3M Science. Applied to Life.™

3M™ Bair Hugger™ System

vs.

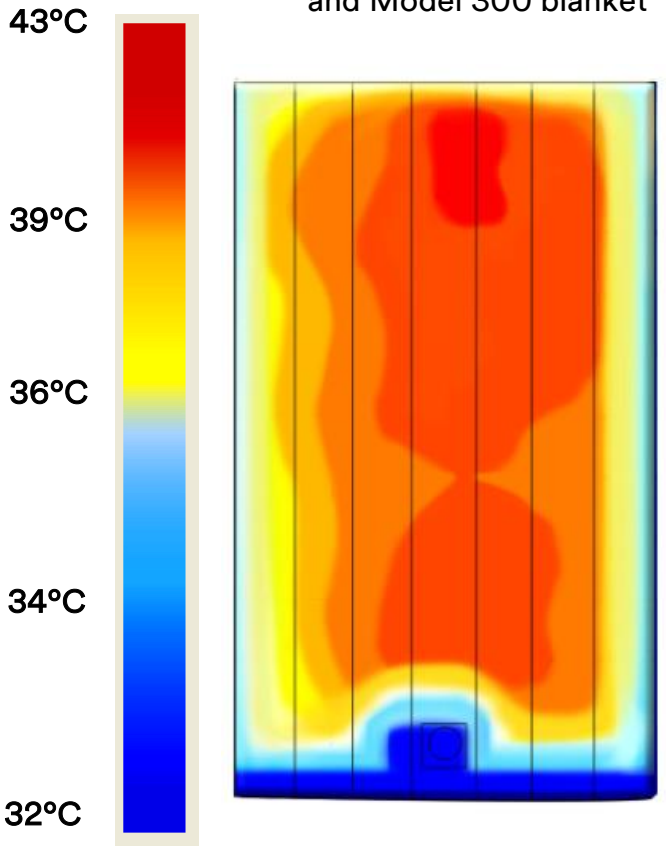
Competitive systems

Mistral-Air® System by Stryker

Temperature Distribution[1] – Adult Full Over Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit
and Model 300 blanket



Blanket Temperatures[1]

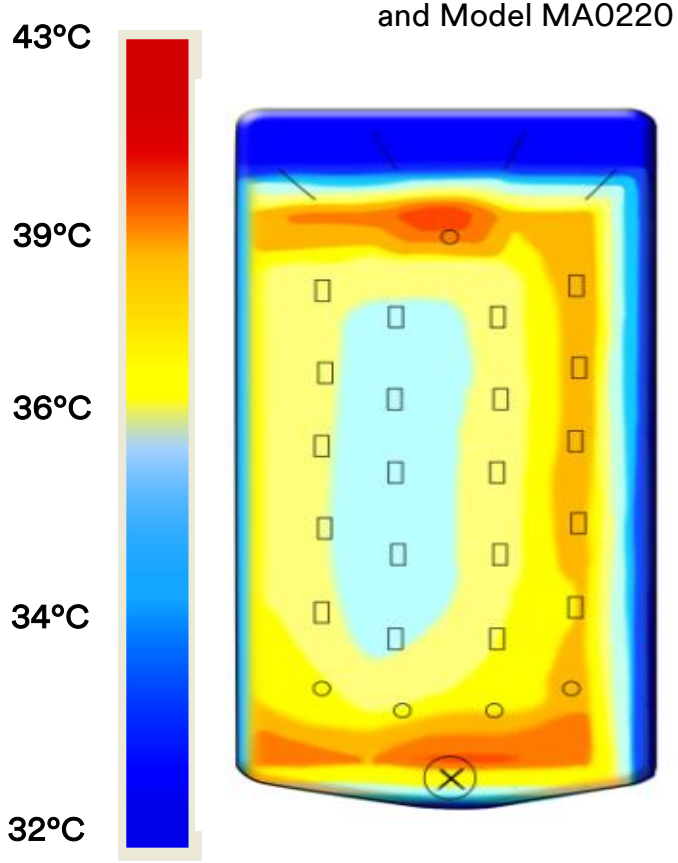
Greatest:	41.8°C
Lowest:	37.1°C*
Mean:	39.9°C*

Heat Transfer Rate[2]

Q-Value:	67.7 Watts*

Mistral-Air® System

Model 1100 (120V, 60 Hz) warming unit
and Model MA0220 blanket



Blanket Temperatures[1]

Greatest:	41.8°C
Lowest:	36.4°C*
Mean:	38.1°C*

Heat Transfer Rate[2]

Q-Value:	41.7 Watts*

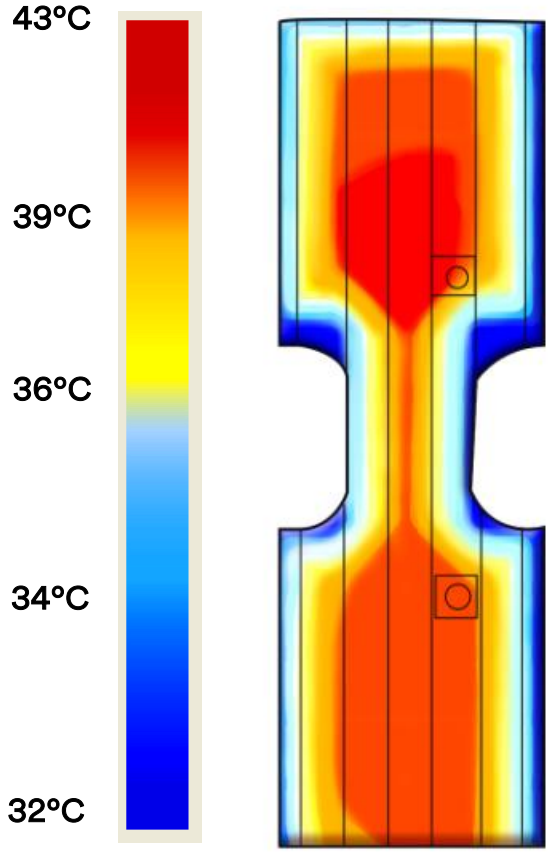
*Denotes a statistically significant difference represented by a P (probability) value below 0.05

Mistral-Air® System by Stryker

Temperature Distribution[1] – Adult Upper Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit
and Model 522 blanket



Blanket Temperatures[1]

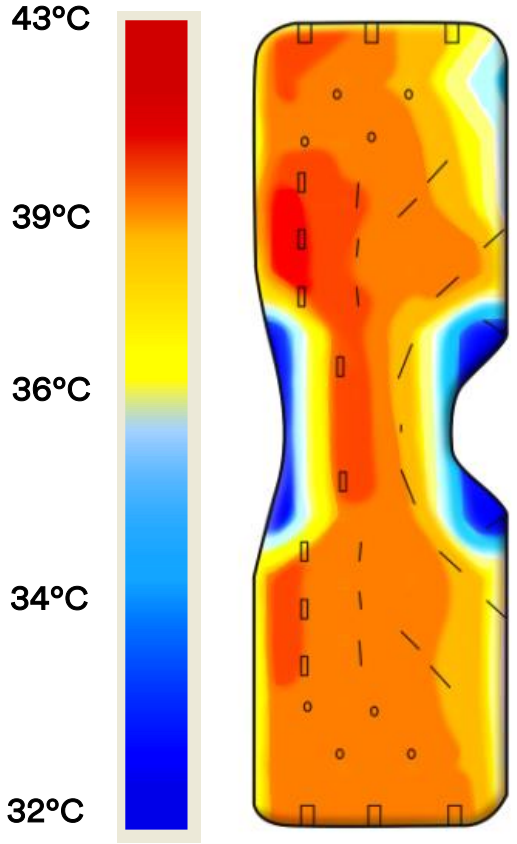
Greatest:	41.8°C*
Lowest:	40.0°C*
Mean:	40.9°C*

Heat Transfer Rate[2]

Q-Value:	67.0 Watts*

Mistral-Air® System

Model 1100 (120V, 60 Hz) warming unit
and Model MA0260 blanket



Blanket Temperatures[1]

Greatest:	42.4°C*
Lowest:	36.1°C*
Mean:	39.8°C*

Heat Transfer Rate[2]

Q-Value:	35.6 Watts*

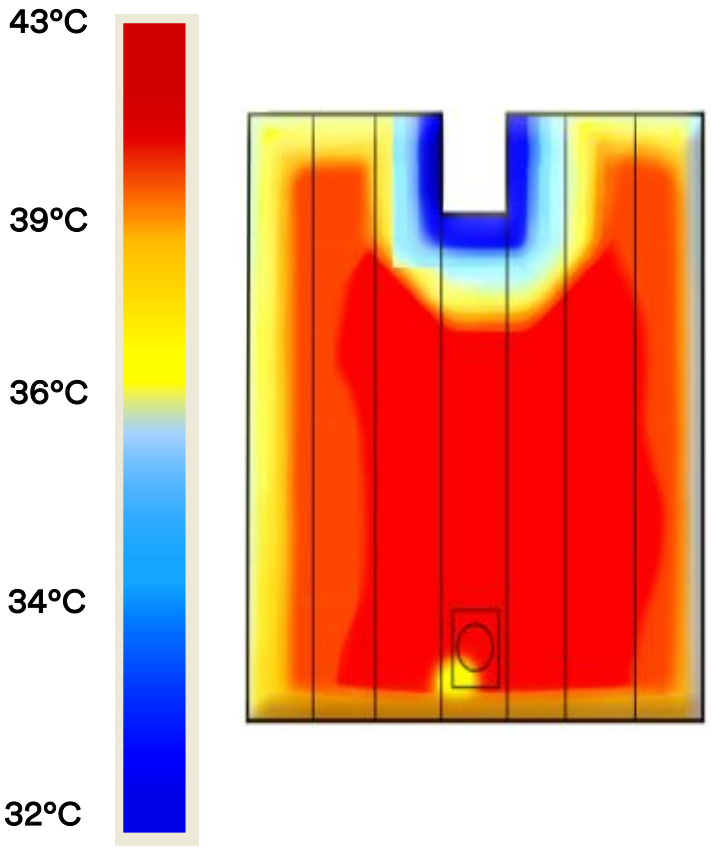
*Denotes a statistically significant difference represented by a P (probability) value below 0.05

Mistral-Air® System by Stryker

Temperature Distribution[1] – Adult Lower Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit
and Model 525 blanket



Blanket Temperatures[1]

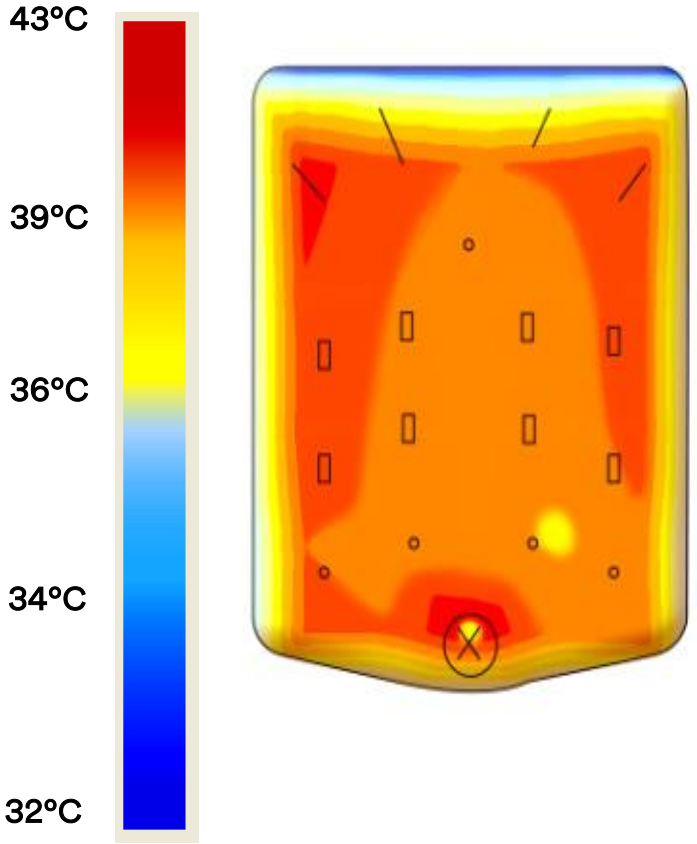
Greatest:	41.9°C
Lowest:	39.3°C
Mean:	40.9°C

Heat Transfer Rate[2]

Q-Value:	93.2 Watts*

Mistral-Air® System

Model 1100 (120V, 60 Hz) warming unit
and Model MA0250 blanket



Blanket Temperatures[1]

Greatest:	42.2°C
Lowest:	39.2°C
Mean:	40.7°C

Heat Transfer Rate[2]

Q-Value:	52.0 Watts*

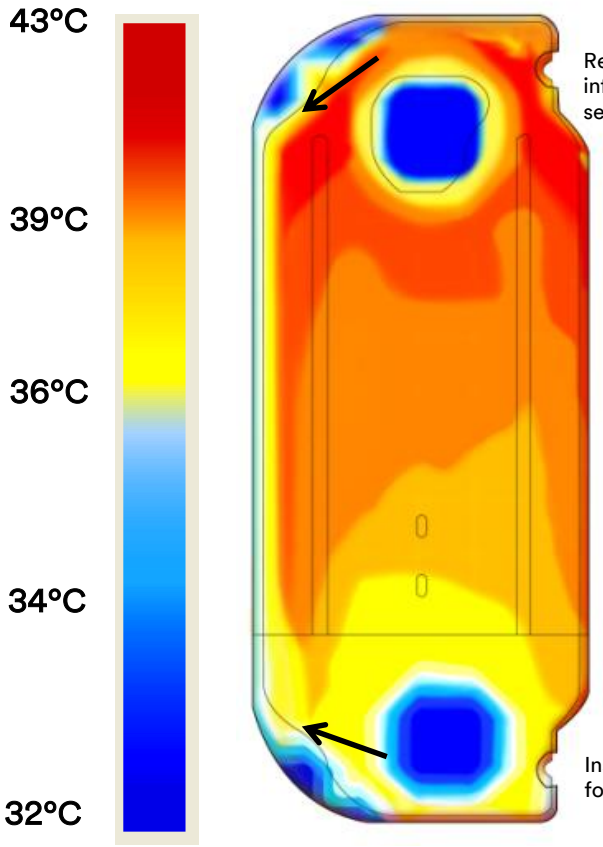
*Denotes a statistically significant difference represented by a P (probability) value below 0.05

Mistral-Air® System by Stryker

Temperature Distribution[1] – Adult Underbody Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit
and Model 635 blanket

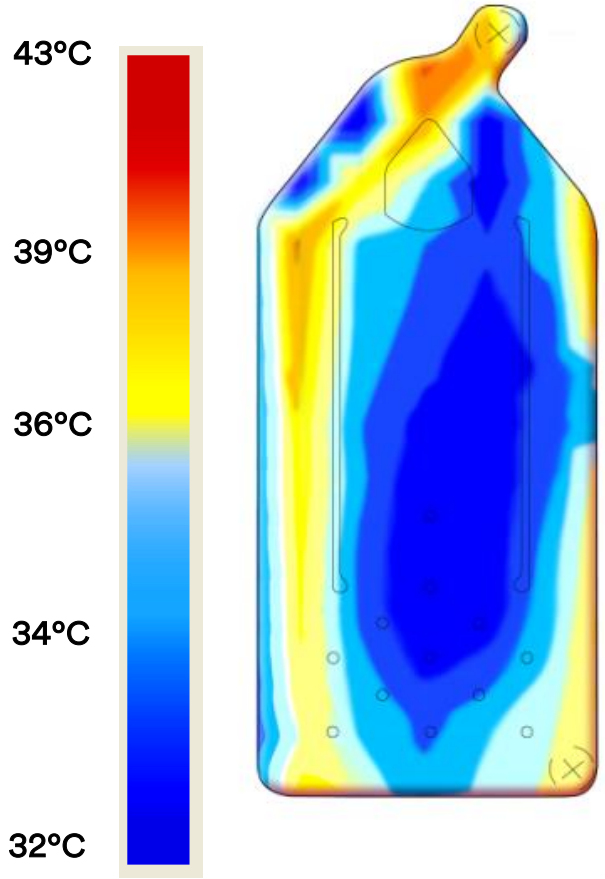


Blanket Temperatures[1]

Greatest:	42.1°C*
Lowest:	36.5°C*
Mean:	39.3°C*

Mistral-Air® System

Model 1100 (120V, 60 Hz) warming unit
and Model MA0400 blanket



Blanket Temperatures[1]

Greatest:	41.0°C*
Lowest:	33.7°C*
Mean:	36.4°C*

*Denotes a statistically significant difference represented by a P (probability) value below 0.05

References for pages 2-5

1. 3M data on file. In vitro study. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand.* 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. *Acta Anaesthesiol Scand*. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand*. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Mistral-Air Model 1100 (120V, 60Hz) warming units.
2. 3M data on file. 3M LAB-SUPPORT-05-233217

Warm Touch™ System by Medtronic/Covidien

3M completed testing to compare 3M™ Bair Hugger™ System vs. the Covidien WarmTouch™ system

- Measured **temperature distribution** of blankets and warming units[1]
- Measured the **amount of heat transferred** from the blankets and warming units[2]

3M™ Bair Hugger™ Forced-Air Warming therapy demonstrated a **uniform distribution** of temperature in each of the three blanket styles evaluated[1]

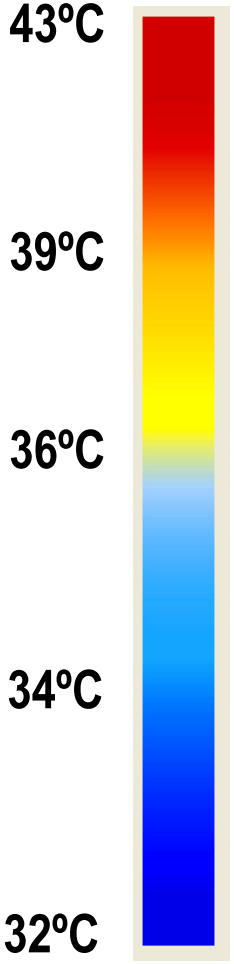
Testing demonstrates 3M™ Bair™ Hugger™ therapy provides **1.4 times more heat transfer** than the WarmTouch system[2] because:

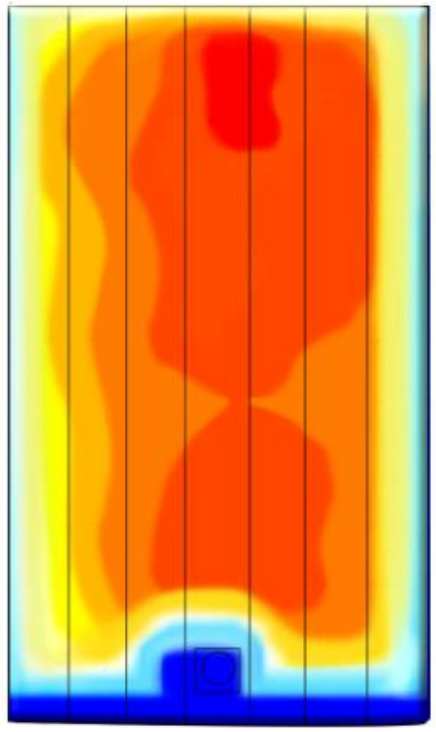
- **More air flow** is provided by the 3M™ Bair Hugger™ Warming Unit as compared to the WarmTouch warming unit[2]
- **Bair Hugger blankets contain more perforations,** which allow more warm air to reach the patient[1,2]

1. 3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Covidien WT6000 (120V, 60Hz) warming units.
2. 3M data on file. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand*. 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. *Acta Anaesthesiol Scand*. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand*. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Covidien WT6000 (120V, 60Hz) warming units.
3. WarmTouch is a trademark of Covidien registered in the U.S. Patent and Trademark office and certain other countries.

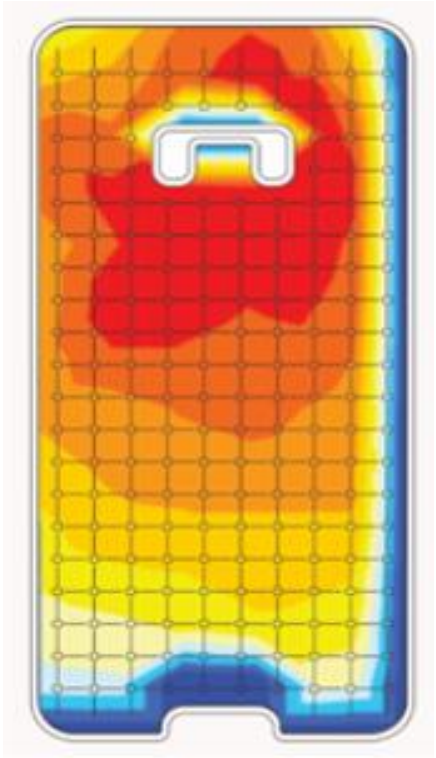
Warm Touch™ System by Medtronic/Covidien

Temperature Distribution Results – Full Body Blanket





3M™ Bair Hugger™ System



Covidien WarmTouch™ System

Contact Surface Temperature (CST)	Bair Hugger™ Therapy	WarmTouch System**
Greatest CST*	41.8°C	42.1°C
Lowest CST	37.1°C	34.7°C
Mean CST	39.9°C	39.3°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

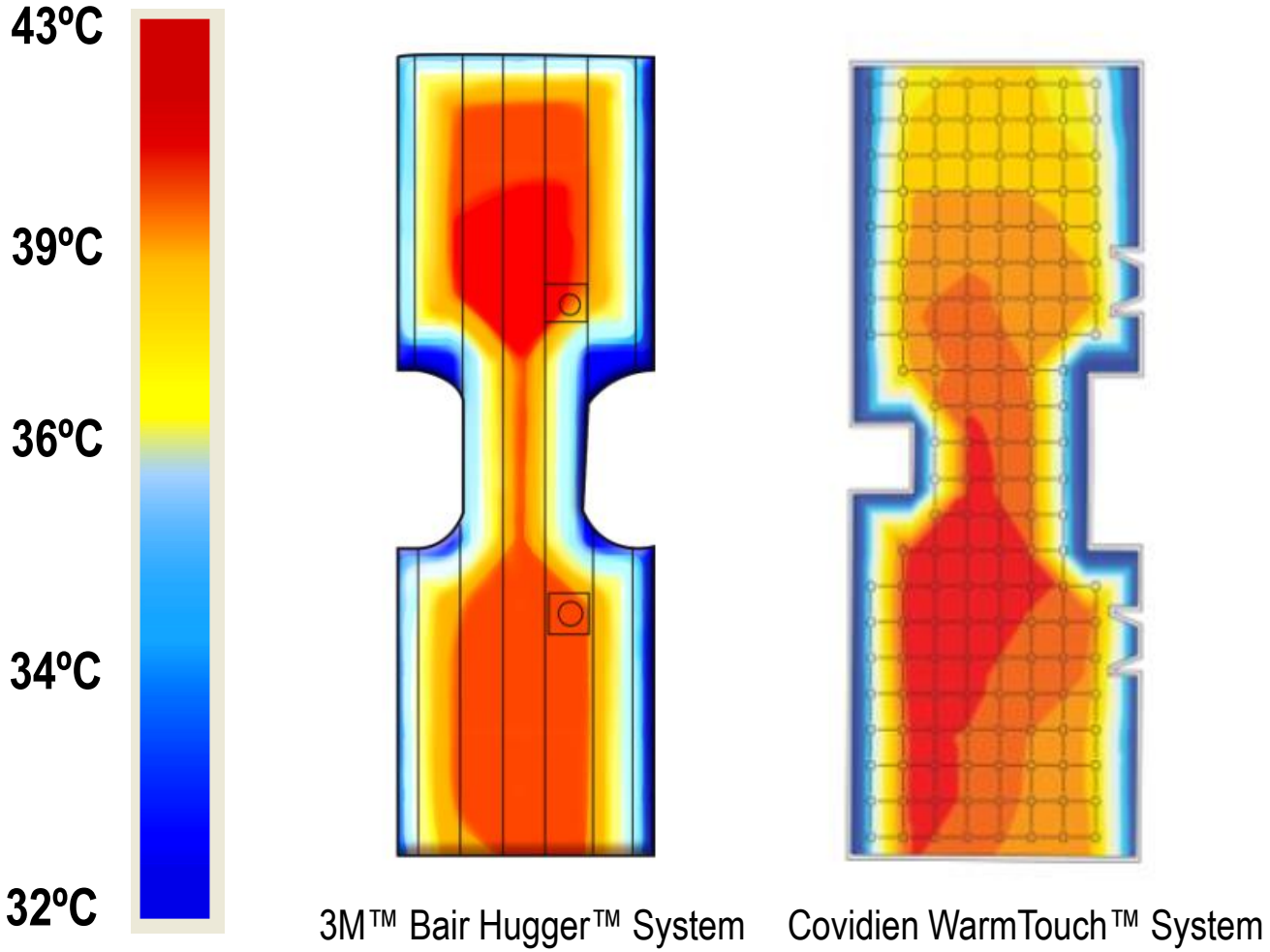
** The WarmTouch WT6000 (120V, 60Hz) warming unit has a "High" set-point temperature of 47°C as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a "High" set-point of 43°C.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 300 full body blanket, and Covidien WarmTouch WT6000 (120V, 60Hz) warming unit with a WarmTouch Model 5030810 full body blanket.

WarmTouch is a trademark of Covidien registered in the U.S. Patent and Trademark office and certain other countries.

Warm Touch™ System by Medtronic/Covidien

Temperature Distribution Results – Upper Body Blanket



Contact Surface Temperature (CST)	Bair Hugger™ Therapy	WarmTouch System**
Greatest CST*	41.8°C	42.1°C
Lowest CST	40.0°C	36.3°C
Mean CST	40.9°C	39.6°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

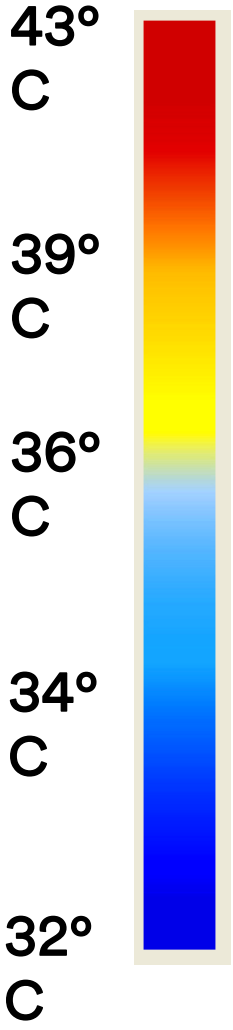
** The WarmTouch WT6000 (120V, 60Hz) warming unit has a “High” set-point temperature of 47°C as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a “High” set-point of 43°C.

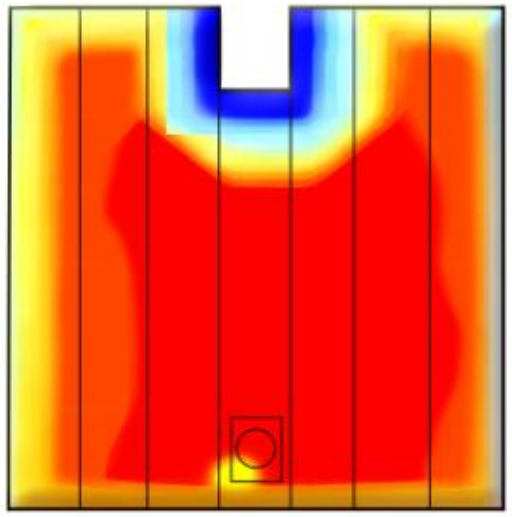
3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 522 upper body blanket, and Covidien WarmTouch WT6000 (120V, 60Hz) warming unit with a WarmTouch Model 5030870 upper body blanket.

WarmTouch is a trademark of Covidien registered in the U.S. Patent and Trademark office and certain other countries.

Warm Touch™ System by Medtronic/Covidien

Temperature Distribution Results – Lower Body Blanket





3M™ Bair Hugger™ System

Covidien WarmTouch™ System

Contact Surface Temperature (CST)	Bair Hugger™ Therapy	WarmTouch System**
Greatest CST*	41.9°C	42.2°C
Lowest CST	39.3°C	37.3°C
Mean CST	40.9°C	39.9°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

** The WarmTouch WT6000 (120V, 60Hz) warming unit has a “High” set-point temperature of 47°C as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a “High” set-point of 43°C.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 525 lower body blanket, and Covidien WarmTouch WT6000 (120V, 60Hz) warming unit with a WarmTouch Model 5030880 lower body blanket.

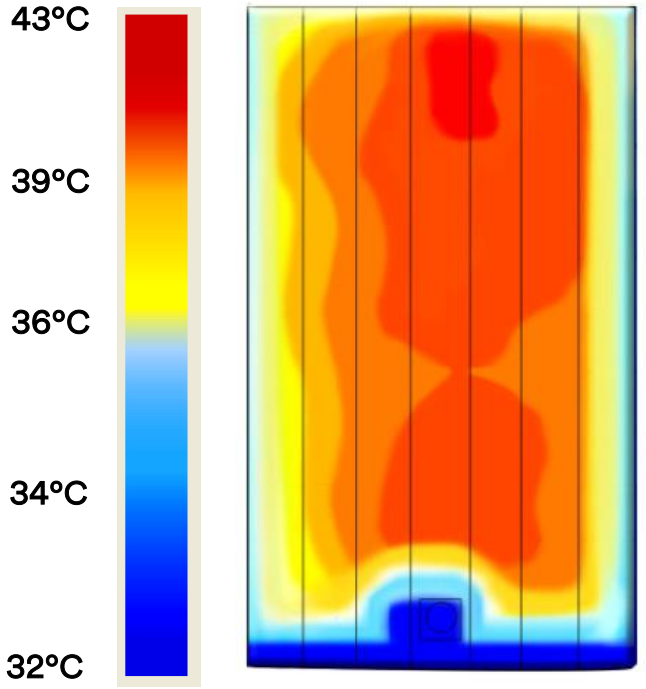
WarmTouch is a trademark of Covidien registered in the U.S. Patent and Trademark office and certain other countries.

Cocoon System by Care Essentials

Temperature Distribution[1] – Adult Full Over Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit and Model 300 blanket



Blanket Temperatures[1]

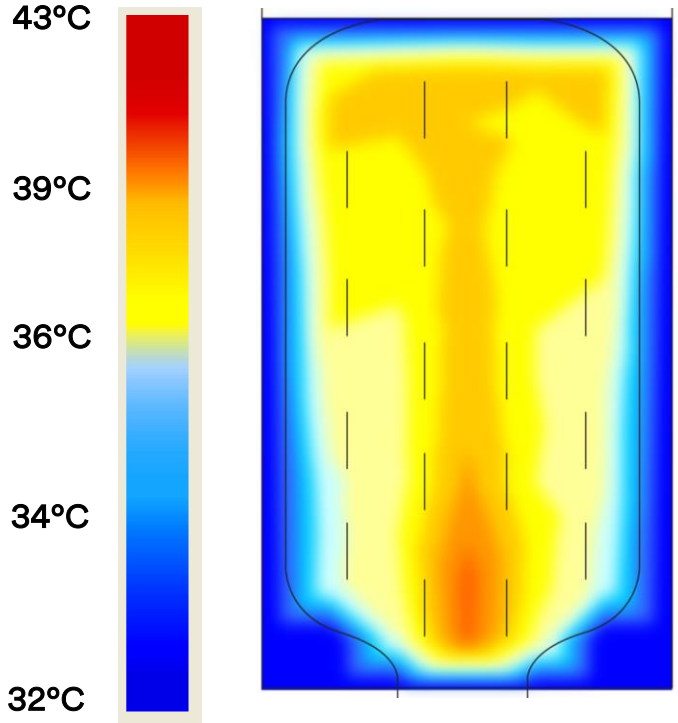
Greatest:	41.8°C*
Lowest:	37.1°C*
Mean:	39.9°C*

Heat Transfer Rate[2]

Q-Value:	67.7 Watts*

COCOO System

Model CWS 4000 (120V, 60 Hz) warming unit and Model CLM 0101 blanket



Blanket Temperatures[1]

Greatest:	40.7°C*
Lowest:	34.8°C*
Mean:	37.4°C*

Heat Transfer Rate[2]

Q-Value:	42.5 Watts*

*Denotes a statistically significant difference ($p < 0.05$) between the Bair Hugger™ System and the COCOON system

1. 3M data on file. In vitro study performed without body weight. Contact surface temperature testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

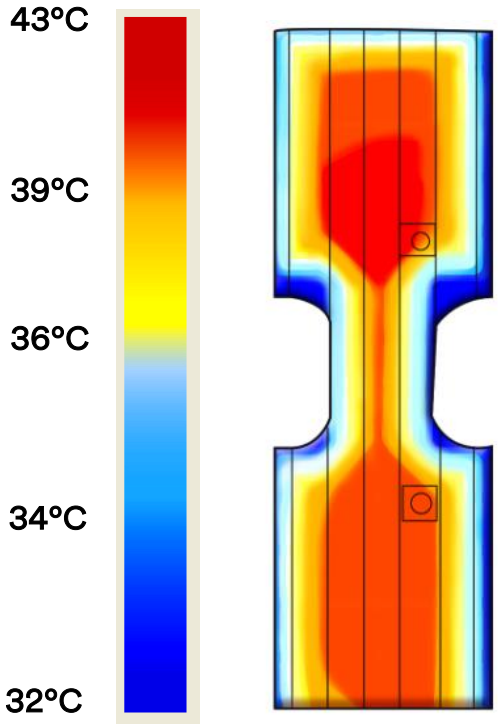
2. 3M data on file. In vitro study. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. Acta Anaesthesiol Scand. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

Cocoon System by Care Essentials

Temperature Distribution[1] – Adult Upper Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit and Model 522 blanket



Blanket Temperatures[1]

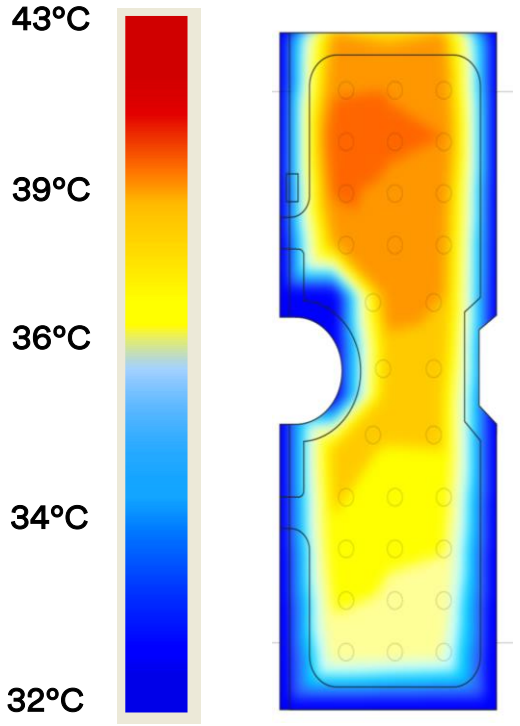
Greatest:	41.8°C*
Lowest:	40.0°C*
Mean:	40.9°C*

Heat Transfer Rate[2]

Q-Value:	67.0 Watts*

COCOO System

Model CWS 4000 (120V, 60 Hz) warming unit and Model CLM 0104 blanket



Blanket Temperatures[1]

Greatest:	40.8°C*
Lowest:	35.7°C*
Mean:	38.4°C*

Heat Transfer Rate[2]

Q-Value:	30.5 Watts*

*Denotes a statistically significant difference ($p < 0.05$) between the Bair Hugger™ System and the COCOON system

1. 3M data on file. In vitro study performed without body weight. Contact surface temperature testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

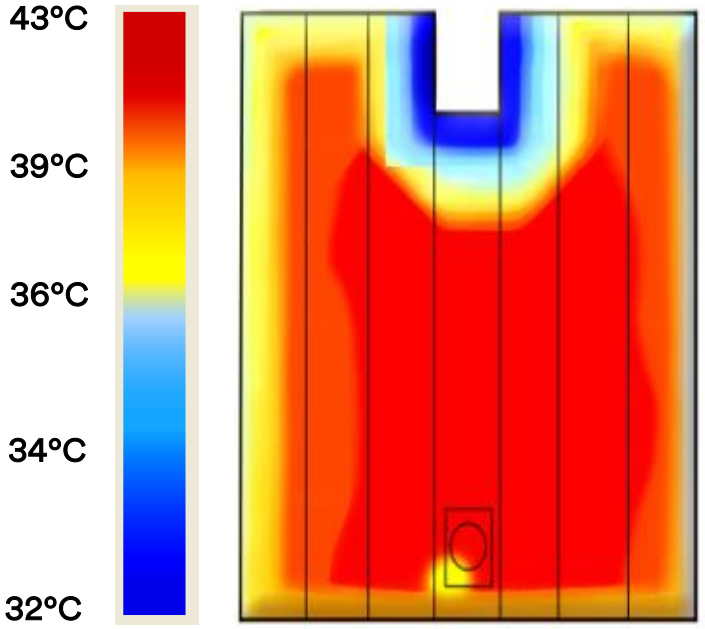
2. 3M data on file. In vitro study. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. Acta Anaesthesiol Scand. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

Cocoon System by Care Essentials

Temperature Distribution[1] – Adult Lower Body Blanket

3M™ Bair Hugger™ System

Model 775 (120V, 60 Hz) warming unit and Model 525 blanket



Blanket Temperatures[1]

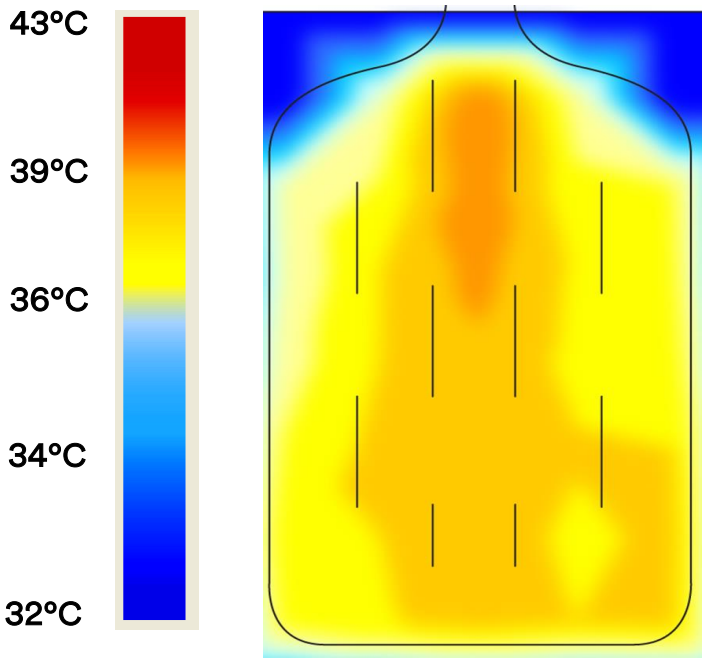
Greatest:	41.9°C*
Lowest:	39.3°C*
Mean:	40.9°C*

Heat Transfer Rate[2]

Q-Value:	93.2 Watts*

COCOON System

Model CWS 4000 (120V, 60 Hz) warming unit and Model CLM 0102 blanket



Blanket Temperatures[1]

Greatest:	40.0°C*
Lowest:	35.8°C*
Mean:	37.7°C*

Heat Transfer Rate[2]

Q-Value:	50.0 Watts*

*Denotes a statistically significant difference ($p < 0.05$) between the Bair Hugger™ System and the COCOON system

1. 3M data on file. In vitro study performed without body weight. Contact surface temperature testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

2. 3M data on file. In vitro study. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. Acta Anaesthesiol Scand. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. Acta Anaesthesiol Scand. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Cocoon CWS 4000 (120V, 60Hz) warming units.

Performance Comparison Testing Results

3M completed testing to compare 3M™ Bair Hugger™ System vs. Snuggle Warm® convective warming system (Smiths Medical)

- Measured **temperature distribution** of blankets and warming units[1]
- Measured the **amount of heat transferred** from the blankets and warming units[2]

3M™ Bair Hugger™ System demonstrated a **uniform distribution** of temperature in each of the four blanket styles evaluated[1]

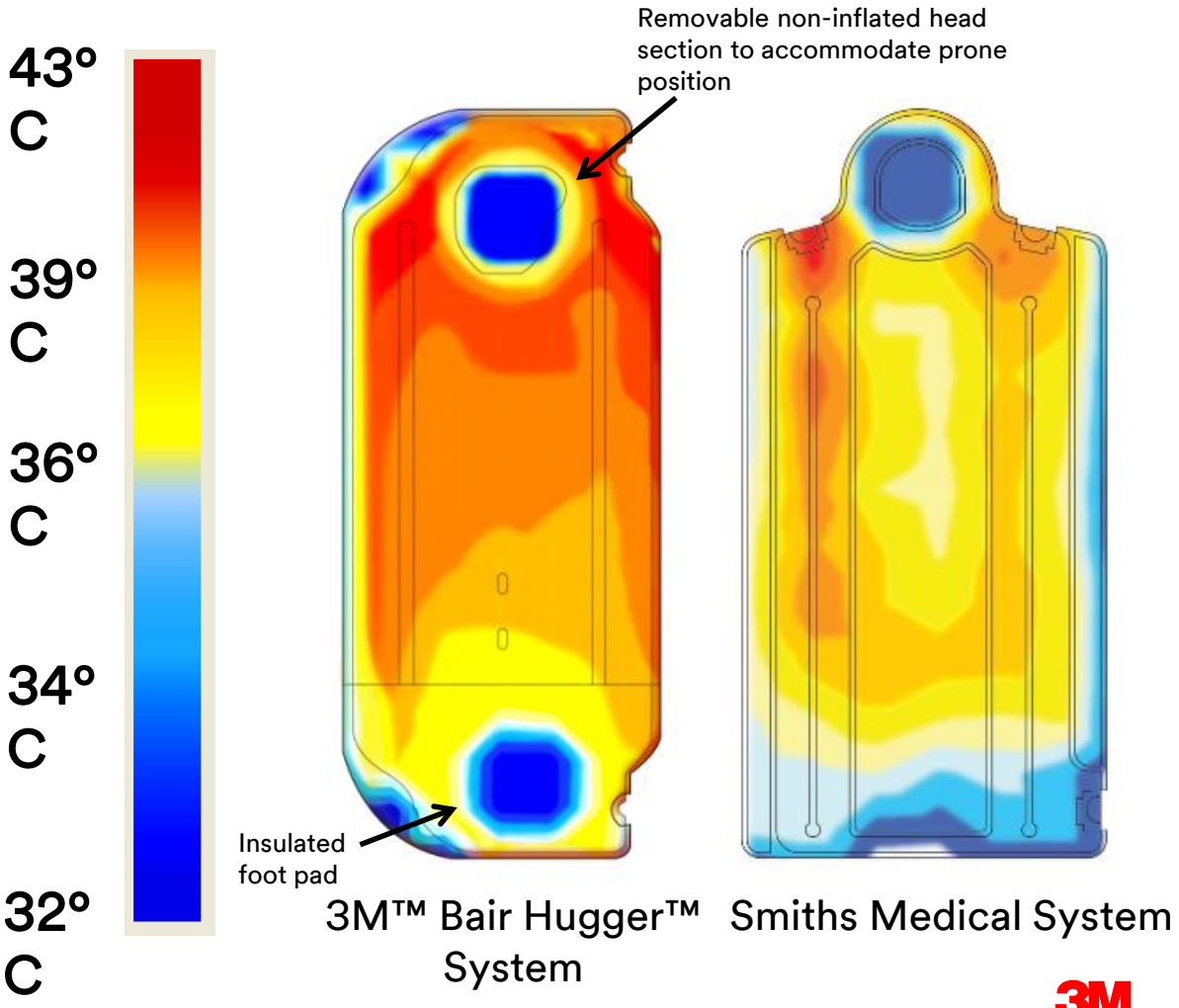
Testing demonstrates 3M™ Bair Hugger™ System provides **between 1.5 to 1.7 times more heat transfer** than the Smiths Medical system[2] because:

- **More air flow** is provided by the 3M™ Bair Hugger™ Warming Unit as compared to the Smiths Medical Equator® warming unit[2]
- **Bair Hugger™ blankets contain more perforations,** which allow more warm air to reach the patient[1,2]

1. 3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Smiths Medical EQ5000 (120V, 60Hz) warming units.
2. 3M data on file. Testing performed using a test stand configuration of the human body (Ref: Brauer A, et al. Comparison of forced-air warming systems with upper body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand*. 2002;46:965-972. Brauer A, et al. Construction and evaluation of a manikin for perioperative heat exchange. *Acta Anaesthesiol Scand*. 2002;46:43-50. Brauer A, et al. Comparison of forced-air warming systems with lower body blankets using a copper manikin of the human body. *Acta Anaesthesiol Scand*. 2003;47:58-64.).Testing performed by 3M using Bair Hugger Model 775 (120V, 60Hz) and Smiths Medical Equator EQ5000 (120V, 60Hz) warming units.

Snuggle Warm® convective warming system

Temperature Distribution Results – Underbody Blanket



Contact Surface Temperature (CST)	Bair Hugger™ System	Smiths Medical System**
Greatest CST*	42.1°C	43.2°C
Lowest CST*	36.5°C	33.1°C
Mean CST*	39.3°C	38.2°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

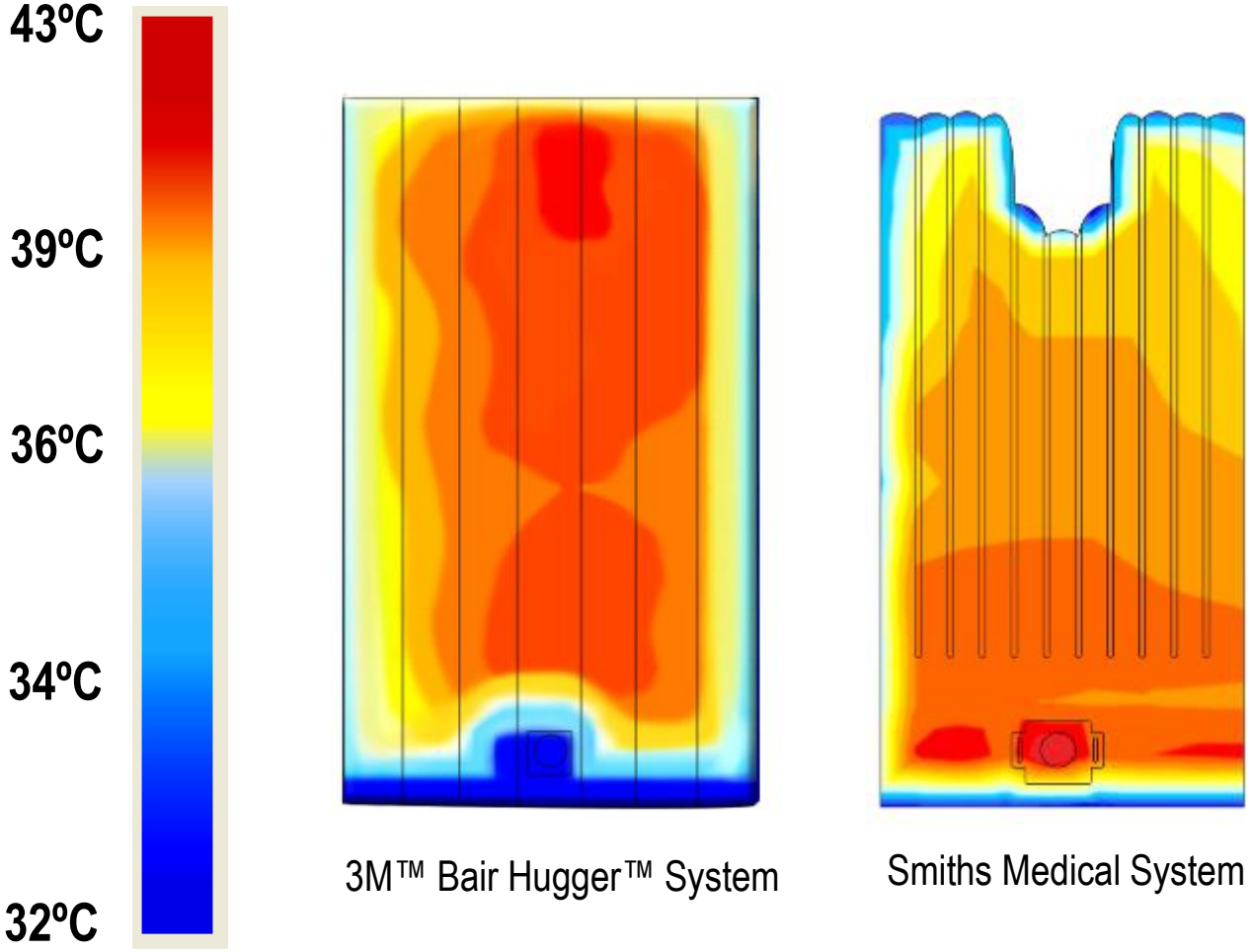
** The Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit has a "High" set-point temperature of 44°C as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a "High" set-point of 43°C.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 635 full access underbody blanket, and Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit with a Snuggle Warm Model SW2113 underbody blanket.

EQUATOR and Snuggle Warm are trademarks of the Smiths Medical family of companies registered in the U.S. Patent and Trademark office and certain other countries.

Snuggle Warm® convective warming system

Temperature Distribution Results – Full Body Blanket



Contact Surface Temperature (CST)	Bair Hugger™ System	Smiths Medical System**
Greatest CST	41.8°C	42.4°C
Lowest CST*	37.1°C	35.4°C
Mean CST*	39.9°C	39.1°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

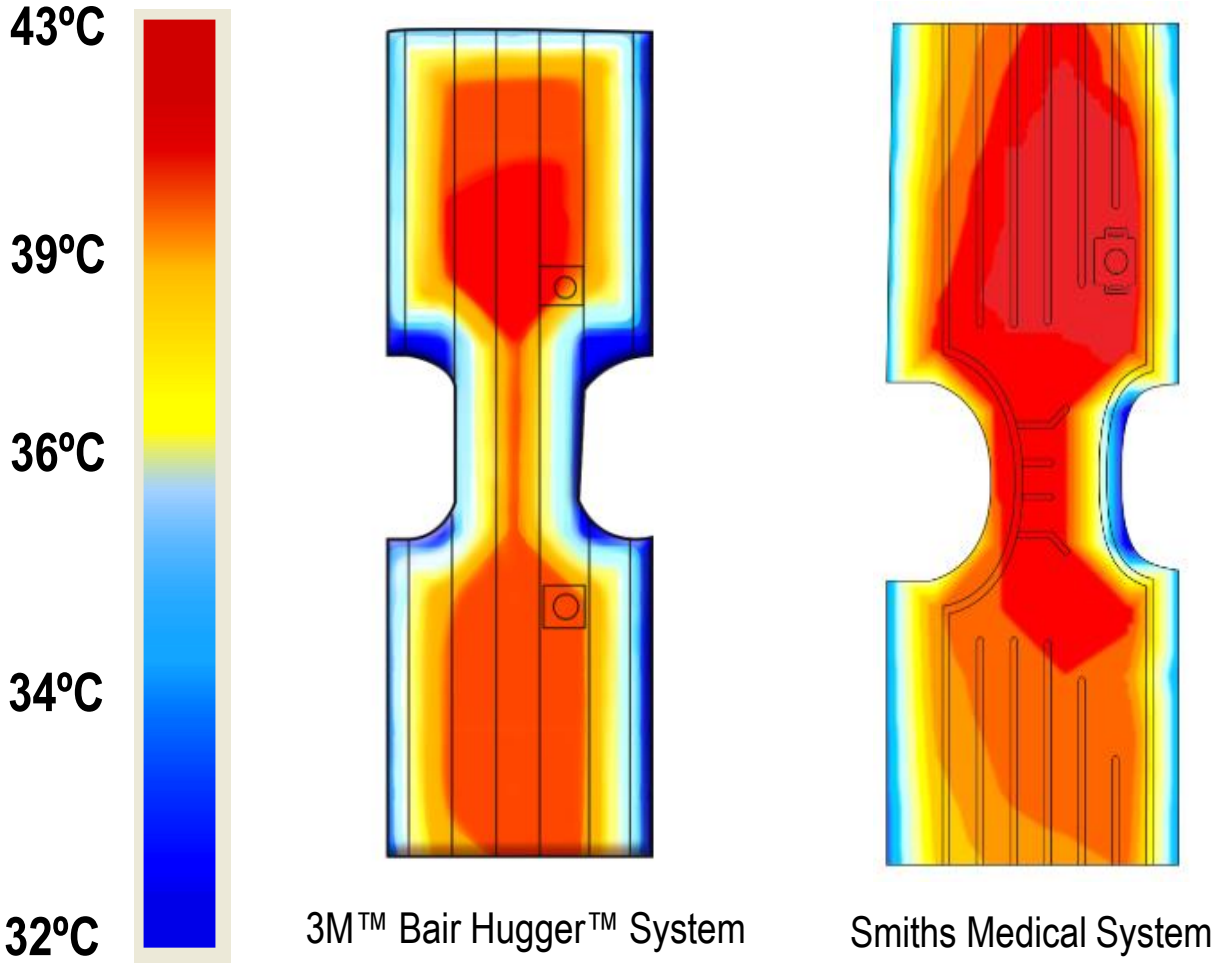
** The Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit has a "High" set-point temperature of 44ºC as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a "High" set-point of 43ºC.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 300 full body blanket, and Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit with a Snuggle Warm Model SW2001 full body blanket.

EQUATOR and Snuggle Warm are trademarks of the Smiths Medical family of companies registered in the U.S. Patent and Trademark office and certain other countries.

Snuggle Warm® convective warming system

Temperature Distribution Results – Upper Body Blanket



Contact Surface Temperature (CST)	Bair Hugger™ System	Smiths Medical System**
Greatest CST*	41.6°C	44.1°C
Lowest CST*	40.0°C	37.0°C
Mean CST*	40.9°C	40.7°C

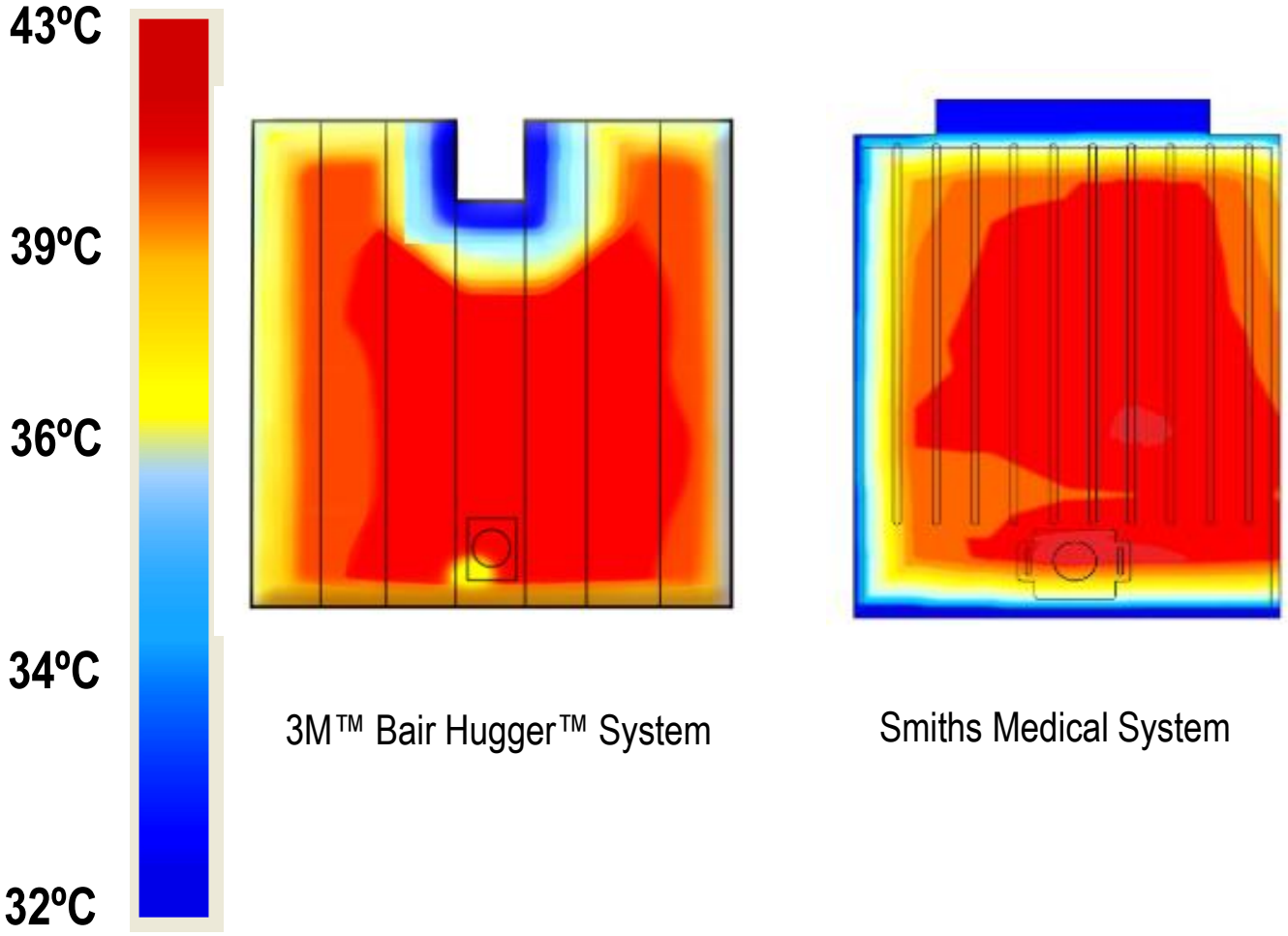
* Denotes a statistically significant difference represented by a P (probability) value below 0.05

** The Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit has a "High" set-point temperature of 44ºC as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a "High" set-point of 43ºC.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 522 upper body blanket, and Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit with a Snuggle Warm Model SW2003 upper body blanket.

Snuggle Warm® convective warming system

Temperature Distribution Results – Upper Body Blanket



3M™ Bair Hugger™ System

Smiths Medical System

Contact Surface Temperature (CST)	Bair Hugger™ System	Smiths Medical System**
Greatest CST*	41.9°C	43.0°C
Lowest CST*	39.3°C	38.2°C
Mean CST	40.9°C	41.1°C

* Denotes a statistically significant difference represented by a P (probability) value below 0.05

** The Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit has a "High" set-point temperature of 44ºC as compared to the Bair Hugger Model 775 (120V, 60Hz) warming unit, which has a 'High" set-point of 43ºC.

3M data on file. Testing performed under IEC Standard 80601-2-35, which does not require the use of a mannequin. Testing performed by 3M using Bair Hugger Model 775 warming unit (120, 60Hz) with a Bair Hugger Model 525 lower body blanket, and Smiths Medical Equator EQ5000 (120V, 60Hz) warming unit with a Snuggle Warm Model SW2004 lower body blanket.

Normothermia: Our Passion, Your Priority

Since

1987

3M™ Bair Hugger™ System has been leading the industry in experience and expertise for solutions to help maintain normothermia

More than

200 million patients

have been warmed by Bair Hugger™ System

More than

80%

of all U.S. hospitals utilize 3M forced-air warming products to maintain normothermia[3]

Over

170 published studies

document forced-air warming's clinical effectiveness

Add it all up...

And you'll find that 3M™ Bair Hugger™ System provides trusted solutions and expertise to meet virtually any patient warming need.

Our team of experts welcomes the opportunity to provide safe and effective patient warming solutions that help to enhance your patient experience and help improve your total cost of care.