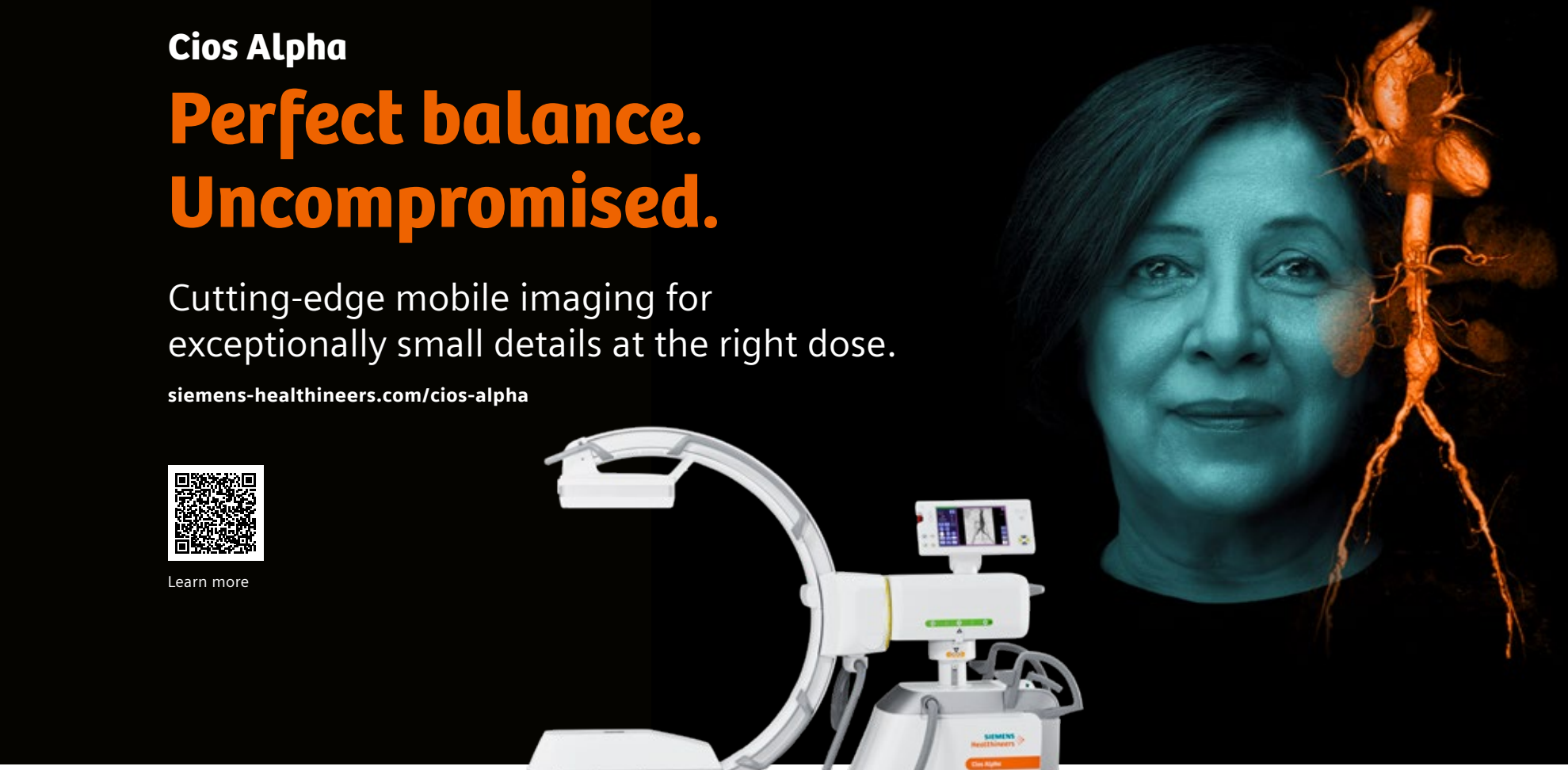
Cios Alpha

Perfect balance. Uncompromised.

Cutting-edge mobile imaging for exceptionally small details at the right dose.

siemens-healthineers.com/cios-alpha

Learn more

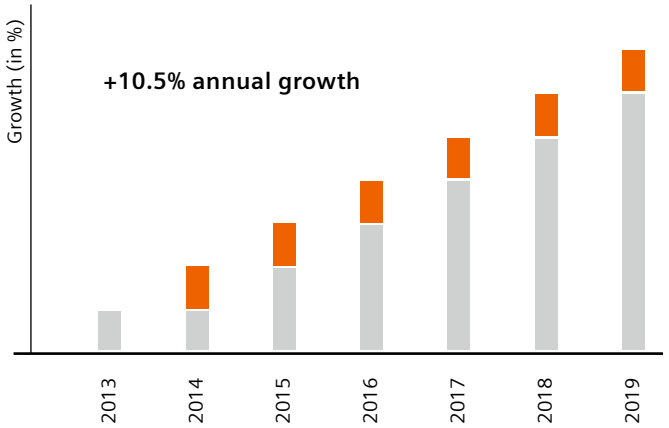


SIEMENS Healthineers

Staying competitive in a challenging market

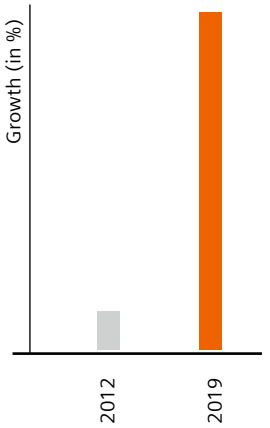
With rising patient numbers and fewer staff, rapid scientific progress, and increasingly outcome-oriented compensation, the environment for healthcare providers around the world is changing.

In light of this situation, hospitals need to stay competitive. One way to approach this is to further develop the promising field of minimally invasive procedures. For these, state-of-the-art technology delivering high image quality is more important than ever.



Expected growth of minimally invasive procedures

A 2014 study by Transparency Market Research (TMR) projects an annual growth rate of 10.5% for the global market of minimally invasive procedures.[1] Due to further technical and socio-economical developement, it is safe to assume this trend will continue.

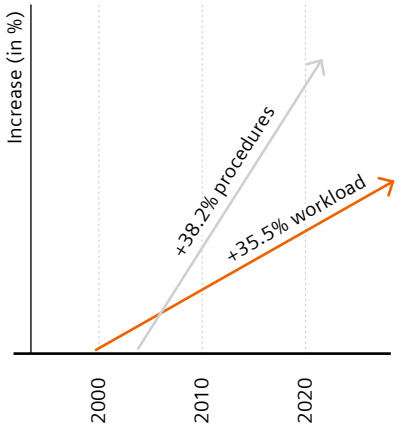


... and their projected value

The same study estimates the global market for minimally invasive procedures to double in value between 2012 and 2019.[2]

A growing concern during minimally invasive surgery is radiation exposure of patients and the OR team.[3] Operators in particular are exposed to radiation on a daily basis. A study published in late 2017 was the first to show evidence of cellular DNA damage in operators performing endovascular procedures.[4]

Such studies are particularly important, since both the volume of surgical procedures and the workload of surgeons are increasing.[5,6] At the same time, this growth calls for efficient workflows.



Growth in surgery

Several dedicated studies indicate a clear trend in surgery: Both the number of procedures and the workload of surgery departments are continuously increasing.[7,8]

We're here for you

In order to help you provide state-of-the-art medical care, a new imaging system should not only expand your clinical portfolio but also address dose concerns and simplify procedures.

In this challenging situation, we want to keep our promise to support you in expanding precision medicine.

With Cios Alpha®, we present a mobile C-arm that accommodates your various needs – and helps you advance therapy outcomes.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Cios Alpha

Contents

Perfect balance. Uncompromised.

In image-guided surgery, the balance of image quality and dose is a longknown topic. They often come at the expense of one another. Dose reduction often means lower image quality – and difficulties in correctly identifying anatomy and devices. Higher dose, on the other hand, means potential health risks for patients, surgeons, and the OR team.

Cios Alpha® is a high-definition 2D mobile C-arm that is designed to give you certainty in these matters. Thanks to its newly upgraded Retina Imaging Chain for optimal images, its CARE technologies for the right dose in each individual case, and its intelligent power management, it delivers the perfect balance between image quality and dose.

Add to that smart solutions for ease of use, less distractions in workflows, and optimal utilization of your equipment – and you get a mobile C-arm that puts you in charge: Safeguard excellent image quality at the right dose for all patients, fully focus on your case, and grow into more profitable procedures.

Cios Alpha
Cutting-edge mobile imaging for exceptionally small details at the right dose.

Outstanding Images

Fluoroscopic image with contrast agent to show arteria poplitea/tibialis

Courtesy of Lafayette Cardiovascular Center of Excellence, Lafayette, Louisiana, USA

Cios Alpha – At a glance

Learn how the dedicated 2D technologies of Cios Alpha® can give you the image quality you need – at the right dose for every situation.

Excellent images, right dose

Retina technology –
See the details you need

Being able to see exceptionally small details is key: both for confident performance and achieving best results for patients – regardless of clinical application, patient size, or length of surgery. Cios Alpha delivers outstanding images thanks to the new Retina Imaging Chain with CMOS technology.

CARE –
The right dose in each individual case

Optimal image quality and easy dose reduction to take care of your patients and look after your team: Cios Alpha offers both. Apply the right dose with Exam Sets, dose buttons, and smart collimation for intraprocedural imaging according the ALARA (as low as reasonably achievable) principle.

Power –
The extra boost when you need it

Cios Alpha allows you to handle even complex cases. The Energy Storage Unit (ESU)I gives you extra power for more anatomical details. In addition, its intelligent power management and active cooling[a] prevent the system from overheating, even during long procedures.

Easy handling, smooth workflow

Ease of use –
Concentrate on the patient not the equipment

Save time and improve efficiency in your clinical workflow with Cios Alpha. Ease staff instruction during surgery – and position your mobile C-arm faster, more precisely, and directly from the sterile field. Cios Alpha features single touch positioning[a], electromagnetic brakes, and a wireless footswitch[a] to help you improve your workflows.

Infection control –
Maintain the highest standards

Cios Alpha is designed to support your infection control. Anti-microbial surfaces, specially developed hardware, and a comprehensive cleaning concept help you be at the forefront of this important topic.

Extended capabilities, smart growth

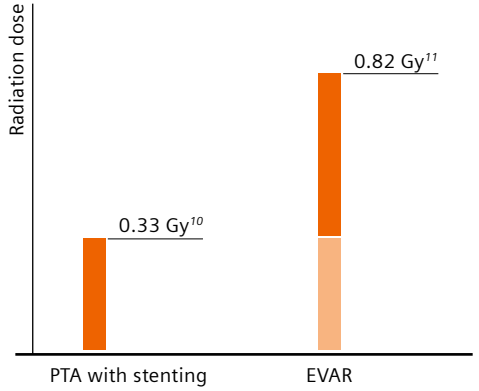
Cios OpenApps –
Expand your capabilities the easy way

Cios Alpha allows you to connect to the Siemens Healthineers Digital Marketplace – a platform that offers compatible and certified apps around your imaging devices and procedures. Just download apps that help you streamline your work and expand your capabilities.

Does good image quality always mean high dose?

Insufficient image quality makes it difficult to correctly identify anatomy or devices. This can not only prolong procedures, but also increase the risk of complications. However, increased image quality often comes at the expense of higher dose and health risks for patients and the OR team.

As several studies have shown,[9] more complex procedures such as EVAR come with longer fluoroscopy time and higher dose – also increasing the risk of operators' DNA damage.



Radiation exposure is a growing concern for operators and patients.

How can you decrease dose and maintain sufficient image quality?

Excellent images, right dose

When it comes to dose and image quality, it doesn't have to be either/or. Cios Alpha® features technology that gives you outstanding image quality at the right dose for each individual case – at every step of the workflow. Need extra power? Cios Alpha delivers that, too. For perfect balance that helps you expand precision medicine and advance therapy outcomes.

A new imaging chain combined with our proven dose reduction algorithms put you in control: Get the level of detail to see what you need to see. And rest assured that image quality does not necessarily mean higher dose.

Read on to see how Cios Alpha achieves this.

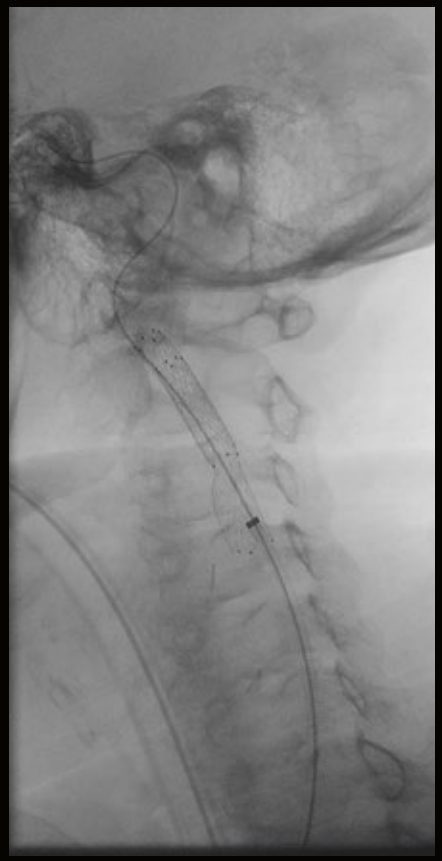
See all the detail you need with the right dose for every situation

Adjust your acquistion mode to your current needs – and get outstanding image quality in fluoroscopy for accurate positioning. Perform confidently and achieve the best results for your patients. Whatever the situation: Cios Alpha® gives you the ideal balance of image quality and dose.

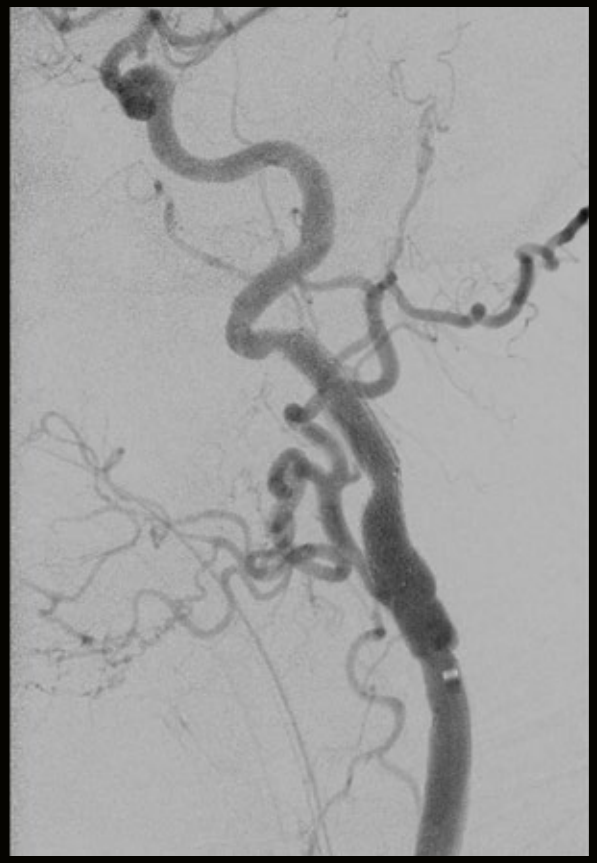
Digital subtraction angiography to identify stenosis of arteria poplitea

Fluoroscopic image of knee for precise stent positioning

Courtesy of Klinikum Stuttgart – Katharinenhospital (KH), Germany



Fluoroscopic image for precise stent deployment



Final angiography of carotid artery after stent deployment

Optimal support for vascular surgery

Cios Alpha offers a broad spectrum of featuresI for vascular procedures. Profit from interfaces for injectors to synchronize the injection of contrast medium, get support for CO imaging, and precisely position stent grafts with dedicated software for Live Graphical Overlay. In addition, Cios Alpha allows stenosis quantification for better quality control and accurate 2D measurement – and up to 100% landmarking for better orientation in the subtraction image.

Courtesy of Hôpitaux Universitaires de Strasbourg, France

See the details you need with Retina technology

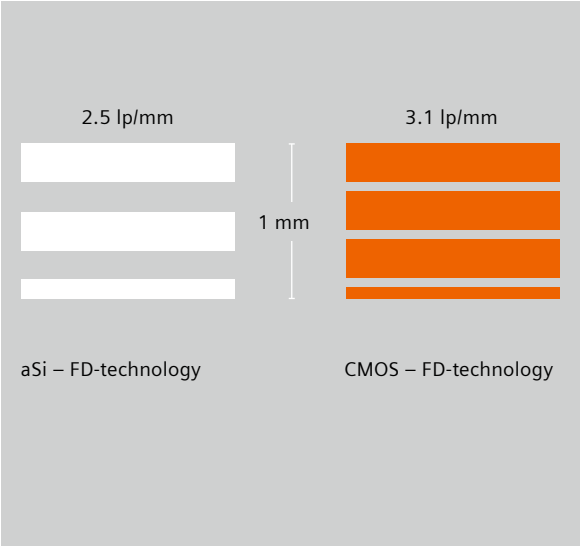
In the OR, it's essential to identify anatomy and devices quickly and correctly. This clearly reduces the risk of prolonged procedures and helps avoid complications during and after surgery.

Cios Alpha® strives for the best image quality, giving you all the details you need and letting you achieve the best results for your patients.

Outstanding images based on intelligent algorithms

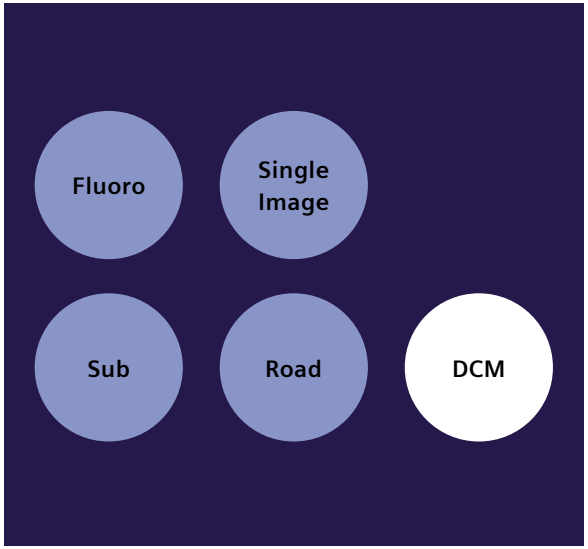
Outstanding images

Combining high sensitivity and low electronic noise levels, our Retina Imaging Chain transforms X-rays into precise, crisp images. Intelligent algorithms automatically adjust brightness and contrast, detect motion, enhance edges, and optimize metal visualization for improved contrast and brightness of surrounding tissue.
To appreciate the outstanding image quality, take advantage of our flexible and adjustable premium high-brightness monitors with an extra wide viewing angle of 170°.



For exceptionally small anatomic details

Cios Alpha features a new flat detector with complementary metal-oxide-semiconductor (CMOS) technology. The new CMOS detector offers 28% more pixels and higher spatial resolution compared to a common amorphous silicon (aSi) detector: 3.1 lp/mm instead of 2.5 lp/mm. Plus, you benefit from instant imaging and a faster readout and a significantly reduced memory effect (from 5% to 0.1% residue) without warm-up time.



High contrast in dynamic procedures

Accessing a max. power of 4,200 W[a], Digital Cine Mode (DCM)[a] offers up to 30 fps for high-contrast fluoroscopy, helping you visualize moving objects and ensuring an optimum workflow for cardiac interventions. You can select this mode directly in the main menu.

High resolution in two sizes

A field of view matching your clinical needs
Matrix size:
30 x 30 cm (12" x 12"): 1952 x 1952 pixels
20 x 20 cm (8" x 8"): 1360 x 1360 pixels[a]

Courtesy of Lafayette Cardiovascular Center of Excellence, Lafayette, Louisiana, USA

The right dose for each individual case – with CARE

Increased image quality often comes at the expense of higher dose and associated health risks. To take care of your patients, you need optimum imaging. But you also want to take care of your team, and yourself. With CARE technology, Cios Alpha® offers you the right dose for every situation.

Radiation-free positioning

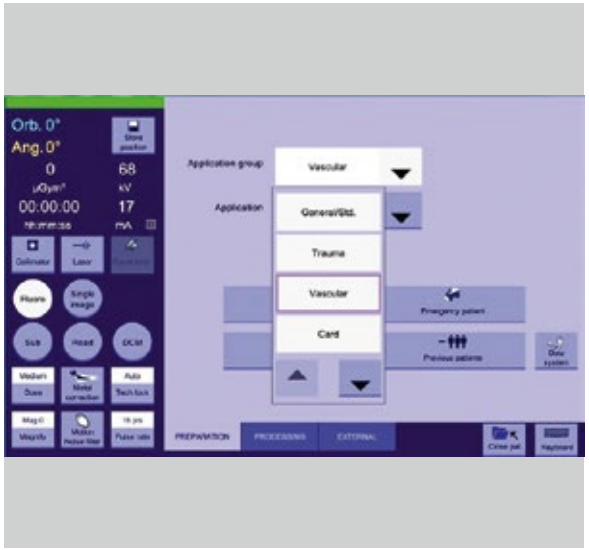
An integrated laser light localizer ensures increased precision and radiation free positioning

High precision, but no dose

An integrated laser light localizer on the detector[a] and the tube[a] ensures increased precision and radiation free positioning. You can now even switch it on and off with the push of a button at the detector – directly from the sterile field.

Ideal for pediatric procedures

Cios Alpha comes with a removable anti-scatter grid, which helps you adjust dose levels for pediatric patients – and comply with regulatory guidelines.



Easy dose adjustment

Exam Sets for various applications, along with handy dose-selection buttons, give you the right dose and image quality throughout the procedure.

Smart collimation

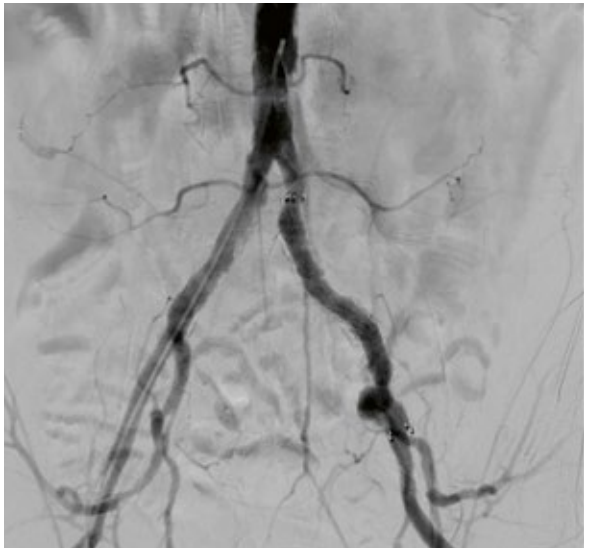
You can move each collimator leaf individually, confining the X-ray beam to the region of interest – thus reducing radiation exposure. The image stays rectangular even when it is rotated – for up to 25% more coverage.

Courtesy of Hôpitaux Universitaires de Strasbourg, France

Get an extra boost with intelligent power management

Cios Alpha® supports you in complex cases like EVAR procedures in vascular surgery. It delivers the extra power you need to see the smallest vessels and check your results.

Additionally, its active cooling system[a] keeps the C-arm cool, where other imaging systems would have overheated long before.



Subtraction angiography of iliac side branches

Courtesy of Lafayette Cardiovascular Center of Excellence, Lafayette, Louisiana, USA

Significantly increase image quality

In particular with obese patients and in abdominal cases

The right power for your needs

Crisp static imaging for documentation, dynamic imaging for a series of moving objects, or lengthy procedures with obese patients – intelligent power management delivers the right configuration for every situation, giving you consistently superior image quality.

Get maximum power

Our Energy Storage Unit (ESU)[a] buffers energy, thus increasing maximum power and tripling the mean power for up-to-30-seconds acquisitions. Get ready for significantly higher image quality – in particular with obese patients and in abdominal cases.

… and keep your C-arm cool

Cios Alpha features an active cooling system[a] that keeps the tube at an optimum temperature. The result: more than 24 hours of uninterrupted fluoroscopy time without overheating.

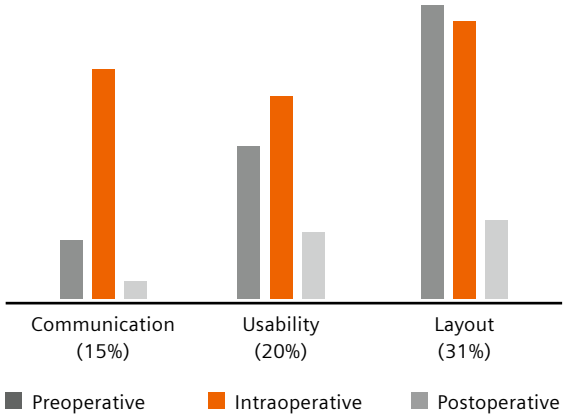
What all of this means for you

Cios Alpha offers you a variety of configuration options. Choose from two field of view sizes, select 15[1] or 25 kW peak power, configure your C-arm with an optional Energy Storage Unit (ESU), or take advantage of the new Digital Cine Mode (DCM)[a] at 30 fps. Cios Alpha supports you with great value for all intents and purposes: excellent images at the right dose, matching your clinical needs.

Does your equipment slow you down?

Difficult-to-operate imaging equipment not only makes surgical procedures more complicated, it also disturbs workflows. Inefficient workflows result in delays, stress, and costs – especially in the operating room.

A 2013 study discovered that problems with communication, usability, and layout are among the top three reasons for pre-, intra- or postoperative workflow interruptions in the OR.[12]



If you address these factors, could they improve efficiency?

Easy handling, smooth workflow

When we say “Perfect balance. Uncompromised.” we also mean that you don’t have to compromise in terms of usability. Cios Alpha® is specifically designed for ease of use and hassle reduction. By increasing workforce productivity and optimizing clinical operations, Cios Alpha can support you in transforming care delivery.

Cios Alpha combines straightforward system and software design with smart solutions for infection control and easy data handling. It allows you to fully concentrate on the patient, improve communication in the OR, and enjoy smoother workflows.

We’ll tell you how on the following pages.

Ease of use means more focus on the procedure

Let Cios Alpha® save you valuable time and improve efficiency in your clinical workflow. Its straightforward design ensures easy handling and puts you in full control of the system in every step of the procedure.

Directly from the sterile field

Simply say “blue” or “yellow” – color-coded axes ensure clear communication.

Fast, precise positioning

You need exact positions, not extra effort. That’s why we’ve made our positioning functionalities particularly easy to engage. Intuitive buttons for the electromagnetic brakes and laser light localizer[a] are accessible from the sterile field – on the detector. And each axis of the C-arm is color-coded to match the respective electromagnetic brake buttons on C-arm and remote user interface. For excellent patient accessibility, profit from the large free space of 84 cm (33.1”). Use the single-handed steering and brake lever for easy system maneuverability.

One look and feel

We've kept the touch user interface consistent across the board: The C-arm, the monitor cart, and the remote version[a] feature a large preview image, intuitive operation, and buttons for the electromagnetic brakes. You can attach the convenient remote module to the OR table – or wheel it in on the slim, separate mobile cart[a].

Particularly easy positioning

The motorization package[a] puts both orbital and angular movement at your fingertips, either via the remote user interface or on the C-arm. And, thanks to single touch positioning[a], you can store and recall up to two projections.

More freedom in the OR

You don't want to worry about tripping over cables. The wireless multifunctional footswitch[a] (compliant with IPX8) with fully sealed covers lets you operate the mobile C-arm flexibly – and with better infection control.

Maintain the highest infection control standards

In the OR, one of the worst complications is an infection following surgery: potentially life-threatening for patients, and cost-intensive for you.

Helping you fight germs

Cios Alpha® helps you with efficient infection control measures. Several surfaces of the C-arm feature an anti-microbial paint, that support regular cleaning and disinfection efforts. The system can be easily covered with sterile drapes, and the washable mouse[a] can be quickly disinfected, making it easy to maintain a high level of sterility. In addition, you'll profit from our comprehensive cleaning concept including recommendations and guidance for optimum cleaning procedures.

Intelligent features for smart data handling and connectivity

New imaging equipment must both connect with other equipment and seamlessly integrate into your hospital network.

Smooth integration into your OR

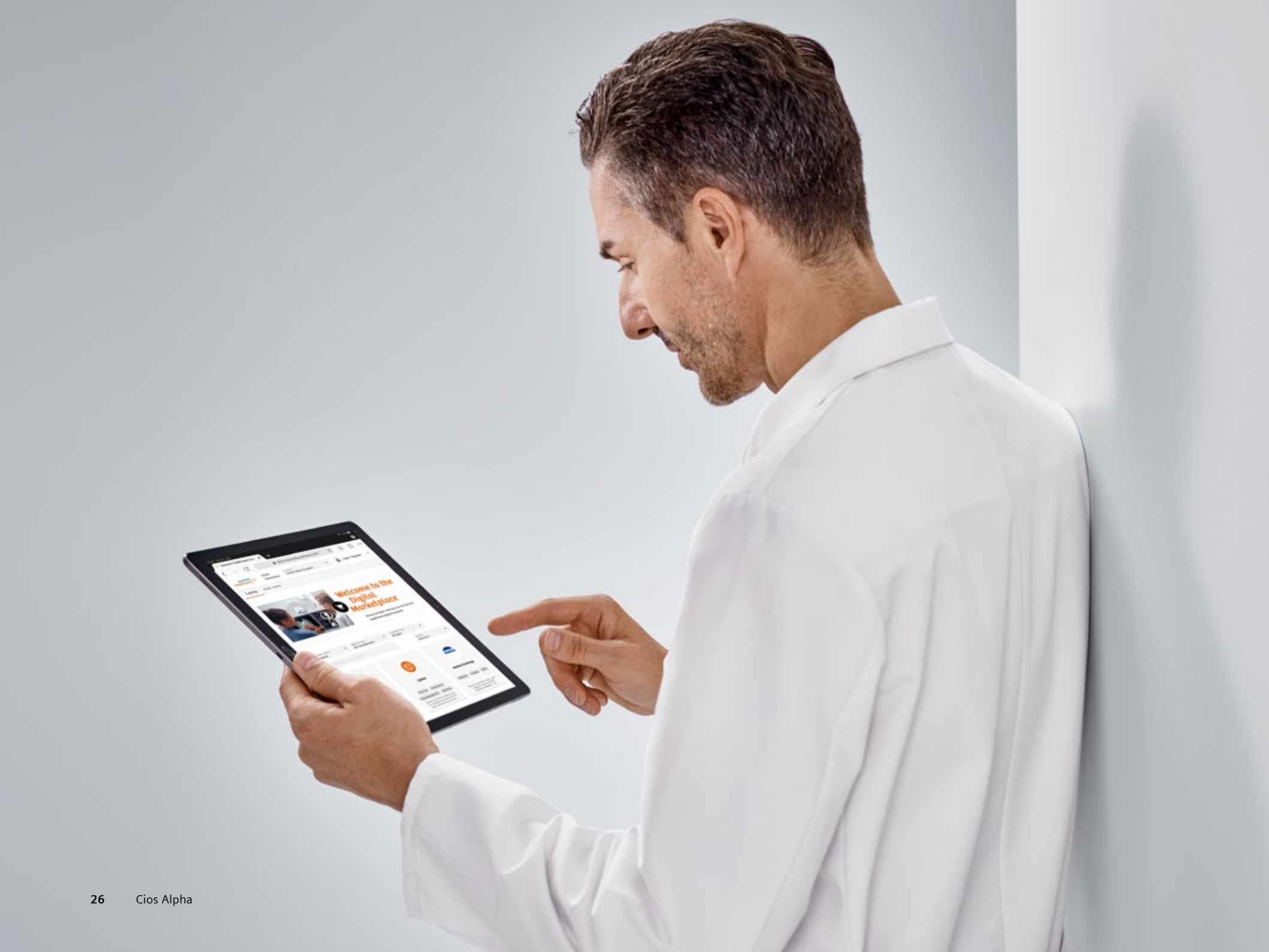
Benefit from a large spectrum of connectivity possibilities with the SmartView – HD VideoManager[a], which allows side-by-side display of X-ray images and images from other modalities such as endoscopy and ultrasound. Conveniently connect your mobile C-arm with your external live and reference monitor via the DVI video splitter[a].

More comfortable and efficient data handling

Documentation is important but can also be time-consuming – making it a stressful task between procedures, when everything has to done quickly. To reduce the time spent on documentation Cios Alpha features Wi-FiI and DICOM 3.0[a] functionalities, as well as a DVD drive and modern USB standards.

What all of this means for you

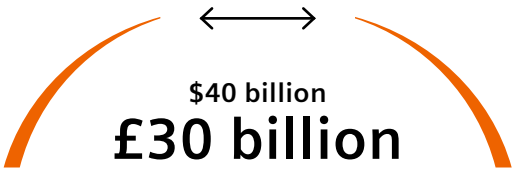
A 2016 study in the UK found inefficiencies in the OR to be GBP 24.77/minute (USD 33).[13] Carried out in a London hospital, the study calculated this sum based on staff capacity costs and opportunity costs. Think of how much money you could save if your imaging system would perfectly support you in improving your efficiency.


Welcome to the
Digital
Marketplace

Expand and advance despite cost pressure?

Healthcare institutions are facing immense cost pressures. New intraoperative imaging equipment must help institutions expand their clinical capabilities – and find a balance between limited budgets and rising costs. In this situation, digital technology certainly offers new opportunities.

A 2015 report forecasts a significant funding gap for the National Health Service (NHS) in the UK:[14]
2020–2021 NHS funding gap forecast to reach



Could digital technology offer a solution to face cost pressure?

Extended capabilities, smart growth

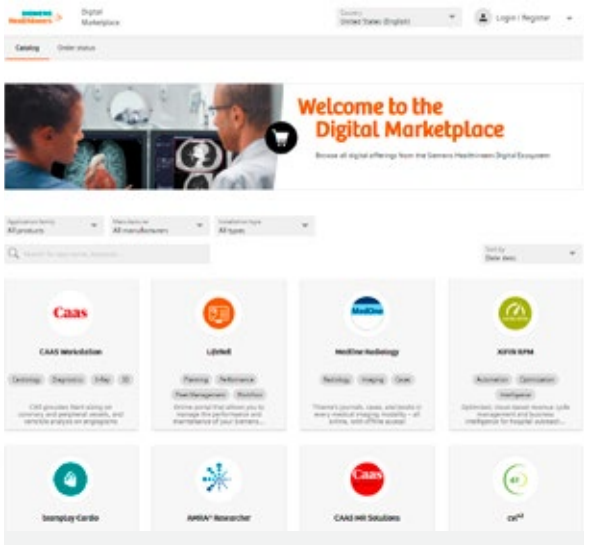
Cios Alpha® helps you optimize your equipment utilization. It offers a smart way to expand your clinical capabilities and provides easy access to digital solutions. Save costs, take on more challenging cases, and grow into more profitable procedures.

Instead of having to invest in new hardware, you can order additional applications for Cios Alpha through the Siemens Healthineers Digital Marketplace. Download certified apps and fully integrate them into your mobile C-arm. In addition, you have access to our Siemens Healthineers Digital Ecosystem[b], an open and secure environment for digitalizing healthcare.

Find out more on the next pages.

Expand your capabilities with Cios OpenApps

In the past, growing into more profitable procedures often meant expensive investments in new equipment. Digitalization opens up new opportunities. Cios Alpha® with Cios OpenApps connects you to the Siemens Healthineers Digital Marketplace, where you'll find compatible, certified apps to let your mobile C-arm best support you during your procedures.



Designed for quick access

You can access the marketplace directly from your Cios Alpha. The apps you need are easy to download and install with just a few clicks.

Smooth UI integration

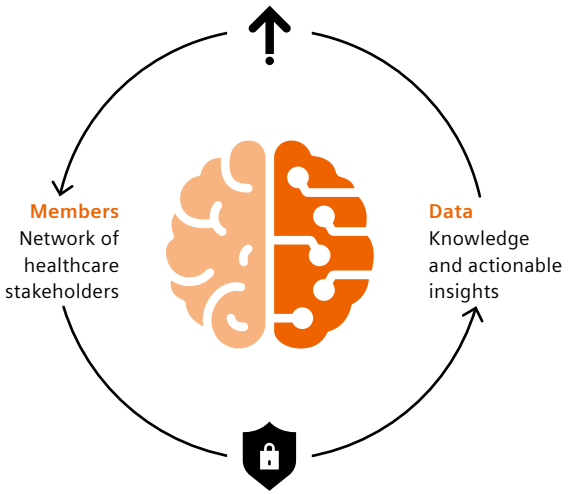
Once you've found the apps to streamline your work, run them directly from your C-arm in the OR – no extra hardware is required.

90-day free trial

We think you'll benefit from our digital offerings. But don't take our word for it – take advantage of our 90-day free trial. No strings attached.

Step into (y)our Digital Ecosystem

In addition to allowing you to shop for digital health offerings through Cios OpenApps, our Digital Ecosystem[b] gives you fast and easy access to actionable insights and increases your decision-making capabilities.



Simply download to your mobile C-arm

Harnessing the power of digital

Our Digital Ecosystem integrates and interconnects healthcare data and knowledge from a global and diverse network of healthcare stakeholders. Profit from an open and secured environment for digitalizing healthcare – and foster innovation and digitalization.

What all of this means for you

While healthcare data increases by 48% per year, only 1 out of 5 healthcare providers has an integrated strategy for data analytics.[15] Expanding digital technologies can give you a significant advantage.

Additional products & services

Good to know: Cios Alpha® seamlessly integrates with all the other products of our large Cios portfolio, making fleet management a breeze. One family, one big idea – setting new standards in imaging precision. We've also put together a balanced collection of services and third-party accessories: from remote monitoring to radiation protection.

Cios Fusion

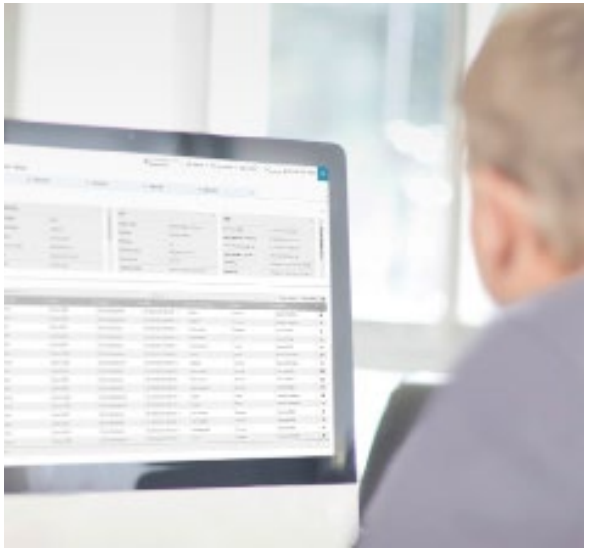
Fuse surgical versatility with Full View FD.

With Cios Fusion, you can increase the competitiveness and surgical versatility of your institution. In a compact system design, this mobile C-arm introduces innovative imaging technologies into your OR. Cios Fusion provides large, crystal-clear images at the right dose – thanks to Full View FD and our unique Retina Imaging Chain with IDEAL (Intelligent Dose Efficiency Algorithm) dose management.

Cios Spin

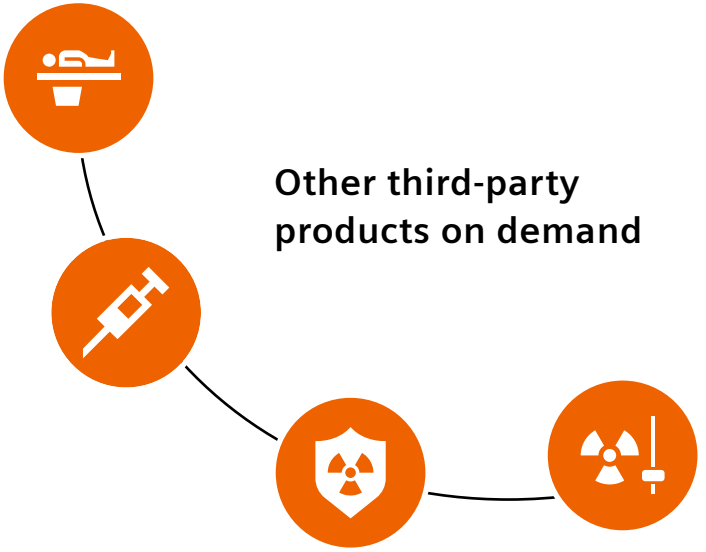
New perspectives. Full control.

Cios Spin® is a mobile 2D and 3D C-arm that offers cutting-edge imaging for intraoperative quality assurance. Featuring dedicated 3D technologies allowing you to confirm your planned results, Cios Spin is easy to learn, easy to use, and easy to integrate in your surgical routine.



Advanced system support

Smart Remote Services (SRS) is a secure data link that connects your medical equipment to our experts who provide you with proactive and interactive services caring for your running operations – including fast error identification, remote repair, software updates, and collaboration services. Via SRS, the performance and condition of your equipment can be monitored in real time.



Accessory solutions

Choosing a new imaging system may inspire other equipment renewals or additions at your workplace. Our accessory solutions portfolio offers a broad range of complementary products, such as mobile surgical tables, radiation protection clothing, contrast injectors, and personal dosimetry systems. Need something else? Talk to us about third-party products not available in the catalog.

We will gladly tailor a package to your individual needs.

Technical specifications

C-arm specifications

Detector technology	CMOS flat detector
Field of view	30 x 30 cm (12" x 12") 20 x 20 cm (8" x 8")[a]
Image resolution	1952 x 1952 pixels 1360 x 1360 pixels[a]
Power management	25 kW/15 kW[a] peak power[a] Energy Storage Unit (ESU)[a] active cooling[a]
Orbital movement	148°
Immersion depth	73 cm (28.7")
Free space	84 cm (33.1")
Max tube current	250 mA (single image, flouroscopy; with standard 25 kW version)

Clinical workflow support

Operating modes	• Single Image • Fluoroscopy • Fluoroscopy High Level • Subtraction/Roadmap[a] • Digital Cine Mode[a]
Interface for hosting certified partner applications	Cios OpenApps
Navigation	NaviLink 2D[a]
Software packages[a]	• Vascular software • Live Graphical Overlay • Stenosis quantification • 2D measurement
CARE program (Combined Applications to Reduce Exposure)	Yes
Anti-microbial coating on C-arm and housing	Yes

System control

Control technology	Touch user interface
Brakes control	Electromagnetic brakes
Table-side control	Yes[a]
Motorization	Yes[a]
Position storage	Yes[a]
Laser light localizer	Yes[a]
Wireless footswitch	Yes[a]

Why Siemens Healthineers?

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey towards expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally everyday benefit from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 170 years of experience and 18,000 patents globally. With more than 48,000 dedicated colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.

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The clinical overlay on the title is not that of the individual pictured. It was modified for better visualization.

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[a] *Optional*
[b] *Siemens Healthineers Digital Ecosystem is not commercially available in all countries. If the services are not marketed in countries due to regulatory or other reasons, the service offering cannot be guaranteed. Please contact your local Healthineers organization for further details.*

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