Agrosta® *Belle*

Texturometer for soft materials, semi-solids and gels, pharmacy, food

The Agrosta® *Belle* has been designed in 2019

In order to provide to researchers a simple and reliable tool to determine : Freshness, spreadability, Tenderness, Springiness, Gumminess, Hardness, Firmness, Consistency, Fracturability etc of a variety of Food Products and soft materials

Your package contains :

- The instrument itself
- 1 Beakers and / or one table
- Tips according to your requirements
- A calibration stand
- A power supply & a USB cable
- The software for windows on USB stick (With video for software training)
- A certificate of conformity
- A manual

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Agrosta® Belle

Texturometer for soft materials, semi-solids and gels, pharmacy, food

Agrosta® Belle has been designed and produced in France by Agrosta

- The motor is a Nema 23 stepper motor
- The machine comes with a double core microprocessor (ESP32) : One core is managing the pressure measurements, the other one manages the motors and distance measurements
- Comes with a light version of Excel (Inside machine software)

LOAD RANGE (LOAD CELLS TYPES AVAILABLE)	5 Kg or 17 Kg
AVERAGE ACCURACY	+/-0.5 g or +/-3 grams
POSITION RANGE	0 to 140 mm
TEMPERATURE MEASURING RANGE	0 to 90 °C
COMPATIBILITY	Windows 2000 XP Vista Windows 7 Windows 8 Windows 10
POSITION ACCURACY	0.03 mm
SPEED	Up to 27 mm/s
SPEED ACCURACY	+/- 0.1% of set speed
CUSTOM DESIGN FIXTURE AND PROBE	YES (3D printing, immediate result)
CUSTOM SOFTWARE	Option
CUSTOM ELECTRONICS	Electronics can be customized Additional features available
OPEN SOURCE	Code provided to pilot the machine Standard Nema 23 motor Standard ESP32 Low cost spare parts
DESIGN Generation	~ 2019
TEMPERATURE PROBE	No
CALIBRATION	Check using Calibration stand with calibrated weight
VARIETY OF BASE PLATES AND PROBES	More than 100
TEST PARAMETERS	14
PRE-CONFIG TEST MODES	4
MADE IN	FRANCE
DATA EXPORT FROM SOFTWARE	Excel, Word, Xml, Jpg
WORKS WITHOUT COMPUTER	NO
GUARANTEE	2 Years full guarantee
STATISTICS	Unlimited data

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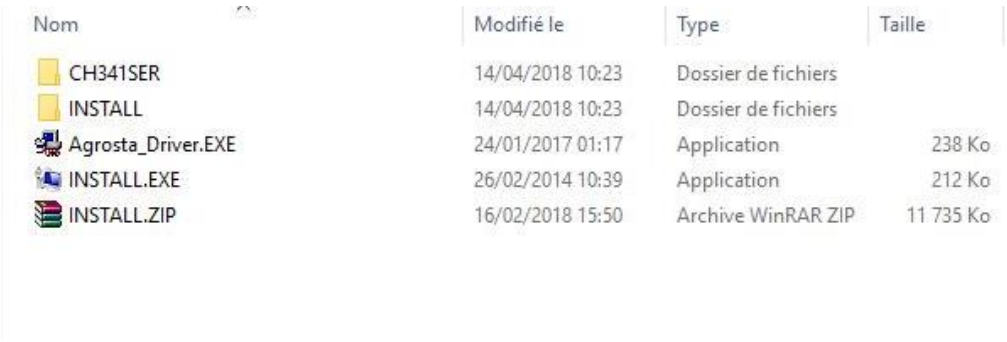
1/ Install Driver

- Don’t connect your machine
- Insert USB stick in your computer



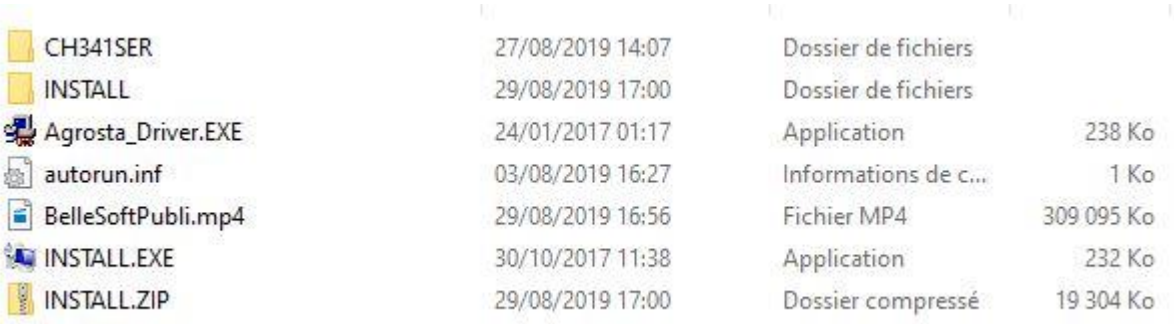
Nom	Modifié le	Type	Taille
CH341SER	14/04/2018 10:23	Dossier de fichiers	
INSTALL	14/04/2018 10:23	Dossier de fichiers	
Agrosta_Driver.EXE	24/01/2017 01:17	Application	238 Ko
INSTALL.EXE	26/02/2014 10:39	Application	212 Ko
INSTALL.ZIP	16/02/2018 15:50	Archive WinRAR ZIP	11 735 Ko

- Double click on “Agrosta_Driver” – Follow setup procedure

2/ Connect Usb cable between instrument and your computer

3/ Wait a few seconds till it is recognized (Driver linked to device)

4/ Install Software from USB Stick



CH341SER	27/08/2019 14:07	Dossier de fichiers	
INSTALL	29/08/2019 17:00	Dossier de fichiers	
Agrosta_Driver.EXE	24/01/2017 01:17	Application	238 Ko
autorun.inf	03/08/2019 16:27	Informations de c...	1 Ko
BelleSoftPubli.mp4	29/08/2019 16:56	Fichier MP4	309 095 Ko
INSTALL.EXE	30/10/2017 11:38	Application	232 Ko
INSTALL.ZIP	29/08/2019 17:00	Dossier compressé	19 304 Ko

- Double click on “INSTALL.EXE”
- Follow Setup procedure

5/ Connect the camera via USB

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6/ Connect Power Plug

Operating :

- In case of EMERGENCY = REMOVE POWER PLUG !
- Start the software from the PC, and select the COM port corresponding to your device - Usually, the last COM is the good one (As far as the driver has been installed according to previous instructions)

First Cycle :

- Once the COM is selected, a window is displayed and asks you the maximum acceptable pressure for the tests you are going to perform
- Choose 1000 grams for very fine testing like Bloom, and 17 000 grams for fruit penetrometry for example
- Then click on “OK”

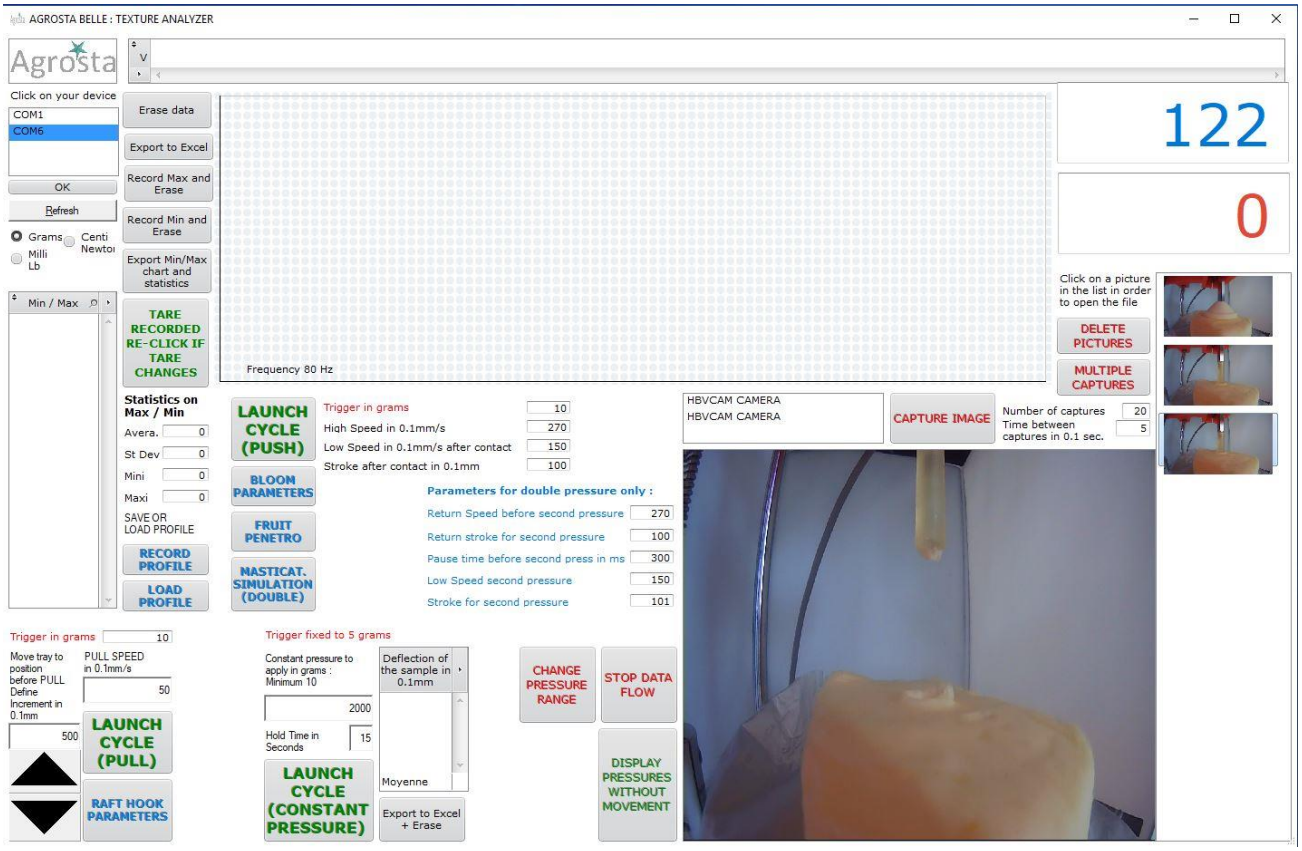
For testing the machine, place the table, put any tip on the sensor head, and place something thick and soft on the table, like a piece of foam

Then click on the preset button “BLOOM PARAMETERS”

Then click on “LAUNCH CYCLE (PUSH)”

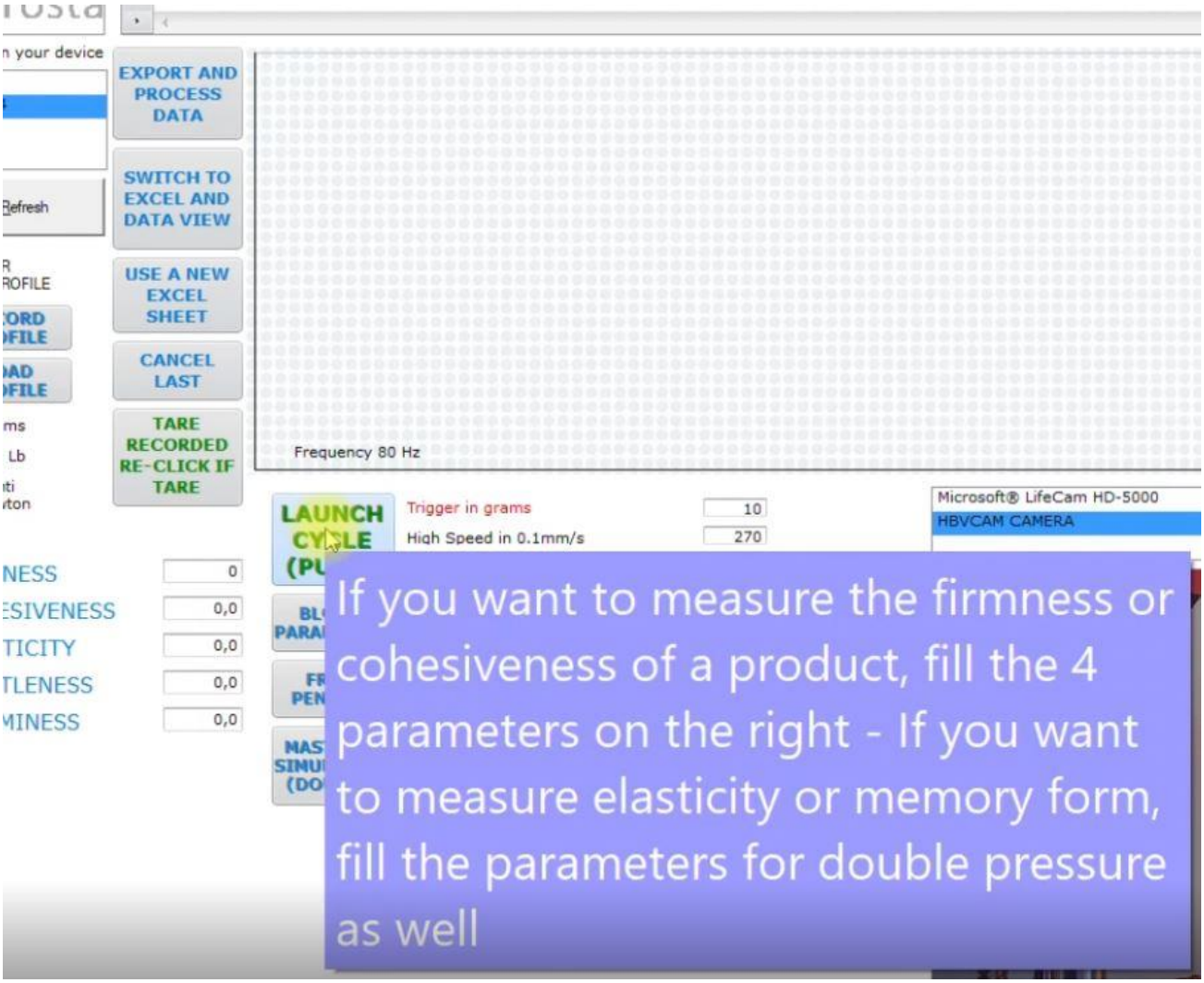
The tray moves down, and a graph of pressures is displayed

Select “HBVCAM CAMERA” in the list of cameras – As far as the camera provided with the machine has been connected



Parameters :

- You can hover over each button with the mouse to get the corresponding explanations :



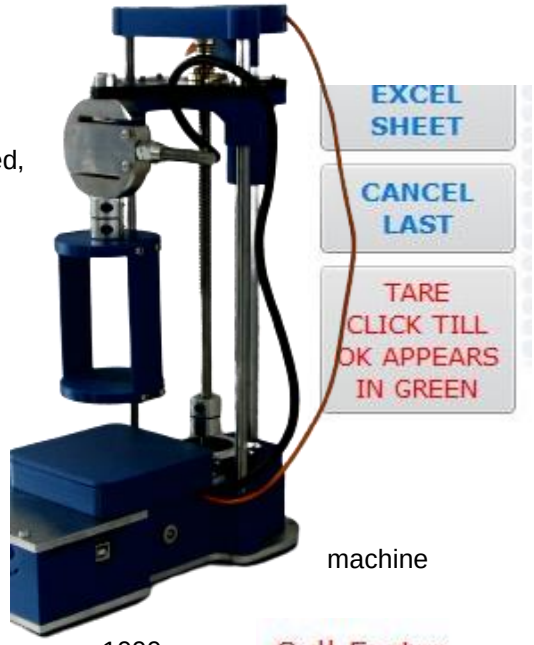
- You can hover over each parameter field to get corresponding explanations :

Calibration check :

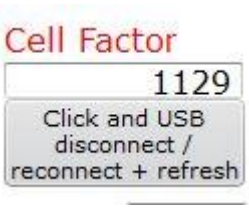
The calibration stand is provided with the machine – You can check the calibration using any calibrated weight and measuring the corresponding value

If the spring is mounted, remove it

Then put the calibration stand in place :



- Connect the machine, and start the software
- If the machine was already connected and soft already started, click on the button “TARE” once the calibration stand is mounted
- Then click on “DISPLAY PRESSURES WITHOUT MOVEMENT”
- And place the calibrated weight on the tray (as shown on picture before)
- The corresponding weight shall be displayed by the software
- You can change the load cell factor in order to calibrate the machine
- Look at the value obtained once weight stabilized : For example if you obtain a value of 1003 grams for a weight of 1000 grams, with a cell factor of 1294 change the factor as follows : New factor = 1294*1003/1000 = 1298



- Change the value, click on the button, remove the weight from stand, remove usb plug, re-connect usb plug, click on Refresh, select the COM of your machine and check again

Changing Tip :

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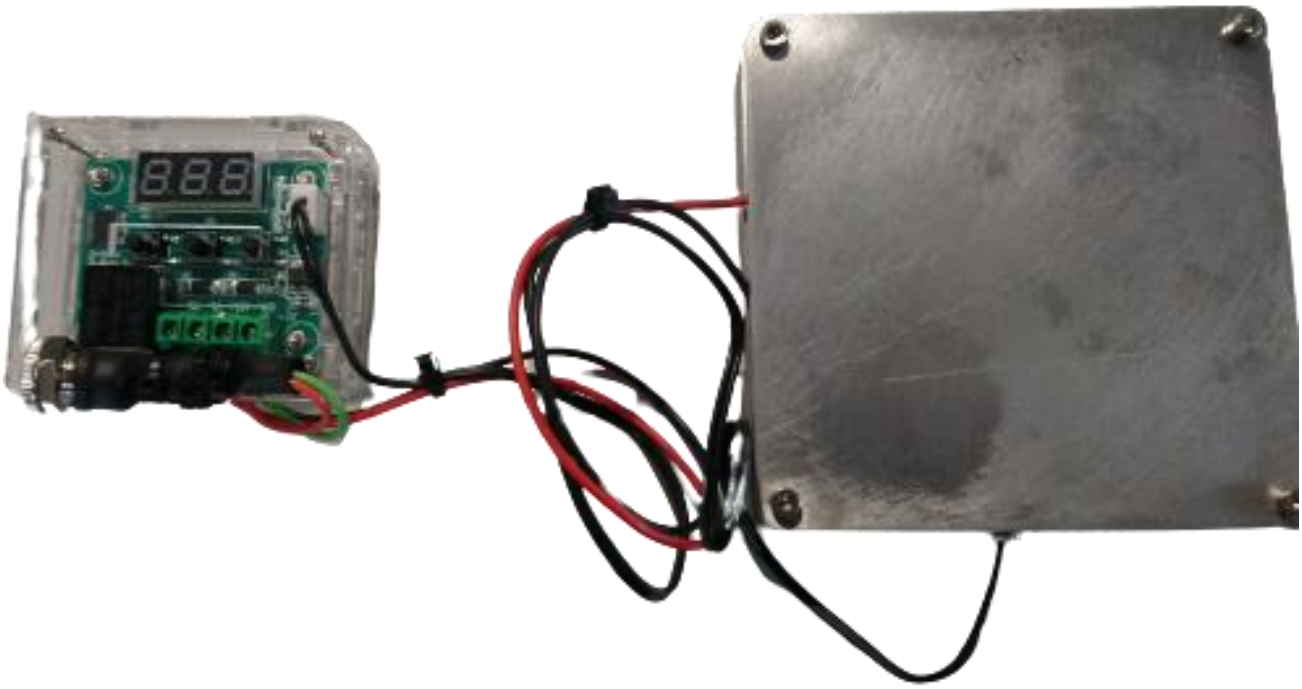
Specific items :

When using the Kramer / Ottawa cell (5 bladed), the cell is not fixed to the sensor (The light blue tip is linked to the sensor and is free when pushing on the blades)

When fixing the Warner bratzler module, insert the blade in the female module, then fix the blade by screwing, and then insert the female module inside the table

Concerning the use of thermal regulation :



There are 3 buttons :

- Short click on the button on the left in order to set the temperature
- Then Button in the middle to increase and button on the right to decrease