by all targets and measured deviations.

For Renishaw files the data units are not decoded; the data is displayed as found in the file. In most cases this will be metric targets (mm) and micrometer deviations (um). For API files the values are converted into metric (mm) for all values.

Graphical View

The graphical view of the data shows all the individual measurement datasets. The coordinates of the mouse position is always shown in the upper right of the graphical view of the data allowing for fast approximation of measurement deviations.

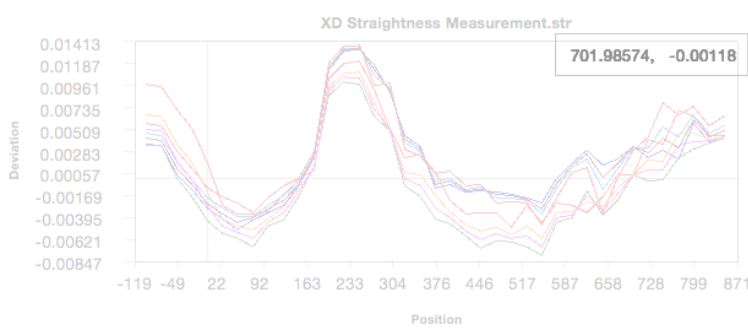


Illustration 2: Graphical view of data with position coordinates displayed in upper-right of the view.

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Revision History

<i>Date</i>	<i>Version</i>	<i>Changes</i>
Oct 21, 2016	1.0	New Program
Nov 9, 2016	1.1	Allow more variation of data formatting for Renishaw laser files.