



SOMATOM Emotion

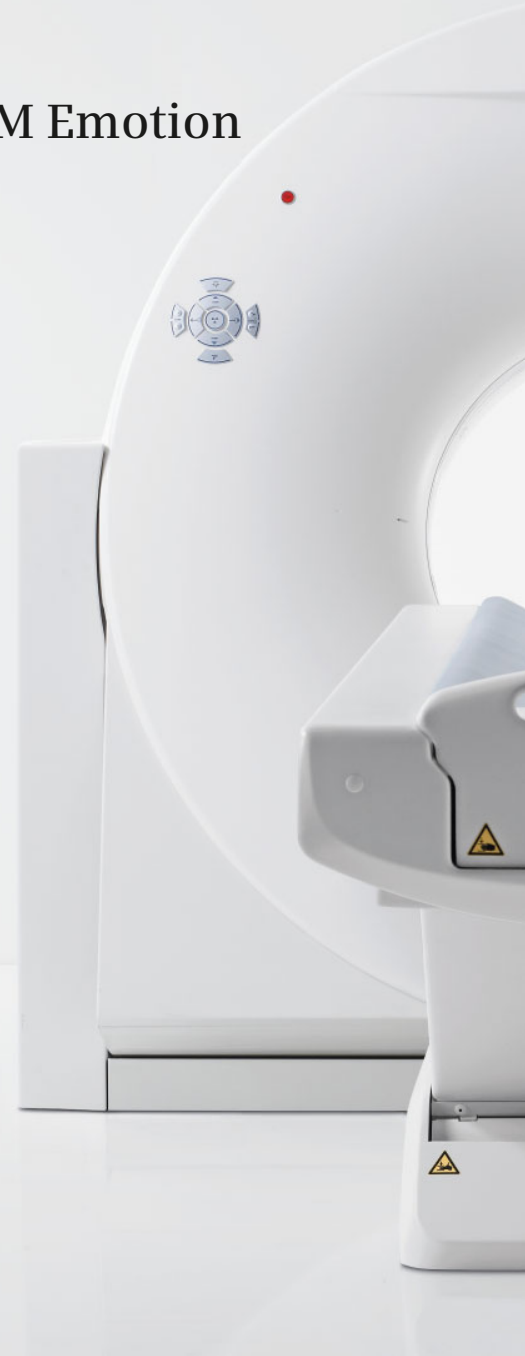
Environmental Product Declaration

Answers for life.

SIEMENS

Designed with Efficiency in Mind – Ecological Advantages of the SOMATOM Emotion

- Dose reduction of up to 68% with CARE Dose4D*
- Reduced power requirements of up to 30% compared to competitive systems**
- Contactless data transmission prevents abrasion and dust
- No more lead used for counterweights
- All substances contained in the product and its packaging are documented
- Plastic parts are labeled for recycling
- Disassembly instructions for high-quality recycling are available
- Complete CT systems and their components are taken back and refurbished
- Product take-back according to strict EU directives
- More than 98% of the materials used can be returned to the flow of recyclable materials
- Environmental product declaration is available for download via internet

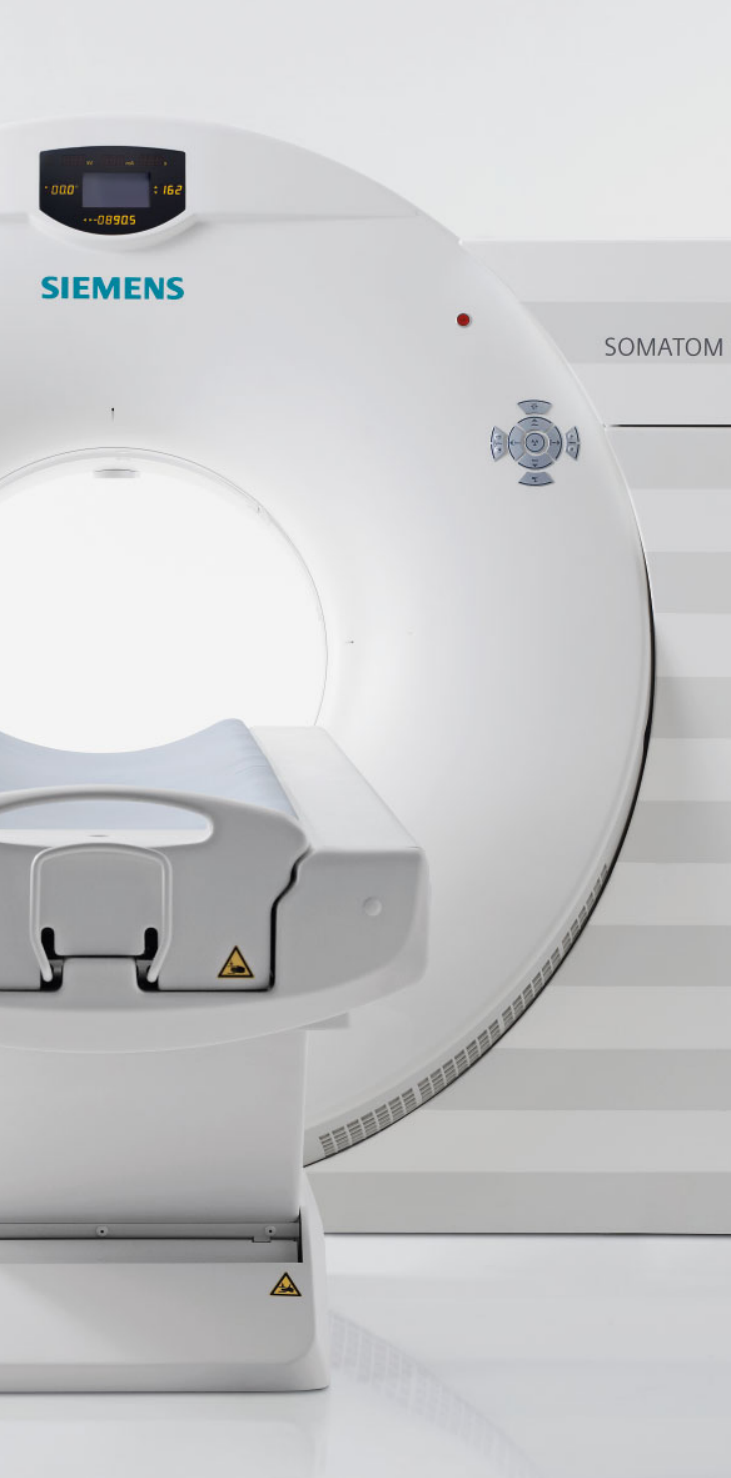


*Results may vary. Data on file.

**Compared to competitive systems requiring power of up to 100 kVA

SOMATOM Emotion – Minimum Lead Content

For the CT to operate quietly, rotating components of the CT need to be counterbalanced. The easiest way is to use lead as a counterbalance to other components. However, lead is a toxic element. Therefore, the SOMATOM Emotion uses no longer lead as a counterbalance. The SOMATOM Emotion 6 and 16 only require a very small amount of lead to shield and shape the radiation beam, enabling superb image quality for which the SOMATOM Emotion is known.



SOMATOM Emotion – The Most Popular CT in the World*

At the end of 2010, sales for the SOMATOM® Emotion CT system have exceeded 7,000 worldwide, making it the most popular CT in the world.* The SOMATOM Emotion has achieved this outstanding success through a combination of an extremely efficient system, leading-edge clinical applications, smooth workflow, and Siemens' continued focus on system uptime.

The efficiency of the SOMATOM Emotion is of benefit both to the environment and for reducing on-going costs from electricity and air-conditioning over the life of your CT system. This focus on efficiency and reducing the total cost of ownership for CT over the longer term is a key factor in the success of over 7,000 systems sold worldwide.

We are now continuing this unparalleled success story in an increasingly competitive and rapidly changing healthcare market. While patients continue to expect higher diagnostic accuracy, healthcare institutions and physicians are being forced to reduce time to diagnosis and unnecessary hospitalization.

To meet these and tomorrow's demands for higher quality and cost-efficient healthcare, we have developed the new SOMATOM Emotion. With both 6-slice and 16-slice configurations, CT scanning has never seen a system reaching this level of efficiency. You can expect, and will receive, high-end imaging performance from an unbelievably compact and efficient scanner that can continuously protect your investment and maximize your returns. If you are a radiologist, technologist, or financial administrator, you will enjoy knowing that you own the world's most popular CT scanner.*

*Based on system sales

Product Take-Back

The SOMATOM Emotion is produced mainly from recyclable materials. 98% (by weight) can be recycled materially, and 2% energetically.

The high-performance X-ray tube assemblies are designed in such a way that as many parts as possible may be reused. The quality of these assemblies is guaranteed by compliance to standard IEC 62309.

Our product take-back program ensures that we address the environmental aspects of our products – even at the end of life. As part of this program, we refurbish systems and reuse components and replacement parts through our Refurbished Systems division wherever possible. We reuse components and subsystems for non-medical products. We also recycle for material or energy value. Disassembly instructions for disposal and recycling are available for all Siemens CT products.

Environmental Product Design



Material supply:

From natural resources to delivery of semi-finished products



Production/delivery:

From production of components to operation startup by the customer



Use/maintenance:

Includes daily use by our customers as well as maintenance



End of life:

From disassembly at the customer through material and energy recycling

Siemens considers environmental aspects in all phases of the product life cycle, including material supply, production/delivery, use/maintenance and end of life.

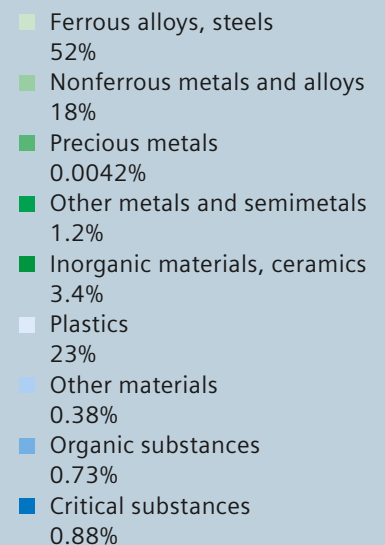
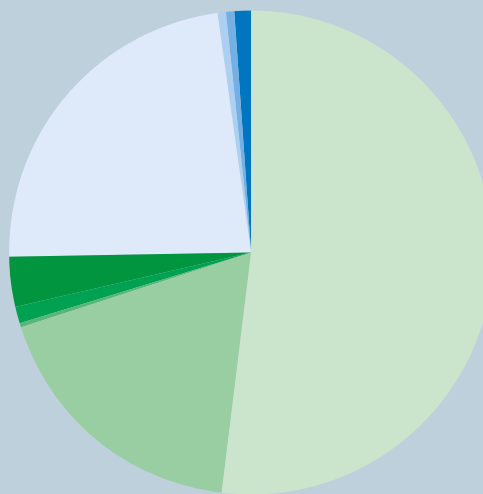
Our product design procedure fulfills the requirements of IEC60601-1-9:2007 "Environmental product design for medical electrical equipment".

This standard supports the effort to improve the environmental performance of our products.

Identification of Product Materials

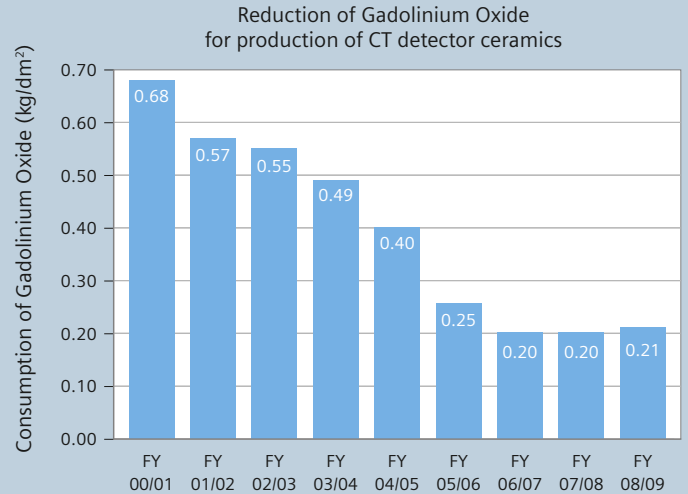
SOMATOM Emotion is mainly built out of metals. This ensures a high degree of recyclability.

Total weight: approx. 2,190 kg



Reduction of Critical Substances

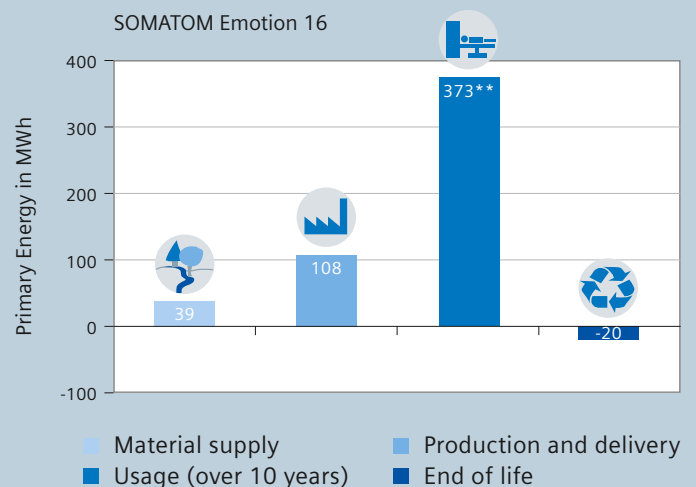
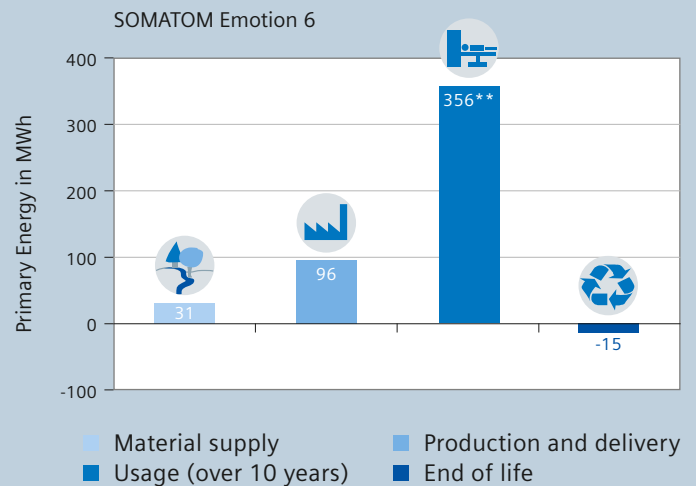
The consumption of material per unit area for CT detectors has been significantly reduced by Siemens Healthcare. Today Siemens needs approx. 70% less Gadolinium Oxide for production of a defined surface area of CT detector ceramics compared to eight years ago.



Cumulated Energy Demand

Energy consumption is the most important environmental characteristic of medical devices. This is why we use the Cumulative Energy Demand to assess environmental performance. Cumulative energy demand is the total primary energy* that is necessary to produce, use and dispose a device – including all transportation. Our medical devices can be recycled almost completely for materials or energy. With end of life treatment it is possible to return up to 20 MWh in form of secondary raw materials or thermal energy to the economic cycle.

*Primary energy is the energy contained in natural resources prior to undergoing any human made conversions (e.g. oil, solar).



** Energy for life cycle phase usage is based on:
 25 patients per day, 60 s scan time per patient,
 10 working hours per day, 300 working days per year.



Operating Data	
Heat emissions of the device	
• Basic load ¹	< 2.3 kW
• Scanning	< 6.8 kW
Allowed ambient temperature³	18°C–30°
Allowed relative humidity	20%–85%
Noise level	≤ 68 dB(A)
Energy consumption:	
• Basic load ¹	< 2.3 kW
• Full load ²	~ 40 kW
• Maximum load	70 kW
Power-on time⁴	< 4 min
Power-off time⁵	< 2 min

¹ Device is in operation but no patient examination takes place

² Average value at examination of patients (abdomen routine mode)

³ Within examination room

⁴ From off-mode to operating state

⁵ From operating state to off-mode

Technical Specifications	
Interface for heat recovery	Yes
Possible type of cooling	Air cooling
Complete switch-off is possible	Yes
Device is adjustable for the user in terms of height	Yes
Uniform operating symbols for device families	Yes

Radiation	
Measures/techniques to reduce ionizing radiation exposure	<ul style="list-style-type: none"> • Ultra Fast Ceramic (UFC) detectors • CARE Dose4D™ • Shaped Filter & Adaptive Dose Shield
Measures/techniques to reduce the exposure to electromagnetic radiation	Not applicable
Reduction compared to the limit value for users	Not applicable

Disposal / Substance Information	
End of life concept	Yes
Recycling information	Yes
List of hazardous substances (not contained in the device)	Yes

Cleaning	
Incompatible cleaning processes	
• Total device	
• Restrictions for particular device components	Not applicable Not applicable
List of incompatible substance classes	
• Total device	Sprays Chlorine releasing agents Substituted phenols based agents Scouring cleaning agents Organic solvents Ammonia releasing agents
• Restrictions for particular device components	Not applicable
Suitability of the device for sterile areas	Not applicable
Size of the surface to be cleaned ¹ user in terms of height	Approx. 2.5 m ²



¹ Gantry-tunnel (inside), patient tabel overlay, control elements, console, keypad, intercom, mouse

Further Ecologically Relevant Information	
Elements of instruction are:	
• Recommendations for saving energy	Yes
• Recommendations for efficient cleaning	Not applicale
• Recommendations for appropriate use of consumables	Yes

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Note: Any technical data contained in this document may vary within defined tolerances.

The statements contained herein are based on the actual experience of Siemens customers. Siemens maintains data on file to support these claims. However, these statements do not suggest or constitute a warranty that all product experience will yield similar results. Results may vary, based on the particular circumstances of individual sites and users.

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www.siemens.com/healthcare-ehs

Global Business Unit

Siemens AG
Medical Solutions
Computed Tomography & Radiation Oncology
Siemensstr. 1
DE-91301 Forchheim
Germany
Phone: +49 9191 18-0
Fax: +49 9191 18-9998

Global Siemens Headquarters

Siemens AG
Wittelsbacherplatz 2
80333 Muenchen
Germany

Global Siemens Healthcare Headquarters

Siemens AG
Healthcare Sector
Henkestrasse 127
91052 Erlangen
Germany
Phone: +49 9131 84-0
www.siemens.com/healthcare

Legal Manufacturer

Siemens AG
Wittelsbacherplatz 2
DE-80333 Muenchen
Germany

www.siemens.com/healthcare