

FEMTOBIOMED

# CELLSHOT®

## Partitioned Flow Electroporation

US FDA DMF registered (MF 30803)

No washing, No mixing, and No EP buffer limitation  
Use your own media and buffers

## JOIN OUR PLATFORM

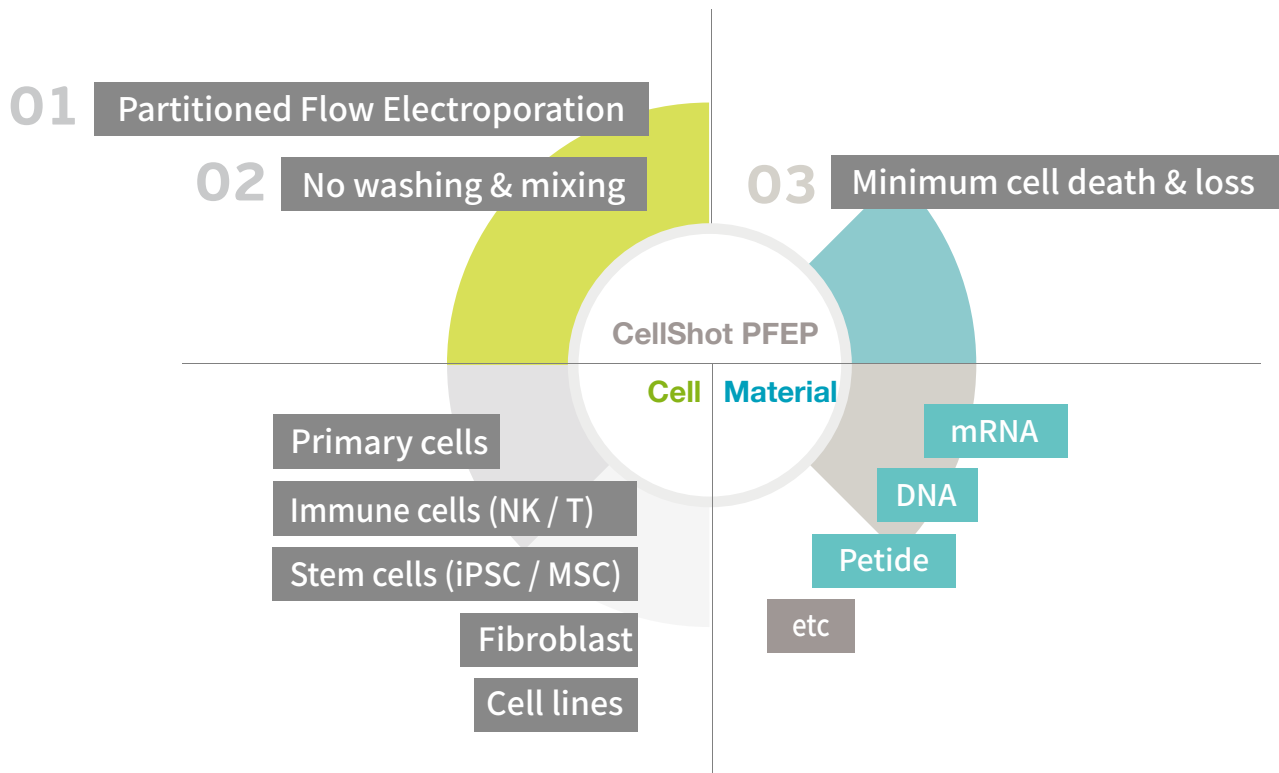
Conventional electroporation can be a labor-intensive process, requiring cells to be washed and mixed with transfection materials before the procedure.

CellShot Partitioned Flow Electroporation (PFEP) offers a more streamlined and efficient alternative. With CellShot, cells can be transfected directly in their own culture media, without the need for washing or mixing with additional materials.

The CellShot System handles all aspects of the transfection process, making it a convenient and effective solution for nonviral cell and gene therapy.



# Femtobiomed CellShot<sup>®</sup> Technology



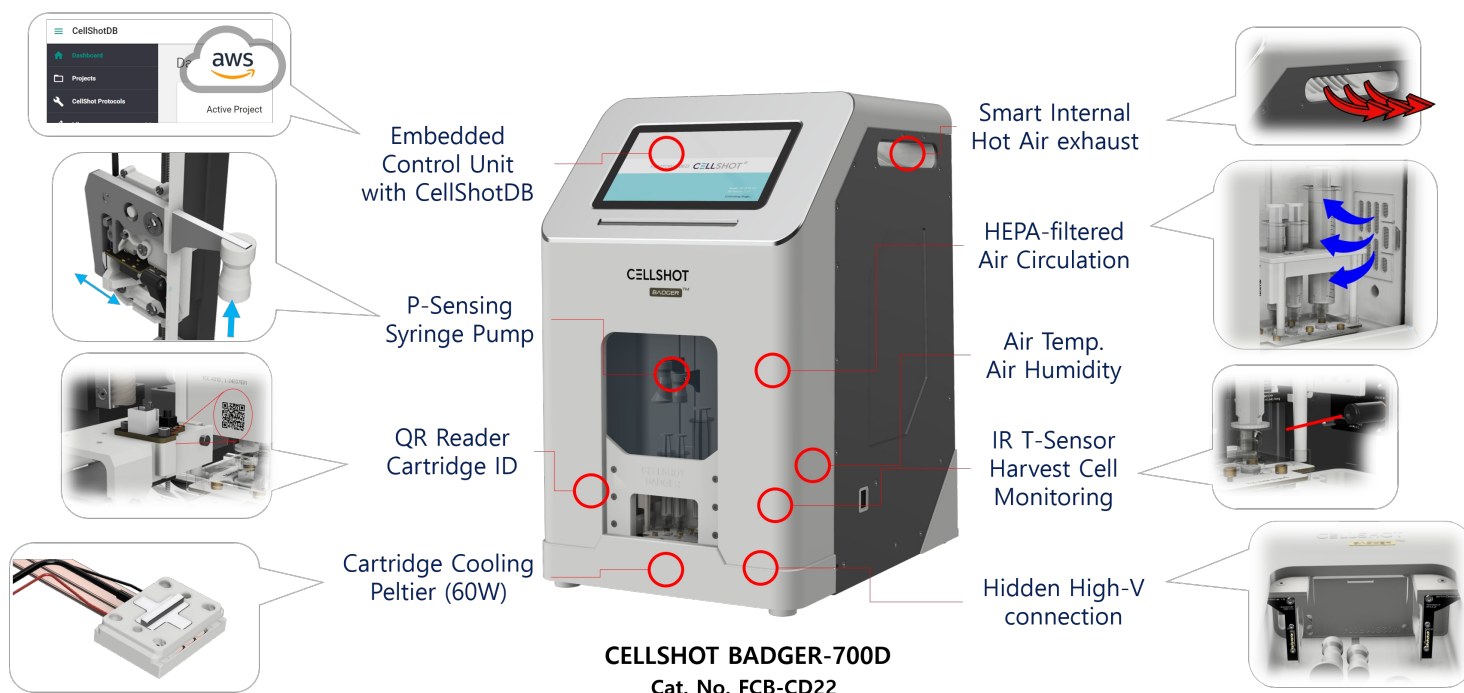
Electroporation(EP) has been widely used to transform bacteria, yeast, or plant protoplasts by introducing new coding DNA for applications to introduce foreign genes into tissue culture cells like mammalian cells. After COVID-19, mRNA applications have emerged in diverse cell therapeutics, and appropriate mRNA delivery protocols are needed, including electroporation. Because extremely fragile mRNA is challenging to deliver, appropriate EP buffers are necessary to minimize mRNA breakdown and cell damage. These EP buffers are rare, so manufacturers limit the application of EP buffers. In addition, primary cells are not recommended to be transfected in EP buffers, and the application time should be kept as short as possible.

CellShot Partitioned Flow Electroporation (PFEP) Technology removed the need for EP buffers. Hence cells in their culture media are directly plugged into the CellShot system separately from mRNA, bypassing washing or mixing steps. Removing the wash-mix process grants huge benefits by removing cell damage, cell loss, and the manual open process of centrifugation and mixing. In addition, higher transfection efficiencies can be achieved because healthier cells can take more transfection forces than damaged cells. The CellShot platform has made it possible to face difficulties no longer when transfecting primary cells. Please refer to the primary NK CAR production and GFP expression in hPBMcs in the Appendix.

The CellShot system provides the best solutions for your R&D and clinical trials in a cost-effective manner. To get a free demo of the innovative CellShot system, please get in touch with FEMTOBIOMED.

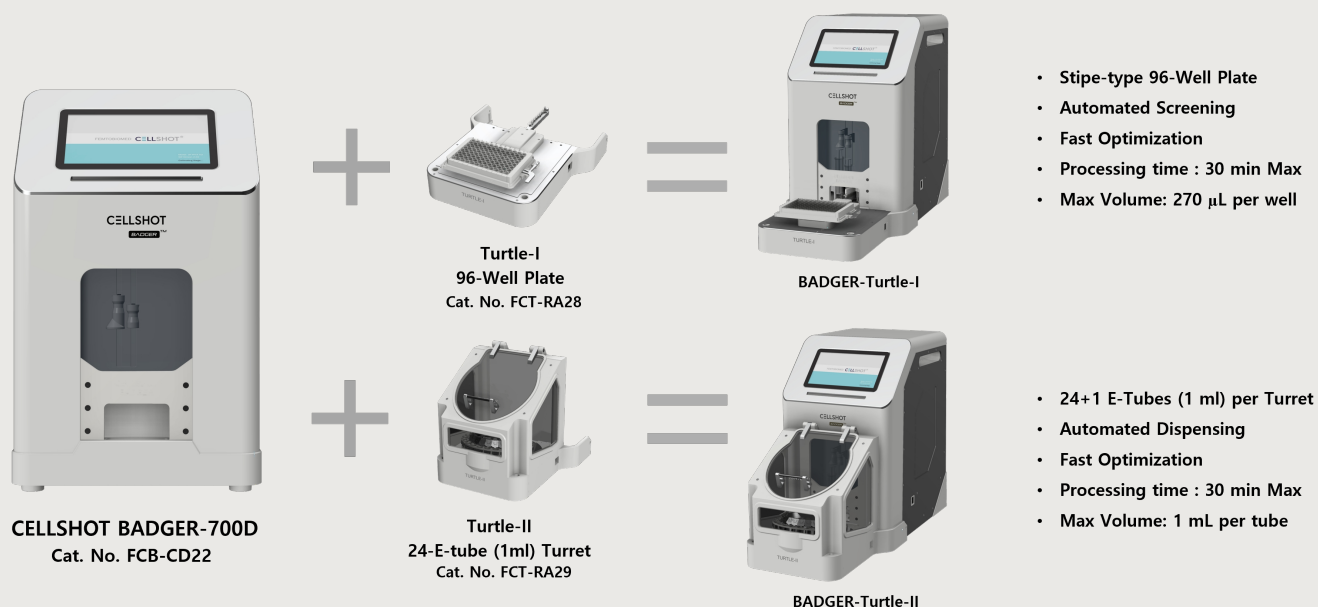
# CellShot Badger-700 Series

## CellShot Badger-700 System Description



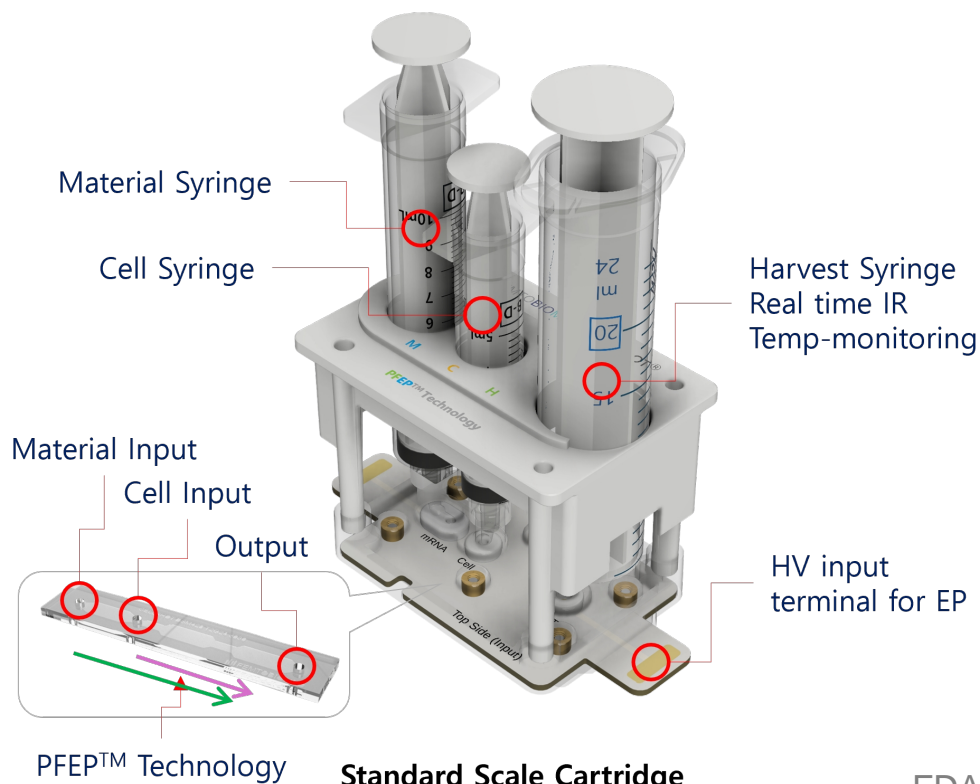
FDA DMF 30803

## CellShot Turtle Attachment Modules for automated screening



# CellShot Cartridges

## Standard Scale CellShot Cartridge Description



**Standard Scale Cartridge**  
Cat. No. FCC-3351

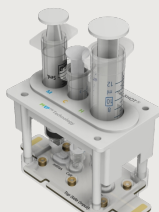
FDA DMF 30803

## CellShot Turtle Systems for automated screening

### BADGER-700



FCC-2310



FCC-3321

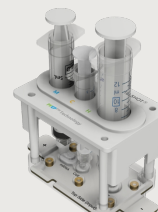


FCC-3351

### BADGER-II



FCC-4310

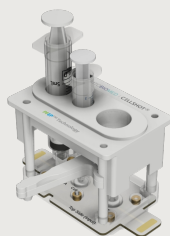


FCC-5321

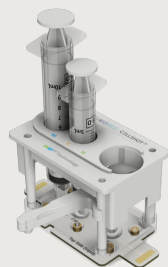


FCC-5351

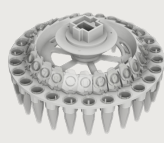
### TURTLE-I/II



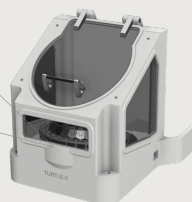
FCC-332T



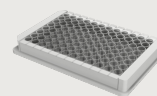
FCC-335T



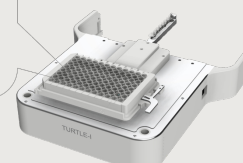
FCC-1E24



FCT-RA29



SPL-38196



FCT-RA28



# Paradigm Shift in Cell Engineering

Deliver multiple genetic materials for your multipotent cell therapy at a high yield

## ➤ CellShot Badger-700 System



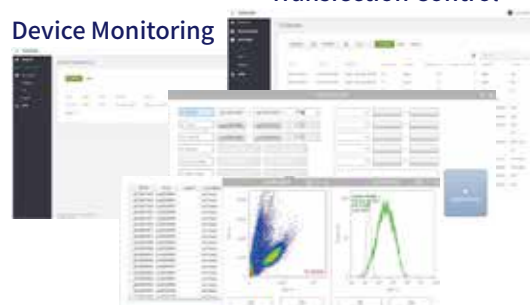
FDA DMF (MF 30803)  
Femtobiomed CellShot® Embedded OS  
Automated and Closed Process

## ➤ Femtobiomed CellShot® DB (database)



Device Monitoring

Transfection Control



Automated Analysis

Easy connection with Phone, PC, Tablet via internet  
([www.CellShotDB.com](http://www.CellShotDB.com))

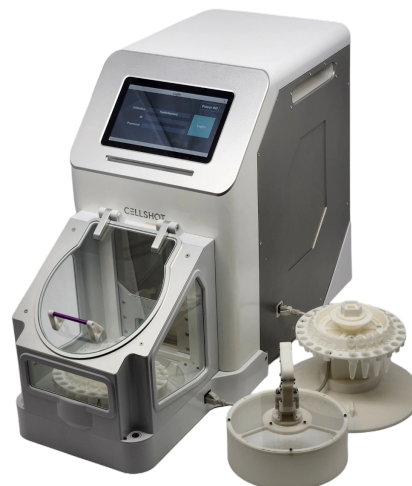
## ➤ CELLSHOT-BADGER-700



## ➤ CELLSHOT-BADGER-Turtle-I



## ➤ CELLSHOT-BADGER-Turtle-II



# Cartridge Line-up 2024

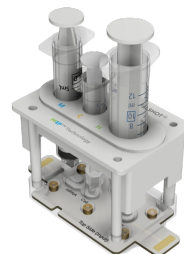
## ► Femtobiomed CellShot® SSC Cartridges 2024



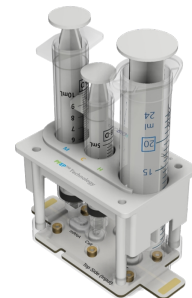
**CELLSHOT BADGER-700**  
Cat. No. FCB-CD21, FCB-CD22



**FCC-2310**



**FCC-3321**



**FCC-3351**

CAT NO.	FCC-2310	FCC-3321	FCC-3351
Cell Volume	1.4 ml	2.4 min	4.9 ml
Mat. Volume	3 ml	5 min	10 ml
Max CAPA.	$1.4 \times 10^8$ Cells	$2.4 \times 10^8$ Cells	$4.9 \times 10^8$ Cells
Proc. Time	4 min	5.5 min	9.5 min
Note	MF 30803	To be DMF	To be DMF

# Cartridge for Turtle

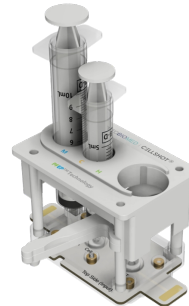
## 2.CELLSHOT BADGER-TURTLE (I/II)



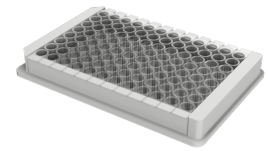
**CELLSHOT BADGER-700+Turtle-I**  
Cat. No. FCB-CD21/22 + FCT-RA28



FCC-332T



FCC-335T



SPL-38196

CAT NO.	FCC-332T	FCC-335T	SPL-38196
Cell Volume	2.4 ml	4.9 ml	
Mat. Volume	5 ml	10 ml	
Max Cases	15 wells	30 wells	96 wells
Max Cell #	10 <sup>7</sup> cell/well	10 <sup>7</sup> cell/well	
Note	Non-GMP	Non-GMP	Non-GMP



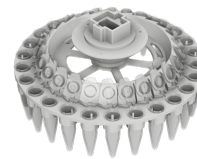
**CELLSHOT BADGER-700+Turtle-II**  
Cat. No. FCB-CD21/22 + FCT-RA29



FCC-332T



FCC-335T



FCC-1E24

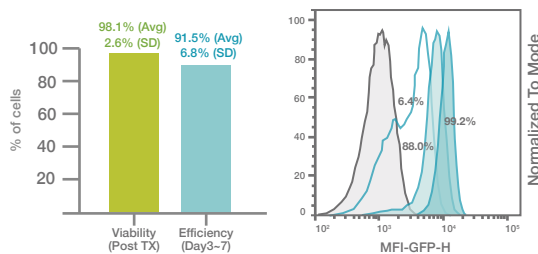


FCA-CTEG

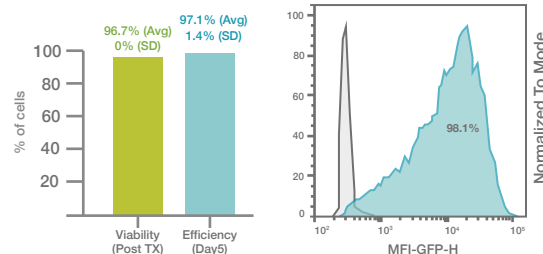
CAT NO.	FCC-332T	FCC-335T	FCC-1E24	FCA-CTEG
Cell Volume	2.4 ml	4.9 ml		
Mat. Volume	5 ml	10 ml		
Max. Tube #	12 tubes	24 tubes	24+1 tubes	
Max. Cell #	3X10 <sup>7</sup>	3X10 <sup>7</sup>		
Note	Partial GMP	Partial GMP	Partial GMP	Turret Grip

# Ensure high viability and efficiency, all the way to multiplexed cell manufacturing

## ● High Viability and Efficiency from Primary PBMC and Primary NK achieved

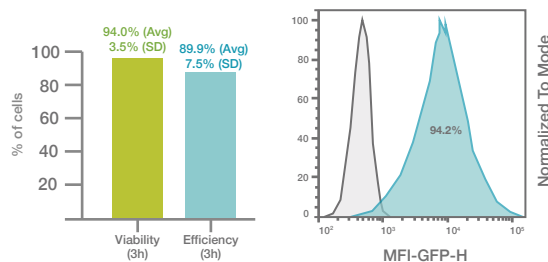


Primary PBMCs with eGFP-mRNA transfection by the PFTX show higher than 90% viability and efficiency

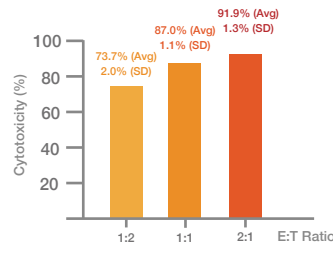


Primary CAR-NKs production by the PFTX with CA19-9 mRNA show higher than 90% viability and efficiency

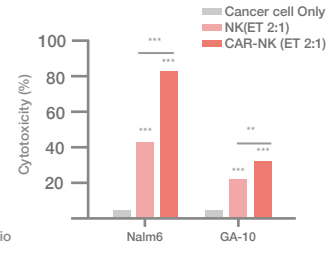
## ● CAR-NK Manufacturing by PFTX technology Shows High Cytotoxicity Against Cancer Cells



CD-19 CAR-NK (human NK cell line) manufactured by the PFTX shows cytotoxicity against Nalm6 (CD19 expressed cancer) exceeding 91%

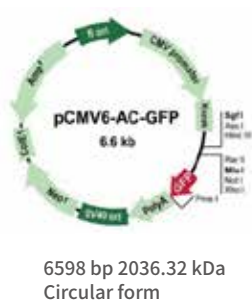


Cytotoxicity according to E:T ratio

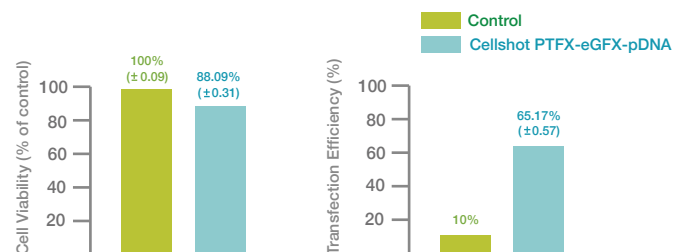
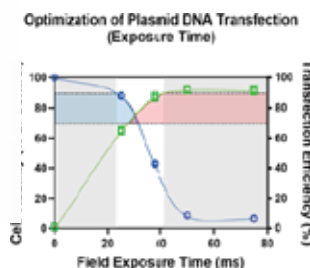


Cytotoxicity against cancer cell type

## ● High Viability and Efficiency Shown from Plasmid DNA Transfection

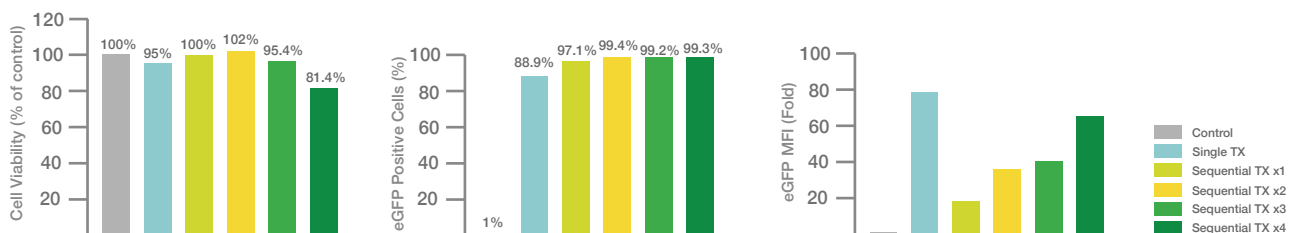


6598 bp 2036.32 kDa  
Circular form



Plasmid DNA Transfection into HepG2 shows 88% viability with 65% efficiency

## ● Multiplexed delivery achieved sequential transfection while maintaining high viability and transfection efficiency



# CELLSHOT Specifications

Software	Program Interface OS	CellShot (supplied) Touch IO Embedded system
System Dimensions	Size (Width x Depth x Height)  Weight	260 x 406 x 445 (mm) 10.2 x 15.9 x 17.9 (inch) 11kg / 24lb
Operating Conditions	Operating Temperature Storage Temperature Operating Humidity	10 - 35 °C (50 - 95 °F) 10 - 35 °C (50 - 95 °F) 70% Max
Power Source	Input Power Fuse Requirement	110~240 VAC, 50/60 Hz 10A Slow Blow, 250V
Cooling system	Peltier direct cooling	60W
Electrical Characteristics	Pulse Voltage Range Pulse Width Range	0 - 2,000 V 10-100µs
Pump Characteristics	Modes of Operation Process Volume Performance	Stepper Motor with P-Sensors 0.5 - 20 mL 0.1 - 2 mL / minute
PC Characteristics	For Win-CellShotDB USB connection	Windows 11 (64 bit) RAM 4GB, eMMC 64GB
Touch Screen Characteristics	Screen Size Resolution Touch Type	7.0 inch 1024 x 600 (Up to 1920 x 1080) Capacitive Touch
Connection to CellShot DB	Server type Operation	AWS or Windows Project management Log file management Device management





#510, D-dong, 700, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Tel. +82.31. 622. 8501

Fax. +82.31. 622. 8509

[cellshot@femtobiomed.com](mailto:cellshot@femtobiomed.com)