GE Healthcare

384 N. Wright Brothers Drive
Salt Lake City, UT 84116
www.gehealthcare.com

OEC C-arms for Chest Imaging

During emergent care situations where availability or access to traditional digital radiography (DR) X-ray is limited, OEC mobile C-arms may be used as a fluoroscopic system in overflow or backup situations in emergency and intensive care environments.

OEC C-arms are designed to provide fluoroscopic and digital spot images of adult and pediatric populations during diagnostic, interventional, and surgical procedures.

With proper set up and use of advanced imaging tools, OEC C-arms can provide high-quality chest images when a portable or room X-ray machine is unavailable. The following information provides considerations to factor in when using an OEC C-arm for imaging in the lung anatomy, such as field of view (FOV) and C-arm positioning around the patient.

Field of View

Field of View is dependent on detector size (31cm, 12", 21cm, or 9") available on OEC C-arms. Depending on patient size, multiple images may be needed to cover the entire lung anatomy.

Imaging Mode

To create high-quality images with the X-ray technique available on OEC C-arms, the Digital Spot mode creates short-duration, high mA exposure images and is often used for diagnostic imaging.

Negate

The Negate feature can be used to invert the light and dark values in an image. A negated image will mimic the look of a traditional film radiograph image. If Negate is applied prior to the first X-ray exposure, the negative inversion will persist on all subsequent exposures until disabled/turned off.

Preset Imaging Profile

Utilize Preset Imaging Profiles for optimized settings, if available on OEC C-arm configuration.

Preset Profile	General	General HD	Bolus Chase
OEC Elite CFD and II	•	•	•
OEC 9900	•		•

Low Dose

Low Dose mode can be used to reduce dose by ~50%. A decrease in Image Quality may be seen.

Live Zoom

OEC Elite CFD C-arms* with Live Zoom enable a C-arm operator to pan to an area of interest on an image, increase the view up to 4Xs, and reimage the area of interest in the zoomed setting with no change in X-ray technique or dose.

*Dependent on model and manufacturing date on OEC Elite CFD and II configurations

This is for reference only. Refer to OEC C-arm operator's manual for further information and practice radiation protection guidelines accordingly.
GE OEC Medical Systems, LLC, doing business GE Healthcare

C-arm Positioning

The SID (Source to Image Distance) for OEC C-arms is 100 cm SID for optimal positioning around a surgical table. For best image quality, the detector should be placed as close to the patient as possible. This reduces radiation scatter and provides optimal FOV. See Figures 1, 2, and 3 demonstrating the model's chest is facing the detector. The use of a radiolucent marker, taped to the patient's skin, is recommended for comparing multiple images of anatomy. When imaging patient, follow standard chest X-ray breathing instructions of deep inhalation/inspiration.

Patient Standing (recommended)

Standing is the preferred patient position for imaging lung fluid levels and diagnosing respiratory functions. The C-arm may be placed in the lateral position with the detector closest to the front of the thoracic region and the X-ray tube behind the patient.



Figure 1. Standing patient facing the detector, with detector placed close to chest anatomy.

Patient Sitting

The position of the chair should be opposite of the X-ray tube and detector to avoid interference with the X-ray image. The C-arm may be placed in the lateral position with the detector closest to the front of thoracic region and the X-ray tube behind the patient.



Figure 2. Seated patient facing the detector, with detector placed close to chest anatomy.

Patient Supine

If patient is supine, a table suitable for X-ray imaging will be needed. The C-arm is positioned for Anteroposterior (AP) view.



Figure 3. Supine patient facing the detector, and the detector placed close to chest anatomy.

Quadrant Imaging

Imaging all borders of the lung anatomy is important as shown in the phantom images shown in Figure 4, taken on an OEC Elite CFD 31cm. A 12" detector would give similar results in capturing a lung field in 4 quadrants. Depending on the size of the patient, quadrant images may not be necessary.

If a 21cm or 9" detector is used, quadrant imaging will be needed. Note the radiolucent marker (highlighted with the red arrow) used in all exposures for comparison of the images.

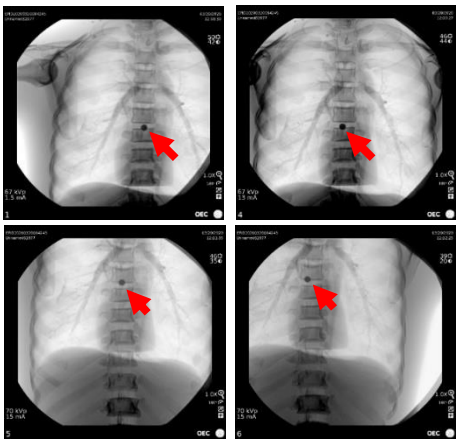


Figure 4. For demonstrative purposes only. Images shown are of a phantom with a translucent circle marker with an OEC Elite CFD 31cm C-arm in General profile.

Protective Draping

Single-use sterile drapes are available to cover and protect equipment when performing imaging procedures. To order OEC C-arms sterile drapes, call 800-874-7378, option 1, option 3.

Clinical Imaging Support

To speak with an OEC C-arm Clinical Imaging Specialist, call 800-874-7378, option 5, option 2.

Additional Resources

Click or copy link for additional information

GE Healthcare Covid-19:

https://www.gehealthcare.com/corporate/covid-19

Cleaning Agents:

https://cleaning.gehealthcare.com/

How-to-Use C-arm Tips for Rad Techs – YouTube Playlist:

https://www.youtube.com/playlist?list=PLMpbsoz7hP4rTbc9bRltXe_m2nqghD8u-

Topics viewable in 3 minutes or less include:

- Basic Positioning
- Advanced Positioning
- Control Panel Functions
- Apply C-arm Drapes