# **Panasonic** ideas for life

# PT-LB20 Series

Micro Portable XGA/SVGA LCD Projectors

PT-LB20NTE 2000 IM XGA PT-**LB20**E **2000** Im **XGA** 

PT-LB20SE 2000 Im SVGA PT-LB20VE 1600 IM XGA



## Presentations in Light



- Daylight View technology
  - Image performance rivalling 3,000-lumen projectors\*1\*
  - Vivid colours in a bright room
  - Auto operation with ambient light sensor
- Easy wireless projection (PT-LB20NTE)
  - Wireless PC motion/sound streaming\*3
  - High-speed data transfer
  - Flexible 16-window index style
  - Simple, user-friendly settings

- Quick operation
  - 2-second speed start
  - One-touch auto setup with digital keystone correction
  - Direct power off
- Portability
  - Compact notebook-size body
  - Ultra-lightweight: 2.1 kg (4.6 lbs)\*4

  - 11 In comparison with our product
    12 The PT-LB20VE rivals 2,400-lumen projectors in image performance.
    3 Supports ASF, WMN, AVI, MPEG4 and MPEG1/2 movie formats.
    4 PT-LB20VTE: 2,2 kg (4,9 lbs)



### Daylight View Technology

any people want to use special colours and designs in their presentations, but these colours change when they're projected onto the screen in a lighted room. So they just use plain, basic colours. As a result, the presentation is visually boring and looks just like their competitor's.

Panasonic solves

this problem with our PT-LB20 Series projectors featuring innovative Daylight View technology. These projectors greatly improve image performance in brightly lit places. In fact, the 2,000-lumen brightness of the PT-LB20 Series achieves a level of image performance that equals many 3,000-lumen projectors.\*1\*2

Starting with the wireless motion and sound streaming capability of the PT-LB20NTE, the Panasonic PT-LB20 Series projectors pack an array of powerful functions into a compact, lightweight body. Select the one that best matches your presentation needs.

Projector

Image Performance Rivalling 3,000-Lumen Projectors

Daylight View technology significantly improves image performance. Our new 2,000-lumen projectors have attained a level of image per-

Group A

35%

formance that equals or exceeds that of our previous 3,000-lumen models in brightly lit environments.\*3

Group D

Group B

16%

The Panasonic PT-LB20 Series with Daylight View

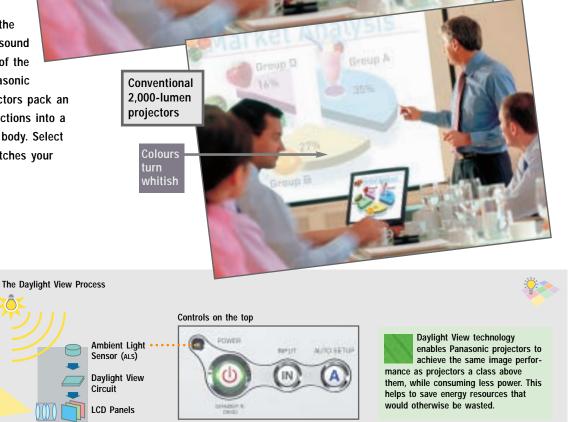
#### Vivid Colours in a Bright Room

Panasonic's unique Daylight View technology greatly improves colour perception in bright rooms. Pale colours are divided into six basic colour components (red, green, blue, yellow, cyan and magenta) for more precise control. Daylight View achieves a superb level of image performance that produces less of a difference

between PC display images and projected images.

#### Auto Operation with **Ambient Light Sensor**

The top panel of the unit is equipped with an ambient light sensor (ALS). The ALS detects changes in the ambient light intensity and optimises colour compensation in four steps according to the environment. The Daylight View mode also provides white balance adjustment settings for both fluorescent and incandescent lamps to match the room lighting.



- In comparison with our product, under room lighting conditions of 400 lux,
- when projecting an 80-inch image (measured diagonally)

  2 The PT-LB20VE with 1,600 lumens of brightness achieves a level of image performance comparable to projectors with 2,400 lumens of brightness.
- \*3 The Daylight View effect may vary depending on screen size, screen gain, and surrounding brightness.

### Easy Wireless Projection (PT-LB20NTE)



The IEEE 802.11b/q-compliant wireless LAN function enables high-speed data transfer.\*5 In Live mode and Multi Live mode, the content of the PC screen is projected with the same

High-Speed Data Transfer

smooth image motion as you get with a wired connection. The motion also flows naturally in PowerPoint animations. Plus, the function combines with an original environment-adap-

tive disper-

sion

Movie Files

Wireless PC Motion/Sound Streaming

Wireless Manager Mobile Edition 2, an original application software for wireless presentations, is supplied. This software makes it easy to use a variety of wireless functions. In Motion Streaming mode, moving-image files\*4 can be sent completely wireless, together with audio, from the hard disk of a PC. There's no need to connect an external video source. Just set up the PC somewhere in the room and imme-

diately start into an effective presentation using both moving images and sound.

Extended Index Style:

This style projects images from up to sixteen PCs as

small windows. Using the

projector's remote control,

you can select any one of

the index windows and display it on the main win-

dow or on a full screen.

16 Thumbnails

algorithm to make moving pictures in Motion Streaming mode extremely smooth too.



In Multi Live mode, a single projector unit can receive data from multiple PCs and display their images simultaneously on its multiwindow screen. The projection style can be selected from Four Window, Index and Extended Index. It is also possible to send images from a single PC to multiple projector units.\*6



#### Simple, User-Friendly Settings



We have simplified the process for installing Wireless Manager ME 2 and setting up a PC for a wireless presentation. Just insert the CD-ROM into the PC, and many of the settings are made automatically. When the presentation is finished. Wireless Manager restores all PC settings to their original state, so the PC is ready to reconnect to your company LAN. When connection is not possible, a detailed error message is displayed to help solve the problem quickly.

#### Other Wireless Features

- · Projector control/status monitoring capability via an Internet browser
- Automatic connection to registered projector
- Follows the Advanced Encryption Standard (AES), which has been adopted as an official U.S. Government standard
- Wireless shutter function
- · One-shot mode
- PowerPoint page up/down operation using the supplied remote control



\*4 Supports ASF, WMV, AVI, MPEG4 and MPEG1/2 movie formats. Copyright protection measures prevent wireless projection of DVD sources

By building the wireless function into the projector, we were able to eliminate the need for a wireless card and keep the appearance of the unit slimmer

\*5 The maximum data transfer speed is 30 frames per second (fps). This speed differs depending on the PC's performance and environment. \*6 Up to eight units



### **Quick Operation**

#### 2-Second Speed Start

Speed Start slashes the time it takes to get your presentation under way. The image appears within two seconds after you press the power button. Behind this breakthrough is Panasonic's high-precision lamp and lamp power supply—an advantage made possible by our advanced production technology.

### One-Touch Auto Setup with Digital Keystone Correction

This function assures quick and easy setup. The projector handles the basic image adjustments, from phasing to vertical and horizontal position. The built-in gravity sensor detects the projector's angle relative to the floor and corrects for vertical keystone distortion accordingly.

#### Direct Power Off

When the presentation is completed, Direct Power Off lets you disconnect the power cable and move the projector right away\*7 because the cooling fan keeps operating until the lamp is cooled.

### **Portability**

#### Compact Notebook-Size Body

PT-LB20 models are 297 mm wide by 210 mm deep—about the size of an A4 sheet of paper—and only 65 mm high. Each slips easily into a bag or briefcase. The



compact size makes these models highly mobile and minimises the space required for presentations or storage.

#### Ultra-Lightweight: 2.1 kg (4.6 lbs)

At only 2.1 kg\*8, PT-LB20 models won't weigh you down—even when you're toting along a notebook PC as well. Convenient size and weight are just two reasons why the PT-LB20 series is the logical choice for mobile presentations.

#### PT-LB20 Series Feature Comparison

	PT- <b>LB20NT</b> E	PT- <b>LB20</b> E	PT- <b>LB20S</b> E	PT- <b>LB20V</b> E
Brightness	2,000 lumens	2,000 lumens	2,000 lumens	1,600 lumens
Native resolution (max.)	XGA (UXGA)	XGA (UXGA)	SVGA (UXGA)	XGA (UXGA)
Daylight View	Yes	Yes	Yes	Yes
Throw distance	1.1–10.7 m	1.1–10.7 m	1.1–11.0 m	1.4-12.7 m
2-Second speed start	Yes	Yes	Yes	Yes
One-touch auto setup	Yes	Yes	Yes	Yes
Direct power off	Yes	Yes	Yes	Yes
Blackboard mode	Yes	Yes	Yes	No
Notebook-size compact body (297 x 65 x 210 mm)	Yes	Yes	Yes	Yes
Weight	2.2 kg	2.1 kg	2.1 kg	2.1 kg
Wireless presentation capability	Yes	No	No	No

#### **Ecology-Conscious Design**

Panasonic meticulously works to minimise environmental impact in the product design, production and delivery processes, and in the performance of the product itself over its life cycle. The PT-LB20 Series reflects the following ecological considerations.

- Lead-free solder is used to mount components to the printed circuit boards.
- No halogenated flame retardants are used in the cabinet.
- No styrofoam is used in the packing materials.
- · Lead-free glass is used for the lens.
- The packing case and operating manual are made from recycled paper.

### More Valuable Features

- · Short-throw zoom lens
- Anti-theft features: User password, control panel lock and text superimposing
- Projector Al
- · Index Window
- · Auto power off
- Two RGB inputs
- RGB 2 IN can be switched to RGB 1 OUT for loop-through monitoring
- · Auto Search
- · Automatic input signal detector
- HDTV compatibility
- Full compatibility with sRGB colour space for accurate colour reproduction (in natural mode)
- Picture mode selection (standard/dynamic/ natural)
- Blackboard mode allows you to project images onto an ordinary classroom or conference room blackboard
- · 3x digital zoom
- Freeze
- · Shutter function for image/sound muting
- Selectable 17-language on-screen menu (English, French, German, Spanish, Italian, Korean, Russian, Chinese, Japanese, Swedish, Norwegian, Danish, Portuguese, Polish, Hungarian, Czech, Thai)
- Discrete S-Video and video inputs allow connection of two DVD/video sources at a time
- Ceiling mountable (option)
- · Lamp power high/low selection
- Temperature warning indication
- · Lamp replacement warning indication



- \*7 The projector cannot be placed into a bag until the
- cooling fan stops operating. \*8 PT-LB20NTE: 2.2 kg/4.9 lbs



Introducing Innovative
Daylight View Projectors

Wireless
Motion/Sound
Streaming

PT-LB20NTE
WIRELESS XGA Projector
2000 Im
Set yourself free.

Vivid Presentations Anywhere



100-240 V AC, 50/60 Hz 220 W (Approx. 4 W in standby mode with fan stopped) Power supply Power consumption

Amps LCD panel Panel size PT-LF 2.5 A-1.3 A 4:3 aspect ratio, micro lens array

PT-LB20NTE/LB20E/LB20SE

0.7° (17.78 mm) diagonal 0.6° (15.24 mm) diagonal Transparent LCD panel (x 3, R/G/B) PT-LB20VE Display method Drive method Active matrix

Pixels PT-LB20NTE/LB20E/LB20VE

786,432 (1,024 x 768) x 3, total of 2,359,296 pixels 480,000 (800 x 600) x 3, total of 1,440,000 pixels PT-LB20SE

Pixel configuration Stripe Lens

Manual zoom (1:1-1:1.2), manual focus

Manual zoom (1:1−1:1.2), manua PT-LB20NTE/LB20 Lamp Brightness

PT-LB20NTE/LB20E/LB20SE

2000 lumens 1600 lumens 90% PT-LB20VE Uniformity Contrast 400:1\*1 (full on/full off)

canning frequency RGB YPBPR

Horizontal: 15–91 kHz, Vertical: 50–85 Hz 480i (525): fh 15.75 kHz; fv 60 Hz 576i (625): fh 15.63 kHz; fv 50 Hz 480p (525p): fh 31.5 kHz; fv 60 Hz 576p (625p): fh 31.25 kHz; fv 50 Hz 720p (750p): fh 45 kHz; fv 60 Hz 1080i (1125): fh 33.75 kHz; fv 60 Hz 1080i (1125): fh 33.75 kHz; fv 60 Hz 1080i (1125): fh 33.75 kHz; fv 50 Hz NTSC, NTSC4.43, PAL-M, PAL60: fh 15.75 kHz; fv 60 Hz PAL, SECAM, PAL-N: fh 15.63 kHz; fv 50 Hz 838–7,620 mm/33–300 inches diagonally S-Video/Video

Projection size 83 Throw distance PT-LB20NTE/LB20E

1.1 m–10.7 m (3<sup>.</sup>7<sup>\*</sup>–35<sup>.</sup>1<sup>\*</sup>) 1.1 m–11.0 m (3<sup>.</sup>7<sup>\*</sup>–36<sup>.</sup>1<sup>\*</sup>) 1.4 m–12.7 m (4<sup>.</sup>7<sup>\*</sup>–41<sup>.</sup>8<sup>\*</sup>) PT-LB20SE PT-LB20VE Optical axis shift

B20E/LB20SE 6:1 (fixed) 12:1 (fixed) PT-LB20NTE/I

PT-LB20VE Keystone correction range

e Vertical: approx. ±30° 17 Ianguages: English, French, German, Spanish, Italian, Korean, Russian, Chinese, Japanese, Swedish, Norwegian, Danish, Portuguese, Polish, Hungarian, Czech, Thai Front/rear ceiling/desk (menu selection) 1.0 W (monaural) output power On-screen menu

Installation Built-in speakers RGB1 IN

RGB signal

D-sub HD 15-pin x 1
R, G, B: 0.7 Vp-p, 75 ohms, Sync on green: 1.0 Vp-p, 75 ohms, Sync on green: 1.0 Vp-p, 75 ohms
HD/SYNC, VD: TTL (positive/negative polarity compatible)
Y: 1.0 Vp-p (including sync signal),
75 ohms: PB, PR: 0.7 Vp-p, 75 ohms
D-sub HD 15-pin x 1 (input/output selectable using on-screen menu)
R, G, B: 0.7 Vp-p, 75 ohms, Sync on green: 1.0 Vp-p, 75 ohms
HD/SYNC, VD: TTL (positive/negative polarity compatible) RGB2 IN/RGB1 OUT RGB signal

Y: 1.0 Vp-p (including sync signal), 75 ohms; PB, PR: 0.7 Vp-p, 75 ohms RCA pln x 1, 1.0 Vp-p, 75 ohms Mini DIN 4-pin x 1, Y: 1.0 Vp-p, C: 0.286 Vp-p, 75 ohms RCA (L, R) x 1, 0.5 Vrms (for RGB/VIDEO/ S-VIDFO) YP<sub>B</sub>P<sub>R</sub> signal VIDEO IN S-VIDEO IN

AUDIO IN

S-VIDEO Mini DIN 8-pin x 1 (RS-232C) 2 m (6'7') Moulded material (ABS/PC) SERIAL

Power cord length Cabinet material Dimensions (W x H x D) 

Operating environment

0°-40°C (32°-104°F) 20%-80% (no condensation) Temperature Humidity note Control Unit Power supply Operation range\*3

3 V DC (button battery x 1) Approx. 7 m (23 feet) when operated from directly in front of the signal recep-

Dimensions (W x H x D)

40 x 86 x 6.5 mm (1-9/16 x 3-3/8 x 1/4) 18 g (0.6 oz.) (including a battery)

Weight 18 g (0.6 oz.)
Wireless LAN (PT-LB20NTE)
Standard IEEE802.11b/g

Modulation IEEE802.11b Direct sequence spread spectrum (ps-ss)

system Orthogonal frequency division multiplex IEEE802.11g (OFDM) system

Transmission syste IEEE802.11b IEEE802.11g

CCK (11/5.5 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps) 64-QAM (54/48 Mbps), 16-QAM (36/24 Mbps), QPSK (18/12 Mbps), DPSK (9/6 Mbps)

Transmission speed IEEE 802.11b IEEE 802.11g

11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps Approx. 30 m 2,412 MHz-2,472 MHz 1–13 ch

Operation range Frequency range Channels

#### Supplied Accessories

- Card remote control
   Lithium battery for remote control
- · Power cord
- RGB signal cable
- Carrying bagSoftware CD-ROM (PT-LB20NTE)

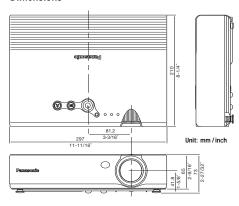
#### Optional Accessories

FT-I AB10 Replacement lamp unit ET-PKB30 Ceiling mount bracket

FT-RM300 Full-function wireless remote control Serial adaptor (DIN 8-pin/D-sub 9-pin) ET-ADSER

\*1: In AI mode.
\*2: Height including protruding parts and legs: 73 mm (2-27/32).
\*3: Operation range differs depending on the environment.

#### Dimensions



To use wireless functions, a PC is required that meets the condi-

To use wireless functions, a PC is required that there is no solutions given below:

S: Windows XP Home Edition, Windows XP Professional, Windows 2000 Professional, Windows Me (Millennium Edition) or Windows 985E (Second Edition)

CPU: Pentium III or higher, or other compatible processor (800 MHz or higher recommended when using the live mode; 1 GHz or higher is recommended when playing movies).

Memory: 128 MB or more (256 MB or more for Windows XP or Windows 2000)

Memory: 128 MB or more (256 MB or more for Windows XP or Windows 2000)

Free hard disk space: 60 MB or more Hardware conditions: CD-ROM drive (for software installation and viewing the

user's manual).

user's manual).

An 802.11b/g built-in wireless LAN system or external 802.11b/g LAN card must be installed and running normally. However, some 802.11g/b wireless LAN may not allow connection to 802.11g projectors. The data transfer speed will be lower with an 802.11b LAN than that with an 802.11g LAN.

Web browser:

Internet Explorer 6.0 or later, Netscape Communicator

DirectX® 8.1b or later must be installed.

Operation is not guaranteed for all computers that meet

the above conditions

#### Notes on use

- The projector uses a high-voltage mercury lamp that contains high internal pressure. This lamp may break, emitting a large sound, or fail to illuminate, due to impact or extended use. The length of time that it takes for the lamp to break or fail to illuminate varies greatly depending on individual lamp characteristics and usage conditions.

  The brightness of the lamp will gradually decrease with use.

- conditions:

  The brightness of the lamp will gradually decrease with use. The lamp, LCD panel, polarizing plate, and polarizing beam splitter (PBS) are consumable parts. These parts may need to be replaced during the guarantee period if the projector is used for six or more hours per day.

  The replacement cycle of the LCD panel, polarizing plate, and polarizing beam splitter (PBS) will be shortened if the projector is subjected to continuous use for six or more hours. Likewise, the replacement cycle of the lamp will be shortened if the power is frequently turned on and off or the projector is subjected to continuous use for for hours. tinuous use for 10 or more hours
- Interruptions may occur in the wireless connection due to signal interference or PC conditions.

#### Projection Distance -

YP<sub>B</sub>P<sub>R</sub> signal

#### PT-LB20NTE/LB20E

Diagonal image size	Distance	Distance to screen		
(4:3 aspect ratio)			edge of screen	
	min.	max.	to centre of lens	
33°/ 0.84 m / 2.7°	-	1.1 m / 3.6	8 cm / 3.1°	
40°/ 1.02 m / 3.3°	1.2 m / 3.9°	1.4 m / 4.6	9 cm / 3.5°	
50°/ 1.27 m / 4.2°	1.5 m / 4.9°	1.7 m / 5.6	11 cm / 4.3°	
60°/ 1.52 m / 4.9°	1.8 m / 5.9°	2.1 m / 6.9°	14 cm / 5.5°	
70°/ 1.78 m / 5.8°	2.1 m / 6.9°	2.4 m / 7.9°	16 cm / 6.3°	
80°/ 2.03 m / 6.7°	2.4 m / 7.9	2.8 m / 9.2	18 cm / 7.1"	
90°/ 2.29 m / 7.5°	2.7 m / 8.9°	3.2 m / 10.5°	20 cm / 7.9°	
100°/ 2.54 m / 8.3°	3.0 m / 9.8°	3.5 m / 11.5°	22 cm / 8.7°	
120°/ 3.05 m / 10.0°	3.6 m / 12.5	4.2 m / 13.8°	26 cm / 10.2°	
150°/ 3.81 m / 12.5°	4.5 m / 14.8°	5.3 m / 17.4°	33 cm / 13.0°	
200°/ 5.08 m / 16.7°	6.0 m / 19.7°	7.1 m / 23.3°	44 cm / 17.3°	
250°/ 6.35 m / 20.8°	7.5 m / 24.6	8.9 m / 29.2	55 cm / 21.7°	
300° / 7.62 m / 25.0°	9.0 m / 29.5°	10.7 m / 35.1°	66 cm / 26.0°	

#### PT-LB20SE

Diagonal image size	Distance to screen		Height from the
(4:3 aspect ratio)			edge of screen
	min.	max.	to centre of lens
33" / 0.84 m / 2.7"	-	1.1 m / 3.6′	8 cm / 3.1
40°/ 1.02 m / 3.3°	1.2 m / 3.9	1.4 m / 4.6	9 cm / 3.5"
50°/ 1.27 m / 4.2°	1.5 m / 4.9′	1.8 m / 5.9′	11 cm / 4.3°
60°/ 1.52 m / 4.9°	1.8 m / 5.9°	2.1 m / 6.9°	14 cm / 5.5°
70°/ 1.78 m / 5.8°	2.1 m / 6.9	2.5 m / 8.3	16 cm / 6.3°
80°/ 2.03 m / 6.7°	2.4 m / 7.9	2.9 m / 9.5°	18 cm / 7.1°
90°/ 2.29 m / 7.5°	2.8 m / 9.2	3.2 m / 10.5	20 cm / 7.9°
100°/ 2.54 m / 8.3°	3.0 m / 9.8°	3.6 m / 11.8°	22 cm / 8.7°
120°/ 3.05 m / 10.0°	3.7 m / 12.1	4.3 m / 14.1	26 cm / 10.2°
150°/ 3.81 m / 12.5°	4.6 m / 15.1	5.4 m / 17.7	33 cm / 13.0°
200°/ 5.08 m / 16.7°	6.1 m / 20.0´	7.3 m / 24.0°	44 cm / 17.3°
250°/ 6.35 m / 20.8°	7.6 m / 24.9°	9.1 m / 29.9′	55 cm / 21.7°
300° / 7.62 m / 25.0°	9.2 m / 30.2°	11.0 m / 36.1	66 cm / 26.0°

#### PT-LB20VE

Diagonal image size	Distance	Distance to screen		
(4:3 aspect ratio)				
	min.	max.	to centre of lens	
33" / 0.84 m / 2.7"	-	1.4 m / 4.6	4 cm / 1.6	
40° / 1.02 m / 3.3°	1.4 m / 4.6	1.7 m / 5.6	5 cm / 2.0°	
50°/ 1.27 m / 4.2°	1.7 m / 5.6	2.1 m / 6.9°	6 cm / 2.4°	
60°/ 1.52 m / 4.9°	2.1 m / 6.9	2.5 m / 8.2	7 cm / 2.8°	
70°/ 1.78 m / 5.8°	2.4 m / 7.9	2.9 m / 9.5	8 cm / 3.1	
80°/ 2.03 m / 6.7°	2.8 m / 9.2	3.4 m / 11.2	9 cm / 3.5°	
90°/ 2.29 m / 7.5°	3.1 m / 10.2	3.8 m / 12.5	11 cm / 4.3°	
100°/ 2.54 m / 8.3°	3.5 m / 11.5°	4.2 m / 13.8°	12 cm / 4.7°	
120°/ 3.05 m / 10.0°	4.2 m / 13.8	5.0 m / 16.4°	14 cm / 5.5°	
150°/ 3.81 m / 12.5°	5.2 m / 17.0°	6.3 m / 20.7°	18 cm / 7.1	
200° / 5.08 m / 16.7°	7.0 m / 22.9°	8.4 m / 27.6	23 cm / 9.1	
250°/ 6.35 m / 20.8°	8.7 m / 28.5	10.6 m / 34.8	29 cm / 11.4°	
300" / 7.62 m / 25.0"	10.5 m / 34.4°	12.7 m / 41.7	35 cm / 13.8°	

# Panasonic

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