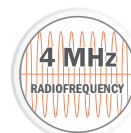




Dermatosurgery and Plastic Aesthetic Surgery

Solutions with the CURIS® 4 MHz Radiofrequency Generator

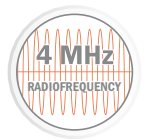


PRECISION ELECTROSURGERY
Made in Germany

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CURIS® 4 MHz Radiofrequency Generator

One unit – many applications



The CURIS® 4 MHz radiofrequency generator relies on innovative 4 MHz technology: It is gentle to the tissue and effective for coagulation and cutting. Scientific studies have shown that tissue trauma may be reduced by using CURIS® 4 MHz radiofrequency technology.¹

CURIS® 4 MHz Radiofrequency Technology

The higher the frequency, the less the resistance of biological tissue to electromagnetic fields – up to the point where cell membranes are capacitively coupled. This effect is created by the CURIS® 4 MHz radiofrequency generator in all monopolar and bipolar modes. When using conventional electrosurgical units the electromagnetic field mainly concentrates between the cells and only heats up the outer layer. However, with the CURIS® 4 MHz radiofrequency generator cell membranes are conductive, and energy is absorbed evenly inside the cells.² As a result, energy is administered gently and in a highly focused fashion. Precise monopolar cuts are possible while lateral heat damage is kept to a minimum.³

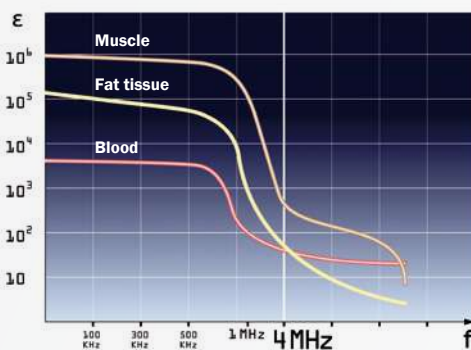
¹ Muehlhaff G et al. A study on the type of lesions achieved by three electrosurgical methods and their way of healing. Romanian Journal of Morphology & Embryology. 2015; 56(4): 1383-1388

² Holder DS. Electrical Impedance Tomography- Methods, History and Applications. IOP Publishing Ltd. 2005

³ Hoffmann TK et al. Comparative analysis of resection tools suited for transoral robot-assisted surgery. European Archives Oto-Rhino-Laryngology. 2014; 271 (5) : 1207-1213

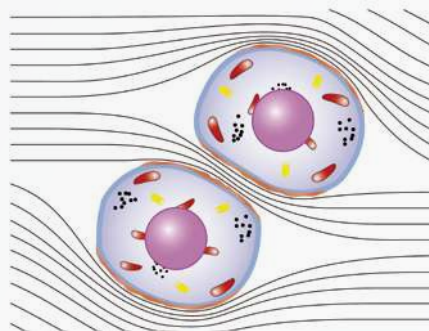
⁴ Hofauer B et al. Radiofrequency in Oral and oropharyngeal tumor surgery. Auris Nasus Larynx, 2020; 47(1):148-153.

Permittivity/Frequency



This diagram shows the permittivity of tissue, which depends on the frequency of the electromagnetic field.

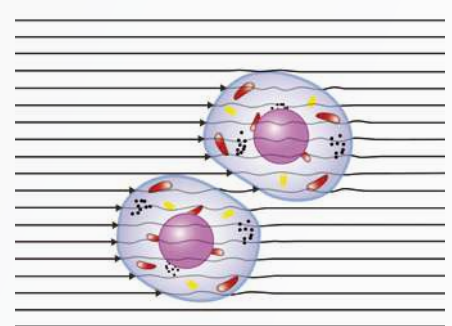
Conventional electrosurgical units



The electromagnetic field concentrates mainly between the cells and heats up only the outer layer.

Source: [2] Holder

CURIS® 4 MHz Radiofrequency Generator



Cell membranes are conductive and the energy is absorbed evenly inside the cells. The result are highly focused tissue effects.

Source: [2] Holder

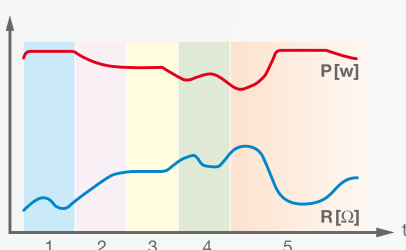


Precision thanks to **AutoRF™**

AutoRF™ is a smart impedance control function that will tailor the power output of the CURIS® 4 MHz radiofrequency generator to the tissue condition. Whether it is cutting through different types of tissue (such as mucosa, muscle, fat or connective tissue) or altering tissue conditions during coagulation, the AutoRF™ feature will deliver adapted power output as required by the different tissue impedance.

When dissecting different types of tissue in one cut (skin, fat, muscles), the unit has to process and respond to the AutoRF™ data in a flash. For this reason, the CURIS® 4 MHz radiofrequency generator has two microprocessors for additional safety and speed.

CURIS® CUT



Monopolar cutting:

Sections 1 to 5 show the different kinds of tissues and cutting speeds to which the unit adjusts its power output automatically. "R" signifies electric tissue resistance and "P" the actual power output. Illustration only.



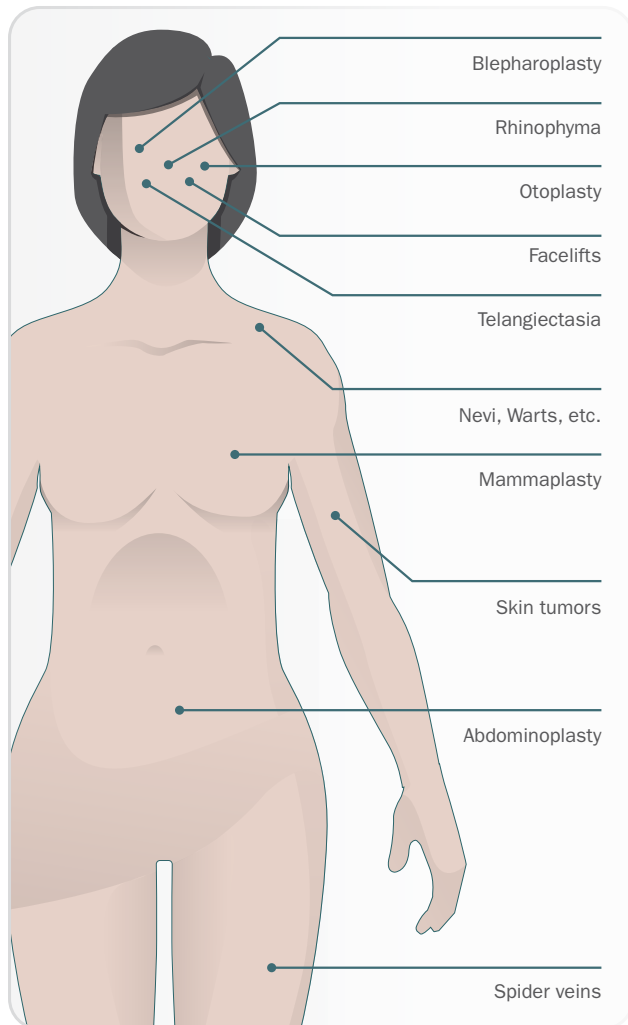
p³™-Technology



p³™, which stands for pulsed power performance, is active in all coagulation modes of the CURIS® 4 MHz radiofrequency generator. Radiofrequency energy is delivered in about 50 small packages per second. Due to the pulsed power output, there are short breaks between the individual packages, giving the tissue enough time to absorb the energy. Highly focused, yet gentle coagulation with minimal thermal damage is possible.



CURIS®: one device
- many applications



Dermatosurgery and Plastic Aesthetic Surgery

Precise cutting allows the tissue to heal with minimal postoperative pain and scarring. The degree of hemostasis is determined by the surgeon. Usually CURIS® 4MHz radiofrequency generator will produce clear, clean cuts. This only works when the energy delivered is highly focussed and there is minimal lateral heat damage.

The frequency of 4 MHz and **AutoRF™** combine to create a homogenous electromagnetic field. For the unit to adjust to ever changing conditions during cutting skin, fat, muscle in one stroke, active performance control with **AutoRF™** is able to ensure reproducible results.

High quality coagulation results can be achieved, according to the doctor's requirements, with two bipolar modes. For instruments with wider tips of 1 mm and more, the MACRO mode is recommended. The advantage of fine instruments – their precision – is enhanced by the PRECISE mode, which can be adjusted in steps of 0.5 watts. Its gentleness and characteristics may improve coagulation results during subtle interventions and near sensitive structures.

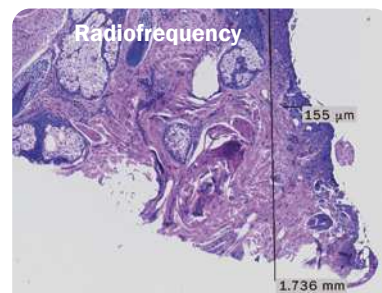
Precise cutting with minimal lateral thermal damage^{3,4}



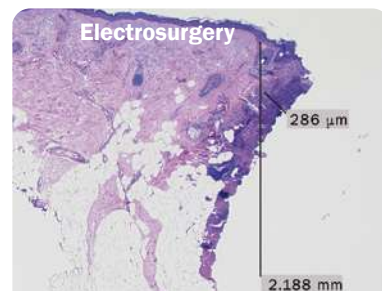
Ø 0.3 mm

36 44 21

ARROWtip™ monopolar microdissection electrode, single-use
45° angled downw., total length: 53 mm



Lateral thermal damage following radiofrequency excision: 155 µm*



Lateral thermal damage after conventional electrosurgery excision: 286 µm*



R. Kasten, MD
Mainz (Germany)

“Radiofrequency surgery causes less lateral tissue damage than conventional electrosurgery. Consequently faster wound healing and a better cosmetic outcome can be expected. Studies have even shown better cosmetic results for radiofrequency skin surgery than for CO₂ laser applications. Radiofrequency also improves operation comfort by enabling germ-free and pressure-free cuts with minimal bleeding in a very cost-effective way.”

* courtesy of Dr. Kasten, Mainz (Germany)

Skin Tumors



Ø 0.3 mm **36 44 20**
ARROWtip™ monopolar microdissection electrode, single-use
total length: 53 mm



Ø 0.3 mm **36 44 21**
ARROWtip™ monopolar microdissection electrode, single-use
45° angled downw., total length: 53 mm



78 01 48 SG
SuperGliss® non-stick bipolar forceps
straight, tips: 0.7 mm, total length: 15.5 cm
working length: 4.0 cm



“The removal of basal cell carcinomas in the facial area is one of the most common surgeries in my practice. It is done under local anesthesia. Using the radiofrequency technology in combination with the ARROWtip™ monopolar microdissection electrodes facilitates a precise cut with very little intracapillary bleeding. Compared to cold steel, I not only save time through the use of a faster and safer bipolar coagulation with radiofrequency, but I also cause less lateral tissue damage and hence finer scars. In addition, we observe very little postoperative pain and infections.”

C. Riedel, MD
Mannheim (Germany)



Rhinophyma



Ø 3.0 mm **36 08 17**
Ball electrode
total length: 63 mm



Ø 8.0 mm **36 08 15**
Wire loop electrode
total length: 57 mm



Ø 9.0 mm **36 08 12**
Wire loop electrode
total length: 57 mm



Ø 0.3 mm **36 08 04**
Needle electrode
straight, total length: 67 mm



78 01 75 SG
SuperGliss® non-stick bipolar forceps,
1.0 mm tip, angled, working length 6.0 cm



“Radiofrequency monopolar surgery in the treatment of rhinophyma has proven to be an easy-to-handle, fast and efficient treatment modality. The combination of monopolar cutting and coagulation at the same time not only facilitates the re-shaping und sculpturing of the nose but also guarantees gentle hemostasis with excellent visibility of the surgical field.”

H. Sadick, MD
Mannheim (Germany)



Radiofrequency monopolar resection of a rhinophyma while carefully preserving pilosebaceous units to prevent scarring (with monopolar wire loop electrode, REF: 36 08 12)



Sculpturing of the nasal contour by evening surface irregularities (with monopolar ball electrode, REF: 36 08 17)

Blepharoplasty



Ø 0.3 mm

36 44 21

ARROWtip™ monopolar microdissection electrode, single-use
45° angled downw., total length: 53 mm



78 01 48 SG

SuperGliss® non-stick bipolar forceps
straight, tips: 0.7 mm, total length: 15.5 cm
working length: 4.0 cm

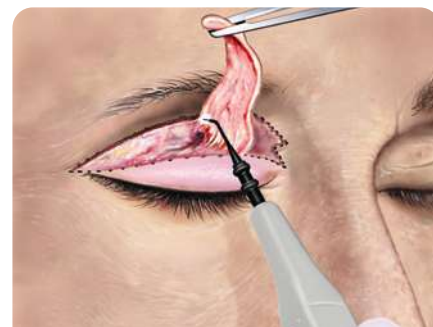
“An established technique for precise cutting and delicate coagulation in plastic and aesthetic surgery: Radiofrequency leads to less lateral tissue damage than conventional electro-surgery. This, in turn, results in improved wound healing and good cosmetic results. Radiofrequency increases the user-friendliness and comfort for the surgeon who is able to work in one uninterrupted go without applying mechanical pressure and with a lower bleeding tendency.”

E. Oestreicher, MD

Meppen (Germany)



Lower Eyelid Plastic Surgery: Skin incision using ARROWtip™ monopolar microdissection electrode (REF: 36 44 21)



Upper Eyelid Plastic Surgery: Skin incision and excision of the skin area using the ARROWtip™ monopolar microdissection electrode (REF: 36 44 21)

Telangiectasia / Spider Veins



36 08 04

Monopolar needle electrode
total length: 67 mm



Spider veins before RF treatment.
(with monopolar needle electrode,
REF: 36 08 04)

“With radiofrequency all types of spider veins can be treated in a fast and cost effective way. The procedure takes only several minutes and effects are instantly visible. Postoperatively there is very little discomfort for the patient.”

D. Zavisic, MD

Freiburg (Germany)



Surgical site immediately
postoperatively.

Radiofrequency Ablation of Papular Melanocytic Nevus



Ø 1.0 mm

36 08 16

Monopolar ball electrode
total length: 63 mm



Papular nevus on left cheek



Tangential excision of papular nevus



Removing the remaining part of the lesion with gentle movements (with monopolar Ball electrode, REF: 36 08 16)



Eight weeks after radiofrequency ablation

"The range of radiofrequency surgery has now been extended to ablative, vaporizing methods in esthetic medicine. This novel method complements the armamentarium of the dermatologist in the operating room as well as those of the plastic surgeon and ENT specialist. Elevated benign nevi may now be removed elegantly and painlessly producing excellent cosmetic results."



R. Kasten, MD
Mainz (Germany)

Excision of hemangiomas



Hemangioma on the upper arm



Excision of a hemangioma with minimal bleeding (with monopolar microdissection electrode, REF: 36 44 21)



Ø 0.3 mm

36 44 20

ARROWtip™ monopolar microdissection electrode, single-use
total length: 53 mm



Ø 0.3 mm

36 44 21

ARROWtip™ monopolar microdissection electrode, single-use
45° angled downw., total length: 53 mm

CURIS® Storage / Transport



36 09 00
Fuego trolley

Fuego Trolley

The trolley has a solid design and enables that the CURIS® 4 MHz radiofrequency generator will not shift. It also comes with a hook to mount the footswitch.

Two storage baskets for accessories and documentation.



99 01 10
CURIS® trolley case

Trolley Case for CURIS® 4 MHz radiofrequency generator

The CURIS® trolley case* is suited to preserve your radiofrequency generator from damage.

*Not for shipment with parcel services.

CURIS® Technical Data

RF output max.	performance	operating frequency		
monopolar				
CUT 1 (unmodulated)	100 W ± 20 % 600 Ω	4.0 MHz	Modulation frequency	33 kHz
CUT 2 (modulated)	80 W ± 20 % 600 Ω	4.0 MHz	Mains supply	100-240 V; 50/60 Hz
CONTACT (Coag)	80 W ± 20 % 400 Ω	4.0 MHz	Measurements W x H x D	320 mm x 170 mm x 385 mm
SOFTSPRAY (Coag)	60 W ± 20 % 600 Ω	4.0 MHz	Weight	approx. 5.0 kg
bipolar			Mode of operation	Intermittent INT 10 s / 30 s equals 25 % ED
BICUT 1	80 W ± 20 % 300 Ω	4.0 MHz	Standards	DIN EN 60601-1; DIN EN 60601-2-2
BICUT 2	80 W ± 20 % 300 Ω	4.0 MHz	Safety class I	
EXCISE (Cut)	80 W ± 20 % 300 Ω	4.0 MHz	EMC (Interference suppr.)	EN 60601-1-2
MACRO (Coag)	80 W ± 20 % 50 Ω	4.0 MHz	Type	CF (cardiac floating) defibrillation proof
PRECISE (Coag)	50 W ± 20 % 50 Ω	4.0 MHz	German MPG class.	II b
RaVoR™	40 W ± 20 % 50 Ω	4.0 MHz	Quality assurance	EN 13485

Technical data valid from generator version 0604

Disclaimer:

The information presented herein has been carefully researched and compiled with the help of specialist physicians. They are not meant to serve as a detailed treatment guide. They do not replace the user instructions for the medical devices used. Sutter accepts no liability for the treatment results beyond the mandatory legal regulations.

The listed working lengths serve as a guideline and may be rounded up or down. The actual lengths may vary slightly.

Products shown in this catalog are subject to regulatory approval in individual markets. Products may therefore not be available in all markets.

Basic Equipment



CURIS® Basic Equipment

Qty.	REF	Description
1	36 01 00-01	CURIS® 4 MHz radiofrequency generator (incl. mains cord, user's manual and test protocol)
1	36 01 10	Foot switch two pedals for CURIS® (cut & coag), 4 m cable
1	37 01 54 L	Bipolar cable for CURIS®, length: 3 m
1	36 07 04	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable 3 m
1	36 02 38	Cable for single-use patient plates, length: 3 m

available patient plates:

1 (x100)	29 00-5	Single-use patient plate, split, for adults and children, PU 20 x 5 pcs.
1 (x50)	95 80 04	Single-use patient plate, split, for adults, PU 10 x 5 pcs.
1 (x50)	95 80 05	Single-use patient plate, split, for children, PU 10 x 5 pcs.
1	36 02 26	Re-usable rubber patient plate (minimum patient weight 15 kg)

CURIS® – Commonly used unit settings*

Possible application	Possible instrument	Suggested unit settings
Dermatology		
Syringoma	Monopolar blade electrode REF 36 04 40	CUT 1 5 - 15 watts
Spider Nevi, Couperosa	ARROWtip™ monopolar microdissection electrodes, single-use REF 36 44 20, 36 44 21	CONTACT 5 - 8 watts
Telangiectasia, Spider Veins	Monopolar needle electrode REF 36 08 04	SOFTSPRAY 3 - 8 watts
Age Spots	Monopolar loop electrode REF 36 04 43	CUT 1 or SOFTSPRAY 12 - 18 watts
Birthmarks	ARROWtip™ monopolar microdissection electrode, single-use REF 36 44 20	CUT 1 or CUT 2 20 - 25 watts
Warts, Fibrosis	Monopolar loop electrode REF 36 04 43	SOFTSPRAY 7 - 25 watts Cut 2: 10 - 25 watts
Neurofibroma	ARROWtip™ monopolar microdissection electrode, single-use REF 36 44 21	CUT 1 7 - 15 watts
Papular Melanocytic Nevi	Monopolar ball electrode REF 36 08 16	CONTACT 4 - 6 watts
Tongue lesions	ARROWtip™ monopolar microdissection electrode, single-use REF 36 44 42	CUT 1 10 - 18 watts
Plastic/Aesthetic surgery		
Blepharoplasty for skin incision	ARROWtip™ monopolar microdissection electrodes / single-use REF 36 44 20, 36 44 21, 36 03 22, 36 03 25	CUT 2 10 - 20 watts
Blepharoplasty for coagulation	SuperGliss® non-stick bipolar forceps REF 78 01 48 SG	PRECISE 23 watts
Facelift for skin incision monopolar	ARROWtip™ monopolar microdissection electrodes, single-use REF 36 44 20, 36 44 21, (36 03 22, 36 03 25)	CUT 1 10 - 18 watts
Facelift for bipolar coagulation	SuperGliss® non-stick bipolar forceps REF 78 01 52 SG OR 78 01 48 SG	PRECISE 15 - 25 watts OR 10 - 15 watts
Hand surgery for skin incision monopolar	ARROWtip™ monopolar microdissection electrode, single-use REF 36 44 20	CUT 1 or CUT 2 12 - 18 watts
Hand surgery for monopolar coagulation	Monopolar ball electrode REF 36 08 16	CONTACT 20 watts OR 5 - 7 watts for slow coagulation
Hand surgery for bipolar coagulation	SuperGliss® non-stick bipolar forceps REF 78 01 52 SG OR 78 02 38 SG	PRECISE 20 watts 15 - 25 watts
Breast surgery for skin incision monopolar	ARROWtip™ monopolar microdissection electrodes / single-use REF 36 44 20, 36 03 50	CUT 1 or CUT 2 7 - 15 watts
Breast surgery for bipolar coagulation	SuperGliss® non-stick bipolar forceps REF 78 01 51 SG OR 78 02 91 SG	PRECISE 15 - 25 watts

Suggested settings valid for generators from version: 0604

*Please see disclaimer on page 8. Values are recommendations only and may be changed at the discretion of the physician!



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