Panasonic

PT-**LB412** Series

LCD Projectors

PT-**LB412**/**LB382**/**LB332**/**LW362**/**LW312**

PT-**LB360** Series

LCD Projectors

PT-**LB300**/**LB280**

Handy Mobility with Wireless Projection Capability*

* The optional ET-WML100 Wireless Module is required. Excluding the PT-LB300/LB280.

Bright, Easy to Use, Mobile, and Reliable for 10,000 Hours*

The compact PT-LB412 Series projectors are bright, easy to use, mobile, and reliable—ideal for educational and corporate users.
They feature a long-life lamp and filter with a replacement cycle of 10,000 hours* and optional wireless projection** capability.

* The maximum replacement cycle of the lamp when the lamp control is set to Eco2, and also the maximum replacement cycle of the filter. Both replacement cycles are affected by the usage environment. 8,000-hour lamp/fliter replacement cycle in Eco2 mode for the PT-LB300/LB280.
** The optional ET-WML100 Wireless Module is required. Wireless projection is not capable with the PT-LB300/LB280.

Excellent Performance in a Compact Body

High Brightness and High Contrast in a Lightweight Body

A brightness level ranging from 2,800 lm*1 to 4,100 lm*1 and contrast ratio of 12,000:1*2 have been achieved in a compact lightweight body. Clear and bright images enhance the learning and working experience.

Replacement Cycle of Lamp and Air Filter Became Longer

Lamp Mode	Replacement Cycle of Lamp*3		Replacement Cycle of Air Filter*3	
	PT-LB412 Series	PT-LB360 Series	PT-LB412 Series	PT-LB360 Series
Eco 2	10,000 hours	8,000 hours	10,000 hours	8,000 hours
Eco 1	6,000 hours	6,000 hours	6,000 hours	6,000 hours
Normal	5,000 hours	5,000 hours	5,000 hours	5,000 hours

Daylight View Lite

The Daylight View Lite function can be activated from the remote control for easy and comfortable viewing during presentations and lectures in a bright room.

Without Daylight View Lite

With Daylight View Lite

Quiet 28 dB*4 Design Helps to Hold Viewers' Attention

The noise level is as low as 28 dB.*4 This helps your audience to keep their attention on the discussion or on the screen images during quiet scenes.

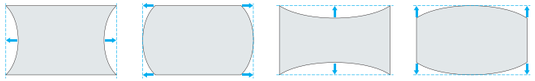
Ease of Installation

Corner Keystone Correction*5 Enables Angled Projection

All you need to do is designate four points as the corners of the projected image, and this function easily carries out horizontal and vertical keystone correction.*5

Curved Screen Correction*6

Barrel and pincushion distortions are easily corrected when projecting onto a curved screen.



1.2x Zoom Lens Allows Flexible Installation

The 1.2x zoom lens lets the projector support a wide range of projection distances.

Easy Lamp and Filter Replacement

For easier maintenance, you can replace the lamp from the top and the air filter from the side, even after the projector is installed on the ceiling. This eliminates the need to detach the projector from its mounting bracket in ceiling-mounted applications.

Multiple Unit Monitoring Capability*7

Multi Projector Monitoring and Control Software is available for monitoring and controlling multiple Panasonic projectors from a single PC.

Variety of Useful Features

Easy Wireless Projection by Optional Module*7

Simply inserting the optional ET-WML100 Wireless Module into the USB port on the projector enables easy wireless projection from Windows PCs, iOS devices, or Android devices on which the proper freeware is installed.

Presenter Light Ver.1.0 for Windows® PCs

- Pictures, videos, and any documents including PDF files/Power Point files, whatever are displayed on the PC screen can be projected.
- The images from up to four PCs can be projected simultaneously.

4-Window Multi Style

VueMagic™ Pro*8 for iOS/Android Devices

- Pictures, some documents including PDF files can be projected.
- Live camera mode / Annotate mode can be used.
- The images from up to four devices can be projected simultaneously.

Memory Viewer Function*7

Just insert a USB memory device into the projector and start projection straight away. There is no need for a PC.

USB Display Function*7 for Easy Projection Using a USB Cable

USB Display outputs images and sounds from the computer by connecting to the USB port with a single USB cable.

Equipped with an HDMI Input Terminal and Abundant Interfaces

Supports a wide range of system architectures. Include an HDMI input terminal, two sets of computer input terminals,* a monitor output terminals.

* The PT-LB300/LB280 has one computer (RGB) input terminal.

PT-LB412/LB382/LB332/LW362/LW312

PT-LB300/LB280

Other Useful Features

- Built-in 10 W speaker*9
- PJLink™ compatibility
- Built-in closed caption decoder
- Direct power off
- Projector identification system for up to 6 projectors
- Blackboard modes
- Start up logo
- Equipped with a security bar for theft prevention

Eco-friendly

- Ecology conscious design
- No halogenated flame retardants are used in the cabinet.
- Lead-free glass is used for the lens.
- Coating-free cabinet for easy recycling.
- Switchable lamp mode

•1 4,100 lm for the PT-LB412, 3,800 lm for the PT-LB382, 3,600 lm for the PT-LW362, 3,300 lm for the PT-LB332, 3,100 lm for the PT-LW312/LB300, and 2,800 lm for the PT-LB280. •2 10,000:1 for the PT-LB300/LB280. •3 The usage environment affects. •4 When lamp mode is set to Eco 2. The usage environment affects. •5 Only vertical keystone correction for the PT-LB300/LB280. •6 Only Curved Screen Correction is operable with the PT-LB412/LB382/LB332/LW362/LW312. •7 These functions are not supported with the PT-LB300/LB280. •8 VueMagic™ Pro is a product of Pixelworks, Inc. For detailed information, refer to the following website. http://vuemagic.pixelworks.com •9 2W speaker for the PT-LB300/LB280.

Projection distance unit: feet [meters]

PT-LB412/LB382
(4:3 aspect ratio; throw ratio 1.48–1.78:1)

Diagonal image size	Projection distance (L) min. (wide)	Projection distance (L) max. (tele)	Height from the edge of screen to center of lens (H)
30" [0.76]	2.9 [0.9]	3.5 [1.1]	0.214 [0.065]
40" [1.02]	3.9 [1.2]	4.7 [1.4]	0.286 [0.087]
50" [1.27]	4.9 [1.5]	5.9 [1.8]	0.357 [0.109]
60" [1.52]	5.9 [1.8]	7.1 [2.2]	0.428 [0.131]
70" [1.78]	6.9 [2.1]	8.3 [2.5]	0.500 [0.152]
80" [2.03]	7.9 [2.4]	9.5 [2.9]	0.571 [0.174]
90" [2.29]	8.9 [2.7]	10.7 [3.3]	0.643 [0.196]
100" [2.54]	9.9 [3.0]	11.9 [3.6]	0.714 [0.218]
120" [3.05]	11.9 [3.6]	14.3 [4.4]	0.857 [0.261]
150" [3.81]	14.9 [4.5]	17.9 [5.5]	1.071 [0.327]
200" [5.08]	19.9 [6.1]	23.9 [7.3]	1.428 [0.435]
250" [6.35]	24.9 [7.6]	29.9 [9.1]	1.785 [0.544]
300" [7.62]	29.8 [9.1]	35.9 [10.9]	2.142 [0.653]

PT-LW362
(16:10 aspect ratio; throw ratio 1.48–1.78:1)

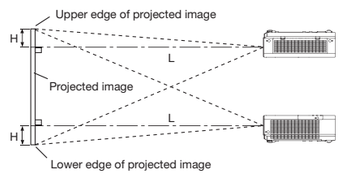
Diagonal image size	Projection distance (L) min. (wide)	Projection distance (L) max. (tele)	Height from the edge of screen to center of lens (H)
30" [0.76]	3.1 [0.9]	3.7 [1.1]	0.089 [0.027]
40" [1.02]	4.1 [1.3]	5.0 [1.5]	0.118 [0.036]
50" [1.27]	5.2 [1.6]	6.3 [1.9]	0.151 [0.046]
60" [1.52]	6.3 [1.9]	7.5 [2.3]	0.180 [0.055]
70" [1.78]	7.3 [2.2]	8.8 [2.7]	0.207 [0.063]
80" [2.03]	8.4 [2.6]	10.1 [3.1]	0.236 [0.072]
90" [2.29]	9.4 [2.9]	11.4 [3.5]	0.269 [0.082]
100" [2.54]	10.5 [3.2]	12.6 [3.8]	0.299 [0.091]
120" [3.05]	12.6 [3.8]	15.2 [4.6]	0.358 [0.109]
150" [3.81]	15.8 [4.8]	19.0 [5.8]	0.449 [0.137]
200" [5.08]	21.1 [6.4]	25.3 [7.7]	0.594 [0.181]
250" [6.35]	26.4 [8.0]	31.7 [9.7]	0.745 [0.227]
300" [7.62]	31.6 [9.6]	38.0 [11.6]	0.892 [0.272]

PT-LW312
(16:10 aspect ratio; throw ratio 1.47–1.77:1)

Diagonal image size	Projection distance (L) min. (wide)	Projection distance (L) max. (tele)	Height from the edge of screen to center of lens (H)
30" [0.76]	3.1 [0.9]	3.7 [1.1]	0.089 [0.027]
40" [1.02]	4.1 [1.3]	5.0 [1.5]	0.118 [0.036]
50" [1.27]	5.2 [1.6]	6.3 [1.9]	0.151 [0.046]
60" [1.52]	6.3 [1.9]	7.5 [2.3]	0.180 [0.055]
70" [1.78]	7.3 [2.2]	8.8 [2.7]	0.207 [0.063]
80" [2.03]	8.4 [2.5]	10.1 [3.1]	0.236 [0.072]
90" [2.29]	9.4 [2.9]	11.4 [3.5]	0.269 [0.082]
100" [2.54]	10.5 [3.2]	12.6 [3.8]	0.299 [0.091]
120" [3.05]	12.6 [3.8]	15.2 [4.6]	0.358 [0.109]
150" [3.81]	15.8 [4.8]	19.0 [5.8]	0.449 [0.137]
200" [5.08]	21.1 [6.4]	25.3 [7.7]	0.594 [0.181]
250" [6.35]	26.4 [8.0]	31.7 [9.6]	0.745 [0.227]
300" [7.62]	31.6 [9.6]	38.0 [11.6]	0.892 [0.272]

PT-LB332/LB300/LB280
(4:3 aspect ratio; throw ratio 1.47–1.77:1)

Diagonal image size	Projection distance (L) min. (wide)	Projection distance (L) max. (tele)	Height from the edge of screen to center of lens (H)
30" [0.76]	2.9 [0.9]	3.5 [1.1]	0.213 [0.065]
40" [1.02]	3.9 [1.2]	4.7 [1.4]	0.285 [0.087]
50" [1.27]	4.9 [1.5]	5.9 [1.8]	0.358 [0.109]
60" [1.52]	5.9 [1.8]	7.1 [2.2]	0.430 [0.131]
70" [1.78]	6.9 [2.1]	8.3 [2.5]	0.499 [0.152]
80" [2.03]	7.9 [2.4]	9.5 [2.9]	0.571 [0.174]
90" [2.29]	8.9 [2.7]	10.7 [3.3]	0.643 [0.196]
100" [2.54]	9.9 [3.0]	11.9 [3.6]	0.715 [0.218]
120" [3.05]	11.9 [3.6]	14.3 [4.3]	0.856 [0.261]
150" [3.81]	14.9 [4.5]	17.8 [5.4]	1.073 [0.327]
200" [5.08]	19.8 [6.0]	23.8 [7.3]	1.427 [0.435]
250" [6.35]	24.8 [7.6]	29.8 [9.1]	1.785 [0.544]
300" [7.62]	29.8 [9.1]	35.8 [10.9]	2.142 [0.653]



- The value for L (distance to screen) varies slightly depending on the zoom lens characteristics.
- At the shortest projection distance, the zoom lens characteristics may cause slight image distortion.

PT-LB412 Series

PT-LB412	XGA	4,100 lm
PT-LB382	XGA	3,800 lm
PT-LB332	XGA	3,300 lm
PT-LW362	WXGA	3,600 lm
PT-LW312	WXGA	3,100 lm

PT-LB360 Series

PT-LB300	XGA	3,100 lm
PT-LB280	XGA	2,800 lm

PT-LB360 Series
PT-LB412 Series
Remote control unit

Specifications

Model		PT-**LB412** Series					PT-**LB360** Series	
		PT-**LB412**	PT-**LB382**	PT-**LB332**	PT-**LW362**	PT-**LW312**	PT-**LB300**	PT-**LB280**
Power supply		AC100–240 V 50 Hz/60 Hz						
Power consumption		300 W (6 W when Standby mode set to Normal, 0.5 W when Standby mode set to Eco*1)						
LCD panel	Display method	Transparent LCD panel (× 3, R/G/B)						
	Drive method	Active matrix method						
	Panel size	16 mm (0.63 inches) diagonal (4:3 aspect ratio)			15.0 mm (0.59 inches) diagonal (16:10 aspect ratio)		16 mm (0.63 inches) diagonal (4:3 aspect ratio)	
	Pixels	786,432 (1,024 × 768) pixels			1,024,000 (1,280 × 800) pixels		786,432 (1,024 × 768) pixels	
Lens		Manual zoom (1.2 ×), Manual focus lens F=1.6–1.76, f=19.16–23.02 mm, Throw Ratio: 1.48–1.78:1		Manual zoom (1.2 ×), Manual focus lens F=2.1–2.25, f=19.11–22.94 mm, Throw Ratio: 1.47–1.77:1	Manual zoom (1.2 ×), Manual focus lens F=1.6–1.76, f=19.16–23.02 mm, Throw Ratio: 1.48–1.78:1	Manual zoom (1.2 ×), Manual focus lens F=2.1–2.25, f=19.11–22.94 mm, Throw Ratio: 1.47–1.77:1		
Screen size		0.76–7.62 m (30–300 inches) diagonally, 4:3 aspect ratio			0.76–7.62 m (30–300 inches) diagonally, 16:10 aspect ratio		0.76–7.62 m (30–300 inches) diagonally, 4:3 aspect ratio	
Resolution		1,024 × 768 pixels (Input signals that exceed this resolution will be converted to 1,024 × 768 pixels.)			1,280 × 800 pixels (Input signals that exceed this resolution will be converted to 1,280 × 800 pixels.)		1,024 × 768 pixels (Input signals that exceed this resolution will be converted to 1,024 × 768 pixels.)	
Brightness* (Lamp power: Normal)		4,100 lm	3,800 lm	3,300 lm	3,600 lm	3,100 lm	3,100 lm	2,800 lm
Lamp		230 W × 1 lamp						
	Lamp replacement cycle*2	Normal: 5000 h/Eco1: 6000 h/Eco2: 10,000 h					Normal: 5000 h/Eco1: 6000 h/Eco2: 8,000 h*2	
Center-to-corner uniformity*		80 %						
Contrast*		12,000:1 (all white/all black, Iris: On)*3					10,000:1 (all white/all black, Iris: On)*3	
Scanning frequency	HDMI IN	525i (480i)*4, 625i (576i)*4, 525p (480p), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1125 (1080)/60i,1125 (1080)/50i, 1125 (1080)/60p, 1125 (1080)/50p, 1125 (1080)/24p, 1125 (1080)/25p, 1125 (1080)/24sF, 1125 (1080)/30p VGA size (640 dots × 480 dots)–WUXGA (1,920 dots × 1,200 dots), dot clock: 25 MHz–162 MHz						
	RGB	f_H: 15–91 kHz, f_V: 24–85 Hz, dot clock: 162 MHz or lower						
	$Y_PB_PR_P$ ($Y_CB_CR_C$)	f_H: 15.73 kHz, f_V: 59.94 Hz [525i (480i)], f_H: 15.63 kHz, f_V: 50 Hz [625i (576i)], f_H: 31.47 kHz, f_V: 59.94 Hz [525p (480p)], f_H: 31.25 kHz, f_V: 50 Hz [625p (576p)], f_H: 45.00 kHz, f_V: 60 Hz [750 (720)/60p], f_H: 37.50 kHz, f_V: 50 Hz [750 (720)/50p], f_H: 33.75 kHz, f_V: 60 Hz [1125 (1080)/60i], f_H: 28.13 kHz, f_V: 50 Hz [1125 (1080)/50i], f_H: 28.13 kHz, f_V: 25 Hz [1125 (1080)/25p], f_H: 27.00 kHz, f_V: 24 Hz [1125 (1080)/24p], f_H: 27.00 kHz, f_V: 48 Hz [1125 (1080)/24sF], f_H: 33.75 kHz, f_V: 30 Hz [1125 (1080)/30p], f_H: 67.50 kHz, f_V: 60 Hz [1125 (1080)/60p], f_H: 56.25 kHz, f_V: 50 Hz [1125 (1080)/50p]						
	Video/S-Video	f_H: 15.73 kHz, f_V: 59.94 Hz [NTSC/NTSC4.43/PAL-M/PAL60], f_H: 15.63 kHz, f_V: 50 Hz [PAL/SECAM/PAL-N]						
Keystone correction range	Vertical	±30° (Auto, Manual)						
	Horizontal	±15° (Manual)					—	
Installation		Ceiling/floor, front/rear						
Terminals	HDMI IN	HDMI 19-pin × 1 HDCP compatible, Deep Color compatible, Audio signal: Linear PCM (sampling frequencies: 48 kHz, 44.1 kHz, 32 kHz)						
	COMPUTER 1 IN	D-sub HD 15-pin (female) × 1 [RGB/S-Video/$Y_PB_PR_P$($Y_CB_CR_C$)]						
	COMPUTER 2 IN	D-sub HD 15-pin (female) × 1 [RGB]					—	
	MONITOR OUT	D-sub HD 15-pin (female) × 1 [RGB/Monitor output]						
	VIDEO IN	Pin jack × 1						
	AUDIO IN 1	M3 (L,R) × 1						
	AUDIO IN 2	Pin jack × 2 (L,R)						
	AUDIO OUT	M3 (L,R) × 1 (variable)						
	LAN	RJ-45 (× 1) For network connections, 10Base-T/100Base-TX, PJLink™ (class 1) compatible					—	
	SERIAL IN	D-Sub 9-pin (female) × 1 For external control (RS-232C compatible)						
	USB-Type A	Memory Viewer/Wireless Module, DC5 V MAX500 mA					—	
	USB-Type B	USB Display					Serviceman only	
Built-in speaker		10 W mono					2 W mono	
Operation noise*		Normal: 37 dB, Eco1: 33 dB, Eco2: 28 dB						
Cabinet materials		Molded plastic (PC)						
Dimensions (W × H × D)		335 mm × 96 mm (when legs at shortest position) × 252 mm						
Weight		Approx. 2.9 kg					Approx. 2.8 kg	
Operating environment		Operating environment temperature: Normal use: 5 °C (41 °F) to 40 °C (104 °F) (Elevation: below 1,400 m (4,593'); [High land]: [Off]) 5 °C (41 °F) to 35 °C (95 °F) (Elevation: 1,400 m (4 593')–2,700 m (8 858'); [High land]: [On 1]) 5 °C (41 °F) to 30 °C (86 °F) (Elevation: 2,700 m (8 858')–3,000 m (9 843'); [High land]: [On 2]) Operating environment humidity: 20–80 % (no condensation)					Operating environment temperature: Normal use: 5 °C–40 °C (41 °F–104 °F) [at altitudes less than 1,400 m (4,500 ft)] 5 °C–35 °C (41 °F–95 °F) [at altitudes of 1,400–2,700 m (4,500–8,800 ft)] Operating environment humidity: 20–80 % (no condensation)	
Supplied accessories		• Wireless remote control unit (× 1) • Power cord (× 1) (× 2 for A model only) • CD-ROM (× 1) ··· Instruction manual, Multi Projector Monitoring and Control Software*5 • Instruction manual (Basic guide) • Batteries for remote control (R03/LR03/AAA type battery (× 2)) • RGB signal cable (× 1)						
Optional accessories	Ceiling Mount Bracket	Projector Mount Bracket: ET-PKL420B, Ceiling Mount Bracket (for high ceilings): ET-PKL100H, Ceiling Mount Bracket (for low ceilings): ET-PKL100S						
	Replacement Lamp Unit	ET-LAL500						
	Replacement Filter Unit	ET-RFL300						
	Conversion Cable	D-SUB/S-Video Conversion Cable: ET-ADSV						
	Wireless Module	ET-WML100 (U,E)					—	

Optional accessories

Ceiling Mount Bracket for high ceilings
ET-**PKL100H**

Ceiling Mount Bracket for low ceilings
ET-**PKL100S**

Projector Mount Bracket
ET-**PKL420B**

Replacement Filter
ET-**RFL300**

* The filter cover shown in the photo is not included.

Replacement Lamp Unit
ET-**LAL500**

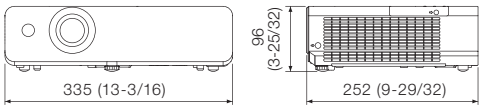
Wireless Module
ET-**WML100 (U,E)**

Photo shows the ET-WML100E

* This module is unavailable for PT-LB300/LB280.

Dimensions

unit: mm (inches)



* Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.

*1 When the Standby mode is set to Eco, network functions such as power on over the LAN network will not operate. Also, only certain commands can be received for external control using the serial terminal. *2 The value for the recommended lamp replacement cycle is the maximum value, at which luminance will become 50 %. The usage environment affects the lamp replacement cycle. *3 Image mode: Dynamic, Lamp control: Normal *4 Pixel-Repetition signal (dot clock frequency 27.0 MHz) only. *5 Not supplied with the PT-LB300/LB280.

Caution

Do not install the projector in locations that are subject to excessive water, humidity, steam or oily smoke. Doing so may result in fire, malfunction or electric shock.

NOTES ON USE

1. The projector uses a high-voltage mercury lamp under high internal pressure. This lamp may break, emitting a popping sound, or fail to illuminate, due to impact or extended use.
2. The high-wattage lamp becomes very hot during operation. Please observe the following precautions:
   - Never place objects on top of the projector while it is in operation.
   - Make sure there is an unobstructed space of 1000 mm(3 ft 3 in) or more around the projector's exhaust openings.
   - If stacking projector units, care must be taken to provide the recommended space between units. These space requirements also apply to installation where only one projector unit is operating at one time and the other unit is used as a backup.
   - If the projector is placed in a box or enclosure, the temperature of the air surrounding the projector must match the operating temperature listed in the specifications table during use. Also, make sure the projector's intake and exhaust openings are not blocked. Ensure there is sufficient ventilation to prevent hot air from the exhaust openings being recirculated into the intake opening.
3. The lamp replacement cycle duration becomes shorter if the projector is operated repeatedly for short periods.
   - The lamp replacement cycle varies greatly depending on individual lamp characteristics and usage conditions.
   - The brightness of the lamp will gradually decrease with use.
4. Due to natural characteristics of lamps, screen brightness may fluctuate. This is not an indication of faulty lamp performance.

Panasonic®

Weights and dimensions shown are approximate. Specifications and appearance are subject to change without notice. Product availability differs depending on region and country. This product may be subject to export control regulations. The projection distances and throw ratios given in this brochure are for use only as guidelines. For more detailed information, please consult the dealer from whom you are purchasing the product. The PJLink trademark is an application trademark in Japan, the United States, and other countries and regions or registered trademarks. Windows® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. HDMI, the HDMI logo and High-Definition Multimedia Interface is a trademark or registered trademark of HDMI Licensing LLC. All other trademarks are the property of their respective trademark owners. Projection images simulated.

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For more information about Panasonic Projectors and Professional Displays, pleaes visit:
Panasonic Visual System Solutions web site-
http://panasonic.net/avc/visual_system/

All information included here is valid as of August 2015.

PT-LB412G1 Printed in Japan.