

## Belinea 10 15 20

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## FEDERAL COMMUNICATIONS COMMISSION (FCC STATEMENT)

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Use only RF shielded cable that was supplied with the monitor when connecting this monitor to a computer device.

### WARNING:

WHEN POSITIONING THIS EQUIPMENT ENSURE THAT THE MAINS PLUG AND SOCKET IS EASILY ACCESSIBLE. To prevent damage which may result in fire or shock hazard, do not expose this appliance to rain or excessive moisture. This class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.



### Congratulations!

You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronic products.

### Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

### What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsföreningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety. The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user. Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

**TCO Development Unit** - S-114 94 Stockholm - Sweden - Fax +46 8 782 92 07 - Email: [development@tco.se](mailto:development@tco.se)

Current information regarding TCO'99 approved and labeled products may also be obtained via the internet, using the address: <http://www.tco-info.com/>

## INTRODUCTION

Congratulations on your new purchase of a Belinea LCD monitor. At Belinea we pride ourselves on innovation and producing technologically advanced monitors of the highest quality.

We are certain that this LCD monitor will meet your expectations and become a trusted partner.

This manual will familiarize you with the installation and use of your Belinea LCD monitor. Please take the time to look through these instructions even if you are familiar with monitors.

The manufacturer has taken all possible care to ensure that this manual contains correct, accurate information. However, the manufacturer cannot assume liability for any possible errors. In addition, the manufacturer cannot guarantee that the hardware will meet the purpose you require. The manufacturer would appreciate reports of any errors, suggestions or criticism.

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Germany

All rights reserved. No part of this manual may be reproduced, processed or distributed in any form (print, photocopy, microfilm or any other process) or processed by an electronic system without prior written permission from the manufacturer.

We reserve the right to make changes according to technical progress. Belinea is an internationally registered trademark. Other brand names may be registered trademarks and must be treated as such.



We are all responsible for the environment: this manual was printed from front to back on paper that was produced without chlorine.

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## FEATURES

This section provides an overview of the numerous functions and features of your LCD monitor.

<b>Active TFT Display</b> 15.1" diagonal size 1024 x 768 pixels	The LCD monitor has an effective diagonal size of 15.1" (38.35 cm) so as far as the effective display size is concerned, it is comparable to a standard 17" monitor. The monitor attains a maximum resolution of 1024 x 768 pixels.
<b>Automatic Image Adjustment</b>	The LCD monitor is controlled via a digital graphics card. The card automatically selects the best image settings (image size, contrast, etc.), so you don't need to make any manual adjustments.
<b>Very Low Power Consumption</b> < 35 Watts	The LCD monitor has a power consumption 50% below that of ordinary CRT monitors during typical operation. In addition, it is VESA DPMS compliant, drastically reducing power consumption when not in use (< 3 Watts).
<b>Minimal Space Requirements</b>	The LCD monitor has a depth of only 6.7" (17 cm), minimizing its space requirements and leaving more desktop space to you.
<b>Wide Viewing Angle</b> 120° hor., 90° vert.	The LCD monitor produces a crystal-clear picture with a brightness of 200 cd/m <sup>2</sup> from nearly any viewing angle.
<b>High Contrast</b>	Exceeding the customary contrast ratio of 150:1, this LCD monitor produces a high-contrast image (contrast ratio 200:1).
<b>100% Glare Free</b>	Due to the LCD monitor's special coating, no annoying reflexions occur, providing an ideal working environment.
<b>TrueColor Support</b>	The LCD monitor employs dithering technology to display TrueColor pictures (16.7 million colors) of the highest quality.
<b>MPR II, TCO 99</b>	This monitor exceeds the MPR II and TCO 99 emission requirements.

## IMPORTANT NOTES BEFORE STARTING

### Location

- The setup location must not be extremely hot, cold, humid or dusty. Heat and cold can impair the functionality of the LCD monitor. Humidity and dust can cause the device to fail.
- Position the monitor so that no direct light or sun strikes the screen.

### Safety Precautions

- Only use the power cord/power adapter supplied with this device. The power cord must be connected to a properly grounded wall outlet. If you take the LCD monitor to a country other than where it was purchased for installation, make sure to use a power cord conforming to this country's standards.
- The power cord must not be damaged. Do not place any objects on the power cord and make sure it does not have any knots. To unplug the cord, always pull on the plug and not on the cable itself. A damaged power cord may cause fire or electric shock.
- Make sure no liquid enters the monitor - it may cause electric shock or short circuit.
- Avoid covering the ventilation slots. Air circulation is necessary to prevent the housing from overheating. If the air circulation is restricted it could cause fire or damage the monitor.
- Do not use any solvents to clean the LCD monitor, as the housing could be damaged. For more information about cleaning the monitor, please see "Caring for your LCD monitor".
- The LCD monitor's screen surface is very sensitive. Please avoid any contact with the surface (finger, pencil etc.) and be especially cautious during transportation since jolts and shocks can cause the screen to become scratched (always use the original packaging).
- Never open the monitor housing or the supplied power adapter yourself. There is a danger of electric shock and other hazards. The monitor or the power adapter may only be opened and serviced by qualified professionals.

## UNPACKING

Carefully lift the LCD monitor out of the packaging and check, if all accessories are included.

The following parts must be included (in addition to this manual):

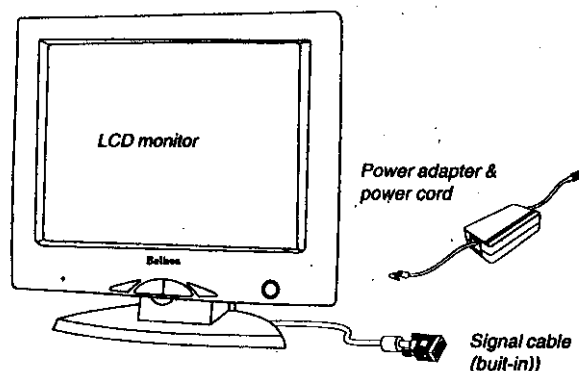


Figure 1. Package Contents

Save the original box and packing material in case you have to ship or transport the monitor.

*The packaging material of this LCD monitor was made from recycling materials. Also, no CFC's were used during manufacturing. Therefore, this product is compliant with the EnergyStar standard and also conforms to the rigorous standards of the Scandinavian countries.*

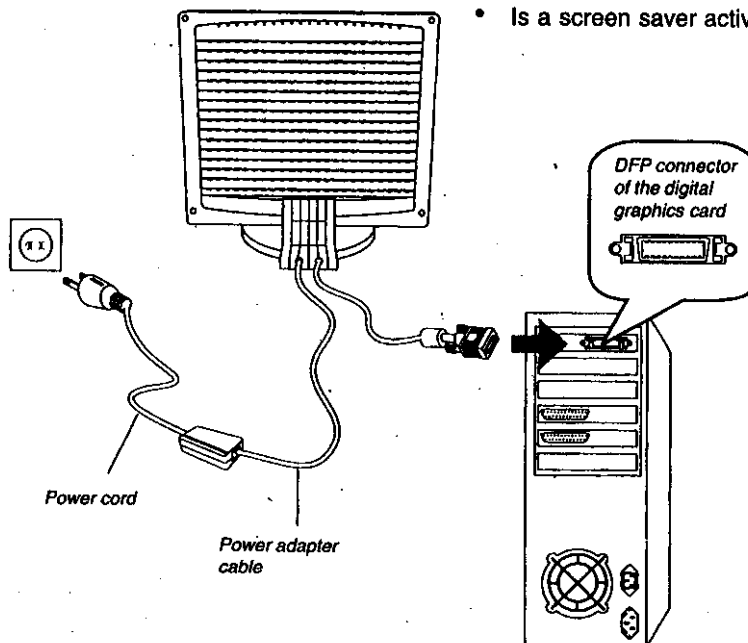
## CONNECTING AND STARTUP

The Belinea 10 15 20 is a digital TFT display that cannot be connected to a standard VGA graphics card. You need a special digital graphics card featuring a 20-pin DFP plug for connecting the LCD monitor. DFP is an industry standard digital interface, making this LCD monitor compatible to all graphics cards supporting this standard.

### † To connect the monitor to your PC .....

1. Make sure that the PC and the LCD monitor are unplugged.
2. Connect the LCD monitor's 20-pin signal cable to your computer's DFP port.
3. Connect the power adapter cable to the back of your LCD monitor, and connect the separate power cord to the adapter and a grounded wall outlet.

4. First, turn on your PC, and then turn on your LCD monitor with the power button (see ① in Figure 3). The status indicator (see ② in Figure 3) should light up green.
5. If there is no image displayed on the LCD monitor, please check the following:
  - Are the PC and LCD monitor turned on?
  - Is the signal cable between the graphics card on the PC and the LCD monitor properly attached?
  - Is a screen saver active?



## IMAGE SETTINGS

### ☀ Adjusting brightness

You can adjust the brightness using the OSD dial (③ in figure 3). Turn the dial clockwise to increase the brightness or turn it counter-clockwise to reduce brightness.

### Additional image settings

No further adjustments to the LCD monitor's settings (as opposed to normal monitors) in addition to adjusting brightness are required. But you may adjust advanced settings using the software that comes with your digital graphics card. For more information, consult the user manual of your graphics card or PC.

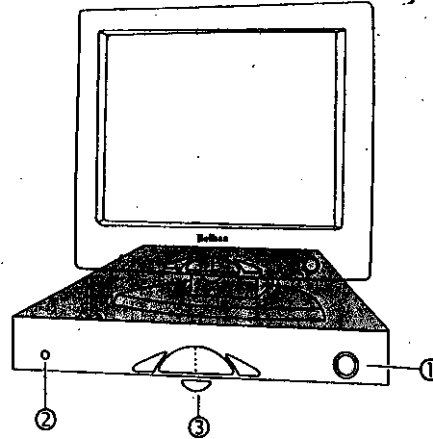


Figure 3. LCD monitor features

## CARING FOR YOUR LCD MONITOR

- First, unplug the power cord from the wall socket.
- If the LCD screen is extremely dirty, clean it with a moist cloth. Use only warm water and then wipe the monitor dry. Solvents or harsh cleaners can damage the housing. Clean the display surface only with a soft cloth, otherwise you may damage the display's coating.
- If the monitor is only slightly dirty, clean it using a soft, dry and antistatic cloth.
- The LCD monitor's screen surface is very sensitive. Please avoid any contact with the surface (finger, pencil etc.) and be especially cautious during transportation since jolts and shocks can cause the screen to become scratched (always use the original packaging).

## ENERGY SAVING FUNCTIONS

This LCD monitor is equipped with power management features according to the EPA, NUTEK and VESA DPMS standards. When not in use, it automatically

switches to the power saving mode. When the device is in power saving mode, the color of the status LED (see ② in figure 3) will become orange.

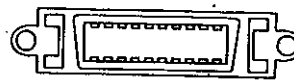
Mode	H-Sync	V-Sync	Color of status indicator	Power consumption	Recovery time
Normal	active	active	green	< 35 W	-
Off-State	off	off	orange	< 3 W	< 3 sec.

## TECHNICAL SPECIFICATIONS

<b>LCD display</b>	15.1 inch diagonal size (38.35 cm visible), low radiation according to MPR II and TCO 99, glare-free coating, contrast ratio 200:1, viewing angle 120° horizontal, 90° vertical
<b>Input signal</b>	Digital 20-pin DFP connector
<b>Display colors</b>	16.7 mill. colors (TrueColor) using dithering technology
<b>Synchronization</b>	48.36 kHz horizontal 60 Hz vertical
<b>Band width</b>	67 MHz
<b>Resolution</b>	1024 x 768 pixels
<b>Power supply</b>	Power adapter: 90 - 264 VAC, 47 - 63 Hz Monitor input voltage: 12 VDC
<b>Power consumption</b>	max. 45 W, 35 W typical (Off-State: < 3 W) Power saving functions EPA, NUTEK and VESA-DPMS certified
<b>Dimensions</b>	390 mm (width) x 359 mm (height) x 170 mm (depth); (monitor only)
<b>Weight</b>	5.8 kg (monitor only)
<b>Operating environment</b>	Operation: 5 - 40 °C, humidity: 20 - 85 % (without condensation) Storage: -20 - 60 °C, humidity: 10 - 85 % (without condensation)
<b>Regulatory compliance</b>	UL, CSA, FCC, CE, TÜV/Ergonomics, TÜV/GS Low radiation: MPR II, TCO 99 Power consumption: E2000

## PIN ASSIGNMENT

Pin	Assignment	Pin	Assignment
1	TX1 +	11	TX2 +
2	TX1 -	12	TX2 -
3	SHLD1	13	SHLD2
4	SHLDC	14	SHLD0
5	TXC +	15	TX0 +
6	TXC -	16	TX0 -
7	Ground	17	Reserved 17
8	+ 5 V	18	HPD
9	Reserved 9	19	DDC_DAT
10	Reserved 10	20	DDC_CLK



20-pin DFP connector

ENGLISH