The Lenovo ThinkVision L171 monitor — Saves space and delivers bright, clear images at an affordable price

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At a glance

The new Lenovo ThinkVision L171 LCD monitor offers:

- Viewable image size: 17 inch (432 mm)
- Brightness: 300 cd/m2 (typical)
- Contrast ratio: 700:1 (typical)
- Viewing angles
 - Horizontal: 140°Vertical: 135°
- Response time: 5 ms (typical)
- Display native resolution of 1280 x 1024 (automatically scales lower resolution to fill the screen)
- Tilt stand
- · Direct access for automatic image setup and brightness
- Analog input (15-pin D)
- · Internal power
- 100 mm Video Electronic Standards Association (VESA) standard for mounting
- EPEAT (Electronic Product Environmental Assessment Tool) Silver certified
- Kensington lock compatible

Overview

Lenovo[™] ThinkVision® L171 monitor is an ideal combination of performance, value, and reliability. The design enhances usability and complements the design of ThinkCentre® and Lenovo 3000 systems.

This monitor is best suited for general business applications such as word processing, spreadsheets, data entry, and business graphics.

Features and benefits

- 17 inch (432 mm) viewable image size
- Native resolution of 1280 x 1024
- · Slim bezel saves space
- · Adjustable tilt stand for viewing comfort
- Direct access for automatic image setup, brightness, and easy monitor setup

- Attachment points for optional ThinkVision USB Soundbar (40Y7616)
- · Analog video connection
- · Internal power
- · Kensington lock slot
- EPEAT Silver certified
- Meets 100 mm VESA standard for mounting
- Detachable stand for wall or arm mounting (sold separately)
- · Available in business black

Planned availability date

November 2, 2007

Description

VESA high-refresh video signal timings

The Lenovo ThinkVision L171 LCD monitor supports a wide range of display modes, including a selection of the VESA timings of incoming video signals at up to 75 Hz (non-interlaced) for the following screen resolutions:

- 640 x 480
- 800 x 600
- 1024 x 768
- 1280 x 1024

Appropriate video-adapter hardware and software must be installed in the attaching system unit.

VESA Display Data Channel/Command Interface (DDC/CI)

The Lenovo ThinkVision L171 LCD monitor supports the DDC protocol to level CI. Basic configuration information can be passed to a system unit from its attached monitor. Often referred to as Plug and Play, the protocol enables a DDC-enabled system unit to automatically configure the video adapter to drive the attached monitor at its optimum display mode without user intervention. For best use, the attaching system unit must also be hardware- and software-enabled for DDC operation.

The capabilities of the monitor are held in nonvolatile monitor memory in an encoded format. The data is received from the monitor by the system unit during boot-up and system configuration.

The EDID data sent by the monitor to the attached system unit also includes the monitor's serial number and other identification information. This can be held in the system unit until requested; for example, by a department local area network (LAN) administrator needing to assess the location of all equipment connected to the LAN.

Date information transmitted in the monitor EDID data conforms to VESA EDID standard V2. This requires the year of manufacture (YOM) to be stored in a one-byte field as an offset from 1990 as derived from the following equation:

An international industrial standard by the name of DDC/CI was developed by VESA to expand upon an existing DDC standard. This new standard adds control functionality without the need for additional connections.

The main advantage of DDC/CI is its bi-directional communication structure between the PC and monitor, which does not require a separate cable. All data is transmitted in both directions via the video graphics card and the standard VGA or DVI signal cable. This capability allows for functions like monitor control, adjustments, and diagnostics to be conducted via software using the mouse and keyboard. In an enterprise or firm, this capability also allows the potential of remote diagnostics and asset management by a technician via the LAN. Customer-supplied software is needed to implement these functions.

International Organization for Standardization (ISO)/DIS 13406 Part 2

ISO/DIS 13406 Part 2 ensures ergonomic requirements are met when the Lenovo ThinkVision L171 LCD monitor forms part of an ISO-compliant system. ISO/DIS 13406 Part 2 is an international standard addressing ergonomic factors for flat-panel displays.

ISO-capable elements do not necessarily make an ISO-compliant system when put together. To satisfy the requirements of ISO 13406 Part 2, a complete platform must be tested and must comply with all applicable elements of ISO 13406 Part 2. The platform includes:

- System unit
- Operating system
- Fonts
- · Video subsystem
- Monitor
- Keyboard
- Mouse

When all contributing platform components satisfy their portion of the requirements, as verified by the required total system testing, the platform is ISO 13406 Part 2-compliant.

Low-frequency electromagnetic emissions

The Lenovo ThinkVision L171 LCD monitor meets the Swedish Board for Technical Accreditation (SWEDAC) MPR-2 requirements and those of MPR-3. MPR-2 is a guideline developed by the SWEDAC to limit the electromagnetic emissions and electrostatic fields generated by workstations. MPR-3 is the colloquial name for the Swedish Standard SS 43614 90:1995.

Electric and magnetic fields with frequencies between 5 Hz and 2 kHz are called extremely low-frequency (ELF) fields. Those with frequencies between 2 kHz and 400 kHz are called very low-frequency (VLF) fields.

The Swedish MPR-3 Standard is intended to limit these fields. Sources of these fields include the power cord supplying 50 or 60 Hz power to the monitor.

TCO'99 compliance

- Environment
- Ergonomics
- Usability
- Reduction of electric and magnetic fields
- Energy consumption
- · Electrical safety

VESA Display Power Management Signaling (DPMS)

The Lenovo ThinkVision L171 LCD monitor meets ENERGY STAR power consumption requirements through implementation of the DPMS protocol. For effective power management, the attaching system unit must also be hardware- and software-enabled for DPMS operation.

HelpWare®

HelpWare is a comprehensive set of service and support offerings for a more productive and enjoyable computing experience. Many HelpWare services are included with the purchase of

your Lenovo system, and additional services are available from the HelpWare support family.

Technical characteristics

Feature	Lenovo ThinkVision L171 LCD monitor
LCD size and type	17. 0-inch (432.0 mm) LCD
Viewable image size	17. 0-inch/432.0 mm
Maxi mum vi ewable area	340 x 272 mm
Brightness (typical)	300 cd/m2
Contrast (typical)	700: 1
Colors	16.7 million
Vi ewi ng angle (typi cal)	Horiz = 140,
	Vert = 135 degrees
Cell response time (typical)	5 ms
RGB vertical stripe pixel pitch	0. 264 mm
Vi deo i nput	15- pi n D
Tilt	4 degrees forward
	30 degrees backward
OSD languages	7
Factory-preset display modes	15
Composite SYC	Yes
SYNC on green	No
ISO 13406 Part 2	Yes
VESA DPMS power management	Yes
capabl e	
Power supply	Uni versal
Power cord detached	1.8 m
FCC B compliance	Yes
MPR-2 emission compliance	Yes
MPR-3 emission compliance	Yes
TCO'99 Environmental Label	Yes
JEIDA compliance	Yes

On-screen display controls

Digital user controls are located on the front bezel, to the left of the power on/off pushbutton. Adjustments are made in conjunction with the on-screen displays. After adjustments are made, with exception of brightness, contrast, and auto adjust, the controls can be locked to prevent further changes. User setup values are stored automatically. For ease of use, there is direct access for auto setup and brightness.

Monitor controls and features include:

- Brightness/contrast
- Image position:
 - Horizontal position
 - Vertical position
- Image setup:
 - Automatic
 - Manual
- Image property: Color
- Options:
 - Information
 - Menu language
 - Menu position
 - Factory default
 - Accessibility
- Exit

Indicators

The power indicator LED indicates the operational state of the monitor:

LED Indicator Lenovo ThinkVision L171 Operating State

Steady Green LED Normal operation Steady Amber LED Active off

Flashing Green Frequency out of Range

A 'No Connection Check signal cable' message appears on the screen whenever the monitor detects no incoming video signal.

Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www-03.ibm.com/research/accessibilit y/requests/accvpat.nsf/lenovo-bidx?OpenForm

Product positioning

The Lenovo ThinkVision L171 Essential monitor belongs to ThinkVision flat-panel LCD monitor family. The flat-panel LCD family includes Essential and Performance monitors. Essential Series monitors include quality products at affordable prices. The Performance Series monitors include P models offering a wide range of adjustability and X models extend the P features adding other specialized features like USB connectivity, wider viewing angles and automatic pivot adjustment.

Monitor	Machi ne type	Monitor size	Vi ewabl e i mage si ze	Addressability (horizontal by vertical)
Essenti al				
L151	9165	15. 0- i nch	15.0-inch (381 mm)	1024 x 768
L171 L194 Wi de	9227 4434	17. 0- i nch 19. 0- i nch	17. 0-inch (432 mm) 19. 0-inch (483 mm)	
Performance				
L151p L171p L193p L190x L201p L220x Wi de	9205 9417 4431 4439 9220 4433	15. 0- i nch 17. 0- i nch 19. 0- i nch 19. 0- i nch 20. 1- i nch 22. 0- i nch	15. 0-inch (381 mm) 17. 0-inch (432 mm) 19. 0-inch (483 mm) 19. 0-inch (483 mm) 20. 1-inch (511 mm) 22. 0-inch (569 mm)	1280 x 1024 1280 x 1024

ThinkVision flat-panel monitors by application:

Application	Si ze/Resol ution	Product
General Purpose: Rugged, back office or infrequent usage	15" (1024 x 768) 17" (1280 x 1024) 19" Wide (1440 x 900)	L151 L171 L194 Wi de
Advanced Business: Workplace users & mobile users sharing a workspace	17" (1280 x 1024) 19" (1280 x 1024)	L171p L193p
Specialized Usage: USB connectivity, frequently switching between landscape and portrait mode, need wide viewing angles & bright vivid images	19" (1280 x 1024) 22" (1920 x 1200)	L190x L220x Wi de

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ThinkVision and ThinkCentre are registered trademarks of Lenovo in the United States, other countries, or both

Other company, product, and service names may be trademarks or service marks of others.

Publications

The following publications are shipped with each monitor (9227AD1):

Title Part number Language

User's Guide on CD 41U5183 U.S. English

French Spanish Italian German Russian Polish Japanese

Traditional Chinese Simplified Chinese

Bul gari an
Croati an
Czech
Hungari an
Romani an
Korean
Sl ovaki an
Sl oveni an

Brazilian/Portuguese

Setup Poster 43R1888 Safety, Troubleshooting and 41U5172

Warranty Guide

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for Lenovo[™] and many non-Lenovo offerings.

For details on available services, contact your IBM representative or visit

http://www.ibm.com/services/

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit

http://www.ibm.com/services/learning/index.html

Select your country, and then select the product as the category.

Physical specifications: Dimensions (landscape orientation) and weight of the monitor and stand (9227AD1):

Parameter	Unpacked	Packed
Width	14.6 in (371.0 mm)	17.2 in (436.0 mm)
Depth	6.8 in (173.2 mm)	6.9 in (175.0 mm)
Hei ght	15.2 in (387.0 mm)	14.8 in (375.0 mm)
Wei ght	9. 1 lb (4. 2 kg)	11. 7 lb (5. 3 kg)

To ensure installability and serviceability, review the installation planning information for any product specific installation requirements.

Conservation: Energy can be saved by switching monitors off overnight and whenever they are not in use for extended periods during the day.

Power requirements

• Input voltage: 100 to 240 V ac +/- 10%

• Frequency: 50/60 Hz +/-3 Hz

· Power consumption:

- Normal use: < 28 watts typical

- VESA standby: < 2 watts

- VESA suspend: < 2 watts

- VESA off: < 1 watt

• Maximum earth leakage current:

- < 3.5 mA at 264 V

- < 0.25 mA at 100 V

Ambient temperature and relative humidity

Parameter	Temperature	Relative humidity	Altitude
Operating	10 to 35 deg C	10 to 80%	0 to 10,000 ft (3,000 m)
Shi ppi ng	-20 to 60 deg C	5 to 95%	0 to 15,000 ft (4,500 m)
Storage	-20 to 60 deg C	5 to 95%	0 to 10,000 ft (3,000 m)

Acoustics: Declared acoustical noise emissions LWAU = 4.5 bels or less. The noise emission level stated is the declared (upper limit) A-weighted sound power level, in bels, for a random sample of monitors. All measurements are made in accordance with ANSI S12.10 and reported in conformance with ISO/DIS 7779.

Emissions: All models meet emission category A requirements of Swedish Standard SS-436-14-90 (MPR-3) in addition to those of MPR-2.

All models meet the &SWEDAC emission guidelines contained in MPR 1990:10 when tested using the MPR 1990:08 test method.

All models meet the TCO'99 Environmental Label from the Swedish Confederation of Professional Employees (TCO), and the emission, power management, and electrical safety requirements of the TCO'99 Environmental Label.

Ergonomics: Compliance to the ISO standard ISO/DIS 13406 Part 2 ensures ergonomic requirements are met when the monitor forms part of an ISO-compliant system.

Regulatory agency approvals

- EMI/Safety:
 - UL (U.S.)

- CSA/cUL (Canada)
- IEC950 CB Report
- NEMKO (Norway)
- SEMKO
- DEMKO (Denmark)
- FIMKO (Finland)
- TUV
- CCC (China)
- NOM
- SASO
- GOST
- PSB (Singapore)
- Jordan
- BSMI
- Australia
- JEITA
- UL-S (Argentina)
- Green Mark (Taiwan)
- FCC B (U.S.)
- IC (Canada)
- CE (Europe)
- (MIC) Korea
- VCCI Class B (Japan)
- South Africa
- New Zealand

Environmental/energy/ergonomic/compatibility approvals

- TCO'99
- MPR-2 (Sweden)
- ENERGY STAR 4.0 (U.S.)
- ISO 13406-Part 2
- WEEE
- RoHS
- EPEAT-Silver
- Software: MS 2000/XP/Vista Basic

Note: ENERGY STAR is a U.S. registered trademark. As an ENERGY STAR Partner, Lenovo has determined that this product meets ENERGY STAR guidelines for energy efficiency.

Hardware requirements: The Lenovo ThinkVision® L171 LCD monitor is intended to operate with system units or video adapters that generate a video output signal falling within the Lenovo ThinkVision L171 specification:

Parameter Lenovo Thi nkVi si on L171

Maximum addressability (pixels) 1280 x 1024 Maximum pixel rate (MHz) 140 The Lenovo ThinkVision L171 supports VESA Standard Timings as detailed in "Display Monitor Timing Specification," Version 1.0, Revision 0.8, dated September 17, 1998, for the following modes:

- VGA: 640 x 480 at 60, 66, 72, and 75 Hz
- SVGA: 800 x 600 at 60, 72, and 75 Hz
- XGA: 1024 x 768 at 60, 70, and 75 Hz
- SXGA: 1280 x 1074 at 60, 70, and 75 Hz

The Lenovo ThinkVision L171 also supports the following modes:

- 640 x 350 at 70 Hz
- 720 x 400 at 70 Hz
- 1280 x 1024 at 76 Hz

Software requirements: The Lenovo ThinkVision L171 monitor features factory-preset display modes. The actual display modes used depend on the attaching system unit, the operating system, and application software.

- Microsoft[™] Windows[™] 2000
- Microsoft Windows XP
- · Microsoft Windows Vista Basic

Factory preset display modes

	sability Pixels)	
640 x 640 x 640 x 640 x 720 x 800 x 800 x 1024 x 1024 x 1280 x 1280 x	350 480 480 480 400 600 600 600 768 768 768 1024 1024	refresh rate 70 Hz 60 Hz 72 Hz 75 Hz 70 Hz 60 Hz 75 Hz 60 Hz 70 Hz 60 Hz 70 Hz 75 Hz 60 Hz 77 Hz 78 Hz 79 Hz 79 Hz 70 Hz 70 Hz 70 Hz
1280 x	1024	76 Hz

• User modes: 20

The factory-preset modes cannot be overwritten, but can be adjusted to personal choice. The new settings are stored automatically in one of the user locations and are recalled each time that mode is used. The factory settings for the mode in use, if any, can be restored by operating the reset control.

Information about the current incoming display mode is shown in the on-screen displays. However, it is displayed at the LCD panel's optimum refresh rate of 60 Hz.

It may be necessary to make some adjustments to the displayed image to compensate for variations in video signal timings. The user controls can be used to make these adjustments.

Compatibility: The Lenovo ThinkVision L171 monitor is supplied with a detachable 1.8-meter (5.9-foot) video signal cable. This cable has the widely used 15-pin, D-Sub video connector for system unit connection.

This monitor has been tested with ThinkCentre® and Lenovo 3000 systems and is compatible with systems and graphics adapters which comply with the relevant parts of "VESA and industry standards and guidelines for computer display monitor timing" Version 1.0 Revision 0.8, adopted

September 17, 1998. Supported display modes and number of colors are a function of the attaching system unit. The full range of display modes, refresh rates, and number of colors available with this monitor may not be available or supported with all combinations of system units, their operating systems, and application software. Implementation of monitor Plug and Play follows the VESA DDC standard. This standard must also be implemented in the attaching system unit hardware and software to be effective.

Plug and Play is a registered mark of Microsoft.

Limitations

- Not all supported display modes run at the high refresh rates necessary for flicker-free performance. Display modes at lower refresh rates are available for compatibility with older video adapters and system units and will not be ISO-compliant.
- Supported display modes are a function of the attaching system unit and video subsystem.
 The full range of display modes available with these monitors may not be available or
 supported with all combinations of system units, their operating systems, video adapter cards,
 and application software.
- Horizontal- and vertical-synchronization signal timings are critical in order to achieve acceptable screen images. As a consequence, support for all possible variations in H- and V-sync timings for any display mode cannot be assumed.
- Adjustment of the user controls to enlarge the image to its maximum size requires that the signal timings of the display mode being used fall within the monitor-timing specifications.
- The number of colors shown in any display mode will exceed 16 million and is dependent on the capabilities of the video adapter in the system unit.
- The Lenovo ThinkVision L171 provides FCC class B residential installation compliance in all display modes.
- Implementation of monitor power management follows the VESA DPMS standard. This
 standard must also be implemented in the attaching system unit hardware and software for
 monitor power management to be effective. The system implementation must provide
 user-adjustable, power-down delay periods. The monitor power management function is
 invoked only after appropriate signals are received from an attached system unit or video
 adapter.
- Implementation of monitor Plug and Play follows the VESA DDC standard. This standard must also be implemented in the attaching system unit hardware and software for monitor Plug and Play to be effective.
- Certain functions require the system unit to be similarly configured, so all monitor functions may not be enabled when attached to a particular system unit.
- A 17.0-inch (432.0 mm) TFT monitor has nearly 4.0 million subpixel transistors laid over an
 area exceeding 141 square inches. Cost-effective manufacturing processes introduce a small
 number of defective subpixel transistors. The Lenovo ThinkVision L171 meets the ISO
 13406-2 Class II Pixel Defect Standard.
- Use of 50% gray background is not recommended since some users may see undesirable FOS effects.
- The Auto-Setup "test pattern" can be used with Microsoft Windows 3.1, Windows NT™ 3.5, Windows NT 4.0, Windows 95, Windows 98, Windows 2000, and DOS 7.0 only.

Planning information

Customer responsibilities: The monitor is designated as customer setup. Instructions are provided in the User's Guide.

Cable orders: No additional cables are required. A 1.8-m power cord appropriate to the country will be supplied by Lenovo.

Packaging

Shipment group

One monitor

- · Tilt stand with customer-installed base
- Attached 1.8-meter (5.9-foot) analog video signal cable (15-pin D to 15-pin D)
- Power cord
- . CD containing multilingual user's guide, setup test pattern, and .INF file
- · Setup poster
- Safety, Troubleshooting and Warranty Guide

With the exception of the models for U.S., CAN, and Japan, the power cords (based on the country order code) are supplied by distribution centers.

Security, auditability, and control

These products use the security and auditability features of the system unit to which they are attached.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities

Terms and conditions

IBM credit corporation financing: No

To obtain copies of the Lenovo Statement of Limited Warranty, contact your reseller or Lenovo.

In the United States, call 800-426-7378 or write to:

Warranty Information

P.O. Box 12195

Research Triangle Park, NC 27709

Attn: Dept ZPYA/B676

Warranty period: Three years

Warranty service: Customer Carry-in or Mail-in using Rapid Replacement Service

If warranty service is required, call the Customer Support Center. The Customer Support Center will assist with problem determination and initiate shipment of a replacement unit, if needed, to the customer's location by express delivery. For calls received by 5:00 p.m. customer's time, in most cases, the replacement unit will arrive within two business days (excluding holidays). The replacement unit becomes the property of the customer in exchange for the failed unit, which becomes the property of Lenovo. Pack the failed unit into the shipping carton that contained the replacement unit and return to Lenovo.

Transportation charges, both ways, are paid by Lenovo.

Failure to use the carton in which the replacement unit was received could result in charges incurred by the customer for damage to the failed unit during shipment.

International Warranty Service (IWS): IWS is available during the warranty period to customers who travel or relocate to countries where their computer is sold and serviced by a Service Provider authorized to perform warranty service. Eligible Lenovo computers are identified by their four-digit machine type.

You can obtain IWS through the method of service, such as CRU, depot, carry-in or on-site, provided in the servicing country. Service methods and procedures vary by country, and some service or parts may not be available in all countries. Service centers in certain countries may not be able to service all models of a particular machine type. In addition, some countries may have fees and restrictions that apply at the time of service.

Note: Due to the earth's magnetic field, CRT monitors are manufactured to work in northern, southern, and equatorial regions of the earth and may not produce a satisfactory image when moved between them. Any required adjustment (if possible) is not covered under IWS and may

be subject to a chargeable action. The magnetic field does not affect flat-panel LCD monitors and ThinkPad® LCD displays.

Licensing: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

ThinkPlus™ and Lenovo Care Maintenance Services

Warranty and maintenance options: The announced products may be eligible for ThinkPlus and Lenovo Care maintenance services, convenient prepackaged offerings for warranty service upgrades and maintenance services.

Refer to the Prices section for information on the availability of ThinkPlus and Lenovo Care maintenance services.

Field-installable features: No

Model conversions: No

Machine installation: Customer setup. Customers are responsible for installation according to the instructions Lenovo provides with the machine.

Graduated program license charges apply: No

Licensed Internal Code and Licensed Machine Code: These products do not contain Licensed Internal Code or Licensed Machine Code.

Prices

	Machi ne	
0rder	type/	Li st
number	model	pri ce(1)

Lenovo Thi nkVi si on L171

9227AD1

9227-AD1

\$239.99

(1) List price does not include tax or shipping and is subject to change without notice. Reseller prices may vary.

ThinkPlus Services for warranty and maintenance

The following offerings apply to model AD1 of machine type 9227.

Description	ThinkPlus part number
3-year IOE 9 x 5	41C9209
3-year IOE 24 x 7 4-hour average response	41C9212
4-year IOE 9 x5	41C9231
4-year IOE 24x7 4-hour average response	41C9232

ThinkPlus MA for post warranty

	Thi nkPl us
Description	part number

1-year IOR 9 x 5 NBD 41C9308

1-year IOR 24 x 7 41C9309 2-year IOR 9 x 5 NBD 41C9326

2-year IOR 24 x 7 41C9327

NBD = Next business day

IBM Global Services is the preferred, authorized warranty service, warranty service upgrade, and post-warranty service provider for Lenovo products (excluding mainland China).

For ServiceElect (ESA) maintenance service charges, contact IBM Global Services at 888-426-4343.

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