OLÓRIN

Display User's Manual

VistaLine

VLG240

www.olorin.com

Contents

Preface

Thank-you for purchasing this Olorin LCD Monitor.

To get the full benefit of the features that this product offers you, it is important that you read this User's Manual which, among other things, will explain how to properly install and operate the monitor. In this user guide there are detailed product specifications, explanations for many of the technical terms used in this manual as well as information on regulatory approvals, cleaning, service instructions, warranty terms, waste disposal and some other useful information.

It is of utmost importance that you carefully read and follow the safety instructions and safety notices included in this User´s Manual.

Failure to comply with these instructions could in some instances cause bodily harm to yourself or other persons and/or un-repairable damage to the product or to other attached devices / appliances.

Throughout this manual the following symbols are used to guide you to the proper use of the product:

Symbols

Expresses DO NOT.

Warning

Person could be at risk of severe injury or death.

Caution

Person or properties could be at risk of injury or damage.

Expresses MUST DO.

Keep this Users Manual in an easy accessible and safe place for future reading of it. If you lose your copy, you may request a new one by contacting us at our internet home page www.olorin.com.

Olorin reserves the right to change the specifications of this product without any notice. Such changes could cause the operation of the product to be slightly different from the descriptions in this copy of the Users Manual.

Windows is a trademark and/or registered trademark of Microsoft Corporation in the United States and/or other countries.

VESA is a trademark of the Video Electronics Standard Corporation. All other product and company names are trademarks of their respective owners.

Product Features

Standard delivery

The product is normally delivered in one main part.

- a LCD panel with TFT picture element which also contains the lamps for the backlight along with necessary electronics and cable connectors as well as power connector. These parts are mounted inside a metal housing.

Power management

This unit has power management system. The monitor will go into sleep mode, where power consumption is less than 5W, whenever either horizontal or vertical signals or both disappear. The monitor is using low power LED backlight.

High performance panel element

The monitor features a standard Full HD resolution which makes it compatible with the majority of hardware. The monitor’s wide viewing angles makes it easier for several operators to view the same image at once. It has LED backlight for lower power consumption and longer product life.

Intended use of this product

This product has been designed and developed for use as a visual output device for direct connection to a Personal Computer and PC compatible devices as well as other video generating equipment, such as cameras. The product will accept industry standard video signals coming over cables with industry standard type connectors. The product will operate and function properly in normal office environment and under conditions as specified in the Product Specification chapter.

Warning

Attempting to use the product for any other purpose than its intended use or connecting to other devices could cause damage to the product and / or to other property and equipment. There could also be a risk of bodily harm to yourself or other persons.

The product operates on 24V DC power and must be connected thru the AC 100-240V, 50-60Hz to 24V DC adapter which is included with the product. Power to the adapter should be coming from an ordinary grounded AC 100-240V power outlet.

Warning

Never try to connect the product to any power source other than the 24V adapter delivered together with the product. There would be a risk of electrical shock which could cause bodily harm, possibly even death. Most certainly such electrical shock will damage the product.

The product can also be delivered with certain options installed. Such options could be touch panel or other special accessories.

Warning

All other uses of the product, including but not limited to attempts such as;

• connection to other types of power sources

• using other types of mounting or placement of the product

• connection to other devices than those for which the monitor has been designed.

will void any and all warranties of the product and the manufacturer will not be responsible or libel for any bodily injury or property damage either directly or indirectly caused by such non-intended use of the product.

Intended Markets

Olorin products are developed primarily for sales and installation in countries within Europe and North America. The products comply with all regulations and directives issued by the European Union and many also comply with regulations for the United States.

Warning

The products are not intended for sales and/or installation in countries, which require other or additional mandatory approvals than those required by the authorities of the European Union or the United States.

Consult the product identification label or product specification for regulatory approvals that apply to this product.

Safety Precautions

It is important that you read through the following notes of Safety Precautions to avoid any damage to the Product, yourself or other property. Following these precautions will also ensure that you get the best use of the Product.

Warning

DO NOT OPEN THE PRODUCT. There are no user serviceable parts inside. Because of high voltage inside there is a risk of bodily injury or death. Only authorized and qualified service personnel should maintain the product.

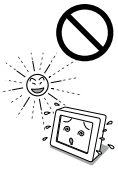
Cautions when setting up

Caution

Do not put the unit on unstable places (on a wonky table or in an inclined place), which might cause injuries if it falls down.

Caution

Do not place the unit where it is subject to direct sunlight or near any heating device. This could cause overheating resulting in damage to the product and eventually causing a fire.



Cautions when using

Warning

Do not put the unit in such a place where there is bad air circulation, dust, humidity, oily smoke or steam. It may lead to a fire.

Caution

Do not put any metal materials or flammable foreign objects into the unit through the vent holes. It may lead to electric shock and/or fire. Immediately disconnect the unit from the power outlet and contact your local re-seller for service.

Caution

Scratching or hitting with hard objects may damage the unit.

Safety Precautions

Warning

Do not use the unit turned over on its back, put on its side, or upside down. These positions may cause the heat that the unit generates to accumulate inside the unit. Such overheating can cause damage to the product and eventually start a fire.

Caution

When using the unit for several hours, you should take a 10-15 minute break every hour to reduce eyestrain. Failure to do so could cause injury to your eyes.

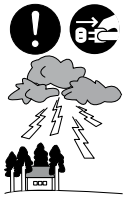
Abnormal circumstances

Warning

In case of any abnormality such as odor, sound, and overheat taking place, immediately turn off the power and disconnect the plug from the outlet. For assistance contact your local re-seller.

Warning

In the event of thunder, immediately turn off the power and disconnect the plug from the outlet. Lightning strikes may cause electric shock and/or fire.



Warning

In the event of broken panel and leaking liquid crystal, do not inhale, swallow, or touch the liquid crystal. It may cause you to get poisoned and/or having a skin irritation. If you put it in your mouth, immediately gargle with water and contact a doctor to get a checkup. In case of getting it on your skin and/or cloth, wipe it off with alcohol and rinse them.

Safety Precautions

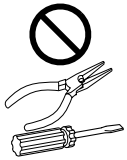
Maintenance

Warning

Do not remove the plastic cabinet. There are high voltage parts inside that may lead to electric shock. Ask a re-seller for adjustment and inspection.

Warning

Do not remodel or repair. It may lead to fire, electric shock, or injuries.



Caution

Clean the dust off the display once a year. The dust that accumulates on the unit may lead to fire. Ask a re-seller for adjustments and inspection.

Caution

Disconnect the plug from the outlet when you do not use the unit for a prolonged period.

Regulatory Tests and Certifications

All Olorin products have normally been tested to comply with all mandatory Regulatory requirements for the markets where the products are sold. Approvals are listed by each Regulatory Agency under the name of the manufacturer and model number as specified on the Product Identification Label. Copies of such approvals can be requested by contacting Olorin AB via www.olorin.com.

Approvals applicable for this specific product is listed in the Product Specification section of this manual.

Tests and Approvals for VistaLine Series

Each product in the VistaLine series has been tested as an IT-category product for normal office environment and for use as a desktop monitor. They comply with the following standards and regulations:

- CE for use within the European Union member states
- WEEE for use within the European Union member states
- RoHS for use within the European Union member states

Tests and Approvals for MedicLine Series

Each product in the MedicLine series has additionally been tested for risk of electrical shock and to comply with

- MDD directive 93/42/EEC class 1 for the European Union member states
- EN60601-1, EN60601-1-2
- IEC 60601-1

Under these directives and regulations, MedicLine products are complying with the requirements for a Class 1 product with continuous mode of operation. The monitor must not be in direct contact with a patient.

Warning

Using any other 24V adapter than the medical approved one delivered with the product or connecting this to a non-grounded power outlet voids the approval.

Warning

Before taking the product in use, the person installing it must test that the grounding of the monitor complies with the impedance requirements of the country where it is being installed.

Warranty and Limitation of Liability

Warranty

For details of the warranty please visit Olorin's website, http://www.olorin.com, and visit the Service & Support section of the site.

Limitation of Liability

Olorin AB, including any of its affiliates, manufacturing partners and sales agents, is not liable for any claim for damages including, but not limited to, loss of business profits, disruption of business, change or loss of saved data, when damage is arising from

- fire, earthquakes, actions taken by any third party, any other accidents, intentionally or negligently, improper use of the product by the user, or any use under other abnormal circumstances,
- the use or inability to use this product,
- the use for other purposes than the intended use as described in this document
- malfunctions caused by the combination of connected devices

Product identification

Affixed to the panel part of the product is a Product Identification Label. It is normally affixed in the connector compartment. This label contains the following information:

- Olorin logo and web address
- Product Family name
- Manufacturers product number
- Part number
- Serial Number
- Power information
- Symbols for Regulatory approvals
- WEEE symbol for disposal of the product
- Manufacturers name
- Country of Origin

Cleaning of the Product

Caution

Be careful when cleaning the metal housing of the panel so that no liquid or other objects will drip down into the product through the ventilation holes. This could cause electric shock and damage the product.

Normal dust and lint particles can be easily wiped off with a soft cloth tissue.

For grease or dirt that is more firmly fixed to the product, the use of a soft and dry micro fiber based cloth tissue will normally remove it all.

You can also use a mild liquid detergent mixed with water for cleaning together with a soft cloth tissue. This will clean both the cabinet and the LCD panel well. For the LCD panel you can also use isopropyl alcohol based liquids (without abrasive) or non-ammoniac glass cleaner.

When cleaning the LCD panel you will get the best result if you clean the panel when its surface has cooled down to normal room temperature. On a warm panel the liquid evaporates too quickly leaving traces of the cleaning. Afterwards wipe the surface dry with another soft cloth tissue.

Warning

When cleaning the cabinet do NOT use thinner, benzene or alcohol as these might damage the plastic and cause the paint to peel off. Do NOT use organic solvent such as acetone and toluene when cleaning the panel.

Warning

If you use any liquid for cleaning you must first un-plug the power to the monitor and not connect it again until you are certain that all the liquid particles have evaporated. Failure to do so could result in electric shock.

Caution

Do not use any tools with hard or sharp material for cleaning. The panel can very easily be scratched or damaged from such tools.

Caution

Do not press hard on the panel when cleaning. This could cause damage to the LCD panel element.

Disposal of the Product

Do not dispose of the unit with general wastes.

The monitor has been manufactured to comply with the EU directive on RoHS (Reduction of Harmful Substances) but even so the LCD panel contains a small amount of mercury and the monitor should therefore be disposed of according to local laws. Please get information from your local re-seller how collection is handled in your country. For countries that are members of the EU the WEEE directive applies and proper marking is on the product label affixed to the monitor.

Getting started

Before operating this monitor, please make sure that all items listed below are present in your delivery.

Standard Items

- LCD monitor
- User's manual
- AC/DC adapter
- AC Power cord
- HDMI cable
- DVI cable
- DisplayPort cable
- VGA cable
- Olorin External OSD controller

If any of the above items are found missing or if you wish to order the optional items, please contact your reseller.

Mounting on a wall or LCD arm

The Monitor has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M4 set 100 mm.

If you intend to mount the monitor on the wall, we strongly recommend that you use wall mount kits with attached M4*10mm screws and which can hold a load of more than the weight of the monitor. Ensure it is securely and safely installed.

Warning

If you mount any device using these 4 holes on the back of the panel you must not use screws longer than 10 mm. Longer screws will cause damage which is not covered by the product warranty.

Connection Method

No tools are required to connect the LCD monitor to your PC or other device. Simply follow the instructions outlined in the next few pages.

Connectors for the signal cables and power are located on the back of the panel. Please refer to the diagram on the next page for the connector configuration.

Connect Power Adapter and Cable

Connect the round shape plug end of the AC/DC adapter to the DC Power input connector of the LCD monitor. Connect the female end of the power cable to the AC power input receptacle on the AC/DC adapter. Then, plug the male end of the power cable into an grounded AC outlet.

Make sure you use the AC to DC adapter delivered with the product.

Caution

Connect Video signal cable

On next page you can see which input connectors there are available on your monitor and which cable you should connect depends on your source for the input signal.

Olorin recommends that the monitor is connected with DisplayPort or HDMI.

If your source is HDMI then you need to use a HDMI to HDMI cable.

If your source is DVI then you need to use a DVI to DVI cable.

If your source is DisplayPort then you need to use a DisplayPort to DisplayPort cable.

If your source is VGA then you need to use a VGA to VGA cable.

When you disconnect the cord /cables, be sure to hold the connector and not the cable itself. Also make sure you use cables and connectors of high quality.

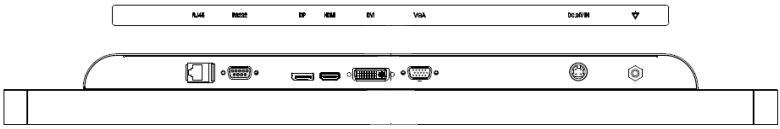
Caution

Connect Olorin External OSD

To connect the External OSD controller, use an CAT 5 RJ45 ethernet cable between the monitor and External OSD.

Input signals

Connections



1. **RJ45**
   RJ45 (8P8C) connection is used for controlling the monitor with an Olorin External OSD, only use the Olorin External OSD that is included with the monitor with the RJ45 input.

2. **RS232**
   RS232 (D-Sub 9-pin) connection is used for controlling the monitor via serial communication, please contact Olorin AB in order to get access to the commands used for serial communication.

3. **DP**
   DP connection is used for connecting the monitor to a video source with DisplayPort out. The DP port supports DisplayPort version 1.2a.

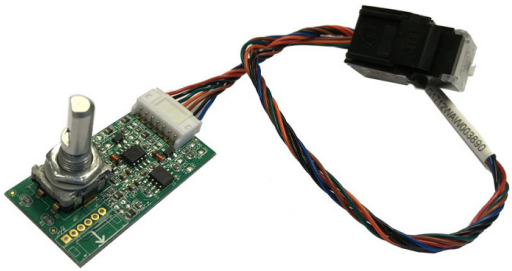
4. **HDMI**
   HDMI connection is used for connecting the monitor to a video source with HDMI out. The HDMI port supports HDMI version 1.3.

5. **DVI**
   DVI-I Dual Link connection is used for connecting the monitor to a video source with DVI out.

6. **VGA**
   VGA (D-Sub 15-pin) connection is used for connecting the monitor to a video source with VGA out.

7. **DC 24V IN**
   DC24V (4-pin) input is used for connecting the Power Adapter included with the monitor. Only use the power adapter that is included with the monitor.

8. **Ground bolt**
   Potential equalization bolt.



Olorin External OSD, via RJ45

The External OSD (Control Dial) is a multi-functional device lthat can be connected to the monitor via RJ45. It has three movements - rotate upward, rotate downward and press inward as a button.

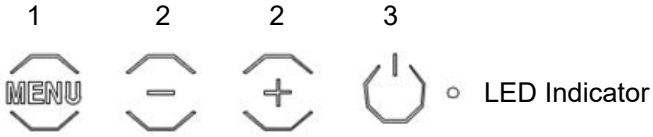
1. **Power ON / OFF**
   Press the Control Dial to power the unit on from the off stage if the display is off. To turn the power off, press the Control Dial and hold for at least three seconds until the display turns off.

2. **OSD Control**
   While the monitor is on (image on the screen), pressing on the Control Dial activates the OSD. While the OSD menu is active, use the three way movements of the Control Dial to adjust the monitor.

Rotate Downward:	Move Up/Right, Increase, Larger, More
Rotate Upward:	Move Down/Left, Decrease, Smaller, Less
Single Button Press:	Execute, Do, Save

3. **Change of Brightness Setting**
   If you rotate the Control Dial without first having clicked to enter the OSD, then it will change the brightness setting. This function is disabled when the monitor is in DICOM, Calibration mode or Special Preset mode.

How to Operate



OSD Sensor Keys *1

The monitor is operated with OSD Sensor Keys (touch keypad) on the bottom right side on the front of the monitor, there are several buttons that are used controlling different things on the monitor. Press the keypad once to activate the OSD (the buttons will light up in blue) and then make your selection.

1. **MENU**
   Press this button to open and close the Main menu and make selections.

   Please view the next page for details on the OSD menu.

2. **DOWN (-)** and **UP (+)**
   Use these two buttons to control the functions of the OSD menu. When you're not in the OSD menu, these buttons will adjust the Brightness (or Dimming if enabled) of the monitor.

3. **POWER**
   Press this button to turn on the monitor. When the monitor is turned on, press and hold this button for three seconds, a message will appear on screen, to turn it off.

   The POWER button will light up in blue when the monitor is turned OFF.

LED Indicator *1

The LED indicator is GREEN when the monitor is ON and an Input source is displayed, the indicator is ORANGE when the monitor is in stand-by and no Input source is available.

*1 Only available for the **VLG24006GTF** version of the monitor

Charts of OSD Adjustment Functions

No Signal

In order to operate the monitor, an input signal need to be connected. Otherwise the monitor will display the message ”No Signal”.

Please see this user manual’s chapters about ”Connection method” and ”Input signals”.

Main Menu

The OSD’s main menu will show easily identifliable icons for easy operation, please see the table below for a brief description of what each menu option does.

Brightness	Sub menu for adjusting the brightness (luminance) of the monitor.
└ Brightness	Adjust the brightness of the monitor, from 0 to 100.
Color	Sub menu for setting the color mode of the monitor.
├ Gamma	Set the monitor’s display mode to Gamma 1.8, 2.0, 2.2 or 2.4.
└ Temperature	Set the monitor’s color temperature to Warm, Neutral, Cool or User defined. User defined color temperature can be adjusted with Red, Green and Blue gain.
Display	N/A
Input	Sub menu for selecting the input source to display on the monitor.
├ Auto Select	Monitor will automatically select the first available input.
├ VGA	Select the VGA input
├ DP	Select the DisplayPort input.
├ HDMI	Select the HDMI input.
└ DVI	Select the DVI input.
OSD	Sub menu for controlling various aspects of the On-Screen Display
├ H Position	Set the horizontal position of the OSD on the display.
├ V Position	Set the vertical position of the OSD on the display.
├ Timeout	Set the time before the OSD disappears after idle.
├ Language	Set the OSD language.
│ ├ English	Set English as the OSD language.
│ ├ Deutsch	Set German as the OSD language.
│ ├ Français	Set French as the OSD language.
│ ├ Italiano	Set Italian as the OSD language.
│ ├ Japanese	Set Japanese as the OSD language.
│ └ Chinese	Set Chinese as the OSD language.
└ Transparency	Set the transparency of the OSD, to see through it.
System	Sub menu for controlling the monitor’s core functions.
└ Reset	Reset the monitor to factory defaults
Exit	Exit the Main Menu

Applicable Signal Timings

The display may not work correctly with timings other than listed below.

Name	Resolution		H Frequency (kHz)	V Frequency (Hz)	VGA	DVI	HDMI	DP
VGA	640	480	31.47	59.94	O	O	O	O
SVGA	800	600	35.16	56.25	O	O	O	O
	800	600	37.88	60.32	O	O	O	O
XGA	1024	768	48.36	60	O	O	O	O
SXGA	1280	1024	63.98	60.02	O	O	O	O
UXGA	1600	1200	75	60	O	O	O	O
1080P	1920	1080	68	60	O	O	O	O

Specifications

VLG24006GTF

LCD Panel	Backlight Type	WLED
	Screen Technology	VA
	Surface Treatment	Antiglare, Hard coating (3H)
	Screen Size, Diagonal	23.8"
	Screen Size, H/V	527.04 × 296.46 mm
	Aspect Ratio	16:9
	Resolution	1920 x 1080, FHD
	Color Depth	16.7M, 72% NTSC
	Contrast Ratio	3000 : 1 (Typ.) (TM)
	Luminance	250 cd/m² (Typ.)
	Viewing Angles	89/89/89/89 (Typ.)(CR≥10)
	Response Time, ms	10/16 (Typ.)(Tr/Td) ms
	Refresh Rate	60 Hz
Display Modes	Gamma	1.8, 2.0, 2.2, 2.4
	Temperature	Cool, Neutral, Warm, User (RGB)
Features	Automatic Luminance Control	N/A
	Dimming	Olorin Dimming, 0 to 100%
	Video Scaling	N/A
Video Inputs	DisplayPort	DisplayPort 1.2a x 1
	DVI	DVI-I Dual Link x 1
	HDMI	HDMI 1.3 Type A x 1
	VGA	D-sub 15 pin x 1
Control Inputs	Serial Command, RS-232	D-sub 9 pin x 1
	Olorin External OSD	RJ45 x 1
Power	Power Input Type	External adapter
	Power Input Rating	100-240Vac, 50/60Hz
	Adapter Model Name	Adapter Technology, ATS065TP240D15205
	Adapter Power Output Rating	24V 2.71A
	DC Input	24V
	DC Connector	4 Pin
	Power consumption	Full Brightness: 100 W Power Saving: 2 W
Compliance	EU	CE(EN 55032/EN 55024/EN 61000-3-2/EN 61000-3-3)
Warranty	DOA	Three (3) months, max. 500 h.
	Standard	Two (2) years

Specifications

VLG24006GTF

Mechanical	Dimensions without Base Unit	548.8 x 365.2 x 53 mm
	Weight without Base Unit	5.47 Kgs
	Housing Color	Black
	Housing Material	Aluminum
	IP Rating	IP65 in front
	Mounting Standard, VESA	100 x 100 mm, 200 x 100 mm
	LED Indicator	Green: ON Orange: Stand-by
	OSD Interface	Sensor Keys on Front Bezel
	OSD Sensor Keys	Menu, Up, Down, Power
	Anti Reflective Film	N/A
	Screen Protection	AG 100, 1.8mm
	Security slot	N/A
	Ground bolt	Potential equalization bolt
Environmental	Operating Temperature, C	0 to 40
	Operating Humidity, % RH	10 to 90
	Operating pressure, hPa	700 to 1060
	Storage Temperature, C	-20 to 60
	Storage Humidity, % RH	10 to 90
	Storage pressure, hPa	500 to 1060

Please note that values for Brightness, Contrast, Response time and Viewing angles are nominal values. Due to delicate manufacturing techniques, these values can be different for each individual monitor.

Specifications

VLG24009

LCD Panel	Backlight Type	WLED
	Screen Technology	VA
	Surface Treatment	Antiglare, Hard coating (3H)
	Screen Size, Diagonal	23.8"
	Screen Size, H/V	527.04 × 296.46 mm
	Aspect Ratio	16:9
	Resolution	1920 x 1080, FHD
	Color Depth	16.7M, 72% NTSC
	Contrast Ratio	3000 : 1 (Typ.) (TM)
	Luminance	250 cd/m² (Typ.)
	Viewing Angles	89/89/89/89 (Typ.)(CR≥10)
	Response Time, ms	10/16 (Typ.)(Tr/Td) ms
	Refresh Rate	60 Hz
Display Modes	Gamma	1.8, 2.0, 2.2, 2.4
	Temperature	Cool, Neutral, Warm, User (RGB)
Features	Automatic Luminance Control	N/A
	Dimming	Olorin Dimming, 0 to 100%
	Video Scaling	N/A
Video Inputs	DisplayPort	DisplayPort 1.2a x 1
	DVI	DVI-I Dual Link x 1
	HDMI	HDMI 1.3 Type A x 1
	VGA	D-sub 15 pin x 1
Control Inputs	Serial Command, RS-232	D-sub 9 pin x 1
	Olorin External OSD	RJ45 x 1
Power	Power Input Type	External adapter
	Power Input Rating	100-240Vac, 50/60Hz
	Adapter Model Name	Adapter Technology, ATS065TP240D15205
	Adapter Power Output Rating	24V 2.71A
	DC Input	24V
	DC Connector	4 Pin
	Power consumption	Full Brightness: 100 W Power Saving: 2 W
Compliance	EU	CE(EN 55032/EN 55024/EN 61000-3-2/EN 61000-3-3)
Warranty	DOA	Three (3) months, max. 500 h.
	Standard	Two (2) years

Specifications

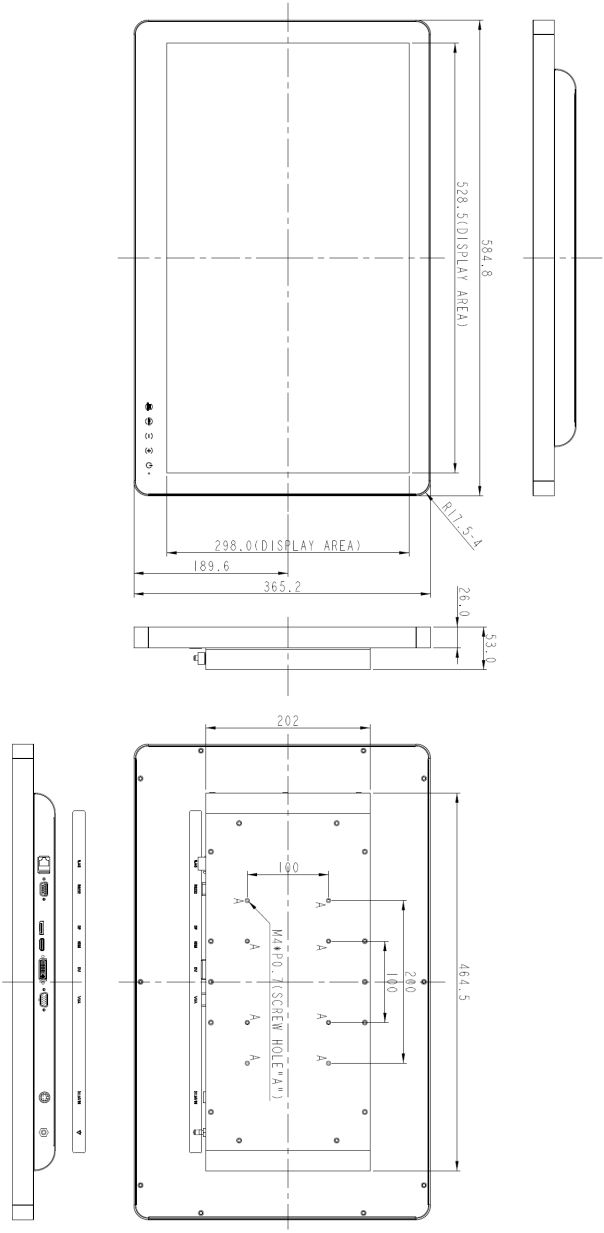
VLG24009

Mechanical	Dimensions without Base Unit	560 x 325.8 x 55.7 mm
	Weight without Base Unit	4.63 Kgs
	Housing Color	Grey
	Housing Material	SECC
	IP Rating	N/A
	Mounting Standard, VESA	100 x 100 mm
	LED Indicator	N/A
	OSD Interface	Olorin External OSD only
	OSD Sensor Keys	N/A
	Anti Reflective Film	N/A
	Screen Protection	N/A
	Security slot	N/A
	Ground bolt	Potential equalization bolt
Environmental	Operating Temperature, C	0 to 40
	Operating Humidity, % RH	10 to 90
	Operating pressure, hPa	700 to 1060
	Storage Temperature, C	-20 to 60
	Storage Humidity, % RH	10 to 90
	Storage pressure, hPa	500 to 1060

Please note that values for Brightness, Contrast, Response time and Viewing angles are nominal values. Due to delicate manufacturing techniques, these values can be different for each individual monitor.

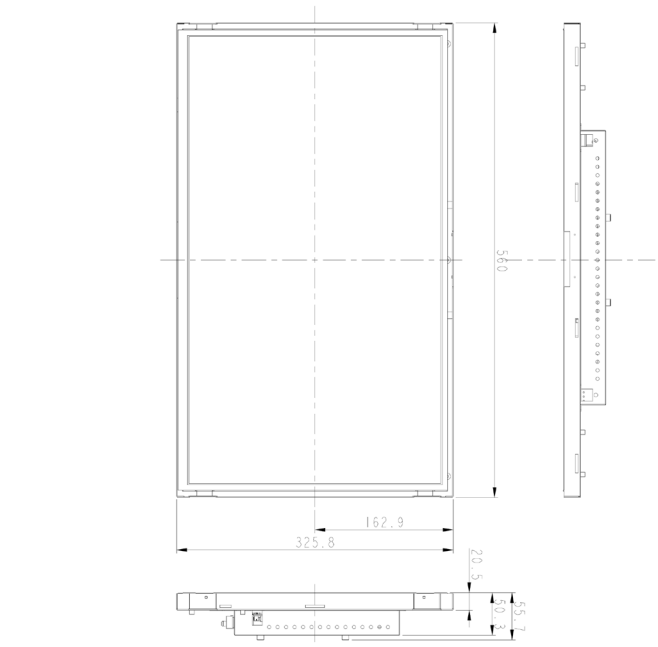
Drawings

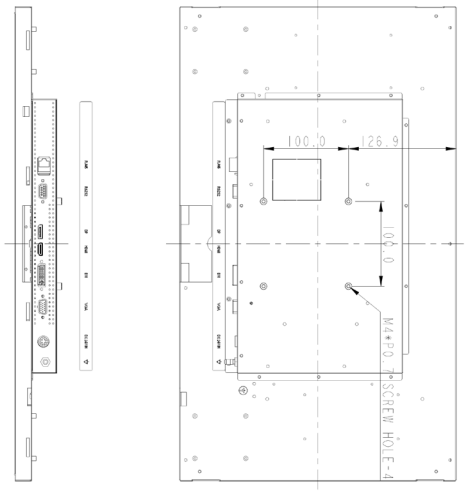
VLG24006GTF



Drawings

VLG24009





Special Considerations for LCD Panels

Manufacturing of LCD panels is very delicate with large panel elements being manufactured in one unit and then cut to smaller sizes to be used in different products. In addition a panel consists of several layers of components (back-light lamps, diffusers, electronics and color filters). There are different technologies used with each having its advantages and disadvantages resulting in end user products with different specifications even when taken from the same manufacturing batch. Below are explanations to some observations that can be made and which are not considered defects since they are merely problems inherent in the technology of LCD monitors. Over time, the performance of the panel will also change. Some of the information below refers to color monitors only.

Native resolution

All panels have a fixed number of pixels in both horizontal and vertical directions. For instance is a 19" panel normally built with 1280 pixels horizontal and 1024 vertical giving a native resolution of 1280x1024. At this resolution you will get the sharpest picture and it is therefore recommended that you use the native resolution. Thru scaling technologies it is possible to use other resolutions but the picture will be less sharp. Some text will appear to have shadows.

Native color temperature

Most commonly LCD panels are manufactured to have a color temperature of 6500K (Kelvin degrees) for full white picture. The color temperature can vary with shade of grey being showed. For instance it could be 7500K at 50% grey and more than 9000 at 90% grey. For an individual panel the color temperature at full white can also vary by +/- 15%. Inside the panel there is a color filter and over time this will age and become more yellow in its color tone. Therefore, over time, the color temperature will gradually go lower so that at full white it could come down to 5000K.

Typical values

In product specifications there are values for brightness, contrast, view angles etc. The values are given as "typical values" meaning that actual value for any given product can vary by up to 20% from this value. For instance, a product specified to give 300 candela as typical maximum value for brightness may for individual samples vary from 240 candela to 360 candela. The values specified are for a new product. Due to wear of the backlight lamps the values will change over time and gradually become lower.

Uniformity and Mura patterns

Depending on the placement of the backlight lamps, how many they are and the size of the panel the brightness over the entire panel will vary by up to 20%. Generally the highest brightness is in the centre of the panel and becoming gradually lower towards the outer edges. This does not follow a linear curve and there might also be "areas" on the screen where there is a noticeable difference in the uniformity. Such clouded areas are referred to as "Mura" and are more related to the panel itself than to the backlight. These Mura patterns are different in size and shape and are color and grayscale dependent since they are a result from deterioration of the liquid crystal alignment layer. Mura is most commonly caused by long term operation under high ambient temperature and is a phenomenon that cannot be repaired.

Non-performing pixels

Each pixel on the panel actually consists of 3 sub-pixels (one for each of Red, Green and Blue). A 19" panel with 1280x1024 therefore has almost 4 million sub-pixels. It can happen that a pixel can get stuck in ON status (bright pixel defect) or in OFF status (dead pixel defect) or in an in-between status (low bright pixel defect). Usually such defects only affect a sub-pixel and not an entire pixel. The defect can therefore only be seen at certain color settings. The ISO 13406-2 standard specifies how many pixel defects that are acceptable before an entire panel will be considered faulty.

Special Considerations for LCD Panels

Olorin products are warranted to follow this standard as a Class II product.

Image sticking

If the same image is shown for a long period of time there is a risk for “image sticking”. This is a result of that the thin film transistors will get stuck in a certain position and continue to show that image even when a new image is sent to the panel. The image will disappear if you put a full white picture on the monitor for several hours. The best solution is to have a screen saver that moves around on the screen so that no static image is constantly shown.

Slow operating in cold environments

The thin film transistors contain some liquid that will cause them to operate slowly in cold temperatures. When temperature inside the panel has increased to normal room temperature, the speed will be up to normal again.

Cable length and input signal

When using long cables from the video source (PC, camera etc) to the monitor the signal level will be lower and cause distortions in the picture shown. A low quality graphic board could also cause such problems. Always use high quality graphic boards and signal cables.

Longer life for your monitor

The components that have biggest influence on the useful life of the product are the backlight lamps. These are made of CCFL (Cold-cathode Fluorescent Lamp) or LED (Light Emitting Diode). Over time these will decay and give less and less light. They generally have a spedification of 40,000 hours before they are worn out. If they are constantly on one year of use corresponds to just over 8,000 hours and thus a life of 5 years.

There are ways to improve the useful life.

The most radical and efficient way is to always switch the monitor off when not used.

The second best is to use the Power Save feature within the PC´s DPMA system. This will not switch off the monitor entirely but the backlight lamps will be switched off which is the important thing. When you start to use the keyboard or mouse, the monitor will be switched on within a couple of seconds.

PLEASE, NOTE THAT A SCREENSAVER WILL NOT SWITCH OFF THE BACKLIGHT LAMPS AND THUS IS NOT A SOLUTION FOR LONGER LIFE.

The higher the luminance is set on the monitor the greater is the wear of the backlight lamps. All monitors have the facility to adjust brightness. Never set this at maximum since this will cause the lamps to decay faster. A setting at 50% will be sufficient for use in office environment.

Gradual change of color

If the backlight is a CCFL type, as the lamps ages they will show a warmer color temperature which can be perceived as more yellow for white color than it was initially when the monitor was new. There are color filters in the panel which also will age and add to the yellowish color tone.

You can usually from the monitors OSD set your own color and by setting the value for blue higher than red and green will change the color temperature back to more normal. However, the blue color filter has lower translucence so the consequence is that you will get a lower brightness.

Troubleshooting

Start your trouble shooting with the following actions

Possible power problem

- Make sure power is connected. If you switch the monitor off and then back on, the diode on the front should show green light. Some models have a main power switch next to the power inlet check that this is set to on. If you have a model **without power** adapter and still the no green light it's not a power problem.
  - If **not**, check your power connection to the 24V adapter and to the wall. There is a similar diode on the 24V adapter that should show green light.
    - If **not**, the adapter might be broken. If you have another adapter of the same type you can verify by using that adapter.
    - If **yes**, there is a problem with the panel which should be repaired
  - If **yes**, then it is not a power problem

Possible signal problem

- If picture is not stable or not shown at all or you get "No Sync" then check connection of the signal cable and graphic board settings.
- If cable connections and graphic board settings are OK, then try the following
  - Switch monitor off. Wait 10 seconds and switch it back on
  - Re-boot the PC
  - Test monitor by connecting it to another PC
- If nothing of this helps, then there is something wrong with the monitor and it should be repaired. Contact your local reseller for assistance.

Monitor shows incorrect resolution

If during boot-up of the PC or coming back from sleep-mode the monitors shows an incorrect resolution then this problem can be resolved by

- Remove monitor power cord from the wall outlet
- Wait 15 seconds
- Re-insert the power cord into the wall outlet

DDC *1

This unit conforms with DDC-2B and VESA *2 standards.

The DDC function reads information stored in the monitor about its capabilities. It communicates over the 15-pin D-sub connector and the 24-pin DVI-D connector and it takes place during start-up of Windows®. It sets the detailed information of the color LCD display in the system file in order to achieve Plug & Play.

The video cable must be connected for reading of the information to take place.

**1 DDC (Display Data channel) and *2 VESA are registered trademarks of Video Electronics Standards Association.*

Power management

This unit conforms to the DPMS standard (Display Power Management Signaling).

Contact

Olorin AB
Marios gata 11
SE 434 37 Kungsbacka
Sweden

Phone: +46 (0)300 566 780

E-mail: info@olorin.com

www.olorin.com