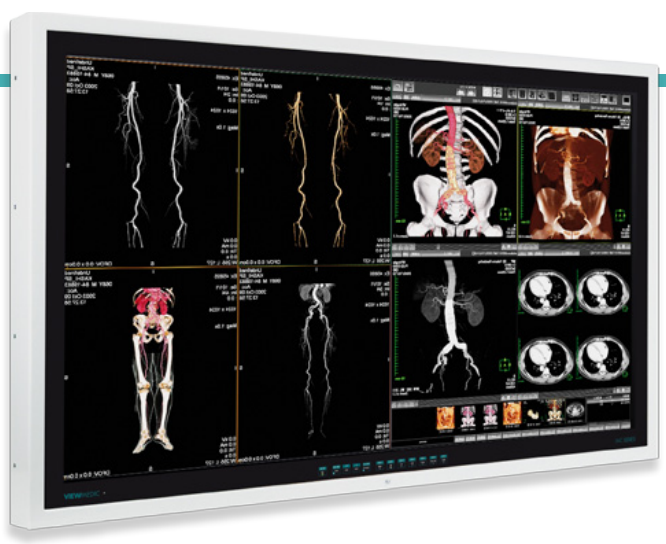
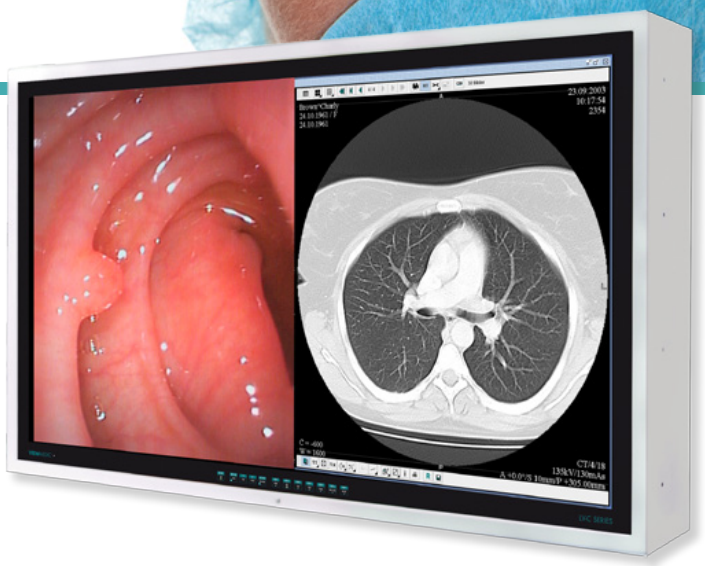
# VIEWMEDIC LV-C

## 42" MEDICAL LARGE SCREEN DISPLAYS





FullHD 42" Large Screen

All around IP65 protection

Video Interfaces up to 3G-SDI

## VIEWMEDIC 42″ monitors – Flexible and safe

The large screens of the VIEWMEDIC LV-C series are just one way you benefit from the longtime experience and innovative developments at Rein Medical GmbH.

The LV-C models are particularly suited for critical clinical areas like operating theatres, intensive care units or accident and emergency departments.

In order to comply with the specific requirements in various areas, the models are available in several different configurations. These configurations differ in terms of housing type, video controller and panel type.

Extensive tests guarantee a high degree of safety and compliance with international standards IEC 60601-1 and IEC 60601-1-2. The newly developed anti-microbial coating ensures even greater hygiene.
Furthermore, all devices are equipped with anti-reflective glass and therefore the front panels are IP65 protected.
The VIEWMEDIC monitors with IP housing also offer all around IP65 protection. Among other things, this prevents the entry of dust and liquids and enables simple, thorough and hygienic cleaning. These properties will help to protect both staff and patients from dangerous infections.

The industrial panels used are highly durable and reliable due to the high-grade components involved. This ensures an authentic and brilliant image reproduction in the long term.

## IP65 compliant cable feedthroughs

LV-C monitors also provide cable feedthroughs on the rear of the device protected in accordance with IP65.

## Easy management via remote operation

Thanks to the compact infrared remote control function, you can operate the VIEWMEDIC LV-C monitors conveniently from a distance. You can also switch between the different signal sources or quickly access important submenu functions.


## Innovative touch panel for hygienic device control

The touch sensitive control panel - named COMMAND BAR - is located behind a protective glass. The COMMAND BAR makes it simple to control the LV-C just with a touch. This method of device control is extremely practical, hygienic, completely without wear and also works with surgical gloves.

Each LV-C is equipped with a COMMAND BAR to control the individual functions of the monitor.

***» 42″ LCD panel with FullHD (1920 x 1080)***
***» PC and video ports incl. 3G/HD-SDI[1)]***
***» User memory which can be named as desired***
***» DICOM preset***
***» Special cooling system protects against dust[2)]***
***» IP65 protection[3)]***
***» Protective glass with interference anti-reflection coating***
***» Possible to operate in portrait mode***
***» IR remote operation, GPIO and keypad***


COMMAND BAR



1) Only applies to ENDO models 2) Only applies to LV-C IP models
3) The LV-C IP models provide all around IP65 protection. Others provide front panel IP65 protection.

## An integrated luminance sensor warrants a precise and long-term backlight stabilisation

The new LV-C display controllers are equipped with backlight stabilisation. A sensor in the display continuously measures brightness and ensures long-term stable luminance.

For this reason, the DICOM Preset as well as a precisely implemented calibration remain stable over a particularly long period of time.

## Picture-in-picture function

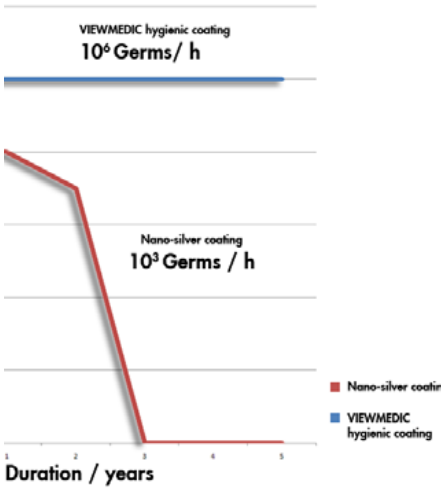
With the PiP function, different signal sources can be displayed in picture-in-picture mode. Another function is the picture-outside-picture (PoP) function. This allows two images to be displayed in equal size. Unlike the PiP function, the images are displayed side by side.

## Available PIP/POP configurations

| Main/ PiP source | VGA | DVI | HDMI | S-VIDEO | CVBS | YPbPr/YCbCr | RGBS | 3G / HD-SDI |
|---|---|---|---|---|---|---|---|---|
| VGA | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| DVI | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| HDMI | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| S-VIDEO | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ |
| CVBS | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ |
| YPbPr/YCbCr | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ |
| RGBS | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ |
| 3G / HD-SDI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |

## New hygienic coating increases safety

The VIEWMEDIC LV-C feature a hygienic coating which was specially developed for the medical sector. It provides you with an enormous advantage in comparison to traditional nano silver coatings. Nanoscale molecules are added to the hygienic coating. These molecules eliminate 5 million germs per hour, without leaving any by-products in the process. A particularly long active phase ensures long-term protection from all kinds of micro-organisms.
Furthermore, the micro structure of the coating guarantees a particularly impervious and scratch-resistant surface.
This saves money and ensures the best possible standards of hygiene.



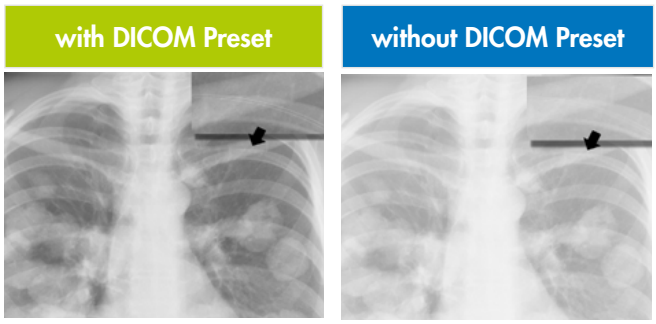
# LARGE SCREEN DISPLAYS

## DICOM Preset and hardware LUT calibration for an authentic image display

All LV-C displays are equipped with the practical DICOM Preset. This factory programmed display feature provides reliable display and image characteristics in accordance with DICOM standards.

You can use the optionally available PerfectLum calibration software and a measuring device to carry out a flawless DICOM calibration that can be repeated at any time.

As part of this process, the DICOM correction is stored in the LUT (look up table) of the monitor and operates independently of graphics card. Furthermore, several monitors can be synchronised. In addition, the software provides a calendar function and reminds the user at a specified interval to perform a test.




## Seven memory slots for screen profiles

All device settings, such as colour settings, video timings or brightness, can be stored in the screen profiles and can be retrieved easily at any time. For this purpose, seven memory slots are available.

These screen profiles can be created and freely named with up to 12 characters. Use speaking names for different applications like ENDO+Vitals or OPCAMinPACS.

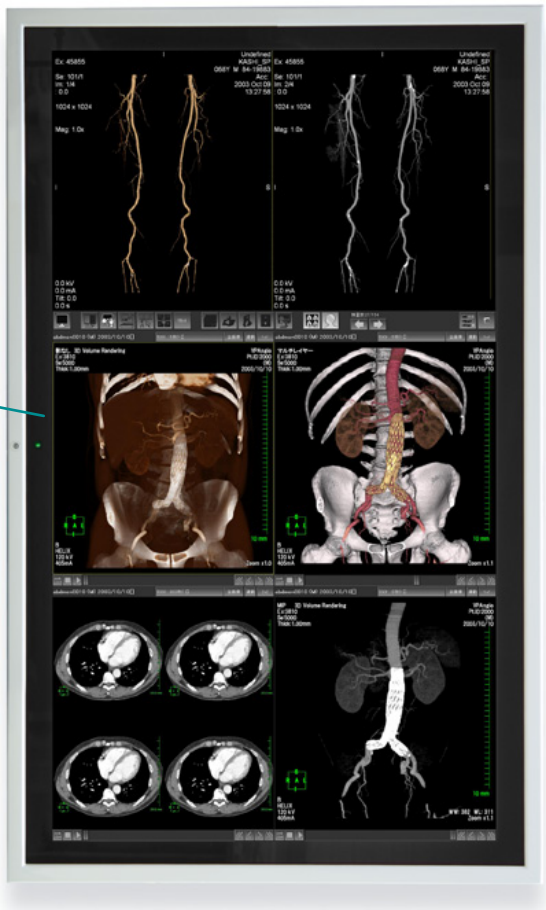
## Professional BNC interfaces enable simple cabling using RG6 coaxial cables

The video interfaces are available as BNC connectors.
This allows the entire video cabling in the operating theatre to be carried out with RG6 coaxial cables (75 Ω).

## Operation in portrait mode

This device is suitable for operation in portrait mode. In order to be able to use the so-called pivot function, you will need a signal source that displays the image rotated at 90°.

There are a range of software solutions on the PC market for this purpose. Many graphics cards can also output a resolution of 1080 x 1920.



# VIEWMEDIC LV-C PRODUCT FEATURES

## An overview of the LV-C product features

The VIEWMEDIC LV-C monitors are equipped with a wide range of features.
We have provided a summary and brief explanation of all important properties here to give you a quick overview.

## Product features at a glance


**IEC standards**
The product meets the IEC 60601-1 and IEC 60601-1-2 standards and has been certified as compliant by independent test laboratories.


**Hygienic coating**
A specially developed, anti-microbial coating that is easy to clean ensures long-term protection and excellent hygienic properties.


**Pivot function**
This device is suitable for operation in upright mode (portrait mode). The signal source must provide the image at a 90° angle for this purpose, as in the case of standard computers.


**DICOM preset**
The DICOM preset stored in the VIEWMEDIC display ensures improved image characteristics and allows for a more detailed picture.


**Multi-picture**
The display is capable of PiP (picture in picture) and PoP (two images side by side). Images can be configured independently of one another (contrast, brightness, etc.).


**Stabilised backlight**
An integrated sensor continually measures brightness and readjusts it over time. This guarantees optimal image brightness at all times.


**Protective glass**
A special optically anti-reflective glass protects the device panel and ensures IP65-compliant front-panel protection.


**User memory**
User profiles can be created and freely named. The user's image settings and multi-picture configurations can be stored.

## Special features of VIEWMEDIC LV-C


**Fanless**
No fan is used. This prevents dust and germs from being circulated.

## Special features of VIEWMEDIC LV-C IP


**Self-contained cooling system**
Thanks to the special design, dust and germs are never exchanged. The temperature of the system is regulated by means of a self-contained cooling system.


**IP65 protection**
The device is fully protected according to IP65. This means that it is protected against the entry of dust, fluids and is also fully protected against accidental contact.


**KVM extender**
The optionally integrable KVM extender allows lengthening (max. 100 m) the cable of all operating elements, for example, the mouse and the keyboard.

## Features of the 3G video interfaces


**3G/HD-SDI**
In addition to the possibility of looping numerous video signals, 3G/HD SDI ports are also provided.

# 3 STEPS TO YOUR LV-C MONITOR

## Which housing is right for you?

1. The issue of hygiene in hospitals and private practices is continually gaining public awareness. In view of the responsibility borne by the health sector, more and more institutions are focusing on the hygienic properties of a product when contemplating a new purchase.
The VIEWMEDIC LV-C series lets you choose between two aluminium housings. This has a direct impact on the hygienic properties of the monitor.
If you opt for the standard housing, you will receive a fanless device that is IP65 protected on the front panel. It is suitable for all areas where you depend on an optimal image reproduction. The exclusion of fans prevents the environment from being contaminated by dust and germs that have gathered in the device.

The VIEWMEDIC IP aluminium housing provides improved protection: It is fully protected according to IP65. Even the cable feedthroughs are covered by this protection class. Dust, fluids and pathogens are prevented from entering the monitor. In addition, no particles or germs are emitted to the environment.

The IP65 protected monitors can be cleaned using any hospital-approved disinfectants. The design has been tried and tested in everyday hospital life and is intended for use in all hygienically sensitive areas.Experience has shown that these properties and the modern hygienic coating contribute to improved on-site hygiene.

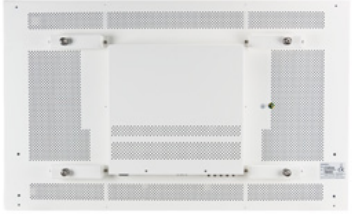
| IP | First digit indicates protection against solids | IP | Second digit indicates protection against liquids |
|---|---|---|---|
| 4 | Protection against foreign bodies with diameters >1 mm | 4 | Protected against splash water |
| 5 | Completely dust proof, protection against deposits of dust inside | 5 | Protected against water jets (from all directions) |
| 6 | Completely dust tight, protection against ingress of dust | 6 | Protected against the ingress of water upon temporary flooding |
| | | 7 | Protected against the ingress of water upon diving |

## Do you need additional video interfaces?

2. The many applications used in the hospital routine deliver images via a wide variety of signal paths. The LV-C models provide a digital input (DVI-D) and an analogue input (VGA) for PC image sources, as well as extensive video inputs.
The 3G models provide connection and loop options tailored to professional video applications, including a 3G/HD SDI interface (SMPTE 242M).

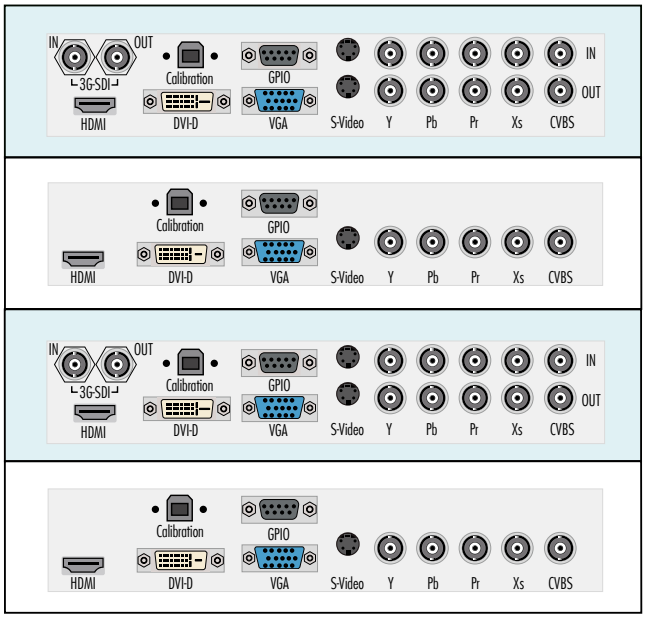
1.

All around IP65 protection



Front IP65 protection

2.



## Which panel type suits the application area: A P-MVA or S-IPS panel?

3. You can choose between two high-grade FullHD industrial panels with 10-bit colour depth and up to 1.06 billion colours.

Select a panel according to the individual specifications of your intended area of operation.

The **P-MVA panel** provides a high contrast ratio of 3500:1 and a rapid reaction time. The P-MVA panel is particularly impressive when it comes to presenting moving images thanks to its fluid and brilliant reproduction. Even for P-MVA panel, the homogeneity of illumination is particularly noteworthy.

The technology of the **S-IPS panel** offers a higher colour fidelity at extreme viewing angles.

3.

| | |
|---|---|
| P-MVA-Panel | Order number: VLVC242IPE |
| S-IPS-Panel | Order number: VLVS242IPE |
| P-MVA-Panel | Order number: VLVC242IP |
| S-IPS-Panel | Order number: VLVS242IP |
| P-MVA-Panel | Order number: VLVC242E |
| S-IPS-Panel | Order number: VLVS242E |
| P-MVA-Panel | Order number: VLVC242 |
| S-IPS-Panel | Order number: VLVS242 |

## Made in Germany

All VIEWMEDIC LV-C products are developed, manufactured and tested in Germany, so you get the highest possible quality. The approval and testing processes in Germany guarantee safety and compliance with the IEC 60601-1 and IEC 60601-1-2 standards.

# TECHNICAL SPECIFICATIONS LV-C 242

| Panel type | P-MVA panel (Standard) | S-IPS panel |
|---|---|---|
| Diagonal | 42" (106,7 cm) | |
| Colour | RAL 9010 white | |
| Panel technology | P-MVA | S-IPS |
| Active display areas | 930,24 x 523,26 mm | |
| Dot Pitch | 0,4845 mm | |
| Viewing angel | 178° / 178° | |
| Brightness | 600 cd/m² | |
| Contrast ratio | 3500 : 1 | 1000 : 1 |
| Response time | 4,5 ms | 9 ms |
| Number of colours | 1,06 billion | 1,06 billion |
| Monitor LUT (Look-Up-Table) | Controller 10/12-bit, panel 10-bit | Controller 10/12-bit, panel 10-bit |
| Resolution (max.) | physical / recommended 1920 x 1080 (FullHD) 16:9<br>1920 x 1200 (WUXGA) 1600 x 1200 (UXGA), 1280 x 1024 (SXGA), 1024 x 768 (XGA), 600 x 800 (SVGA), 640 x 480 (VGA), 720 x 400 | |

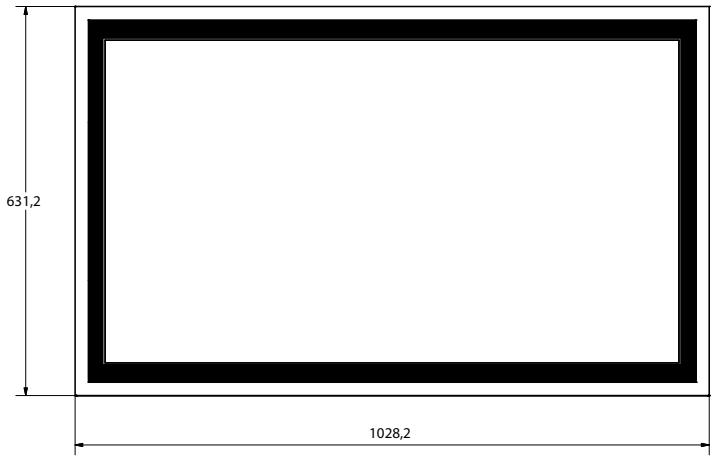
| Controller type | Standard | 3G |
|---|---|---|
| Interface see page 6 | | |
| Analog in | HD-15, Analog Video RGB : 0.7Vp-p, 75 Ohm | |
| Digital in | DVI (DFP compatible with optional adapter), Digital RGB, horizontal and vertical sync,<br>differential signal level range : TMDS(Max=1560mVp-p / Min=150mVp-p), 100 Ohm | |
| Multimedia in | HDMI 1.3a, tested timings (PAL/NTSC): 720p@60, 1080i@60, 1080p@60, 1080p@24 | |
| S-Video (Y/C) in<br>ENDO with video out (Loop through) | NTSC: 4 pin Mini DIN Y: 1Vp-p 75 Ohm positive, C : 0.286Vp-p 75 Ohm positive, Sync : 0.3Vp-p negative | |
| | PAL: 4 pin Mini DIN Y: Y : 1Vp-p 75 Ohm positive, C : 0.3Vp-p negative, Sync : 0.3Vp-p negative | |
| YPbPr, RGB/Component in<br>ENDO with video out (Loop through) | 3 x BNC, 0.7Vp-p, 75 Ohm positive, Sync On Green 0.3Vp-p sync negative, 1x BNC External Sync, 2.0V min. - 5.5V max. +/- bipolar<br>tested timings (PAL/NTSC): 1920 x 1080 (25p , 30p, 50p, 60p , 50i , 60i), 1280 x 720 (50p, 60p) | |
| CVBS (Composite Video) in<br>ENDO with video out (Loop through) | 1 x BNC, 1Vp-p, 75 Ohm sync negative | |
| SD/HD-SDI/3G in<br>with video out (Loop through) | ——— | 1 x BNC Digital composite signal mode by 2.970Gb/s,<br>2.970/1.001Gb/s, 485Gb/s, 1.485/1.001Gb/s und 270Mb/s,<br>supports SMPTE 425M-A, SMPTE 424M, SMPTE 292M,<br>SMPTE 259M-C and DVB-ASI |
| GPIO (Dsub9) | 9-pin for external control panel: Menu/Enter, Power, Menu down, Auto, Menu up, Ground, 2 x LED, signal change-over | |
| Calibration (USB-B) | Interface for optimal calibration via USB | |

## General information

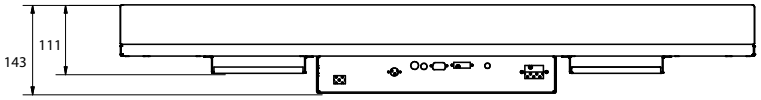
| | |
|---|---|
| Operation | IR-remote and 4 Buttons at the back of the device<br>removable cable remote (optional), GPIO protocol and GPIO customising on request |
| Power Supply | internal power supply, Input AC 100 - 120 V / 220 - 240 V (50/60 Hz) |
| Power consumption | max 270 W / stand-by mode < 5 W / turn off mode < 5 W |
| Physical dimensions (HxWxD) | 1028,2 x 631,2 x 144 |
| Weight | 32 kg |
| Ambience conditions | ambience temperature +0° C bis +35° C / air humidity 30% - 75% |
| Power management | VESA DPMS |
| Plug & Play | VESA (DDC1/DDC2) |
| VESA-Mounting | 4 x M8 screw socket 380 x 665 & VESA 600 x 200 (MIS-F), hor./vert. centered |
| Safety test | IEC 60601-1, IEC 60601-1-2 |
| Warranty | 2 years Bring-In-warranty |

# DIMENSIONS VIEWMEDIC LV-C 242

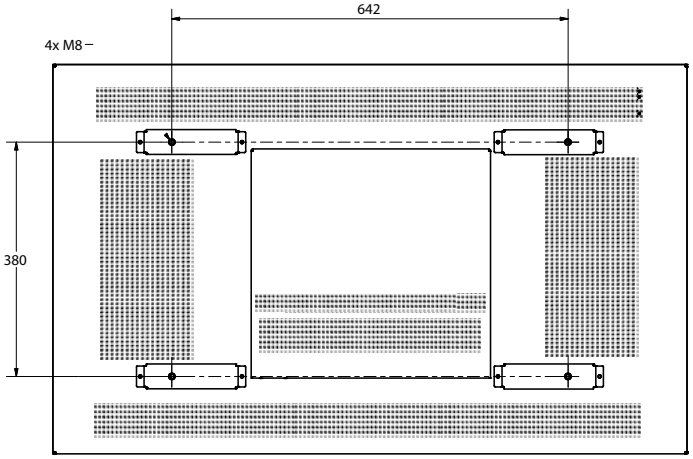
Front



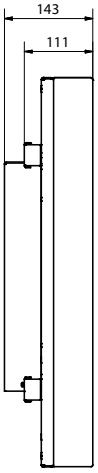

Top/Bottom




Back




Side

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| Dot Pitch | 0,4845 mm | |
| Viewing angel | 178° / 178° | |
| Brightness | 600 cd/m² | |
| Contrast ratio | 3500 : 1 | 1000 : 1 |
| Response time | 4,5 ms | 9 ms |
| Number of colours | 16,7 million | 1,06 billion |
| Monitor LUT (Look-Up-Table) | Controller 10/12-bit, panel 8-bit | Controller 10/12-bit, panel 10–bit |
| Resolution (max.) | physical / recommended 1920 x 1080 (FullHD) 16:9<br>1920 x 1200 (WUXGA) 1600 x 1200 (UXGA), 1280 x 1024 (SXGA), 1024 x 768 (XGA), 600 x 800 (SVGA), 640 x 480 (VGA), 720 x 400 | |

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| Analog in | HD-15, Analog Video RGB : 0.7 Vp-p, 75 Ohm | |
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| Multimedia in | HDMI 1.3a, tested timings (PAL/NTSC): 720p@60, 1080i@60, 1080p@60, 1080p@24 | |
| S-Video (Y/C) in<br>ENDO with video out (Loop through) | NTSC: 4 pin Mini DIN Y: 1Vp-p 75 Ohm positive, C : 0.286 Vp-p 75 Ohm positive, Sync : 0.3 Vp-p negative | |
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| YPbPr, RGB/Component in<br>ENDO with video out (Loop through) | 3 x BNC, 0.7 Vp-p, 75 Ohm positive, Sync On Green 0.3 Vp-p sync negative, 1x BNC External Sync, 2.0 V min. - 5.5 V max. +/- bipolar<br>tested timings (PAL/NTSC): 1920 x 1080 (25p , 30p, 50p, 60p , 50i , 60i), 1280 x 720 (50p, 60p) | |
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| GPIO (Dsub9) | 9-pin for external control panel: Menu/Enter, Power, Menu down, Auto, Menu up, Ground, 2 x LED, signal change-over | |
| Calibration (USB-B) | Interface for optional calibration via USB | |

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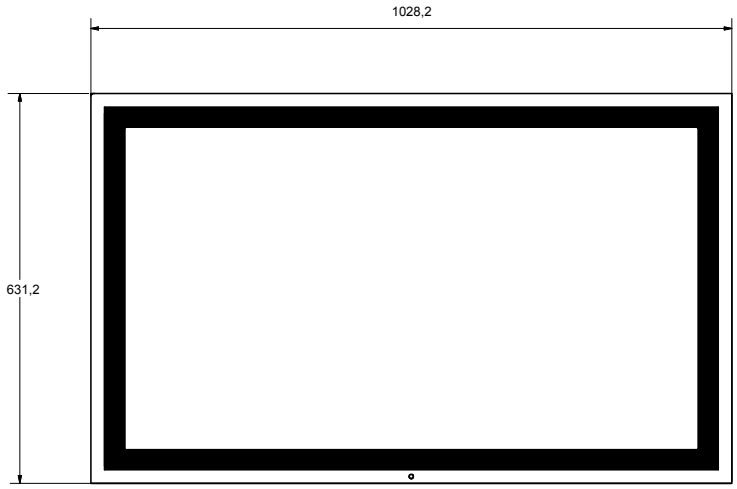
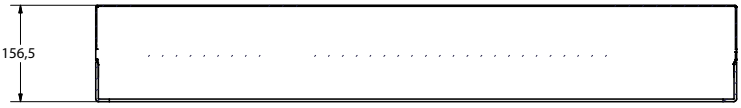
| Power management | VESA DPMS |
| Plug & Play | VESA (DDC1/DDC2) |
| VESA-Mounting | 4 x M8 screw socket 380 x 665 & VESA 600 x 200 (MIS-F), hor./vert. centered |
| Safety test | IEC 60601-1, IEC 60601-1-2 |
| Warranty | 2 years Bring-In-warranty |

# DIMENSIONS VIEWMEDIC LV-C 242 WITH IP65 PROTECTION

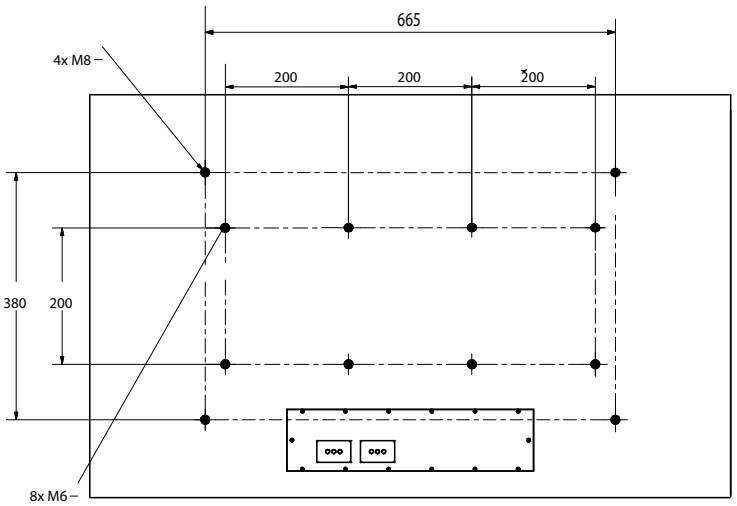
Front



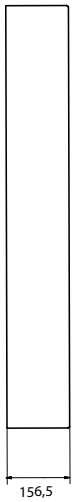

Top/Bottom




Back




Side

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# CONTACT

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EN ISO 13485:2003
+ AC:2007

▶ Voluntary participation in regular monitoring

DEKRA Certification
DEKRA
certified


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