Medtronic
Engineering the extraordinary

Specification Guide

Valleylab™ FT10 electrosurgical generator

Trust in performance, reliability, and safety.

TissueFect™ technology

TissueFect™ sensing technology monitors changes in tissue impedance 434,000 times a second and adjusts energy output accordingly to deliver the appropriate amount of energy for the desired tissue effect.[1]

Upgrade-ready

Add LigaSure™ technology at any time with the Valleylab™ FT10 LigaSure™ Feature Kit[3]

Easy-to-read control panel

The Valleylab™ FT10 electrosurgical generator is an intuitive system to use, and the error alerts are easy to understand.†[1,2]

†Total of 32 surgeons and 39 nurses interviewed. Product validation testing January 27–30 and February 24–27, 2015.

Valleylab™ FT10 electrosurgical generator

Technical specifications

General

Output system	Isolated output
Cooling	Natural convection and fan
Display	17.8 cm (7.0 in) LCD touchscreen 16,777,216 colors with 24-bit data signal[4]
Connector ports	1 standard monopolar with UFP, 1 advanced monopolar, and 1 bipolar
Enclosure	Magnesium
Mounting	• Valleylab™ universal generator cart (VLFTCRT) • Operating room boom systems • Any stable, flat surface such as a table or cart top
Operating system	Linux

Dimensions and weight

Height	17.8 cm (7.0 in)
Width	36.8 cm (14.5 in)
Depth	46.2 cm (18.2 in)
Weight	10.1 kg (22.3 lb)

Environmental parameters for operation

Ambient temperature range	10–40°C (50–104°F)
Relative humidity	15–85% non-condensing
Atmospheric pressure	700–1060 millibars

Environmental conditions for transport and storage†,‡

Ambient temperature range	–10 to +60°C (14 to 140°F)
Relative humidity	15–90% non-condensing
Atmospheric pressure	500–1060 millibars

†The system can be stored for up to one year without performance degradation upon use.

‡If the energy platform is stored at a temperature outside the normal operating range of 10 to 40°C, the system is ready for use after at least one hour at ambient temperature 20°C ± 5°C.

Duty cycle

The Valleylab™ FT10 electrosurgical generator is capable of operating a duty cycle of 25%, defined as 10 seconds active and 30 seconds inactive, in any mode for a period of 4 hours.

Input power

	Nominal line voltage		Units
Line ranges	100–127	220–240	VAC
Line voltage full regulation range†	90–140	198–264	VAC
Line frequency‡	47–63	47–63	Hz
Max VA nominal line voltage§	950	950	VA
Max mains current§	9.5	4.8	A_{RMS}
Max heat dissipation	180	180	W
Fuses	10 Fuses (2): 5 mm × 20 mm 10 A, 250 V, fast-blow	6.3 Fuses (2): 5 mm × 20 mm 6.3 A, 250 V, fast-blow	A
Power cord	NEMA 3-prong hospital-grade connector		

†Includes margin per IEC 60601-1.
‡Includes margin on the international range of 50-60 Hz.
§Max VA and current are based on nominal line voltages.

Internal memory

Real-time clock battery	Battery type: Lithium CR1620 or CR1632 Battery capacity: 75 mAh (minimum)
Storage capacity	8 GB

The generator retains all the features configured by the user, calibration data, and statistical data if the power is turned off and if the device is unplugged.

Return electrode monitor (REM) contact quality monitoring system

Interrogation frequency	64–76 kHz
Interrogation current	<100 µA
Contact resistance sense range	5–135 Ω
Contact resistance accuracy (RF not activated)	±7 Ω
Contact resistance accuracy (RF activated)	Greater of ±14 Ω or 20%

Ethernet

Connected speed	10/100/1000BASE-T
Standards	IEEE 802.3, IPv4
Protocols	SFTP (for file transfer through port 22), UDP (non-file transfer), TCP/IP

USB

The USB connection is located on the back of the generator. The intended use of the USB port is to perform service operations on the generator (bidirectional communications).

Leakage current

Leakage currents and patient auxiliary currents (IEC 60601-1)

Touch current	<100 µA NC, <500 µA SFC
Earth leakage current	<500 µA NC, <1000 µA SFC
Patient auxiliary current (<1 kHz)	<10 µA NC, <50 µA SFC
Patient auxiliary current (>1 kHz)	Scaled with frequency per IEC 60601-1, but does not exceed 10 mA NC/SFC
Patient leakage current	<10 µA NC, <50 µA SFC
Total patient leakage current	<50 µA NC, <100 µA SFC

NC: Normal condition.

SFC: Single fault condition (as defined in IEC 60601-1).

Total patient leakage current: Measurement of patient leakage current with all patient outputs connected together.

High frequency leakage (IEC 60601-2-2)

Bipolar (short leads)	<68.9 mA_{RMS}
Monopolar measured directly at the ESU terminals	<100 mA_{RMS}

Audio tones

Activation tones	Tone	Duration	Volume
CUT	660 Hz ± 5%	Entire activation duration	User adjustable from 45 dBA to 65 dBA (-0/+6 dBA @ 1 m)
COAG	940 Hz ± 5%	Entire activation duration	User adjustable from 45 dBA to 65 dBA (-0/+6 dBA @ 1 m)
SHARED COAG	988 Hz ± 5%	Entire activation duration	User adjustable from 45 dBA to 65 dBA (-0/+6 dBA @ 1 m)
Valleylab™	800 Hz ± 5%	Entire activation duration	User adjustable from 45 dBA to 65 dBA (-0/+6 dBA @ 1 m)
Bipolar	940 Hz ± 5%	Entire activation duration	User adjustable from 45 dBA to 65 dBA (-0/+6 dBA @ 1 m)

Energy output characteristics

Mode	Rated load (Ω)	Rated output power (W)	Max peak voltage (V)	Current nominal max (A)	Typical crest factor†	Duty cycle
Monopolar CUT						
PURE	300	300	1287	1.25	1.6	100%
BLEND	300	200	2178	1	2.2	50%
VALLEYLAB	300	200	2783	1	3.2	25%
Monopolar COAG						
FULGURATE	500	120	3448	1	5.4	6.25%
SHARED FULGURATE	500	120	3448	1	5.4	6.25%
SPRAY	500	120	3932	1	6.2	4.76%
SHARED SPRAY	500	120	3932	1	6.2	4.76%
SOFT	100	120	264	1.55	1.5	100%
Bipolar						
PRECISE	100	70	184	1	1.8	100%
STANDARD	100	70	415	1.78	1.8	100%
MACRO	100	70	530	2	1.7	100%

†At rated load.

Auto bipolar system

Interrogation frequency	434 kHz ±10%
Interrogation current	<10 μA_{RMS} averaged over 1 second
Activation impedance	≤2200 Ω ±20%
Deactivation impedance	>4000 Ω ±25%
Keying delay	User selectable in 0.5 second increments from 0.0 seconds to 2.5 seconds

Saved settings

These represent the number of memory slots or settings that can be saved.

Total number of Groups	10
Total number of Favorites	6 Favorites per Group
Total number of Recents	6 Recent preferences† per Group

†Recents are automatically saved after an activation occurs following a settings change.

References:

1. Based on internal memo #RE00256209 rev A, Valleylab™ FT10 memo control system resolution in VLFT10GEN. March 2020.
2. Based on internal report #RE00005401, Product validation of Valleylab™ FT10 surgeon & nurse evaluation in simulated use. January–February 2015.
3. Based on report #PT00093618 rev C, Valleylab™ FT10 energy platform User Guide. 2019.
4. Based on report #TCG070WVLQEPNN-AN00 (KYOCERA) display specification. 2023.

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