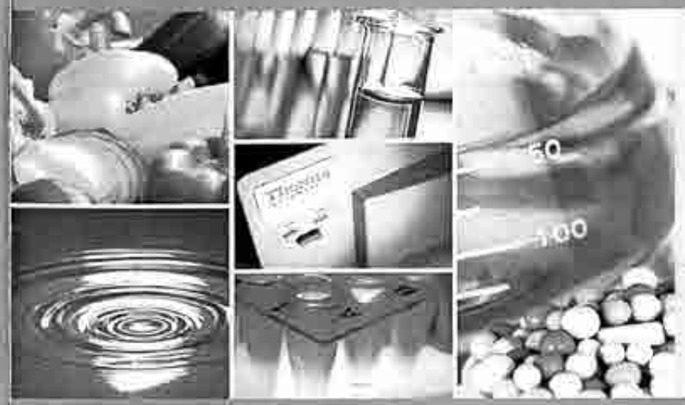
M1



Thermo Scientific

Medilite Microcentrifuges

Instruction Manual

IM-448-8 October 2014

Visit us online to register your warranty.
www.thermoscientific.com/labwarranty

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WEEE Conformity

This product is subject to the regulations of the EU Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96. It is marked by the following symbol:

Thermo Fisher Scientific has entered into agreements with recycling and disposal companies in all EU Member States for the recycling and disposal of this device. For information on recycling and disposal companies in Germany and on the products of Thermo Fisher Scientific, which fall under the RoHS Directive (Restriction of the use of certain hazardous substances in electrical and electronic equipment), please visit the website www.thermo.com/WEEERoHS

Table of Contents

Preface

Before starting to use the centrifuge, read through this instruction manual carefully and follow the instructions.

The information contained in this instruction manual is the property of Thermo Fisher Scientific; it is forbidden to copy or pass on this information without explicit approval.

Failure to follow the instructions and safety information in this instruction manual will result in the expiration of the sellers warranty.

Scope of Supply

Article number		Quantity	Check
	Centrifuge Medilite	1	☐
	Rotor	1	☐
IM448	CD with instruction manual	1	☐

If any parts are missing, please contact your nearest Thermo Fisher Scientific representative.

This symbol refers to general hazards.
WARNING means that injuries or material damage or contamination could occur.
CAUTION means that material damage could occur.

Intended Use

This centrifuge is a laboratory product designed to separate components by generation of relative centrifugal force. The centrifuge is to be used for separating materials of different density or particle size suspended in a liquid.

Maximum sample density at maximum speed: $1.2 \frac{g}{cm^3}$

Centrifuging hazardous substances:

- Do not centrifuge explosive or flammable materials or substances which could react violently with one another.
- The centrifuge is neither inert nor protected against explosion. Never use the centrifuge in an explosion-prone environment.
- Do not centrifuge inflammable substances.

Remaining risk: Inproper use can cause damages, contamincation, and injuries with fatal consequences.

- Do not centrifuge toxic or radioactive materials or any pathogenic micro-organisms without suitable safety precautions.

  When centrifuging microbiological samples from the Risk Group II (according to the Biosafety Manual" of the World Health Organization (WHO)), aerosol-tight biological seals have to be used.

  For materials in a higher risk group, extra safety measures have to be taken.

- If toxins or pathogenic substances have gotten into the centrifuge or its parts, appropriate disinfection measures have to be taken (see "Disinfection" on page 4-3).

Remaining risk: Inproper use can cause damages, contamincation, and injuries with fatal consequences.

- Highly corrosive substances which can cause material damage and impair the mechanical stability of the rotor, should only be centrifuged in corresponding protective tubes.

Introduction

Contents

Characteristics

The unit consists of:

- A baseplate with three rubber suction cup pads for stability.
- A brushless AC motor is attached to the cabinet. The motor is thermally protected in accordance with UL and CSA specifications.
- A six or twelve place plastic 45° angle rotor.
- A 30 minute timer (with hold function).
- A viewport in the cover for easy speed verification.

Technical Data

The technical data of the Thermo Scientific Medilite is listed in the following table.

Table 1-1. Technical data Thermo Scientific Medilite

Feature	Value	
Environmental conditions	Indoor use only Altitudes of up to 2,000 m above sea level max. relative humidity 80 % up to 31 °C; de creasing linearly up to 50% relative humidity at 40 °C	
Permissible ambient temperature during operation	+5 °C to +40 °C	+5 °C to +40 °C
Permissible ambient temperature during storage and shipping	+2 °C to +50 °C	+2 °C to +50 °C
Overvoltage category	II	II
Pollution degree	2	2
Heat dissipation	220-240 V	120 V
	274 BTU/h	290 BTU/h
IP	20	20
Max running time	30 min	30 min
Speed n_{max}	2700 rpm	3100 rpm
Maximum RCF value at n_{max}	920 x g	1228 x g
Maximum kinetic energy	< 285 Nm	< 285 Nm
Noise level at maximum speed	< 65 dB (A)	< 65 dB (A)
Dimensions		
Hight	241 mm	9.5 in
Hight, cover open	457 mm	18 in
Width	292 mm	11.5 in
Depth	375 mm	14.75 in
Weight	5.7 kg	12.5 lbs

Directives, Standards and Guidelines

Table 1-2. Directives, Standards and Guidelines

Tension / Frequency	Marked	Produced and inspected according to the following standards and guidelines
220-240V 50Hz/60Hz,	CE 2006/42/EC Machine Directive 2004/108/EC EMC Directive 2006/95/EC Low Voltage Directive	EN 61010-1, 2nd Edition EN 61010-2-020, 2nd Edition
120V 50Hz	cCSAus:	UL Std. No. 61010-1 (2nd Edition) CAN/CSA-C22.2 No. 61010-1-04 CAN/CSA-C22.2 No. 61010-2-020-09 IEC 61010-2-020 2nd Edition

Mains Supply

The following table contains an overview of the electrical connection data for the Thermo Scientific Medilite. This data is to be taken into consideration when selecting the mains connection socket..

Table 1-3. Electrical connection data of theThermo Scientific Medilite

Cat.		Mains voltage	Frequency	Rated current	Power-consumption	Equipment fuse	Building fuse
449	Medilite 6-place rotor	220-240 V	50 / 60 Hz	0.6 A	80 W	1.25 A, slow blow	16 AT
448	Medilite 6-place rotor	120 V	50 / 60 Hz	1.2 A	85 W	2.5 A, slow blow	15 AT
459	Medilite 12-place rotor	220-240 V	50 / 60 Hz	0.6 A	80 W	1.25 A, slow blow	16 AT
458	Medilite 12-place rotor	120 V	50 / 60 Hz	1.2 A	85 W	2.5 A, slow blow	15 AT

Rotor Selection

The Thermo Scientific Medilite is supplied with a rotor.

Two rotors are available to choose from.

6-Place Rotor	47430
12-Place Rotor	47620
Aeroshield 10 mL sealed with cap and o-ring	2087

Tube Size (mm)	
O.D. x Length Min.	7 x100
O.D.x Length Maximum 6 tubes (in 6 or 12 places)	16 x 133 or 17 x 120
O.D.x Length Maximum 12 tubes	16 x 100
Maximum Volume	
6 place	90 mL (6 x 15 mL)
12 place	130 mL (12 x 10 mL)

For more information visit our website at: www.thermoscientific.com/centrifuge.

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Installation

Contents

Receive the Unit

All units are shipped in protective packaging.

Inspect the unit upon receipt and immediately file any damage claims with the shipper/carrier.

Prepare the Installation Site

- The unit normally resides on a bench top.
- Place the centrifuge on a clean, dry surface, to make certain that the suction feet at the bottom grip the surface firmly. Keep the area beneath the unit free of debris and loose materials..

CAUTION The resting surface must be level, to ensure quiet, vibration-free operation. A rigid and stable location is important. An improperly loaded centrifuge may vibrate or move.

- A safety zone of at least 30 cm (12")must be maintained around the centrifuge.

WARNING
No person or any hazardous materials Should be in the safety zone while the centrifuge operates for the unlikely event of a disruption.

- The centrifuge should not be exposed to heat and strong sunlight.

WARNING UV rays reduce the stability of plastics.
Do not subject the centrifuge, rorors and plastic accessories to direct sunlight.

- The set-up location must be well-ventilated at all times.
- Lift the lever to release the latch. Remove the soft material covering the plastic shields (6 or 12) that are shipped in position inside the rotor.
- Press down on the center hub to ensure that the rotor is secured to the shaft. Turn rotor by hand to verify it turns freely.
- Inspect the shields for damage. Make sure the flange of the shield is flush with the surface of the rotor.

Verify Power Configuration

Verify that the correct power cord and connector is provided for your installation.

The unit requires a grounded power supply (3-outlet). If your facility does not have grounded power outlets, arrange for proper grounding.

WARNING ELECTRICAL HAZARD!
Do not remove the grounding pin from the centrifuge power cord. Do not use the bare wired power cord to attach a power plug that does not have a grounding pin. The power cord provided with the unit is correctly rated for the highest current demand. This power cord should not be interchanged with cords from equipment with lower current demand. Exchange of power cords between equipment may create a fire hazard.

Moving the Unit

To move the unit to a new location:

WARNING Use caution when moving to avoid any injury

1. Check that the new site meets the criterias described in "Prepare the Installation Site" on page 2-2 before moving the unit.
2. Before moving, unplug the centrifuge and remove all accessories and the rotor.
3. Position a flat object, such as a tongue depressor, near a suction cup at the bottom of the unit.
4. Lift up an edge of the cup, and insert the flat object far enough to break the vacuum suction seal.
5. When all four suction cups are disengaged, lift the unit from the work surface.
6. When the unit is in its new location, ensure that the suction cups adhere correctly to the work surface.

Operation

Contents

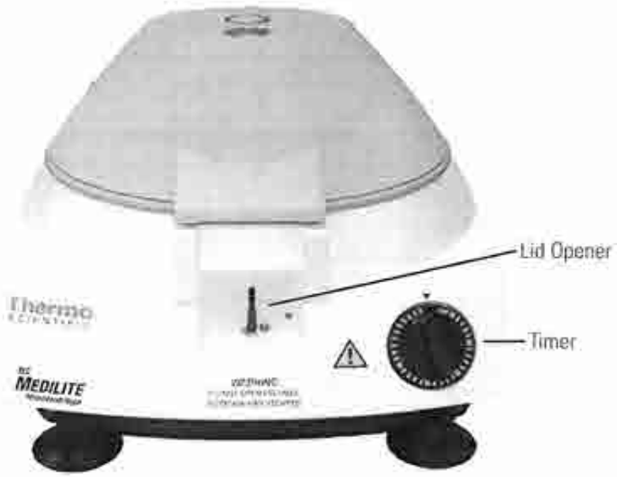
Warnings and Cautions

WARNING To Avoid Electric Shock: Plug the power cord into a grounded outlet.
Never remove the grounding prong from the power plug, or use any adapter which does not complete the grounding circuit.
Always unplug the power cord before attempting to clean or service the centrifuge.

CAUTION Do not exceed maximum rated speed for each rotor/ accessory combination. Maximum speeds can be found in "Technical Data" on page 1-3. All rotors and accessories are stamped with their cat. no.for easy identification.
Do not spin any fluids which have a specific gravity greater than 1.5.
Do not operate the unit if the shields or rotor show signs of damage. If deterioration is visible, replace the affected parts immediately.
Do not open the lid while the unit is spinning.
Ensure that loads are properly balanced around the rotor to minimize vibration. All Thermo Fisher Scientific accessories are stamped with their weight for easy balancing.

Chemical damage can appear as crazing, frosting, peeling or similar deterioration of the inner cavity or exterior surface of the shields or rotor. Mechanical damage can appear as cracks, scratches or gouges on the shield or rotor surfaces.

Operating Controls



Loading

1. Unlatch and open the cover.
2. Check that the rotor turns freely and that there are no loose objects in the chamber.

3. Load the rotor symmetrically with 2, 3, 4, or 6 tubes in the 6-place rotor (but not 1 or 5) or 2, 3, 4, 6, 8, 9, or 12 in the 12-place rotor (but not 1, 5, 7 or 11).

The tubes must be of equal size and with contents of equal (within 1 gram) weight.

4. Close the cover securely, ensuring that the latch is engaged.

Starting a Run

1. Turn the timer knob to the desired run duration.

   For runs of under 5 minutes, turn the timer past the five minute setting and then back to the desired time).

   For runs in the HOLD mode (infinite duration), turn the knob speed counter-clockwise to the ∞setting.

The motor will take several minutes to reach top speed..

Note Periods of slight vibration during acceleration are normal. If excessive vibration occurs, turn the timer knob to zero (0). When the rotor has come to a stop, open the cover and check that the load is balanced. If the rotor is properly balanced and vibration persists, ensure that the suction cup feet are clean and adhering to the surface on which the unit was placed.

Stopping a Run

1. To stop a run, turn the timer knob to zero or allow the time to expire.
2. Wait until the rotor has come to a complete stop, then unlatch and open the cover.

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Maintenance

Contents

Care and Cleaning

- Keep the centrifuge clean to ensure good operation and to extend its life.
- Clean the sample chamber, rotor, and lid at the end of each work day and immediately after any spill. Use a damp sponge, warm water, and a mild liquid detergent, suitable for washing dishes by hand. Do not use caustic detergents or detergents that contain chlorine ions. These attack metals.
- Remove stubborn stains with a plastic scrub pad. Do not use steel wool, wire brushes, abrasives, or sandpaper as they create corrosion sites. Never pour water directly into the rotor chamber.
- Scrub the rotor's tube cavities with a stiff test tube brush that has end bristles and a non-metallic tip. After cleaning, dry each part with a clean absorbent towel.

CAUTION In the case of glass breakage, be careful to remove all particles of glass from the unit. Microscopic particles of glass can become embedded in parts on in plastic shields. Thoroughly scrub any components, adapters, or cushions with a wire brush or replace these items as glass shards embedded in the components can cause further breakage.

To Remove a Rotor

To remove the rotor, lift it straight up off its drive shaft. The rotor is held in place by spring clips that line up flat to the surface on the drive shaft. To reinstall the rotor, line up the clips with the flat surface and press it as far down the shaft as it will go.

Chemical Compatibility Chart

CHEMICAL	MATERIAL	ALUMINUM	ANODIC COATING for ALUMINUM	BUNA-N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fibre/Epoxy	DELRIN	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL	NYLON	PET, POLYCLEAR, CLEARCRIMP	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYIMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A, TEFLON	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON	VITON
2-mercaptoethanol		S	S	U	-	S	M	S	-	S	U	S	S	U	S	S	-	S	S	S	U	U	S	S	S	S	S	S
Acetaldehyde		S	-	U	U	-	-	-	M	-	U	-	-	-	M	U	U	U	M	M		M	S	U	-	S	-	U
Acetone		M	S	U	U	S	U	M	S	S	U	U	S	U	S	U	U	U	S	S	U	U	S	M	M	S	U	U
Acetonitrile		S	S	U	-	S	M	S	-	S	S	U	S	U	M	U	U	-	S	M	U	U	S	S	S	S	U	U
Alcenes		U	U	S	-	S	S	S	-	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S	S	U
Allyl Alcohol		-	-	-	U	-	-	S	-	-	-	-	S	-	S	S	M	S	S	S	-	M	S	-	-	S	-	-
Aluminum Chloride		U	U	S	S	S	S	U	S	S	S	S	M	S	S	S	S	-	S	S	S	S	S	M	U	U	S	S
Formic Acid (100%)		-	S	M	U	-	-	U	-	-	-	-	U	-	S	M	U	U	S	S	-	U	S	-	U	S	-	U
Ammonium Acetate		S	S	U	-	S	S	S	-	S	S	S	S	S	S	S	U	-	S	S	S	S	S	S	S	S	S	S
Ammonium Carbonate		M	S	U	S	S	S	S	S	S	S	S	S	S	S	U	U	-	S	S	S	S	S	S	M	S	S	S
Ammonium Hydroxide (10%)		U	U	S	U	S	S	M	S	S	S	S	S	-	S	U	M	S	S	S	S	S	S	S	S	S	M	S
Ammonium Hydroxide (28%)		U	U	S	U	S	U	M	S	S	S	S	S	U	S	U	M	S	S	S	S	S	S	S	S	S	M	S
Ammonium Hydroxide (conc.)		U	U	U	U	S	U	M	S	-	S	-	S	U	S	U	U	S	S	S	-	M	S	S	S	S	-	U
Ammonium Phosphate		U	-	S	-	S	S	S	S	S	S	S	S	-	S	S	M	-	S	S	S	S	S	S	M	S	S	S
Ammonium Sulfate		U	M	S	-	S	S	U	S	S	S	S	S	S	S	S	S	-	S	S	S	S	S	S	U	S	S	U
Amyl Alcohol		S	-	M	U	-	-	S	S	-	M	-	S	-	M	S	S	S	S	M	-	-	U	-	S	-	M	
Aniline		S	S	U	U	S	U	S	M	S	U	U	U	U	U	U	U	-	S	M	U	U	S	S	S	S	U	S
Sodium Hydroxide (<1%)		U	-	M	S	S	S	-	-	S	M	S	S	-	S	M	M	S	S	S	S	S	S	M	S	S	-	U
Sodium Hydroxide (10%)		U	-	M	U	-	-	U	-	M	M	S	S	U	S	U	U	S	S	S	S	S	S	M	S	S	-	U
Barium Salts		M	U	S	-	S	S	S	S	S	S	S	S	S	S	S	M	-	S	S	S	S	S	S	M	S	S	S
Benzene		S	S	U	U	S	U	M	U	S	U	U	S	U	U	U	M	U	M	U	U	U	S	U	U	S	U	S
Benzyl Alcohol		S	-	U	U	-	-	M	M	-	M	-	S	U	U	U	U	U	U	U	-	M	S	M	-	S	-	S
Boric Acid		U	S	S	M	S	S	U	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S
Cesium Acetate		M	-	S	-	S	S	S	-	S	S	S	S	-	S	S	-	-	S	S	S	S	S	S	M	S	S	S

CHEMICAL	MATERIAL	ALUMINUM	ANODIC COATING for ALUMINUM	BUNA-N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fibre/Epoxy	DELRIN	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL	NYLON	PET, POLYCLEAR, CLEARCRIMP	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYIMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A, TEFLON	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON	VITON
Cesium Bromide		M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Cesium Chloride		M	S	S	U	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Cesium Formate		M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Cesium Iodide		M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Cesium Sulfate		M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Chloroform		U	U	U	U	S	S	M	U	S	U	U	M	U	M	U	U	U	M	M	U	U	S	U	U	U	M	S
Chromic Acid (10%)		U	-	U	U	S	U	U	-	S	S	S	U	S	S	M	U	M	S	S	U	M	S	M	U	S	S	S
Chromic Acid (50%)		U	-	U	U	-	U	U	-	-	-	S	U	U	S	M	U	M	S	S	U	M	S	-	U	M	-	S
Cresol Mixture		S	S	U	-	-	-	S	-	S	U	U	U	U	U	U	-	-	U	U	-	U	S	S	S	S	U	S
Cyclohexane		S	S	S	-	S	S	S	U	S	U	S	S	U	U	U	M	S	M	U	M	M	S	U	M	M	U	S
Deoxycholate		S	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	S	S	S	S
Distilled Water		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Dextran		M	S	S	S	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	S
Diethyl Ether		S	S	U	U	S	S	S	U	S	U	U	S	U	U	U	U	U	U	U	U	U	S	S	S	M	U	
Diethyl Ketone		S	-	U	U	-	-	M	-	S	U	-	S	-	M	U	U	U	M	M	-	U	S	-	-	S	U	U
Diethylpyrocarbonate		S	S	U	-	S	S	S	-	S	S	U	S	U	S	U	-	-	S	S	S	M	S	S	S	S	S	S
Dimethylsulfoxide		S	S	U	U	S	S	S	-	S	U	S	S	U	S	U	U	-	S	S	U	U	S	S	S	S	U	U
Dioxane		M	S	U	U	S	S	M	M	S	U	U	S	U	M	U	U	-	M	M	M	U	S	S	S	S	U	U
Ferric Chloride		U	U	S	-	-	-	M	S	-	M	-	S	-	S	-	-	-	S	S	-	-	M	U	S	-	S	
Acetic Acid (Glacial)		S	S	U	U	S	S	U	M	S	U	S	U	U	U	U	U	M	S	U	M	U	S	U	U	S	-	U
Acetic Acid (5%)		S	S	M	S	S	S	M	S	S	S	S	S	M	S	S	S	S	S	S	S	M	S	S	M	S	S	M
Acetic Acid (50%)		S	S	U	U	S	S	U	-	S	M	S	U	U	M	U	S	M	S	M	S	M	S	M	U	S	M	U
Ethyl Acetate		M	M	U	U	S	S	M	M	S	S	U	S	U	M	U	U	-	S	S	U	U	S	M	M	S	U	U
Ethyl Alcohol (50%)		S	S	S	S	S	S	M	S	S	S	S	S	U	S	U	S	S	S	S	S	S	S	S	M	S	M	U
Ethyl Alcohol (95%)		S	S	S	U	S	S	M	S	S	S	S	S	U	S	U	-	S	S	S	M	S	S	S	U	S	M	U
Ethylene Dichloride		S	-	U	U	-	-	S	M	-	U	U	S	U	U	U	U	U	U	U	-	U	S	U	-	S	-	S
Ethylene Glycol		S	S	S	S	S	S	S	S	S	S	S	S	-	S	U	S	S	S	S	S	S	S	S	M	S	M	S
Ethylene Oxide Vapor		S	-	U	-	-	U	-	-	S	U	-	S	U	-	S	M	-	-	S	S	S	U	S	U	S	S	U
Ficoll-Hypaque		M	S	S	-	S	S	S	-	S	S	S	S	-	S	S	-	S	S	S	S	S	S	S	M	S	S	S
Hydrofluoric Acid (10%)		U	U	U	M	-	-	U	-	-	U	U	S	-	S	M	U	S	S	S	S	M	S	U	U	U	-	-
Hydrofluoric Acid (50%)		U	U	U	U	-	-	U	-	-	U	U	U	U	S	U	U	U	S	S	M	M	S	U	U	U	-	M
Hydrochloric Acid (conc.)		U	U	U	U	-	U	U	M	-	U	M	U	U	M	U	U	U	-	S	-	U	S	U	U	U	-	-

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Formaldehyde (40%)	M	M	M	S	S	S	S	M	S	S	S	S	M	S	S	S	U	S	S	M	S	S	S	S	M	U
Glutaraldehyde	S	S	S	S	-	-	S	-	S	S	S	S	S	S	S	-	-	S	S	S	-	-	S	S	S	-	-
Glycerol	M	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Guanidine Hydrochloride	U	U	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	U	S	S	S
Hamo-Sol	S	S	S	-	-	-	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	S	S	S	S
Hexane	S	S	S	-	S	S	S	-	S	S	U	S	U	M	U	S	S	U	S	S	M	S	U	S	S	U	S
Isobutyl Alcohol	-	-	M	U	-	-	S	S	-	U	-	S	U	S	S	M	S	S	S	-	S	S	S	-	S	-	S
Isopropyl Alcohol	M	M	M	U	S	S	S	S	S	U	S	S	U	S	U	M	S	S	S	S	S	S	S	M	M	M	S
Iodoacetic Acid	S	S	M	-	S	S	S	-	S	M	S	S	M	S	S	-	M	S	S	S	S	S	M	S	S	M	M
Potassium Bromide	U	S	S	-	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	-	S	S	S	M	S	S	S
Potassium Carbonate	M	U	S	S	S	S	S	-	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S
Potassium Chloride	U	S	S	-	S	S	S	S	S	S	S	S	S	S	S	-	S	S	S	S	S	S	U	S	S	S	S
Potassium Hydroxide (5%)	U	U	S	S	S	S	M	-	S	S	S	S	-	S	U	S	S	S	S	S	S	S	M	U	M	S	U
Potassium Hydroxide (conc.)	U	U	M	U	-	-	M	-	M	S	S	-	U	M	U	U	U	S	M	-	M	U	-	U	U	-	U
Potassium Permanganate	S	S	S	-	S	S	S	-	S	S	S	U	S	S	S	M	-	S	M	S	U	S	S	M	S	U	S
Calcium Chloride	M	U	S	S	S	S	S	S	S	S	S	S	S	S	M	S	-	S	S	S	S	S	S	M	S	S	S
Calcium Hypochlorite	M	-	U	-	S	M	M	S	-	M	-	S	-	S	M	S	-	S	S	S	M	S	M	U	S	-	S
Kerosene	S	S	S	-	S	S	S	U	S	M	U	S	U	M	M	S	-	M	M	M	S	S	U	S	S	U	S
Sodium Chloride (10%)	S	-	S	S	S	S	S	S	-	-	-	S	S	S	S	S	-	S	S	S	S	-	S	S	M	-	S
Sodium Chloride (sat'd)	U	-	S	U	S	S	S	-	-	-	-	S	S	S	S	S	-	S	S	-	S	-	S	S	M	-	S
Carbon Tetrachloride	U	U	M	S	S	U	M	U	S	U	U	S	U	M	U	S	S	M	M	S	M	M	M	M	U	S	S
Aqua Regia	U	-	U	U	-	-	U	-	-	-	-	-	U	U	U	U	U	U	U	-	-	-	-	-	S	-	M
Solution 555 (20%)	S	S	S	-	-	-	S	-	S	S	S	S	S	S	S	-	-	S	S	S	-	S	S	S	S	S	S
Magnesium Chloride	M	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	S
Mercaptoacetic Acid	U	S	U	-	S	M	S	-	S	M	S	U	U	U	U	-	S	U	U	S	M	S	U	S	S	S	S
Methyl Alcohol	S	S	S	U	S	S	M	S	S	S	S	S	U	S	U	M	S	S	S	S	S	S	S	M	S	M	U
Methylene Chloride	U	U	U	U	M	S	S	U	S	U	U	S	U	U	U	U	U	M	U	U	U	S	S	M	U	S	U
Methyl Ethyl Ketone	S	S	U	U	S	S	M	S	S	U	U	S	U	S	U	U	U	S	S	U	U	S	S	S	S	U	U
Metrizamide	M	S	S	-	S	S	S	-	S	S	S	S	-	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Lactic Acid (100%)	-	-	S	-	-	-	-	-	M	S	U	-	S	S	S	M	S	S	-	M	S	M	S	S	-	S	
Lactic Acid (20%)	-	-	S	S	-	-	-	-	M	S	M	-	S	S	S	S	S	S	S	M	S	M	S	S	-	S	
N-Butyl Alcohol	S	-	S	U	-	-	S	-	-	S	M	-	U	S	M	S	S	S	S	S	M	M	S	M	-	S	-	S

CHEMICAL	MATERIAL: ALUMINUM	ANODIC COATING for ALUMINUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL	NYLON	PET, POLYCLEAR, CLEARCRIMP	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A, TEFLON	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON	VITON
N-Butyl Phthalate	S	S	U	-	S	S	S	-	S	U	U	S	U	U	U	M	-	U	U	S	U	S	M	M	S	U	S
N, N-Dimethylformamide	S	S	S	U	S	M	S	-	S	S	U	S	U	S	U	U	-	S	S	U	U	S	M	S	S	S	U
Sodium Borate	M	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	-	S	S	S	S	S	M	S	S	S	
Sodium Bromide	U	S	S	-	S	S	S	-	S	S	S	S	S	S	S	S	-	S	S	S	S	S	M	S	S	S	
Sodium Carbonate (2%)	M	U	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	
Sodium Dioctyl Sulfate	S	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	S	S	S	S	S	S	S	S	S	S	
Sodium Hypochlorite (5%)	U	U	M	S	S	M	U	S	S	M	S	S	S	M	S	S	S	S	M	S	S	S	M	U	S	M	S
Sodium Iodide	M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	M	S	S	S	
Sodium Nitrate	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	-	S	S	S	S	S	U	S	S	S	
Sodium Sulfate	U	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	
Sodium Sulfide	S	-	S	S	-	-	-	S	-	-	-	S	S	S	U	U	-	-	S	-	-	-	S	S	M	-	S
Sodium Sulfite	S	S	S	-	S	S	S	S	M	S	S	S	S	S	S	M	-	S	S	S	S	S	S	S	S	S	
Nickel Salts	U	S	S	S	S	S	-	S	S	S	-	-	S	S	S	S	-	S	S	S	S	S	S	M	S	S	
Oils (Petroleum)	S	S	S	-	-	-	S	U	S	S	S	S	U	U	M	S	M	U	U	S	S	S	U	S	S	S	
Oils (Other)	S	-	S	-	-	-	S	M	S	S	S	S	U	S	S	S	U	S	S	S	S	-	S	S	M	S	
Oleic Acid	S	-	U	S	S	S	U	U	S	U	S	S	M	S	S	S	S	S	S	S	S	S	M	U	S	M	M
Oxalic Acid	U	U	M	S	S	S	U	S	S	S	S	S	U	S	U	S	S	S	S	S	S	S	U	M	S	S	
Perchloric Acid (10%)	U	-	U	-	S	U	U	-	S	M	M	-	-	M	U	M	S	M	M	-	M	S	U	-	S	-	S
Perchloric Acid (70%)	U	U	U	-	-	U	U	-	S	U	M	U	U	M	U	U	U	M	M	U	M	S	U	U	S	U	S
Phenol (5%)	U	S	U	-	S	M	M	-	S	U	M	U	U	S	U	M	S	M	S	U	U	S	U	M	M	M	S
Phenol (50%)	U	S	U	-	S	U	M	-	S	U	M	U	U	U	U	U	S	U	M	U	U	S	U	U	U	M	S
Phosphoric Acid (10%)	U	U	M	S	S	S	U	S	S	S	S	U	-	S	S	S	S	S	S	S	S	S	U	M	U	S	S
Phosphoric Acid (conc.)	U	U	M	M	-	-	U	S	-	M	S	U	U	M	M	S	S	S	M	S	M	S	U	M	U	-	S
Physiologic Media (Serum, Urine)	M	S	S	S	-	-	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Picric Acid	S	S	U	-	S	M	S	S	S	M	S	U	S	S	S	U	S	S	S	S	U	S	U	M	S	M	S
Pyridine (50%)	U	S	U	U	S	U	U	-	U	S	S	U	U	M	U	U	-	U	S	M	U	S	S	U	U	U	U
Rubidium Bromide	M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Rubidium Chloride	M	S	S	-	S	S	S	-	S	S	S	S	S	S	S	-	-	S	S	S	S	S	S	M	S	S	S
Sucrose	M	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sucrose, Alkaline	M	S	S	-	S	S	S	-	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	M	S	S	S
Sulfosalicylic Acid	U	U	S	S	S	S	S	-	S	S	S	U	S	S	S	-	S	S	S	-	S	S	S	U	S	S	S
Nitric Acid (10%)	U	S	U	S	S	U	U	-	S	U	S	U	-	S	S	S	S	S	S	S	S	S	M	S	S	S	S

CHEMICAL	MATERIAL: ALUMINUM	ANODIC COATING for ALUMINUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL	NYLON	PET[1]- POLYCLEAR, CLEARSPRIMP	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYETHERIMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A, TEFLON	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON	VITON
Nitric Acid (50%)	U	S	U	M	S	U	U	-	S	U	S	U	U	M	M	U	M	M	M	S	S	S	U	S	S	M	S
Nitric Acid (95%)	U	-	U	U	-	U	U	-	-	U	U	U	U	M	U	U	U	U	M	U	U	S	U	S	S	-	S
Hydrochloric Acid (10%)	U	U	M	S	S	S	U	-	S	S	S	U	U	S	U	S	S	S	S	S	S	S	U	M	S	S
Hydrochloric Acid (50%)	U	U	U	U	S	U	U	-	S	M	S	U	U	M	U	U	S	S	S	S	M	S	M	U	U	M	M
Sulfuric Acid (10%)	M	U	U	S	S	U	U	-	S	S	M	U	S	S	S	S	S	S	S	S	S	S	U	U	U	S	S
Sulfuric Acid (50%)	M	U	U	U	S	U	U	-	S	S	M	U	U	S	U	U	M	S	S	S	S	S	U	U	U	M	S
Sulfuric Acid (conc.)	M	U	U	U	-	U	U	M	-	-	M	U	U	S	U	U	U	M	S	U	M	S	U	U	U	-	S
Stearic Acid	S	-	S	-	-	-	S	M	S	S	S	S	-	S	S	S	S	S	S	S	S	S	M	M	S	S	S
Tetrahydrofuran	S	S	U	U	S	U	U	M	S	U	U	S	U	U	U	-	M	U	U	U	U	S	U	S	S	U	U
Toluene	S	S	U	U	S	S	M	U	S	U	U	S	U	U	U	S	U	M	U	U	U	S	U	S	U	U	M
Trichloroacetic Acid	U	U	U	-	S	S	U	M	S	U	S	U	U	S	M	-	M	S	S	U	U	S	U	U	U	M	U
Trichloroethane	S	-	U	-	-	-	M	U	-	U	-	S	U	U	U	U	U	U	U	U	U	S	U	-	S	-	S
Trichloroethylene	-	-	U	U	-	-	-	U	-	U	-	S	U	U	U	U	U	U	U	U	U	S	U	-	U	-	S
Trisodium Phosphate	-	-	-	S	-	-	M	-	-	-	-	-	S	-	-	S	S	S	-	-	S	-	-	S	-	S	
Tris Buffer (neutral pH)	U	S	S	S	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Triton X-100	S	S	S	-	S	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Urea	S	-	U	S	S	S	S	-	-	-	-	S	S	S	M	S	S	S	S	-	S	S	S	M	S	-	S
Hydrogen Peroxide (10%)	U	U	M	S	S	U	U	-	S	S	S	U	S	S	S	M	U	S	S	S	S	S	S	M	S	U	S
Hydrogen Peroxide (3%)	S	M	S	S	S	-	S	-	S	S	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S
Xylene	S	S	U	S	S	S	M	U	S	U	U	U	U	U	U	M	U	M	U	U	U	S	U	M	S	U	S
Zinc Chloride	U	U	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S
Zinc Sulfate	U	S	S	-	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Citric Acid (10%)	M	S	S	M	S	S	M	S	S	S	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S

[1] Polyethyleneterephthalate

Key

- S Satisfactory
- M Moderate attack, may be satisfactory for use in centrifuge depending on length of exposure, speed involved, etc. Suggest testing under actual conditions of use.
- U Unsatisfactory, not recommended.
- – Performance unknown; suggest testing, using sample to avoid loss of valuable material.

Chemical resistance data is included only as a guide to product use. No organized chemical resistance data exists for materials under the stress of centrifugation. When in doubt we recommend pretesting sample lots.

Contact Information

United States / Canada	+1 866 984 3766
Latin America	+1 866 984 3766
Austria	+43 1 801 40 0
Belgium	+32 53 73 42 41
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France	+33 2 2803 2180
Italy	+39 02 95059 552
Netherlands	+31 76 579 55 55
Nordic / Baltic Countries / CIS	+358 9 329 10200
Russia	+7 812 703 42 15
Spain / Portugal	+34 93 223 09 18
Switzerland	+41 44 454 12 22
UK / Ireland	+44 870 609 9203
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India	+91 22 6716 2200
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Australia	+61 39757 4300
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Countries not listed	+49 6184 90 6000 +33 2 2803 2180

ThermoFisher
SCIENTIFIC

CE

KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY

Name und Anschrift des Herstellers und des Bevollmächtigten
für die Zusammenstellung der relevanten technischen Unterlagen:
Name and address of the manufacturer and of the authorized
representative to compile the relevant technical documentation:

Thermo Electron LED GmbH
Zweigniederlassung Osterode
Am Kalkberg
37520 Osterode
Germany

Hiermit erklären wir, dass die nachstehend beschriebene Maschine
Herewith we declare, that the machinery described below

Beschreibung / description	**: Labor-Zentrifuge / centrifuge**
Marke / brand	**: Thermo Scientific**
Modellbezeichnung / model name	**: Medilite**
Modell Nr. / model no.	**: LT004490F, LT004590F**
Gültig ab Equipmentnr. **Valid from equipment no.**	**: T18Y-444933-TY**

mit allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG in Übereinstimmung ist.
is in conformity with all relevant terms of directive for machinery 2006/42/EC.

Die Maschine ist auch in Übereinstimmung mit allen einschlägigen Bestimmungen der Richtlinie 2004/108/EG über elektromagnetische Verträglichkeit.
The machinery is in accordance with all relevant terms of directives for electromagnetic compatibility 2004/108/EC.

Die Schutzziele der Niederspannungsrichtlinie 2006/95/EG werden eingehalten.
The protection goals of the directive for low voltage 2006/95/EC are met.

Angewandte harmonisierte Normen/
Harmonized standards used:

EN 61010-1: 2004
EN 61010-2-020: 2006

Osterode, den 23.08.2013

Dr. Andreas Karl
Director R&D

	Name	Datum	Dokument	Revision
			50142090_01	01
Freigegeben	Laaboubi	23.08.2013		

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 37 ASHEVILLE NC
POSTAGE WILL BE PAID BY ADDRESSEE

THERMO FISHER SCIENTIFIC INC.
275 AIKEN ROAD
ASHEVILLE, NC 28804-9777

TESTED AND INSPECTED

This unit has been approved for shipment. For service or further information about this equipment, please contact the THERMO service department.

Inspected by: Lynn Mull

Packed by: Becky Robinson

Date: July 13, 2015

Thermo Fisher Scientific Inc.
275 Aiken Road, Asheville, NC 28804-9777
TOLL FREE USA 800-252-7100 or 828-658-2711
TOLL FREE CANADA 800-447-3826

WARRANTY REGISTRATION

Name _____ Title _____ Signature _____

Email _____ Phone _____ Fax _____

Company: _____ Bldg.: _____ Lab/Dept/RmNo. _____

Street Address _____

City _____ State/Prov. _____ Zip _____ Country _____

Model Number _____ **Serial Number** _____

Purchased from Company _____ Date Received: _____

City _____ State _____ Zip _____

Serial Number
G13A-540570-GA
Model #:
MEDILITE 12 PLS
004580F

What is your specific product application? _____

Are there additional features you require? _____ If so, what modifications would you suggest? _____

On a scale of one to five, one being the lowest, and five being the highest, please rate your new product according to the following attributes:

Poor (1) Fair (2) Good (3) Very Good (4) Excellent (5)

- ☐ **Product Quality.** Overall quality of the product, including the product's construction, material and workmanship, reliability and maintainability.
- ☐ **Product Performance.** Controllability, temperature stability and ease of operation.
- ☐ **Delivery.** Condition of your product upon delivery, and the time lines of its delivery.
- ☐ **Price.** Product value for your dollar.
- ☐ **Warranty and Service.** Terms and conditions of our warranty, as well as responsiveness to your requests, and our product support.
- ☐ **Documentation.** Readability and value of start-up instructions, warranty explanation and other documentation.
- ☐ **Relative Performance.** Performance of unit as compared to similar products.

DETACH HERE

WARRANTY INFORMATION

Model #:
MEDILITE 12 PLS
004580F

Serial Number
G13A-540570-GA

MODEL NUMBER _____ **SERIAL NUMBER** _____

Domestic Warranty (United States and Canada)

Thermo Fisher Scientific Inc., through its authorized Dealer or service organizations, will repair or at its option replace any part found to contain a manufacturing defect in material or workmanship, without charge to the Purchaser for parts, service labor or any necessary shipping or cartage cost. Thermo Fisher Scientific reserves the right to use replacement parts, which are used or reconditioned. Replacement or repaired parts will be warranted for only the unexpired portion of the original warranty.

This warranty is limited to Goods purchased and installed in the United States and Canada. It does not apply to damage caused by accident, misuse, fire, flood or acts of God. It does not apply to damage caused from failure to properly install, operate or maintain the Goods in accordance with the printed instructions provided. To obtain proper warranty service, simply contact the nearest authorized service center or Dealer listed in the directory enclosed with the Goods. Thermo Fisher Scientific's own shipping records showing date of shipment shall be conclusive in establishing the warranty period.

International Warranty (excluding Canada)

If any part is found to contain a manufacturing defect in material or workmanship, Thermo Fisher Scientific will replace such defective part; however, Purchaser shall be responsible for cost of transportation. Thermo Fisher Scientific reserves the right to use replacement parts which are used or reconditioned. Thermo Fisher Scientif assumes no responsibility for any labor expenses for service, removal or reinstallation required to replace such defective parts, or for incidental repairs; such costs are the responsibility of the purchaser unless a service labor agreement exist between the Owner and his Dealer.

The warranty does not apply to damage caused by accident, misuse, fire, flood or acts of God, or to defects resulting from failure to properly install, operate or maintain the product in accordance with printed instructions provided. To obtain prompt warranty service, simply contact the Dealer from whom you purchased the Goods or the nearest Dealer handling Thermo Fisher Scientific products. Thermo Fisher Scientific's own shipping records showing date of shipment shall be conclusive in establishing the warranty period.

Limitation of Liability

The purchaser agrees that the sole liability of Thermo Fisher Scientific with respect to defective Goods shall be limited as set forth in this warranty and Thermo Fisher Scientific shall not be liable under any theory of relief, including breach of contract, negligence, strict liability, tort or otherwise for incidental, consequential or other damages including but not limited to loss of profits, injury to property, or loss of use of the Goods. In no event shall the liability of Thermo Fisher Scientific here under exceed the purchase price actually paid by the purchaser for the Goods. The foregoing warranty is in lieu of all other express and implied warranties (except title) including, without limitation, warranties of merchantability and fitness for purpose.

FOR ACCESSORIES, PARTS AND SERVICE OR OTHER INFORMATION ON THERMO PRODUCTS:
THERMO FISHER SCIENTIFIC INC.
275 Aiken Road • Asheville, NC 28804

Sales: 800-252-7100 • Technical Support: 800-438-4851 • Technical Support Fax: 828-658-2576 • www.revco-sci.com