# Panasonic

S P E C   F I L E

**Product Number :**  PT-**TW250**

**Product Name :**  LCD Projectors

## Specifications

**Main unit**

| | | |
|---|---|---|
| Power supply | | AC100–240V 3.5A 50/60 Hz |
| Power consumption | | 300W |
| | | 6W when Standby mode set to Normal, |
| | | 0.5W when Standby mode set to Eco*1 |
| LCD panel | Panel size | 15.0 mm (0.59 inches) diagonal (16:10 aspect ratio) |
| | Display method | Transparent LCD panel (× 3, R/G/B) |
| | Drive method | Active matrix method |
| | Pixels | 1,024,000 (1,280 × 800) × 3, total of 3,072,000 pixels |
| | Pixel configuration | Stripe |
| Lens | | Fixed zoom, manual focus F1.8  f 6.08mm |
| Throw ratio | | 0.46:1 |
| Lamp | | 230 W UHM lamp |
| Screen size | | 50–100 inches (1.27–2.54 m) diagonally, 16:10 aspect ratio |
| Colors | | Full color (16,777,216 colors) |
| Brightness*2 | | 2,800 lumens (LAMP POWER: NORMAL) |
| Center-to-corner uniformity*2 | | 80% |
| Contrast*2 | | 10,000:1 (full on/full off, Iris ON) |
| Resolution | | 1,280 × 800 pixels (Input signals that exceed this resolution will be converted to 1,280 × 800 pixels.) |
| Optical axis shift | | 7.2:-1 (fixed) |
| Keystone correction range | | Vertical: ±15°, horizontal: ±15° |
| Installation | | Ceiling/floor, front/rear (menu selection) |
| Built-in speaker | Output power | 10 W (monaural) |
| Terminals | HDMI IN | HDMI 19-pin × 1, HDCP and Deep color compatible |
| | | 480i (525i)*3, 576i (625i)*3, 480p (525p), 576p (625p), 720 (750)/60p, 720 (750)/50p, 1080 (1125)/60i, 1080 (1125)/50i, 1080 (1125)/25p, 1080 (1125)/24p, 1080 (1125)/24sF, 1080 (1125)/30p, 1080 (1125)/60p, 1080 (1125)/50p, |
| | | VGA (640 × 480)–WUXGA*4 (1,920 × 1,200), |
| | | Audio signal: linear PCM |
| | | (sampling frequencies: 48 kHz, 44.1 kHz, 32 kHz) |
| | COMPUTER (RGB) 1 IN | D-sub HD 15-pin (female) × 1 |
| | R, G, B | R, G, B: 0.7 Vp-p, 75 ohms; |
| | | HD/VD, SYNC: high impedance, TTL (positive/negative automatic) |
| | Y, PB (CB), PR (CR) | Y: 1.0 Vp-p (including sync signal), 75 ohms |
| | | PB (CB), PR (CR): 0.7 Vp-p, 75 ohms |
| | S-VIDEO | Y: 1.0 Vp-p; C: 0.286 Vp-p, 75 ohms |
| | | **NOTE: D-Sub -S video conversion cable (ET-ADSV) is required.** |
| | COMPUTER (RGB) 2 IN / 1 OUT | D-sub HD 15-pin (female) × 1 |
| | | **NOTE: Input/output is selected using the menu. When output is selected, signals from COMPUTER (RGB) 1 IN are output.** |
| | R, G, B | R, G, B: 0.7 Vp-p, 75 ohms; |
| | | HD/VD, SYNC: TTL (positive/negative automatic) |
| | VIDEO IN | Pin jack × 1, 1.0 Vp-p, 75 ohms |
| | AUDIO IN 1 | M3 (L, R) × 1, 0.5 Vrms |
| | AUDIO IN 2 | Pin jack × 2 (L, R x 1), 0.5 Vrms |
| | AUDIO OUT | M3 (L, R) × 1 (monitor out: 0–2.0 Vrms, variable) |
| | SERIAL IN | D-sub 9-pin (female) × 1, for external control (RS-232C compliant) |
| | LAN | RJ-45 × 1, for network connection, compliant with PJLink™, 100Base-TX/10Base-T |
| | USB | USB A (type A) connector × 1, for Memory Viewer (Out put 5V MAX 500mA) |
| | | USB B (type B) connector × 1, for USB Display |

| | |
|---|---|
| Power cord length | 3 m (9 ft 10 in) |
| Cabinet materials | Molded plastic |
| Dimensions (W × H × D) | 335 × 134.1[*5] × 329 mm |
| | (13-3/16 × 5-1/4[*5] × 12-15/16 inches) |
| Weight[*6] | Approx. 3.8 kg (8.38 lbs) |
| Operation noise[*2] | 37 dB (Lamp power: Normal), 33 dB (Lamp power: Eco1) |
| | 28 dB (Lamp power: Eco2) |
| Operating temperature | 5°C–40°C (41°F–104°F) [at less than 1,400 m (4,500 ft.) above sea level] |
| | 5°C–35°C (41°F–95°F) [at 1,400 m to 2,700 m (4,500 ft. to 8,800 ft.) above sea level] |
| Operating humidity | 20%–80% (no condensation) |
| Storage temperature | -20°C–60°C |
| Storage humidity | 10%–80% |

**Remote control unit**

| | |
|---|---|
| Power supply | 3 V DC (R03/LR03/AAA type battery × 2) |
| Operation range[*7] | Approx. 5 m (16 ft 5 in) when operated from directly in front of the signal receptor |
| Dimensions (W × H × D) | 44 × 105 × 20.5 mm (1-23/32 × 4-1/8 × 13/16 inches) |
| Weight | Approx. 63 g (2.22 oz) (including batteries) |

**Supplied accessories**

Power cord (× 1) (× 2 for PT-TW250E)
Wireless remote control unit (× 1)
Batteries for remote control (R03/LR03/AAA type × 2)
Computer signal cable 1.5 m (4 ft 11 in), VGA cable (× 1)
Software CD-ROM (Instruction Manual, Multi Projector Monitoring and Control Software) (× 1)
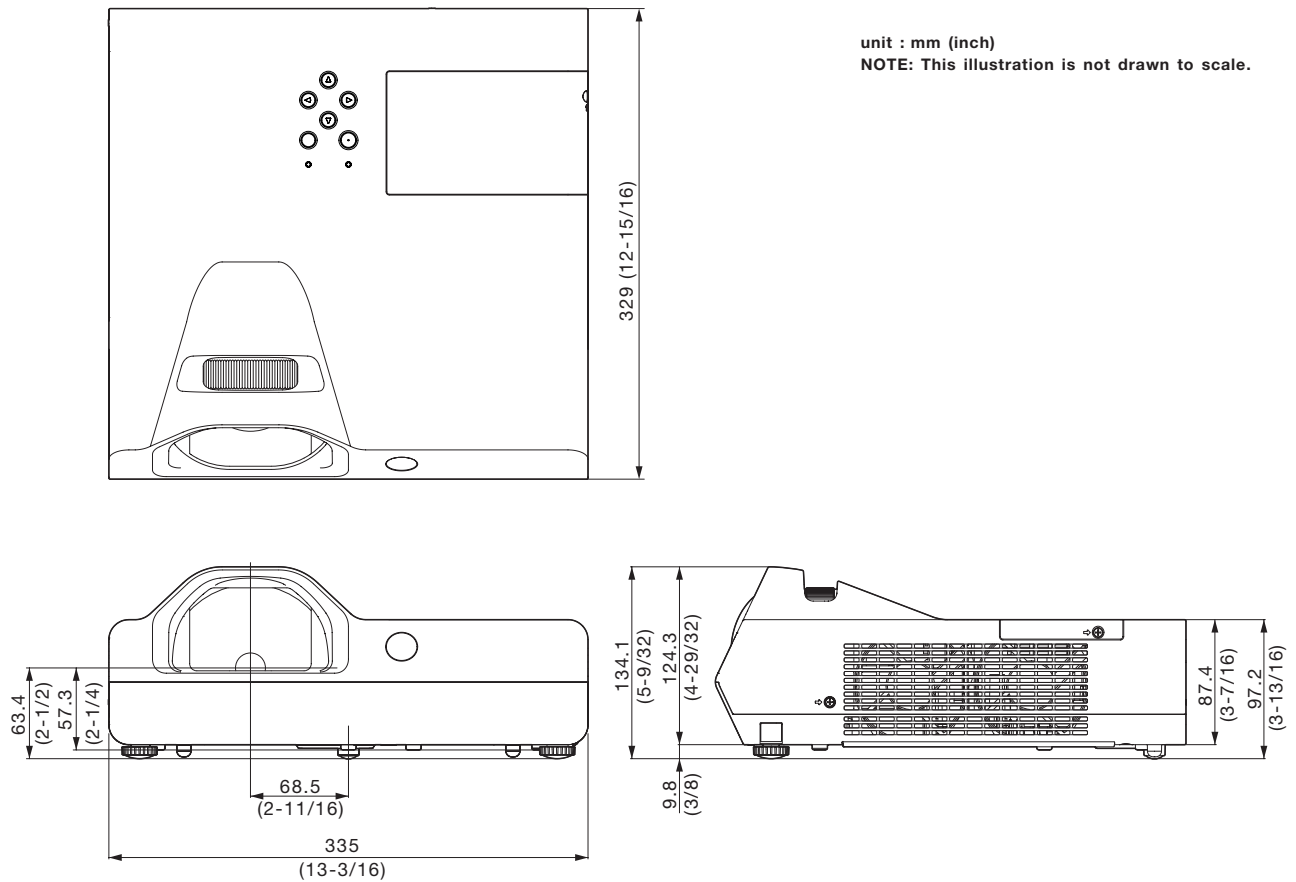
**Optional accessories**

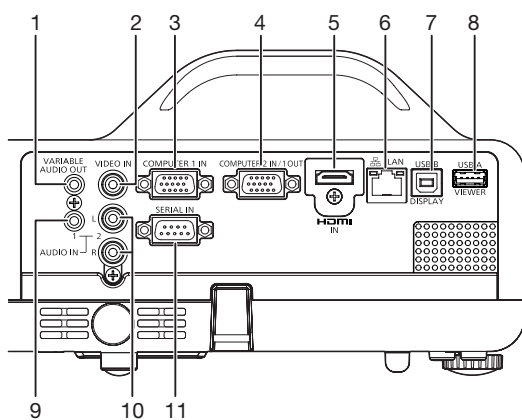| | |
|---|---|
| Ceiling mount bracket | ET-PKL100H (for high ceilings) |
| Ceiling mount bracket | ET-PKL100S (for low ceilings) |
| Projector mount bracket | ET-PKL430B |
| D-SUB - S Video conversion cable | ET-ADSV |
| Replacement lamp unit | ET-LAL500 |
| Replacement filter unit | ET-RFL300 |

**Weights and dimensions shown are approximate. Specifications subject to change without notice.**
*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 Measurement, measuring conditions, and method of notation all comply with ISO 21118 international standards.
*3 Only compatible with dot clock frequency of 27MHz (pixel repetition signal)
*4 WUXGA resolution is supported only when the signals are compliant with VESA CVT-RB (Coordinated Video Timing-Reduced Blanking).
*5 With legs at shortest position.
*6 Average value. May differ depending on models.
*7 Operation range differs depending on environments.

## Dimensions

unit : mm (inch)
**NOTE: This illustration is not drawn to scale.**

329 (12-15/16)

63.4 (2-1/2)
57.3 (2-1/4)

68.5 (2-11/16)

335 (13-3/16)

134.1 (5-9/32)
124.3 (4-29/32)
9.8 (3/8)

87.4 (3-7/16)
97.2 (3-13/16)

## Terminals

VARIABLE AUDIO OUT
VIDEO IN
COMPUTER 1 IN
COMPUTER 2 IN/1 OUT
SERIAL IN
HDMI IN
LAN
USB B DISPLAY
USB A VIEWER
AUDIO IN

| 1 | Audio output |
|---|---|
| 2 | Video input |
| 3 | Computer 1 input |
| 4 | Computer 2 input / computer 1 output |
| 5 | HDMI input |
| 6 | LAN connector |
| 7 | USB B connector |
| 8 | USB A connector |
| 9 | Audio input 1 |
| 10 | Audio input 2 |
| 11 | Serial input |

## Standard setting-up position
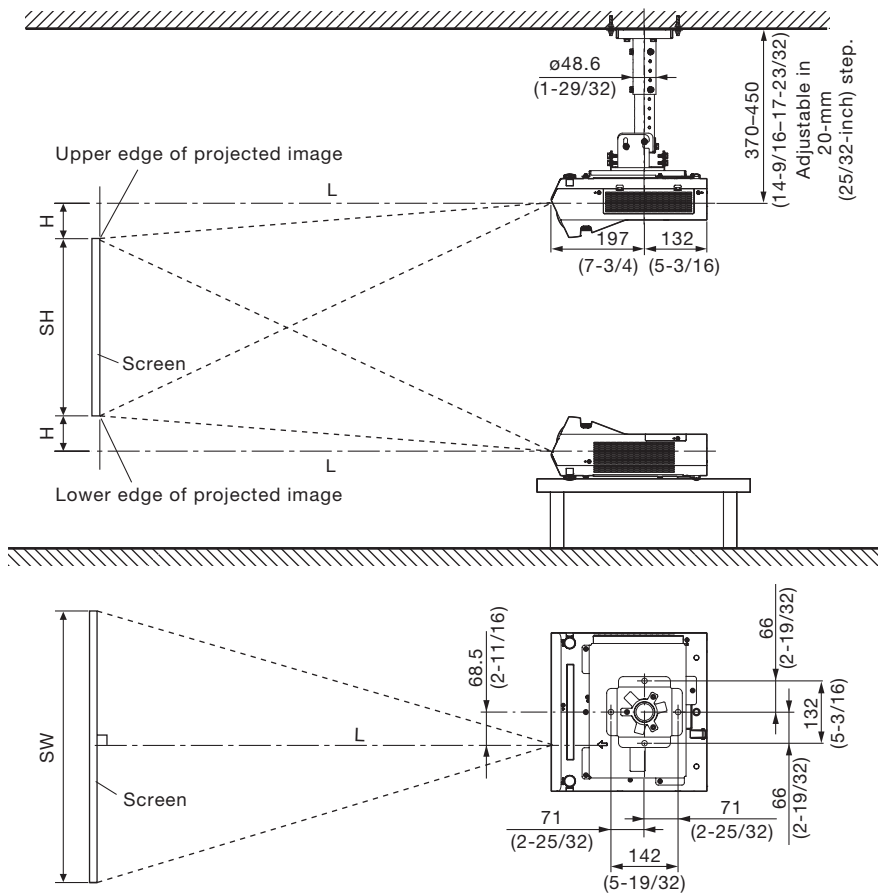


**NOTE:**

**Illustrations show the projector installed using optional ceiling mount bracket ET-PKL100H and bracket assembly ET-PKL430B.**

**This illustration is not drawn to scale.**

unit : mm (inch)

**Caution:**
- All construction work should be done by a qualified technician.
- When mounting to the ceiling, use the special mounting bracket. Furthermore, in order to prevent it from falling down from the ceiling, use the supplied wire on the mount bracket.

### Projection distance for 16:10 aspect ratio screen

unit: meters (feet)

| Projection size [diagonal] | Projection distance [L] | Height from the edge of screen to center of lens [H] |
|---|---|---|
| 1.27 m / 50˝ | 0.49 (1.57) | -0.10 (-0.36) |
| 1.52 m / 60˝ | 0.59 (1.94) | -0.12 (-0.43) |
| 1.78 m / 70˝ | 0.69 (2.26) | -0.14 (-0.49) |
| 2.03 m / 80˝ | 0.80 (2.62) | -0.16 (-0.56) |
| 2.29 m / 90˝ | 0.90 (2.95) | -0.18 (-0.62) |
| 2.54 m / 100˝ | 1.00 (3.28) | -0.20 (-0.72) |

### Projection distance for 16:9 aspect ratio screen

unit: meters (feet)

| Projection size [diagonal] | Projection distance [L] | Height from the edge of screen to center of lens [H] |
|---|---|---|
| 1.27 m / 50˝ | 0.50 (1.64) | -0.13 (-0.49) |
| 1.52 m / 60˝ | 0.60 (1.97) | -0.16 (-0.56) |
| 1.78 m / 70˝ | 0.71 (2.33) | -0.19 (-0.66) |
| 2.03 m / 80˝ | 0.82 (2.69) | -0.21 (-0.75) |
| 2.29 m / 90˝ | 0.92 (3.05) | -0.24 (-0.85) |
| 2.54 m / 100˝ | 1.03 (3.38) | -0.27 (-0.95) |

### Projection distance for 4:3 aspect ratio screen

unit: meters (feet)

| Projection size [diagonal] | Projection distance [L] | Height from the edge of screen to center of lens [H] |
|---|---|---|
| 1.27 m / 50˝ | 0.55 (1.80) | -0.04 (-0.13) |
| 1.52 m / 60˝ | 0.67 (2.20) | -0.05 (-0.15) |
| 1.78 m / 70˝ | 0.79 (2.59) | -0.05 (-0.18) |
| 2.03 m / 80˝ | 0.91 (2.99) | -0.06 (-0.20) |
| 2.29 m / 90˝ | 1.02 (3.35) | -0.07 (-0.23) |
| 2.54 m / 100˝ | 1.14 (3.74) | -0.08 (-0.25) |

### Calculation of the projection distance

For a screen size different from the above, use the equation below to calculate the projection distance.

Aspect ratio 16:10

$L$ (m) = (diagonal screen size in inches) × 0.0104 − 0.0339

Aspect ratio 16:9

$L$ (m) = (diagonal screen size in inches) × 0.0106 − 0.0339

Aspect ratio 4:3

$L$ (m) = (diagonal screen size in inches) × 0.0117 − 0.0339

**NOTE:**
**Distances calculated with the above equations will include a slight error.**

## List of compatible signals

The signals that can be input to this projector are shown in the table below. Horizontal scanning frequencies of 15 kHz to 91 kHz, vertical scanning frequencies of 24 Hz to 85 Hz, and a dot clock of 162 MHz maximum can be input.

NOTE: The native resolution of this projector is 1,280 × 800 pixels. If the display resolution of the input signal is different from the native resolution, image compression or expansion will be used to convert the input signal to a level within the native resolution.

| Display mode | Display resolution (dots)[1] | Scanning frequency H (kHz) | V (kHz) | Dot clock frequency (MHz) | Format |
|---|---|---|---|---|---|
| NTSC/NTSC4.43/PAL-M | 720 × 480i | 15.7 | 59.9 | − | S-VIDEO/VIDEO |
| PAL/PAL-N/SECAM | 720 × 576i | 15.6 | 50.0 | − | |
| 480i(525i) | 720 × 480i | 15.7 | 59.9 | 13.5 | $(YC_BC_R)$/RGB |
| 576i(625i) | 720 × 576i | 15.6 | 50.0 | 13.5 | |
| 480i(525i) | 720(1440) × 480i[2] | 15.7 | 59.9 | 27.0 | HDMI |
| 576i(625i) | 720(1440) × 576i[2] | 15.6 | 50.0 | 27.0 | |
| 480p(525p) | 720 × 483 | 31.5 | 59.9 | 27.0 | HDMI/ |
| 576p(625p) | 720 × 576 | 31.3 | 50.0 | 27.0 | $YP_BP_R(YC_BC_R)$/RGB |
| 720(750)/60p | 1280 × 720 | 45.0 | 60.0 | 74.3 | |
| 720(750)/50p | | 37.5 | 50.0 | 74.3 | |
| 1080(1125)/60i | 1920 × 1080i | 33.8 | 60.0 | 74.3 | |
| 1080(1125)/50i | | 28.1 | 50.0 | 74.3 | |
| 1080(1125)/24p | 1920 × 1080 | 27.0 | 24.0 | 74.3 | |
| 1080(1125)/24sF | 1920 × 1080i | 27.0 | 48.0 | 74.3 | |
| 1080(1125)/25p | 1920 × 1080 | 28.1 | 25.0 | 74.3 | |
| 1080(1125)/30p | | 33.8 | 30.0 | 74.3 | |
| 1080(1125)/60p | | 67.5 | 60.0 | 148.5 | |
| 1080(1125)/50p | | 56.3 | 50.0 | 148.5 | |
| VGA | 640 × 480 | 31.5 | 59.9 | 25.2 | HDMI/RGB |
| | | 35.0 | 66.7 | 30.2 | |
| | | 37.9 | 72.8 | 31.5 | |
| | | 37.5 | 75.0 | 31.5 | |
| | | 43.3 | 85.0 | 36.0 | |
| SVGA | 800 × 600 | 35.2 | 56.3 | 36.0 | |
| | | 37.9 | 60.3 | 40.0 | |
| | | 48.1 | 72.2 | 50.0 | |
| | | 46.9 | 75.0 | 49.5 | |
| | | 53.7 | 85.1 | 56.3 | |
| MAC16 | 832 × 624 | 49.7 | 74.6 | 57.3 | |
| XGA | 1024 × 768 | 48.4 | 60.0 | 65.0 | |
| | | 56.5 | 70.1 | 75.0 | |
| | | 60.0 | 75.0 | 78.8 | |
| | | 68.7 | 85.0 | 94.5 | |
| MXGA | 1152 × 864 | 67.5 | 74.9 | 108.0 | |
| MAC21 | 1152 × 870 | 68.7 | 75.1 | 100.0 | |
| 1280 × 720 | 1280 × 720 | 37.1 | 50.0 | 60.5 | |
| | | 44.8 | 60.0 | 74.5 | |

**[1]** The "i" appearing after the resolution indicates an interlaced signal.

**[2]** Only compatible with dot clock frequency of 27 MHz (pixel repetition signal)

| Display mode | Display resolution (dots)*1 | Scanning frequency H (kHz) | V (kHz) | Dot clock frequency (MHz) | Format |
|---|---|---|---|---|---|
| 1280 × 768 | 1280 × 768 | 47.8 | 59.9 | 79.5 | HDMI/RGB |
| | | 60.3 | 74.9 | 102.3 | |
| | | 68.6 | 84.8 | 117.5 | |
| 1280 × 800 | 1280 × 800 | 41.3 | 50.0 | 68.6 | |
| | | 49.7 | 60.0 | 83.5 | |
| | | 62.8 | 74.9 | 106.5 | |
| | | 71.6 | 84.9 | 122.5 | |
| MSXGA | 1280 × 960 | 60.0 | 60.0 | 108.0 | |
| SXGA | 1280 × 1024 | 64.0 | 60.0 | 108.0 | |
| | | 78.2 | 72.0 | 135.1 | |
| | | 80.0 | 75.0 | 135.0 | |
| | | 91.1 | 85.0 | 157.5 | |
| 1366 × 768 | 1366 × 768 | 39.6 | 49.9 | 69.0 | |
| | | 47.7 | 59.8 | 84.8 | |
| SXGA+ | 1400 × 1050 | 65.3 | 60.0 | 121.8 | |
| | | 82.2 | 74.9 | 156.0 | |
| WXGA+ | 1440 × 900 | 55.9 | 59.9 | 106.5 | |
| 1600 × 900 | 1600 × 900 | 55.9 | 60.0 | 119.0 | |
| UXGA | 1600 × 1200 | 75.0 | 60.0 | 162.0 | |
| WSXGA+ | 1680 × 1050 | 65.3 | 60.0 | 146.3 | |
| 1920 × 1080 | 1920 × 1080 | 66.6 | 59.9 | 138.5 | |
| WUXGA | 1920 × 1200*2 | 74.0 | 60.0 | 154.0 | |

*1  The "i" appearing after the resolution indicates an interlaced signal.

*2  WUXGA resolution is supported only when the signals are compliant with VESA CVT-RB (Coordinated Video Timing-Reduced Blanking).