

Panasonic
ideas for life



SHORT-THROW PROJECTORS FOR INTERACTIVE APPLICATIONS

PT-TW231R SERIES

LCD PROJECTORS
PT-TW231R
PT-TW230

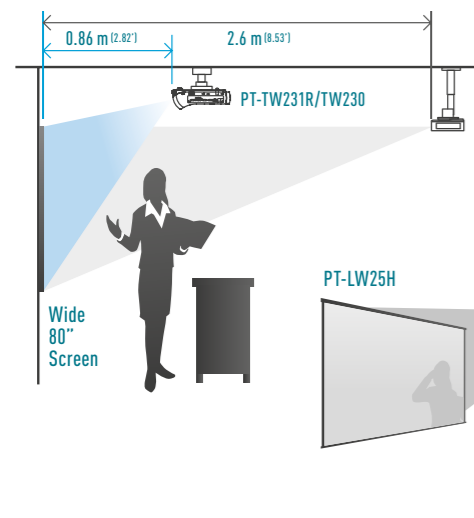


NEW PROJECTORS WITH APPEALING SHORT THROW PROJECTION FEATURES

Projecting images onto a large screen in a limited space; making lectures go smoothly by eliminating glare of the projection light and the shadow on the screen. The new short-throw interactive projectors meet these needs, creating new styles of lectures, workshops, meetings and presentations.

SHORT THROW WITH INTERACTIVE FUNCTION*1

SHORT THROW



Images are projected onto an 80-inch wide screen with a projection distance of 0.86 m

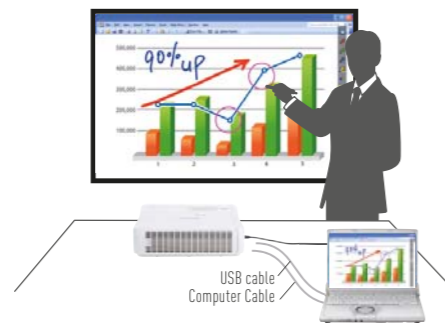
Close range projection reduces not only shadows of the presenter but also glare of the projection light, making lectures and meetings less stressful.

INTERACTIVE FUNCTION

The interactive function allows writing on a projected image*1

You can write letters or draw figures on the projected image with an interactive pen. Then you can store these letters and figures in a computer. The interactive function allows efficient and effective presentations and promotes information sharing.

- You can write notes and points on the screen with the interactive pen/pointer.
- During presentation, you can use the whiteboard to operate the computer.
- You can instantly store and share with others the decisions made during meetings.



Provided Interactive Pen and Interactive Pointer

Interactive pen
Lightly touch the screen with this pen to write.

Interactive pointer
Press the button of the interactive pointer to work.



CREATING NEW STYLES OF LECTURES, TRAINING, MEETINGS & PRESENTATIONS



For better understanding of lectures

The teacher makes the students write answers on the written on whiteboard to increase their feelings of involvement in the class and their levels of understanding.

For facilitating information-sharing meeting

You can immediately digitalize the contents the screen for information sharing.

For more realistic training

The presenter writes key points and new data on the whiteboard in real time to conduct realistic training.

For more compelling presentations

Projection and writing on a large screen make presentations more compelling.

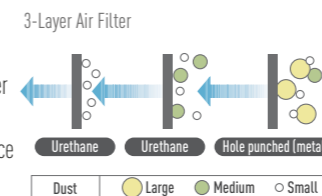
SUPERB PERFORMANCE

High Brightness of 2,500 lm and a 10 W High-output Speaker Meet Your Meeting/Seminar Room Needs

High brightness of 2,500 lm ensures bright and easy-to-see image projection. The volume level of the 10 W high-output speaker is enough for meeting rooms and classrooms; you do not need to use an external speaker. You can make multi-media presentations (including audio presentations).

Lamp and Air Filter Replacement Cycle of up to 4,000 Hours

The lamp replacement cycle of up to 4,000 hours². The air filter is constructed of three layers with different mesh sizes. The air filter replacement cycle is also 4,000 hours³. Such replacement cycles reduce maintenance hassles, because longer periods of use translate to lower maintenance costs and environmental impact.



Quiet 28-dB⁴ Design Does Not Interrupt Meetings or Classes

As the quiet design keeps noise levels down to 29-dB⁴, the sound of the cooling fan is hardly noticeable. The audience can concentrate on the presentation and the screen images even during quiet scenes.

Extensive Interfaces with an HDMI Input Terminal

Extensive interfaces, including two sets of computer (RGB) input terminals (one set is switchable to output) and an HDMI input terminal, allows a wide range of system configurations.



0.42 W Standby Power Consumption⁵

When Standby mode is set to Eco, the standby power consumptions is as low as 0.42 W⁵, reducing running cost and effects on the environment.

Easy Remote Monitoring and Control

Web browsers of computers connected via wired LAN allow you to remotely operate the projector and check its status. The email messaging function lets you know when to replace the lamp, and notifies you of the projector status. Multi Projector Monitoring and Control Software is available to monitor and control multiple Panasonic projectors using a single computer. The wired LAN terminal is compatible with PLink™ (class 1). The open protocol that is used by many manufacturer ensures control of system configurations which include projectors of other manufacturers.



CONVENIENT FUNCTIONS

“Direct Power Off” Right after Use

The breaker in the room is directly turned off without operating the power switch of the ceiling-mounted projector. You can leave the room immediately after the meeting or the class.

Startup Logo Function*⁶ is Effective for Theft Prevention

To start projection, you can display your pre-registered logo. Displaying your school or company logo aids in theft prevention. The password function prevents unauthorised use of the projector.

Easy to Replace the Lamp and Air Filters

You can replace the lamp and the air filters from the top of the projector. There is no need to detach the projector from the ceiling bracket.



Wireless Remote Control is Convenient When Using More Than One Projector

A maximum of two IDs can be set up, allowing individual remote control of each projector.



Eco-friendly

- No halogenated flame retardants are used in the cabinet.
- Lead-free glass is used for the lens.
- Low standby power of 0.42 W⁵.
- Switchable lamp mode.

*1 Only PT-TW231R has this function.

*2 This is the maximum value when the lamp power is set to Eco mode where the lamp is turned on for 2 hours and off for 0.25 hours. If the lamp is turned on more times or kept on for a long time, the lamp replacement cycle will shorten. In Normal mode, the lamp replacement cycle is 3,000 hours. The usage environment affects the duration of the filter.

*3 With the lamp power set to Eco. The usage environment affects the duration of the filter.

*4 When the lamp power is set to Eco and fan control is set to Off (Non-high altitude setting).

*5 Standby mode: Eco. When the Standby mode is set to Eco, network functions such as LAN Standby On do not work.

*6 To register a logo, the included Logo Transfer Software is required.

SPECIFICATIONS

MODEL	PT-TW231R	PT-TW230	
Power supply	100 – 240 V AC, 50/60 Hz		
Power consumption	310 W (0.42 W when STANDBY MODE set to ECO;* 9.5 W when STANDBY MODE set to NETWORK.)		
Optical system	Optical isolation/Prism synthesis by using a dichroic mirror		
LCD Panel	Panel size	15 mm (0.59 inches) (16:10 aspect ratio)	
	Display method	Transparent LCD panel (x 3, RGB)	
	Drive system	Active matrix	
	Pixels	1,024,000 pixels (1,280 × 800) x 3 – Total: 3,072,000 pixels	
	Alignment	Stripe	
Lens	Fixed/manual focus – F = 1.8 – f = 6.68 mm		
Lamp	230 W UHM lamp (The lamp replacement cycle is 4,000 hours*2)		
Screen size (diagonal)	1.52 – 2.79 m (60 – 110 inches) (16:10 aspect ratio)		
Colour reproducibility	Full Colour (16.77 million Colours)		
Brightness*3	2500 lm		
Center-to-corner uniformity*3	80%		
Contrast*3	500:1 (full on/off)		
Resolution	1,280 × 800 pixels (Input signals that exceed this resolution will be converted to 1,280 × 800 pixels.)		
Scanning frequency	HDMI	(Horizontal) 25–80 kHz; (Vertical) 50–85 Hz; (Dot clock) 162 MHz or lower	
	RGB (analog)	(Horizontal) 15–100 kHz; (Vertical) 50–100 Hz; (Dot clock) 140 MHz or lower (Signals exceeding the dot clock rate of 140MHz are downsampled.)	
	YPBPR (YCBCR)	FH: 15.75 kHz, FV: 60 Hz [480i(525i)]	FH: 15.63 kHz, FV: 50 Hz [576i(625i)]
		FH: 31.50 kHz, FV: 60 Hz [480p(525p)]	FH: 31.25 kHz, FV: 50 Hz [576p(625p)]
		FH: 45.00 kHz, FV: 60 Hz [720(750)/60p]	FH: 37.50 kHz, FV: 50 Hz [720(750)/50p]
Video/S-Video	[FH] 15.75/15.63 kHz (FV) 50/60 Hz [NTSC/NTSC4.43/PAL/PAL60/PAL-N/PAL-M/SECAM]		
Keystone correction range/mity	Vertical: ± 20°		
Installation	Ceiling/floor, front/rear (Menu setting)		
Built-in speaker	3.7 cm Round shape x 1 output power 10 W (Monaural)		
Terminats	HDMI IN	(HDMI 19-pin) x 1 (compatible with HDCP) Audio signal Linear PCM (Sampling frequency: 48 kHz/44.1 kHz/32 kHz)	
	COMPUTER IN 1	D-sub HD 15-pin (female) x 1 (RGB/YPB(CB)/PR(CR) x 1)	
	COMPUTER IN 2 / MONITOR OUT	D-sub HD 15-pin (female) x 1 (RGB x 1) (Input/output selectable using on-screen Menu) (When Monitor Out is selected, the COMPUTER IN 1 signal is output)	
	Video in	RCA pin x 1	
	S-video in	Mini DIN 4-pin x 1	
	COMPUTER AUDIO IN	M3 x 1 (L-R x 1)	
	AUDIO IN	RCA pin x 2 (L-R x 1) for VIDEO/S-VIDEO input	
	AUDIO OUT	M3 x 1 (L-R x 1)	
	SERIAL IN	D-sub 9-pin (male) x 1 for external control (RS-232C compliant)	
	LAN	(RJ-45) x 1 (for network connection, 100BASE-TX/10BASE-T, compliant with PjLink™ (class 1))	
	3D SYNC OUT	Mini DIN 3-pin x 1 (for 3D transmitter connection)	
	USB	1 (for interactive function)	
	Cord length	3.0 m (9'10")	
Cabinet materials	Moulded plastic (PC)		
Dimensions (W × H × D)	350 × 143 × 389 mm (13-25/32" × 5-5/8" × 15-1/16") (with legs at shortest position)	350 × 143 × 382 mm (13-25/32" × 5-5/8" × 15-1/32") (with legs at shortest position)	
Weight	Mini DIN 3-pin x 1 (for 3D transmitter connection)		
Noise level	36 dB (Lamp power: Normal); 29 dB (Lamp power: Eco)		
Operating environment	Operating temperature: 0° – 35°C (32° – 95°F) (Less than 1200 m above sea level); 0° – 30°C (32° – 86°F) (1200 – 2700 m above sea level) Operating humidity: 20% – 80% (no condensation)		
Supplied accessories	Power cord x 1*, Power cord cover x 1, Wireless remote control unit x 1, Batteries (AAA type x 6), USB cable (4.5 m) x 1, Computer cable (1.8 m, for VGA) x 1, Interactive pen x 1, Interactive pointer x 1, Application software (Logo Transfer Software, Multi Projector Monitoring & Control Software), CD-ROM x 1, Application software (Light Pen II), CD-ROM x 1	Power cord x 1*, Power cord cover x 1, Wireless remote control unit x 1, Batteries (AAA type x 2), Computer cable (1.8 m, for VGA) x 1, Application software (Logo Transfer Software, Multi Projector Monitoring & Control Software), CD-ROM x 1	

For more information about Panasonic projectors
 >>> <http://panasonic.net/avc/projector>

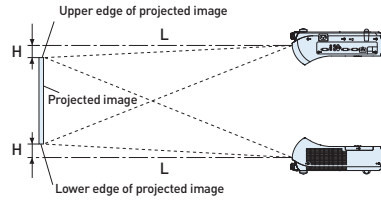


All information included here is valid as of December 2012.

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.

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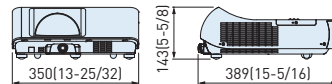
PROJECTION DISTANCE UNIT: METERS (FEET)



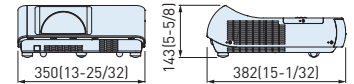
[16:10 ASPECT RATIO; THROW RATIO: 0.5:1]		
Diagonal image size	Projection distance (L)	Height from the edge of screen to centre of lens (H)
1.52 [60"]	0.64 [0.92']	-0.14 [-0.46']
1.78 [70"]	0.75 [2.46']	-0.16 [-0.52']
2.03 [80"]	0.86 [2.28']	-0.18 [-0.59']
2.29 [90"]	0.97 [3.18']	-0.20 [-0.66']
2.29 [100"]	1.09 [3.58']	-0.23 [-0.75']
2.29 [110"]	0.44 [3.94']	-0.25 [-0.82']

DIMENSIONS UNIT: MM (INCH)

PT-TW231R



PT-TW230



CAUTION

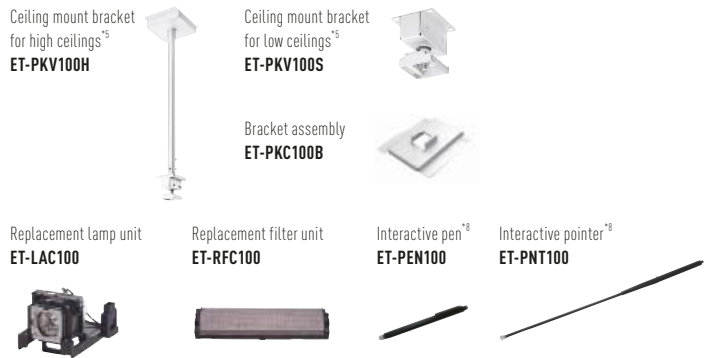
Do not install the projector in locations that are subject to excessive water, humidity, steam or oily smoke. Doing so may result in fire, malfunction or electric shock.

- *1 When Standby mode is set to Eco, network functions such as standby on via LAN are not available. Only certain commands can be received for external control using the serial terminal.
- *2 This is the maximum value when the lamp power is set to Eco mode where the lamp is turned on for 2 hours and off for 0.25 hours. If the lamp is turned on more times or kept on for a long time, the lamp replacement cycle will shorten. In Normal mode, the lamp replacement cycle is 3,000 hours. The usage environment affects the duration of the lamp.
- *3 Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.
- *4 The above values are averages. Actual values may be different according to the product.
- *5 Power cord x 2(PT-TW231REA/TW231REA).
- *6 Power cord x 2(PT-TW230EA/TW230EA).
- *7 This product is used together with an optional bracket assembly (sold separately).
- *8 The above are exclusively for PT-TW231R. They are the same as those which are supplied with PT-TW231R.

NOTE 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 500 mm (19-11/16 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.

OPTIONAL ACCESSORIES



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