



# Cyto Pulse Sciences, Inc.

A medical device and treatment development company

# Data Sheet

## Parallel Needle Array *in vivo* Electrodes

Cyto Pulse™ Electroporation and Electrofusion Systems for:  
 In vivo therapeutic delivery  
 Gene therapy  
 Immunotherapy  
 Hybridoma production  
 Vaccine delivery  
 Nuclear transfer

mRNA delivery  
 siRNA delivery  
 plasmid delivery

Cyto Pulse parallel needle array electrodes are available exclusively for the Derma Vax™ clinical evaluation DNA vaccine delivery system and Onco Vet™ animal electroporation delivery system. They are functional over a number of applications ranging from intra-dermal skin vaccination to tumor electro-chemotherapy.



The electrodes are specifically designed to produce near uniform electric fields in the treatment volume. Cyto Pulse needle arrays are the closest approximation of parallel plate electrodes and treat approximately 80% of the target area with 95% of the applied electric field. This efficient design makes them ideal for practical use in the clinic. Electrodes are available with slightly varying properties of needle length and row spacing to accommodate different delivery targets.

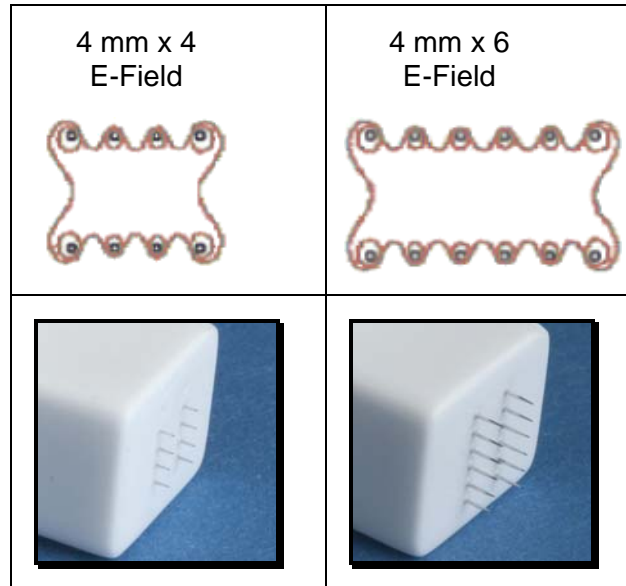
### Intradermal Array for Skin (IDA)



Derma Vax™  
 Clinical Evaluation System



OncoVet™



### IDA Specifications

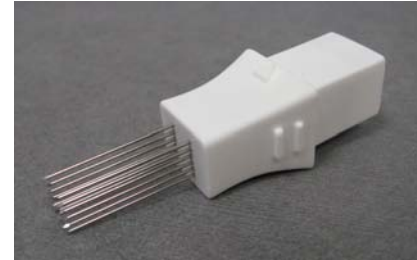
Needle Material	Stainless Steel
Needle Tip	Smooth Fine Point
Row Spacing (on center)	4 mm or 6 mm
Spacing in Row (on center)	1.5 mm
Needles per Row	4 or 6
Needle Diameter	0.3 mm
Needle Length	2 mm

Headquarters:  
 810 Cromwell Park Dr, Suite T  
 Glen Burnie, MD 21061, USA  
 Voice: 410-787-1890  
 Fax: 410-787-1891  
 Web: [www.cytopulse.com](http://www.cytopulse.com)

Cyto Pulse™ Electroporation and Electrofusion Systems for:  
 In vivo therapeutic delivery  
 Gene therapy  
 Immunotherapy  
 Hybridoma production  
 Vaccine delivery  
 Nuclear transfer

mRNA delivery  
 siRNA delivery  
 plasmid delivery

## Intra-Tumor Array ITA



## Intra-Tumor Specifications

	ITA 6-6-10	ITA 6-6-25
Needle Material	Stainless Steel	Stainless Steel
Needle Tip	Smooth Fine Point	Trocar Point
Row Spacing (on center)	6 mm	6 mm
Spacing in Row (on center)	1.5 mm	1.5 mm
Needles per Row	6	6
Needle Diameter	0.3 mm	0.7 mm

## Models

Model No.	Type	Row Space mm	Needles Per row	Needle Length mm
IDA 4-4-2	Skin	4	4	2
IDA 4-6-2	Skin	4	6	2
IDA 6-6-2	Skin	6	6	2
ITA 6-6-10	Tumor	6	6	10
ITA 6-6-25	Tumor	6	6	25

The IDA and ITA tips are single use, sterile and disposable devices. The tip is made of medical grade plastic with surgical steel needles. Cyto Pulse uses an Advanced Sterilization Products, a Johnson & Johnson Company, Sterrad® 50 Sterilization System. This system uses a combination of hydrogen peroxide vapor and low temperature gas plasma to rapidly sterilize the electrodes without leaving toxic residue. For more information see [www.sterrad.com](http://www.sterrad.com).

The tips are numbered then sterilized and shipped in individual Tyvek pouches. A cover is included to protect the needles during shipping and handling.

The tip is inserted into the handle by aligning the arrow on the tip with the arrow on the handle. Side grips have been added to the tip for easier application. Note the "Electrode ID" number on the base of the tip. This number will be required for input into the Waveform Generator touch screen and will not be visible after the tip is inserted.



Derma Vax™  
 Clinical Evaluation System



OncoVet™

Headquarters:  
 810 Cromwell Park Dr, Suite T  
 Glen Burnie, MD 21061, USA  
 Voice: 410-787-1890  
 Fax: 410-787-1891  
 Web: [www.cytopulse.com](http://www.cytopulse.com)

Copyright Cyto Pulse Sciences 2007

February 2008  
 Printed in USA

Specifications may change without notice