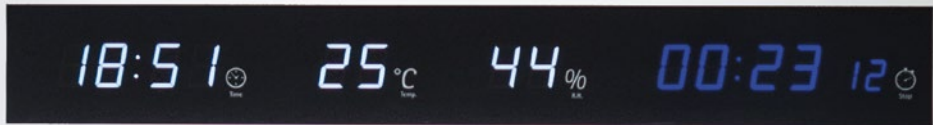
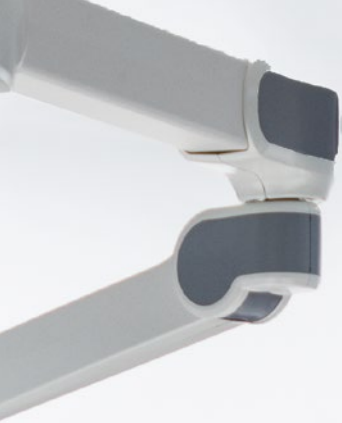


A photograph of three surgeons in an operating room, wearing blue scrubs, masks, and caps, focused on a procedure. The lighting is a cool blue, and the scene is captured from a high angle, looking down at the surgeons' hands and instruments.

OPERION[®] 3

WALL MONITORS AND WORKSTATIONS FOR THE OPERATING ROOM
NICHE OR ON-WALL MOUNTING
DISPLAY SIZES OF 19" TO 75"



OPERION 3 Monitors and workstations for the OR

The OPERION® concept offers professional devices for any type of OR wall. Whether as a monitor or with an integrated PC system that uses the latest Intel® technology, you will get the right system for any application, in screen sizes of 19" to 75".

OR MONITOR & PC

The right display every time - for any area of application

There are numerous screen sizes available, starting with the 19" size and going up to the 75" UHD monitor. This means you will find the right design in the size you want for any application. When developing our monitor systems, we focus on providing an operating concept that is consistent.

Industrial components for 24/7 use

When developing the OPERION, industrial-standard monitor and computer components are used. For example, PID (Public Information Display) panels are used for screens that are 32" or larger. All the panels used are high quality and suitable for continuous operation, which guarantees a long service life.

Optional PC system creates a workstation for RIS, HIS, PACS and so on.

Almost all OPERION models are ready for PC kit integration. The use of industrial-standard motherboards that are designed for 24/7 use offers great security against outages. Depending on the desired performance, the system can be equipped with an Intel Core™ i5™ dual core or an i7™ quad core processor and up to 32 GB of RAM, plus various data storage devices (HDD, SSD).

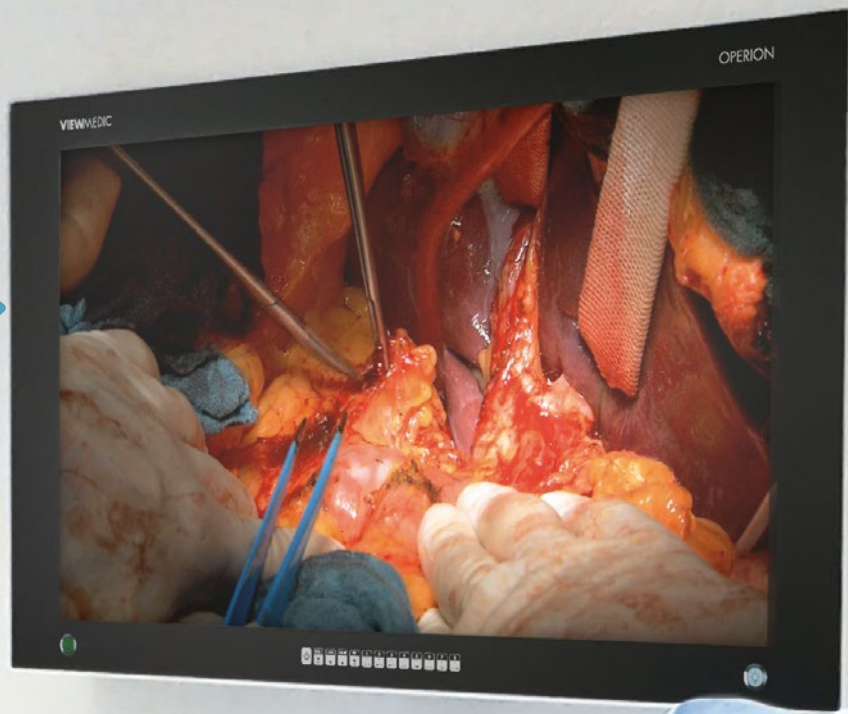
All common PC interfaces are available in multiples, thus facilitating communication and control functions. We offer 4 kV isolators for the PC interfaces as an accessory for a vast range of usage scenarios.

Variety of input equipment

The wide variety of equipment for the OPERION continues with the input devices. Some of the available options include various kinds of hygienic keyboards, folding if required and with the option of adding a mouse, touchpad, optical drive, USB port and barcode reader.

Germicidal coating

The installation frame for the BR (cover mount) version and the BODY enclosure are coated with STERIDUR. This powder coating contains sterions that eliminate many millions of germs per hour. The effect of this coating is permanent and thus consistently microbacterial.



INTEGRATION

Three enclosures. One technology.

The various OPERION enclosures are always perfectly suited to the installation situation. They therefore accommodate the one-piece electronic module, which, just like the front glass, is compatible with each enclosure type [flush mount (FB), cover mount (BR) & BODY]. For example, in the event of subsequent renovation, it would be possible to flush mount the display and electronics unit into a new module wall.

Future-proof and environmentally conscious - made by Rein Medical.

There are three kinds of enclosure to choose from for each OPERION: flush mount (FB), cover mount (BR) & BODY

In OR rooms with modular wall systems, the [flush mounted \(FB\)](#) design means that the OPERION can be fully and hygienically integrated as part of the wall system. Installation frames such as those used in the [cover mount \(BR\) design](#) are the right choice for new and existing recesses in dry walls. If the system can only be surface-mounted, the [BODY design](#) provides high-quality solid aluminium enclosures.

Flat and flush: the flush mount (FB) design

The construction of the OPERION flush mount is in keeping with the dimensions used by manufacturers of modular space systems. This facilitates the best, most cost-effective integration into system walls made by EMV, GHK DOMO, HT, Lindner, MAQUET, MEDIK and Pneumatik, as well as those made by many other manufacturers. As a result, the OR monitor looks as if it is part of the wall and disinfecting it is easy and hygienic.

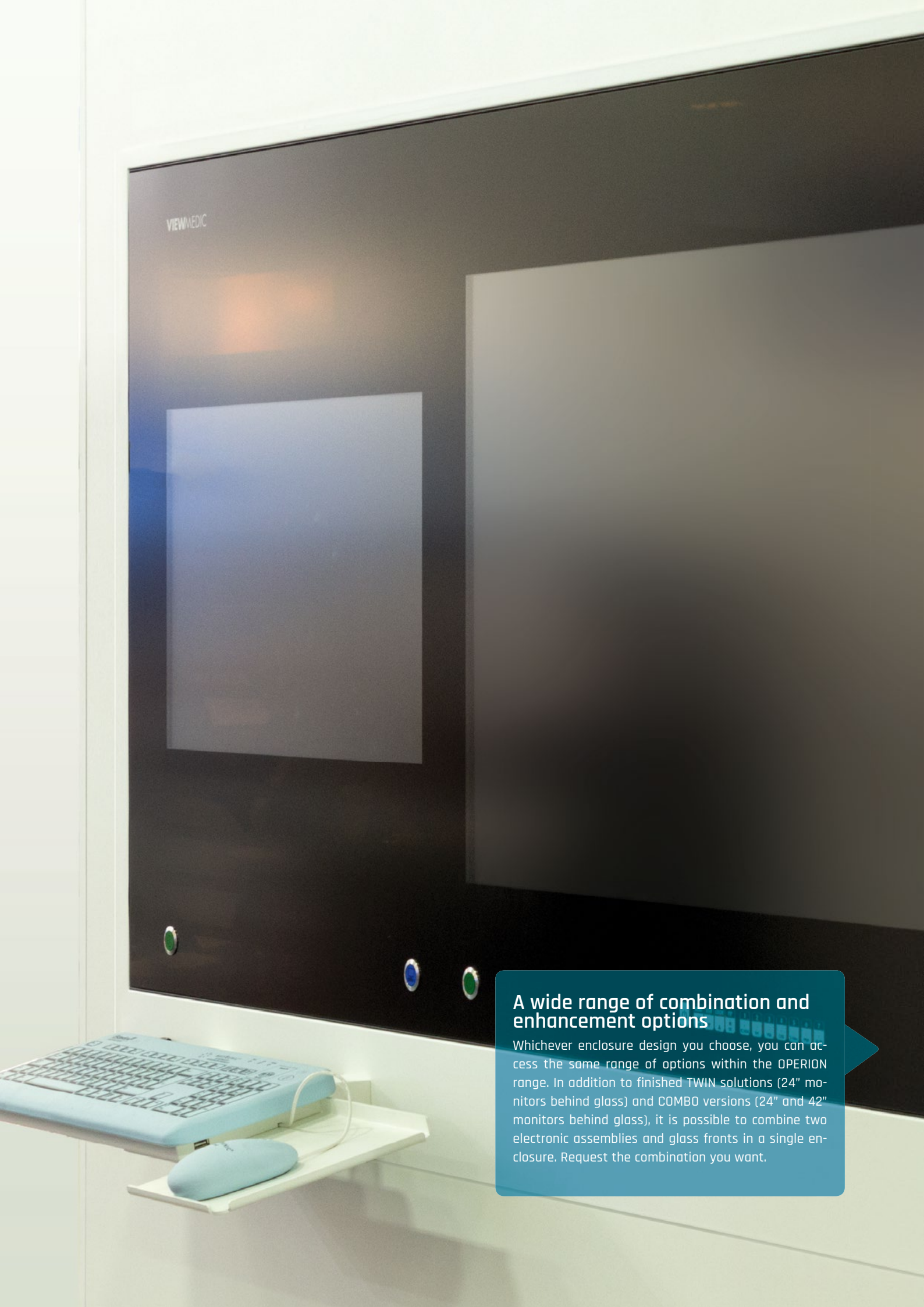
OPTIONS

The solution that fits perfectly into existing recesses: the cover mount (BR) design

Recesses in conventional, drywall style OR walls almost always have unclean rough edges. The installation frame fits new and existing recesses perfectly. The cover frame sits on the OR wall. The outer dimensions of the installation frame can be customised to the circumstances.

The OPERION as a surface-mounted solution: the BODY design

There is not always a wall recess in the OR into which an OPERION FB or BR enclosure can be integrated. Furthermore, it is not possible to retrofit such a recess in many rooms. For rooms like this, the BODY design is the ideal solution. With this design, the OPERION is mounted directly onto the wall. The consistent overall depth of 125 mm makes it possible for multiple devices to be combined and placed next to one another.



VIEWMEDIC

A wide range of combination and enhancement options

Whichever enclosure design you choose, you can access the same range of options within the OPERION range. In addition to finished TWIN solutions (24" monitors behind glass) and COMBO versions (24" and 42" monitors behind glass), it is possible to combine two electronic assemblies and glass fronts in a single enclosure. Request the combination you want.



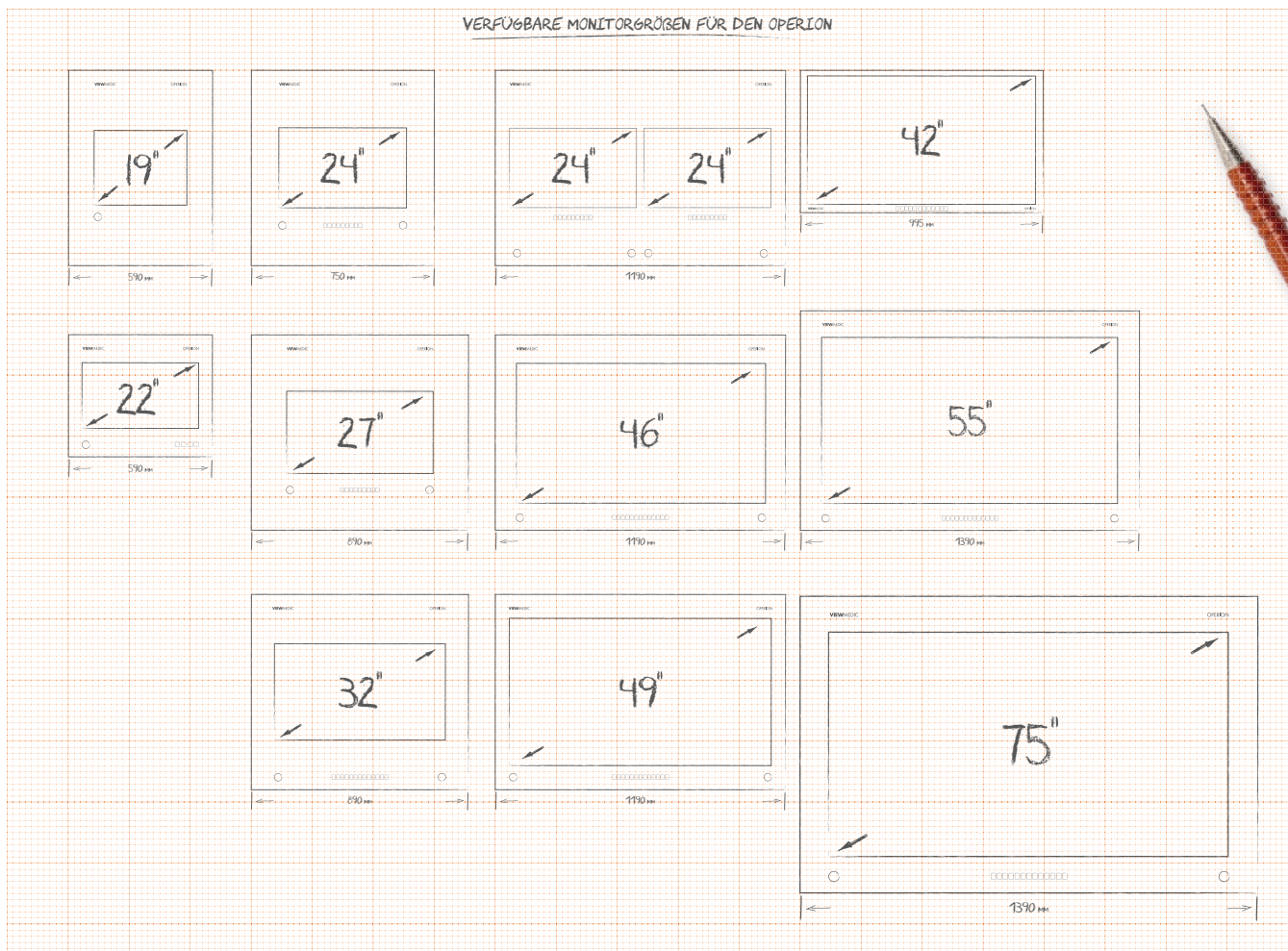
Plenty of room for technology: OPERION TOWER

The OPERION TOWER is placed directly in front of an existing wall and reaches from the floor to the ceiling. It is completely enclosed on all sides, which means it is just as hygienic as all of the other options in the OPERION range. The space above and below the OPERION can be used for additional technology. A video matrix, routers, switches and other PC components can be accommodated here.

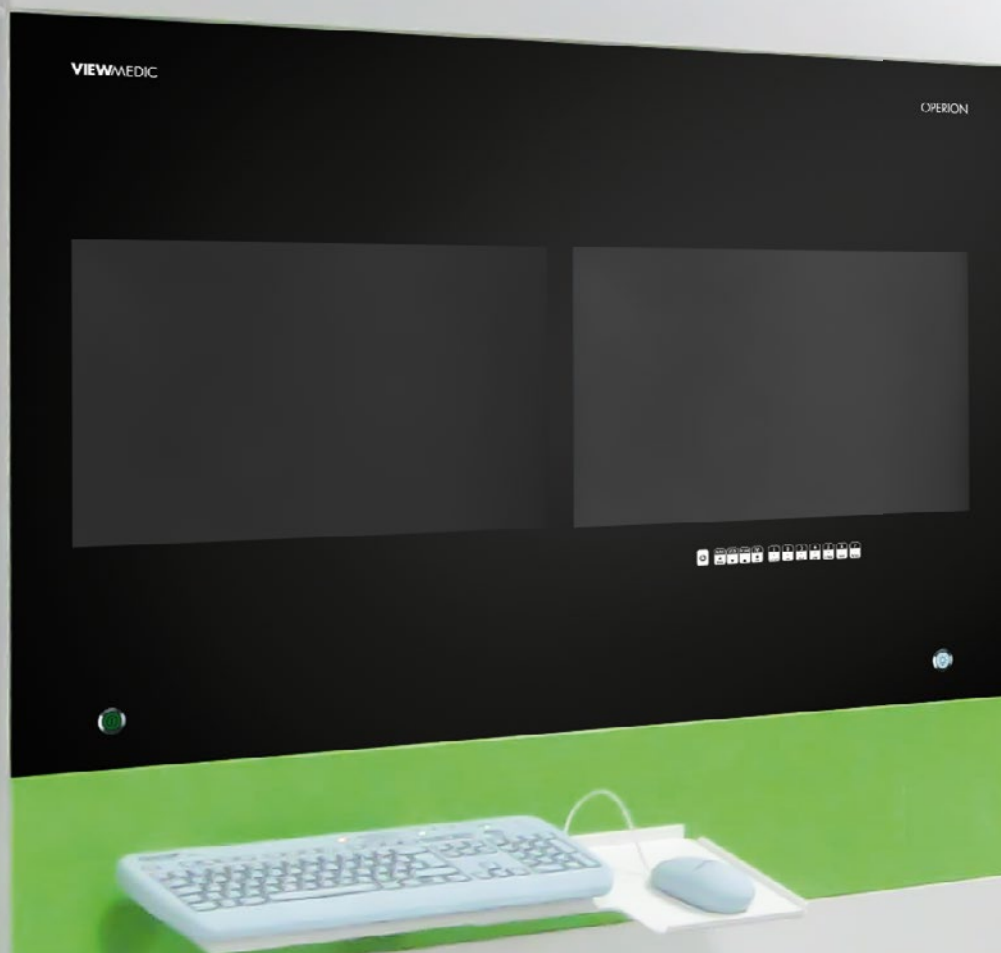
The right format every time

The OPERION is available in numerous options and formats. Starting with the 19" design - ideal for use as a RIS, HIS or PACS workstation - right through to the 75" wall monitor for large operating rooms, which has a 4k display and UHD QuadView, enabling it to display up to four images in full HD at the same time.

VERFÜGBARE MONITORGRÖßEN FÜR DEN OPERION



FUNCTIONS &



IP65 protection from floor to ceiling

The flush mount option fits perfectly into the wall element and enables complete hygienic disinfection with any listed surface disinfectant.

FEATURES

Automatic Lumination Stabilisation (ALS)

All OPERION displays that are 32" or larger have ALS (Automatic Lumination Stabilisation). ALS eliminates fluctuations in the backlight that can occur, for example, during the warming-up phase or when the temperature changes. Furthermore, this control also compensates for service life-related failure of the backlight. In combination with high quality PID panels, the monitors deliver top quality, bright images, even after many years.

DICOM preset and calibration interface

All OPERION monitors offer a DICOM preset that is compliant with room class 4 under the current version of DIN 6868-157, which relates to the best possible viewing of X-ray images. The calibration interface on our monitor controllers enables monitor LUT calibration using the optional PerfectLum® software.

Prevent colour space fluctuations with BT.709, BT.1886 & BT.2020 presets.

When it comes to colours, monitors and image-producing devices do not always 'speak the same language'. The result: the colour display of the recorded images does not correspond with reality and is displayed inaccurately. OPERION displays offer presets for a range of colour spaces (BT.709, BT.1886 and BT.2020) in order to prevent such colour shifts.

Four full HD images displayed simultaneously using UHD QuadView

The two largest OPERION models (screen sizes of 55" and 75") have excellent 4k2k resolution and a working area that is large enough to display four images from different sources in full HD quality at the same time. These monitors have six digital inputs (4 x DVI & 2 x DisplayPorts) plus an analogue VGA input.

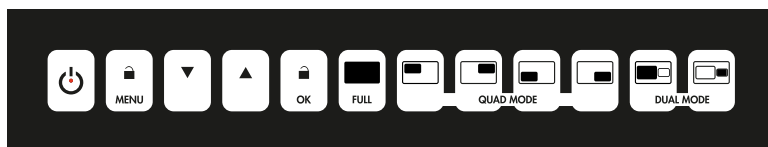
PIP

Every OPERION that is 32" or larger is capable of displaying images from two signal sources simultaneously. In Picture-In-Picture (PIP) mode, one picture is displayed within another. The size and position of the sub-image can be changed. With Picture-outside-Picture (POP), two images are displayed side by side. Three different modes (1:1, STRETCH and CENTERZOOM) ensure the optimal display of the images.



OPERION: Class 1 medical products

The OPERION is a Class 1 medical product (in accordance with MDD 93/42/EEC Annex IX, Rule 12) and may be combined with other medical products without electrical isolation, including in areas close to patients. All OPERION 3 series devices have been tested according to the international standards DIN EN 60601-1 and DIN EN 60601-1-2.



OPERION COMMAND BAR: Ease of use and hygienic cleaning

For the design of the OPERION, easy, reliable cleaning has always been of the utmost importance. For this reason, the OPERION has a command bar with which all of the monitor functions can be accessed. It is completely integrated into the glass and can be operated while wearing surgical gloves.

Control via RS232 and GPIO

The OPERION can be (remotely) controlled in a variety of ways via the GPIO interface. For example, it is possible to use a foot-operated switch to move between different input sources.

An extensive list of control commands enables full device control via RS232. In this way, intelligent video management systems can switch between the DICOM preset and BT.709, for example, depending on which source is being routed to the monitor.



KVM integration

Sometimes it is not desirable for the computer to be integrated directly into the OPERION. In these cases, remote computers can be connected via a KVM extender. Our tried and tested KVM solution provides a reliable connection via a CAT cable that can be up to 100 metres in length.

Alongside image, keyboard and mouse signals, there is also the option of transmitting audio and RS232 control signals. Electrical isolation of the CAT lead is possible as well.

Touch technology is on the rise

The rapid expansion in the use of smartphones and tablets is also affecting the development of desktop applications. More and more programs can be controlled not only with a mouse and keyboard but also with finger movements. For this reason, almost every OPERION also has an optional PCAP touchscreen. The sensor film is laminated to the interior of the glass and offers great ease of use, very good light permeability and perfect hygiene.





While an OPERION wall monitor can be operated reliably and hygienically at all times via the integrated COMMAND BAR sensor field, an OPERION being operated as a PACS workstation, for example, requires hygienic input devices that prevent cross-contamination between patients and staff and thus reduce the risk of infection. This is where the DOCTRAY MEDIGENIC and DOCTRAY TOUCH input devices come into play.



DOCTRAY MEDIGENIC The ergonomic keyboard solution

The DOCTRAY MEDIGENIC is an ergonomic, proven solution for use with an OPERION workstation. It includes a hygienic keyboard with a mouse tray and USB port, a suitable mouse and an optional DVD multirive. The DOCTRAY MEDIGENIC has the convenient ergonomics of a conventional keyboard but is quick and easy to clean via wipe-down disinfection.

DOCTRAY TOUCH Hygienic, robust and versatile

The DOCTRAY TOUCH is just as reliable and easy to use. It is a folding, highly robust keyboard featuring an integrated touchpad that can be operated even while wearing surgical gloves. It also has a USB port and an optional optical drive. Furthermore, it can be equipped with a barcode reader.

The tailor-made OR solution

All OPERION monitors and workstations are also available with touchscreens (Projective Capacitive Touch). Both the integrated PC and any remote computers connected via a signal extender can be operated in this way.

Our service for you: Let us know which modalities and signals need to be displayed and what requirements you have of your PC system. We will then build the optimum OPERION for you.



As well as providing has sufficient internal space, the OPERION also provides all the connections that are required to build a system with converters, signal extenders and other enhancements - precisely according to your needs. Get in touch with us and we will find the perfect solution for you.

SMART OR for the intelligent operating room

The OPERION reveals its full potential when combined with SMART OR. SMART OR manages all of the video sources in the OR, displays them on different output devices and makes the images available on the hospital network. SMART OR also makes it possible to archive video streams and to connect to KIS, HIS and PACS. *

INFOBAR – more than just a clock

The INFOBAR is a clock with large numbers that can be easily read, even in poor light conditions. It is precisely adapted to the OPERION in design and operation. This means that the INFOBAR can be mounted directly above the OPERION. If required it includes functional displays for: time, stopwatch, temperature, humidity and differential pressure. The INFOBAR has an integrated A/D adapter (0-10V), which means it can use existing sensors in the OR.

OPERION – your connection to the entire OR world

The flexibility and enhancement possibilities extend beyond the OPERION. To enable you to connect external devices such as monitors, USB sticks or signal sources, we offer standardised, labelled junction boxes. The flush-mounted boxes can be configured to your specifications. The control switches for the OPERION INFOBAR can also be integrated in this way.

SUMMARY

- > MONITOR SIZES FROM 19" TO 75"
- > AUTOMATIC LUMINATION STABILISATION (ALS)
FOR ALL DEVICES THAT ARE 32" OR LARGER
- > VARIOUS DESIGNS TO SUIT ANY OR
- > DICOM AND COLOUR PRESETS (BT.709, BT.1886 & BT.2020)
- > HYGIENIC CONTROL USING THE COMMAND BAR
- > 4K RESOLUTION FOR 55" AND 75" DISPLAYS
- > PICTURE-IN-PICTURE AND UHD QUADVIEW DISPLAY
- > COMPONENTS DESIGNED FOR 24/7 OPERATION
- > SUITABLE INPUT DEVICES AND SYSTEM ENHANCEMENTS

* You can find more information about SMART OR and our video integration solutions in the BR-DE-SOR and BR-DE-VID brochures

** We are also happy to provide the detailed BR-DE-INB information brochure for the INFOBAR.

BROCHURES FROM REIN MEDICAL

Rein Medical provides you with comprehensive information. Whether for individual products or for complex integration projects, our brochures showcase key features, benefits and application examples at a glance.



Order no. BR-EN-PRK



Order no. BR-EN-C4C



Order no. BR-EN-C4D



Order no. BR-EN-MED

We would be happy to send you our brochures free of charge on request. Simply send an e-mail telling us which brochure(s) you would like to: info@reinmedical.com. You can also download all of our brochures as PDF files at: www.reinmedical.com

www.reinmedical.de

Headquarter in Germany

Rein Medical GmbH

Schwalmstrasse 301 [Monforts Quartier 23]
41238 Mönchengladbach, Germany
Tel.: (+49-2161) 6984-0, Fax: (+49-2161) 6984-259
E-mail: info@reinmedical.com

Switzerland

Rein Medical AG

Büfelderstrasse 1, CH-8370 Sirmach TG
Tel.: (+41-71) 929-55-99, Fax: (+41-71) 929-55-90
E-mail: info.ch@reinmedical.com

Spain

Rein Medical Systems S.A.

C/ Téllez, 30
1ª Planta, Oficina 2 Puerta 3, 28007 Madrid
Tel.: (+34-91) 530-88-24, Fax: (+34-91) 574-32-93
E-mail: info.es@reinmedical.com