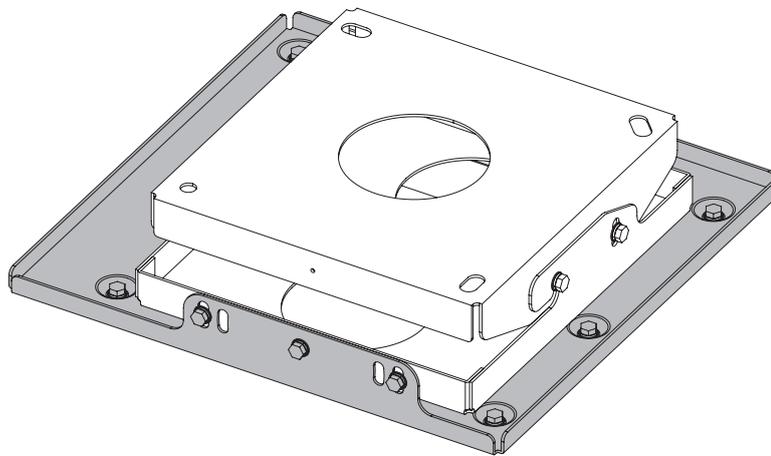# Panasonic®
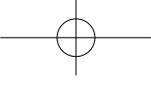
Installation Instructions
Projector Mount Bracket

Model No. ET-PKD120B

*   The figure above shows a combination of this product and the separately sold ET-PKD120S ceiling mount bracket (for low ceilings).
*   Unless specified otherwise, figures in these instructions show a combination with the ceiling mount bracket (for low ceilings). The installation method is also the same as that of the ceiling mount bracket (for high ceilings).

Thank you for purchasing this Panasonic product.

■   To customers
    The "Installation Instructions" is intended for use by installation personnel. Be sure to employ certified personnel to perform the installation.
    After installation, have the installation personnel return these "Installation Instructions" to you, and save it for future use.
    When moving or removing the projector, give this manual to the certified personnel and have them perform the procedure.

■   To installation personnel
    Read the "Installation Instructions" thoroughly and then perform the operation correctly and safely.
    Be sure to read through the section entitled "Read this first!" (page 3) before proceeding with the installation.
    After installation, return these "Installation Instructions" to the customer.

Contents

Read this first!

WARNING:

Installation work should only be carried out by the certified personnel.
- If this product is not installed correctly, serious accidents may result.
- Follow the instructions specified in "Installation" of this manual, and perform secure installation.

Do not install in a place which is not strong enough.
- If the installation location is not strong enough, the ceiling bracket may fall down and an injury may result.

Make sure that your footing is safe and secure during installation.
- If your footing is not secure, you may fall down or drop the bracket, and an injury may result.

Make sure that the ceiling bracket is installed correctly in accordance with the structure and materials used at the installation location.
- If a mistake is made in the installation procedure, the ceiling bracket may fall down and an injury may result.

Do not loosen or remove the ceiling mount bracket screws or bolts unnecessarily.
- The projector may fall down and injury may result.

Do not set up the projector in humid or dusty places or in places where the projector may come into contact with oily smoke or steam.
- Using the projector under such conditions may result in fire, electric shocks or plastic deterioration. The plastic deterioration may cause the falling down of the projector which is mounted in the ceiling.

Do not allow children to reach the attached metal fittings and screws.
- The attached metal fittings and screws can cause personal injury if swallowed.
- If swallowed, seek medical advice immediately.

Mounting must be carried out by two or more persons.
- Including the projector, this fixture weighs at least 20 kg (44.1 lbs). Make sure that mounting is carried out by two or more persons.

Do not disassemble or modify the ceiling mount bracket.
- The projector may be damaged or fall, causing injury.

CAUTION:

Install only the designated projector.
Install only using the designated method.
- Otherwise, the projector may fall and become damaged, and cause injury.

Do not install the ceiling bracket in a place which may impede projector ventilation.
- If this is not observed, fire may result.

Do not hang from or hang objects on the projector or ceiling mount bracket.
- The projector may fall and cause injury.

When installing, always use the supplied components.
- Otherwise, this may cause damaged projector to fall and cause injury.

Install the mounting screws and power cable in such a way that they will not make contact with the inside parts of the ceiling.
- Electric shocks may result from contact with any metal objects inside the ceiling.

- ■ **Panasonic disclaims all liability for any accidents or any damage caused by the installation of the ceiling mount bracket using methods that are not described in these Installation Instructions or methods that do not use the parts specified in these Instructions.**

- ■ **If products are no longer being used, they should be dismantled and removed by the certified personnel as soon as possible.**
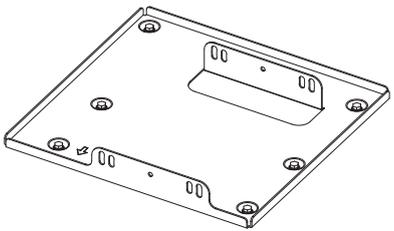
Product description

This is a ceiling mount bracket for installing projectors.

■ Applicable ceiling mount brackets

ET-PKD120S / ET-PKD120H

■ Structural components

Parts name	Form (number of parts)	Applications
Projector mount bracket	× 1	This is used to install the projector itself. It also includes a function for adjusting the left/right tilt.
Screws and bolts	Hex head bolt, captive washer (M6×16) × 6	These are used to mount the bracket onto the projector.
Drop prevention kit	Flat washer (M8) × 2 Wire rope × 1	Prevents the ceiling mount bracket from falling.

● Store small parts in an appropriate manner, and keep them away from small children.
● Tightening torque for the screws are M6: 4±0.5 N•m, M8: 10±1 N•m.
● When tightening up the screws, use a tool such as a torque screwdriver or torque wrench. Do not use electric screwdrivers or impact screwdrivers.
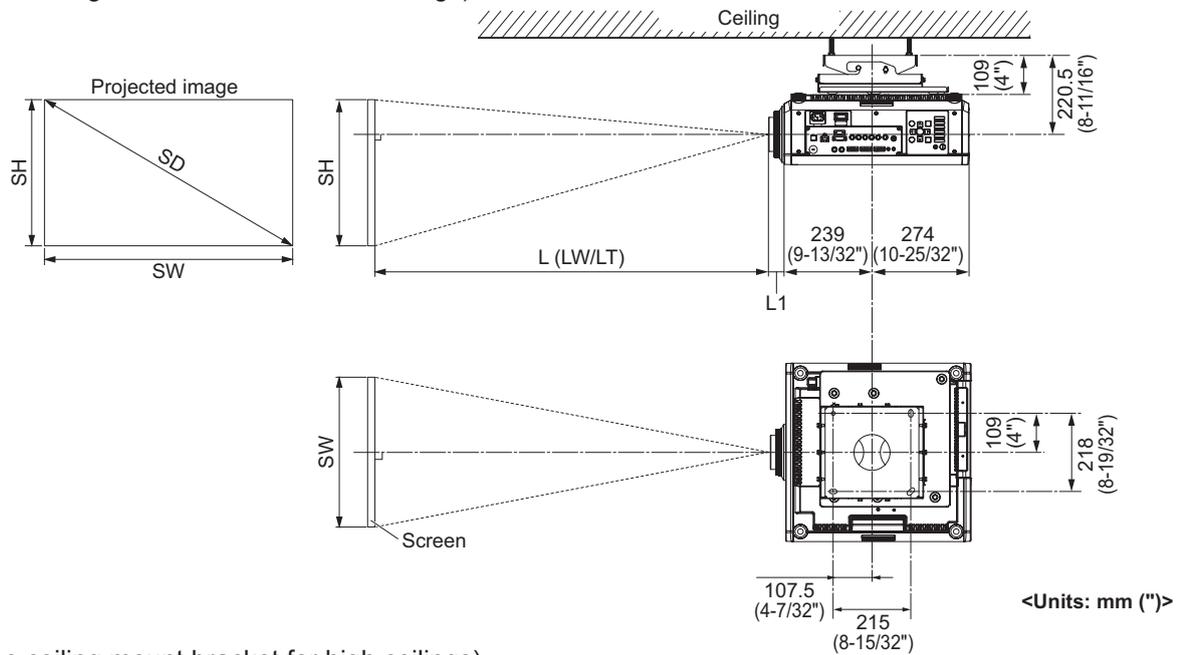
Attention

● Dispose of the packaging materials properly after taking the product out of it.

Standard installation dimensions

The dimensional relationship between the screen and the projector is shown below.
Establish the dimensions after assessing the area possible for installation.

■ **Ceiling mount brackets: ET-PKD120S / ET-PKD120H**
● Projectors: PT-DZ870 / PT-DW830 / PT-DX100
(when using the ceiling mount bracket for low ceilings)

(when using the ceiling mount bracket for high ceilings)
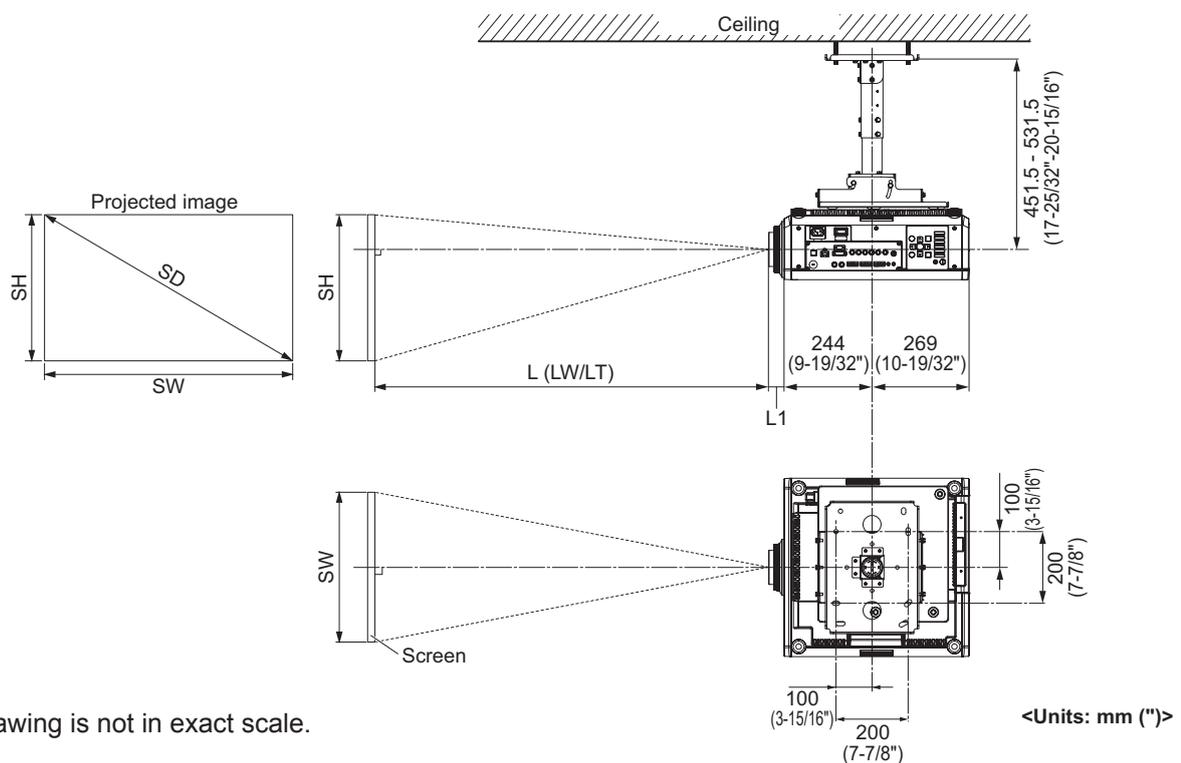
(Note) This drawing is not in exact scale.

Attention

● Install the projector with at least 500 mm (19-11/16") gap from the surrounding walls or objects in order to ensure that the air intake/exhaust ports of the projector will not be blocked.
● Avoid setting up in places which are subject to sudden temperature changes, such as near an air conditioner or lighting equipment.

Note

● Depending on the product, the appearance may differ from the illustrations in these installation instructions.

Standard installation dimensions (continued)

The projection distance can be adjusted using the zoom lens. Check the projected image while making fine adjustments.

● In the case of PT-DZ870 / PT-DW830 / PT-DX100   Unit: m

Model number of projection lens	L1 size (Approx.)
Standard zoom lens	0.043
ET-DLE055	0.028
ET-DLE085	0.084
ET-DLE150	0.045
ET-DLE250	0.045
ET-DLE350	0.051
ET-DLE450	0.095

■ Projection distance according to the projector lens.

For the projection distances for projection lenses (optional), refer to the operating instructions [Installation] provided with the projector. Or check the diagonal dimension (m) of your projected image and calculate the projection distance using the following formula.

● In the case of PT-DZ870

Unit: m

Lens type	Model number of projection lens	Aspect ratio	Projection distance (L) formula	
Standard zoom lens	—	16 : 10	Minimum(LW)	L = 1.4906 x SD(m) – 0.0746
			Maximum(LT)	L = 2.0814 x SD(m) – 0.0725
		16 : 9	Minimum(LW)	L = 1.5320 x SD(m) – 0.0746
			Maximum(LT)	L = 2.1393 x SD(m) – 0.0725
		4 : 3	Minimum(LW)	L = 1.6874 x SD(m) – 0.0746
			Maximum(LT)	L = 2.3563 x SD(m) – 0.0725
Fixed-focus lens	ET-DLE055	16 : 10	—	L = 0.6893 x SD(m) – 0.0476
		16 : 9	—	L = 0.7084 x SD(m) – 0.0476
		4 : 3	—	L = 0.7803 x SD(m) – 0.0476
Ultra short focus zoom lens	ET-DLE085	16 : 10	Minimum(LW)	L = 0.6865 x SD(m) – 0.0471
			Maximum(LT)	L = 0.8498 x SD(m) – 0.0442
		16 : 9	Minimum(LW)	L = 0.7056 x SD(m) – 0.0471
			Maximum(LT)	L = 0.8735 x SD(m) – 0.0442
		4 : 3	Minimum(LW)	L = 0.7772 x SD(m) – 0.0471
			Maximum(LT)	L = 0.9621 x SD(m) – 0.0442
Short focus zoom lens	ET-DLE150	16 : 10	Minimum(LW)	L = 1.1259 x SD(m) – 0.0540
			Maximum(LT)	L = 1.6243 x SD(m) – 0.0498
		16 : 9	Minimum(LW)	L = 1.1572 x SD(m) – 0.0540
			Maximum(LT)	L = 1.6695 x SD(m) – 0.0498
		4 : 3	Minimum(LW)	L = 1.2747 x SD(m) – 0.0540
			Maximum(LT)	L = 1.8388 x SD(m) – 0.0498
Intermediate focus zoom lens	ET-DLE250	16 : 10	Minimum(LW)	L = 1.9665 x SD(m) – 0.0800
			Maximum(LT)	L = 3.1059 x SD(m) – 0.0792
		16 : 9	Minimum(LW)	L = 2.0212 x SD(m) – 0.0800
			Maximum(LT)	L = 3.1923 x SD(m) – 0.0792
		4 : 3	Minimum(LW)	L = 2.2263 x SD(m) – 0.0800
			Maximum(LT)	L = 3.5161 x SD(m) – 0.0792
Long focus zoom lens	ET-DLE350	16 : 10	Minimum(LW)	L = 3.1000 x SD(m) – 0.1351
			Maximum(LT)	L = 4.6843 x SD(m) – 0.1346
		16 : 9	Minimum(LW)	L = 3.1862 x SD(m) – 0.1351
			Maximum(LT)	L = 4.8146 x SD(m) – 0.1346
		4 : 3	Minimum(LW)	L = 3.5094 x SD(m) – 0.1351
			Maximum(LT)	L = 5.3030 x SD(m) – 0.1346
Ultra long focus zoom lens	ET-DLE450	16 : 10	Minimum(LW)	L = 4.6931 x SD(m) – 0.3017
			Maximum(LT)	L = 7.4193 x SD(m) – 0.2991
		16 : 9	Minimum(LW)	L = 4.8236 x SD(m) – 0.3017
			Maximum(LT)	L = 7.6256 x SD(m) – 0.2991
		4 : 3	Minimum(LW)	L = 5.3129 x SD(m) – 0.3017
			Maximum(LT)	L = 8.3992 x SD(m) – 0.2991

Note

● The values obtained from the above formulas may contain slight errors.

● The throw ratio is based on the value during projection of a 3.81 m (150") size image.

● When GEOMETRY or KEYSTONE adjustment is used, compensation is made so that the projected image size becomes smaller than the specified size.

Standard installation dimensions (continued)

● In the case of PT-DW830

Unit: m

Lens type	Model number of projection lens	Aspect ratio		Projection distance (L) formula
Standard zoom lens	—	16 : 10	Minimum(LW)	L = 1.5651 x SD(m) − 0.0746
			Maximum(LT)	L = 2.1855 x SD(m) − 0.0725
		16 : 9	Minimum(LW)	L = 1.6086 x SD(m) − 0.0746
			Maximum(LT)	L = 2.2462 x SD(m) − 0.0725
		4 : 3	Minimum(LW)	L = 1.7715 x SD(m) − 0.0746
			Maximum(LT)	L = 2.4736 x SD(m) − 0.0725
Fixed-focus lens	ET-DLE055	16 : 10	—	L = 0.7237 x SD(m) − 0.0476
		16 : 9	—	L = 0.7438 x SD(m) − 0.0476
		4 : 3	—	L = 0.8191 x SD(m) − 0.0476
Ultra short focus zoom lens	ET-DLE085	16 : 10	Minimum(LW)	L = 0.7209 x SD(m) − 0.0471
			Maximum(LT)	L = 0.8923 x SD(m) − 0.0442
		16 : 9	Minimum(LW)	L = 0.7409 x SD(m) − 0.0471
			Maximum(LT)	L = 0.9171 x SD(m) − 0.0442
		4 : 3	Minimum(LW)	L = 0.8159 x SD(m) − 0.0471
			Maximum(LT)	L = 1.0100 x SD(m) − 0.0442
Short focus zoom lens	ET-DLE150	16 : 10	Minimum(LW)	L = 1.1822 x SD(m) − 0.0540
			Maximum(LT)	L = 1.7055 x SD(m) − 0.0498
		16 : 9	Minimum(LW)	L = 1.2151 x SD(m) − 0.0540
			Maximum(LT)	L = 1.7529 x SD(m) − 0.0498
		4 : 3	Minimum(LW)	L = 1.3381 x SD(m) − 0.0540
			Maximum(LT)	L = 1.9304 x SD(m) − 0.0498
Intermediate focus zoom lens	ET-DLE250	16 : 10	Minimum(LW)	L = 2.0649 x SD(m) − 0.0800
			Maximum(LT)	L = 3.2612 x SD(m) − 0.0792
		16 : 9	Minimum(LW)	L = 2.1223 x SD(m) − 0.0800
			Maximum(LT)	L = 3.3519 x SD(m) − 0.0792
		4 : 3	Minimum(LW)	L = 2.3371 x SD(m) − 0.0800
			Maximum(LT)	L = 3.6912 x SD(m) − 0.0792
Long focus zoom lens	ET-DLE350	16 : 10	Minimum(LW)	L = 3.2550 x SD(m) − 0.1351
			Maximum(LT)	L = 4.9185 x SD(m) − 0.1346
		16 : 9	Minimum(LW)	L = 3.3455 x SD(m) − 0.1351
			Maximum(LT)	L = 5.0553 x SD(m) − 0.1346
		4 : 3	Minimum(LW)	L = 3.6842 x SD(m) − 0.1351
			Maximum(LT)	L = 5.5671 x SD(m) − 0.1346
Ultra long focus zoom lens	ET-DLE450	16 : 10	Minimum(LW)	L = 4.9277 x SD(m) − 0.3017
			Maximum(LT)	L = 7.7903 x SD(m) − 0.2991
		16 : 9	Minimum(LW)	L = 5.0647 x SD(m) − 0.3017
			Maximum(LT)	L = 8.0069 x SD(m) − 0.2991
		4 : 3	Minimum(LW)	L = 5.5775 x SD(m) − 0.3017
			Maximum(LT)	L = 8.8174 x SD(m) − 0.2991

Note

● The values obtained from the above formulas may contain slight errors.
● The throw ratio is based on the value during projection of a 3.81 m (150") size image.
● When GEOMETRY or KEYSTONE adjustment is used, compensation is made so that the projected image size becomes smaller than the specified size.

Standard installation dimensions (continued)

● In the case of PT-DX100

Lens type	Model number of projection lens	Aspect ratio	Projection distance (L) formula	
Standard zoom lens	—	4 : 3	Minimum(LW)	L = 1.4571 x SD(m) – 0.0746
			Maximum(LT)	L = 2.0346 x SD(m) – 0.0725
		16 : 9	Minimum(LW)	L = 1.5875 x SD(m) – 0.0746
			Maximum(LT)	L = 2.2167 x SD(m) – 0.0725
Fixed-focus lens	ET-DLE055	4 : 3	—	L = 0.6738 x SD(m) – 0.0476
		16 : 9	—	L = 0.7340 x SD(m) – 0.0476
Ultra short focus zoom lens	ET-DLE085	4 : 3	Minimum(LW)	L = 0.6711 x SD(m) – 0.0471
			Maximum(LT)	L = 0.8307 x SD(m) – 0.0442
		16 : 9	Minimum(LW)	L = 0.7311 x SD(m) – 0.0471
			Maximum(LT)	L = 0.9051 x SD(m) – 0.0442
Short focus zoom lens	ET-DLE150	4 : 3	Minimum(LW)	L = 1.1006 x SD(m) – 0.0540
			Maximum(LT)	L = 1.5878 x SD(m) – 0.0498
		16 : 9	Minimum(LW)	L = 1.1991 x SD(m) – 0.0540
			Maximum(LT)	L = 1.7299 x SD(m) – 0.0498
Intermediate focus zoom lens	ET-DLE250	4 : 3	Minimum(LW)	L = 1.9224 x SD(m) – 0.0800
			Maximum(LT)	L = 3.0361 x SD(m) – 0.0792
		16 : 9	Minimum(LW)	L = 2.0943 x SD(m) – 0.0800
			Maximum(LT)	L = 3.3078 x SD(m) – 0.0792
Long focus zoom lens	ET-DLE350	4 : 3	Minimum(LW)	L = 3.0304 x SD(m) – 0.1351
			Maximum(LT)	L = 4.5791 x SD(m) – 0.1346
		16 : 9	Minimum(LW)	L = 3.3015 x SD(m) – 0.1351
			Maximum(LT)	L = 4.9888 x SD(m) – 0.1346
Ultra long focus zoom lens	ET-DLE450	4 : 3	Minimum(LW)	L = 4.5876 x SD(m) – 0.3017
			Maximum(LT)	L = 7.2526 x SD(m) – 0.2991
		16 : 9	Minimum(LW)	L = 4.9981 x SD(m) – 0.3017
			Maximum(LT)	L = 7.9015 x SD(m) – 0.2991

Note

● The values obtained from the above formulas may contain slight errors.
● The throw ratio is based on the value during projection of a 3.81 m (150") size image.
● When GEOMETRY or KEYSTONE adjustment is used, compensation is made so that the projected image size becomes smaller than the specified size.

Installation

After checking the height, width, and structure of the installation location while referring to "Standard installation dimensions" on pages 5 to 9, determine the appropriate positions for setting up the screen and installing the projector.

Setting up the screen

Set up the screen according to the specified method in a position which takes into account the projection distance and angle and the type of screen being used.
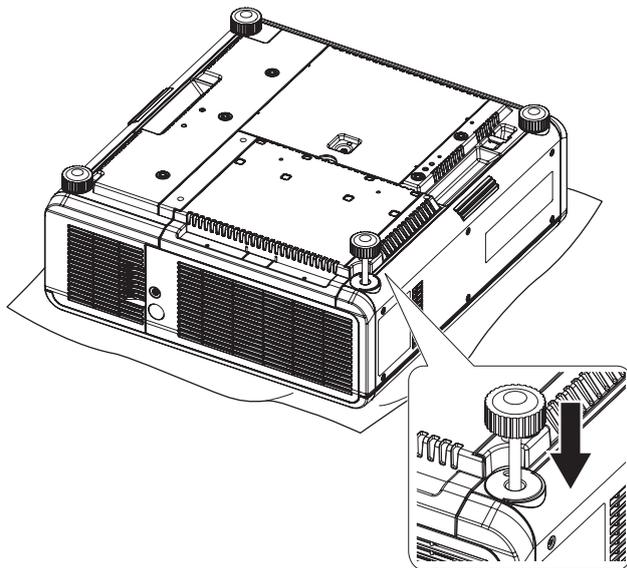
Screws tightening torques

M6 .... 4±0.5 N•m
M8 .... 10±1 N•m

● Use a torque screwdriver or torque wrench to tighten screws and bolts to their specified tightening torques. Do not use electric screwdrivers or impact screwdrivers.
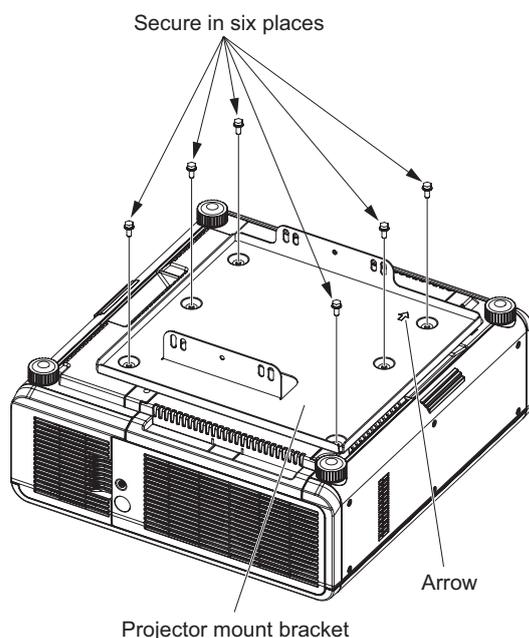
Installing the bracket to the projector

Attach the projector mount bracket to the projector (sold separately).

1) Place the projector upside-down onto a piece of soft material.

2) Turn the adjustment leg (see the figure on the left) clockwise to minimize the length of the leg.
   ● If the adjustment leg (see the figure on the left) is long, the projector mount bracket comes in contact with the leg and cannot be mounted onto the projector.
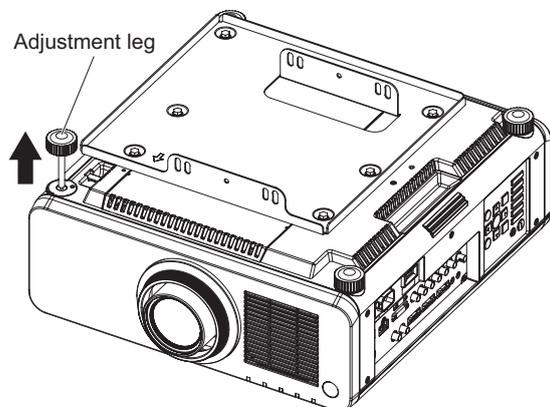
Secure in six places

3) Secure the projector mount bracket to the bottom of the projector using the six supplied captive washer screws (M6 x 16) as illustrated on the left.
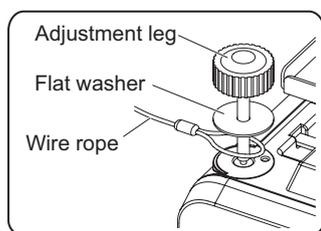
Arrow

Projector mount bracket

Installation(continued)
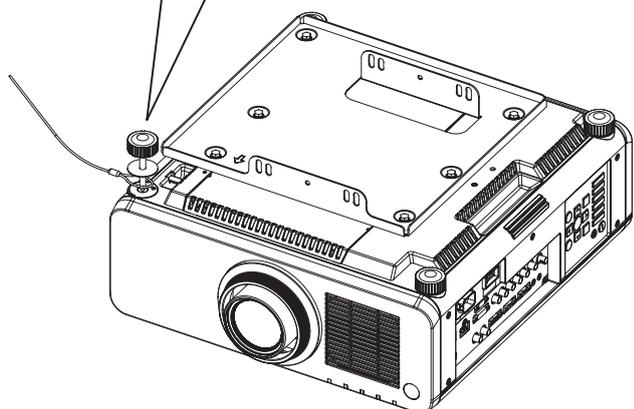
Attaching the drop prevention kit to the projector

Attach the wire rope to the projector (sold separately).

Adjustment leg

1) Turn the adjustment leg (one) counterclockwise to remove it from the projector.

Adjustment leg

Flat washer

Wire rope

2) Pass the supplied flat washer (one) and wire rope through the adjustment leg (one) as illustrated on the left.

3) Turn the adjustment leg clockwise to secure it to the projector.

Note

● For installing the ceiling mount brackets (for low and high ceilings) (sold separately) to this bracket as well as attaching the wire rope to the ceiling, refer to the respective installation instructions.
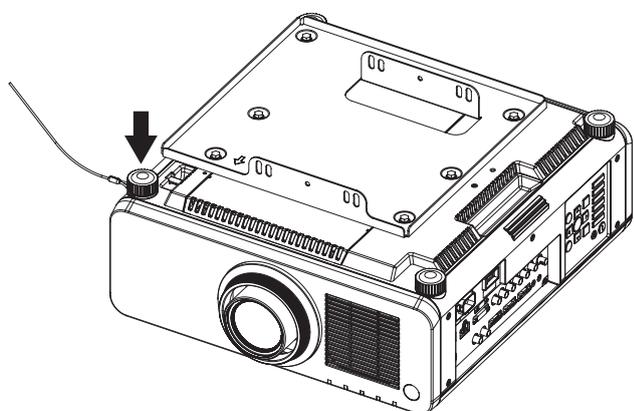
Specifications

External dimensions	Width: 380 mm (14-31/32"), Height: 56 mm (2-7/32"), Depth: 362 mm (14-1/4")
Weight	Approx. 2.5 kg (5.5 lbs.)

Panasonic Corporation