# Force-Displacement Graphing Software
Force Recorder Professional

- Data can be transmitted to plot the force-displacement (length) graph easily.

- It is ideal for tactile analysis due to force transition is based on displacement.

- Graph can be drawn accurately and precisely due to the high sampling rate. (Mx. 2000Hz)

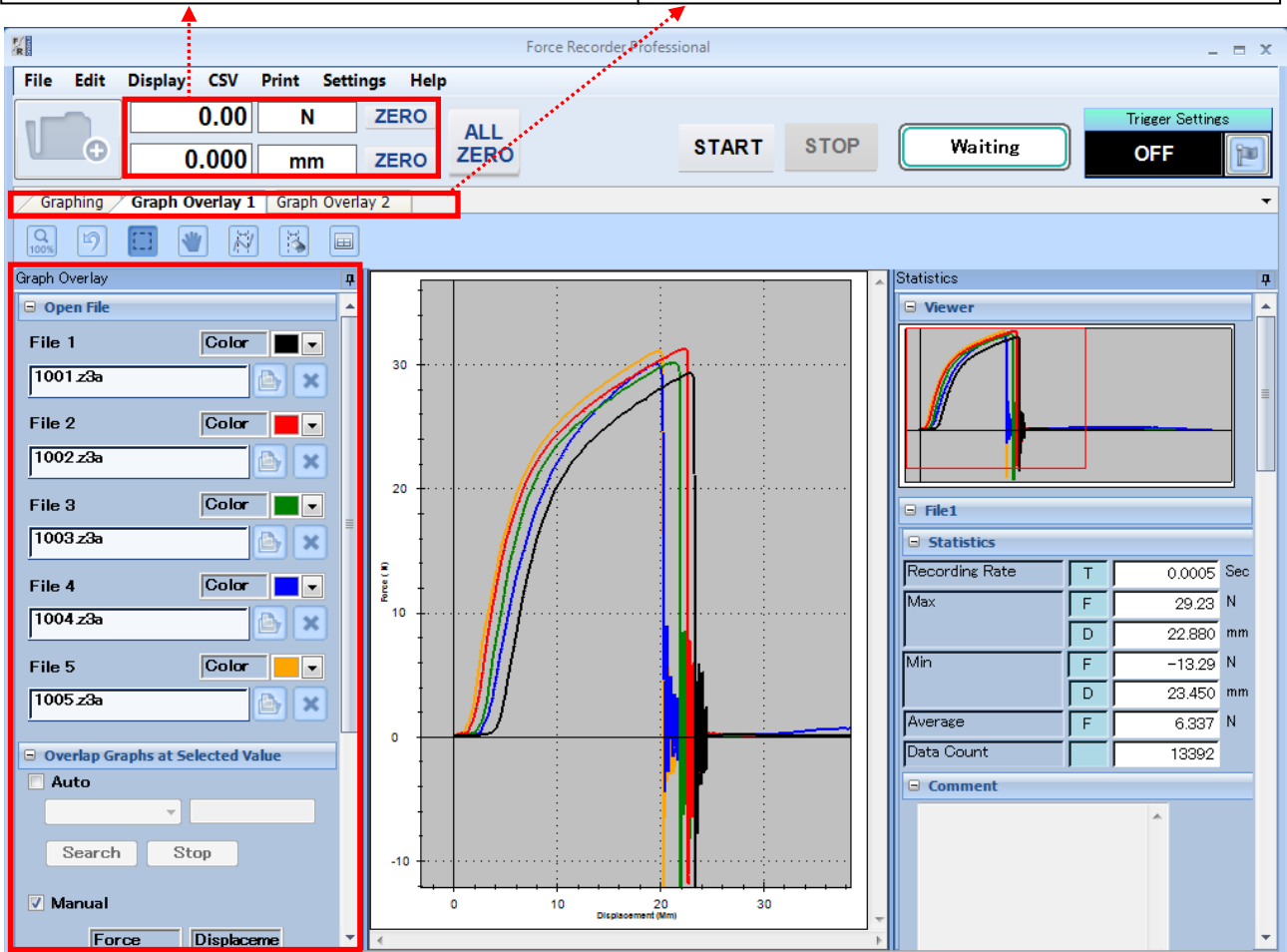- You can switch between force-time and force-displacement based on your needs.

Display image
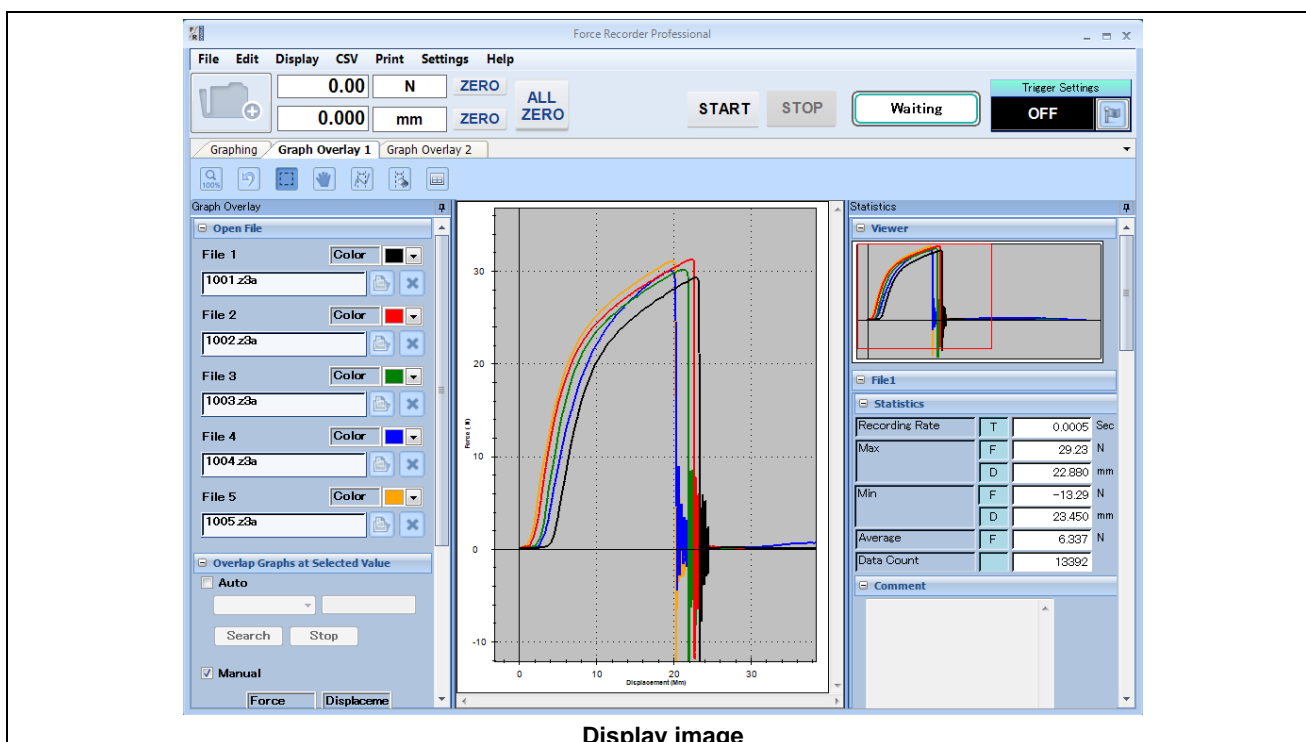
Basic function of Force Recorder Software	
Graph scaling function	The graph can be zoomed in/out, or scroll to check the details.
Statistical calculation	Maxmimum/minimum/average values are automatically calculated.
Comment function	Comments can be inserted on the graph to record the test condition.
Print	Graph, statistics value and comment can be printed out as report format.
CSV file converting function	Recorded data can be converted into CSV format.
Preview saving function	Graph can be saved in various format. (e.g. Word, Excel and PDF)
Force gauge setting	The setting of force gauge can be changed via software.

Additional functions of Force Recorder Professional	
Display of displacement	Travel distance of force gague can be recorded and displayed on software.
Trigger function	Graphs can be overlaid for easy comparison. (up to 5 graphs can be overlaid at once)
Point marking	Data can be recorded automatically by setting up the START/STOP value.
Border line function	You can add comments at a specific point on the graph.
Area select function	You can draw line on the recorded graph at specific force/time as a judgement line.
Trigger function	You can extract the necessary data, and the new statistical value will be calculated.

[Software Display Function]

Force-Displacement display
You can switch the display mode between Force-time and Force -displacement.

| 0.00 | N | ZERO | Force-Time mode

| 0.0 | N | ZERO |
| 0.000 | mm | ZERO | Force-Displacement mode

Tabs
You can compare different graph easily.

| Graphing | Graph Overlay 1 | Graph Overlay 2 |

Graph overlay
You can overlay the graphs in Graph Overlay Tab.
The file name and color can be viewed easily.
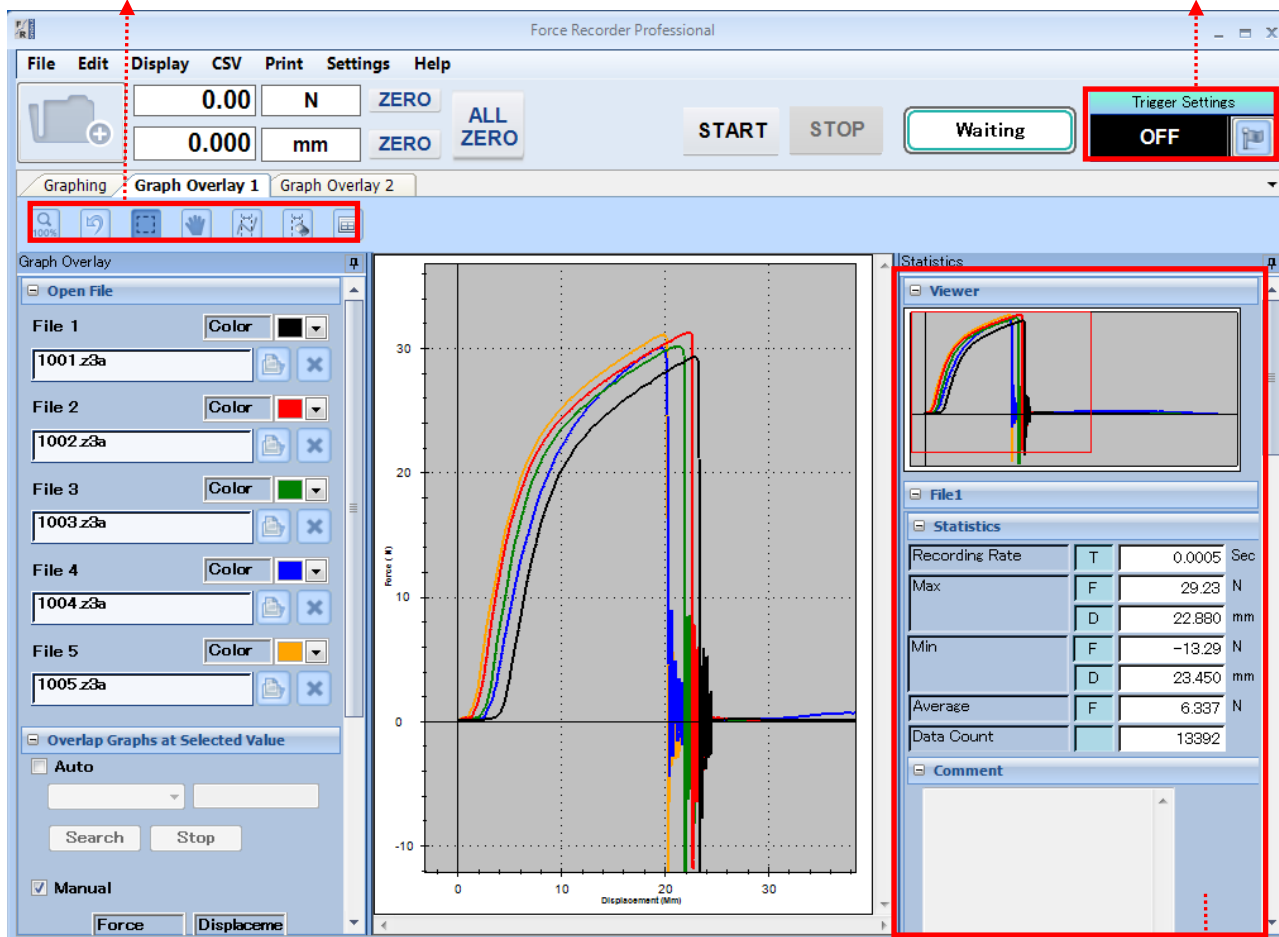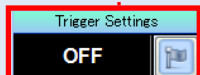The overlaid graphs can be aligned on any position for comparison.

Graph zooming function

The graph can be easily zoomed in/out and scrolled for analyzing.

Trigger function

The software will automatically record the graph according to the set value.

[Graph viewer]

It shows the whole graph and the selected area.
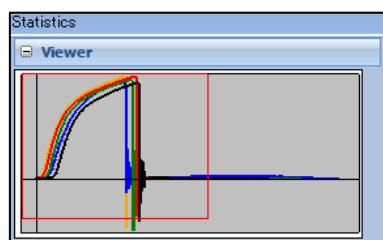
[Graph statistics]

The maximum/minimum/average values are automatically calculated.
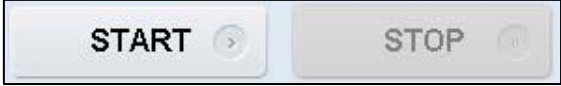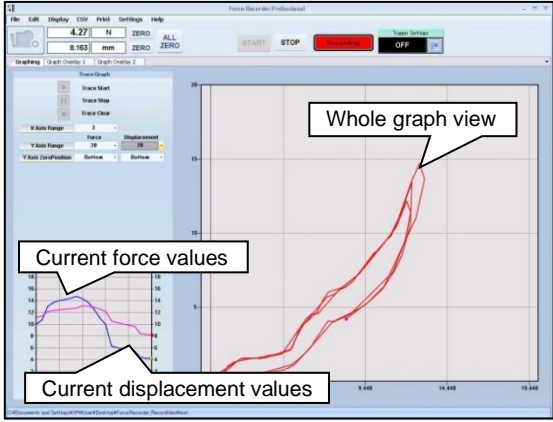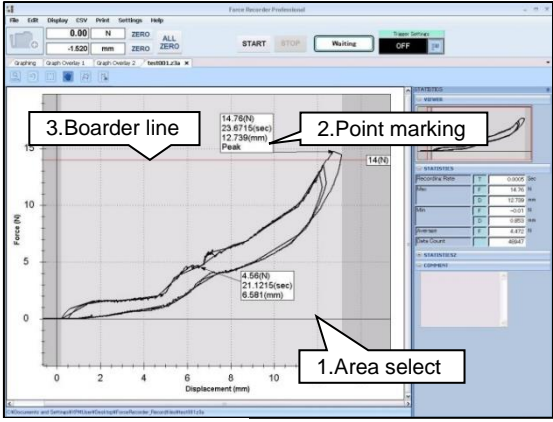
Statistics			
Recording Rate	T	0.0005	Sec
Max	F	29.23	N
	D	22.880	mm
Min	F	–13.29	N
	D	23.450	mm
Average	F	6.337	N
Data Count		13392	

[Comment]

Comments can be inserted on the graph to record the test condition.

[Main Functions]

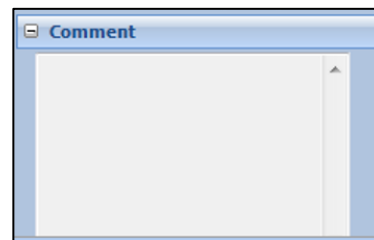| Force-Displacement Graphing	Graph Analyzing
1. You can START/STOP the recording by simply click the buttons. (Start/Stop buttons) 2. Force transition can be viewed clearly by 2 different displays which show the whole graph and current force and displacement values. 3. The software will automatically record the graph according to the set value. (Trigger function) * e.g. The software will start recoding when force reaches 1N, and stop after 10 sec.	1. You can extract the necessary data, and the new statistical value will be calculated. (Area select function) 2. You can add comments at a specific point on the graph. (Point marking function) 3. You can draw line on the recorded graph at specific force/time as a judgement line. (Border line function) (Screen after edited)
Viewing Graph	**Print and Save**
1. You can zoom in/out or scroll easily to check the details of the recorded graph. (Graph scaling function) (Graph viewing buttons) 2. The graphs can be overlaid for easy comparison. (up to 5 graphs can be overlaid at once)	1. You can print the graph, statistical values, and comment in report format. 2. You can enlarge and print the specific area of the graph. 3. Recorded data can be converted into CSV format. (CSV file converting function) * The conversion data amount is limited. 4. Preview can be saved as image file in various format. (e.g. Word, Excel, and PDF)

Output Functions

CSV format converting
- Recorded graph data can be converted into CSV format.
- It is also possible to add new data to an existing CSV file.

Print/Data output
- Recorded data can be saved as Word, Excel, and PDF format.
- Graphs can be use as image files and paste into file.
- The recorded data can be printed out with graph, date, time, statistical value, and comments to form a complete report.

	J12		fx					
	A	B	C	D	E	F	G	H
1	MAX FORCE = 327							
2	MIN FORCE = -19							
3	AVERAGE FORCE = 84.8							
4	UNIT = N							
5	DATA COUNT = 79914							
6	RECORDING RATE = 0.0005							
7	FILE DATE = 6/1/2020 9:46:09 AM							
8	COMMENT =							
9	MARK POINT ON = ---							
10	MARK POINT OFF = ---							
11	THRESHOLD = ---							
12	1ST PEAK FORCE = ---							
13	2ND PEAK FORCE = ---							
14	0							
15	0							
16	0							
17	0							
18	0							
19	0							
20	0							

Main Functions Comparison

Version	Light	Standard	Professional
Feature	Graphing only	With editing functions	Force-displacement graphing
Graphing	Force-time	Force-time	Force-time Force-displacement
Data transferring speed (Max)	2000 data/sec	2000 data/sec	2000 data/sec
Recording data point (Max)	7.2 million	7.2 million	7.2 million
Displacement output	N/A	N/A	√
Graph overlaying function	N/A	√	√
Trigger function	N/A	√	√
Point marking	N/A	√	√
Border line function	N/A	√	√
Capture function	N/A	√	√
Graph scaling	√	√	√
Statistics output	√	√	√
Comment	√	√	√
Print	√	√	√
CSV file converting	√	√	√
Preview saving (PDF/Word/Excel)	√	√	√
Force gauge setting	√	√	√

* For further information of Light and Standard version, refer to Force Recorder Light and Standard specification.

Specification	
Model	Force Recorder Professional
Operating environment	OS: Windows 8.1/10/11
Hardware	CPU: 1GHz or higher Memory: 2GB or more Hard disk: 10GB (Data storage area) more
Plat form	.NET Framework4.6 later
Execute environment	Microsoft Internet Explorer6.0 later Windows Installer 3.1 later
Image size	Resolution 1024*768 pixel more
Compatible devices	ZTA series, HTGA series, DTXA series, eZT, FA Plus2/eFA Plus2 (Available for drawing both force-time and force-displacement graph.) *Required to be connected with a linear scale/an angle meter kit or a build-in linear scale (-FA option) by the designated cable.
	ZTS series, HTGS series, DTXS series (Available only for drawing force-time graph.)

[Gauges available for drawing force-displacement graph] *

Force-Displacement and Force-Time graph		
Digital Force Gauge **ZTA series**	Sensor Interchangeable Amplifier **eZT**	Desk Type Load Cell Amplifier **FA Plus2/eFA Plus2**
For Torque-Angle and Torque-Time graph		
Handy Type Torque Gauge **HTGA series**		Screw Cap Torque Tester **DTXA series**

* To be able to draw a force-displacement/torque-angle graph, a linear scale/angle meter or a build-in test stand is required.

Related Products

Force Displacement Analysis Unit FSA series

This unit includes the necessary items for performing force-displacement measurement.

Set Content:

1. Software Force Recorder Professional
2. Force Gauge ZTA series
3. Test Stand with linear scale
4. Cable
5. Standard Attachment

FSA－1KE series

* Optional attachment GT-30 is not included

Torque-Angle Analysis Unit TAA series

This unit includes the necessary items for performing torque-angle measurement.

Set Content

1. Software Force Recorder Professional
2. Screw Cap Torque Tester DTXA series
3. Test Stand with angle meter
4. Cable
5. Standard Attachment

TAA－MTS－TB series

* Refer to specifications of the individual product for details.

[Custom-made]

We can offer additional functions or modifying software to improve data management method and measurement efficiency according to your needs. Contact us for details.

Examples:

Function	Description
Pass/Fail Judgment	The software will judge the test result according to the set value.
Automatic Capture Functions	The software will automatically capture the needed graph based on the set values.
CSV Auto Save	The CSV file will be saved automatically after the measurement.
Trigger One-Touch Setting	The trigger function can be activated with ease.

FORCE MEASUREMENT
IMADA

[Cautions]
- Information in this document is subject to change without prior notice.
- This document is product descriptions and handling precautions, and do not guarantee various characteristics or safety.
- This product is designed for force measurement purpose only.
- Do not copy and use this content without authorization.
- A force gauge (sold separately) is required to use this product.
- This product is protected by Universal Copyright Convention and Japanese Copyright Act.
- Returns are not acceptable. Check the specification, working conditions and operating environment before purchase.

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