



caleva

TECHNICAL SPECIFICATIONS

LABORATORY

CALEVA

MULTI-LAB

Batches up to 50 g for **Teaching** and **Research**

TECHNICAL SPECIFICATIONS

One machine, three processes



Spheronizer

Extruder

Mixer / Granulator

DESCRIPTION

The Caleva Multi Lab (CML) is designed to allow the formulation development of small batches of spheroids, pellets or beads on the laboratory bench top for advanced teaching or research and development use.

The CML reduces valuable bench top space requirements by up to 70% by incorporating an optional attachments consisting of a small scale granulator, an extruder and spheronizer with a single compact base machine.

This is ideal for formulation development of pellets or extruded product used in multiple applications within the pharmaceuticals, ceramics, catalysts, chemical, food (including fish food) and other related industries.

Representing a “Step Change”; not only in design but application. The CML combines both technical and financial benefits by allowing the user to only choose the options they need today, whilst maintaining the flexibility to add additional functionality in the future.

GENERAL USE

Designed for experimental formulation development applications and very small quantity batch production as well as advanced teaching applications.

○ **Equipment design**

The CML is designed to be robust in operation as well as “tool-less” in general use and fully interlocked for operator safety.

PRODUCT QUALITY

○ **Granulation**

The granulator is based on the two blade system found in the Caleva Mixer Torque Rheometer. Two blades rotating at different speeds and in opposite direction are able to provide a high shear granulation in batch sizes from 15 to 50 grams. The MTR bowl design is a highly efficient granulator and mixer. A range of options are available.

○ **Extrusion**

Dies with different hole lengths and diameters are available thus offering the opportunity to control the density and quality of the extrudate according to the user requirement. This can lead to spheres that are very consistent in both their roundness and size distribution which usually results in higher usable yields. With

most products the amount of dead space with product remaining after extrusion is very low. It is not practical to work with extrudate diameter of below 500 microns.

○ **Spheronization**

The spheronizer size and speed is designed to work efficiently with the batches run through the granulator and the extruder (15 g to 50 g). Excellent consistency and yield in pellet production can be achieved.

○ **Typical Capacity Range**

The CML is designed to work with batches of between 15 to 50 g wet weight. With the addition of the optional half sized bowl for the granulator it has been possible to work successfully with batches as little as 10 grams of wet weight.

STANDARD CONFIGURATION

○ **Physical Specification**

Size of base machine:	450 mm H x 365 mm W x 375 mm D
Weight:	34.2 kg (230 V) 36.4 kg (110 V)
Cabinet:	Brushed 304 Stainless Steel
Product Contact Parts:	316 and/or 316 L Stainless Steel, Acetyl and Acrylic The Sigma blades are 431-QT900 Stainless Steel
Power requirement	230 Volts 50 hertz, 6.3 amps or 110v, 50 hertz, 10 amps Single phase

ATTACHMENTS

At least one of the following attachment must be chosen: The CML is normally supplied with all three attachments for complete processing.

MIXER ATTACHMENTS

○ **Mixer Bowl**

Standard Bowl
 working capacity
 approximately 60-80
 ml (25-50 g, wet
 weight, product
 dependent).
 Different bowl sizes
 and different blade
 types are available.

○ **Mixer Mounting**

Mounted to front rotating shaft.



EXTRUDER ATTACHMENTS

- **Standard extrusion Die Plate**
Standard die plate Ø1 mm x 1 mm deep holes. Hole diameters from 0.6 to 3.0 mm available. Please contact us for details.
- **Product feed**
Manual, with feed tray positioned above the inlet.



SPHERONIZER ATTACHMENTS

- **Spheronizer Bowl**
Processing capacity of between 10-80 g (wet weight, product dependent).
- **Spheronizer Mounting**
Side mounted speed increasing gearbox on side rotating shaft output.

OPERATION AND CONTROLS

The speed of the motor may be changed by the operator. The speed display panel meter displays alternately the speed of either the front or side drive output. The speed display can be toggled between the two outputs by pressing the button on the panel meter labelled 'Display Toggle'. The speed currently displayed is denoted by the character 'A' or 'b' on the digital display: A = Mixer primary shaft rotational speed (RPM) and Extruder screw shaft rotational speed (RPM) b = Spheronizer Disc rotational speed (RPM).



- **The Base Machine with at least one attachment is fully functional as supplied. All three attachments are required for full functionality.**

TALK TO US

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Cert No. 1503
ISO 9001