Sutter

Dermatosurgery and Plastic Aesthetic Surgery

Solutions with the CURIS® 4 MHz Radiofrequency Generator

4 MHz RADIOFREQUENCY

AutoRF™

p³™ pulsed power performance

product design award

PRECISION ELECTROSURGERY
Made in Germany

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CURIS® 4 MHz Radiofrequency Generator One unit – many applications

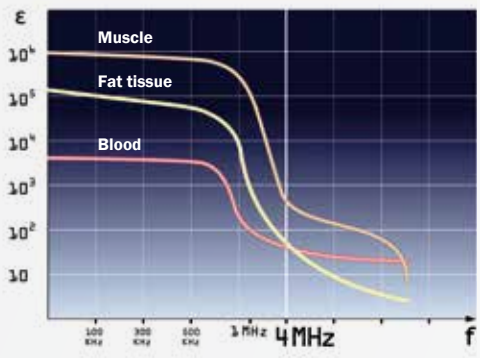
The CURIS® 4 MHz radiofrequency generator relies on innovative 4 MHz technology: It is gentle to the tissue and effective for coagulation and cutting. Scientific studies have shown that tissue trauma may be reduced by using CURIS® 4 MHz radiofrequency technology.[1]

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]

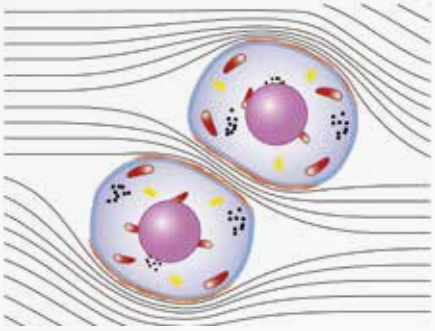
[1] Muehlfay G et al. A study on the type of lesions achieved by three electrosurgical methods and their way of healing. Romanian Journal of Morphology & Embryology. 2015; 56(4): 1383-1388
[2] Holder DS. Electrical Impedance Tomography-Methods, History and Applications. IOP Publishing Ltd. 2005
[3] Hoffmann 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 Nasur Larynx, 2020; 47(1):148-153.

Permittivity/Frequency



This diagram shows the permittivity of tissue, which depends on the frequency of the electro-magnetic field.

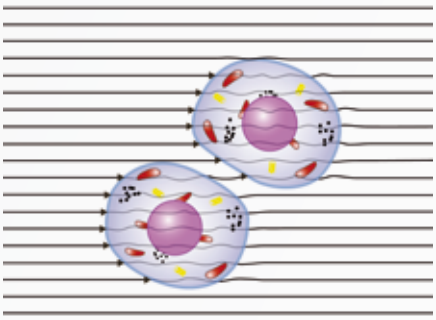
Conventional electrosurgical units
(between 300 - 500 kHz)



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

Source: [2] Holder

CURIS® 4 MHz Radiofrequency Generator



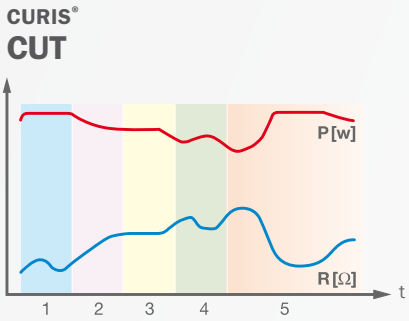
Cell membranes are conductive and the energy is absorbed evenly inside the cells. The result are highly focused tissue effects.

Source: [2] Holder

Precision thanks to **Auto*RF***™

Auto*RF*™ 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 Auto*RF*™ 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 Auto*RF*™ data in a flash. For this reason, the CURIS® 4 MHz radiofrequency generator has two microprocessors for additional safety and speed.



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

Blepharoplasty

Ø 0.3 mm

36 44 21
ARROW*tip*™ 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 ARROW*tip*™ monopolar microdissection electrode (REF: 36 44 21)

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

Telangiectasia / Spider Veins

36 08 04
Monopolar needle electrode
total length: 67 mm

"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)

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

Surgical site immediately postoperatively.

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
CUT 2 (modulated)	80 W ± 20 % 600 Ω	4.0 MHz
CONTACT (Coag)	80 W ± 20 % 400 Ω	4.0 MHz
SOFTSPRAY (Coag)	60 W ± 20 % 600 Ω	4.0 MHz
bipolar		
BICUT 1	80 W ± 20 % 300 Ω	4.0 MHz
BICUT 2	80 W ± 20 % 300 Ω	4.0 MHz
EXCISE (Cut)	80 W ± 20 % 300 Ω	4.0 MHz
MACRO (Coag)	80 W ± 20 % 50 Ω	4.0 MHz
PRECISE (Coag)	50 W ± 20 % 50 Ω	4.0 MHz
RaVoR™	40 W ± 20 % 50 Ω	4.0 MHz

Modulation frequency	33 kHz
Mains supply	100-240 V; 50/60 Hz
Measurements W x H x D	320 mm x 170 mm x 385 mm
Weight	approx. 5.0 kg
Mode of operation	Intermittent INT 10 s / 30 s equals 25 % ED
Standards	DIN EN 60601-1; DIN EN 60601-2-2
Safety class	I
EMC (Interference suppr.)	EN 60601-1-2
Type	CF (cardiac floating) defibrillation proof
German MPG class.	II b
Quality assurance	EN 13485

Technical data valid from generator version 0604

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), cable length: 4 m
or 1	**36 01 14**	Foot switch with two pedals for CURIS® (cut & coag) without holding bracket, cable length: 4 m
1	**37 01 54 L**	Bipolar cable for CURIS®, cable length: 3 m
1	**36 07 04**	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable legth: 3 m
1	**36 02 38**	Cable for single-use patient plates, length: cable length: 3 m
1 (x 100)	**29 00-5**	Single-use patient plate, split, for adults and children, PU 20 x 5 pcs.

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	ARROW*tip*™ 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	ARROW*tip*™ 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	ARROW*tip*™ 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	ARROW*tip*™ monopolar microdissection electrode, single-use **REF 36 44 42**	CUT 1 10 - 18 watts
Plastic/Aesthetic surgery		
Blepharoplasty for skin incision	ARROW*tip*™ 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	ARROW*tip*™ 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	ARROW*tip*™ 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	ARROW*tip*™ 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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Made in Germany

SUTTER MEDIZINTECHNIK GMBH
ALFRED-WALZ-STR. 22 · 79312 EMMENDINGEN/GERMANY
TEL. +49(0)7641-96256-0 · FAX +49(0)7641-96256-30
WWW.SUTTER-MED.COM · INFO@SUTTER-MED.DE