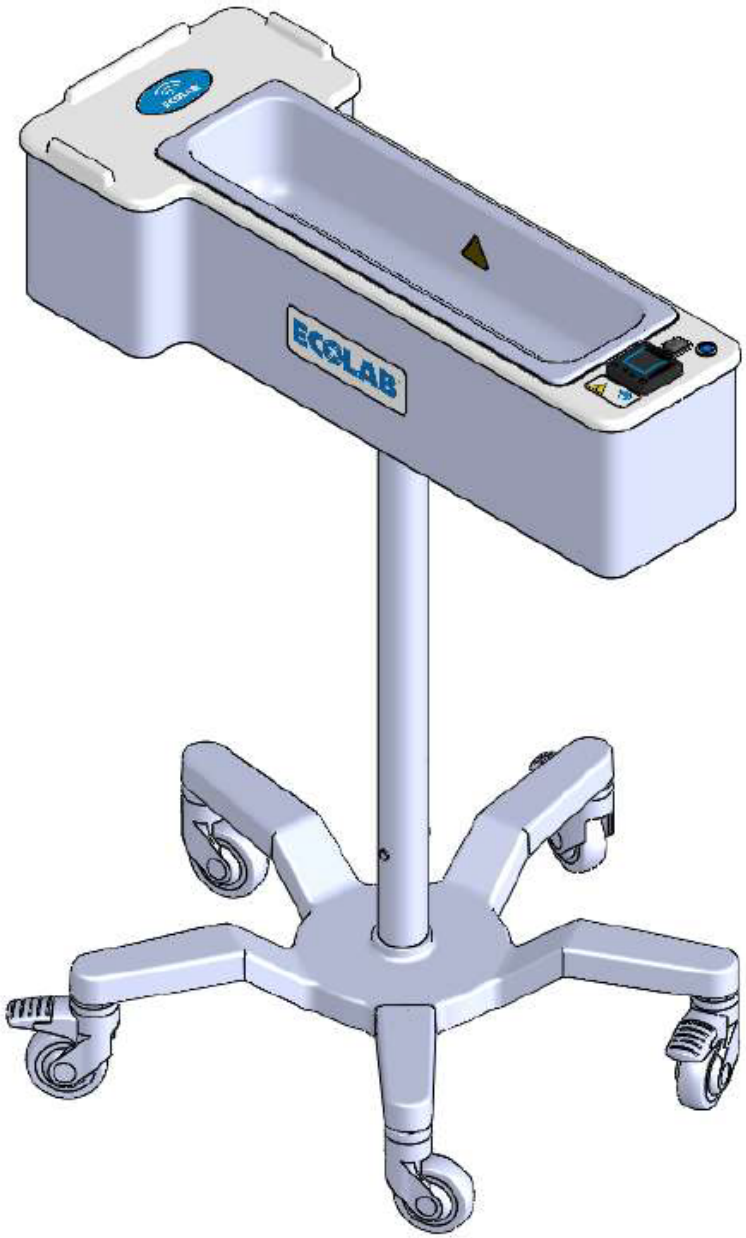
Ecolab Fluid Warmer
EFW5L
Operator's Manual



Contents

Rx ONLY Federal (USA) law restricts this device to sale by or on the order of a physician.

1 Introduction

1.1 Intended Use / Indications for Use

The Ecolab Fluid Warmer (EFW5L) is designed to warm and maintain the temperature of surgical solutions prior to their use. The Ecolab Pillow Drape (EPD400/EPD400N) is a single-use equipment cover intended for use where warm irrigation is required.

1.2 Contraindications

No direct patient contact. Not intended as a blood warmer, tissue bath, or patient bath.

1.3 Important Labels and Indicators

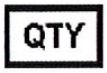
- Power: When lit, indicates the EFW5L fluid warming machine is on.
- Temperature Control
  - Upper indicator (PV – Present Value) indicates present temperature of solution.
  - Lower indicator (SV – Set Value) indicates the temperature to which the solution is set to warm.
  - AL lights when Present Value is 2°C (4°F) greater than Set Value.
  - SP1 lights when heating element is active.
  - SP2 is not applicable.
  - Used to increase/decrease temperature setting (SV).
  - "Drape Unit" indicates the correct Ecolab drape is not installed or that the Ecolab drape has reached its 24h expiration.

Explanation of Labels/Symbols:

Symbol	***Symbol Title*** *(Symbol Description)*	***Standard Title***	***Reference***
EC REP	**Authorized representative in the European Community** Indicates the authorized representative in the European Community.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.4.4 FDA Recognition #5-112
	**Disposal of Electrical and Electronic Equipment (EEE)** Indicates that this product shall not be treated as household waste and instead shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.	N/A	N/A
CE	**CE Mark European Conformity** Indicates the medical device is in conformance with the applicable European Union Directives.	N/A	N/A

Symbol	*Symbol Title* *(Symbol Description)*	*Standard Title*	*Reference*
	**Global Trade Item Number (GTIN)** Identifies the unique GTIN associated with the product.	N/A	N/A
	**Medical Device** Indicates that this item is a medical device.	N/A	N/A
	**Importer name** Any natural or legal person established within the Union that places a device on the Union market.	N/A	N/A
	**Warning, electricity** Indicates taking care to avoid coming into contact with electricity. Note: The top panel and controller should not be removed. No user serviceable parts inside.	Graphical symbols - Safety colours and safety signs - Registered safety signs	ISO 7010-W012
	**Warning, hot surface** Indicates taking care to avoid coming into contact with hot surface. Note: Allow this surface to cool before cleaning.	N/A	N/A
	**Protective earth (ground)** Source of earth ground for the device.	Graphical symbols for use on equipment	IEC 60417-5019
	**General warning sign** Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself. **Caution Sign Adjacent to Basin Heater** – Heater surface may be hot **Caution Sign Adjacent to Rating Label** – Use only specified fuse	Graphical symbols - Safety colours and safety signs - Registered safety signs Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 7010-W001 ISO 15223-1 Reference #5.4.4 FDA Recognition #5-117

Symbol	***Symbol Title*** *(Symbol Description)*	***Standard Title***	***Reference***
	**General warning sign** Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself.	Graphical symbols - Safety colours and safety signs - Registered safety signs Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 7010-W001 ISO 15223-1 Reference #5.4.4 FDA Recognition #5-117
	**Volume** Indicates the fluid volume capacities for the basin.	N/A	N/A
	**ETL listed mark** Certifies that EFW5L conforms to IEC 60601-1 3rd Edition Standard as tested by a 3rd Party Laboratory.	N/A	N/A
	**NFC** Indicates that this is where the pillow drape and NFC tag should be placed.	N/A	N/A
	**Manufacturer** Indicates the medical device manufacturer, as defined in EU Directives 90/385/EEC, 93/42/EEC and 98/79/EC.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.1.1 FDA Recognition #5-117
	**Date of manufacture** Indicates the date when the medical device was manufactured.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.1.3 FDA Recognition #5-117

Symbol	***Symbol Title*** *(Symbol Description)*	***Standard Title***	***Reference***
	**Serial number** Indicates the manufacturer's serial number so that a specific medical device can be identified.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.1.7 FDA Recognition #5-117
	**Follow instructions for use** Indicates that the instruction manual or booklet must be read.	Graphical symbols - Safety colours and safety signs - Registered safety signs	ISO 7010-M002
	**Consult instructions for use** Indicates the need for the user to consult the instructions for use.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.4.3 FDA Recognition #5-117
	**Warning, use correct fuse** Replace fuse as indicated.	N/A	N/A
	**Loaded mass** Indicates equipment mass including working load.	N/A	N/A
	**Quantity** Indicates the number of units per package.	N/A	N/A
	**Catalogue number** Indicates the manufacturer's catalogue number so that the medical device can be identified.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.1.6 FDA Recognition #5-117
	**For professional use only** Caution: Federal (USA) law restricts this device to sale by or on the order of a physician.	N/A	N/A
	**No pushing** Indicates to prohibit pushing against an object. Note: Do not push with casters locked or blocked to prevent tipping.	Graphical symbols - Safety colours and safety signs - Registered safety signs	ISO 7010-P017
	**No sitting** Indicates to prohibit sitting on a surface.	Graphical symbols - Safety colours and safety signs - Registered safety signs	ISO 7010-P018

Symbol	***Symbol Title*** *(Symbol Description)*	***Standard Title***	***Reference***
	**No stepping on surface** Indicates to prohibit stepping onto a surface.	Graphical symbols - Safety colours and safety signs - Registered safety signs	ISO 7010-P019
	**No leaning on surface** Indicates to prohibit leaning on a surface.	N/A	N/A
	**Do not use if package is damaged** Indicates a medical device that should not be used if the package has been damaged or opened.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.2.8 FDA Recognition #5-117
	**Temperature Limit** Indicates safe temperature range during transport and storage of EFW5L.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.3.7 FDA Recognition #5-117
	**Humidity Limit** Indicates safe humidity range during transport and storage of EFW5L.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.3.8 FDA Recognition #5-117
	**Atmospheric Pressure Limitation** Indicates safe range of atmospheric pressure during transport and storage of EFW5L.	Medical devices - Symbols to be used with medical device labels, labelling and information to be supplied - Part 1: General requirements	ISO 15223-1 Reference #5.3.9 FDA Recognition #5-117
	**FCC Certification Mark** Certifies that EFW5L has been tested and found to be in compliance with Federal Communication Commission (FCC) standards.	Radio Frequency Devices	Title 47 CFR Part 15

Symbol	*Symbol Title* *(Symbol Description)*	*Standard Title*	*Reference*
IC	**IC Certification Mark** Certifies that EFW5L has been tested and found to be in compliance with Industry Canada (IC) standards.	Information Technology Equipment (including Digital Apparatus)	IC ICES-003

Table 1: Labels and Symbols

1.4 Warnings and Precautions

- EFW5L is designed for use by Healthcare professionals.
- EFW5L is designed for transport and storage in indoor ambient temperature and humidity conditions: -18ºC to 60ºC (0ºF to 140ºF), 15% to 90% RH, 70 to 106 kPa atmospheric pressure.
- EFW5L is designed for use in indoor ambient temperature and humidity conditions: 16°C to 27°C (60°F to 80°F), 45% to 60% RH, 70 to 106 kPa atmospheric pressure.
- EFW5L is not designed for use, transport, or storage in an oxygen rich environment.
- EFW5L is not designed for use, transport, or storage in the presence of flammable anesthetics
- Position EFW5L to allow for easy removal of power cord from power outlet. Power cord must be disconnected from outlet to isolate EFW5L from external power supply.
- Warning: No direct patient contact! Do not place a patient (e.g. an infant) or any part of a patient into, on, or against EFW5L or into direct contact with the warming basin. Contact may cause thermal injury.
- Warning: To avoid risk of electric shock, this equipment must only be connected to a supply main with protective earth.
- Warning: Risk of Fire: Replace fuse as marked. Refer to Rating Label and Section 9.3 for Fuse information.
- Warning: Do not sit or stand on EFW5L.
- Warning: Do not transport at an incline of greater than 5°.
- Warning: Do not transport while unit is draped and surgical solution is present.
- Warning: No modification of this equipment is allowed.
- Warning: Grounding reliability can only be achieved when this equipment is connected to an equivalent receptacle marked “Hospital Only” or “Hospital Grade.”
- Warning: Do not operate without approved Ecolab drape and recommended fluid volumes.
- Warning: Power must be off until minimum fluid level is poured into drape.
- Caution: Electric shock hazard, do not remove protective panel. Refer servicing to qualified service personnel.
- Caution: Make sure that the warmer is turned off before unplugging the power cord.
- Warning: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

- Warning: Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
- Warning: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the EFW5L including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- Note: The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

2 Specifications

- Power: 120VAC, 50/60Hz, 4.50A OR 230VAC, 50/60Hz, 2.30A
- Fuse:
  - 120VAC, T5.0AL, 250VAC (5x20mm) Time delay low breaking capacity fuse
  - 230VAC, T3.15AL, 250VAC (5x20mm) Time delay low breaking capacity fuse
- Temperature Scale: Celsius or Fahrenheit – user selectable
- Basin Temperature Set Point: 20° to 49° ± 1°C (68° to 120° ± 2°F)
- Use with single-use Ecolab Scope Warmer Pillow Drape (EPD400/EPD400N)
- Minimum fluid volume: 1.0L
- Maximum fluid volume: 5.5L
- Maximum working fluid volume: 4.5L
- Equipment mass including working load (unit, cord, fluid, scopes): 18.958 Kg
- Equipment mass unloaded (unit, cord): 6.658 Kg
- Adjustable Pole and Base mass (EFW-ABA): 6.03 Kg
- Non-adjustable Pole and Base mass (EFW-FBA): 5.33 Kg
- The device provides no protection against water.
- The EFW5L has been evaluated with respect to electromagnetic compatibility, electric shock, fire and mechanical hazards in accordance with EN IEC 60601-1, ANSI/AAMI/ES 60601-1:2005/A2:2021

Guidance and manufacturer's declaration – electromagnetic emissions		
EFW5L is intended for use in the electromagnetic environment specified below. The customer or the user of EFW5L should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment –**
RF emissions CISPR 11	Group 1	EFW5L uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	
Harmonic emissions IEC 61000-3-2	Complies	
Voltage fluctuations and flicker emissions IEC 61000-3-3	Complies	

Table 2: Guidance and Manufacturer's Declaration – Electromagnetic Emissions

Guidance and manufacturer's declaration – electromagnetic immunity			
EFW5L is intended for use in the electromagnetic environment specified below. The customer or the user of EFW5L should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/ burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.

Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 secs	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 secs	Mains power quality should be that of a typical commercial or hospital environment. If the user of EFW5L requires continued operation during power mains interruptions, it is recommended that the EFW5L be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30.0 A/m	30.0 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. Portable and mobile RF communications equipment should be used no closer to any part of EFW5L including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Reference Table 5: Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 6 Vrms ISM bands 150 kHz to 80 MHz	3 Vrms 6 Vrms	$d=1.2\sqrt{P}$ **Reference Table 5: Recommended Separation Distance**
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m	$d=1.2\sqrt{P}$ 80 MHz to 800 MHz $d=2.3\sqrt{P}$ 800 MHz to 2.7 GHz **Reference Table 5: Recommended Separation Distance**

Proximity Magnetic Fields IEC 61000-4-39	65A/m (rms), PM at 2.1 kHz, 50% duty cycle, 134.2kHz; 7.5A/m (rms), PM at 50 kHz, 50% duty cycle, 13.56MHz	65A/m (rms), PM at 2.1 kHz, 50% duty cycle, 134.2kHz; 7.5A/m (rms), PM at 50 kHz, 50% duty cycle, 13.56MHz	
			Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

Table 3: Guidance and Manufacturer's Declaration - Electromagnetic Immunity

NOTE – Ut is the a.c. mains voltage prior to application of the test level.

NOTE 1 – At 80MHz and 800MHz the higher frequency range applies.

NOTE 2–These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

NOTE 3 – This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

NOTE 4 - This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: 1) L'appareil ne doit pas produire de brouillage; 2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NOTE 5 – The fluid warmer wireless operation is safe and complies to RF exposure requirements.

NOTE 6 – Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE 7 - This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Proximity Fields from RF Wireless Communication Equipment IEC/EN-61000-4-3					
Frequency (MHz)	**Modulation**	**Field Strength (V/m)**	**Polarity (H/V)**	**Location**	**Description of Susceptibility**
385	Pulse Modulation[1] 18Hz	27	H & V	All Four Sides of the EUT	No susceptibility was observed.
450	FM 1kHz sine	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
710	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.
745	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.
780	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.
810	Pulse Modulation[1] 18Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
870	Pulse Modulation[1] 18Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
930	Pulse Modulation[1] 18Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed
1720	Pulse Modulation[1] 217Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
1845	Pulse Modulation[1] 217Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
1970	Pulse Modulation[1] 217Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
2450	Pulse Modulation[1] 217Hz	28	H & V	All Four Sides of the EUT	No susceptibility was observed.
5240	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.
5500	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.
5785	Pulse Modulation[1] 217Hz	9	H & V	All Four Sides of the EUT	No susceptibility was observed.

[1]The carrier shall be modulated using a 50% duty cycle square wave signal.
Dwell Time: 3 seconds

Table 4: Proximity Fields from RF wireless communications equipment

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which EFW5L is used exceeds the applicable RF compliance level above, EFW5L should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating EFW5L.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and EFW5L	
EFW5L is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of EFW5L can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and EFW5L as recommended below, according to the maximum output power of the communications equipment.	
Rated maximum output power of	**Separation distance according to frequency of transmitter** m

transmitter W	150 kHz to 80 MHz $d=1.2\sqrt{P}$	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 2.5 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer. NOTE 1–At 80 MHz to 800 MHz, the separation distance for the higher frequency range applies. NOTE 2–These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

Table 5: Recommended Separation Distances

EFW5L Unit

Model Number	Description
EFW5L	Ecolab Fluid Warmer

Table 6: EFW5L Unit

Power Cord

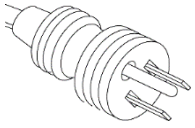
Figure	Model	Voltage	Plug Type	Main Region Used
	CTP25NA-B	120V	Type B (Hospital Grade)	United States, Canada, Columbia, Costa Rica, Ecuador, Dominican Republic, Mexico
	EFW25NA-B	120V	Type B (Hospital Grade)	United States, Canada, Columbia, Costa Rica, Ecuador, Dominican Republic, Mexico
	CTP25UK-G	230V	Type G	United Kingdom, Hong Kong, Ireland, Singapore, United Arab Emirates, Saudi Arabia, Bahrain, Kuwait, Qatar

Table 7: Power Cord

3 Operating Characteristics

- Maximum fluid Set Point temperature: 49°C (120°F)
- Minimum fluid Set Point temperature: 20°C (68°F)
- Warmer Basin fluid volume for use: 1.0-4.5 L
- Language supported: English
- Wheel Locks: Locks the wheels to prevent unintended movement of EFW5L.

- Warmer Basin: Basin with integrated heat source which supports drape and holds up to 4.5L of fluid.
- Power Cord Hook: Provides storage for power cord when EFW5L is not in use.

3.1 Power Connection

The EFW5L is a dual voltage system designed to work when connected to a 120 or 230 VAC 50/60 Hz Power Source.

3.2 Temperature Control System

To ensure the safe use of warm fluid, the basin heater controls may be set at a temperature between 20°C and 49°C (68°F and 120°F) by the user. A new temperature range may be selected by the user, within this existing temperature range. The temperature scale may be set to either Celsius or Fahrenheit by the user. Do not operate heater without a minimum of 1.0 liters of fluid in the basin.

3.3 EFW5L Drapes

The system should be used with single-use Ecolab Scope Warmer Pillow Drapes (EPD400/EPD400N).

4 Assembly Instructions

4.1 Assembling EFW5L

Refer to Figure 1.

a. Remove all items from the box.
b. Confirm the contents of the box with this list:
   1 ea. **Column (1)** (Fixed (4784) or Adjustable (5239))
   1 ea. **Ecolab Fluid Warmer Base (2)** with wheels, three lockable (101735)
   If you do not have all parts, please contact Ecolab/Microtek Customer Service at 1-800-824-3027 (North America) or +31 575 599200 (Europe).
c. Confirm that an **Ecolab Fluid Warmer Unit (3)** (EFW5L or EFW6L) and the **K-23 Mounting Kit (4) (**containing 4 ea. ¼”-20 Phillips Head Screws and 4 ea. Washers) supplied with the Warmer are available. Ensure that the Warmer is unplugged.
d. Remove the bubble-wrap from the cord and place the bubble-wrap on a stable flat surface.
e. Place the Warmer on the bubble-wrap, on its side, with handle facing the ceiling. Ensure that the Warmer is stable.
f. Align the mounting plate holes of the Column with the mounting holes of the Warmer. Use 4 ea. ¼”-20 Phillips Head Screws and 4 ea. Washers from the K-23 Mounting Kit supplied with your Warmer to secure the Warmer to the Mounting Plate.
g. Place the Base on the floor next to the Warmer with the wheels locked and facing down.

h. Pick up the Warmer with attached Column and insert the Column into the Base. Press firmly to seat the Column to the Base.

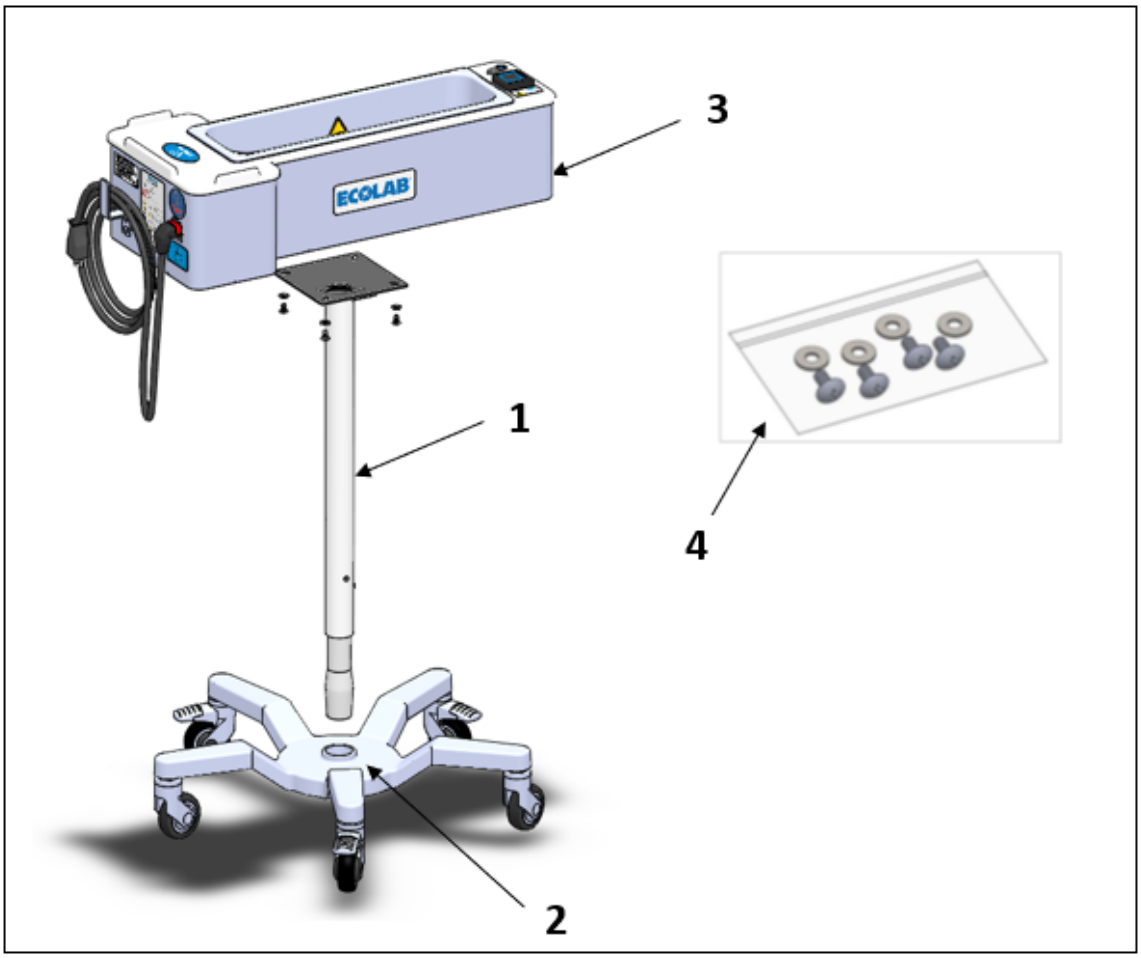


Figure 1: Assembly

5 Controls, Indicators, and Components

Refer to Figure 2. This section provides a quick description of the controls, indicators, and components of EFW5L.

Item	Name	Description
1	Power Indicator Light emitting diode (LED)	Blue LED that lights up when the warmer system is turned on.
2	Power Switch	Controls power to the warmer system.
3	Controller	Shows Set Point temperature, Current fluid temperature, and error messages during operation.
4	+ Button	Button on the controller used to increase Set Point temperature and to scroll between selections in *Operations* menu.
5	Numeric Slider	Slider on the controller that allows the user to increase (slide in the direction of the + Button) or decrease (slide in the direction of the – Button) the Set Point temperature by more than 1 degree at a time. Not recommended for use with a drape.
6	– Button	Button on the controller used to decrease Set Point Temperature and to scroll between selections in *Operations* menu.
7	Fn Button	No programmed function.
8	Right Arrow Button	Button on the controller used to enter selected submenu.
9	Left Arrow Button	Button on the controller used to return to previous submenu.
10	Home Button	Button on the controller that returns the screen to home after viewing the *Operations* menu.
11	Warmer Basin	Basin with integrated heat source which supports drape and warms fluids.
12	Handle	Can be gripped to move the unit when the wheels are unlocked.
13	Power Cord Hook	Provides storage for power cord when unit is not in use.
14	Power Cord	Connects to unit and to electrical wall socket to provide power to the unit.
15	Wheel Locks	Locks the wheels to prevent unintended movement of the unit.

Table 8: Controls, Indicators, and Components

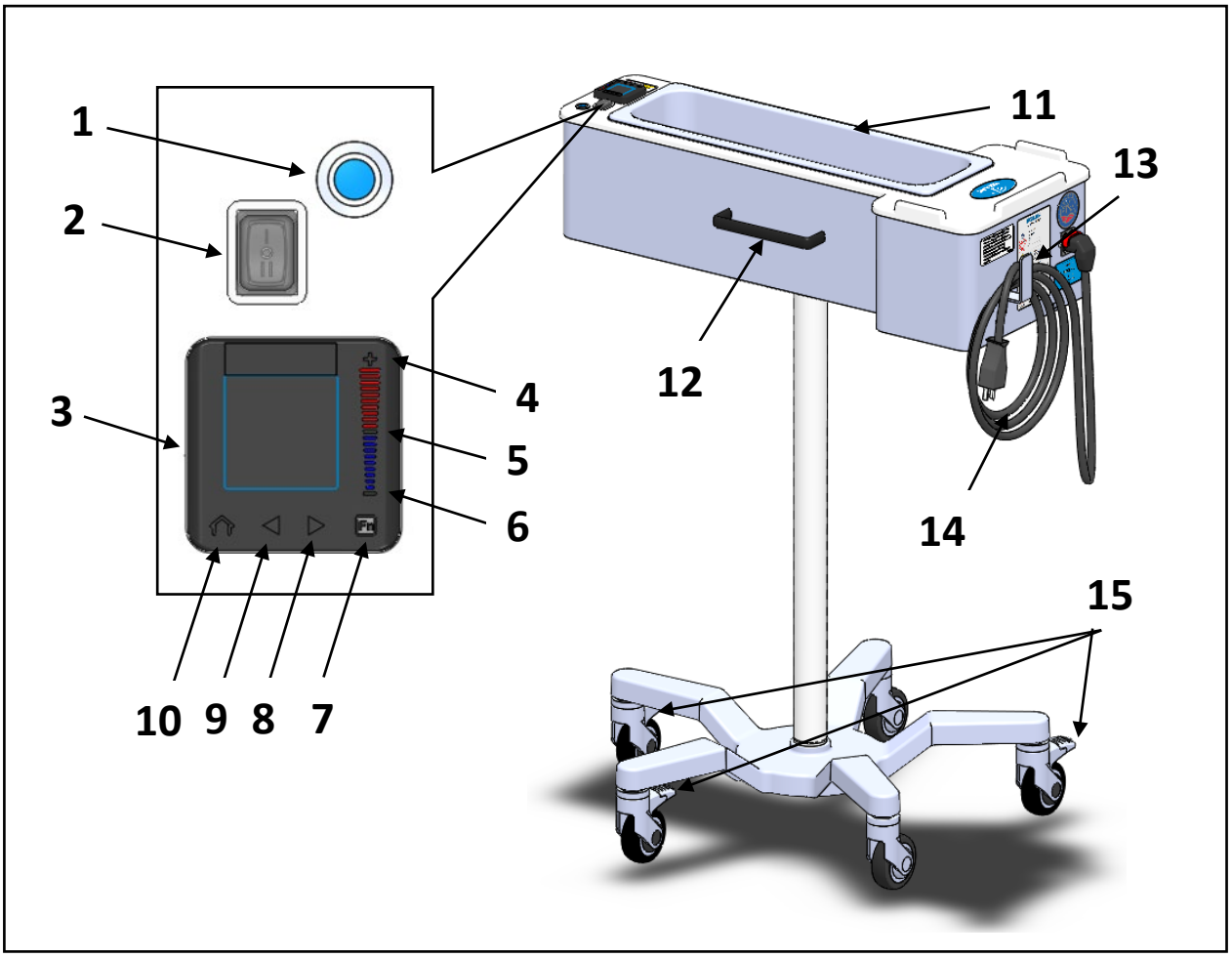


Figure 2: Controllers, Indicators, and Comonents

Refer to Figure 3. The home screen displays the Current fluid temperature (**1**) on the upper display in red font and the Set Point temperature (**2**) on the lower display in green font in the selected temperature scale (°F or °C). The numbers in red font (**3**) located below the Set Point temperature serve for informational purposes only and have no programmed function. See Section 7.3.

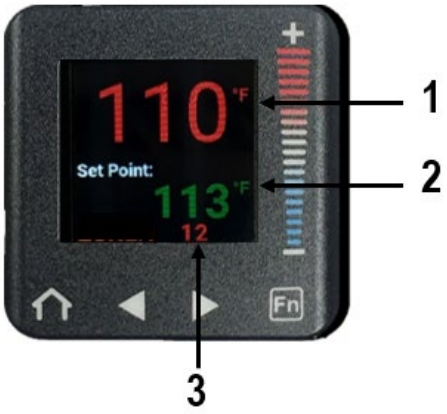


Figure 3: Controller Home Screen

6 Installation and Setup

All personnel using EFW5L should fully understand the Instructions for Use prior to using the device. Review the instructions in this manual and become familiar with all controls and functions before operating EFW5L in an operating room.

6.1 Locking/Unlocking the Wheels

Prior to first use, engage and disengage all three (3) wheel locks a total of five (5) times to break in the locking mechanism.

Lock/Unlock the wheels as follows:

EFW5L has three wheels with **Wheel Locks**.

- Lock the wheels by pressing down on the **Wheel Locks** until they remain in the down position.
- Unlock the wheels by lifting the **Wheel Locks** until they remain in the neutral position.

Unlock the wheels before moving EFW5L, and make sure the wheels are locked once it is in position.

6.2 Moving EFW5L

Move the unit as follows:

a. Remove fluid from EFW5L basin before moving.
b. Keep hold of the Handle on the EFW5L unit at all times during movement.
c. Be sure that the floor area near EFW5L is free from cables, cords, thresholds, or any other obstructions.
d. Once EFW5L is in position, use the Wheel Locks to prevent any unintended movement.

6.3 Height Adjustment Column Only

Refer to Figure 4. EFW5L can be raised or lowered as follows:

a. Lock the **Wheel Locks** (1) to prevent unintended movement of the unit during adjustment.
b. Find the current location of the **Height Adjustment Pin** (2).
c. Hold the column with one handle and use the other hand to remove the pin.
d. Slide the column up or down until the pin hole lines up with the hole associated with the desired height.

e. Insert the pin into the hole until the spring-loaded ball clicks into place.

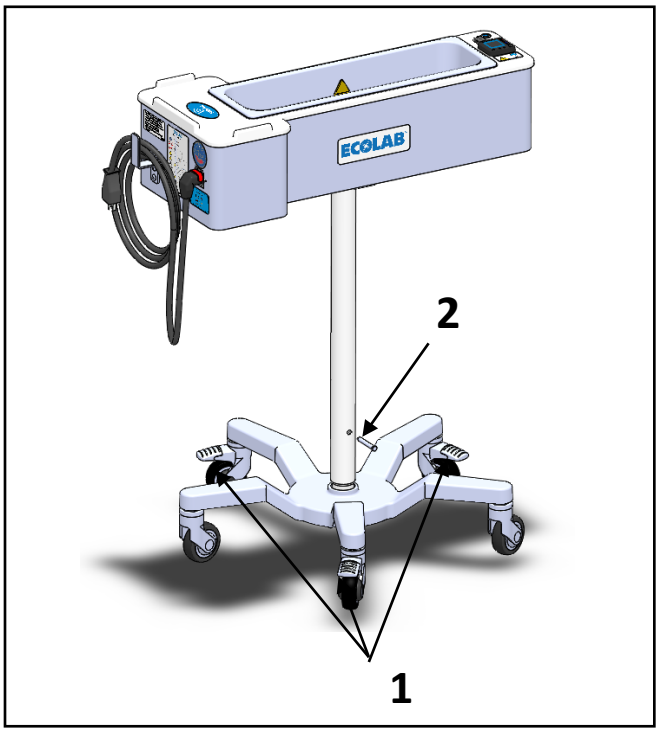


Figure 4: Adjusting EFW5L

6.4 Connecting and Disconnecting the Power Cord

Procedures described in this section should only be performed by qualified service personnel.

6.4.1 Connecting the Power Cord to EFW5L

Refer to Figure 5. Connect the power cord as follows:

a. Locate the Power Cord Kit.
b. Locate female end with red locking button (1) and plug it into EFW5L power inlet (2). You should hear an audible click when plug is secured.
c. Plug male end into a wall outlet.
d. When ready for use, power on EFW5L by pressing the on side (3) of the Power Switch (Section 7.1).

6.4.2 Disconnecting the Power Cord from EFW5L

Refer to Figure 5. Disconnect the power cord as follows:

a. Press the off side (4) of the Power Switch to power off the unit.
b. Unplug male end from wall outlet.

c. Pull back red lock button (5) and disengage female end from EFW5L.

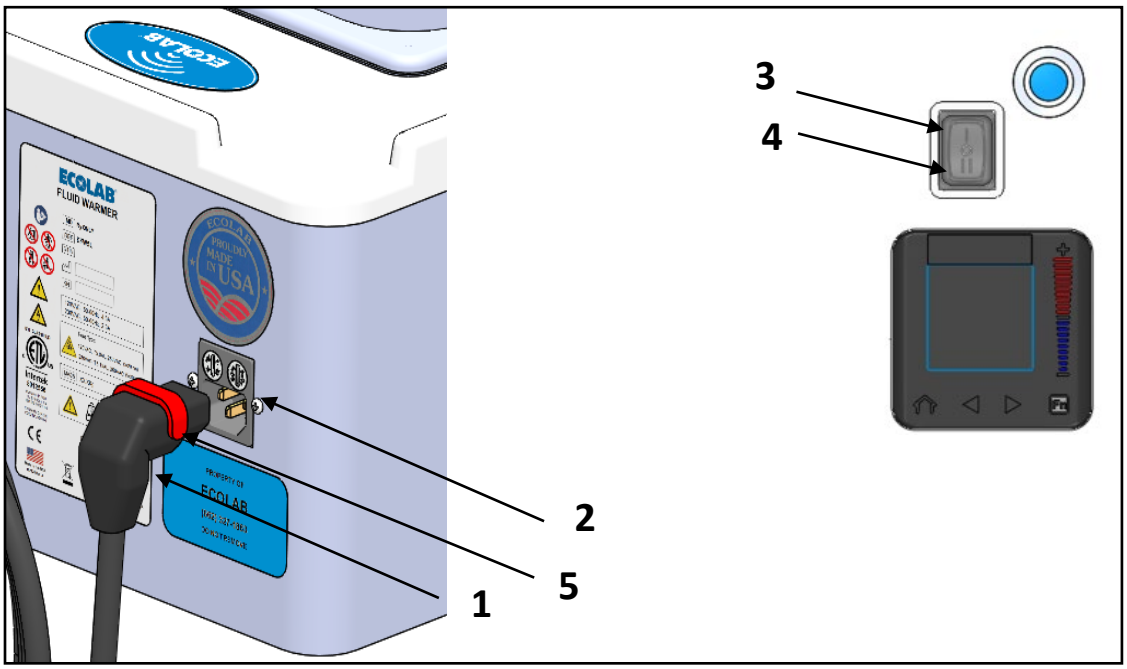


Figure 5: Connecting and Disconnecting the Power Cord

6.5 Fuse Installation

Procedures described in this section should only be performed by qualified service personnel.

Refer to Figure 6. Install the fuses as follows:

a. Locate the Fuses (1) in the Power Cord Kit box.
b. Confirm the Fuses are sized correctly for local power system:
    a) 120VAC, T5.0AL, 250VAC (5x20mm)
    b) 230VAC, T3.15AL, 250VAC (5x20mm)
c. Using flat-tip screwdriver, unscrew and pull out two Fuse Holders (2).
d. Insert Fuses into Fuse Holders.

e. Insert Fuse Holders into CoreTemp and secure with Screwdriver.

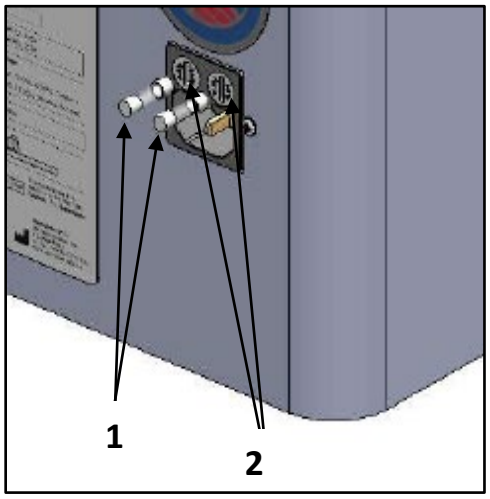


Figure 6: Fuse Installation

6.6 Initial Setup

Follow the steps below for initial setup of the warmer system. All of the settings referenced in this section will remain set when EFW5L is turned off and then turned back on.

6.6.1 Temperature Scale Function

Temperature readings can be displayed in either Fahrenheit or Celsius.

Change the temperature scale as follows:

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. (“Display Units 1” will be selected in a red font.)

b. Press the **right arrow button** to enter the *Display Units* submenu.

c. Press the **"+"** or **"–" buttons** to scroll up or down to select °C or °F. The scale selected will be in red font.

Note: The temperature scale cannot be changed if the Set Point temperature is locked. See Section 6.6.3 to lock and unlock the Set Point temperature.

d. Press the home button to return to the home screen with the Temperature Scale now set to the desired unit.

6.6.2 Adjusting Set Point Temperature

The home screen displays the Current fluid temperature (**1**) on the upper display in red font and the Set Point temperature (**2**) on the lower display in green font in the selected temperature scale (°F or °C). The Set Point temperature can be adjusted by the user.

Note: If the Set Point was requested to be locked by the factory, the ability to adjust the Set Point by the user is disabled.

Note: If a valid EPD400 drape is not detected, the controller will display “Drape Unit” and the ability to adjust the Set Point by the user is disabled.

To adjust the Set Point temperature:

a. From the home screen,
   - Press the **"+" button** to increase the Set Point temperature by increments of 1 degree.
   - Press the **"–" button** to decrease the Set Point temperature by increments of 1 degree.
   - Press and hold the **"+"** or **"–" buttons** to adjust the Set Point Temperature by more than 1 degree at a time.

b. When the user has stopped adjusting the Set Point temperature, the Set Point temperature display will flash green to confirm that the desired Set Point has been accepted.

6.6.3 Locking and Unlocking the Set Point Temperature Controls

The Set Point Temperature can be locked to a specific temperature or unlocked to allow the user to adjust the temperature as desired.

Note: When the set point temperature is locked, the temperature scale, password enable, and set point temperature range features are also locked and cannot be adjusted.

6.6.4 Locking the Set Point Temperature:

a. From the home screen, follow the directions in Section 6.6.2 to adjust the Set Point temperature to the desired Set Point.
b. From the home screen, press the **right arrow button** to navigate to the *Operations* menu ("Display Units 1" will be selected in a red font).

c. Press the **"–" button** to scroll down to "Factory" ("Factory" will be in a red font when selected).

d. Press the **right arrow button** to enter the *Factory* submenu ("Lock" will be selected in a red font).

e. Press the **right arrow button** to enter the *Lock 1* submenu ("Operations Page" will be selected in a red font.)

f. Press the **right arrow button** to enter the *Operations Page* submenu.

g. Ensure that the number displayed is set to “3.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “3.”

h. Press the **right arrow button** to enter the *Password Enable* submenu. (“Off” will be selected in a red font.)

i. Press the **right arrow button** to enter the *Read Lock* submenu.

j. Ensure that the number displayed is set to “2.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “2.”

k. Slowly press the **right arrow button** to enter the *Write Security* submenu.

l. Ensure that the number displayed is set to “0.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “0.”

(Note: If the screen flashes, you may have scrolled too far and the number will not save. If so, press the home button to return to the home screen and repeat steps a-l.)

(Note: When the set point temperature is locked (write security is set to 0), the temperature scale, password enable, and set point temperature range features are also locked and cannot be adjusted.)

m. Press the **home button** to return to the home screen. The Set Point temperature is now locked.

n. To confirm that the Set Point temperature is successfully locked, press the **“+”** or **“–” buttons** to attempt to increase or decrease the Set Point temperature. The Set Point temperature should not change. If you are able to adjust the Set Point temperature, repeat the steps in Section 6.6.4.

6.6.5 Unlocking the Set Point Temperature

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu (“Display Units 1” will be selected in a red font).

b. Press the **“–” button** to scroll down to “Factory” (“Factory” will be selected in a red font).

c. Press the **right arrow button** to enter the *Factory* submenu. (“Lock” will be selected in a red font).

d. Press the **right arrow button** to enter the *Lock 1* submenu. (“Operations Page” will be selected in a red font.)

e. Press the **right arrow button** to enter the *Operations Page* submenu

f. Ensure that the number displayed is set to “3.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “3.”

g. Press the **right arrow button** to enter the *Password Enable* submenu. (“Off” will be selected in a red font.)

h. Press the **right arrow button** to enter the *Read Lock* submenu.

i. Ensure that the number displayed is set to “2.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “2.”

j. Slowly press the **right arrow button** to enter the *Write Security* submenu.

k. Ensure that the number displayed is set to “5.” If it is not, press the **“+”** or **“–” buttons** to increase or decrease the number displayed until it is set to “5.” (**Note:** If the screen flashes, you may have scrolled too far and the number will not save. If so, press the home button to return to the home screen and repeat steps a-l.)

l. Press the **home button** to return to the home screen with the Set Point temperature now unlocked.

m. To confirm that the Set Point temperature is successfully unlocked, press the **"+"** or **"–" buttons** to attempt to increase or decrease the Set Point temperature. The Set Point temperature should change. If you are unable to adjust the Set Point temperature, repeat the steps in Section 6.6.5.

6.6.6 Setting a new Set Point Temperature Range within the Factory Set Point Temperature Range

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. ("Display Units 1" will be selected in a red font).

b. Press the **"–" button** to scroll down to "Minimum Set Point 1" ("Minimum Set Point 1" will be in a red font when selected).

c. Press the **right arrow button** to enter the *Minimum Set Point* submenu.

d. Press the **"+"** or **"–" buttons** to increase or decrease the number displayed, until the desired Minimum Set Point is shown.
   - The user cannot set this value below 68°F (20°C).

e. Press the **right arrow button** to enter the *Maximum Set Point* submenu.
f. Press the **"+"** or **"–" buttons** to increase or decrease the number displayed, until the desired Maximum Set Point is shown.
   - The user cannot set this value above 120°F (49°C).

g. Press the **home button** to return to the home screen with the Set Point Temperature range now updated.

6.6.7 Enabling and Disabling Password Protection

Enabling the password provides a second layer of security on the unit. If the password is enabled, the user will be prompted for the password before any setting changes can be made. After enabling the password, the unit must be restarted for the password enable feature to be activated.

(**Note:** If the set point temperature is locked (write security is set to 0), the password enable/disable feature is also locked and cannot be adjusted. Refer to section 6.6.5 to unlock the set point temperature and adjust write security to 5 prior to enabling/disabling the password.)

6.6.8 Enabling Password Protection

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. (“Display Units 1” will be selected in a red font).

b. Press the **“–” button** to scroll down to “Factory” (“Factory” will be in a red font when selected).

c. Press the **right arrow button** to enter the *Factory* submenu. (“Lock” will be selected in a red font).

d. Press the **right arrow button** to enter the *Lock 1* submenu. (“Operations Page” will be selected in a red font.)

e. Press the **“–” button** to scroll down to “Password Enable” (“Password Enable” will be in a red font when selected).

f. Press the **right arrow button** to enter the *Password Enable* submenu. (“Off” will be selected in a red font.)

g. Press the **"–" button** to scroll down to "On" ("On" will be in a red font when selected).

h. Press the **home button** to return to the home screen with the Password now enabled.

6.6.9 Disabling Password Protection

(**Note:** If the set point temperature is locked (write security is set to 0), the password enable/disable feature is also locked and cannot be adjusted. Refer to section 6.5.3.2 to unlock the set point temperature and adjust write security to 5 prior to enabling/disabling the password.)

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. ("Display Units 1" will be selected in a red font).

b. Press the **"–" button** to scroll down to "Factory" ("Factory" will be in a red font when selected).

c. Press the **right arrow button** to enter the *Factory* submenu. ("Lock" will be selected in a red font).

d. Press the "**–" button** to scroll down to "Unlock" ("Unlock will be in red font when selected).

e. Press the **right arrow button** to enter the *Unlock* submenu. (“Public Key” will be selected in a red font.

f. Press the **“–” button** to scroll down to “Password” (“Password” will be in a red font when selected).

g. Press the **right arrow button** to enter the *Password* submenu. Ensure that the number displayed is set to “156”. If it is not, press the “+“ or “-” **buttons** to increase or decrease the number displayed until it is set to “156”. Hit “Home” button to return to home screen.

h. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. (“Display Units 1” will be selected in a red font).

i. Press the **“–” button** to scroll down to “Factory” (“Factory” will be in a red font when selected).

j. Press the **right arrow button** to enter the *Factory* submenu. (“Lock” will be selected in a red font).

k. Press the **right arrow button** to enter the *Lock 1* submenu. (“Operations Page” will be selected in a red font.)

l. Press the **"–" button** to scroll down to "Password Enable" ("Password Enable" will be in a red font when selected).

m. Press the **right arrow button** to enter the *Password Enable* submenu. ("On" will be selected in a red font.)

n. Press the **"+" button** to scroll up to "Off" ("Off" will be in a red font when selected) and press **home button**.

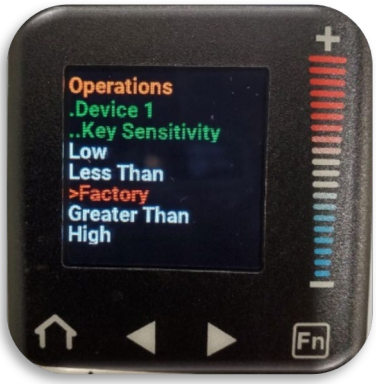
o. Press the **home button** to return to the home screen with the Password feature now disabled.

6.6.10 Changing Touchpad Sensitivity

a. From the home screen, press the **right arrow button** to navigate to the *Operations* menu. (“Display Units 1” will be selected in a red font).

b. Press the **“–” button** to scroll down to “Key Sensitivity 1” (“Key Sensitivity 1” will be in a red font when selected). Press the **right arrow button** to enter the *Key Sensitivity 1* submenu.

c. Press the **"–" button** to scroll down to the desired sensitivity setting (selected option will be in red font.)
   i. Low: 15% less sensitivity than factory settings
   ii. Less Than: 5% less sensitivity than factory settings
   iii. Factory: factory default and typical sensitivity value
   iv. Greater Than: 5% more sensitivity than factory settings
   v. High: 10% more sensitivity than factory settings



d. Press the **home button** to return to the home screen with the sensitivity setting now changed.

7 Operating Instructions

7.1 Powering On

Refer to Figure 7. Ensure the power cord is installed correctly on EFW5L (Section 6.4).

1. Plug male end into a wall outlet.
2. The **Power Switch** on top of the unit is used to turn on the system. Press the on side of the **Power Switch (1)** to power on the unit. The blue **Power Indicator LED** (**2**) will remain lit as long as the on side of the **Power Switch** was pressed and EFW5L is plugged in.

7.2 Powering Off

Refer to Figure 7.

1. Press the off side of the **Power Switch (1)** on top of the unit to power off the warming system. The blue **Power Indicator LED (2)** will turn off.
2. Unplug the male end of the power cord from the wall outlet and store on power cord hook.

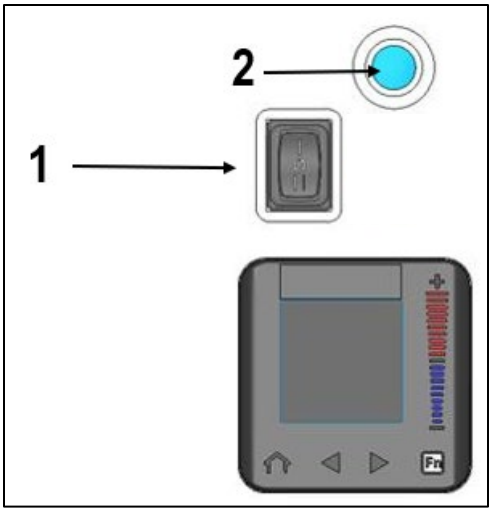


Figure 7: Power Controls

7.3 Controller

7.3.1 Home Screen Display

Refer to Figure 8. The home screen of the Controller shows the following information:

- Current Fluid Temperature (**1**) in selected temperature scale in red font on the upper display.
- Set Point Temperature (**2**) in selected temperature scale in green font in on the lower display, below the words “Set Point.”
- The numbers in red font (**3**) below the Set Point temperature offer information only and have no programmed function. Different combinations of numbers will be displayed below the Set-Point temperature indicating the state of the heater pad and the primary and secondary sensors.
    - The number “1” (**4**) in red font indicates the state of the heater pad.
        - When displayed, the heater pad is on.
        - When flashing, the heater pad is approaching the Set Point Temperature.
        - When not displayed, the heater pad is off, and the Current fluid temperature has reached the Set Point temperature.
    - The number “2” (**5**) in red font indicates the state of the secondary sensor in the heater pad.
        - When displayed, the unit is operating within its specified temperature range.
        - When flashing, the heater pad is approaching the limit of its specified range. Following the flashing, “2” will stop being displayed and “Alarm 2” will begin flashing. See Section 7.3.2 for details.
    - The number “5” (6) in red font indicates the state of the drape.
        - When displayed, the unit has successfully detected an Ecolab drape.

- When not displayed, the drape is either not installed, installed incorrectly, or expired.

The temperatures on the home screen, as shown in Figure 6, can be displayed in either degrees Celsius or degrees Fahrenheit (Section 6. 5.1)..

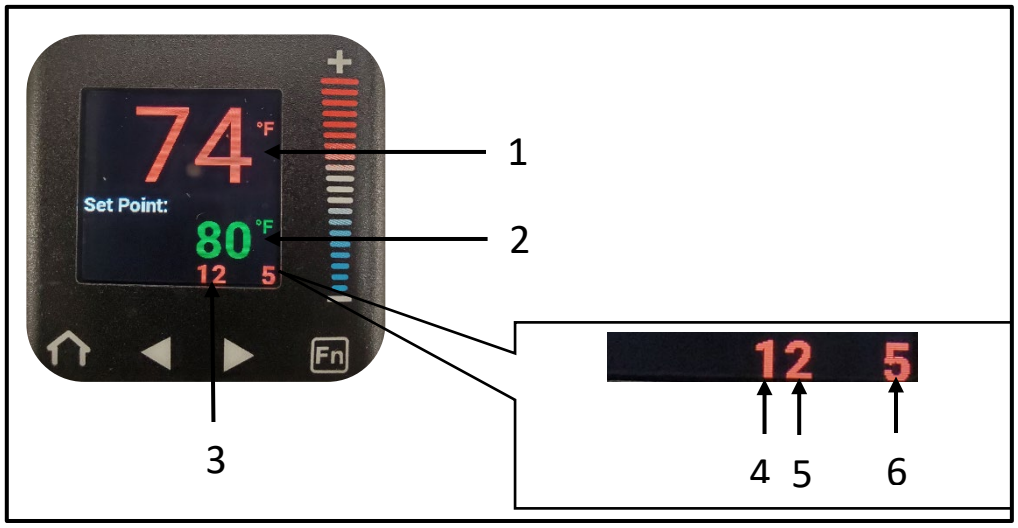


Figure 8: Controller Home Screen Display

7.3.2 Warnings

- In the event that the Current fluid temperature exceeds the Set Point temperature by 2°C (4°F) or greater, the display will show “Attention! Alarm 1: High” flashing on the screen.
  - Alarm 1 will stop flashing when the Current fluid temperature returns within the range of less than 2°C (4°F) above the Set Point temperature.

- In the event that the basin temperature exceeds 60°C (140°F), the display will show “Attention! Alarm 2: High” flashing on the screen.
  - The heater pad of the Fluid Basin will shut off to allow the system to cool. The system will resume normal heating operation when the Fluid Basin returns to normal operating temperature.

Note: The Fluid Basin temperature may exceed 60°C (140°F) if the unit was not properly draped and a minimum of 1 L of fluid was not added to the Fluid Basin prior to powering on the unit. In this event, power off the unit and ensure that the basic operation steps are followed (see Section 7.5).

7.4 Basic Operation

The following steps describe basic operation of EFW5L fluid warmer.

a. Position EFW5L and lock wheels (Section 6.1).
b. Power on the unit by pressing the “on” side of the Power Switch (Section 7.1).
c. The controller will prompt the user to “Drape Unit”.
d. Ensure unit is off and basin is dry before draping.
e. Install an Ecolab EPD400 or EPD400N drape. Adjust drape to ensure uniform contact with the basin walls (i.e. no folds that create air pockets) and NFC tag is centered over NFC label on shelf.
f. Add the desired quantity of solution into the draped basin, making sure that the minimum fluid requirements are maintained. Refer to Section 2 – Specifications for minimum fluid levels.
g. When the correct drape is installed, the Power Indicator Light and Controller will illuminate, and the unit will begin warming the fluid to the Set Point.
h. Adjust the Set Point Temperature to the desired Set Point using the “+” and “–” buttons (Section 6.5.2).
i. The maximum temperature EFW5L can be adjusted to is 49°C (120°F). Attempting to adjust the fluid temperature above 49°C (120°F) will not work. Set Point will remain at 49°C (120°F).

Note: Do not use empty graduates in the warming basin.
Note: Never turn fluid warmer on before minimum fluid requirement is added to the draped basin.

7.5 Post Procedure and Storage Steps

Refer to Figure 9.

a. Shut down EFW5L by following the steps in section 7.2.
b. Remove residual fluid and dispose in accordance with hospital guidelines.
c. Lift drape off EFW5L and dispose in accordance with hospital guidelines.
d. Unplug male end of Power Cord (1) from wall outlet.
e. Store Power Cord on Power Cord Hook (2).
f. Allow EFW5L warmer basin to cool down completely (approx. 5 minutes) and follow cleaning procedures as described in Section 9.1.
g. Unlock the wheels using the steps in Section 6.1. Using the Handle (3), move EFW5L to a storage location.

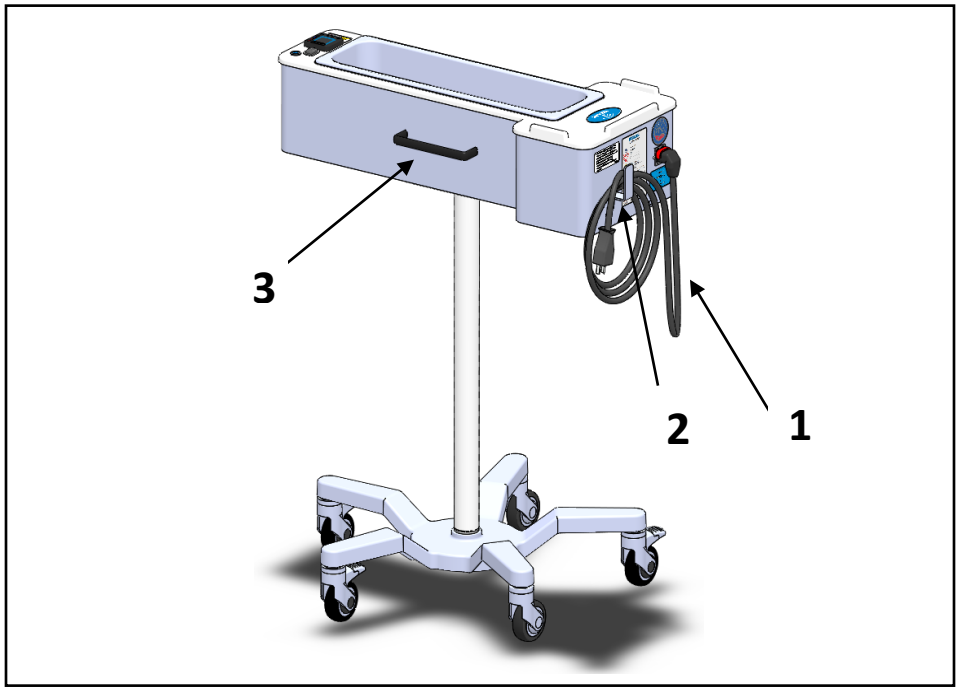


Figure 9: Storage Steps

7.6 Power Interruption

In the event of a power interruption:

a. The unit will NOT automatically restart. After main power is restored, power on the unit by following the steps in section 7.1.

8 Troubleshooting

Symptom	***Probable Cause***	***Action***
EFW5L will not power on. The Power Indicator Light is not illuminated.	Power cord not plugged in properly	Inspect power cord and verify that it is properly connected to the unit and plugged in to the wall outlet.
	No power at wall outlet	Verify that wall outlet power is turned on; check appropriate circuit breakers.
	Fuse blown.	Inspect fuses for signs that they have blown. Replace fuses as required (Section 9.3). Confirm that facility power is within specifications (Section 2).
	Internal error	Shut down and unplug the unit and contact customer service.
EFW5L does not turn off when the off side of the Power Switch is depressed.	Limit switch is damaged.	Contact customer service.
EFW5L warmer system powers on (heating begins), Controller illuminates, but the Power Indicator Light does not illuminate.	Power Indicator Light Failure	Contact customer service.
EFW5L warmer system powers on, Power Indicator Light illuminates, but the Controller does not illuminate.	Controller Failure	Contact customer service.
EFW5L powers on but warmer system does not heat.	Temperature Adjusted Incorrectly	If the Power Indicator Light is on, make sure the temperature is adjusted properly. If the temperature adjustment is correct but the unit does not heat up, contact customer service.
	Correct drape not installed or installed incorrectly.	Make sure the drape is installed correctly (Refer to section 7.4)

Symptom	***Probable Cause***	***Action***
	Internal Error	Disconnect power cord from the wall outlet to remove power from the unit for 10 seconds. Then reconnect power cord and press the on side of the Power Switch to restart the warmer system. If malfunction still exists, contact customer service.
EFW5L overheats and displays “Attention! Alarm 1: High.”	Fluid added to the warmer system exceeds Set Point Temperature by 2°C (4°F) or greater	Wait for the fluid to cool down to within 2°C (4°F) of the Set Point Temperature.
	Internal Error	Turn off the unit by pressing the off side of the Power Switch. Allow the unit to cool for 5 minutes. Press the on side of the Power Switch to restart the unit. If malfunction still exists, contact customer service.
When attempting to adjust temperature, Controller does not adjust it.	Temperature adjustment function has been locked	Refer to Section 6.6.3 to unlock temperature adjustment.
	Controller malfunction	Contact customer service.
Wheel locks broken or do not secure EFW5L in place.	Faulty wheel locks	Contact customer service.
Crack or damage to EFW5L enclosure.	EFW5L unit was damaged	Remove the unit from service. Contact customer service.
EFW5L basin has corrosion.	EFW5L was not cleaned as frequently as instructed.	Dry the basin with a lint free cloth and isopropyl alcohol after each use and scrub the basin with a non-abrasive cleanser, per cleaning guidelines (Section 9).
EFW5L controller displays unusual fluctuations in the Current Temperature.	Incorrect installation of drape.	Ensure the drape is evenly distributed and in full contact with the basin walls. If malfunction still exists, contact customer service.

Symptom	*Probable Cause*	*Action*
EFW5L controller does not reach the Set Point Temperature.	Incorrect installation of drape.	Ensure the drape is evenly distributed and in full contact with the basin walls. If malfunction still exists, contact customer service.
EFW5L Controller displays “DRAPE UNIT” message.	Drape not installed, or installed improperly.	Install EPD400/EPD400N Drape correctly (Section 7.4).
	Non-approved drape installed.	Install EPD400/EPD400N Drape correctly (Section 7.4).
	Expired drape detected.	Install new EPD400/EPD400N Drape (Section 7.4).
EFW5L does not detect drape when valid drape is installed.	Drape sensor malfunction.	Confirm you are using a valid EPD400/EPD400N drape and that NFC tag is centered over the NFC label on the shelf (see Table 1). Disconnect power cord from the wall outlet to remove power from the unit for 10 seconds. Then reconnect power cord and press the on side of the Power Switch to restart the unit. If malfunction still exists, contact customer service.

Table 9: Troubleshooting

9 Maintenance

Procedures described in this section should only be performed by qualified service personnel.

9.1 Routine Cleaning After Each Use

a. Clean the EFW5L as follows:
    a. Always allow the basin to cool down completely (approx. 5 minutes) before cleaning
    b. Clean and dry the basin after each use with a lint free cloth and isopropyl alcohol.
    c. It is important to avoid scratching the basin.
    d. Make sure the basin is completely clean and dry for next use.
b. Inspect the power cord after each use for any unusual signs of wear or abuse.
    a. If wear or abuse is noted, please contact customer service to have the power cord replaced.

9.2 Monthly Maintenance

a. Clean EFW5L with a non-abrasive cleanser and lint free cloth every month.
    i. This prevents the buildup of corrosion or staining in the basin which may be caused by normal condensation during use.
b. Inspect the power cord for any unusual signs of wear or abuse.
    ii. If wear or abuse is noted, please contact customer service to have the power cord replaced.

9.3 Fuse Replacement

Replace the fuse as follows:

a. Unplug the power cord from the wall outlet.
b. Disconnect the power cord from EFW5L (Section 6.4).
c. Use a small flat-head screwdriver to unscrew the **Fuse Caps** (**1**) on power entry module and pull out **Fuse Holder** (**2**).
d. Remove fuses from holders.
e. Acquire proper replacement fuses (Refer to section 2).
f. Install new fuses as outlined in Section 6.5.

9.4 Temperature Verification

The EFW5L warmer fluid temperature should be verified every five (5) years. The following items are required to perform this verification:

- EPD400 or EPD400N Drape
- Calibrated Fluke 51II Digital Thermometer (or equivalent)
- Shrouded 6” long Type T Thermocouple Probe

a. Install a single-use EPD400 or EPD400N Drape.
b. Add one (1) liter of saline or water to the basin.
c. Turn on EFW5L by pressing the “on” side of the **Power Switch** and allow to heat for one (1) hour.
d. Place the tip of the Thermocouple Probe into the fluid (without contacting the drape) to a point approximately .635 cm (.25 in) above the center of the basin. The temperature indicated by the calibrated thermometer should be at Set Point ± 1.5°C (2.5°F). If the temperature is not within the specified range, contact customer service.

10 Warranty Information

MAINTENANCE AND WARRANTY

The manufacturer warrants that EFW5L will meet the manufacturer’s standard written specifications then in effect and will be fit for the uses and purposes described in manufacturer’s literature. As the sole remedy for EFW5L, manufacturer, in its reasonable discretion, shall either repair or replace EFW5L that manufacturer determines did not meet this warranty at the time of shipment. This warranty does not apply to (i) damage resulting from misuse, neglect, accident or improper use by any person or entity other than manufacturer or (ii) any altered by any person or entity other than manufacturer; and/or (iii) the failure to follow the provisions of the Operator’s manual. **ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE**

DISCLAIMED. MANUFACTURER DISCLAIMS ALL LIABILITY FOR LOST PROFITS, CONSEQUENTIAL, INCIDENTAL, AND/OR SPECIAL DAMAGES.

Ecolab reserves the right to discontinue products, change specifications, designs, terms, and conditions of sale without prior notice. Ecolab's acceptance of buyer's order is expressly limited to the terms and conditions contained herein. If a buyer subsequently uses another form to place or confirm an order, it is understood that any terms or conditions contained therein inconsistent with these terms and conditions shall be of no force or affect whatsoever between the parties hereto.

11 Contact Information

Ecolab / Microtek Customer Service

North America: . . . . . (800) 824-3027

Manufactured for:
Microtek Medical, Inc.
1 Ecolab Place
St. Paul, MN 55102 U.S.A.
www.microtekmed.com