

OPESCOPE ACTENO

Surgical Mobile C-arm Imaging System





Mobile C-arm Imaging System

OPESCOPE ACTENO

Free and easy positioning achieves optimal performance to meet the demands of the operation room and emergency room.

The total system pursues high image quality and ease of use.

This is the pinnacle of the evolving OPESCOPE-series.

Amazing Operability

Great ease of operation

Compact & Clean

Easy to move and clean

TEchnology of Imaging & Performance

Exceptional imaging technology and performance

New Dose Management

Pursuing lower exposure dose

Opened Upgradability

Selectable functionality provides expandability





Mobile C-arm Imaging System

OPESCOPE ACTENO

Free and easy positioning achieves optimal performance to meet the demands of the operation room and emergency room.

The total system pursues high image quality and ease of use.

This is the pinnacle of the evolving OPESCOPE-series.

Amazing Operability

Great ease of operation

Compact & Clean

Easy to move and clean

TEchnology of Imaging & Performance

Exceptional imaging technology and performance

New Dose Management

Pursuing lower exposure dose

Opened Upgradability

Selectable functionality provides expandability



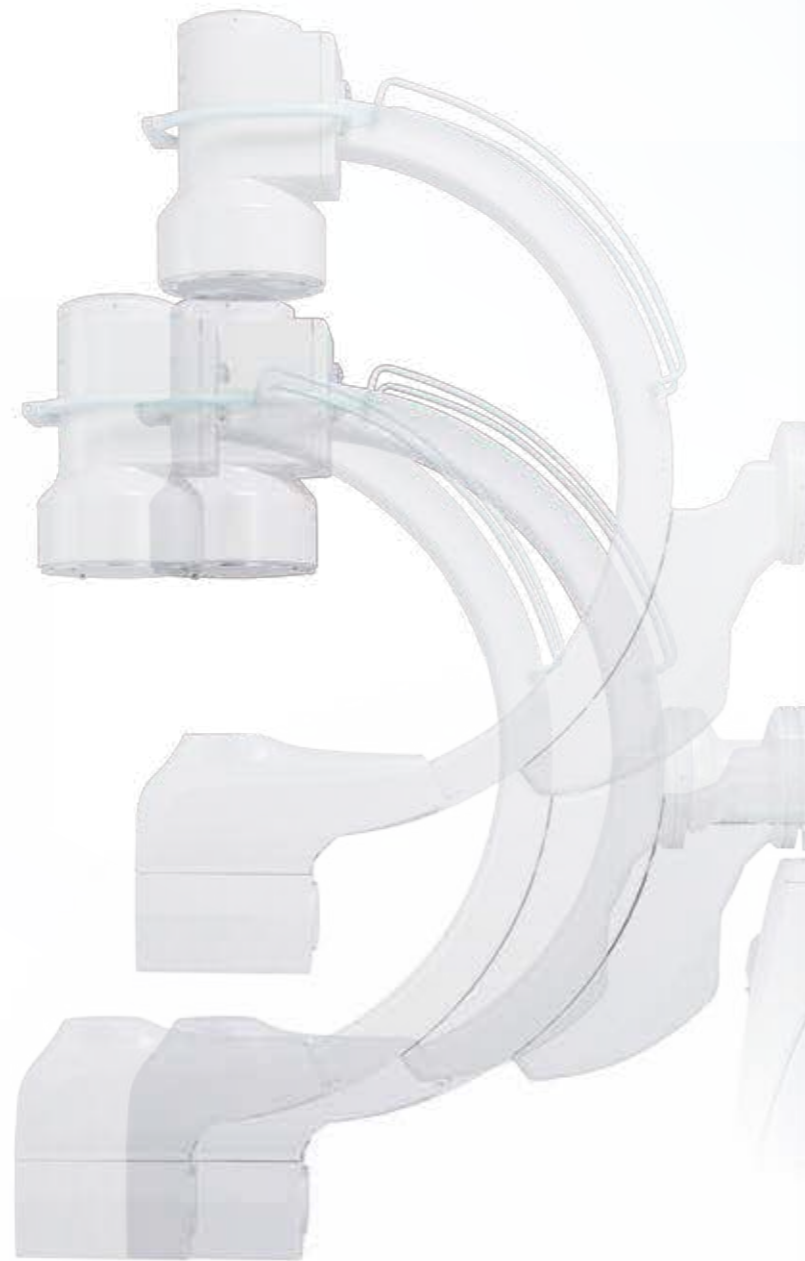
Amazing Operability

Great ease of operation

The excellent mobility of the compact C-arm makes positioning smooth. The manually operated C-arm can be rapidly & lightly moved to the observation position that you want.

Light & Quick C-arm positioning Just as You Wish

The fully counterbalanced C-arm realizes very light & smooth C-arm movements, which allow you to position the C-arm to your ROI (Region Of Interest) very quickly. The manual vertical movements make the height adjustment easy and minimize the danger of collisions with the operating table or other objects.



Highly-Visible Electromagnetic Locks on Each Side of the Unit

Electromagnetic lock mechanisms that lock and release the C-arm movements are located at each side of the C-arm unit and can be easily approached from the left or right side. The ON/OFF status of the electromagnetic locks is clearly indicated by color-coded illustrations to show the status at a glance.

Smart "C-Memory" Function for Smoother Observations

In the examination for femur head etc., it is necessary to examine from various C-arm positions repeatedly. Shimadzu's unique "C-Memory" function can memorize and re-produce the following "3C" for each C-arm positions, which helps you to reduce your examination time.

Camera rotation Camera Rotation position memory

Collimation Collimator position memory

Condition of X-ray X-ray condition memory

Unique "Doctor Handle" to position C-arm from I.I. side Option

The C-arm release button at the image intensifier releases the electromagnetic lock without the need to move to the unit. This unique feature enables C-arm positioning easily from doctor side as well.



Doctor Handle

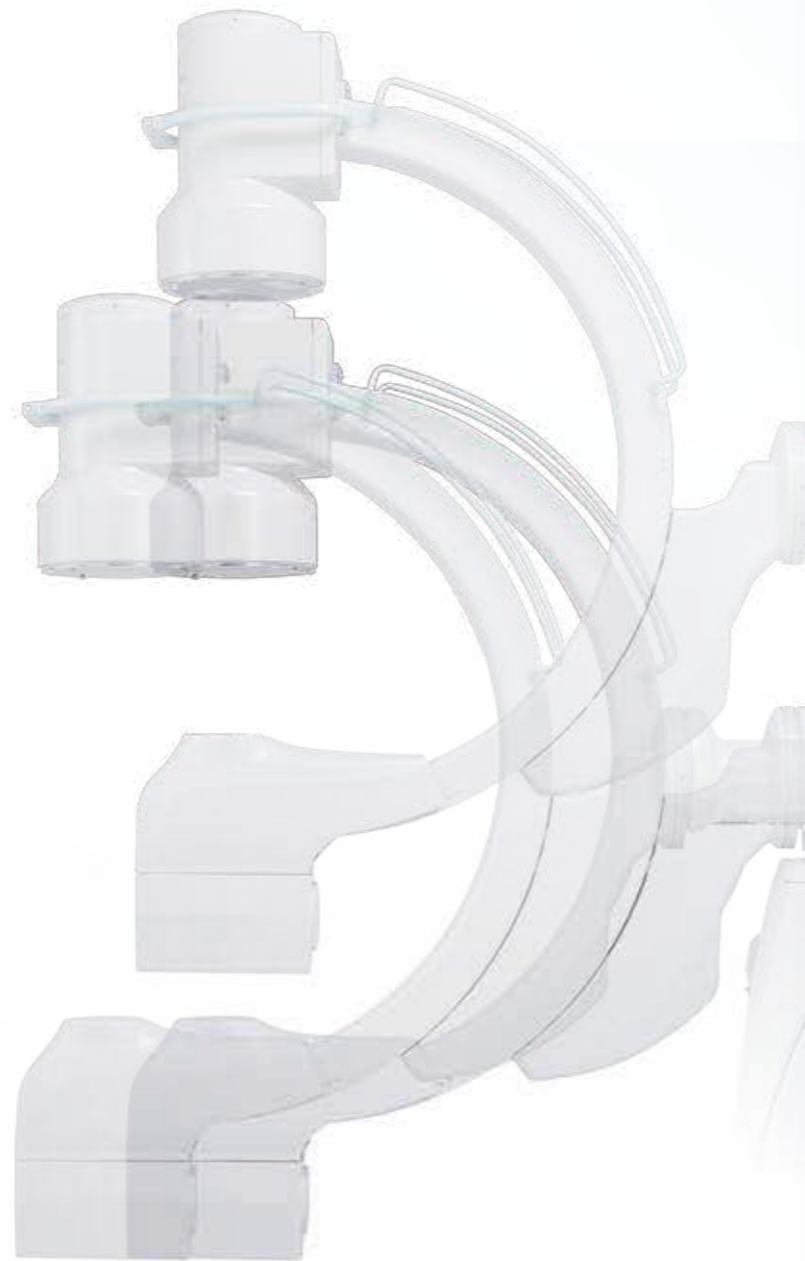
Amazing Operability

Great ease of operation

The excellent mobility of the compact C-arm makes positioning smooth. The manually operated C-arm can be rapidly & lightly moved to the observation position that you want.

Light & Quick C-arm positioning Just as You Wish

The fully counterbalanced C-arm realizes very light & smooth C-arm movements, which allow you to position the C-arm to your ROI (Region Of Interest) very quickly. The manual vertical movements make the height adjustment easy and minimize the danger of collisions with the operating table or other objects.



Highly-Visible Electromagnetic Locks on Each Side of the Unit

Electromagnetic lock mechanisms that lock and release the C-arm movements are located at each side of the C-arm unit and can be easily approached from the left or right side. The ON/OFF status of the electromagnetic locks is clearly indicated by color-coded illustrations to show the status at a glance.

Smart "C-Memory" Function for Smoother Observations

In the examination for femur head etc., it is necessary to examine from various C-arm positions repeatedly. Shimadzu's unique "C-Memory" function can memorize and re-produce the following "3C" for each C-arm positions, which helps you to reduce your examination time.

Camera rotation Camera Rotation position memory

Collimation Collimator position memory

Condition of X-ray X-ray condition memory

Unique "Doctor Handle" to position C-arm from I.I. side Option

The C-arm release button at the image intensifier releases the electromagnetic lock without the need to move to the unit. This unique feature enables C-arm positioning easily from doctor side as well.



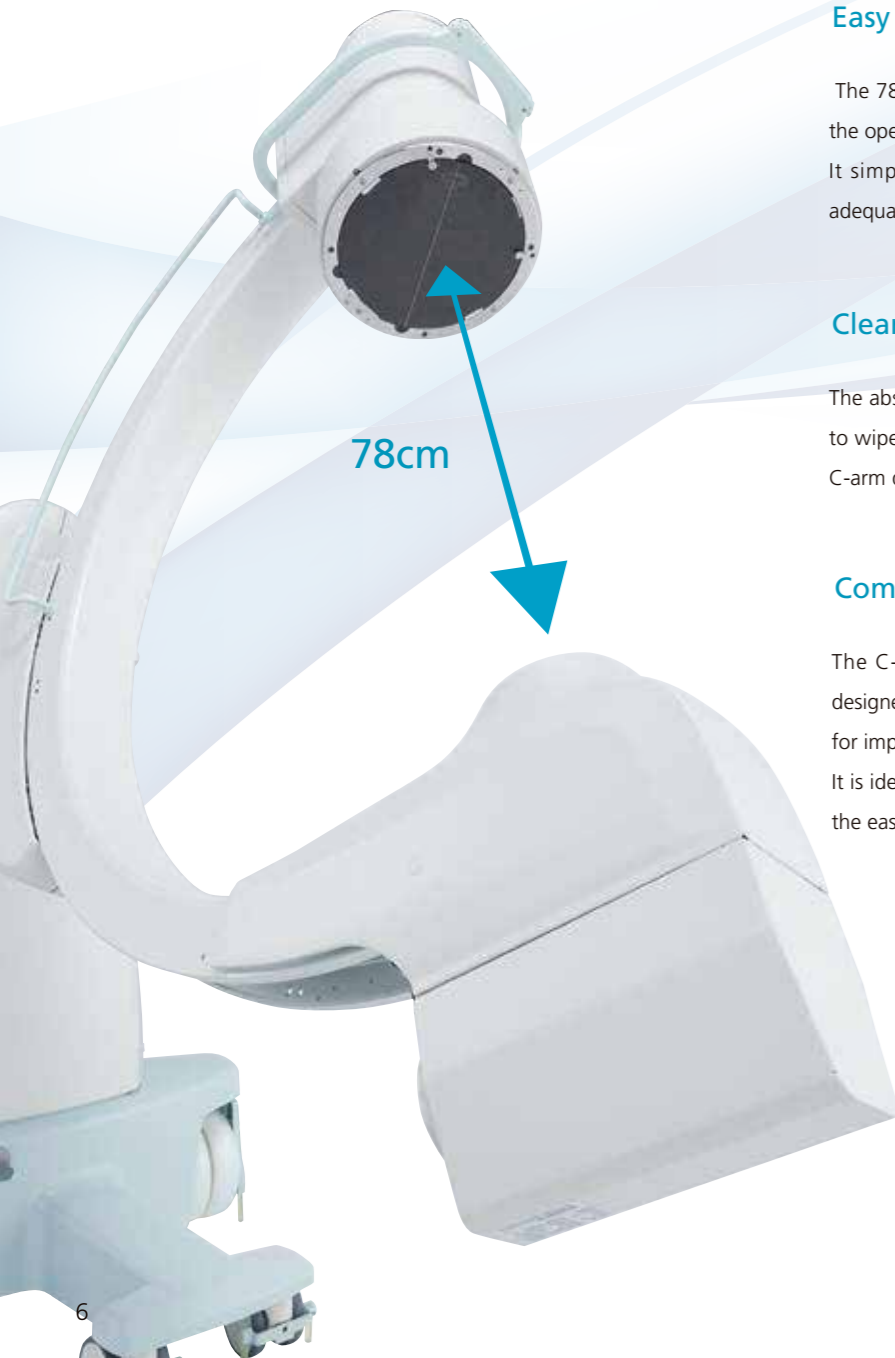
Doctor Handle

Compact & Clean

Easy to move and clean

The compact and cleverly designed geometry offers superb maneuverability that allows easy positioning by staff prior to surgery.

The flat and wide C-arm reduces interference with the operating table and can always be kept clean.



Easy to Operate Wide C-arm

The 78 cm wide opened C-arm minimizes interference with the operating table.

It simplifies approach to the surgical site and maintains adequate working space for the surgeon.

Clean C-arm

The absence of levers and cables on the C-arm makes it easy to wipe and keep clean. No cables hang from the side of the C-arm during examinations.

Compact Design for Easy & Stable Driving

The C-arm unit is compact and weighs only 250 kg. It is designed with the center of gravity above the rear-wheel drive for improved stability during travel.

It is ideally designed from the actual users' point of view for the easier driving and positioning in your daily usages.



Adequate C-arm Unit Clearance

Large open space behind the main unit makes it easy for staff to drive the unit.



Large Double Wheels for Lighter Travels

The double large wheels make the unit easy to maneuver. The wheels move independently for lighter travel and easy steering.

Compact C-arm Unit

The width at the C-arm unit wheels is just 80 cm. Moving the system through narrow doors into the operation room and positioning the unit in the busy room with many surgeon devices become much easier.



Quick Cable Connection

The lighter cable is easily connected by the staff. The connector is provided at the perfect height for easy connection.



Less Interference with the Wheels

The more compact wheels let the C-arm unit move closer to the operating table. Lack of interference between the unit and floor ensures smooth C-arm rotation, even during surgery.

Technology of Imaging & Performance

Exceptional imaging technology

OPESCOPE ACTENO offers the high-quality images and flexible operation demanded during surgery and emergencies. It offers high-performance operation that matches every operator's needs.

The high-resolution CCD camera combined with our advanced image processing technologies delivers the required high image quality to you.

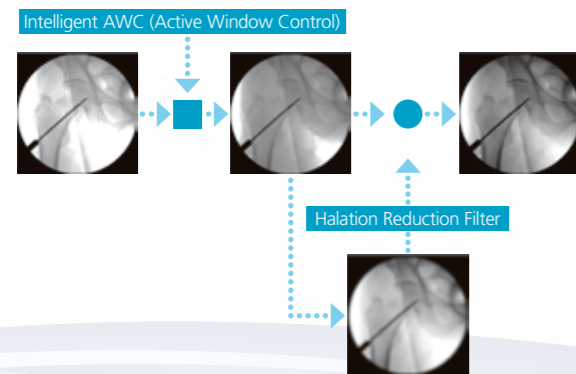
High Resolution and High Contrast Images Helps Accurately Observe the Region of Interest

1M Pixel CCD Camera

The 1M pixel CCD camera offers high resolution and high contrast. Clear observations of targets and devices even in a thick body are ensured by sharp fluoroscopic images that offer natural shading representation and identification of fine details.

High-Level Filtering Further Enhances Image Quality

Proprietary filtering ensures clear images by efficiently cutting halation near the skin and underexposure due to superimposed organs.



Dynamic IBS Function

Realtime analysis of the image brightness maintains optimal brightness by controlling X-ray conditions.

Boost-Pulse Function Cuts Exposure and Enhances Image Quality

High-power pulsed X-rays offer superior high-quality and high-contrast images at reduced exposure dose. It provides clear observations of thick objects, such as lateral lumbar images.

Supershot Function for High Quality Images

The supershot function creates high-contrast one-shot images with reduced background noise. This function will be very helpful when you need intensive checks during surgery. (without digital unit option)



Large LCD Touchscreen

A large touchscreen with a wide viewing angle is integrated at the center of the C-arm unit.

The clearly displayed radiography conditions can be changed by a few simple operations.

The images displayed on the monitors can be controlled directly from the C-arm unit.



Customizable to Suit Each Operator

The touchscreen display can be customized to suit each operator.

The Simple mode that automatically displays images instantly in emergency situations and the Expert mode that allows precise settings of the radiography conditions are available as presets.



Simple mode



Expert mode

Fluoroscopic Image Memory Function

The temporary image memory function up to 172 frames accepts loop images and one-shot images. You can use this function to record and review the status during surgery.

Monitor folding / height adjusting function Option

Newly-designed monitor cart can be closed like this to be compact when you finish using the system.

You can also adjust the monitor height to the surgeon's line of sight.

(Dual monitor type)



Technology of Imaging & Performance

Exceptional imaging technology

OPESCOPE ACTENO offers the high-quality images and flexible operation demanded during surgery and emergencies. It offers high-performance operation that matches every operator's needs.

The high-resolution CCD camera combined with our advanced image processing technologies delivers the required high image quality to you.

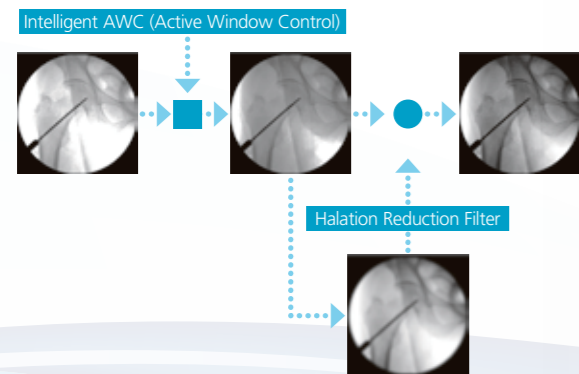
High Resolution and High Contrast Images Helps Accurately Observe the Region of Interest

1M Pixel CCD Camera

The 1M pixel CCD camera offers high resolution and high contrast. Clear observations of targets and devices even in a thick body are ensured by sharp fluoroscopic images that offer natural shading representation and identification of fine details.

High-Level Filtering Further Enhances Image Quality

Proprietary filtering ensures clear images by efficiently cutting halation near the skin and underexposure due to superimposed organs.



Dynamic IBS Function

Realtime analysis of the image brightness maintains optimal brightness by controlling X-ray conditions.

Boost-Pulse Function Cuts Exposure and Enhances Image Quality

High-power pulsed X-rays offer superior high-quality and high-contrast images at reduced exposure dose. It provides clear observations of thick objects, such as lateral lumbar images.

Supershot Function for High Quality Images

The supershot function creates high-contrast one-shot images with reduced background noise. This function will be very helpful when you need intensive checks during surgery. (without digital unit option)



Large LCD Touchscreen

A large touchscreen with a wide viewing angle is integrated at the center of the C-arm unit.

The clearly displayed radiography conditions can be changed by a few simple operations.

The images displayed on the monitors can be controlled directly from the C-arm unit.



Customizable to Suit Each Operator

The touchscreen display can be customized to suit each operator.

The Simple mode that automatically displays images instantly in emergency situations and the Expert mode that allows precise settings of the radiography conditions are available as presets.



Simple mode



Expert mode

Fluoroscopic Image Memory Function

The temporary image memory function up to 172 frames accepts loop images and one-shot images. You can use this function to record and review the status during surgery.

Monitor folding / height adjusting function Option

Newly-designed monitor cart can be closed like this to be compact when you finish using the system.

You can also adjust the monitor height to the surgeon's line of sight.

(Dual monitor type)





Extensive options to support even further

A diverse range of additional options supports your safe and efficient surgeries even more.

Fluoroscopic Images Display at the C-arm Unit

The touchscreen can show the same fluoroscopic images being seen by the surgeon on the main monitor. Observing that images on touchscreen, the operator can easily perform the adjustments requested by the surgeon.



Real-time Exposure Dose Value Display

The area-dose value is calculated and always displayed in real-time on the touchscreen and monitor.



Further Dose Reduction by Removable Grid

The grid can either be installed or removed, depending on the examination. Whenever required, the grid can be removed to minimize the dosage level even further.

Laser Pointer

A laser marker illuminates the center of imaging field. The marker position is displayed on the monitor as well, allowing you easy and accurate position confirmation.

Hand Switch

Fluoroscopy and radiography can be controlled using a hand switch.



* Selectable projection direction from I.I. side or X-ray tube side.

Other Options

- Doctor Handle
- High-grade Fiber Grid
- Cassette holder
- Hygienic C-arm Cover

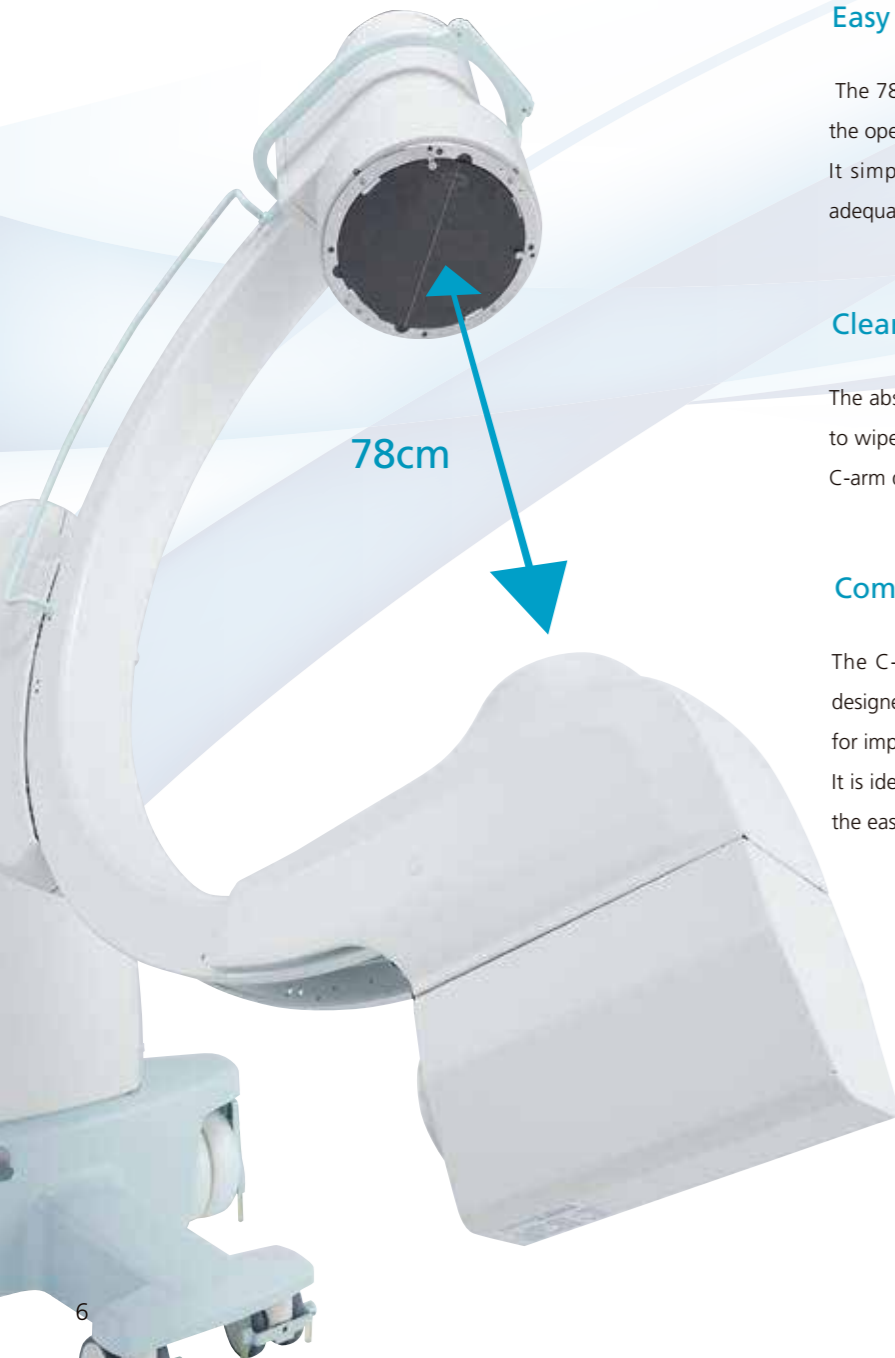
* This page describes optional items.

Compact & Clean

Easy to move and clean

The compact and cleverly designed geometry offers superb maneuverability that allows easy positioning by staff prior to surgery.

The flat and wide C-arm reduces interference with the operating table and can always be kept clean.



Easy to Operate Wide C-arm

The 78 cm wide opened C-arm minimizes interference with the operating table.

It simplifies approach to the surgical site and maintains adequate working space for the surgeon.

Clean C-arm

The absence of levers and cables on the C-arm makes it easy to wipe and keep clean. No cables hang from the side of the C-arm during examinations.

Compact Design for Easy & Stable Driving

The C-arm unit is compact and weighs only 250 kg. It is designed with the center of gravity above the rear-wheel drive for improved stability during travel.

It is ideally designed from the actual users' point of view for the easier driving and positioning in your daily usages.



Adequate C-arm Unit Clearance

Large open space behind the main unit makes it easy for staffs to drive the unit.



Large Double Wheels for Lighter Travels

The double large wheels make the unit easy to maneuver. The wheels move independently for lighter travel and easy steering.

Compact C-arm Unit

The width at the C-arm unit wheels is just 80 cm. Moving the system through narrow doors into the operation room and positioning the unit in the busy room with many surgeon devices become much easier.



Quick Cable Connection

The lighter cable is easily connected by the staff. The connector is provided at the perfect height for easy connection.



Less Interference with the Wheels

The more compact wheels let the C-arm unit move closer to the operating table. Lack of interference between the unit and floor ensures smooth C-arm rotation, even during surgery.

New Dose Management

Pursuing lower X-ray exposure

The advanced total system design incorporates various functions to reduce the radiation dose while maintaining high image quality.

Pulsed Fluoroscopy for High Image Quality and Low Exposure Dose

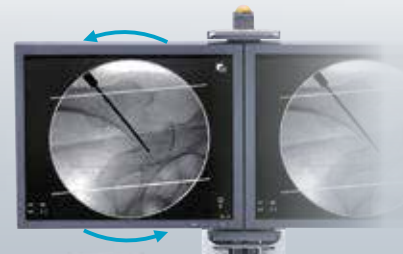
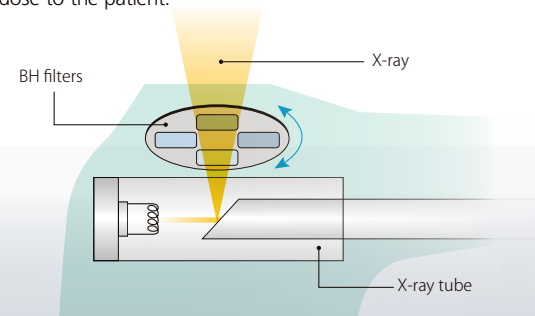
Pulsed fluoroscopy at up to 15 fps available as standard. It maintains high image quality while reducing the X-ray exposure.

Virtual Collimation saves exposure just for positioning

The collimation and image rotation position can be set from the last-image-hold image of your last fluoroscopy. Unnecessary exposure is reduced as no X-ray irradiation is required for this setting.

Select the X-ray Filter According to the Examination

ACTENO offers Multi Beam Hardening (MBH) filters to eliminate soft X-rays which do not contribute to the actual clinical images. The optimal filter is automatically selected by the examination protocol (APR) from three types of filters to cut unnecessary dose to the patient.



Opened Upgradability

Selectable functionality provides expandability

The various optional items and functions allow you to accommodate the most suitable system configuration flexibly to each facility and also upgrade to have a digital imaging unit, DICOM connections to the network and DSA capability whenever needed.

Digital Imaging Unit option

Digital Imaging Unit enables spot radiography and high-speed serial radiography using our high resolution digital technologies. After acquisition, you can make image adjustments or add annotations then save the data in HDD. The large capacity of the system HDD lets you store up to 30,000 high quality images.

Efficient Image Data Archive

Image data can be recorded in DICOM format on DVD-R/CD-R media, and DICOM viewer software is also added to the disc simultaneously, so that you can easily review the images on any PC which does not have viewer S/W.



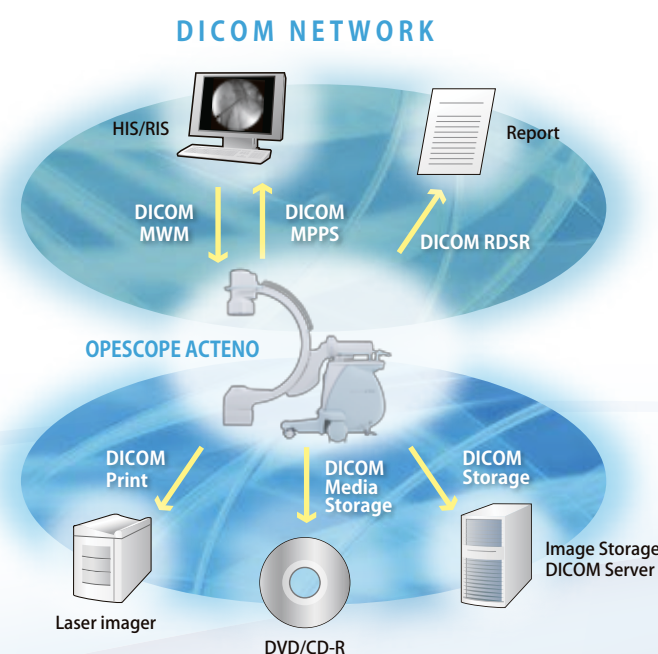
Easy Image Export to a USB Memory Device

The images recorded in a digital imaging unit can also be output to a USB memory device in Jpeg or Bitmap files, which allows you to utilize it easily on your PC.

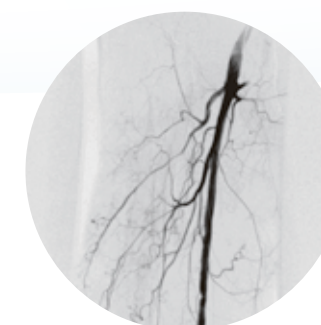
Multiple DICOM connections for your Network

DICOM MWM/MPPS options let you connect to HIS/RIS to receive and send information of the patient and examinations, which minimizes your workflow before/after the examinations.

DICOM Storage option stores the image data in your DICOM server, and DICOM Print realizes easy printing via network. In addition, DICOM RDSR (Radiation Dose Structured Report) ensures the radiation dose information feedbacks for your firm dose managements which is nowadays important.



* This page describes optional items.



Real-time DSA option

The capability of high-speed, real-time DSA (Digital Subtraction Angiography) at Max.7.5fps can be expanded for your vascular examinations or dialysis shunt radiography.

RSM Technology Minimizes Motion Artifacts in DSA

Adding our unique RSM filtering process to DSA images will eliminate the motion artifacts which can easily happen in the patients under anesthesia who cannot control their breathing or the patients who easily move during shunt imaging. This broadens the potential scope of application for using DSA.

Anti-virus Software Integration

The anti-virus software is available for the Digital Imaging Unit, which permits our official programs and applications and excludes any other unknown programs. It also blocks the infiltration of malware via network connections or external media to ensure that the system is always safe to use.

* This page describes optional items.

Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at www.shimadzu.com



Shimadzu Corporation

Headquarters

1, Nishinokyo-Kuwabara-cho, Nakagyo-ku, Kyoto 604-8511, Japan
<http://www.shimadzu.com>



Shimadzu Corporation Medical Systems Division has been certified by TÜV Rheinland as a manufacturer of medical systems in compliance with ISO9001:2008 Quality Management Systems and ISO13485:2003 Medical Devices Quality Management Systems.

Remarks:

- Every value in this catalogue is a standard value, and it may vary a little from the actual at each site.
- The appearances and specifications are subject to change for reasons of improvement without notice.
- Certain configurations may not be available pending regulatory clearance. Contact your Shimadzu representative for information on specific configurations.
- Before operating this system, you should first thoroughly review the Instruction Manual.

New Dose Management

Pursuing lower X-ray exposure

The advanced total system design incorporates various functions to reduce the radiation dose while maintaining high image quality.

Pulsed Fluoroscopy for High Image Quality and Low Exposure Dose

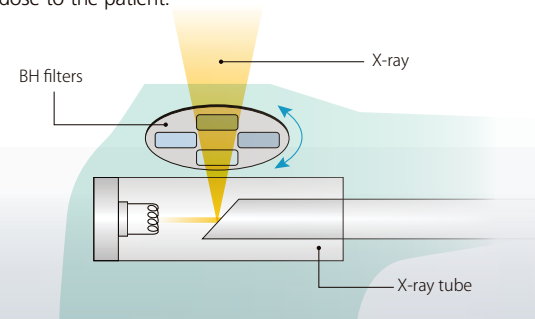
Pulsed fluoroscopy at up to 15 fps available as standard. It maintains high image quality while reducing the X-ray exposure.

Virtual Collimation saves exposure just for positioning

The collimation and image rotation position can be set from the last-image-hold image of your last fluoroscopy. Unnecessary exposure is reduced as no X-ray irradiation is required for this setting.

Select the X-ray Filter According to the Examination

ACTENO offers Multi Beam Hardening (MBH) filters to eliminate soft X-rays which do not contribute to the actual clinical images. The optimal filter is automatically selected by the examination protocol (APR) from three types of filters to cut unnecessary dose to the patient.



Opened Upgradability

Selectable functionality provides expandability

The various optional items and functions allow you to accommodate the most suitable system configuration flexibly to each facility and also upgrade to have a digital imaging unit, DICOM connections to the network and DSA capability whenever needed.

Digital Imaging Unit option

Digital Imaging Unit enables spot radiography and high-speed serial radiography using our high resolution digital technologies. After acquisition, you can make image adjustments or add annotations then save the data in HDD. The large capacity of the system HDD lets you store up to 30,000 high quality images.

Efficient Image Data Archive

Image data can be recorded in DICOM format on DVD-R/CD-R media, and DICOM viewer software is also added to the disc simultaneously, so that you can easily review the images on any PC which does not have viewer S/W.



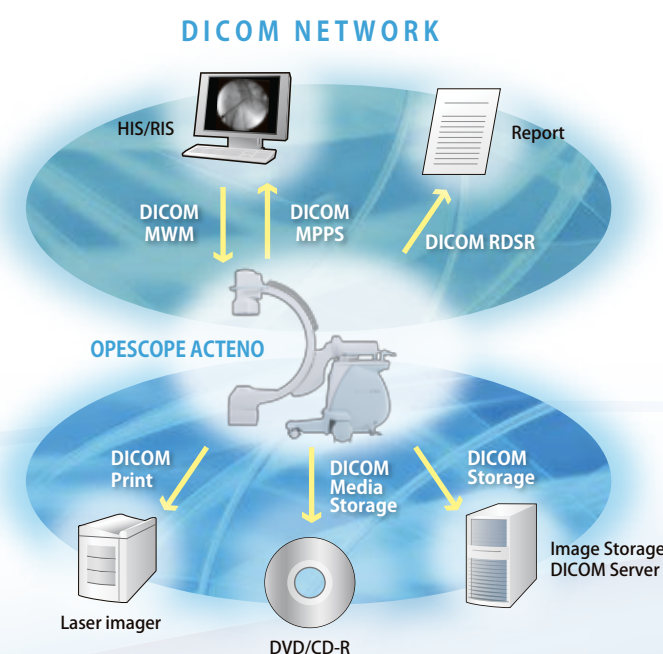
Easy Image Export to a USB Memory Device

The images recorded in a digital imaging unit can also be output to a USB memory device in Jpeg or Bitmap files, which allows you to utilize it easily on your PC.

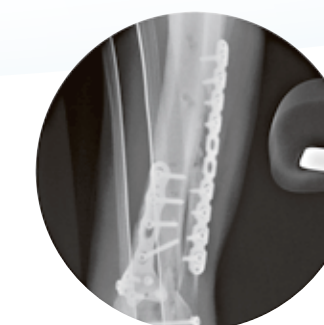
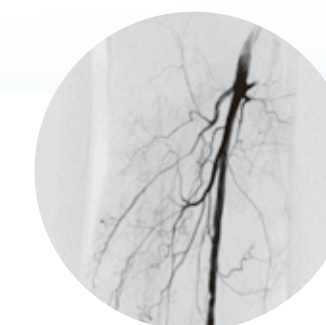
Multiple DICOM connections for your Network

DICOM MWM/MPPS options let you connect to HIS/RIS to receive and send information of the patient and examinations, which minimizes your workflow before/after the examinations.

DICOM Storage option stores the image data in your DICOM server, and DICOM Print realizes easy printing via network. In addition, DICOM RDSR (Radiation Dose Structured Report) ensures the radiation dose information feedbacks for your firm dose managements which is nowadays important.



* This page describes optional items.



Real-time DSA option

The capability of high-speed, real-time DSA (Digital Subtraction Angiography) at Max.7.5fps can be expanded for your vascular examinations or dialysis shunt radiography.

RSM Technology Minimizes Motion Artifacts in DSA

Adding our unique RSM filtering process to DSA images will eliminate the motion artifacts which can easily happen in the patients under anesthesia who cannot control their breathing or the patients who easily move during shunt imaging. This broadens the potential scope of application for using DSA.

Anti-virus Software Integration

The anti-virus software is available for the Digital Imaging Unit, which permits our official programs and applications and excludes any other unknown programs. It also blocks the infiltration of malware via network connections or external media to ensure that the system is always safe to use.

* This page describes optional items.

New Dose Management

Pursuing lower X-ray exposure

The advanced total system design incorporates various functions to reduce the radiation dose while maintaining high image quality.

Pulsed Fluoroscopy for High Image Quality and Low Exposure Dose

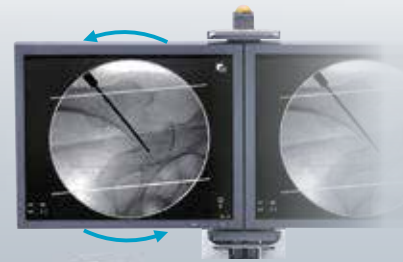
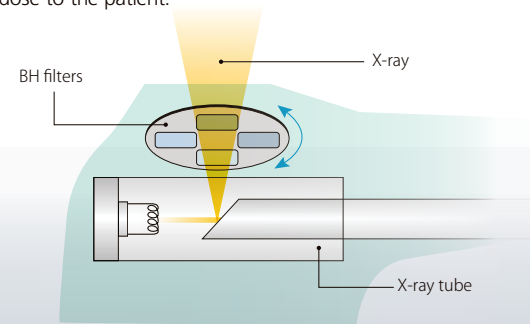
Pulsed fluoroscopy at up to 15 fps available as standard. It maintains high image quality while reducing the X-ray exposure.

Virtual Collimation saves exposure just for positioning

The collimation and image rotation position can be set from the last-image-hold image of your last fluoroscopy. Unnecessary exposure is reduced as no X-ray irradiation is required for this setting.

Select the X-ray Filter According to the Examination

ACTENO offers Multi Beam Hardening (MBH) filters to eliminate soft X-rays which do not contribute to the actual clinical images. The optimal filter is automatically selected by the examination protocol (APR) from three types of filters to cut unnecessary dose to the patient.



Opened Upgradability

Selectable functionality provides expandability

The various optional items and functions allow you to accommodate the most suitable system configuration flexibly to each facility and also upgrade to have a digital imaging unit, DICOM connections to the network and DSA capability whenever needed.

Digital Imaging Unit option

Digital Imaging Unit enables spot radiography and high-speed serial radiography using our high resolution digital technologies. After acquisition, you can make image adjustments or add annotations then save the data in HDD. The large capacity of the system HDD lets you store up to 30,000 high quality images.

Efficient Image Data Archive

Image data can be recorded in DICOM format on DVD-R/CD-R media, and DICOM viewer software is also added to the disc simultaneously, so that you can easily review the images on any PC which does not have viewer S/W.



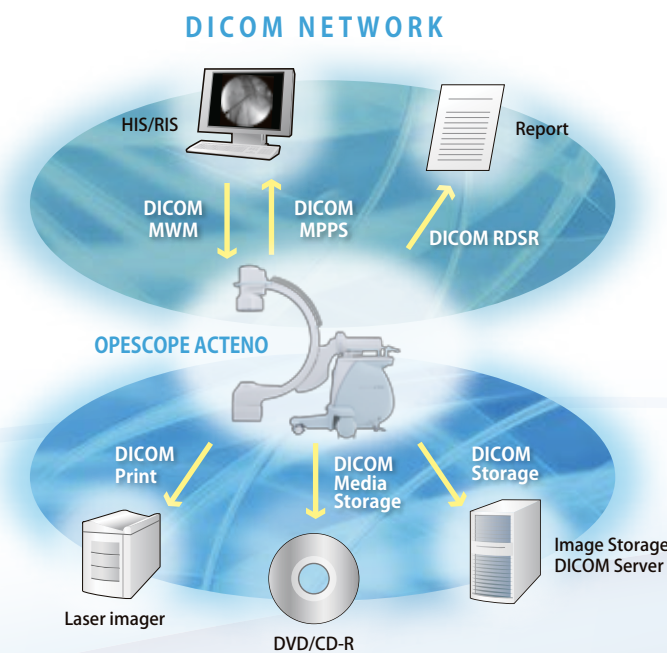
Easy Image Export to a USB Memory Device

The images recorded in a digital imaging unit can also be output to a USB memory device in Jpeg or Bitmap files, which allows you to utilize it easily on your PC.

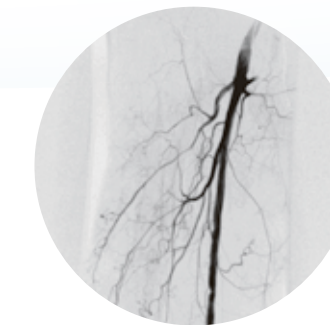
Multiple DICOM connections for your Network

DICOM MWM/MPPS options let you connect to HIS/RIS to receive and send information of the patient and examinations, which minimizes your workflow before/after the examinations.

DICOM Storage option stores the image data in your DICOM server, and DICOM Print realizes easy printing via network. In addition, DICOM RDSR (Radiation Dose Structured Report) ensures the radiation dose information feedbacks for your firm dose managements which is nowadays important.



* This page describes optional items.



Real-time DSA option

The capability of high-speed, real-time DSA (Digital Subtraction Angiography) at Max.7.5fps can be expanded for your vascular examinations or dialysis shunt radiography.

RSM Technology Minimizes Motion Artifacts in DSA

Adding our unique RSM filtering process to DSA images will eliminate the motion artifacts which can easily happen in the patients under anesthesia who cannot control their breathing or the patients who easily move during shunt imaging. This broadens the potential scope of application for using DSA.

Anti-virus Software Integration

The anti-virus software is available for the Digital Imaging Unit, which permits our official programs and applications and excludes any other unknown programs. It also blocks the infiltration of malware via network connections or external media to ensure that the system is always safe to use.

* This page describes optional items.