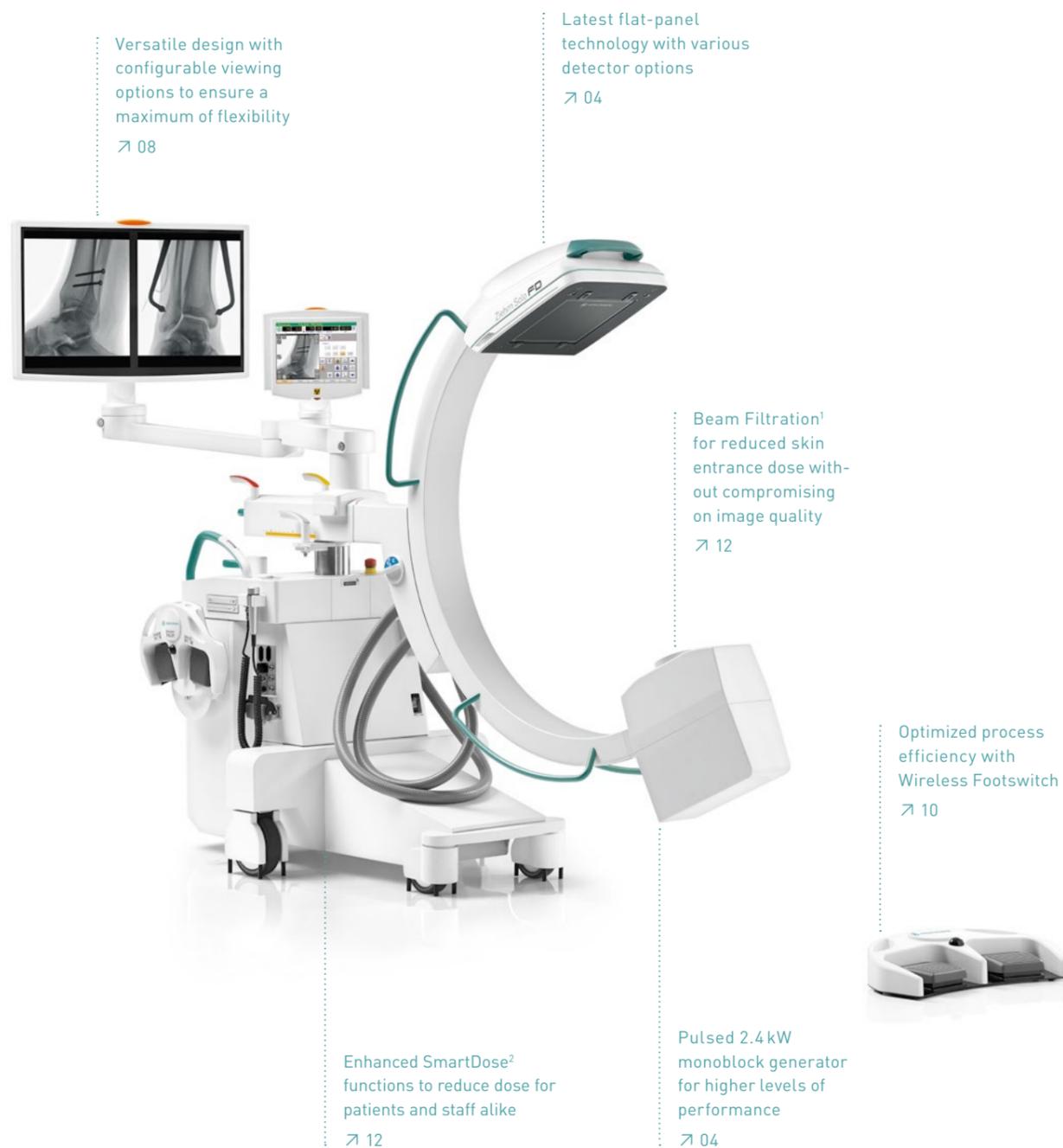




## Ziehm Solo FD

Versatile design meets  
latest flat-panel technology

CMOSLINE



Ziehm Solo FD. As the size of hospital and surgery center ORs is limited 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 on the market. It is easy to handle with high maneuverability for even the smallest treatment scenarios. The premium variant is equipped with CMOS flat-panel technology to perform a broad portfolio of applications. Optional IGZO-variants complete the product line from an entry-level to a model with a large 31 cm x 31 cm<sup>3</sup> flat-panel detector. 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 routines. Compared with conventional C-arms, the latest flat-panel technology with CMOS achieves higher spatial resolution due to a smaller pixel size combined with lower noise levels and a higher read-out speed at full resolution. True resolution, especially in the magnification modes, makes interpolation unnecessary. CMOS technology therefore 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.



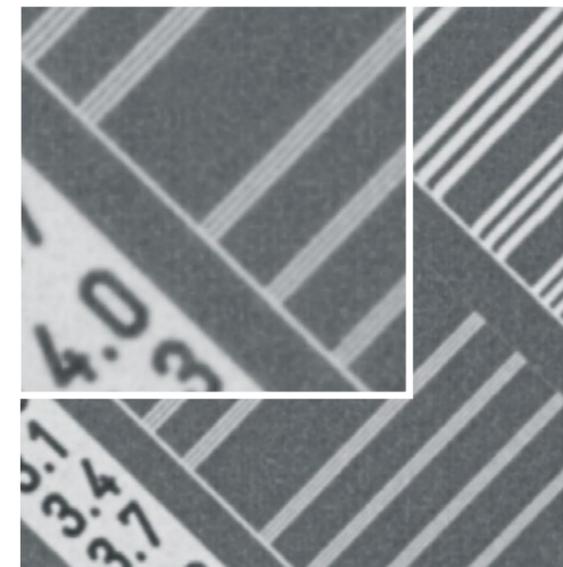
Full size (21 cm x 21 cm)



Magnification mode 1 (15 cm x 15 cm)



Magnification mode 2 (10 cm x 10 cm)



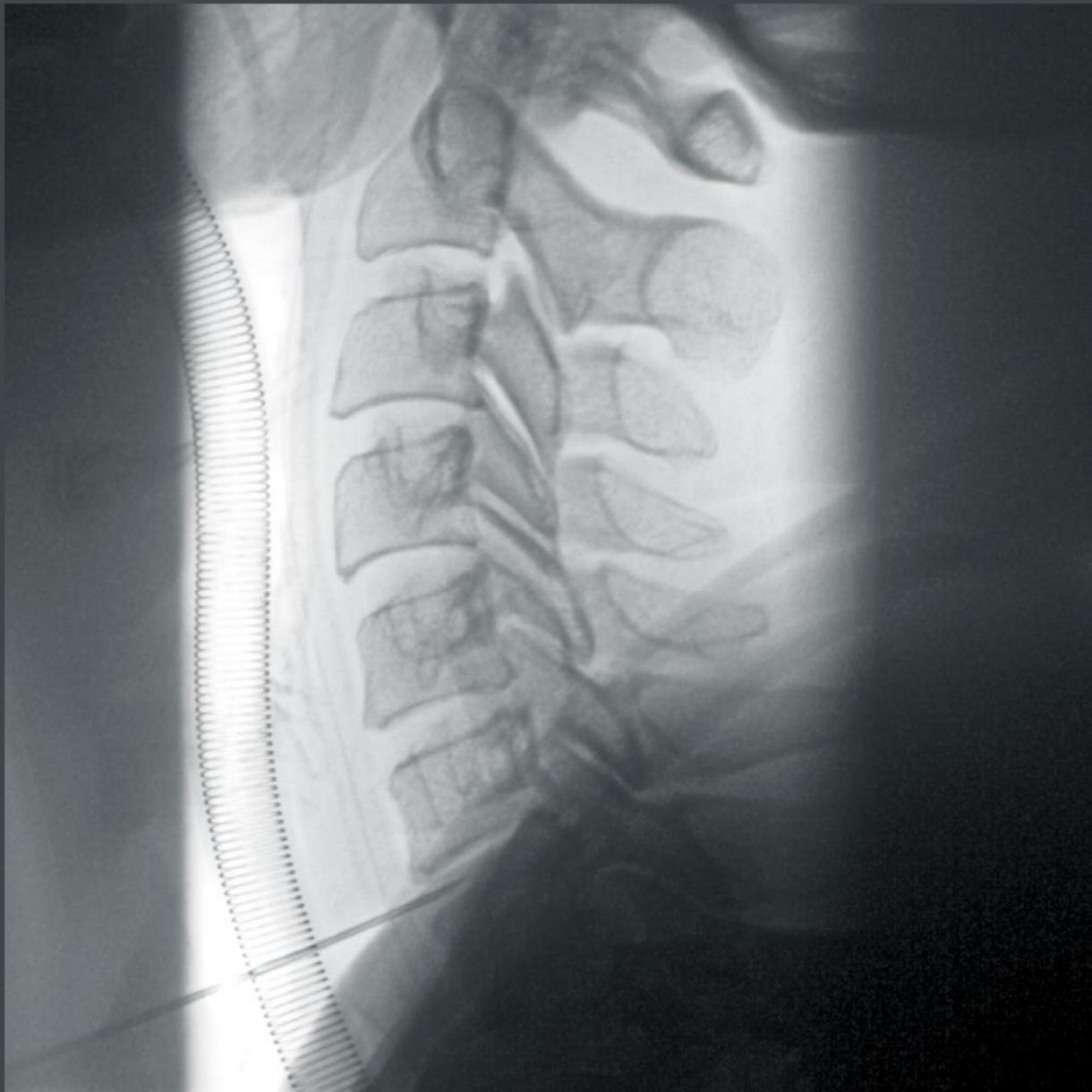
Spatial resolution phantom with more than 4.0 lp/mm visible

4,096

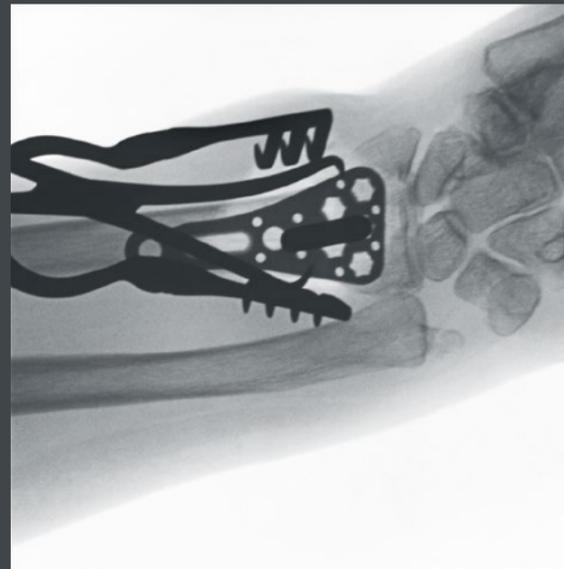
Conventional image intensifier

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 with a 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.

### → Expanded product line with more options

While the Ziehm Solo FD comes in the standard version with a 21 cm x 21 cm detector, the system is also available with a 31 cm x 31 cm<sup>3</sup> IGZO flat-panel detector. The bigger detector size allows to cover larger anatomical regions in orthopedic and vascular surgery. Additionally with Ziehm Solo FD lite<sup>4</sup>, there is a configuration with a 21 cm x 21 cm IGZO detector and a limited option package.



### 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.



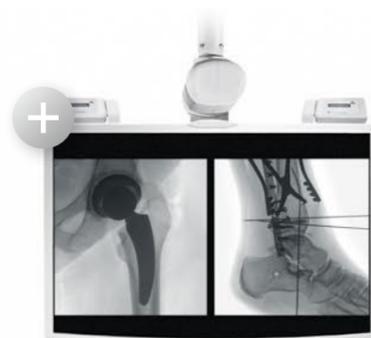
### Easy handling

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>5</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



| FEATURES                 | Ziehm Solo FD lite <sup>4</sup>    | Ziehm Solo FD   | Ziehm Solo FD <small>CMOSLINE</small>             |
|--------------------------|------------------------------------|---|---|
| Imaging technology       | IGZO, flat-panel, 21 cm x 21 cm    | IGZO, flat-panel, 21 cm x 21 cm<br>IGZO, flat-panel, 31 cm x 31 cm <sup>3</sup> | CMOS, flat-panel, 21 cm x 21 cm                   |
| Detector resolution      | 1.5k x 1.5k                        | 1.5k x 1.5k (21 cm x 21 cm)<br>2k x 2k (31 cm x 31 cm)                          | 2k x 2k   |
| Monitor                  | Standard FullHD 27" split monitor  | High-brightness FullHD 27" split monitor  | High-brightness and high-contrast 19" DUO monitor |
| Power generator          | 2.4 kW, pulsed monoblock generator | 2.4 kW, pulsed monoblock generator  | 2.4 kW, pulsed monoblock generator                |
| Ziehm Usability Concept  | ■                                  | ■   | ■   |
| SmartDose                | ■                                  | ■   | ■   |
| Remote Solo Center       | -                                  | ■   | ■   |
| Ziehm Viewing Station    | -                                  | ■   | ■   |
| Advanced Heat Management | ■                                  | ■   | ■   |
| Field Transport Solution | -                                  | ■ / -   | ■   |
| Orbital movement         | 165°                               | 165°  | 165°  |

available ■ | not available -



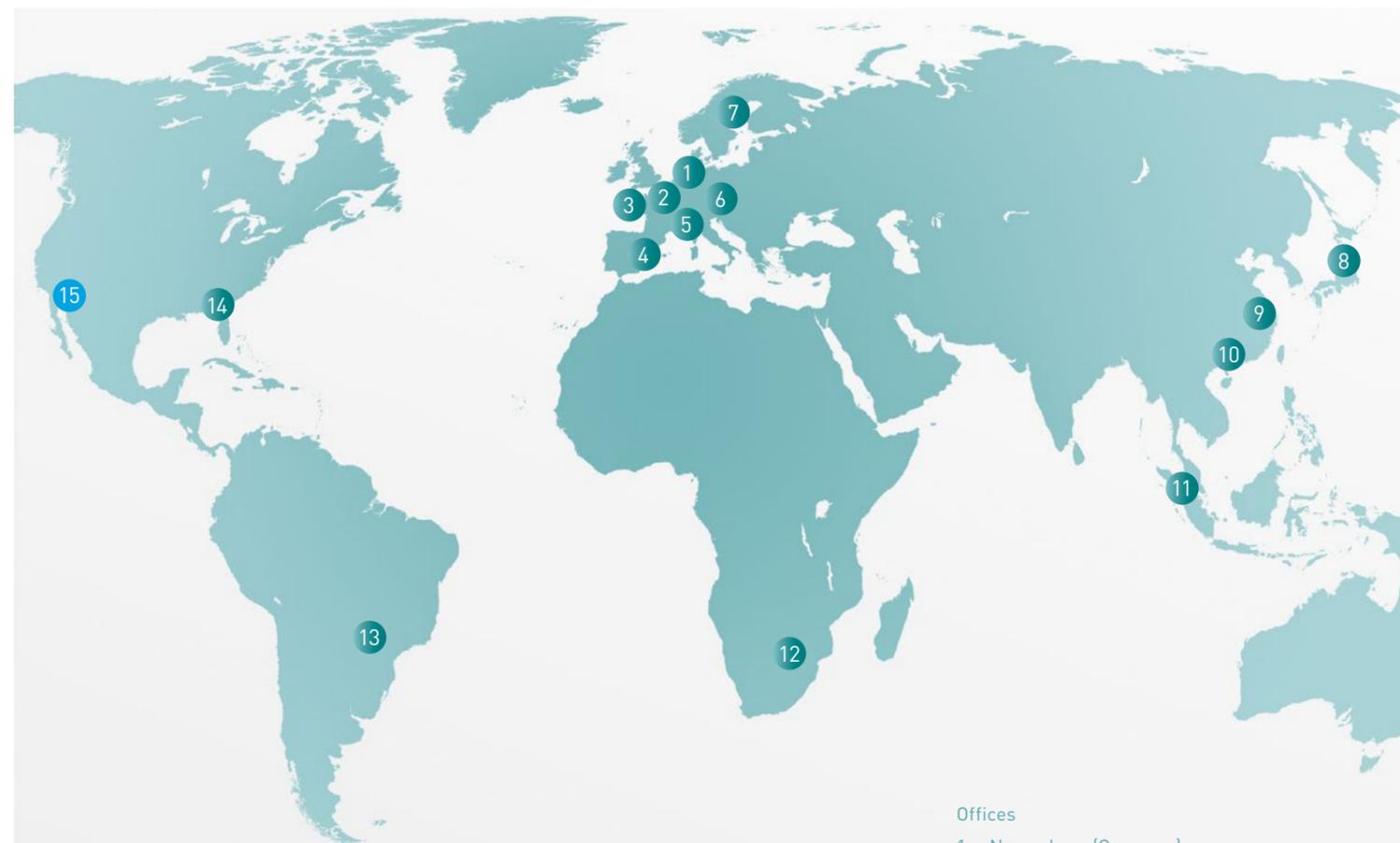
Color-coded handles



Wireless Footswitch and Remote Solo Center



Field Transport Solution, to meet the needs of disaster medical care



Offices

1. Nuremberg (Germany)
2. Paris (France)
3. Rennes, Therenva SAS (France)
4. Valencia (Spain)
5. Reggio Emilia (Italy)
6. Tulln an der Donau (Austria)
7. Kerava (Finland)
8. Tokyo (Japan)
9. Shanghai (China)
10. Guangzhou (China)
11. Singapore (Singapore)
12. Midrand (South Africa)
13. São Paulo (Brazil)
14. Orlando, FL (USA)
15. 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.

Images may contain options that are not available for all variants.

<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> Availability may vary due to national registrations.

<sup>4</sup> Ziehm Solo FD Lite represents a group of optional hardware and software that creates an option package on the device named Ziehm Solo FD.

<sup>5</sup> Gosch D. et al. "Influence of grid and ODDC on radiation exposure and image quality using mobile C-arms – First results," RöFo, 09/07

## **HEADQUARTERS**

### **Germany**

Ziehm Imaging GmbH  
Lina-Ammon-Strasse 10  
90471 Nuremberg, Germany  
Phone +49 911 660 67 0  
Fax +49 911 660 67 390  
info@ziehm.com

### **USA**

Ziehm Imaging  
A division of Ziehm-Orthoscan, Inc.  
6280 Hazeltine National Dr  
Orlando, FL 32822, USA  
Toll Free +1 800 503 4952  
Phone +1 407 6 15 8560  
Fax +1 407 6 15 8561  
mail@ziehm.com

### **Brazil**

Ziehm Medical do Brasil  
Av. Roque Petroni Jr.,  
1089 cj 904  
04707-000 São Paulo, Brazil  
Phone +55 11 30 33 59 99  
Fax +55 11 30 33 59 97  
brazil@ziehm.com

### **Austria**

Ziehm Imaging Austria GmbH  
Ziegelfeldstrasse 10  
3430 Tulln an der Donau  
Austria  
Phone +43 2272 66441  
austria@ziehm.com

### **Italy**

Ziehm Imaging Srl  
Via Paolo Borsellino, 22/24  
42124 Reggio Emilia, Italy  
Phone +39 05 22 61 08 94  
Fax +39 05 22 61 24 77  
italy@ziehm.com

### **Spain**

Ziehm Imaging Spain SLU  
Avenida Pérez Galdós 13-14<sup>a</sup>  
46007 Valencia, Spain  
Phone +34 960 911 152  
spain@ziehm.com

### **France**

Ziehm Imaging S.A.R.L.  
1, Allée de Londres  
91140 Villejust, France  
Phone +33 1 69 07 16 65  
Fax +33 1 69 07 16 96  
france@ziehm.com

### **Finland**

Ziehm Imaging Oy  
Kumitehtaankatu 5  
04260 Kerava, Finland  
Phone +358 4 49 75 75 37  
finland@ziehm.com

### **China**

Ziehm Medical Shanghai Co., Ltd.  
Hongqiao New Tower Centre  
Rm 02-06, 29/F  
83 Loushanguan Road  
Shanghai, P.R. China; 200336  
Phone +86 21 62 36 99 03  
Fax +86 21 62 36 99 16  
china@ziehm.net.cn

### **Singapore**

Ziehm Imaging Singapore Pte. Ltd.  
23 Serangoon North Ave 5  
#05-04 BTC Center  
Singapore 554530, Singapore  
Phone +65 65 30 39 40  
singapore@ziehm.com

### **Japan**

Ziehm Imaging Japan KK  
REID-C Nihonbashi Koamicho bldg 2F  
11-5 Nihonbashi Koamicho Chuo-ku  
Tokyo 103-0016, Japan  
Phone +81 3 5643 5791  
Fax +81 3 3663 5278  
japan@ziehm.com