

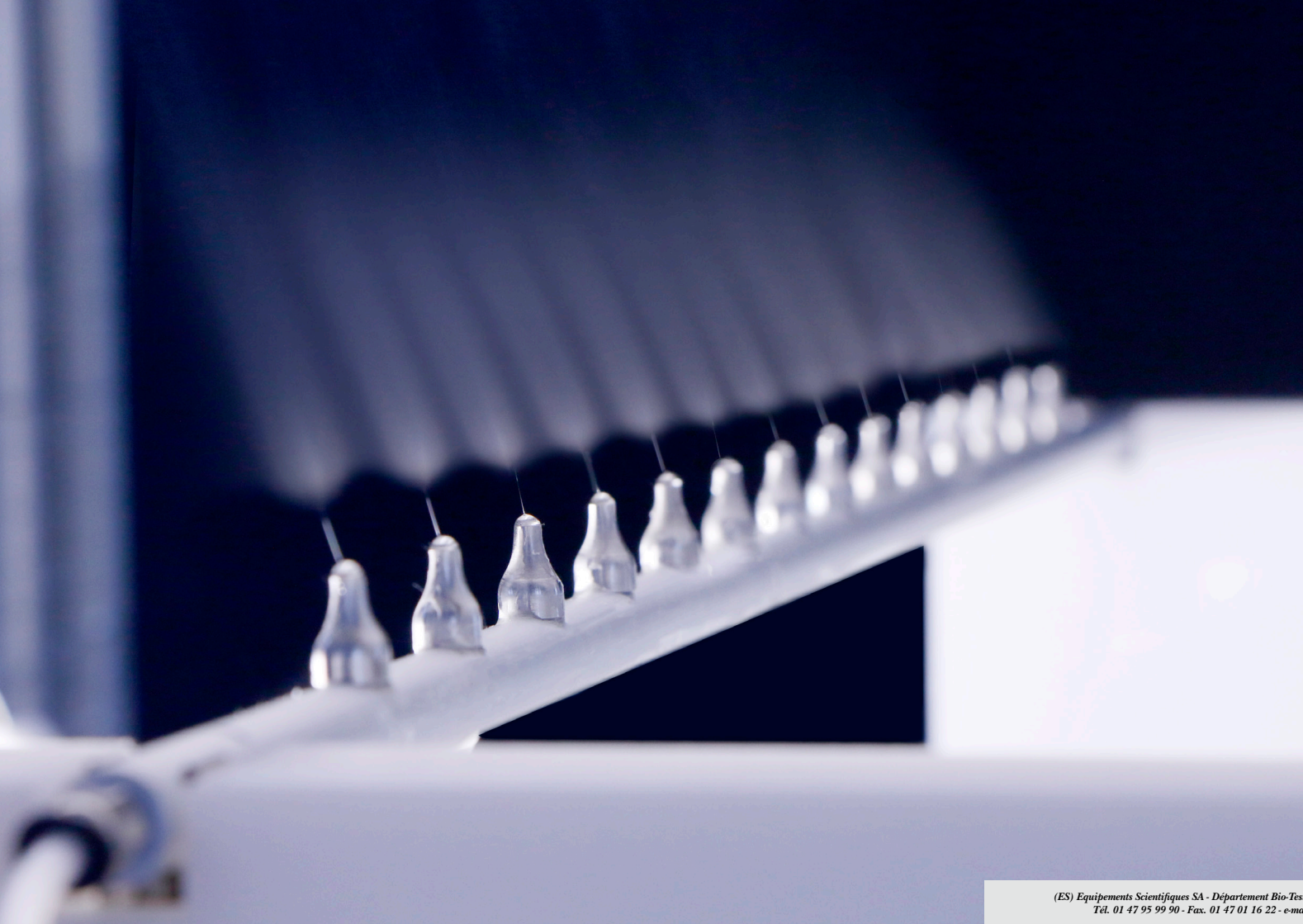
NanoSpinner

PilotLine-PE550



2020

HYBRID ELECTROSPINNING TECHNOLOGY



About **INOVENSO**

We started our academic activities in 2007 working on nanotechnologies under the Nano Fiber Membrane Group (NanoFMG). After focusing on improving Nanofiber quality during Electrospinning process, we established our born global company Inovenso in 2010. Our name is acronym of Innovative Engineering Solutions. We aimed to develop very efficient electrospinning machines and accelerate nanofiber science. We quickly became a bridge company between academia and industry and proudly contributed to hundreds of scientific projects using polymer nanofibers for a wide variety of applications such as biomedical tissue, engineering, pharmaceutical, energy, filtration, material sciences, textile, agriculture, cosmetics.

We brought new innovative approaches to overcome many common obstacles in the nanofiber production field such as scalability, flexibility, standardization and reproducibility with developed customized electrospinning devices all the way from any lab scale desktop starter kits to industrial scale electrospinning machines. It was only possible with working very closely with our clients, understanding their real needs and sharing their concerns and problems.

For more info visit: www.inovenso.com

About **PE-550**

The **PE-550** is our cutting-edge electrospinning device for the continuous production of nanofibers. Its major advantage is scalability, as it's suitable for both big-scale production line as well as small-scale R&D projects. The NS Pilot Line enables high productivity for mass production of nanofibers with high-functioning 56 nozzles, in addition to energy saving mode of single nozzle function for small-scale R&D projects.

Its unique design differentiates **PE-550** from other devices with more flexible scalability for production of nanofibers and composites. Its ability to accommodate 4 syringe pumps and 4 high voltage power suppliers enables independently controlled simultaneous runs with up to 4 different polymers.

NanoSpinner

PilotLine-PE550

Hybrid Electrospinning Technology

PE-500 uses a patented, unique
“Hybrid Electrospinning Technology”.

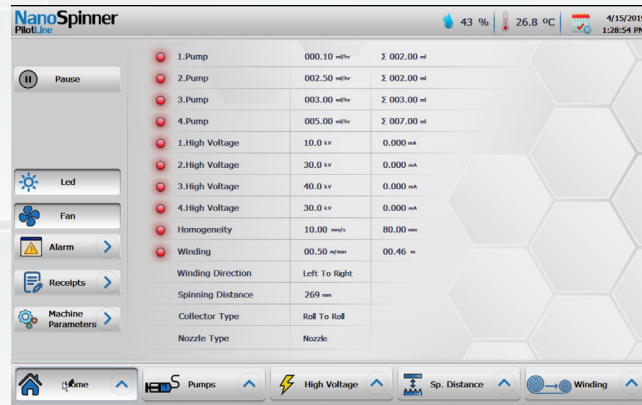
This new technique combines the advantages of both needle-based and needle-less electrospinning, as follows: High throughput productivity, with an accurate control over the process and the final product.
(from needle-based Electrospinning).

PE550 is installed in:

- MAYO CLINIC, MINNESOTA, **USA**.
- ARGONNE NATIONAL LAB, **USA**.
- GIMHAE BIOMEDICAL CENTER, **KOREA**.
- SENAI CETIQT, **BRAZIL**.



UNIQUE USER INTERFACE



USER FRIENDLY

Specially designed control panel with user-friendly interface makes operations much easier.

ACCURATE CONTROL

Operator will have the full control of all parameters.

RECIPE RECALL

The recipes recall function enables users to save parameters and recall instantly.



PRODUCT DESCRIPTION

NanoSpinner
PilotLine-PE550

- **Single and Multi Nozzle Operation**

Up to 56 Nozzles during full operation

Possible to work with single nozzle

Standard Different Diameters Nozzles can be attached optionally

4 Precise syringe pumps

4 High voltage power suppliers (40kV). Each of them charges different pipe sets.

- **Advanced Automation System**

Full control of the process and system via 12 inches touch screen panel saving all important parameters and recall when needed. Equipped with extra safety features such as spark protection, safety-door option, and integrated safety-relays.

- **Roll to Roll Collector:**

Fiber Deposition Width: 550 mm

Substrate Winding Speed: 0,01 m/min - 10 m/min

Coating Homogeneity System: X-axis repetitive motion

Stroke of Coating Homogeneity System: 20mm - 80mm

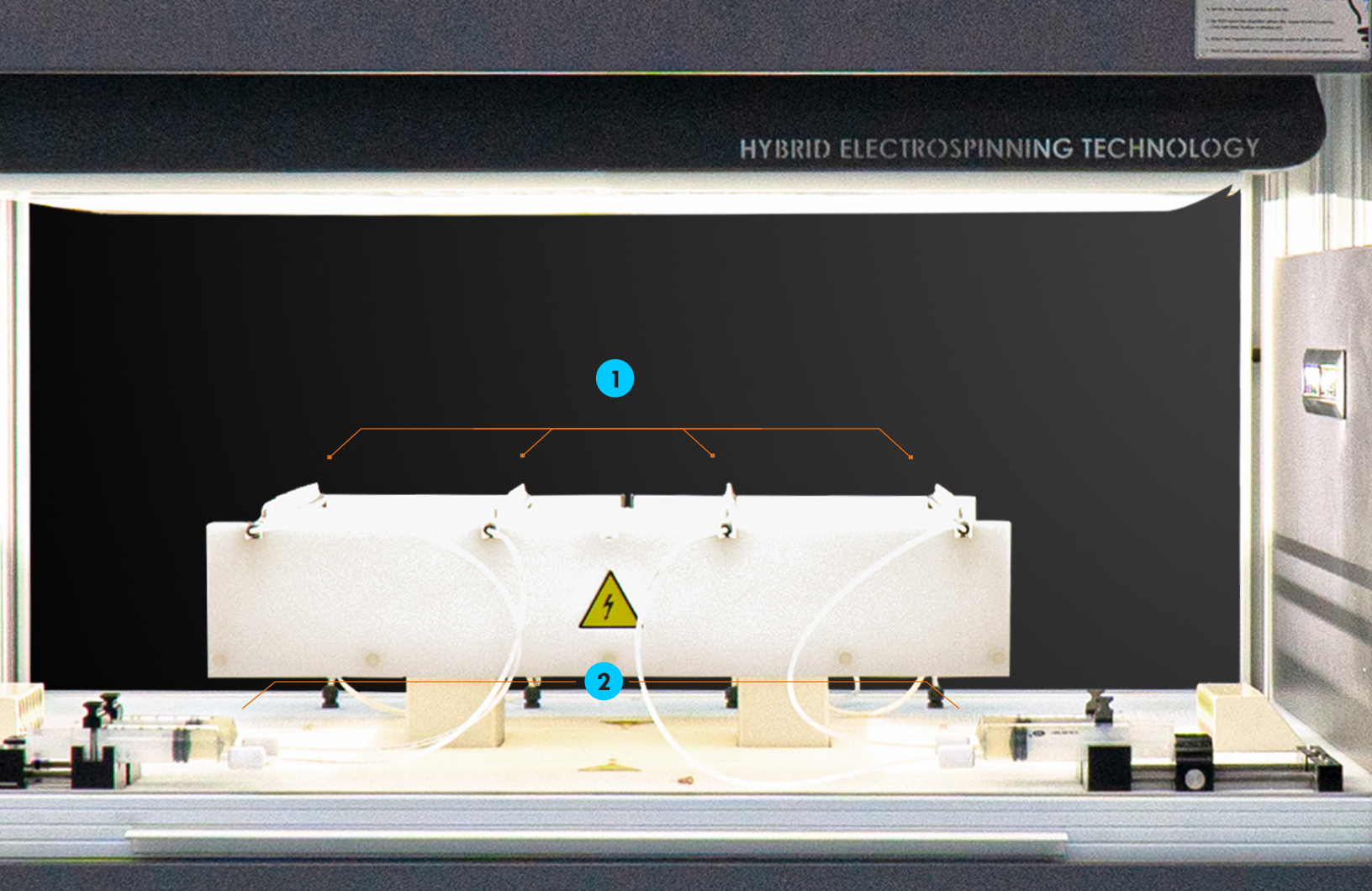
Speed of Coating Homogeneity System: 5-50 mm/sec

- **Minimum Required Solution**

Single Nozzle Feeding: 2ml

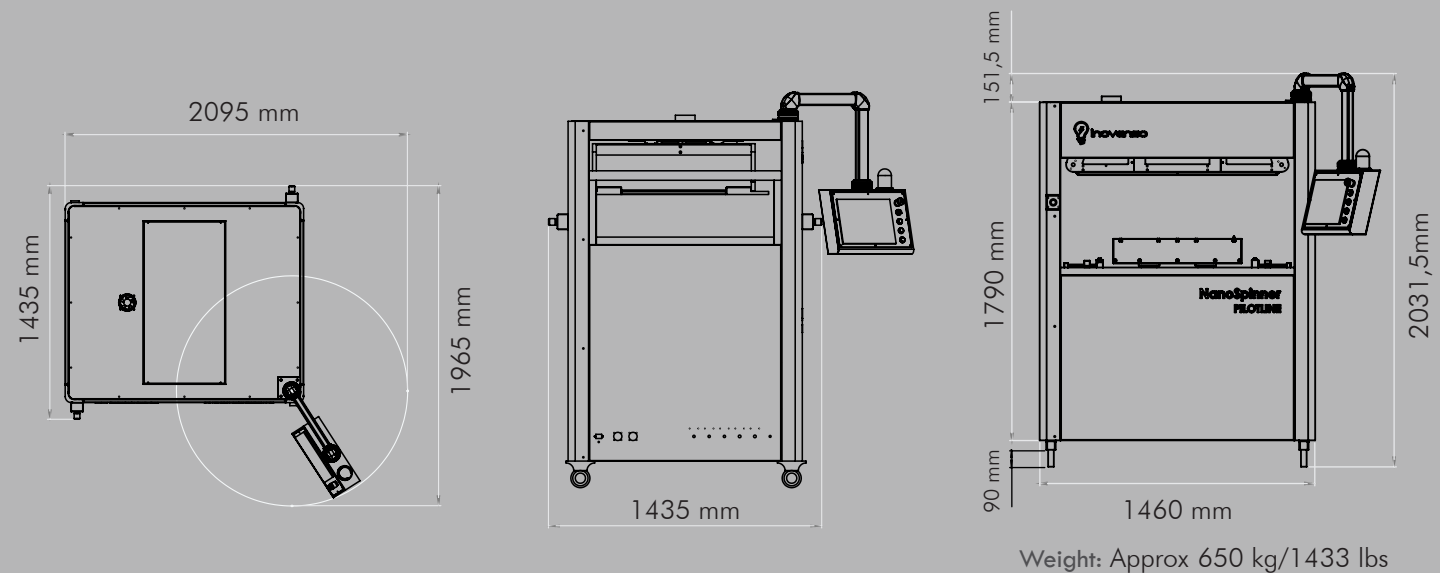
Feeding each Pipe Set: 15ml

Full Loading: 60ml

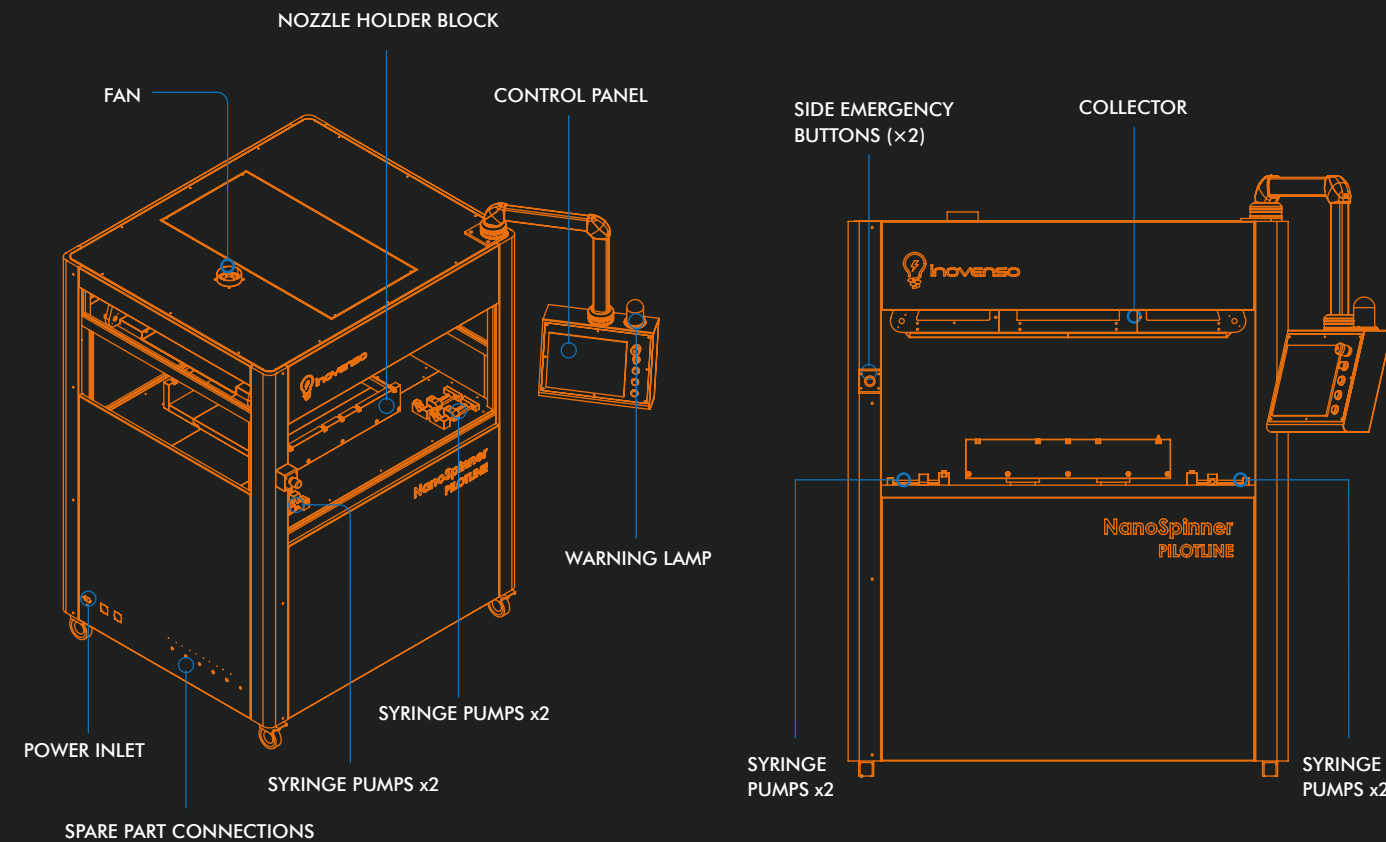


- 1 4 integrated high voltage suppliers for each of the 4 nozzle rods.
- 2 4 individually adjustable syringe pumps to infuse up to 4 solutions simultaneously.

NanoSpinner
PilotLine-PE550



TECHNICAL DRAWING



3D TECHNICAL DRAWING

HYBRID ELECTROSPIN

APPLICATION AREAS:

Medicine



Biotechnology



Energy



Tissue Engineering



Filtration



Textiles



Agriculture



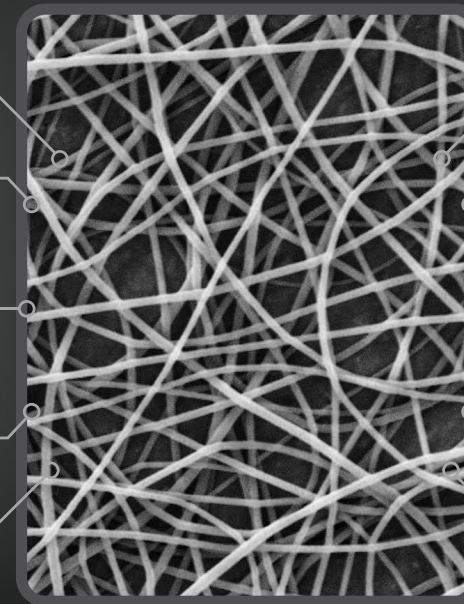
Cosmetics



Food



Defense





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