Breathing Filters, HMEs and HMEFs

INTERSURGICAL®
COMPLETE RESPIRATORY SYSTEMS

Quality, innovation and choice

www.intersurgical.com

Use of Breathing Filters

Breathing filters provide an effective barrier that prevent cross contamination between patients, respiratory breathing systems, equipment and the clinical environment. Their use is widely recognized as beneficial and is recommended by a number of Anaesthetic Associations[1].

The threat to patients is varied

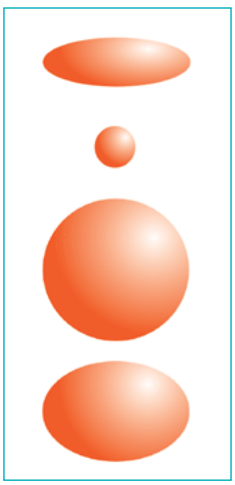
Patients who require an artificial airway have their natural physiological protection bypassed. This will increase the risk of cross contamination between patients and healthcare equipment. The cross contamination of patients via an anesthetic system has been reported, and documented areas of concern regarding infection includes *Hepatitis C* and *Mycobacterium tuberculosis*.

Critically ill patients are commonly at risk of infection, particularly from Ventilator Associated Pneumonia (V.A.P.). This nosocomial infection increases morbidity and potential mortality as well as the cost of treatment costs. The strategic use of an efficient breathing filter will provide an effective barrier between patients, breathing systems and ventilatory equipment.

Proven efficiency

The Intersurgical range of breathing filters has been designed for the protection of the patient, breathing system and equipment. They have been independently tested and proven to be highly efficient in preventing the passage of bacteria and viruses. Clinically relevant testing is carried out on all products using *Bacillus subtilis* (1.0µm x 0.7µm) and Ø174 bacteriophage. Additional testing includes *Mycobacterium tuberculosis* (0.3µm x 1.0µm), *Hepatitis C* (0.03µm) and *MS-2 coliphage* (0.02µm). These tests provide you with clinically relevant information to allow evidence-based decisions to be made on the most appropriate product to meet your clinical requirements.

Potential infectious bacteria [Particle sizes µ microns]



Mycobacterium tuberculosis **[0.3µ x 1.0µ smallest size]**

Brevundimonas diminuta **[0.3µ]**

Staphylococcus aureus **[1.0µ]**

Bacillus subtilis **[1.0µ x 0.7µ]**

Essential requirements

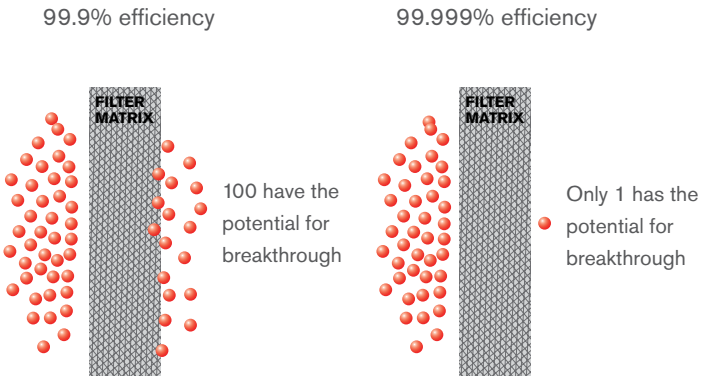
The Intersurgical range of breathing filters offers a choice of electrostatic and pleated mechanical filters with a range of patient connections, providing a choice of products to meet various clinical situations.

- Independently validated Filtration Efficiency[2]
- Proven filtration against *Mycobacterium tuberculosis* and *Hepatitis C*
- Proven efficiency not affected by anesthetic agent
- Safe inert material
- Option of patient connections – conveniently packed and ready for use
- Lightweight – reducing patient trauma
- Low compressible volume – reducing rebreathing of CO_2
- Low resistance to flow – over 24 hours
- Safe, secure ISO connectors
- Compliance to all relevant international standards

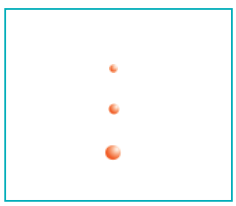
Filtration efficiency

Filtration performance is determined by independent microbiological testing against clinically relevant bacterial and viral challenges. The level of breakthrough of the challenge determines the efficiency. This efficiency is reported as a percentage based upon this breakthrough.

Filtration Efficiency based on a challenge of 100,000 Microbes



Potential infectious viruses [Particle sizes µ microns]



MS-2 coliphage **[0.02µ]**

Bacteriophage **[0.027µ]**

Hepatitis C **[0.03µ]**

Find out more

1. Association of Anaesthetists of Great Britain and Ireland 1996. Danish Society of Anaesthetists 1998. French Society of Anaesthetists 1998.
2. All filters are independently validated for filtration efficiency at the Health Protection Agency, Porton Down, Salisbury, Wiltshire, U.K and Nelson Laboratories Inc, USA.

All quoted performance figures are mean values.

The breathing filter range

The Intersurgical range of breathing filters has been designed for the protection of the patient, breathing system and equipment.

Filta-Guard™

High-efficiency

The high-efficiency Filta-Guard is a dedicated breathing filter designed for use in breathing systems in anesthesia and intensive care, for the protection of the patient, hospital personnel and the equipment from potential microbial contamination. The Flow diffuser improves performance and optimizes resistance to flow.

Make an inquiry

Code	1944000
Box Qty.	70
Filtration efficiency	>99.999%
Resistance to flow at 30L/min	1.0cm H_2O
Resistance to flow at 60L/min	2.3cm H_2O
Compressible volume	67ml
Weight	40g
Connectors	22ID – 22OD/15ID
Minimum tidal volume	>200ml

Inter-Guard™ range

Sterile

The Inter-Guard range of sterile breathing filters is designed for use in breathing systems in the operating room and the intensive care unit for the protection of the patient, breathing system and equipment. The perfect combination between size and performance.

Make an inquiry

Code	1344007S Ⓢ	1344000S Ⓢ	1344711S Ⓢ
Box Qty.	50	50	50
Luer lock port		✓	
Filtration efficiency	>99.998%	>99.998%	>99.998%
Resistance to flow at 30L/min	0.8cm H_2O	0.8cm H_2O	1.1cm H_2O
Resistance to flow at 60L/min	2.1cm H_2O	2.0cm H_2O	2.7cm H_2O
Compressible volume	41ml	42ml	41ml*
Weight	22g	23g	36g
Connectors	22ID/15OD - 22OD/15ID	22ID/15OD - 22OD/15ID	22ID/15OD - 22OD/15ID
Minimum tidal volume	>150ml	>150ml	>150ml
Accessories			Superset™ catheter mount

Ⓢ Sterile

* Filter Only

Clear-Guard™ range

The Clear-Guard range of breathing filters includes a number of options, all designed for use in breathing and anesthetic systems for the protection of the patient, hospital personnel and the equipment from potential microbial contamination. Designed with a rounded ergonomic polypropylene housing, the Clear-Guard 3 range represents our most cost-effective filter option, and is available with an integral 90˚ elbow, reducing the need for an additional catheter mount or separate patient elbow.

The Clear-Guard Midi low volume filter provides a further option with minimum deadspace; ideal for use in anesthesia.

Clear-Guard Midi

Clear-Guard 3

Clear-Guard 3 (angled)

Code	1644000	1544000	1545000
Qty.	100	150	75
Luer lock port	✓	✓	✓
Filtration efficiency	>99.9%	>99.99%	>99.99%
Resistance to flow at 30L/min	0.7cm H_2O	0.8cm H_2O	0.8cm H_2O
Resistance to flow at 60L/min	1.8cm H_2O	1.9cm H_2O	2.1cm H_2O
Compressible volume	34ml	60ml	75ml
Weight	19g	27g	34g
Connectors	22ID – 22OD/15ID	22ID/15OD – 22OD/15ID	22ID/15OD – 22OD/15ID
Minimum tidal volume	>100ml	>200ml	

Make an inquiry

illustrated

Hydro-Guard™ Mini

Pleated membrane filter

A versatile, low-volume breathing filter with a pleated mechanical membrane for use in anesthesia as an HMEF (moisture return: 24.3mg H_2O/L at VT 500ml), or in ICU as a filter only.

Code	1745000
Qty.	40
Luer lock port	✓
Filtration efficiency	>99.999%
Resistance to flow at 30L/min	1.3cm H_2O
Resistance to flow at 60L/min	2.9cm H_2O
Compressible volume	63ml
Weight	30g
Connectors	22ID/15OD – 22OD/15ID
Minimum tidal volume	>200ml

Make an inquiry

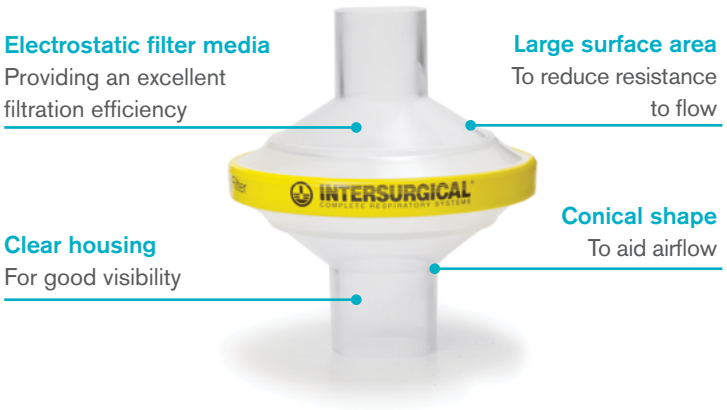
Flo-Guard

Low-resistance breathing filter for CPAP and bilevel

The Flo-Guard provides a combination of filtration performance with low-resistance. It is ideal for use in both the hospital and the home, where high flow rates may be used, including CPAP, bilevel and cough-assist applications. The Flo-Guard breathing filter is designed to be used at the machine-end of a breathing system to protect the patient and machine against cross contamination, while maintaining a low resistance across a wide range of flow rates.

Code	1690000
Qty.	50
Filtration efficiency	>99.99%
Resistance at 30L/min	0.4cm H_2O
Resistance at 60L/min	0.8cm H_2O
Resistance at 90L/min	1.4cm H_2O
Resistance at 120L/min	2.0cm H_2O
Resistance at 150L/min	2.7cm H_2O
Resistance at 180L/min	3.4cm H_2O
Resistance at 210L/min	4.3cm H_2O
Resistance at 240L/min	5.1cm H_2O
Compressible volume	80ml
Weight	27.8g
Connectors	22ID – 22OD

Make an inquiry



Air-Guard Clear

For use in respiratory systems and oxygen concentrators

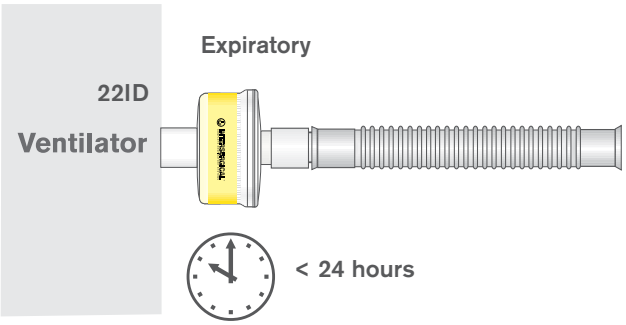
The Intersurgical Air-Guard Clear is a hydrophobic pleated mechanical filter, designed for the protection of oxygen concentrators and other respiratory equipment.

Providing an excellent level (>99.9999%) of protection against bacterial and viral challenges, the Air-Guard Clear's product performance has been tested, validated and verified at independent microbiological laboratories.

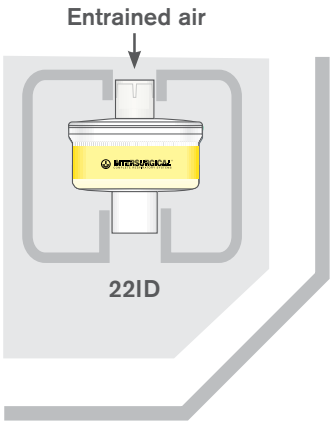
The Air-Guard Clear's pleated mechanical filter is validated for 24-hours use, but this can be extended when used in non-humidified gas flow. The product can be used for extended periods of time for the protection of oxygen concentrators, upon the discretion of the clinician.

Please note: this product is contraindicated for use at the patient connection end of the breathing system.

Respiratory system protection



Oxygen concentrator protection



Code	1790000
Qty.	50
Filtration efficiency	>99.9999%
Resistance to flow at 30L/min	0.9cm H_2O
Resistance to flow at 60L/min	1.9cm H_2O
Compressible volume	120ml
Weight	56g
Connectors	22ID – 22OD/15ID
Minimum tidal volume	>360ml

Make an inquiry

Intersurgical Pulmo-Protect™ lung function filter

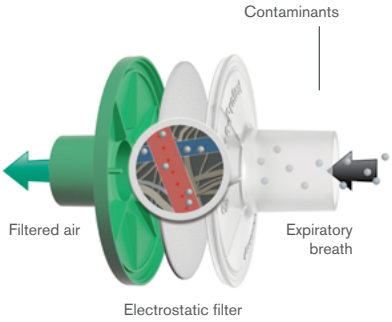
Forced expiratory and inspiratory maneuvers are used to assess a patient's lung function. This assessment helps diagnose the extent of any disease process in the patient's lung, as a pre and postoperative assessment, during smoking cessation and occupational health programs.

During these tests patients may generate peak flows as high as 12 L/sec (720 LPM) and expel infective droplets, which could contaminate the pulmonary function test equipment. As a result cross infection between patients is a real risk[1].

Pulmo-Protect combines low resistance with a high bacterial and viral efficiency filter designed specifically to protect the patient and equipment during lung function tests.

Pulmo-Protect provides:

- Protection of pulmonary function test equipment
- High filtration properties reduces risk of contamination between patients
- Low resistance performance ensures efficacy of results and complies with ATS/ERS recommendations[2]
- Low functional volume
- Microbiological filtration effectiveness has been independently tested and validated to provide >99.999% efficiency against bacteria and viruses[3]
- Flexible, comfortable, disposable mouth piece helps with patient compliance and improve the effectiveness of the test
- Comfortable single patient nose clip prevents patient-to-patient touch contamination
- Device compatible range of color coded filters available individually or as a complete pulmonary function test kit



Pulmo-Protect options

For use with the following test devices	Pulmo-Protect lung function filter	Filter with integrated elliptical mouthpiece	Filter, mouthpiece and nose clip	Filter, flexible mouthpiece and nose clip	Filter, flexible mouthpiece and nose clip
	1691000	1691004	1691050	1691010	1691013
JAEGER®, MasterScreen, SensorMedics®, Vmax™, Micro Medical®, Chest and Microgard®	(Qty 50) ○	(Qty 50) ○	(Qty 30) ○	(Qty 30) ○	(Qty 30) ○
Medisoft, BodyBox, HypAir Compact + and SpiroAir	1691001 (Qty 50) ●	1691005 (Qty 50) ●	1691051 (Qty 30) ●	1691011 (Qty 30) ●	1691014 (Qty 30) ●
Fukuda Denshi®, SP-350 and Fudac-77	1691002 (Qty 50) ●	1691006 (Qty 50) ●	1691052 (Qty 30) ●	1691012 (Qty 30) ●	-
NSpire™	1691003 (Qty 50) ●	1691007 (Qty 50) ●	1691053 (Qty 30) ●	1691016 (Qty 30) ●	-

Accessories

Code	Description	Qty.
14356000	Nose clip with foam pads	10

Make an inquiry

References:
1. Journal of Respiratory Medicine 2005.09.015 An audit into the efficacy of single use bacterial/viral filters for the prevention of equipment contamination during lung function assessment. 2. European Respiratory Journal 2005; 26: 319–338 Standardisation of spirometry M.R. Miller, J. Hankinson, V. Brusasco, F. Burgos, et al.
3. Nelson Labs 771942B.1, Nelson Labs 771943B.1

Inter-Therm™ T+

The Inter-Therm T+ is a heat and moisture exchange device designed for use with spontaneously breathing patients to reduce loss of heat and moisture during respiration.

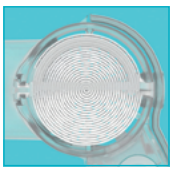
When a patient has a tracheostomy, the normal process of temperature and moisture maintenance is bypassed by the insertion of the tracheal tube. The possible loss of heat and moisture can lead to serious complications, notably damage to cilia and the mucous glands.

This in turn may result in retention of sputum and atelectasis, production of mucous plugs and potential tube occlusion.

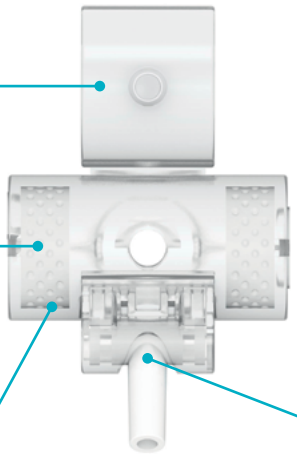
The Inter-Therm T+ has a number of unique features that make it an ideal product for prolonged use with spontaneously breathing patients.

Clipped suction port
Allows easy access for suctioning without removing the device

Clear housing and white HME elements
Optimizes visualization of possible pulmonary secretions



Unique corrugated paper design
Provides perfect combination between humidification output and low resistance to flow



Small and lightweight
Reduces pull and drag on the patient's airway

Optimal humidification
Reduces the side effects associated with breathing cold dry gases over a prolonged period of time

Integrated swivel oxygen connector
Allows for quick and convenient connection of supplemental oxygen and can be folded away when not in use

Code	Description	Length	Qty.
1875000	Inter-Therm T+ HME		100*
1875000S	Inter-Therm T+ HME - Sterile		100
1875001	Inter-Therm T+ HME with oxygen tube	1.8m	40
1875001S	Inter-Therm T+ HME with oxygen tube - Sterile	1.8m	20

Code	1875000(*S)	1875001(*S)
Moisture loss	13.1mg H_2O/L	13.1mg H_2O/L
Moisture return	26.1mg H_2O/L	26.1mg H_2O/L
Resistance at 30L/min	0.4cm H_2O	0.4cm H_2O
Resistance at 60L/min	1.1cm H_2O	1.1cm H_2O
Compressible volume	17ml	17ml
Weight	9g	9g
Connectors	15ID	15ID
Minimum tidal volume	>60ml	>60ml
Accessories		1.8m oxygen tube

Average Fi O_2 at variable O_2 flow rates

Oxygen (L/min)	Fi O_2 at 15 BPM
1	26.4%
2	31.8%
3	35.0%
4	38.2%
5	41.8%
6	44.9%
7	47.4%
8	49.6%

Make an inquiry

(*S) Add an S to the seven digit code number for the sterile version of this product eg.1875000S (sterile quantity is shown in brackets).

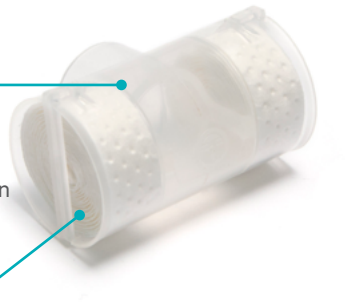
Inter-Therm™ T HME

The Inter-Therm T is a heat and moisture exchange (HME) designed for use with spontaneously breathing patients in order to reduce loss of heat and moisture during respiration, ideal for patients and clinicians caring for patients living with a tracheostomy.

Clear housing and white HME elements
Optimizes visualization of possible pulmonary secretions

Small and lightweight
Reduces pull and drag on the patient's airway

Unique corrugated paper design
Provides a perfect combination between humidification output and low resistance to flow



Optimal humidification
Reduces the side effects associated with breathing cold dry gases over a prolonged period of time

Code	Description	Qty.
1875020	Inter-Therm T HME	100
1875020S	Inter-Therm T HME - Sterile	100

Code	1875020 (S*)
Moisture loss	11.9mg H_2O/L
Moisture return	27.1mg H_2O/L
Resistance at 30L/min	0.3cm H_2O
Resistance at 60L/min	0.8cm H_2O
Compressible volume	16ml
Weight	5g
Connectors	15ID
Minimum tidal volume	>60ml

Average FiO_2 at variable O_2 flow rates

Oxygen (L/min)	FiO_2 at 15 BPM
1	26.4%
2	31.8%
3	35.0%
4	38.2%
5	41.8%
6	44.9%
7	47.4%
8	49.6%

Make an inquiry

Hydro-Therm™ Micro HME

In normal respiration the anatomy of the upper airway helps to warm and humidify the inspired air, and to retain the warmth and moisture contained in the expired air. During inspiration, even cold or dry gas is typically heated to 37°C and when fully saturated contains 44mg H_2O per liter. In mechanical ventilation or anesthesia, the patient's upper airway may be bypassed by the introduction of an artificial airway. As a result, the patient's lungs may be confronted with cold dry inspired gas. The side effects of this are well documented and include damaged cilia, thicker mucous, increased risk of tube occlusion and infection.

The Hydro-Therm Micro is a small volume, lightweight HME designed to replicate the functions of the body's upper airway by conserving expired heat and moisture and returning to the patient during inhalation.

The Hydro-Therm Micro is suitable for use on neonates and infants with a tracheostomy or for short term procedures and during transport.

Small and lightweight
Reduces the risk of inadvertent pull and drag on the patient's airway

Moisture return
Tested in accordance with ISO 9360, delivers a moisture return of 29.5mg H_2O/L

Low compressible volume
Reduces deadspace and potential rebreathing of expired Carbon Dioxide

Safety by design
Safely secures the position of the media throughout use

Low resistance to flow
Minimizes the work of breathing

Suitable for use on neonatal and infant patients
With a tracheostomy, during transport or short procedures

Larger surface area of HME media
The open celled foam HME maximizes moisture return with a low compressible volume

Safe and secure connections
Tapered connections, compliant with ISO 5356

Code	Description	Qty.
1442000	Hydro-Therm Micro HME	120

Code	1442000
Moisture loss	9.2mg H_2O/L
Calculated moisture return	29.5mg H_2O/L
Resistance at 5L/min	0.3cm H_2O
Resistance at 10L/min	0.8cm H_2O
Compressible Volume	2.2ml
Minimum tidal volume	>10ml
Weight	2.8g
Connectors	15ID/15OD

Make an inquiry

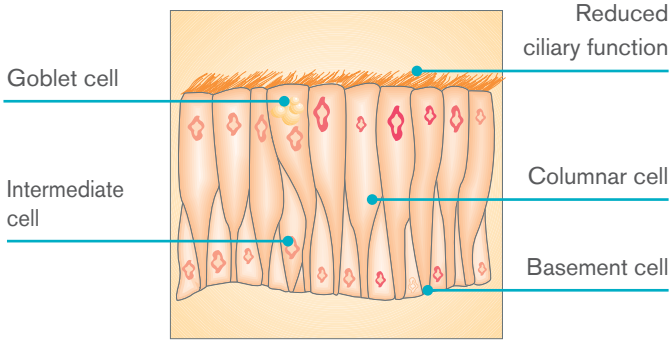
Heat and Moisture Exchangers (HMEs)

In normal respiration the anatomy of the upper airway helps to warm and humidify inspired air, and to retain the warmth and moisture contained in expired air. During inspiration, even cold or dry air is typically heated to 37 °C and, fully saturated, contains 44mg H_2O per liter. In mechanical ventilation or anesthesia, the patient's upper airway may be bypassed by the introduction of a tracheal tube. As a result, the patient's lungs may be confronted with cold, dry, inspired gas.

Prolonged exposure to dry ventilatory gases can lead to:

- Localized inflammation of the trachea
- A reduction in ciliary function
- Retention and thickening of secretions
- Lowering of patient temperature
- Reduction in cardiopulmonary function
- Increased risk of tracheostomy tube occlusion
- Extended duration and cost of care

Respiratory epithelium adversely affected by heat & moisture loss

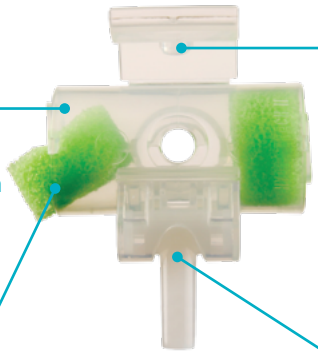


Hydro-Trach™ T range

A heat and moisture exchanger designed for use on tracheostomized patients. The Hydro-Trach T is an ideal product for prolonged use with spontaneously breathing patients.

Clear housing
For easy visual inspection of possible secretion build up

Anti-occlusion mechanism
Allows the HME element to partially dislodge in the event of total occlusion or vigorous cough



Clipped suctioning port
Allows for easier suctioning without removal of the device

Small and lightweight
Reduces pull on the patient connection

An integral swivel oxygen connector (except 1870000 and 1871000)
Allows for connection of the oxygen tube without the need of a separate oxygen adapter, which can be easily folded away when not in use

Code	1870000	1871000	1873000	1874000
Qty.	100	40	100	40
Moisture loss	13.2mg H_2O/L	13.2mg H_2O/L	13.2mg H_2O/L	13.2mg H_2O/L
Calculated moisture return	26mg H_2O/L	26mg H_2O/L	26mg H_2O/L	26mg H_2O/L
Resistance at 30L/min	0.3cm H_2O	0.3cm H_2O	0.3cm H_2O	0.3cm H_2O
Resistance at 60L/min	0.6cm H_2O	0.6cm H_2O	0.6cm H_2O	0.6cm H_2O
Compressible volume	19ml	19ml* + O_2 tube	19ml	19ml* + O_2 tube
Weight	8g	8g*	8g	8g*
Connectors	15ID	15ID*	15ID	15ID*
Minimum tidal volume	60ml	60ml*	>60ml	>60ml*
Accessories		1.8m oxygen tube		1.8m oxygen tube

Make an inquiry | Find out more | Watch the video

* HME Only

Hydro-Therm™ HME range

A dedicated range of Heat and Moisture Exchangers designed to replicate the functions of the body's upper airway by conserving expired heat and moisture and returning these to the patient during inhalation. The Hydro-Therm is a small-volume, lightweight device which is clinically suitable over a wide range of patient sizes.

Make an inquiry

Code	1850000	1855000
Qty.	80	80
Luer lock port		✓
Moisture loss	7.8mg H_2O/L	7.8mg H_2O/L
Calculated moisture return	30.8mg H_2O/L	30.8mg H_2O/L
Resistance to flow at 30L/min	0.5cm H_2O	0.5cm H_2O
Resistance to flow at 60L/min	1.6cm H_2O	1.6cm H_2O
Compressible volume	20ml	20ml
Weight	11.8g	11.8g
Connectors	15OD – 22OD/15ID	15OD – 22OD/15ID
Minimum tidal volume	>60ml	>60ml

Hydro-Therm™ 3 HME range

A dedicated range of heat and moisture exchangers designed to replicate the functions of the body's upper airway by conserving expired heat and moisture and returning these to the patient during inhalation. The Hydro-Therm 3 is a large-volume HME with rounded housing for use in anesthesia and intensive care.

Make an inquiry

Code	1560000	15606500
Qty.	150	20
Luer lock port	✓	✓
Moisture loss	6.7mg H_2O/L	6.7mg H_2O/L
Calculated moisture return	31.6mg H_2O/L	31.6mg H_2O/L
Resistance at 30L/min	0.2cm H_2O	0.2cm H_2O
Resistance at 60L/min	0.7cm H_2O	0.8cm H_2O
Compressible volume	59ml	59ml*
Weight	31g	31g*
Connectors	22ID/15OD – 22OD/15ID	22ID/15OD – 22OD/15ID
Minimum tidal volume	>200ml	>200ml
Accessories		Flextube™ 22ID - 15ID

* HME only

The Heat and Moisture Exchanging Filters (HMEFs)

Our range of Heat and Moisture Exchanging Filters (HMEFs) combines the filtration efficiency of dedicated breathing filters with optimum moisture return provided by the addition of an HME element. Designed for use at the patient connection.

Filta-Therm™ range



Code	1942000	19426500	19426502
Box Qty.	70	20	20
Moisture loss	9.3mg H_2O/L	9.3mg H_2O/L	9.3mg H_2O/L
Calculated moisture return	29.5mg H_2O/L	29.5mg H_2O/L	29.5mg H_2O/L
Filtration efficiency	>99.999%	>99.999%	>99.999%
Resistance at 30L/min	1.1cm H_2O	1.1cm H_2O	1.1cm H_2O
Resistance at 60L/min	2.5cm H_2O	2.5cm H_2O	2.5cm H_2O
Compressible volume	66ml	66ml*	66ml*
Weight	42g	42g*	42g*
Connectors	22ID – 22OD/15ID	22ID – 22OD/15ID*	22ID-22OD/15ID*
Minimum tidal volume	>200ml	>200ml	>200ml
Accessories		Flextube™ 22ID - 15ID	Flexible catheter mount 22ID - 22OD/15ID

Make an inquiry



Code	1941000	19416500	1906000
Box Qty.	70	20	70
Luer lock port	✓	✓	✓
Moisture loss	9.3mg H_2O/L	9.3mg H_2O/L	9.9mg H_2O/L
Calculated moisture return	29.5mg H_2O/L	29.5mg H_2O/L	28.9mg H_2O/L
Filtration efficiency	>99.999%	>99.999%	>99.999%
Resistance at 30L/min	1.0cm H_2O	1.0cm H_2O	1.2cm H_2O
Resistance at 60L/min	2.4cm H_2O	2.4cm H_2O	2.4cm H_2O
Compressible volume	65ml	65ml*	70ml
Weight	43g	43g*	45g
Connectors	22ID – 22OD/15ID	22ID – 22OD/15ID*	22OD – 22OD – 22OD/15ID
Minimum tidal volume	>200ml	>200ml	>210ml
Accessories		Flextube™ 22ID - 15ID	

* HMEF only

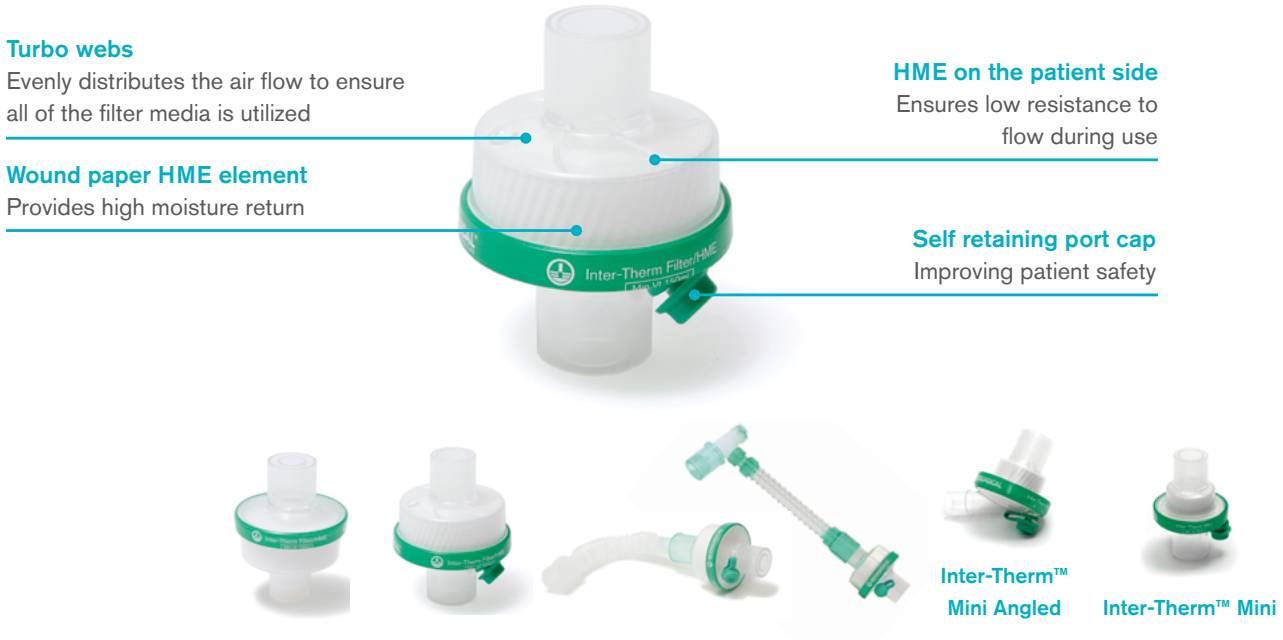
Inter-Therm™ range

Sterile

The Inter-Therm range of sterile HMEFs is designed for use in breathing systems in the operating room and intensive care unit.

The Inter-Therm includes a wound paper HME media, providing excellent humidification and low resistance properties.

The Inter-Therm Mini Angled offers an easy to use option with an integral 90° elbow for pediatrics, reducing the need for an additional catheter mount or separate patient elbow.



Code	1341007S	1341000S	1341011S	1341580S	1332000S	1331000S
Box Qty.	50	50	50	50	50	50
Luer lock port		✓	✓	✓	✓	✓
Moisture loss	6mg H_2O/L	6mg H_2O/L	6mg H_2O/L	6mg H_2O/L	8.5mg H_2O/L	8.4mg H_2O/L
Calculated moisture return	32.3mg H_2O/L	32.3mg H_2O/L	32.3mg H_2O/L	32.3mg H_2O/L	30.1mg H_2O/L	30.2mg H_2O/L
Filtration efficiency	>99.998%	>99.998%	>99.998%	>99.998%	>99.99%	>99.99%
Resistance at 30L/min	1.6cm H_2O	1.6cm H_2O	1.4cm H_2O	1.6cm H_2O	2.2cm H_2O	2.2cm H_2O
Resistance at 60L/min	2.7cm H_2O	2.7cm H_2O	3.5cm H_2O	3.9cm H_2O	N/A	N/A
Compressible volume	57ml	57ml	57ml*	57ml*	29ml	28ml
Weight	30g	31g	45g	58g	19g	20g
Connectors	22ID/15OD - 22OD/15ID	22ID/15OD - 22OD/15ID	22ID/15OD - 22OD/15ID	22ID/15OD - 22OD/15ID	15OD-22OD/15ID	22ID/15OD-22OD/15ID
Minimum tidal volume	>180ml	>180ml	>180ml	>180ml	>90ml	>90ml
Accessories			Superset™ catheter mount	Smoothbore catheter mount with double swivel elbow and double flip-top cap		

Make an inquiry

S Sterile
* HMEF only

Clear-Therm™ range

Medium efficiency

Designed with a rounded ergonomic polypropylene housing, Clear-Therm 3 represents our optimal combination of performance and cost-effectiveness.

Clear-Therm 3

Clear-Therm 3

Code	1541000	15416500
Box Qty.	150	20
Luer lock port	✓	✓
Moisture loss	7.8mg H_2O/L	7.8mg H_2O/L
Calculated moisture return	30.8mg H_2O/L	30.8mg H_2O/L
Filtration efficiency	>99.99%	>99.99%
Resistance at 30L/min	0.8cm H_2O	0.8cm H_2O
Resistance at 60L/min	2.1cm H_2O	2.1cm H_2O
Compressible volume	60ml	60ml*
Weight	29g	29g*
Connectors	22ID/15OD – 22OD/15ID	22ID/15OD – 22OD/15ID*
Minimum tidal volume	>200ml	>200ml
Accessories		Flextube™ 22ID - 15ID

Make an inquiry

Clear-Therm Mini

Clear-Therm Micro

Code	1831000	1441000
Box Qty.	40	50
Luer lock port	✓	✓
Moisture loss	6.8mg H_2O/L	12.3mg H_2O/L
Calculated moisture return	31.7mg H_2O/L	26.8mg H_2O/L
Filtration efficiency	>99.99%	>99.99%
Resistance at 30L/min	1.5cm H_2O	N/A
Resistance at 11L/min	N/A	1.0cm H_2O
Compressible volume	26ml	11ml
Weight	22g	11g
Connectors	22ID/15OD – 22OD/15ID	15OD –15ID
Minimum tidal volume	>90ml	>35ml

* HMEF only

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