Sustainable surgical imaging solutions for a resilient tomorrow

OEC™ 3D premium mobile C-arm

Creating a more sustainable future requires us to care for the planet and its inhabitants.

It is essential that we continue to drive progress toward early, precise, and accessible diagnosis and treatment of more patients. For the planet, it is critical that we do so with a reduced impact on precious and rare resources that are imperative to life. We believe that the advancement of precision health, greater digitization of healthcare, and increased access to quality care are fundamental to accomplishing this goal.

We support carbon policies that reduce greenhouse gas emissions and promote sustainable development. We are committed to achieving net zero by 2050 and are part of the UN-backed “Race to Zero,” with a goal of reducing emissions based on the Paris Agreement. We’ve also set a public goal to achieve a 50% reduction in our own operational emissions by 2030. As a result of these efforts, we want to enable a more sustainable health system by addressing not only the environmental impacts of our products but also the challenges healthcare professionals and their patients face with resilient, digital options.

We are committed to achieving **net zero** emissions by 2050.

We’ve set a public goal of a **50% reduction** in our own operational emissions by 2030.

We deliver sustainable, intelligently efficient solutions for a resilient tomorrow.

Building a healthier world to help improve access to care and enable better patient outcomes.

OEC 3D helps create a resilient tomorrow.

Our OEC 3D C-arm and its services help ensure that radiology professionals and the patients they serve have the technology necessary to create a sustainable and resilient tomorrow.

Reducing environmental impact

- Up to 95% of the system materials in the OEC 3D is recyclable.[1]
- The OEC 3D conforms to international standards for environmental design, hazardous substance reduction, and electronic waste management.

Improving outcomes

- Energy utilization of OEC 3D operates on single-phase, cord-connected, standard wall power and utilizes internal batteries and a battery charger buffer to manage X-ray generator energy demand.
- OEC 3D enhances cardiovascular imaging with less power requirements and radiation dose with eNR (enhanced Noise Reduction) for equivalent image appearance of 30 kW power on a 15 kW C-arm.
- Less radiation and power is needed to cool X-ray tube when Live Zoom is used instead of Mag modes, with the ability to zoom up to 4X either fluoro or Cine images.

[1] Data on file. GE Healthcare 2022. Values based on weight.

Contributing to a healthier planet

More than half of the healthcare sector's climate footprint, approximately 53%, is attributable to energy use.[2] As a result, we have strengthened our commitment to environmentally conscious design and sustainable practices across our product manufacturing, sourcing, distribution, installation, and service operations. This includes improving energy efficiency, optimizing the use of limited or rare materials, providing digitally enabled and remote predictive and maintenance service throughout the product lifespan, and offering refurbishment and recycling options at the end of product life.

We're committed to environmental product design.	The OEC 3D conforms to the international standard for environmental design, IEC60601-1-9:2007.

[2] Health care climate footprint report | Health Care Without Harm (noharm-uscanada.org)

Materials

GE Healthcare reviews the environmental aspects of the material supply used within our products to increase recyclability and decrease the use of hazardous substances, when possible.

Recyclable	We're committed to high recyclability of our products and reuse when possible.
	Up to 95% of the system materials in the OEC 3D is recyclable.[3]
Reduce the use of hazardous substances	EU RoHS directive 2011/65/EU
	REACH (EC) 1907–2006

Manufacturing

Through our environmental reviews, we also focus on implementing renewable energy and reducing waste.

Renewable energy	Our Salt Lake City manufacturing site electrical service provider continues to expand its renewable energy resources and envisions a 74% reduction of greenhouse gas emissions from 2005 levels by 2030.[4]
Reducing electricity	Continuous improvement goals in manufacturing process efficiency result in lower energy demand per unit produced.

[3] Data on file.
[4] Source: PacifiCorp website https://www.pacificorp.com/environment/renewable-energy.html.

Packaging and distribution

GE Healthcare imaging equipment has a robust and multi-sourced supply chain for systems and spare parts across all product portfolios.

Improved packaging	Packaging is designed to optimize product transportation protection, safety, and material reuse. Up to 86% of transport package is made of recyclable and reusable wood and cardboard.
Product transportation[5]	Air transport: +/-80% International
	Ocean transport: +/-10% International
	Truck transport: +/-10% International, 100% USA

[5] The values provided are based on product transportation and distribution during 2021.

Product utilization

Our imaging products are designed to help enable energy efficiency through dedicated features and advanced applications to reduce the environmental impact.

Ergonomically designed

Patient setup and positioning	OEC 3D C-arm is designed to minimize interference with patient table or the need to adjust patient table height with a sleek X-ray tube housing size and ability to place detector in a low lateral height.
	Integrated depth perception camera, Live View, enables real-time view as position detector on patient anatomy, eliminating the need for scout images and radiation exposure while positioning the C-arm.
	Integrated laser aimers are also provided to align the detector with patient anatomy prior to taking an X-ray, minimizing unnecessary radiation exposure.
Reduce staff burden	For the clinical team in the operating room, physical strain and effort is minimized with a lightweight C-arm and workstation design, weighing less than other mobile 3D C-arms.
	The OEC 3D is also efficient to set up with a quick boot-up time of less than a minute and Smart Connect, which enables patient data to be entered into the Workstation while the C-arm is being connected around the patient table and not yet connected.
	Surgical team can see large, clear images with a 32” 4K UHD display that easily positions for line of sight and has the ability to increase viewing perspective up to 60% with 27 inches of forward display travel and resolution of a 4K display.

Product utilization (Cont.)

Guidance for product utilization	Instructions are provided for use of the equipment to minimize the environmental impact during installation, use, and operation.
Reduce energy consumption during use	Internal batteries and battery charger buffer the X-ray generator energy demand during fluoroscopy and allow the OEC 3D C-arm system to operate on single-phase, cord-connected wall power.
Power consumption	Power off: 0.32 kW Power low: 0.55 kW Ready to scan: 0.58 kW
24 hour energy consumption[6]	Power off: 7.6 kW·h Power low: 13.2 kW·h Ready to scan: 14 kW·h

[6] As measured according to COCIR X-ray Equipment Measurement of Energy Consumption, March 2014.

End of product life

We are increasingly putting our retired products' materials back into the supply chain to maximize efficient use and minimize unnecessary waste. This circularity model enables our imaging products to extend their clinical impact through longer lifespans while reducing the environmental footprint. Additionally, we offer our customers partnered support for upgrades and services throughout a product's lifespan to maintain optimal performance and help drive better patient outcomes.

Our refurbishment programs involve an extensive inspection and testing process, designed to bring equipment back to its original certified manufacturing specifications. If the system is not suitable for refurbishment, eligible parts are harvested for reuse after quality and performance testing, while the rest are returned to dedicated recycling facilities.

Guidance for end of lifecycle	Equipment instructions are provided to minimize the environmental impact for disposal or recycling.
Upgradeable hardware and software options are provided as a solution to extend the product lifespan.	Options may be offered to extend the product lifespan.
Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.	OEC C-arms are eligible for assessment through the refurbishment program, in which they are assessed for refurbishment, harvesting, or recycling at the appropriate time in the lifespan.[7] 95% of OEC C-arms are reused, refurbished, or recycled, extending the lifetime of each product.[7]
Waste reduction	This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

[7] System parts are eligible for refurbishment, although whether a system is actually refurbished versus harvested for parts or otherwise recycled or reused is dependent on the state of the system when GE Healthcare takes possession of it. Data on file.

Digitizing healthcare through transformative innovations for a resilient tomorrow

We are committed to investing in digital capabilities that help accelerate clinical decision making, optimize imaging operations, and drive efficiencies in exam workflows, all of which can improve patient outcomes. Enabling digital transformation will further enhance our predictive and maintenance service operations for the life of your products.

We are also dedicated to driving a more resilient and sustainable future in healthcare. Many factors, including the pandemic, climate-related weather disasters, and supply-chain issues amplified this need. Managing operations through these challenges requires resilience and perseverance.

Advancing clinical outcomes

Advanced applications and cutting-edge AI tools provide personalized data to drive actionable insights, helping healthcare professionals make fast, accurate clinical decisions for care pathways.

Help improve patient outcomes with improved image quality

Numerous innovations in technology and image processing are designed into the OEC 3D to deliver precise 3D and 2D images with true versatility and efficiency in operating rooms. Notable innovations include the following features:

- True 3D/2D versatility on a lightweight C-arm and simple, intuitive interface for capturing 2D and 3D cone-beam images intraoperatively in minutes;
- Large 19 cm x 19 cm x 19 cm volume—67% greater volume than other 3D C-arms—for viewing anatomical levels in the spine, maxillofacial, orthopedic trauma, or pulmonary biopsies;
- Five 3D volume reconstructed images presented on a 32” 4K UHD display for a precise and simultaneous view of axial, coronal, sagittal, volume rendering, and maximum intensity projection;
- Volume Viewer, a suite of 3D imaging tools based on GE Healthcare’s proven AW image fabric technology, including Multi Oblique Mode for assessing hardware alignment, scrolling through slices, rotate, zoom, and more;
- OEC Open, an open platform enabling seamless integration with navigation and robotics systems.

Advancing clinical outcomes (Cont.)

Help improve patient outcomes with improved image quality (Cont.)

- Live View to position detector on patient anatomy with a real-time view, eliminating the need for scout images for enhanced communication while positioning the C-arm;
- Renowned 2D image processing with advanced features, including Live Zoom that offers 4X image size with no change in technique, one-button selection of Preset Profiles for anatomical image optimization, and 30% less noise during vascular and cardiac imaging with eNR (enhanced Noise Reduction);
- Live Zoom that digitally zooms up to 4X larger during a fluoro shot, Cine run, subtraction, or roadmap while using the same dose rate as normal images and less dose compared to images in Mag mode; and
- Preset Imaging profiles designed to enhance view of anatomy based on procedure, including a Pediatric profile that automatically reduces dose by up to 50%.

Optimizing imaging operations

Our solutions are designed to increase efficiencies across the radiology spectrum without increasing the administrative and training burden on radiologists and technologists.

Reduce setup time	System is efficient to set up with a quick boot-up time of less than a minute and Smart Connect, which enables patient data to be entered into the Workstation while the C-arm is being connected around the patient table and not yet connected.
Ease of use	In addition to less physical strain, the OEC 3D C-arm user interface is intuitive with OEC recognizable icons, colors, and layout and quick access to functions during procedures, including X-ray controls, Live Zoom, Digital Pen, measurements, annotations, laser aimer, image directory, preset imaging profiles, and more. A user interface is also available on an optional rollstand for control when and where desired.
Cybersecurity	GE Healthcare's Design Engineering Privacy and Security (DEPS) process follows GDPR, HIPAA, NIST 800-53, NIST 800-30, ISO 27001, and NIST CSF requirements.
Cleanability	Our equipment is designed to be cleaned and disinfected easily. We continue to test and approve new cleaning and disinfecting agents. Visit *Cleaning.GEHealthcare.com* for updates.

Building a healthy world to help enable better patient outcomes.

GE Healthcare is a member of COCIR, the European Trade Association representing the medical imaging, radiotherapy, health ICT, and electromedical industries.[8]

[8] *https://www.cocir.org/about-cocir/members.html*

Not all products or features are available in all geographies. Check with your local GE Healthcare representative for availability in your country.
Not all features are included in the standard system configuration. Check with your local GE Healthcare representative.

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