

SIEMENS

Cios Alpha

See the power with Full View FD

www.siemens.com/cios-alpha



Retina
Imaging
Chain for
lower dose

Answers for life.

Cios Alpha lets you see more and gives you the power to do more.



Outstanding image quality coupled with powerful performance and simple operation: welcome to a new era in surgical imaging.

Whether you're repairing an abdominal aortic aneurysm or checking the placement of pedicle screws in spine surgery, the more you can see, the more confidently you can perform the procedure. Well suited to advanced operating rooms, Cios Alpha covers the needs of all relevant clinical disciplines, opening up new possibilities in surgical imaging.

Outstanding images, optimized dose

The first mobile C-arm to use Full View flat detector (FD) technology, Cios Alpha delivers outstandingly detailed and distortion-free images at very low dose. Full View FD technology enables the collimators to uniquely track the image rotation, providing the maximum field of view all the time. For up to 25% more image coverage** even when rotated. The Retina Imaging Chain with IDEAL dose reduction (Intelligent Dose Efficiency Algorithm) constantly optimizes the dose, giving you excellent image quality at very low dose regardless of clinical application and patient size.

More power, more vision

Capable of generating the power you need for even very challenging situations and long-lasting procedures, Cios Alpha's active cooling system* combined with intelligent power management provides excellent penetration at very low dose. So you get consistently clear, sharp images without having to worry about overheating or image quality degradation.

Exceptional precision, effortless control

Fast, intuitive and convenient: Cios Alpha's intelligent features are designed for flexible, efficient operation and seamless integration into your workflow. Engineered to let you see and do more, its compact detector design provides extended free space for excellent patient access while the remote user interface* and single-touch positioning* give you direct control from the sterile field. For complete versatility, time-savings, and less effort.

Innovative features for clinical applications

Multipurpose and efficient: in a single system, Cios Alpha covers the surgical imaging needs of all the most relevant clinical interventions. From vascular and cardiac surgery to gastroenterology, urology, trauma and spine surgery – whatever your surgical discipline, Cios Alpha integrates seamlessly into your workflow.

* Option

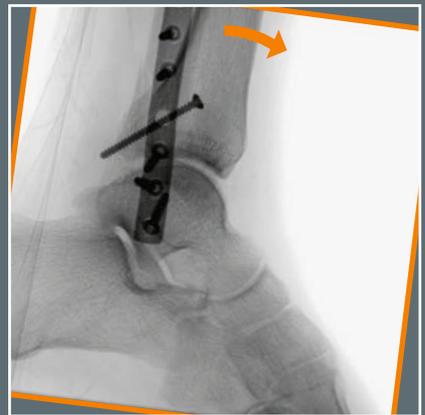
** Compared to today's conventional image intensifiers



Standard FD image



Field of view with conventional FD systems once the image has been rotated even by as little as 1°.



Cios Alpha's field of view provides up to 25% more coverage**, even when rotated.



Cios Alpha's unique Full View FD technology gives you outstanding image quality at very low dose.

Outstanding images, optimized dose

The vision you need with Full View FD: from the big picture to the tiniest detail.

From image acquisition to viewing and archiving, Cios Alpha fully leverages the potential of flat detectors. Its unique Full View FD technology and Retina Imaging Chain with IDEAL dose reduction help you see every detail – at very low dose. Whether you're identifying micro-fractures or precisely positioning fine catheters and implants, Cios Alpha allows you to perform complex procedures with confidence and control.

See the full picture...

Cios Alpha's smart collimation system enables the collimators to synchronize with the image rotation, providing optimal visibility with up to 25% more anatomical coverage** and better orientation at any time during and after image rotation. So whatever you're viewing, you always get the full view.

...clearly and precisely

With its 30 cm x 30 cm (12" x 12")* flat detector, Cios Alpha delivers a larger field of view with exceptionally high levels of spatial resolution and dynamic range to help you clearly differentiate tissue and surrounding structures. And because they are distortion free, images are geometrically optimized for accurate measurement and ultra-precise positioning.

* Option

** Compared to today's conventional image intensifiers

Outstanding images, optimized dose

The image quality you need – with less dose: Retina Imaging Chain with IDEAL dose reduction.

Achieving high-quality images while keeping the dose as low as possible is a challenge in the OR. Our unique solution: the Retina Imaging Chain with IDEAL dose reduction.

A new breed of imaging chain

The Retina Imaging Chain with IDEAL dose reduction optimally transforms X-rays the detector receives into outstanding images – just like the retinas in our eyes intelligently convert light into visual signals for our brains – while it simultaneously applies IDEAL dose reduction. The result: high-quality images at very low dose, in all relevant clinical applications and for patients of almost all sizes.

Retina Imaging Chain in detail

The following five elements make up the Retina Imaging Chain:

Retina FD technology: Cios Alpha is equipped with the latest generation of flat detectors that is characterized by a higher sensitivity and lower electronic noise level than conventional flat detectors. The result is optimized low dose performance, meaning better image quality with less dose.

Retina Calibration: Every single pixel on the flat detector of Cios Alpha undergoes a complex temperature calibration. As a result, temperature compensation takes place in real time during acquisition. This makes sure the system provides excellent low dose imaging at all temperatures – even when the detector is cold right after power on.

Retina Board: Specifically designed for Cios Alpha, the Retina Board continuously optimizes image quality during acquisition by eliminating all detector related artifacts.

Retina Exam Sets: Provides a selection of optimized exam sets with predefined exposure parameters for a broad range of clinical applications. Just select your application and automatically achieve excellent image quality at very low dose. Simple exam set customization lets you tailor it to your OR's specific needs.

IDEAL dose reduction: The Intelligent Dose Efficiency Algorithm (IDEAL) is a smart dose management system specially designed for Cios Alpha. It continuously analyzes each and every one of the detector's 2.2 million pixels* and constantly optimizes their dose efficiency. The result is an always optimized balance of image quality and dose as well as automatic contrast and brightness regulation.



View Cios Alpha's high-quality images, acquired using very low dose, on two bright high-contrast TFT screens.



Cios Alpha provides the power you need for very high penetration, e.g. with obese patients.



More power, more vision

The mobile C-arm that stays cool: so you can keep yours.

One of the most powerful mobile C-arms on the market, Cios Alpha's 25 kW* high power generator gives you power reserves for very high penetration to deliver clear, detailed images in almost all situations.

The power to work longer...

With its advanced cooling system*, Cios Alpha allows you to work uninterrupted and without image quality degradation up to three times longer than with conventional C-arms. When the tube heats up, the active cooling system* coupled with the intelligent power management system automatically manages heat dissipation to stay within the thermal limits. So you can perform a wide range of long-lasting procedures, even on obese patients, without worrying about overheating.

...when it's needed

Cios Alpha's Energy Storage Unit (ESU)* buffers energy, tripling the mean power that can be applied. The ESU makes the maximum power available for significantly higher penetration capability in series acquisition when it's needed.

...so you can do more

With its combination of higher penetration power, uninterrupted operation and IDEAL dose reduction, Cios Alpha opens up new opportunities in surgical imaging. It lets you perform a wide variety of procedures from standard to high-end hybrid OR applications that were once only possible with fixed C-arms, such as complex endovascular procedures.

"We could certainly perform fenestrated stent grafts with Cios Alpha.

Not just because of its image quality, but even more due to its tube performance and active cooling system. One of the first AAAs we performed with it was on an obese patient and lasted well over three hours. Even at the end of that operation, the tube was not getting hot at all. A conventional C-arm would have overheated long before."

Werner Lang, MD FEBVS, Professor of Surgery,
Chief, Department of Vascular Surgery,
University Hospital Erlangen, Germany



The speaker is employed by an institution that provides Siemens product reference services for compensation pursuant to a written agreement.

* Option

Exceptional precision, effortless control

Complete flexibility. Precisely where you need it.

Cios Alpha is designed to provide you with the information you need, simply and quickly without getting in your way. Every aspect has been carefully thought out to make it as convenient and intuitive as possible, for optimum support of the surgical workflow.

Direct table-side control

To give you complete flexibility, Cios Alpha can be controlled from the monitor cart, the C-arm or directly from the sterile field using the remote touch user interface (UI)*. So wherever you work, you get a consistent, intuitive interface. In addition, touch-sensitive brake controls mounted directly on the detector housing allow surgeons to position and control the C-arm by themselves – quickly, conveniently and with maximal precision.

Time-saving positioning and operation

With its motorization package* for effortless positioning, and its color-coded brakes and scales for simple, intuitive operation, you can save precious time during your procedures.

A system that remembers where it was

With Cios Alpha's single-touch positioning function*, you can record up to two specific projections and recall them later. All with the touch of a button. Orbital and angular positions are stored together with the collimator setting, allowing exact reproduction of relevant projections.



“One of the major benefits of the C-arm is its easy handling.

The possibility for surgeons to actually perform every movement by themselves by using the brake control buttons on the detector is just great. The problem for us surgeons is that our staff cannot always read our minds. So it is very important to have the full control of the C-arm during interventions. Allowing this is, in my eyes, one of the major advances of Cios Alpha.”

Prof. Dr. med. Sebastian Debus,
Director, Clinic and Polyclinic for Vascular Medicine,
University Hospital Hamburg-Eppendorf, Germany

The speaker is separately engaged and paid by Siemens to provide product reference services.

Electromagnetic brake controls mounted directly on the detector housing make repositioning and locking the C-arm quick and convenient.



Exceptional precision, effortless control

From ergonomics to EMotion: detail that's music to your ears.

With ergonomic side rails and handles, a single-handed steering lever, a centralized footbrake, and cable deflecting wheels, Cios Alpha's smart features and attention to detail make work easier. Allowing you to concentrate on the patient.

Room to move, space to see

Enjoy greater maneuverability with Cios Alpha's lightweight and compact monitor cart. What's more, two high-brightness, high-contrast TFT displays present the image information you need – before, during and after the procedure. They are horizontally and vertically adjustable*, rotatable through 180° and with a wide 170° viewing angle so you can see the details you need. Even add additional external ceiling or wall-mounted monitors for all-around visibility using the monitor out function*.

Freedom to work

Expanding flexibility of operation, the multifunctional footswitch* allows hand-free X-ray release and image capture, and gives direct access to all operating modes.

In tune with your workplace

EMotion*, Cios Alpha's onboard sound system, lets you connect an MP3 player so you can listen to the music of your choice for a pleasant working environment.

The right connections

Cios Alpha seamlessly integrates into your hospital's network via LAN/WLAN*. With SmartView*, the HD VideoManager, external video signals can be displayed on the right monitor, allowing side-by-side viewing of fluoroscopic and e.g. endoscopic images. Save up to 100,000 images directly on the hard drive and select from CD/DVD, USB and DVD recording* for easy patient documentation.



Ergonomic side rails and highly precise orbital roller bearings provide effortless positioning.



Innovative features for clinical applications

Clinical applications: for your vascular needs.

Ideally suited for vascular interventions such as AAA, femoral artery bypass or placement of carotid stents, Cios Alpha includes a range of innovative features to improve efficiency and make your life easier.

Live graphical overlay*

Cios Alpha's unique live graphical overlay makes drawings on monitors a thing of the past. With this tool, you can mark anatomical structures that are well visible in subtracted images, such as arteries. This graphical overlay remains in subsequent fluoro scenes, providing you better orientation while placing stent grafts.

Stenosis quantification*

Stenosis quantification software calculates the degree of stenosis. The vessel is automatically analyzed and the minimum value in relation to a reference value is evaluated. The geometric and densitometric parameters of the stenosed vessels are then displayed for simple and effective intra-operative control.

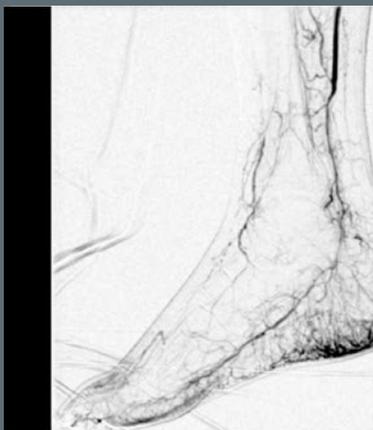
Injection trigger*

Cios Alpha features an interface to connect injectors, allowing for better synchronization of the contrast medium during subtractions for even greater flexibility and integration.

Up to 100% landmarking*

Surgeons can add surrounding anatomical structures, such as bones, to a subtracted image for better orientation. The ability to recalculate and reuse peak opacified images helps save time and contrast medium while reducing dose.

Vascular surgery



Subtracted angiography foot



Angiography iliofemoral arteries



Subtracted angiography abdominal aorta

Innovative features for clinical applications

Clinical applications: specially for your specialty.

Cios Alpha's versatile features extend its flexibility beyond vascular surgery to meet the needs of the most relevant clinical disciplines – from cardiac surgery, electrophysiology and gastroenterology to orthopedic, trauma and spine surgery, pain management and urology. The 30 cm x 30 cm (12" x 12")* and 20 cm x 20 cm (8" x 8") flat detector options coupled with 25 kW* or 12 kW generator let you tailor Cios Alpha to your exact surgical needs.

Cardiac

Large 25 kW* power reserves and rotating anode deliver excellent performance, while the 20 cm x 20 cm (8" x 8") flat detector provides optimum focus and 30 pulse per second fluoro imaging rates, delivering incredibly sharp images for the finest catheter placement.



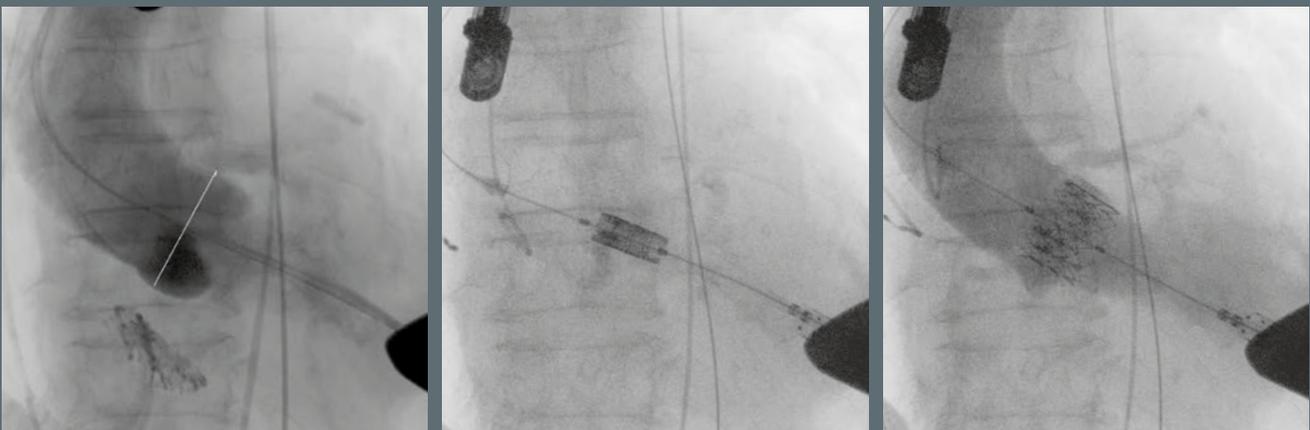
“I think one of the most important things with Cios Alpha is the image quality.

It is so high that you can even interfere when you have complications. During a TAVI procedure, for example, your valve could cover one of the coronary artery ostia, which would produce a huge infarct requiring immediate intervention. You can either do it in a hybrid OR or with Cios Alpha because the image quality is that good.”

Bruno K. Podesser, M.D. Associate Professor of Surgery,
Attending Surgeon, Department of Cardiac Surgery,
Landeskrankenhaus St. Poelten, Austria

The speaker is employed by an institution that provides Siemens product reference services for compensation pursuant to a written agreement.

Cardiac surgery



Transcatheter Aortic Valve Implantation (TAVI)

Gastroenterology and urology

With its large field of view, Cios Alpha's 30 cm x 30 cm (12" x 12")* flat detector provides decisively more anatomical information and excellent images for fine structures and instruments. SmartView*, the integrated HD VideoManager, enables you to connect external video sources and display endoscopic or ultrasound images side-by-side with X-ray images. Additionally, all these images can be stored in one patient file.

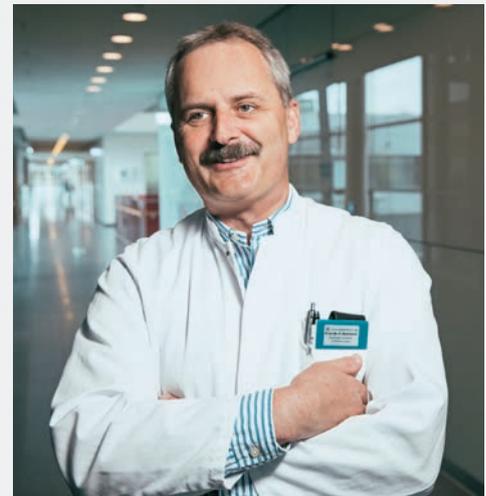
Ortho, trauma and spine surgery

Equally suited to complex ortho and trauma cases, and to complex spine surgery, Cios Alpha's excellent HD images allow fine detail visualization. Tube currents of up to 250 mA* enable superior image quality for single images.

"In my opinion, Cios Alpha can be used for any type of trauma and orthopedic surgery.

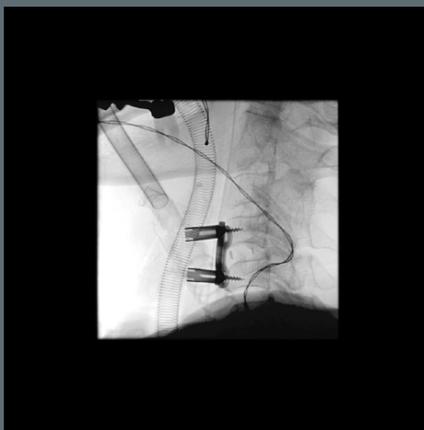
Because of its features like better image quality, larger field of view, asymmetric and rotatable collimators, motorization and position storage."

Univ. Prof. Dr. med. Florian Gebhard,
Director and Chair Department for Orthopaedic Trauma, Vice Dean,
Medical Faculty Ulm University, Germany



The speaker is employed by an institution that provides Siemens product reference services for compensation pursuant to a written agreement.

Ortho, trauma and spine surgery



Cervical spine



Proximal tibia



Distal tibia

Cios Alpha at a glance.

Full View FD technology

The 30 cm x 30 cm (12" x 12"), 1.5 k x 1.5 k* flat detector provides a large field of view and distortion-free imaging with higher dynamic range for greater detail. Its smart collimation system provides up to 25% more image coverage** even when rotated.

Retina Imaging Chain with IDEAL dose reduction

For outstanding image quality at very low dose.

FD mounted brake controls

Simple, convenient control right where you need it in the sterile field.

Compact flat detector

85 cm / 33.5" of extended free space for excellent patient access.

25 kW high power generator*

One of the most powerful mobile C-arm generators available, for very high penetration and clear, detailed images. Its Energy Storage Unit (ESU)* triples the mean power that can be applied.

Active cooling system*

Coupled with intelligent power management, it protects Cios Alpha against overheating. This allows you to perform a wide range of long-lasting procedures conveniently and without image quality degradation, even on obese patients.



* Option

A 20 cm x 20 cm (8" x 8"), 1 k x 1 k detector and a 12 kW generator come standard on Cios Alpha.

Complete flexibility and control

Operate Cios Alpha from its touch screen user interface (UI) on the monitor cart, from the table-side remote UI*, or from the C-arm UI.

High-brightness, high-contrast TFT monitors

Horizontally and vertically adjustable* 19" monitors, rotatable through 180° with wide 170° viewing angle allow you to see as much detail as possible, even from a distance.

SmartView*

The HD VideoManager displays external video signals on the right monitor. For side-by-side viewing of, for example, fluoroscopic and endoscopic images. All images can be stored in one patient file.

Optimum vascular workflow support*

Advanced applications such as stenosis quantification, live graphical overlay, injection trigger and advanced scene handling enable excellent vascular workflow support.

Advanced connectivity

Seamless integration into hospital networks with data interfacing via LAN/WLAN*. DVI output enables image display on external monitors*. Storage capacity of 100,000 images on hard disk, documentation with CD/DVD, USB and DVD recording*.

Less effort, more precision

Motorization package*, single-touch positioning* and electromagnetic brakes for precise, effortless operation.

Intuitive operation

Color-coded axes correspond to brake controls for intuitive operation.

Compact, lightweight monitor cart

Space saving design for easy maneuverability.





Invest in tomorrow's technology today.

Cios Alpha represents an outstanding investment – for today and tomorrow. With effortless operability, technical innovation and unique features that open up new opportunities in surgical imaging. All of which give surgeons the power to see and do more – with outstanding image quality at very low dose. Now, surgeons can work more efficiently, with fewer interruptions, and carry out procedures that they have never previously been able to perform with a mobile C-arm.

Closer by design

Closer to technology and closer to you. Siemens Healthcare Customer Services delivers extensive experience combined with innovative solutions to help protect and maximize your investment in Cios Alpha over the entire product lifecycle; services that help improve uptime, increase performance and optimize workflow for sustainable healthcare, while your staff is adequately trained to deliver high quality results.

Service tailored for you

Helping you prevent unscheduled downtime and improve workflow, Siemens comprehensive service options can be tailored to your precise needs. From preventive maintenance to technical phone support, system updates and fast on-site response, our proven Performance Plans are designed to help improve reliability while providing predictable costs, lower risk and greater efficiency.

The problem's solved. Before you know it!

An efficient and comprehensive infrastructure offering device-related remote services, with Siemens Remote Services your system is monitored for parameter deviations so that remedial action can be taken proactively before problems arise. Plus, remote diagnosis allows defective parts to be identified and ordered, avoiding downtime and keeping repair times to a minimum.



“Cios Alpha is a very innovative product with many features which bring us far forward.

It allows us to perform vascular procedures that were not possible with conventional mobile C-arms in the pre-Cios Alpha era.”

Prof. Dr. med. Sebastian Debus,
Director, Clinic and Polyclinic for Vascular Medicine,
University Hospital Hamburg-Eppendorf, Germany

The speaker is separately engaged and paid by Siemens to provide product reference services.

Experience why detail matters.

Whatever your needs, whatever your surgical discipline, Cios Alpha provides you with outstanding image quality and the power you need for extended, complex procedures. The system's unique Full View FD technology, the Retina Imaging Chain with IDEAL dose reduction, and other industry-leading innovations, together with excellent usability, represent a significant step forward in mobile C-arm technology, opening up new opportunities that let surgeons see and do more.

Cios Alpha: Because detail matters.



Cios Alpha is not commercially available in all countries. Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens organization for further details.

The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products/ services/features included in this brochure are available through the Siemens sales organization worldwide. Availability and packaging may vary by country and are subject to change without prior notice.

The information in this document contains general descriptions of the technical options available and may not always apply in individual cases.

Siemens reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens sales representative for the most current information.

In the interest of complying with legal requirements concerning the environmental compatibility of our products (protection of natural resources and waste conservation), we may recycle certain components where legally permissible. For recycled components we use the same extensive quality assurance measures as for factory-new components.

Any technical data contained in this document may vary within defined tolerances. Original images always lose a certain amount of detail when reproduced.

Global Business Unit

Siemens AG
Medical Solutions
X-Ray Products
Henkestraße 127
DE-91052 Erlangen
Germany
Phone: +49 9131 84-0

Global Siemens Headquarters

Siemens AG
Wittelsbacherplatz 2
80333 Muenchen
Germany

Global Siemens Healthcare Headquarters

Siemens AG
Healthcare Sector
Henkestraße 127
91052 Erlangen
Germany
Phone: +49 9131 84-0
www.siemens.com/healthcare

Legal Manufacturer

Siemens AG
Wittelsbacherplatz 2
DE-80333 Muenchen
Germany