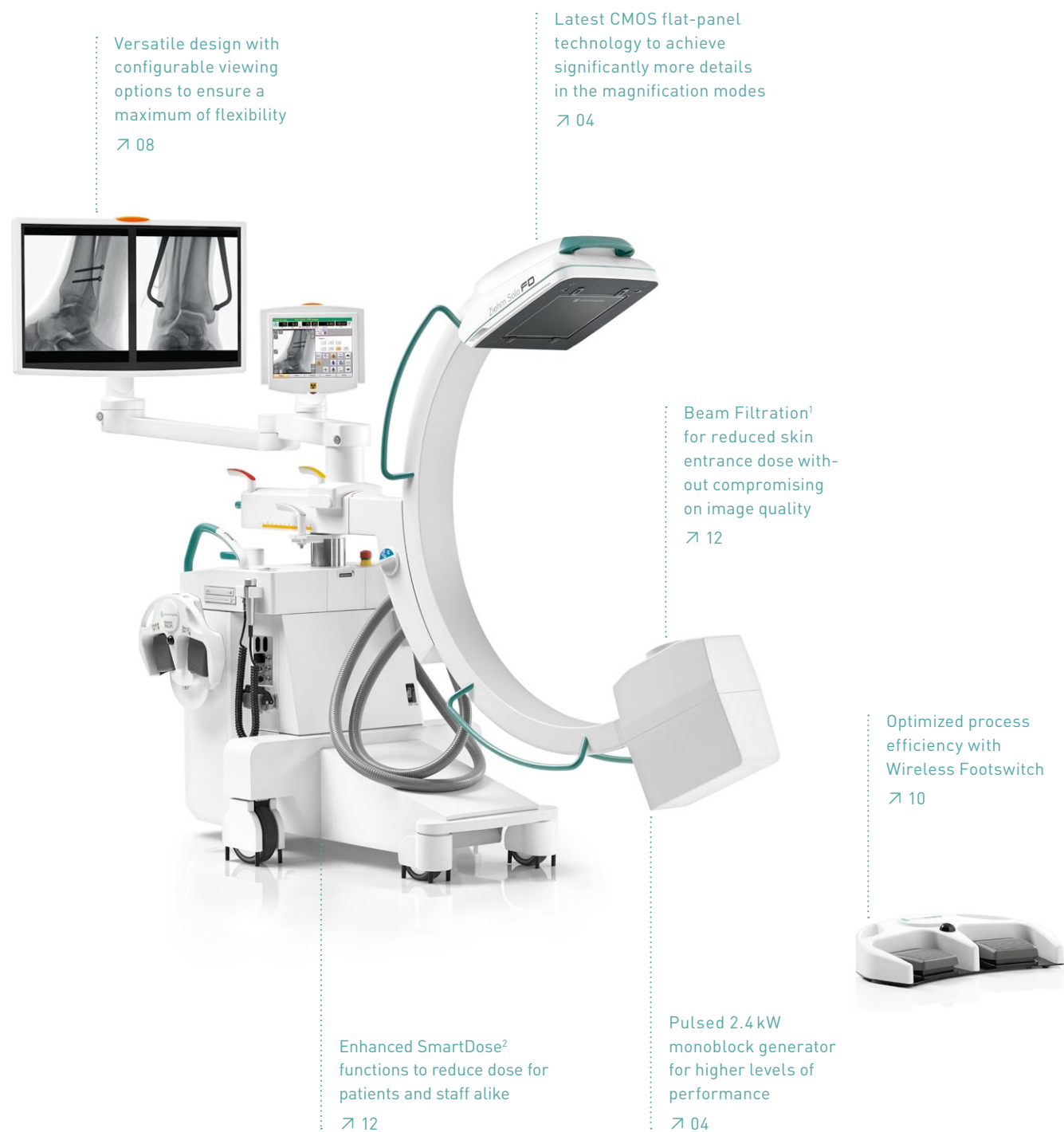




## Ziehm Solo FD

Versatile design meets  
latest flat-panel technology

CMOSLINE



Ziehm Solo FD. As the size of hospital and surgery center ORs decreases and equipment quantity rises, the demand for imaging systems with smaller footprints is growing. With its all-in-one design, the Ziehm Solo FD is one of the most compact C-arms for even the smallest treatment scenarios on the market. The system is equipped with CMOS flat-panel technology to perform a broad portfolio of applications. Versatile viewing options and new dimensions in user friendliness offer maximum flexibility in the OR to support your clinical workflow. With the enhanced SmartDose Concept, the Ziehm Solo FD ensures best image quality at a minimized dose.

## 01 / Achieve significantly more details with CMOS flat-panel technology

Optimal soft tissue and bone contrast as well as high spatial resolution and a wide dynamic range are key to displaying detail-rich images of even the smallest anatomical structures. CMOS detector technology delivers on all counts, helping physicians to improve image quality.

### → CMOS flat-panel technology

Image quality and efficiency are the most important but also challenging factors in daily clinical routine. In comparison with conventional C-arms, the latest CMOS flat-panel technology achieves higher spatial resolution due to smaller pixel sizes combined with lower noise levels and a higher read-out speed at full resolution. True resolution, especially in the magnification modes, makes interpolation unnecessary. Because of these features, CMOS technology enables improved overall efficiency.

### → Higher level of performance

The compact monoblock generator provides short, sharp pulses, producing razor-sharp images even if the patient is moving. This intelligent pulse technology also improves dose management. The flat-panel technology is unaffected by magnetic fields and enables distortion-free imaging, with no loss in image quality and more than 65,000 shades of gray.

### → Contrast-rich visualization

The Ziehm Solo FD offers a high-brightness and high-contrast 19" DUO monitor. Even from a distance, the high-end monitors provide the physician with optimal insights by visualizing the finest details – from any angle.



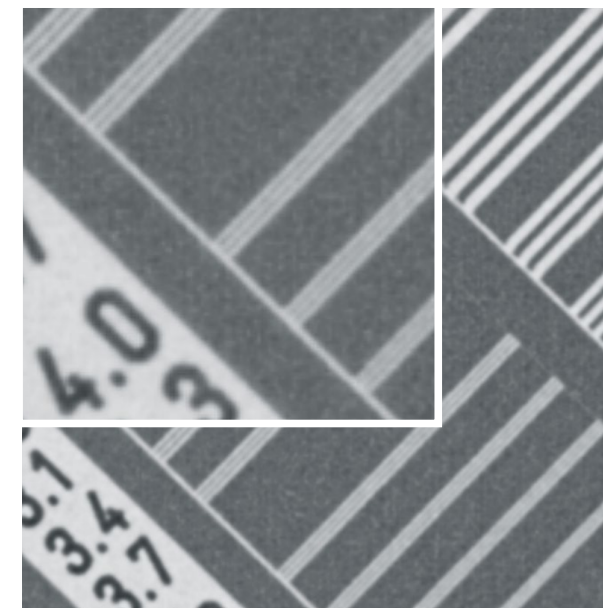
Full size (20.5 cm x 20.5 cm)



Magnification mode 1 (15 cm x 15 cm)



Magnification mode 2 (10 cm x 10 cm)



Spatial resolution phantom with more than 4.0 lp/mm visible

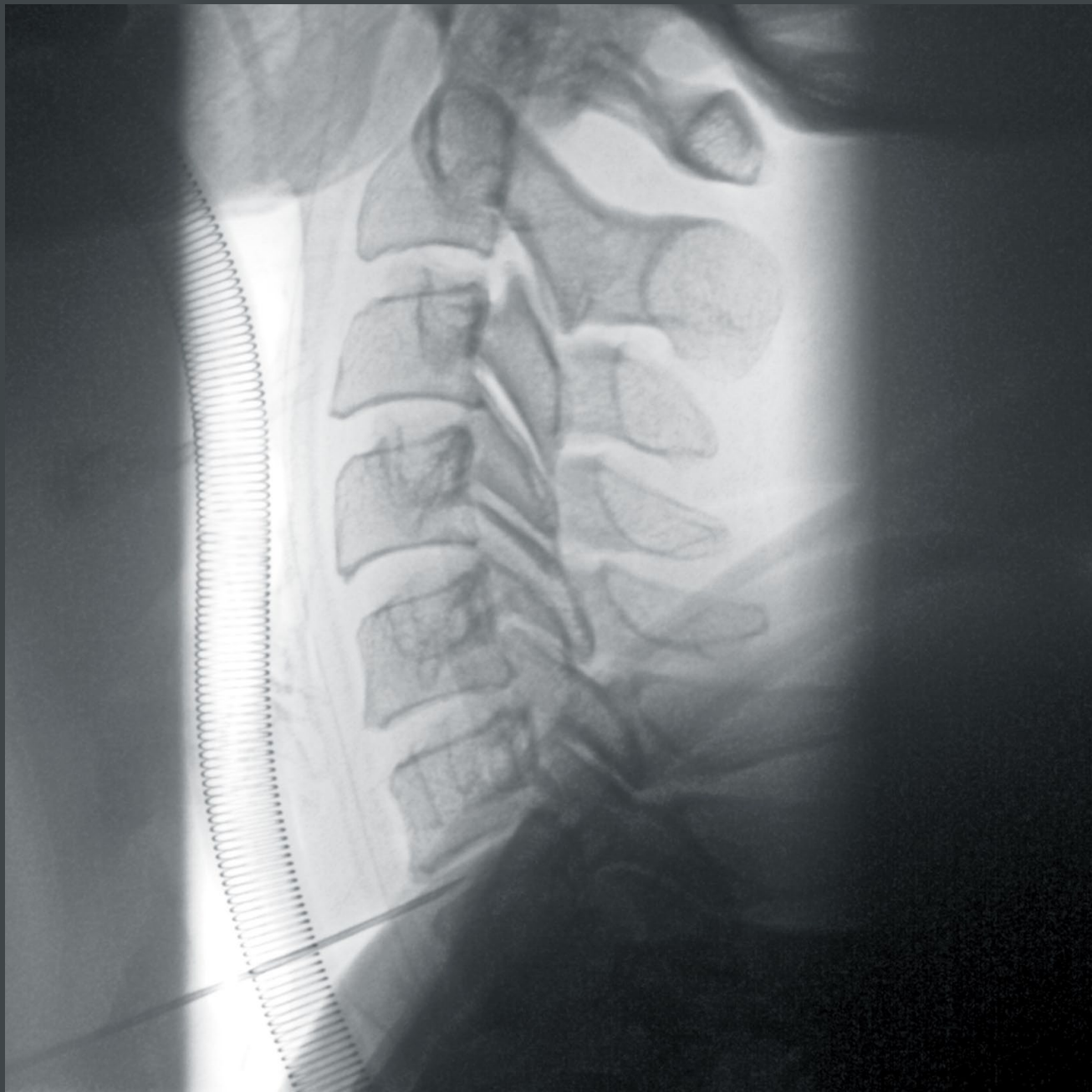
4,096

Conventional image intensifier

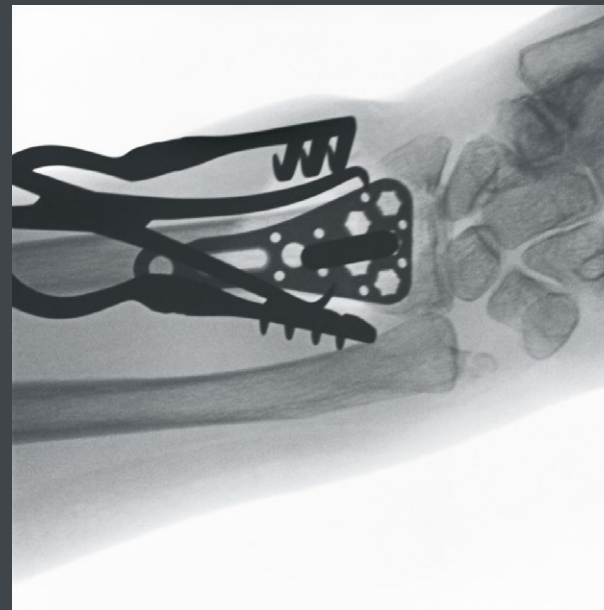
65,536 shades of gray

Ziehm Solo FD with flat-panel technology





Cervical spine



Stabilization of a radius fracture



Adjusting screw for stabilization of syndesmosis



Peripheral revascularization



Osteosynthesis of the clavicular

## 02/Ensure maximum flexibility with a versatile design

As space in the OR is limited, the demand for imaging systems with smaller footprints is growing. Thanks to the compact design and viewing options, the Ziehm Solo FD enables the hospital to fit every individual need.

### → Compact design

The Ziehm Solo FD is one of the smallest C-arms on the market. It comes as standard with a 19" dual flatscreen mounted on an articulating monitor arm, eliminating the need for a separate monitor cart. Despite the compact design, 165 degrees of orbital movement enhances easy patient coverage and ensures a maximum of flexibility in the OR – fully counter-balanced in every position.



### All-in-one design

All functions required for image capturing, processing and archiving are integrated in the C-arm, without the need for a standalone monitor cart.



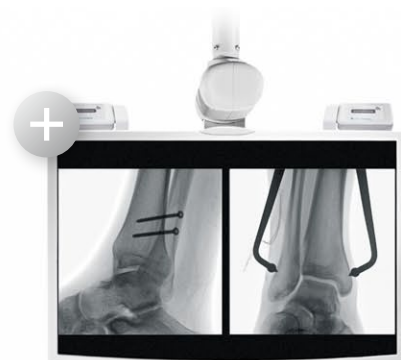
### Easy handling

165 degrees of orbital movement and the 87 cm C-arm opening ideally support your workflow.

→ Flexible configurations

In addition to the compact design of the system, three different viewing options enhance flexibility during interventions to allow the product range to suit individual needs.

These options allow you to conveniently operate the system from the Ziehm Viewing Station, the Remote Solo Center and the C-arm.



Option 1: wall- or ceiling-mounted monitors  
This space-saving configuration maximizes available space in the OR and can benefit from wireless integration.



Option 2: Remote Solo Center  
Create sufficient scope for sterile operation with the Remote Solo Center, flexibly mounted to the sides of the OR table or on a separate stand.



Ziehm Solo FD with integrated monitor  
This versatile mobile C-arm comes as standard with an integrated monitor to ensure a compact design for small ORs. Furthermore, it can be extended with three different viewing options.

Option 3: Ziehm Viewing Station  
The C-arm can be easily supplemented with an extra Viewing Station featuring a high-brightness FullHD 27" split monitor or a high-brightness and high-contrast 19" DUO monitor.





## 03/ Optimize process efficiency with advanced clinical workflows

In the face of time and efficiency pressure, compatible clinical workflows help to operate the C-arm in an easy and intuitive way. Unmistakable communication increases safety in the OR and optimizes efficient patient handling.

### → Wireless Freedom

Ziehm Imaging's Wireless Freedom Concept bundles three different opportunities to increase efficiency and safety in the OR. Firstly, WLAN allows operators to transfer images wirelessly to the PACS from any location. Secondly, with the Ziehm Wireless Video option, live images can be transferred to wall- or ceiling-mounted monitors in real time for even greater flexibility. Thirdly, key functions such as X-rays can be actuated with the wireless dual-plus footswitch. The footswitch has the added bonus of increasing safety by reducing cables on the OR floor.

### → Fit for the future

The Solo Center is a touchscreen with a modular software architecture, ensuring maximum flexibility. This interface can be easily upgraded and expanded with additional software modules without the need for hardware changes.

### → Seamless integration

The interface, Ziehm NetPort, enables easy integration into existing IT networks. X-ray images saved in DICOM 3.0 format are transferred to the PACS, and patient data can be exchanged with HIS/RIS. X-ray images can be retrieved at any time. They can also be backed up to DVD or USB stick and printed on transparencies or paper.



Ziehm SmartEye technology mirrors the live image on the touchscreen, enabling the operator to keep track of orientation and object position.

## 04 / Reduce exposure significantly with the next-generation SmartDose Concept

The Ziehm Solo FD is designed to meet growing demand among surgeons and their staff for minimized dose exposure without compromising on image quality. Optimal filtration and advanced anatomical programs deliver on these demands, making this device perfect for dose-sensitive applications.

### → Best image quality. Minimized dose.

The comprehensive concept consists of a broad, clinically proven application portfolio to address daily challenges of low dose and high image quality. With significant dose savings, Ziehm Imaging sets the benchmark in user-friendly adjustments of dose exposure. SmartDose<sup>2</sup> helps display even the smallest details of complex anatomical areas and reduce dose with intelligent pulse regulation and optimized anatomical programs. Furthermore, dedicated SmartDose functions significantly reduce exposure in pediatric surgery<sup>3</sup>.

### → Beam Filtration for reduced skin entrance dose

Our feature-rich SmartDose concept comes with the groundbreaking Beam Filtration<sup>1</sup> technology. Dose reduction techniques for an optimized X-ray spectrum support our enhanced CMOS imaging chain. Beam Filtration enables an exceptional reduction in the skin entrance dose for Ziehm Imaging flat-detector systems in comparison to systems with conventional filtration technology.



**SmartDose**  
Best image quality. Minimized dose.



#### LASER POSITIONING DEVICE

integrated in flat-panel or I.I. and generator housing for accurate and dose-free positioning of C-arm



#### REDUCTION OF PULSE FREQUENCY

manually or fully automatically to lower the accumulated dose



#### OBJECT DETECTED DOSE CONTROL (ODDC)

to automatically analyze the area of interest and minimize dose while optimizing image quality



#### ANATOMICAL PROGRAMS

with automatic optimization of dose and image quality for best results



#### HIGH-SPEED ADR

for intelligent, fast regulation of pulse rate to lower the dose level



#### ZAIIP ALGORITHM AND FILTERS

to display fast-moving objects like guide wires and even the smallest vessels in razor-sharp image quality



#### LOW DOSE MODE

in all anatomical programs for particularly dose-sensitive procedures, e.g. in pediatrics



#### PREMAG

for exposure-free magnification of X-ray images



#### AUTOMATIC ADJUSTMENT

for large patients – with no additional increase in dose



#### REMOVABLE GRID

to reduce dose in pediatric and other dose-sensitive procedures



#### VIRTUAL COLLIMATORS

for exposure-free positioning of collimators



#### BEAM FILTRATION

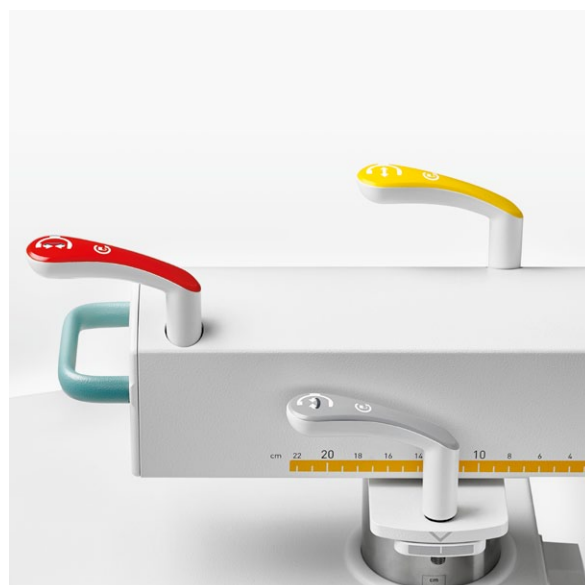
for reduced skin entrance dose without compromising on image quality



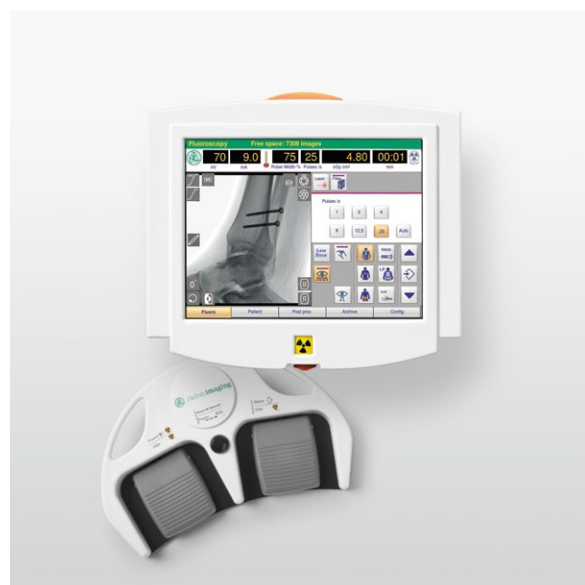
## 05/Features at a glance

In a challenging healthcare environment, where space and cost are at a premium, the Ziehm Solo FD meets evolving needs with support for a wide range of applications and a host of individualized options.

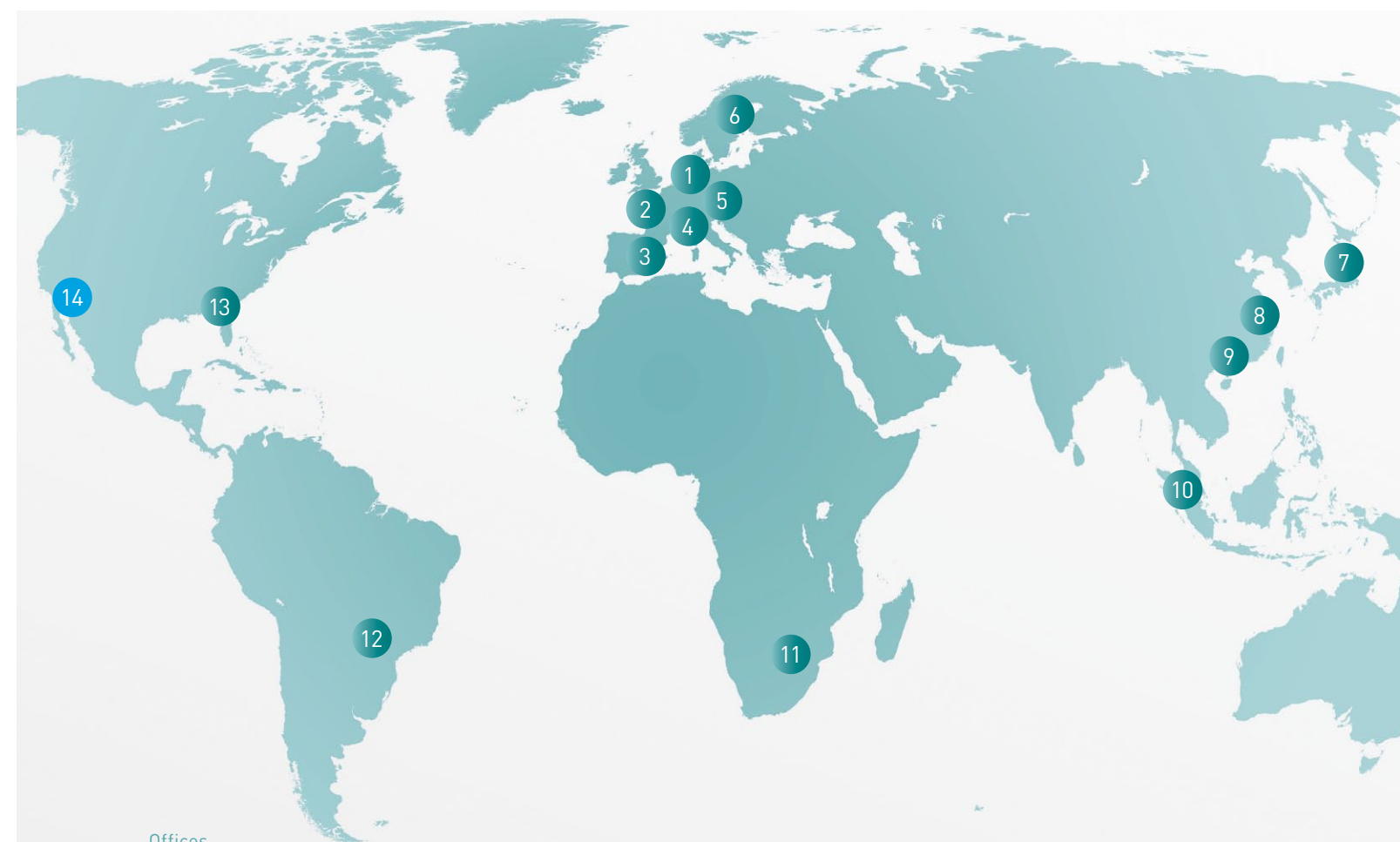
Footprint	0.8 m <sup>2</sup>	Anatomical Marking Tool (AMT)	optional
C-arm opening	87 cm	Ziehm Viewing Station	optional
2k x 2k CMOS technology		Monitors for existing ceiling support arms	optional
Touchscreen user interface		Ziehm NetPort	optional
Ziehm SmartEye with SmartControl		Interface to 2D navigation systems	optional
SmartArchive		Printer / DVD	optional
Color-coded scales and handles		Cineloop/DSA	optional
Pulsed monoblock generator		Wireless freedom integration (WLAN, Wireless Footswitch and Wireless Video)	optional



Color-coded handles



Wireless Footswitch and Remote Solo Center



### Offices

1. Nuremberg (Germany)
2. Paris (France)
3. Valencia (Spain)
4. Reggio Emilia (Italy)
5. Tulln an der Donau (Austria)
6. Kerava (Finland)
7. Tokyo (Japan)
8. Shanghai (China)
9. Guangzhou (China)
10. Singapore (Singapore)
11. Midrand (South Africa)
12. São Paulo (Brazil)
13. Orlando, FL (USA)
14. Scottsdale, AZ, Orthoscan (USA)

## MAXIMIZE YOUR UPTIME



**Make sure to get the best service for your daily business.**

Rely on Ziehm Imaging for flexible and fast service to stay on the cutting edge of technology. Tailored service packages, remote service and individual upgrade paths keep you competitive in your daily hospital routine.

CMOSline represents a system configuration that is based on a Ziehm Imaging CMOS flat-panel detector.

<sup>1</sup> The technology Beam Filtration reduces dose exposure for Ziehm Imaging flat-detector systems in comparison with conventional filtration techniques. Data on File. Results may vary.

<sup>2</sup> The SmartDose Concept includes a variety of hard- and software features. Due to regulatory reasons the availability of each feature may vary. Please contact your local Ziehm Imaging sales representative for detailed information.

<sup>3</sup> Gosch D. et al. "Influence of grid and ODDC on radiation exposure and image quality using mobile C-arms – First results," RøFo, 09/07

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