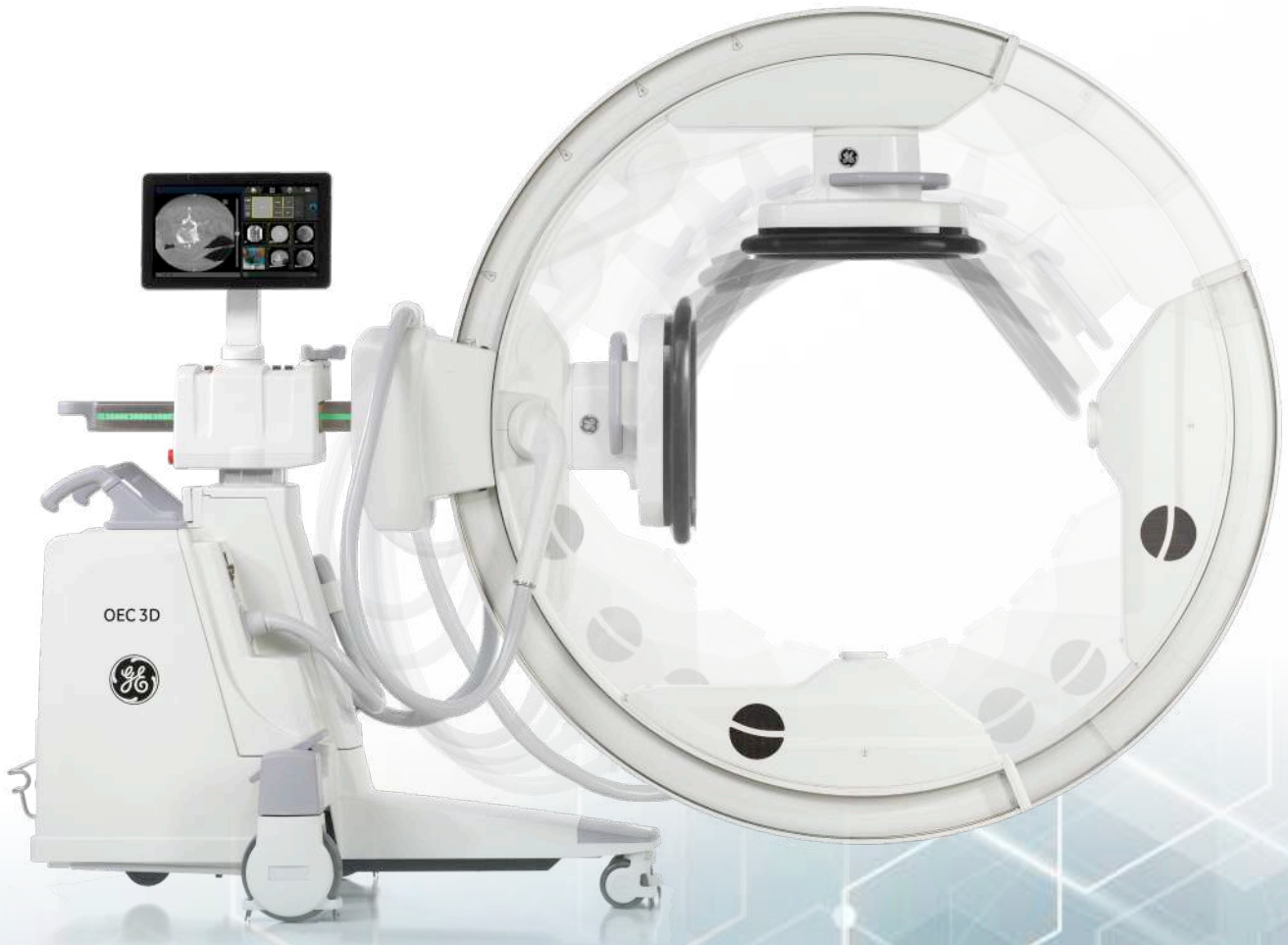
OEC 3D

Technical Overview



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Technology advancements for intraoperative imaging

Over the past two decades, many technology innovations have been introduced in intraoperative 3D imaging, robotic guidance and navigation systems intended to provide improved anatomical visualization and precise guidance. Despite the benefits, many operating rooms have not integrated these technologies into routine surgical practice either due to the steep learning curve or disruption to the surgical workflow.

With the steady increase in minimally invasive surgeries, the need for accuracy, precision and greater clarity of anatomical details is increasingly relevant. Diverse procedures and varied patient types, coupled with dynamic staffing lead to added workflow challenges in handling technology and integration with multiple systems within the operating room.

To address these challenges GE Healthcare introduces the OEC 3D C-arm designed to provide unparalleled precision and efficiency.

Leveraging insights from expert surgeons and operating room directors across the globe, GE Healthcare has synthesized the latest technological advancements across imaging detectors, computational processing, visualization engines and depth-perception camera technology with the goal of introducing a nimble, reliable intraoperative mobile 3D imaging system that delivers sought after precision and efficiency.

The OEC 3D C-arm endeavors to eliminate the need to trade ease of use for improved image visualization. Beyond surgeons and operating room directors, the OEC 3D imaging system strives to bring value to all stakeholders within a patient centric ecosystem allowing 3D intraoperative imaging to become a routine surgical tool. In Neuro, Spinal, Orthopedic, Trauma or even select Vascular procedures, OEC 3D is designed to deliver precise and efficient patient outcomes.

Innovating Surgical Imaging

Across the portfolio, OEC C-arms are renowned for capturing exceptional images every day. Building on this legacy of imaging innovation, GE Healthcare is introducing the OEC 3D C-arm, a true 3D/2D surgical imaging system.

The OEC 3D C-arm is designed to bring high-definition 3D and 2D images covering a large field of view to surgeons, while integrating quickly into existing surgical workflows, all in an intuitive and compact design. The OEC 3D imaging system is intended to provide an exquisite image to support surgical precision and efficiency.

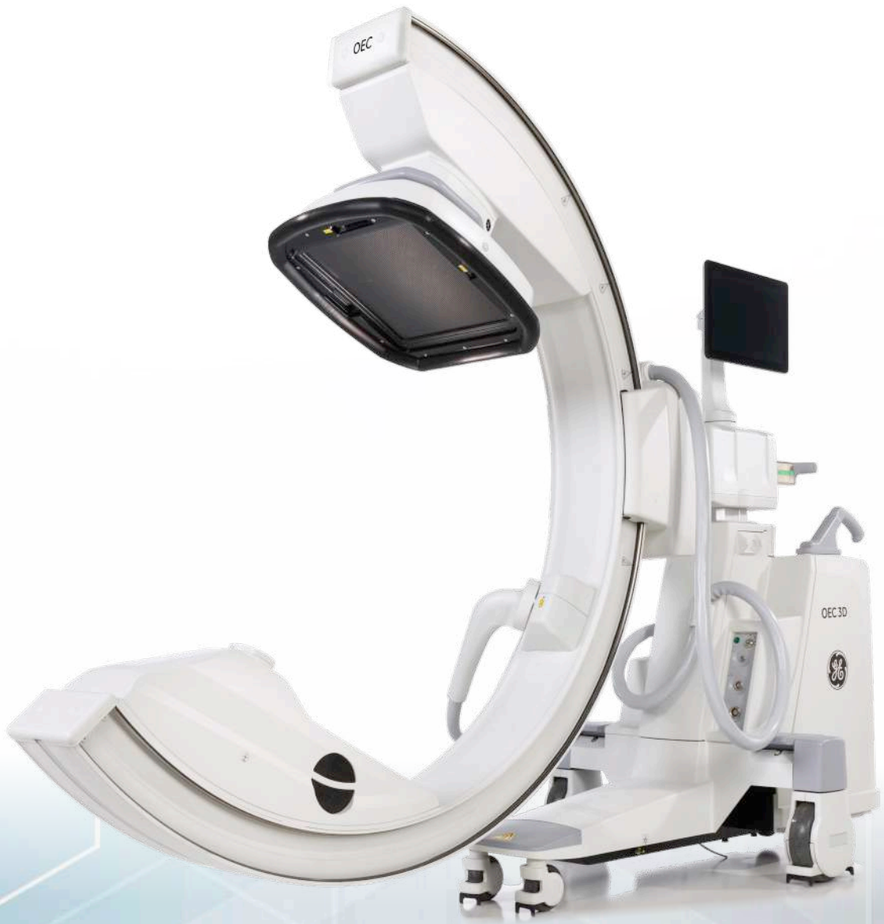
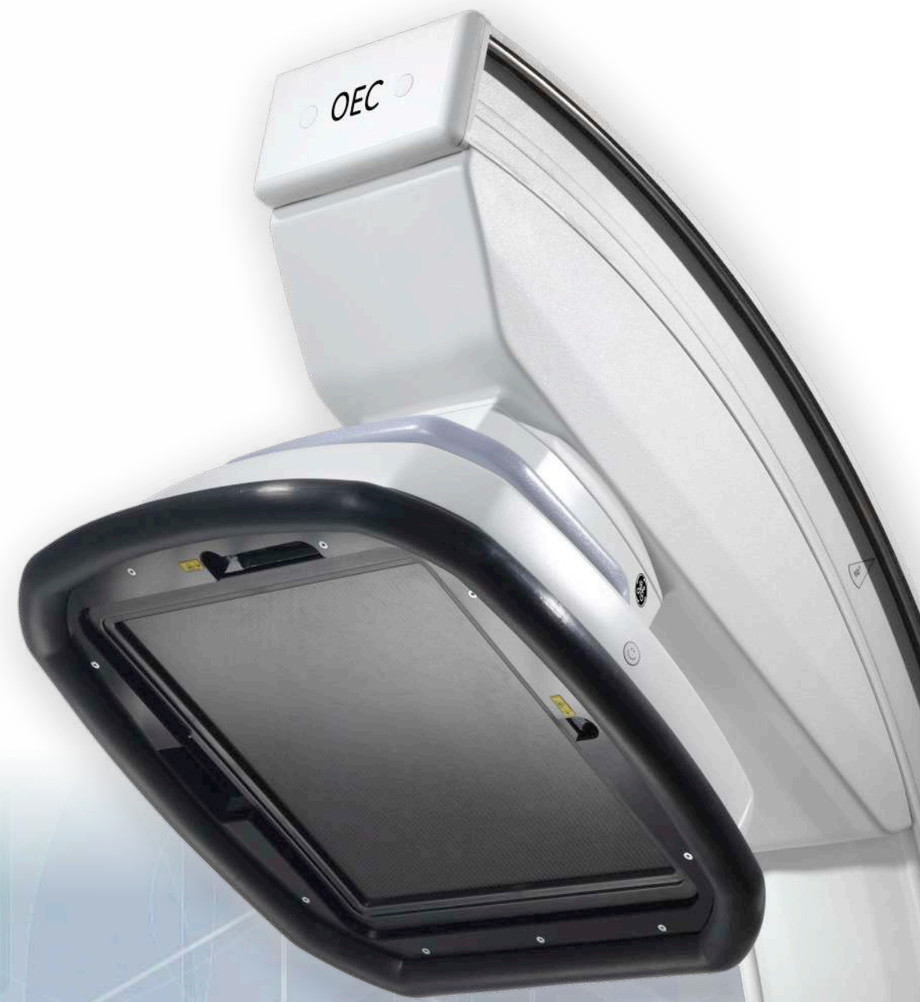


Image Detail

With the rise of minimally invasive procedures such as spinal fusion or lumbar spine scoliosis, seeing all the anatomy of interest in fine detail is critical. Complex spine procedures, including inserting and placing pedicle screws and preventing or correcting deformities, require precise views of spinal structures.

The 31 cm x 31 cm CMOS detector is designed to provide high resolution 3D images with a large field of view that can capture L2 to S1 in a single shot. The 200° isocentric sweep creates 3D images with 19 cm x 19 cm x 19 cm volume and 512^3 voxel resolution.



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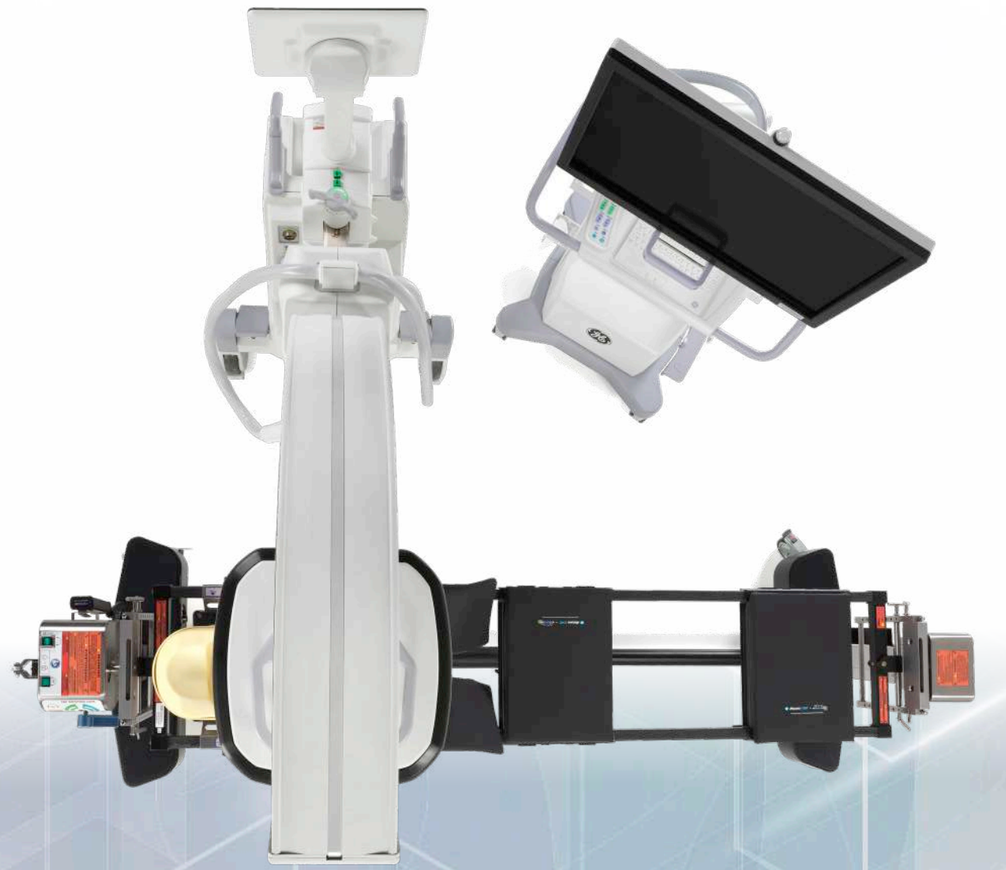
True 3D/2D Imaging

Minimally invasive procedures continue to expand in scope and complexity, and OR managers are directing the use of multiple assets across diverse patient caseloads. The OEC 3D C-arm strives to provide clinical flexibility with both 3D and 2D imaging capability in order to enhance efficiency for OR managers balancing C-arm needs in a variety of 2D imaging cases and expand the system's use beyond 3D specific cases.

In addition to 3D imaging features, the OEC 3D C-arm also provides a comprehensive 2D imaging chain. This functionality is intended to allow the OEC 3D C-arm to be an integrated 3D and 2D mobile C-arm and to free up space in operating rooms storing multiple image types within the same patient case for easy reference.



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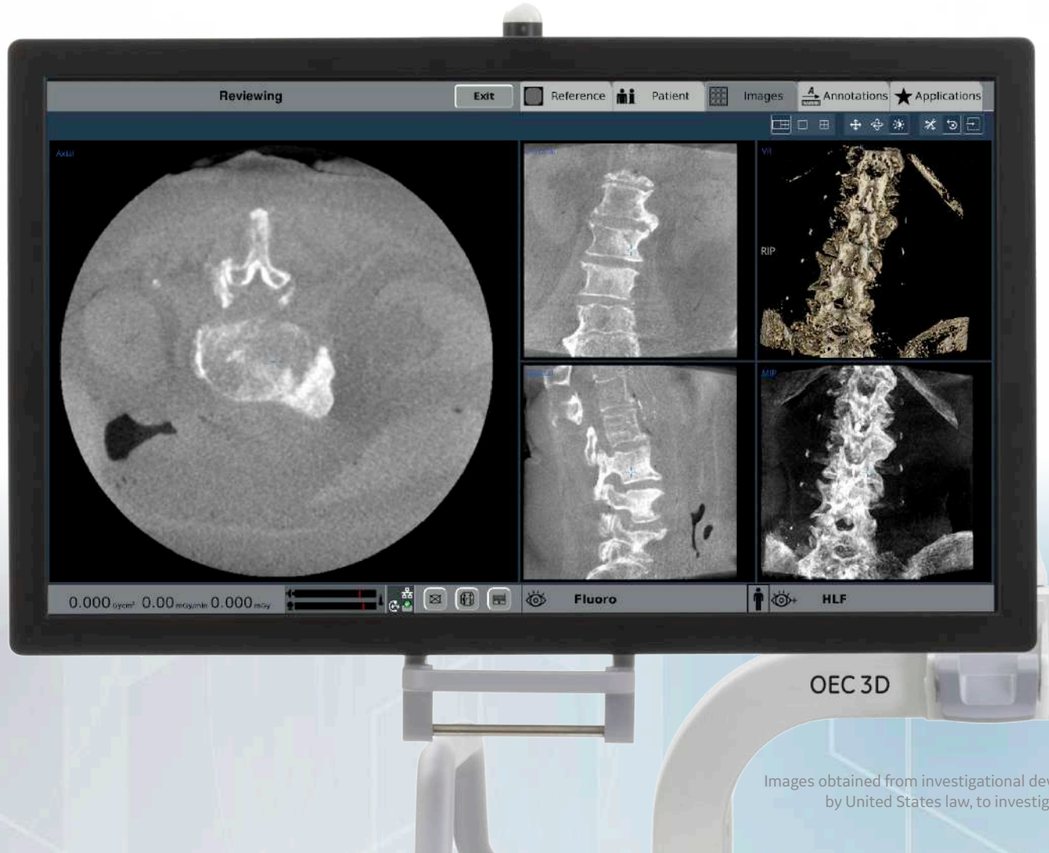
3D Visualization

When viewing 3D anatomical detail, like cortical rims, pedicle diameters, or orbital floors, the OEC 3D imaging system is designed to present precision images quickly after the scan is complete. See the detailed, fully reconstructed multi-planar 3D images in less than 30 seconds after a scan is completed. OEC 3D images reveal 1 to 1 detail captured by the CMOS detector, processed by the advanced OEC imaging chain, and then displayed on a 4K ultra high definition monitor. Images can also be processed with Metal Artifact Reduction to reduce metal artifact while imaging screws and other hardware.

The GE proprietary 3DXR reconstruction engine endeavors to allow surgeons to analyze the volume reconstructed images quickly and easily. The Advanced Visualization package is designed to bring intuitive workflow features for a preferred layout and view, such as drag and drop, paging, and zoom. Advanced Visualization is also intended to enable change of perspective views, pan through slices, and adjust planes in between coronal, sagittal and axial views.



Images obtained from investigational device, limited by United States law, to investigational use.

3D Control

The intention of the step-by-step user guide is to make 3D scans easy and intuitive by taking users through each stage of 3D scanning from pre-scan to completion allowing users with minimal training to complete a 3D scan.

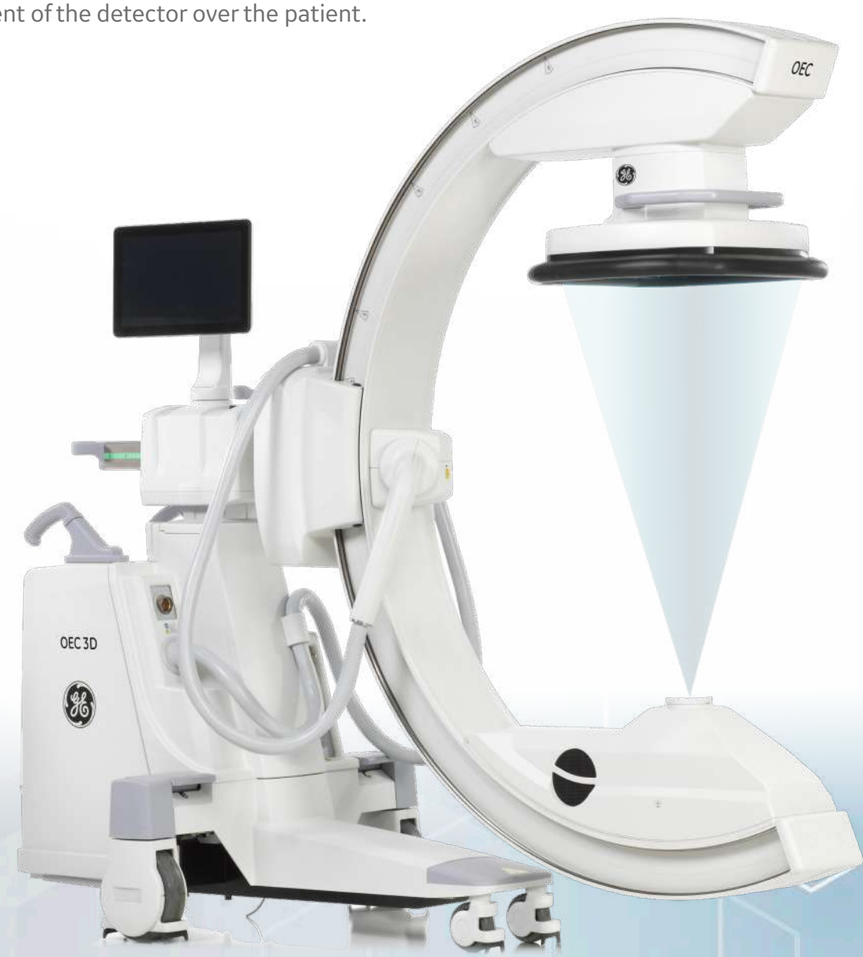
For user convenience, familiar OEC icons and interfaces are available in four places enabling control from the C-arm's OEC Touch, OEC Touch Tableside, RUI, or workstation.

The OEC 3D is designed to integrate seamlessly with navigation systems and the open interface architecture is built for future integrations with robotics or AI applications.

C-arm Positioning

Accurate positioning of the detector relative to the patient is important for 3D and 2D scans. The OEC 3D has a lightweight carbon fiber mainframe that contributes to the 200° isocentric scan. The goal of this lean and compact design is to allow users to easily position the system around patients and tables.

The OEC 3D endeavors to provide an additional view, attained with an integrated depth camera featuring powerful image processing. The integrated camera is designed to dynamically display the intended area of exposure on the patient and automatically adjust the view leveraging depth perception algorithms. This feature is intended to guide precise alignment of the detector over the patient.



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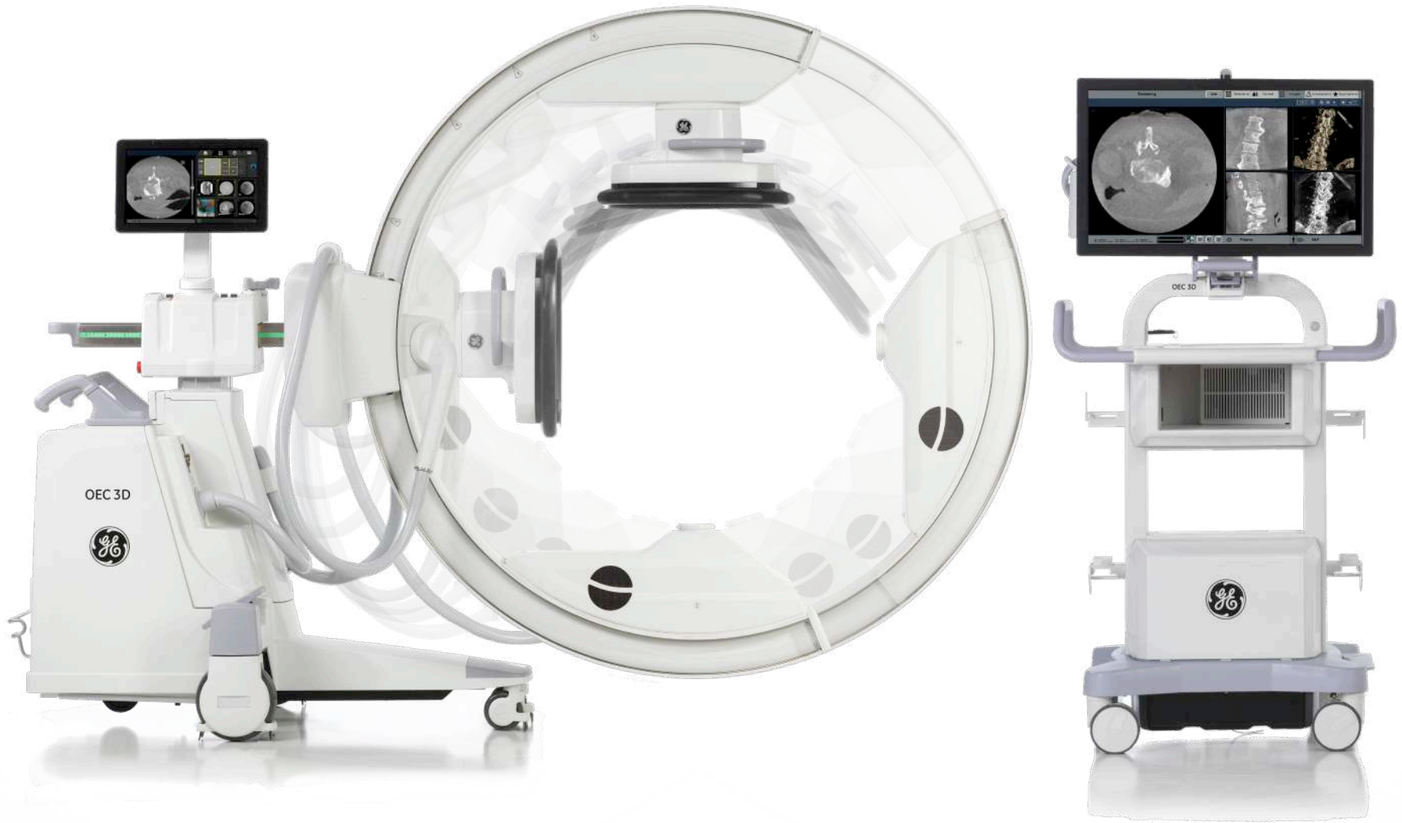
OEC 3D

Precision and Efficiency

- 31 cm x 31 cm CMOS flat detector
- Isocentric 200° 3D orbital sweep
- Additional view with integrated depth camera
- Switch from 3D to 2D imaging
- 4 ways to control: OEC Touch on C-arm or Tableside, RUI and workstation
- Lightweight mainframe with sleek X-ray housing design



- Large field of view with 19 cm x 19 cm x 19 cm volume and 512³ voxels
- Advanced Visualization intended to transform images to preferred view
- View images in less than 30 seconds with 3DXR image reconstruction engine
- Designed to integrate seamlessly with navigation systems
- 2D imaging features: Live Zoom, Digital Pen, eNR, Bolus Chase, and more
- Open design goal for interface with future robotics and AI enabled technology

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