

Panasonic

ideas for life

PT-TW231R Series

LCD Projectors

PT-TW231R
PT-TW230



Short-throw interactive projectors make presentations for classes and meetings easier to understand and more compelling.



New Projectors With Effective and 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.



PT-TW231R

2500 lm

WXGA

Interactive



PT-TW230

2500 lm

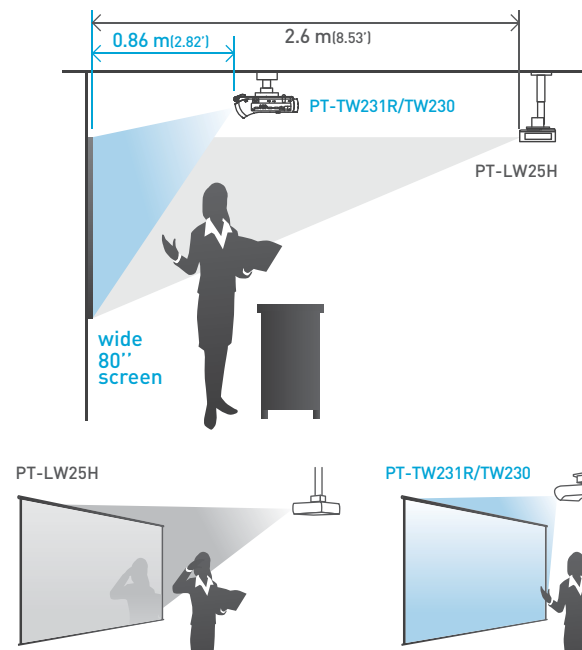
WXGA

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.

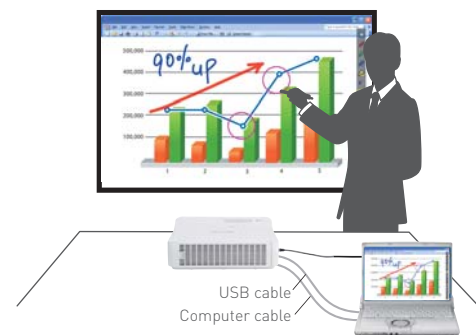


Interactive function

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 and presentations

For better understanding of lectures

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

For more realistic training

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

For facilitating information-sharing meeting

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

For more compelling presentations

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



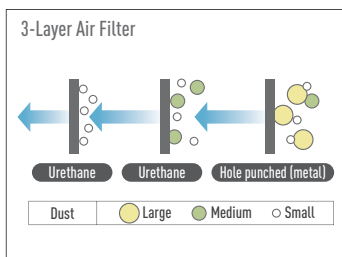
Superb Performance

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 hours*2. The air filter is constructed of three layers with different mesh sizes. The air filter replacement cycle is also 4,000 hours*3. Such replacement cycles reduce maintenance hassles, because longer periods of use translate to lower maintenance costs and environmental impact.



Quiet 29-dB*4 Design Does Not Interrupt Meetings or Classes

As the quiet design keeps noise levels down to 29-dB*4, 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.



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

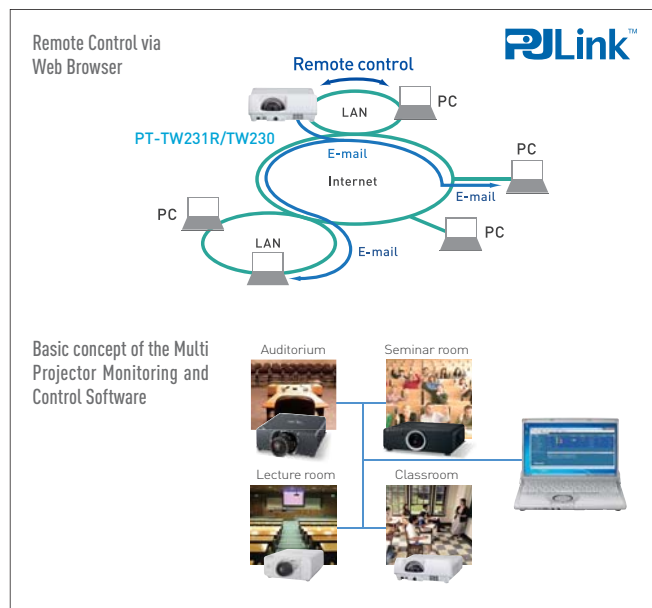
To start projection, you can display your pre-registered logo. Displaying your school or company logo aids in theft prevention. The password function prevents unauthorized use of the projector.

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 W*5
- Switchable lamp mode

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 PjLink™ (class 1). The open protocol that is used by many manufacturer ensures control of system configurations which include projectors of other manufacturers.



0.42 W Standby Power Consumption*5

When Standby mode is set to Eco, the standby power consumptions is as low as 0.42 W *5, reducing running cost and effects on the environment.

Easy to Replace the Lamp and Air Filters

You can replace the lamp from the top and the air filters from the back 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 six IDs can be set up, allowing individual remote control of several projectors.



*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 lamp.
*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,*1 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]	
Color reproducibility	Full color [16.77 million colors]	
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]]	
Video/S-Video	fh: 45.00 kHz, fv: 60 Hz [720i[750i]/60p] fh: 37.50 kHz, fv: 50 Hz [720i[750i]/50p]	
	fh: 33.75 kHz, fv: 60 Hz [1080i[1125i]/60i] fh: 28.13 kHz, fv: 50 Hz [1080i[1125i]/50i]	
Keystone correction range	[FH] 15.75/15.63 kHz [FV] 50/60 Hz [NTSC/NTSC.4/3/PAL/PAL.60/PAL-N/PAL-M/SECAM]	
Installation	Vertical: ± 20°	
Built-in speaker	3.7 cm Round shape x1 output power 10 W [Monaural]	
Terminals	HDMI IN	[HDMI 19-pin] x 1 [compatible with HDCP]
	COMPUTER IN 1	Audio signal Linear PCM [Sampling frequency: 48 kHz/44.1 kHz/32 kHz]
	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	D-sub HD 15-pin [female] x 1 [RGB/YPbPr/Cb]/Pr[Cr] x 1
	S-VIDEO IN	RCA pin x 1
	COMPUTER AUDIO IN	Mini DIN 4-pin x 1
	AUDIO IN	M3 x 1 [L-R x 1]
	AUDIO OUT	RCA pin x 2 [L-R x 1] for VIDEO/S-VIDEO input
	SERIAL IN	M3 x 1 [L-R x 1]
	LAN	D-sub 9-pin [male] x 1 for external control [RS-232C compliant]
USB	[RJ-45] x 1 [for network connection, 100BASE-TX/10BASE-T, compliant with PjLink™ [class 1]]	
USB	1 [for interactive function]	-
Cord length	2.0 m [6'7"]	
Cabinet materials	Molded plastic [PC]	
Dimensions (W × H × D)	350 × 143 × 389 mm [13-25/32" × 5-5/8" × 15-5/16"] [with legs at shortest position]	350 × 143 × 382 mm [13-25/32" × 5-5/8" × 15-1/32"] [with legs at shortest position]
Weight	Approx. 4.7 kg [10.4 lbs]*4	
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]	
Supplied accessories	Power cord x 1*5, Power cord cover x 1, Wireless remote control unit x 1, Batteries (AAA type x 6), Computer cable (1.8 m, for VGA) x 1, Interactive pen x 1, Interactive pointer x 1, USB cable (4.5 m) 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*6, 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, Application software (Light Pen II), CD-ROM x 1

*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.J]

*6 Power cord x 2 [PT-TW230EA/TW230EA.J]

*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.

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.

NOTE ON USE

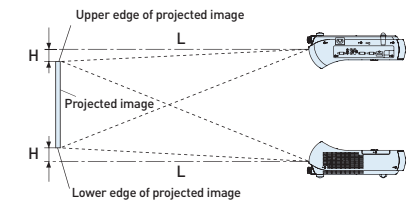
- The projector uses a high-voltage mercury lamp under high internal pressure. This lamp may break, emitting a popping sound, or fail to illuminate, due to impact or extended use.
- The high-wattage lamp becomes very hot during operation. Please observe the following precautions:
 - Never place objects 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.
- 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.
- Due to natural characteristics of lamps, screen brightness may fluctuate. This is not an indication of faulty lamp performance.

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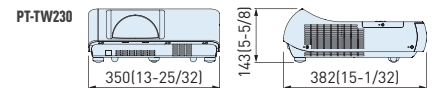
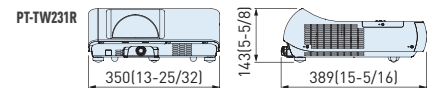
Projection distance unit: meters (feet)



(16:10 aspect ratio; throw ratio: 0.5:1)

Diagonal image size	Projection distance (L)	Height from the edge of screen to center of lens (H)
1.52 [60"]	0.64 [2.10']	-0.14 [-0.46']
1.78 [70"]	0.75 [2.46']	-0.16 [-0.52']
2.03 [80"]	0.86 [2.82']	-0.18 [-0.59']
2.29 [90"]	0.97 [3.18']	-0.20 [-0.66']
2.54 [100"]	1.09 [3.58']	-0.23 [-0.75']
2.79 [110"]	1.20 [3.94']	-0.25 [-0.82']

Dimensions unit: mm (inch)



Optional accessories

Ceiling mount bracket for high ceilings*7
ET-PKV100H



Ceiling mount bracket for low ceilings*7
ET-PKV100S



Interactive pen*8
ET-PEN100



Interactive pointer*8
ET-PNT100



Replacement lamp unit
ET-LAT100



Replacement filter unit
ET-RFT100



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