ziehm imaging

Ziehm Vision² / Ziehm Vision² FD

The new standard in mobile imaging

→ Flat-Panel Detector

→ Image Intensifier

18" TFT monitors provide bright, high contrast image with a wide viewing angle

↗ 04

High resolution thanks to a dynamic CCD camera with 1 k × 1 k technology

↗ 04

Intuitive workflow with synchronized TFT touchscreens on C-arm and monitor cart

↗ 08

Easy integration into existing networks (with WLAN option)

↗ 10

Active Cooling for continuous performance during lengthy, demanding procedures

↗ 10

Counter-balanced C-arm for simplified positioning

↗ 08

Advanced technology in a mobile platform.

The latest generation C-arm with flat-panel technology.

Larger opening

Measuring 35" (89.5 cm), the larger C-arm opening allows easier patient access and simplified positioning.

Distortion-free imaging

Flat-panel technology enables fully digital, distortion-free imaging. In addition, the digital detector is not effected by magnetic fields giving the operator added flexibility.

High dynamic range

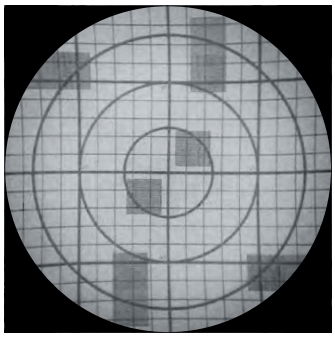
Due to its high dynamic range, the flat-panel detector enables optimal concurrent soft tissue and skeletal imaging.

Larger field of view

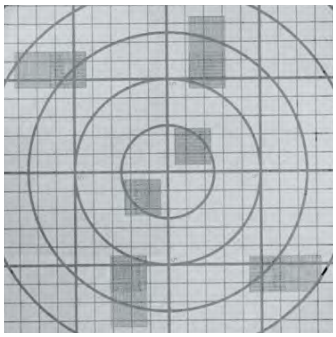
The larger surface and square shape of the panel increases the image size compared to conventional image intensifiers.

Compared field of view of flat-panel and conventional image intensifier.

Image intensifier with S-shaped and pincushion distortion.



Flat-panel with distortion-free image.



Larger field of view

High dynamic range
with more than
16,000 levels of gray

Flat-panel technology
for fully digital, distortion-
free imaging

Larger opening:
35" (89.5 cm) C-arm
opening for easy
handling

Flat-panel highlights:
→ Larger opening
→ Distortion-free imaging
→ High dynamic images
→ Larger field of view

Ziehm Vision². This C-arm sets a new benchmark in high-end mobile imaging while minimizing dose levels. It delivers state-of-the-art functionality by bundling finely tuned components with proprietary innovations. The Ziehm Vision² fits the broadest spectrum of clinical applications. The optional, leading-edge flat-panel detector (FD) enables fully digital, distortion-free imaging. Due to its high dynamic range, it also allows optimal, concurrent soft tissue and skeletal imaging at the same time.

01 / Excellent results. A range of finely tuned components ensures highest image quality and lowest dose levels

Sharp pulses for sharper images

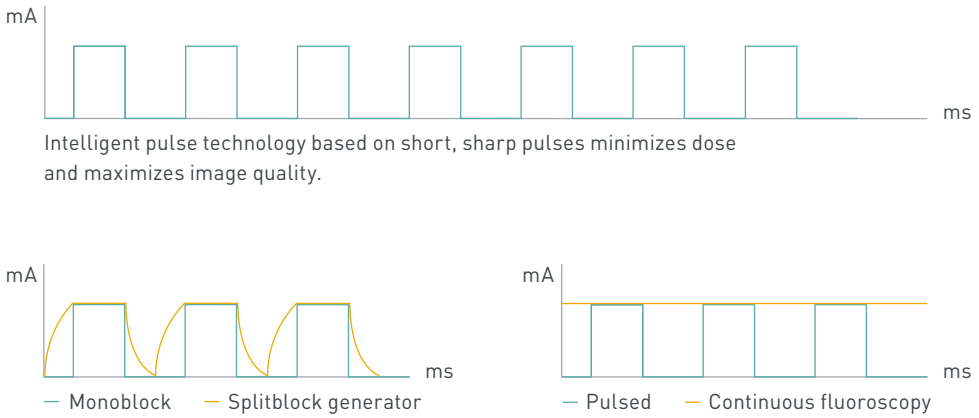
Ziehm Vision² comes with a highly compact monoblock generator. It generates up to 30 short, sharp pulses per second (25 pulses per second with a flat-panel detector), producing crystal-clear images even if the patient is moving. This intelligent pulse technology also reduces dose (as illustrated below).

High dynamic range camera system

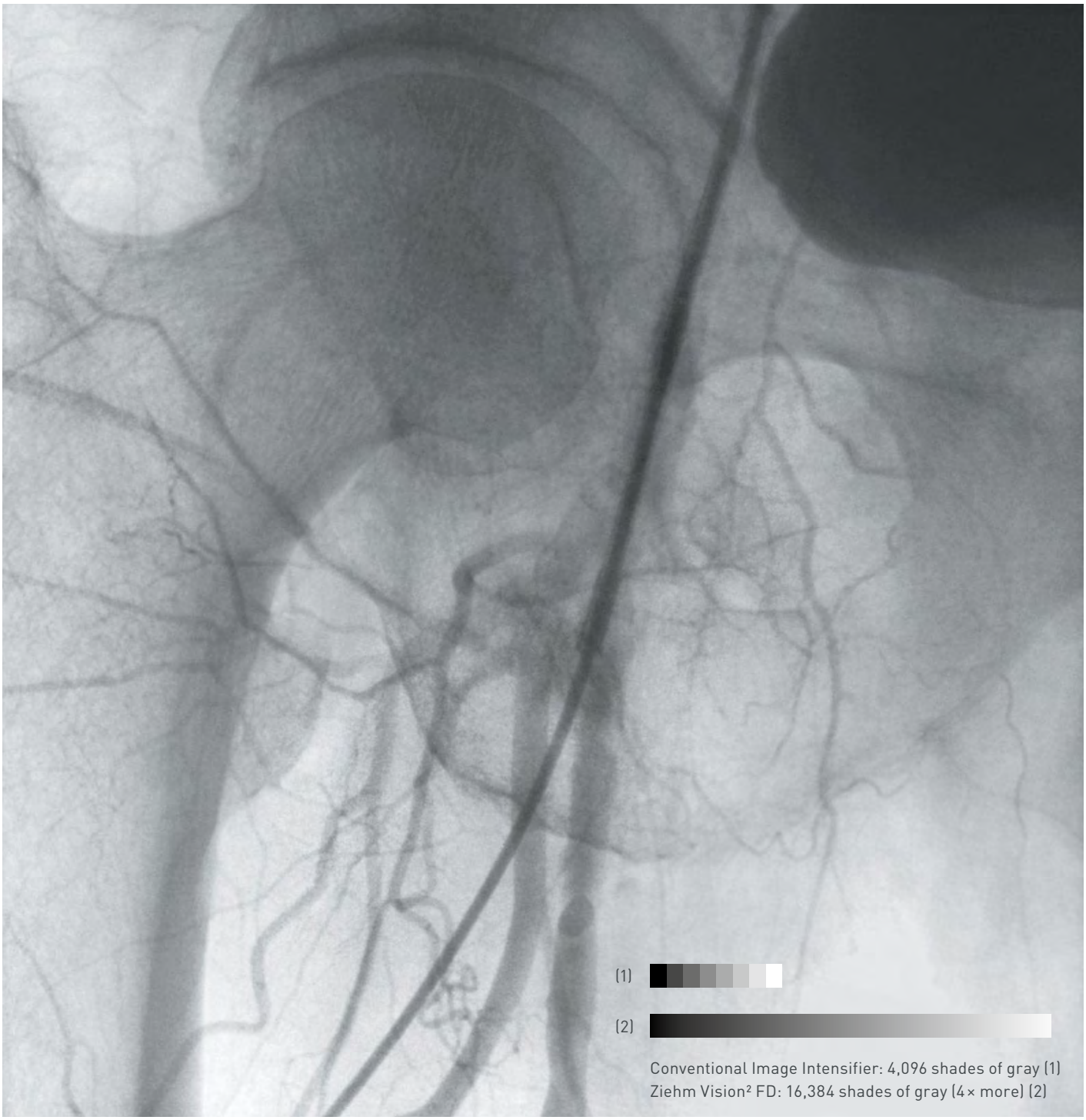
The high resolution CCD camera, which enables anatomic visualization in a high dynamic range, is a key component in the imaging chain. With 1k × 1k resolution and more than 4,000 shades of gray, it visualizes even the smallest anatomical structures. Optional flat-panel technology raises this to even more than 16,000 shades of gray for even more detailed images.

Contrast-rich display

Among monitors, Ziehm Imaging's two 18" TFT screens stand out for their exceptional brightness and contrast. Even at a distance, the high-resolution monitors provide the physician with the ability to visualize the finest details – from every angle.



Intelligent pulse technology based on short, sharp pulses minimizes dose and maximizes image quality.



Conventional Image Intensifier: 4,096 shades of gray (1)
Ziehm Vision² FD: 16,384 shades of gray (4× more) (2)

02 / Automatic adjustment. ODDC provides superb image quality, systematically reducing dose levels for both staff and patients.

Easy positioning

Ziehm Vision² greatly simplifies patient positioning and dose control. ODDC technology (object detected dose control) creates a matrix over the entire scan field and uses 256 measurement cells to scan the region of interest in real time. All settings, including output levels and noise filters, are automatically adapted to the patient's position.

Real-time motion detection

ODDC's measurement cells automatically detect motion in patient anatomy. This means that the pulse frequency can be automatically lowered if the patient is stationary. If, however, motion is detected in the region of interest, the pulse frequency automatically increases to a maximum of 30 pulses per second, eliminating motion artifacts.

Automatic metal correction

ODDC reduces over penetration. The system detects metal parts in the scanned zone (plates, pins, instruments or implants) and automatically adjusts generator output and video signal.

"The average dose reduction when using 25 pulses/sec resulting from object detection and automatic down-pulsing was 21 %, and the maximum dose reduction was 60 %."

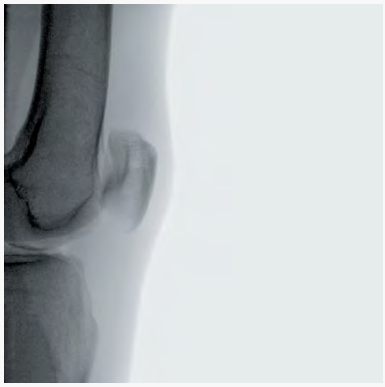
(Gosch D. et al. "Influence of Grid and Object Detection on Radiation Exposure and Image Quality using Mobile C-Arms – First Results", RöFo, 09/2007)

ODDC inside

ODDC highlights

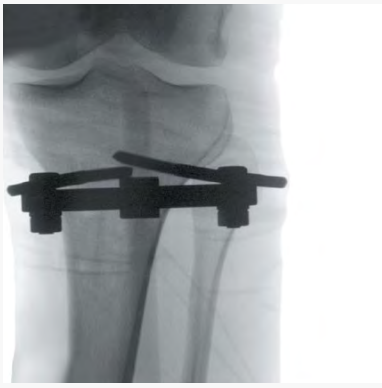
Conventional image quality

ODDC: Grid-controlled adjustment of generator output, filters and pulse frequency.

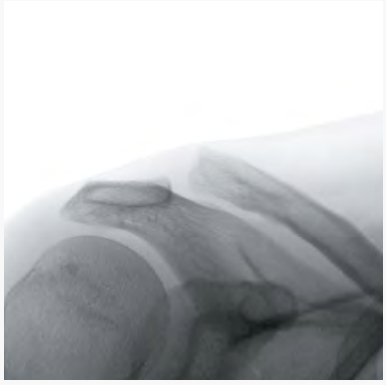


Crystal-clear images achieved with minimal levels of dose

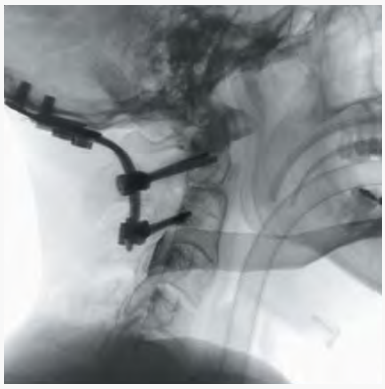
Application examples



Sharp images even with moving objects in trauma surgery for instance.



Unsurpassed quality when region of interest is not centered



Automatic metal correction for optimum sharpness

03 / New dimension in usability. Ziehm Vision² supports your clinical workflow and sets standards for intuitive guidance.

Best-in-class ergonomics

With a footprint of 8.6 sq ft (0.8 m²), Ziehm Vision² is one of the smallest C-arms on the market. Its compact design and easy-drive system means it can be maneuvered with minimal effort during procedures. All steering and braking functions are activated from a single lever. All C-arm movements are fully counterbalanced in every position, making the unit extremely comfortable to use.

Intuitive workflow

The Ziehm Vision Center is a rotating and tilting touchscreen control panel mounted to the C-arm mobile stand that provides access to the same controls found on the monitor cart. It offers an intelligent workflow that makes operating the C-arm easy and intuitive. The user benefits from synchronized touchscreens on the monitor cart and the C-arm, coupled with clear and easy-to-follow icons. From a short-list of anatomical programs, the operator simply selects the desired option and the Ziehm Vision Center automatically adjusts the system performance to the region of interest, always ensuring the best image quality and lowest dose levels.

Fit for the future

The graphical user interface is a touchscreen with an open, modular software architecture, ensuring maximum flexibility. The Ziehm Vision² user interface can be easily upgraded and expanded with additional software modules without the need for hardware changes.

Above: Optimal counterbalanced C-arm movements for fast and easy positioning

Below: Ziehm SmartEye displays the live X-ray image on the user interface. SmartControl enables the user to intuitively manipulate the X-ray image directly from the touchscreen.


Pedal: RSA | DSA
74
20.0
57
25
3.17
0:07
kV
mA
Pulse width %
Pulses/s
mGy
min
Fluoro
Vascular
Patient
Post Proc.
Measure
Archive
Config

Prolonged use

C-arms need to be in continuous use during lengthy and demanding procedures such as vascular and cardiac interventions. Ziehm Vision²'s Advanced Active Cooling system (AAC) keeps the generator at an ideal operating temperature and in the event of a temperature increase, the pulse frequency is automatically reduced, until the generator's temperature has cooled down. This guarantees uninterrupted usage especially during long and difficult procedures.

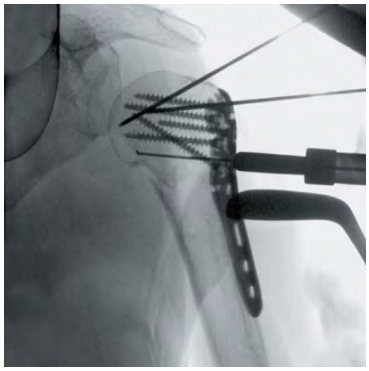
Seamless integration

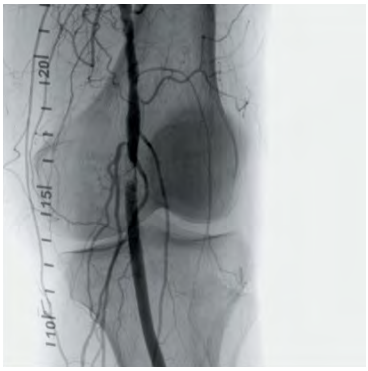
The open interface, Ziehm NetPort, enables easy integration into existing IT networks so patient data saved in optional DICOM 3.0 format is transferred – via WLAN for example – to the PACS or HIS/RIS. Data can be retrieved from the monitor cart at any time. Data can also be backed up to DVD or USB and be printed on transparencies or paper.

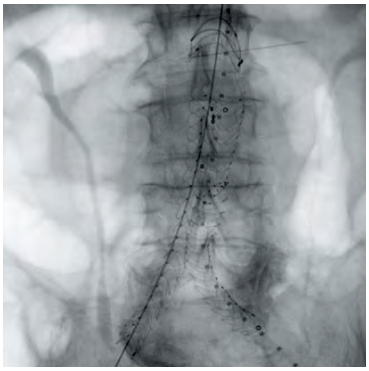
Compatibility with navigation systems

Ziehm Vision² with a 9" (23 cm) image intensifier is compatible with 2D navigation systems to enable real-time navigation and pin-point precision during surgical procedures.

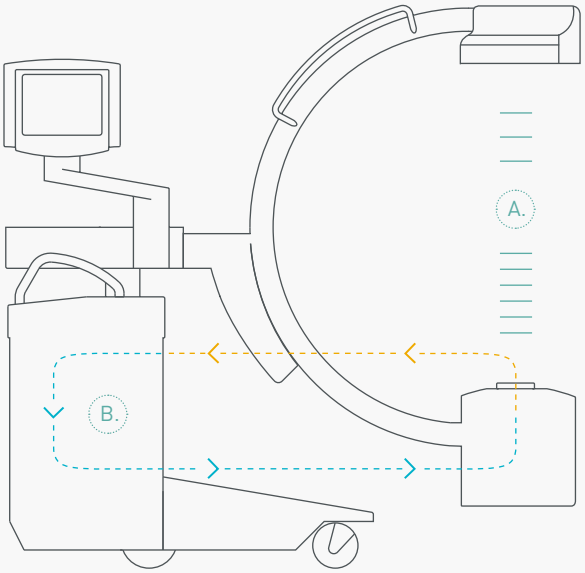
Continuous imaging even during demanding procedures.







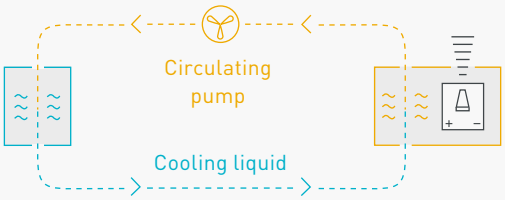
Advanced Active Cooling keeps generator temperatures down and automatically adapts the pulse rate



A.
Automatic pulse regulation ensures continuous imaging

B.
Cooling cycle, heat exchanger

High capacity heat radiator with cooling liquid



Pulsed monoblock generator: Heat is transferred to a built-in heat radiator

04 / Broadest application spectrum. Our units are engineered for the widest range of clinical applications.

The Ziehm Vision² is the solution of choice for demanding minimally invasive and interventional procedures such as vascular surgery, interventional cardiac imaging, neurosurgery, orthopedics and trauma surgery. Equipped with leading-edge flat-panel technology, Ziehm Vision² FD is also ideally suited to procedures requiring refined image quality with a larger field of view.

Ziehm Vision²

Ziehm Vision² FD

Product	Ziehm Vision²	Ziehm Vision² FD
1 k × 1 k technology	•	•
Shades of gray	4,096	16,384
Distortion-free imaging	–	•
Fully digital imaging	–	•
Pulsed monoblock generator	•	•
ODDC	•	•
DICOM	•	•
Interface to 2D navigation systems	9" (23 cm) I.I. only	•
WLAN	optional	optional
Advanced Active Cooling	•	•
C-arm opening	29.9" (76 cm)	35.2" (89.5 cm)
Field of view 9" (23 cm)	56.3 in² (363 cm²)	–
Field of view 7.8" x 7.8" (19.8 cm × 19.8 cm)	–	60.8 in² (392 cm²)
Field of view 12" (31 cm)	92.1 in² (594 cm²)	–

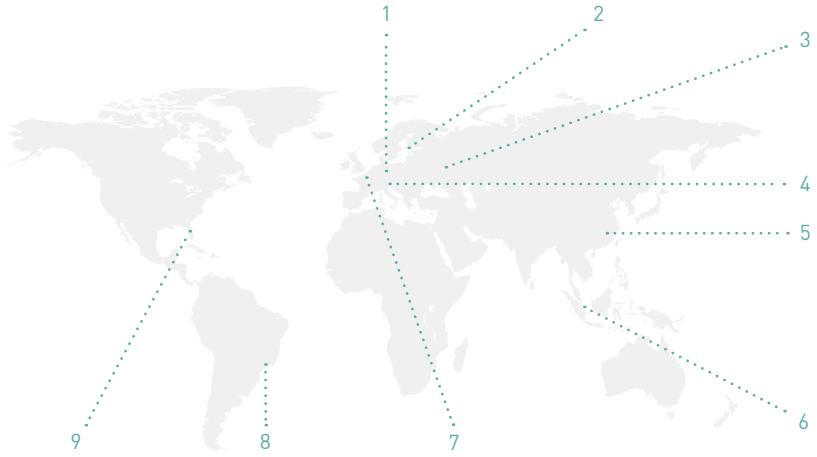
05 / Service. We make sure you get the best results from the best products.

Close to you

Regardless of your needs, our experts are on hand. Thanks to our worldwide network of service centers, you can always rely on Ziehm Imaging for flexible and fast service.

Keeping you at the cutting edge

With Ziehm Academy, you can enhance your clinical knowledge, find out more about mobile C-arms and receive made-to-measure trainings. The courses cover the full clinical spectrum, from general operator training and technical workshops through to high-level training sessions.



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