

# Dermeo®

French designer and manufacturer

ISO 9001 ISO 13485

## Cavitation and Radiofrequency device

# CAVIFAST2

New technology for  
sono-cosmetic treatments



### Cavitation

Autocalibration of the transducers  
Frequency 38 kHz +/- 2 kHz  
Anodized aluminum

### Radiofrequency

Multifrequency from 0,3 to 2MHz  
Constant control of skin temperature  
Securised multipolar contact

### Bio-impedance

Measurement of the body's composition at 50kHz



# ORGANIZATION

Our research,  
our innovations,  
our expertise



## The company

Set up in 2000, DERMEO became the only French IPL manufacturer offering medical devices combining the best technological features with the best results. At the top of an evolutionary innovation, DERMEO has technological and clinical expertise. DERMEO is involved in designing, manufacturing, distributing, sales and after sales services of medical devices.

Innovation  
for  
performance

## Evolutionary technology

DERMEO is in constant development and recruits only the best engineers in mechanics, electronics, energy conversion, computer software development, optics and composite materials, which has enabled DERMEO to be awarded several patents.

## Quality

DERMEO provides you with the knowledge of an ISO 9001 and ISO 13485 certified expert. Compliance with these international and medical organizational standards is a guarantee of quality for both our customers and our suppliers. DERMEO has a medical devices vigilance cell which is registered by ANSM.

## Medical research

Clinical research investments are made in partnership with groups of specialist doctors to assess the performance, security, and innocuousness of the devices that are on the market.

**DESIGNING, MANUFACTURING,  
DISTRIBUTING, SALES, AND  
AFTER SALES OF MEDICAL  
AND AESTHETIC DEVICES**



## French product

The high quality of DERMEO's production tools complies with the French manufacturing protocols and enables total transparency and traceability from the designer to the patient. DERMEO only selects the best components from French or European origin.

The manufacturing steps are validated by us and by inspectors who check the conformity of the devices on the manufacturing line compared to the files.

The strategy of innovation and quality coupled with excellent knowledge of international regulations has allowed DERMEO to expand on all five continents.



# CERTIFICATION & HOMOLOGATIONS

## Our quality, Our certifications, your safety

### The guarantee of a manufacturer that proposes a complete quality management system

DERMEO provides you with the knowledge of an ISO 9001 and ISO 13485 certified expert. Compliance with these standards is a guarantee of quality for both our customers and our suppliers.

### Recognized quality, verified safety

CAVIFAST2 medical devices are approved by many health Ministries around the world. DERMEO® medical devices have the free sales certificate from ANSM.

### RECOGNIZED QUALITY VERIFIED SAFETY

**ansm**

Agence nationale de sécurité du médicament  
et des produits de santé



## International Medical approvals

### International medical approvals

DERMEO has passed the inspections and audits of the Medical CE, as well as electromagnetic compatibility testing and electrical compliance.

CAVIFAST2 is approved by the Health Ministries of several countries (updating in progress).

### DERMEO MEDICAL DEVICES ARE COMPLIANT WITH INTERNATIONAL STANDARDS



# TECHNOLOGY & TECHNIQUES

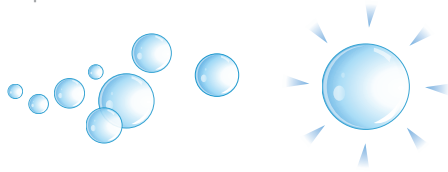
## CAVITATION

## Fast & non invasive technology against cellulite and excess localized fat

### The principle of cavitation

Cavitation is the emission of ultrasounds within a liquid environment. When the liquid is submitted to a high intensity pressure ultrasound wave, micro-cavity bubbles are formed and their volume increases until they implode.

The generated thermal energy during this phenomenon and the compressing and decompressing waves, are responsible for the implosion of the micro-cavities.



### Cavitation slimming

The cavitation principle allows the treatment of excess localized fat and reduces the built-up layers in order to lose centimeters from the treated zone. Low frequency ultrasounds generated by the transducers use the water located in our cells to form bubbles. These bubbles increase in volume until they implode, thus weakening the membrane of the adipocytes and releasing the triglycerides.

**INSTANT LOSS OF 1 UP TO 8 CM**

## Powerful, performing, and efficient systems

### Handheld transducers

The hand piece is a handheld transducer allowing the conversion of electric energy into mechanical ultrasound energy. Composed of inalterable piezoelectric material, each transducer is formed of two pieces of ceramic adjusted in order to prevent overheating. When activating the device, the two ceramic pieces vibrate simultaneously, each at a different frequency, (called resonant frequency) and therefore

### Indicate transducers

The concave transducer (with a diameter of 50 mm) is used for focalized treatment. It works on small areas and treats fibrous cellulite (the skin is dimpled when standing, has a rugged touch, and painful when pinched).

The flat transducer (with a diameter of 50 mm) targets edematous cellulite (the skin is dimpled when standing and laying down).

### Autocalibration of transducers

At each start-up, the system autocalibrates the transducers, optimizing the resonant frequency.

### Large treatment area

CAVIFAST 2 is provided with handheld transducers with a diameter of 50 mm, which corresponds to a treatment area of 19.6 cm<sup>2</sup>. By having a large treatment area, the treatment is performed very quickly allowing to obtain a larger profitability.

### Highly powerful

The power of the transducers is more than 60 Watts for a diameter of 50 mm, which means a power of 3 W/cm<sup>2</sup> (RMS).

A power of 3 W/cm<sup>2</sup> (RMS) coupled with a system of pulsed emission is considered as ultrasound with a high power. Only highly powerful ultrasounds can modify the environment within which they are spread.

**60  
Watts**

### Optimum resonance frequency

CAVIFAST2 is calibrated on a resonant frequency of 38 kHz + / - 2 kHz, allowing a maximum cavitation to a penetration depth of 3 to 4 cm.

**38  
kHz**

### Treatment area on anodized aircraft aluminum

Due to its biocompatible coating of anodized aluminum, the treatment head does not suffer from oxidation because of contact with the gel. Anodized aluminum provides electrical insulation and avoids electric shocks to the skin.



## The association of Cavitation and r

CAVIFAST 2 is a multifunctional device who is combining new innovatives to liquefy the localized fat and to reduce the volume and the number of better support and acts on the outside aspect of the skin, the irregularit Though this multifunctional body and face device, you will obtain an im volumator effect, optimized over time.

The bio-impedance system measures the composition of the body of the progress that has been made.

### Software and integrated printer

The CAVIFAST 2 has a resistive 5.7 inches color touch screen, which provides the user with excellent legibility and comfort, even when wearing gloves. Featuring new, more ergonomic and intuitive software to facilitate comfortable daily use.



# RADIOFREQUENCY

## Effective technique against cellulite and cutaneous relaxation

### The principle of radiofrequency:

Radiofrequency is based on the emission of an electric current at a very high frequency, which passes through the skin and generates heat in the subcutaneous tissue.

The effective radiofrequency current is the sinusoidal component of the frequency. (I think it should be like this, but I'm not sure) When applied to tissue, it mobilizes the contained ions. This ionic agitation is responsible for friction between the particles, causing the tissue that has been subjected to the current to heat up.

### The action of radiofrequency

This technique of radiofrequency allows to heat the deep dermis and thus stimulate the production of collagen. This heat causes a neocollagenesis that improves firmness and skin tension. This new collagen induces skin firming and reduces cutaneous relaxation and wrinkles.

## Adaptive, efficient and secure systems

### Multipolar applicator for body and face

The hand piece is an applicator with four 12mm titanium electrodes, which is suitable for both the body and the face.

**CONVINCING TO GET RESULTS  
A TEMPERATURE OF THE BEST SKIN IS NEEDED**

### Temperature sensor for a safe treatment

A temperature sensor is integrated in the hand piece. When the limit is reached, the hand piece will shut off, avoiding any burns.

### Contact probe

Equipped with a probe to control the emission of the current, CAVIFAST 2 prevents any electric shocks, and enhances the effectiveness of high power treatments, avoiding discomfort and the risk of burns.

50  
Watts

### Multi-frequency generator

The CAVIFAST 2 has a multi-frequency generator that is adjustable by the operator from 0.3 to 2 MHz, adapting the depth of the treatment according to the selected treatment area. A higher frequency equals a treatment closer to the skin surface.

0,3  
à  
2,0MHz

### Efficient power

The CAVIFAST 2 has a power of 50 Watts, which can be easily adjusted by the operator in order to obtain an effective treatment and the desired result.



## radio frequency techniques

technologies: cavitation coupled with radio frequency. Cavitation allows adipocytes. Radio frequency firms up the skin, regenerates tissues for a ies, the signs of the ageing and the cellulite.

mediate results with a localized loss of centimeters and a tensor and

CAVIFAST 2. It allows to print the measured values in order to track the



### Evolutive software for easy updating

The software is embedded on a SD card, facilitating a quick and easy Update of the medical systems via internet



## Results approved

### Clinical studies : efficiency & safety approved

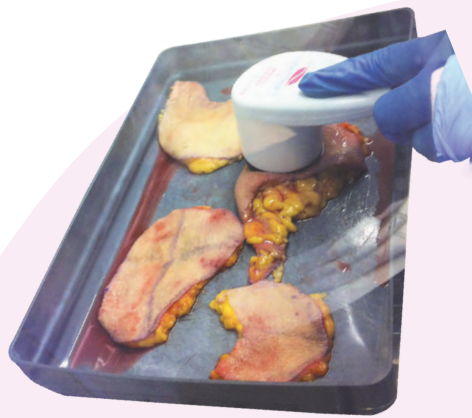
To demonstrate the quality and effectiveness of DERMEO's medical devices, a clinical report was officially established by the GREDECO laboratory in order to demonstrate the quality and effectiveness of DERMEO devices. This study was carried out on fragments of human skin, by researchers from the laboratory GREDECO in the Hospital Pitié-Salpêtrière in Paris.



Groupe de Recherche et d'Evaluation  
en DERMATOLOGIE et COSMÉTOLOGIE

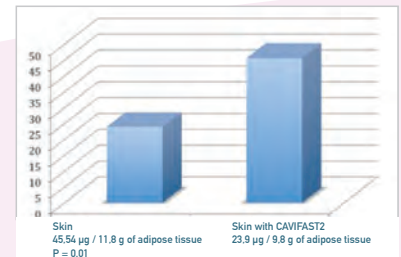
The image below illustrates a CAVIFAST2 device that emits low frequency ultrasound (38 kHz +/- 2 kHz)

While imploding, these bubbles weaken the membrane of the fat cells and accelerate the exchanges in metabolism. The triglycerides, which were initially inside the fat cells, are hydrolyzed in glycerol (lipolysis).



### Glycerol released

The results of the study showed for all donors a nearly doubled increase of glycerol released compared to the "normal" skin after only 10 minutes treatment with CAVIFAST2.



### Clinical references

Dr. Sylvie Boissic  
Dermatologist, Pathologist Research Director  
GREDECO Consultant at the Hospital  
de la Pitié-Salpêtrière

## AESTHETIC TREATMENTS WITH DERMEO DEVICES PRESENT HIGH LEVELS OF EFFICIENCY AND SAFETY

### Jagged outline of the adipocytes: lipolysis

The left image shows a section of the structure of the skin taken before the treatment, showing the adipocytes being regular and round shaped.

After treatment with the DERMEO device, a jagged outline of the adipocytes is observed in the right image. These modifications, observed at the level of the hypodermis, confirm the mechanism of cavitation lipolysis.

Lipolysis is a reduction in the volume of adipocytes by mobilization and removal of glycerol.

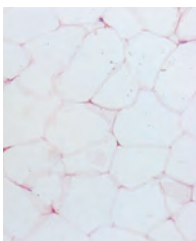
### Destruction of the adipocyte membrane: lipoclasia

The left image demonstrates the hypodermis, at the level of the skin, being composed out of regular shaped adipocytes. After treatment, modifications of the appearance and sometimes the rupture of the membrane, are observed. Thus, after treatment with the CAVIFAST 2, lipoclasia, a destruction of the adipocyte membranes, is observed on the treated patients.

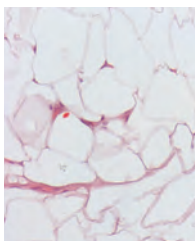
### Absence of alteration of the tissue: non-invasive treatment

Histological cuts performed on skin explants show a non-invasive lipoclasia. The image here below illustrates an absence of alteration of the dermo-hypodermic junction.

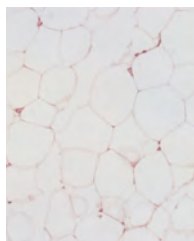
The respect of the essential structures of the skin such as the epidermis, dermis and vessels reflects the perfect safety of CAVIFAST 2 treatments.



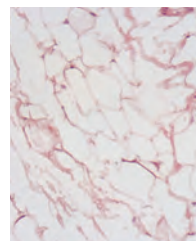
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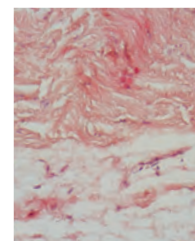
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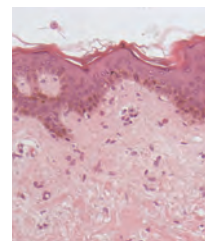
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(x200)



SKIN  
TREATED (x200)



SKIN  
TREATED (x200)



SKIN TREATED

Profitability,  
flexibility,  
efficiency

## CAVIFAST2®

### CAVITATION:

- Concave transducer
- Flat transducer

### RADIOFREQUENCY :

- Multipolar applicator

### BIO-IMPEDANCE :

- Bioimpedance system with integrated printer

### Package :

- Accessories
- Marketing package
- 2 years full warranty on labor & parts



Marketing, sales,  
legal

### Sales arguments

DERMEO provides its users with relevant marketing material, such as a list with unique selling points and a list containing frequently asked questions with appropriate answers, which can be used when interacting with patients that are interested in treatments by DERMEO's devices.

### Training

The training program is supported by 2 volumes of training manuals. One is theoretically and technically oriented, whereas the other volume focuses on the practical and commercial aspects.

### Media exposure

DERMEO's products and treatments receive a strong national and international exposure in on and offline media.

### Clinical and legal

To provide better information to patients and better protection to practitioners, models of quote / informed consent / medical history forms, which have been validated and approved by doctors and lawyers, are available for the users.

### Clinical Description : cavitation

The CAVIFAST 2 device allows a decrease in the size of the treated zone by reducing the number of triglycerides within the adipose cells which leads to a loss of centimeters and an improvement in the quality of skin. A considerable change in the aspect of orange peel is observed, thanks to the elimination of fibrous nodules from the cellulite tissue, the improving of oxygenation and the revascularization of the subcutaneous tissue.

This technique of lipolysis addresses unsatisfactory silhouettes and localized excess cellulite.



### Clinical Description : radiofrequency

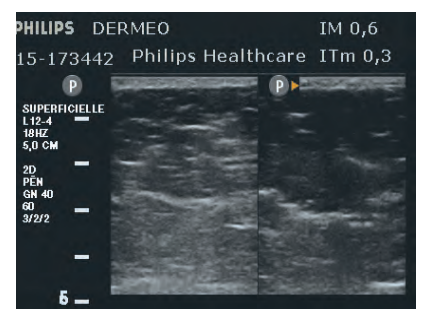
The CAVIFAST 2 act on the superficial and deep layers of the dermis, to treat both excess fat and cutaneous relaxation. Under the effect of heat, the collagen fibers shrink, causing the immediate effect of tightened skin. The radiofrequency technique used by the CAVIFAST 2 is a non-invasive method that regenerates collagen, firms up the skin and improves the general texture.



### Bio-impedance

The analysis system measures the body's composition by bio-impedance at 50kHz. This process is used as a part of the slimming treatment, and serves to determine the amount of fat mass. By measuring the body's resistance to a low alternating stream with one or several frequencies, reliable measures are obtained showing the scientific efficiency of the device.

Photo taken with an echograph determinating the depth of penetration of ultrasound from 3 to 4 under the skin.



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Designer and manufacturer of new technologies  
for aesthetic treatments

Dimensions (H x W x D) in mm	260 x 510 x 440 (device) 1020 x 510 x 520 (device with trolley)
Weight	+/- 10 kg
Electric current	100 – 240 V~ / 50-60 Hz
Consumption	140 Watts
Protection Category	1, type B et BF
Conformities	Electromedical Standards CEI 60601-1 : 2012 CEI 60601-1-6 : 2010 CEI 62366 : 2007 CEI 60601 -1-2 : 2007 CB certificate
Medical certification	Classe IIB
Keyboard/Screen	Capacitive touch screen 5"7 LCD color TFT 320 x 240 pixels
Warranty	2 years warranty on parts and labor
<b>BIO-IMPEDANCE</b>	
Emission frequency	50 kHz
Current	800 µA
Cable	ECG cable type for 4 electrodes with pressure disposable
Type of electrodes	42x36 mm Ag/AgCl, solid gel foam, disposable, class I 93/42/CEE

<b>ULTRASOUNDS</b>	
Power of transducers	60 Watts or 3 W/cm² (RMS)
Resonant frequency	38 kHz +/- 2 kHz z
Emission mode	Pulsed with active control pulse
Transducer dimensions	Ø 50 mm +/- 1 mm (Flat) Ø 50 mm +/- 1 mm (Concave)
Number of programs	2 : Remodeling, Maintenance
Warranty	Within the limit of 250 hours of use per transducer r
<b>RADIOFREQUENCY</b>	
Emission Frequency	0,3 to 2 MHz ajustable per 0,1 MHz
Power of emission	50 Watts
Type of emission	Multipolar (4 x 12 mm) titanium
Control of emission	Embedded IR temperature sensor (45 ° C threshold) contact probe (TOS meter)

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