



**MAGNETOM Altea with BioMatrix**

# Environmental Product Declaration

[siemens-healthineers.com/altea](https://siemens-healthineers.com/altea)





## Confidence to deliver

MAGNETOM Altea is the new 1.5T Open Bore system that gives you full confidence to deliver the productivity, reproducibility, and patient satisfaction that you demand in MRI. Powered by our premium MR technology, MAGNETOM Altea combines our unique BioMatrix technology, the new *syngo* MR XA software platform and our exclusive Turbo Suite to fundamentally transform care delivery.

## Key product features

- BioMatrix technology for less rescans and consistent, high quality personalized exams
- New 1.5T magnet with 70 cm Open Bore and large 50 x 50 x 50 cm<sup>3</sup> FoV
- Accelerated workflows and reduced scan times for higher throughput and robustness with GO technologies
- New Turbo Suite acceleration packages enable up to 50 %<sup>1</sup> faster clinical routine examinations

<sup>1</sup>Data on file

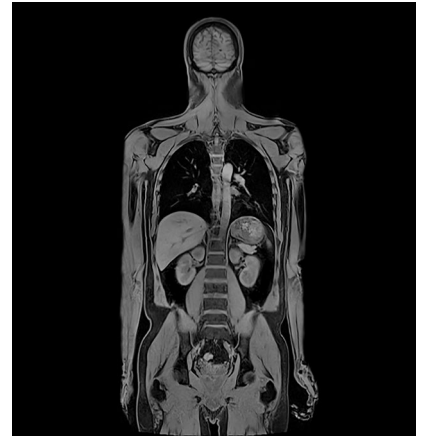
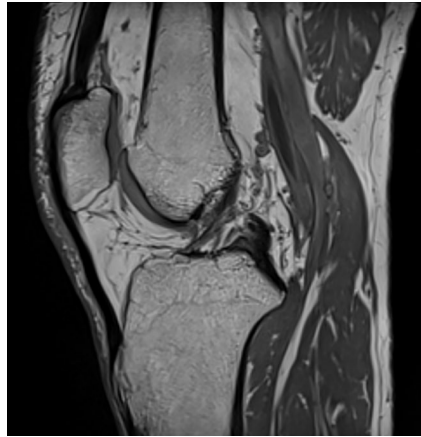
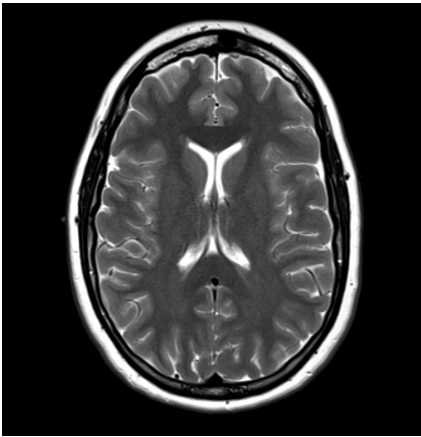
# MAGNETOM Altea

## Key differentiator

MAGNETOM Altea with BioMatrix technology, delivering consistency and efficiency in daily clinical routine. The user-friendly work environment and GO technologies enable push-button examinations and help accelerate the entire workflow from patient positioning to result distribution. Artificial intelligence based technologies support in automating routine tasks, for robust and consistent workflows, even in a high volume environment. New speed technologies such as Simultaneous Multi-Slice TSE can dramatically reduce scan times for routine examinations. MAGNETOM Altea incorporates several power-saving technologies reducing the energy consumption significantly over comparable systems. Additionally, with the Green Cooling Package (optional), customers can decrease their energy consumption for cooling by up to 39%<sup>1</sup>. Furthermore, MAGNETOM Altea is easy to site with low space requirements and low connection values enabling to use existing infrastructures and with that reduce installation costs.

## Zero Helium boil-off magnet technology

MAGNETOM Altea uses a superconducting magnet. During operation, the magnet windings must be cooled below their critical temperature. That happens with liquid helium. Equipped with a Zero Helium boil-off technology, MAGNETOM Altea requires no helium refill in normal use. This saves costs while maintaining a stable system performance.



## Environmental benefits

- Reduction of energy consumption with Eco-Power technology
- State-of-the-art Zero Helium boil-off technology
- Green Cooling Package (optional) with automatic adaption to cooling requirements to decrease energy consumption for cooling by up to 39%<sup>1</sup>

## Customer benefits

- Consistently high image quality and higher productivity with BioMatrix technology
- Reduced life-cycle costs by increased energy efficiency
- Small installation area enabled by ultra-short and lightweight magnet technology

<sup>1</sup>Based on climate dates for Munich. Data on file; results may vary

## Environmental Management System

Siemens Healthineers gives high priority to achieving excellence in Environmental Protection, Health Management and Safety (EHS).

Across the globe, Siemens Healthineers has implemented a consistent EHS management system. It lays the foundation for the continuous improvement of our performance in these areas, and regular auditing assures our conformance.

As a result of this consistent approach, Siemens Healthineers is considered one organization and is certified in accordance with ISO 14001 and OHSAS 18001.

## 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 site, through material and energy recycling

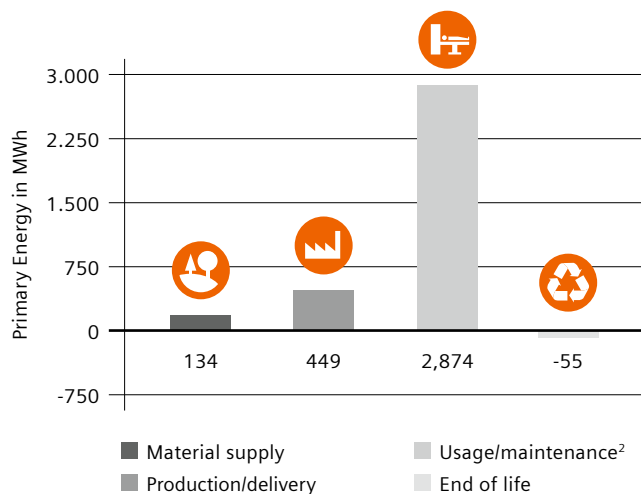
Siemens Healthineers considers environmental aspects in all phases of the product life cycle, including material supply, production/delivery, use/maintenance and end of life.

Our product design procedure fulfills the requirements of IEC 60601-1-9:2007 + A1 2013 Medical electrical equipment Part 1-9: General requirements for basic safety and essential performance – Collateral Standard: Requirements for environmentally conscious design.

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

## Cumulative 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<sup>1</sup> that is necessary to produce, use and dispose of a device – including all transportation. Our medical devices can be recycled almost completely for materials or energy. With an appropriate end-of-life treatment it is possible to return up to 55 MWh in the form of secondary raw materials or thermal energy to the economic cycle.



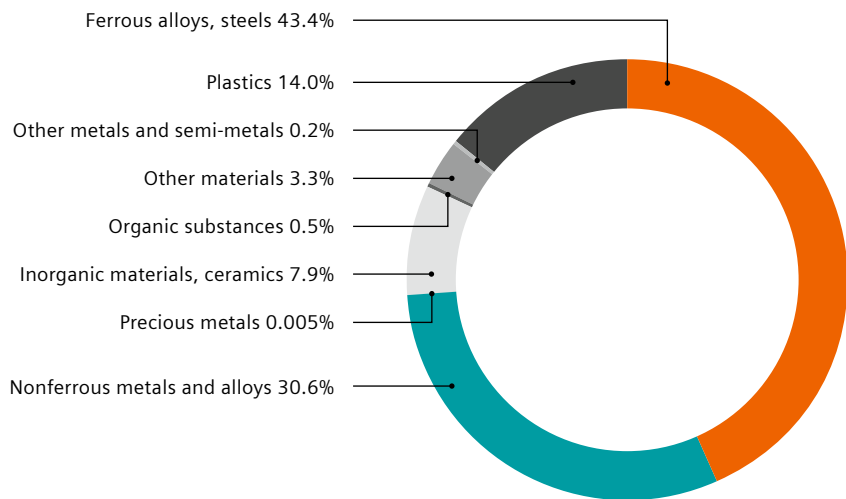
<sup>1</sup>Primary energy is the energy contained in natural resources prior to undergoing any man made conversions (e.g. oil, solar).

<sup>2</sup>Based on 10 years usage.

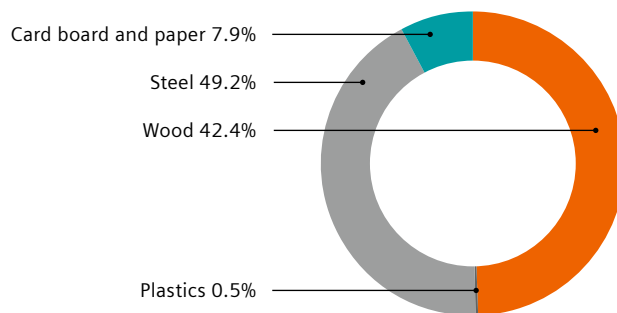
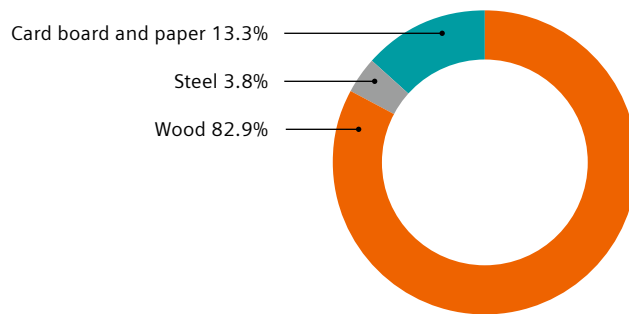
## Product Materials

MAGNETOM Altea is mainly built out of metals. This ensures a high degree of recyclability.

Total weight: approx. 6,500 kg



Numbers may not add up due to rounding



Numbers may not add up due to rounding

## Packaging Materials

It is our goal to minimize our packaging material and reduce the packaging waste by reusing and recycling it.

For domestic delivery our MRI systems are transported by truck in open packaging. For overseas delivery by air freight closed packaging is used and the magnet is delivered on a reusable steel pallet (see graphs on the left). In case of sea freight the components are additionally vacuum packed.

The packaging reuse ratio for closed packaging is more than 50%. The rest is supplied to material recycling. Only an insignificant amount (~1%) has to be recycled for energy.

Total weight:

Open packaging: approx. 365 kg

Closed packaging: approx. 2,060 kg

## Product Take Back

Most of the materials used to produce MAGNETOM Altea are recyclable. 92% (by weight) can be recycled for material content and 8% for energy.

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 whenever possible through our Refurbished Systems business.

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 our products.



## Operating Data

Heat emissions of the device <sup>1</sup>	
• System ready to measure <sup>2</sup>	8.2 kW (XJ gradients)
• Scan <sup>3</sup>	20.2 kW (XJ gradients)

Allowed ambient temperature <sup>3</sup>	18°C–22°C
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Allowed relative humidity <sup>4</sup>	40–60%
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Noise level	
• Basic load	≤ 59.0 dB (A) <sup>5</sup>
• Full load	≤ 98.7 dB (A) <sup>5</sup>

Power consumption <sup>1</sup>	
• System off	4.3 kW
• System ready to measure <sup>2</sup>	8.2 kW (XJ gradient)
• Scan <sup>3</sup>	20.2 kW (XJ gradient)

Power-on time <sup>6</sup>	5.5 min
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Power-off time <sup>6</sup>	5.5 min
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## Technical Specifications

Interface for heat recovery	No
Possible type of cooling	Standard: water-cooling Optional: air-cooling
Complete switch-off is possible	No
Device is adjustable for the user in terms of height	Not applicable
Uniform operating symbols for device families	Yes

## Electromagnetic Fields

Measures/techniques to minimize the exposure to electromagnetic fields	<ul style="list-style-type: none"> <li>• actively shielded magnet</li> <li>• actively shielded gradients</li> <li>• if necessary magnetic shielding</li> <li>• RF-cabin with 90 dB damping</li> </ul>
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<sup>1</sup>All values are typical values, applicable for 400V/50Hz. The power consumption described herein is based on results that were achieved in a setting according to the COCIR methodology MRI – Measurement of the energy consumption (<http://www.cocir.org/site/index.php?id=46>). Since many variables impact power consumption (e.g. sequences used for scanning and sequence parameters, scan time), there can be no guarantee that each customer will achieve the same values.

<sup>2</sup>Device is in operation but no patient examination takes place.

<sup>3</sup>Average value for energy consumption at examination of patients.

<sup>4</sup>Within examination room.

<sup>5</sup>Measured according to NEMA in magnet room.

<sup>6</sup>From off-mode to operating state.

## Replacement Parts and Consumables

Item	Life cycle <sup>1</sup>
• Rechargeable battery (mobile table)	3 years
• Cold head	2 years
• ECG-Electrodes	Disposable material

## Disposal/Substance Information

End-of-life concept	Yes
Recycling information	Yes
List of hazardous substances	Yes

## Cleaning

The following classes of active agents in specific concentrations have been tested and are approved for cleaning	<ul style="list-style-type: none"> <li>• Aldehydes</li> <li>• Guanidine derivatives</li> <li>• Peroxide compounds</li> <li>• Pyridine derivatives</li> <li>• Chloro derivatives</li> <li>• Commercially available cleaning agents, detergent substances</li> </ul>
Suitability of device for sterile areas	No
Size of the surface to be cleaned <sup>2</sup>	Approx. 9 m <sup>2</sup>

Please refer to the dedicated user manuals for system and components for a detailed list of approved and not approved cleaning substances and further instructions.

## Further Ecologically Relevant Information

Elements of instructions are:	
• Recommendations for saving energy	Yes
• Recommendations for efficient cleaning	Yes
• Recommendations for appropriate use of consumables	Yes



<sup>1</sup>Recommended exchange interval.

<sup>2</sup>Front cover, front funnel, body coil, patient table overlay, local coil, control elements.

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