# Operating Instructions 

Fixed-focus lens
Model No. ET-DLE030

*Compatible projectors are listed below.
PT-DZ870 / DW830 / DX100 / DZ770 / DW740 / DX810 / DZ680 / DW640 / DX610 / DW730 / DX800 / DZ6710 / DZ6700 / DW6300 / D6000 / D5000

Thank you for purchasing this Panasonic product.

- To ensure correct use of this lens, please read the operating instructions supplied with the lens and the projector carefully.
$\square$ Before using this product, be sure to read "Read this first!" ( $\Rightarrow$ Page 3).
- Please save this manual for future use.


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## Read this first!

## WARNING:

Before replacing the zoom lens, be sure to turn the power off and disconnect the power plug from the wall outlet.

- Otherwise, an electrical shock may result.

Do not place objects near the light projecting surface.

- This surface produces intense light. Failure to heed this warning could result in fire or burn injuries.


## CAUTION:

## Supplied accessories and consumables:

Do not use the lens with the protective film and lens cap left on.

- If left on, the heat generated during projection could melt them resulting in projector deformation and damage, and personnel attempting to remove them could suffer burn injuries.

Do not open the desiccant bag. Do not eat the contents. (Inadvertently ingesting desiccant could be harmful.)

- If the desiccant gets into your eyes or mouth, immediately rinse with plenty of water and seek medical attention.
- Keep desiccant out of the reach of children.


## Supplied Accessories

Make sure that the following has been provided

| Part name | Appearance (quantity) |  |
| :---: | :---: | :---: |
| Lens cap |  | (The product is delivered with <br> a lens cap attached.) |
| Lens shift gauge |  | $\times 1$ |

## Attaching the Lens / Detaching the Lens

## Before replacing the projection lens

Return the projection lens to the home position before replacing or removing it.
For details on how to return the lens to the home position, refer to the operating instructions of the projector.

## Attention

- Make sure that the projector power supply is switched off before attaching or detaching the projection lens.
- After removing the projection lens, store it safely away from vibration or impacts.
- Do not touch the electric contact points of the projection lens with your fingers. Dust and dirt on the contacts may cause contact malfunctions.
- Before attaching the Fixed-focus lens, remove the protective film from the light projecting surface and the lens cap from the lens.

- Be sure not to touch the light projecting surface or the surface of the lens. Any fingerprints or smudges on these surfaces will be magnified and lower the quality of the image displayed on the screen.
- The light projecting surface and lens are made of glass. The lens could be damaged if brought into contact with or rubbed against hard objects. Handle the lens carefully.
- Use a clean, soft and dry cloth to wipe away any dirt or dust that has adhered to the light projecting surface or lens. Do not use fluffy cloths containing oil, water or dust for cleaning.
- When the Fixed-focus lens is removed from the projector, place it with the light projecting surface facing downwards.


## Attaching the Lens / Detaching the Lens (continued)

## Attaching the Lens



Fixed-focus lens


1) With the lens mount cover that came with your projector attached, align the positioning guide on the lens with the guide groove on the projector, and insert the lens fully.

- There is a red dot at the bottom right end of the positioning guide.

2) Rotate the lens clockwise until you hear a "click".

## Attention

- Gently turn the zoom lens counterclockwise to check that it will not fall out.

Detaching the Lens


1) Turn the lens mount cover counterclockwise to detach it from the lens and slide it towards the front end of the lens.
2) Hold down the lens release button while turning the lens counterclockwise to release it.
3) Turn the lens mount cover clockwise to reattach it.

## Attention

- Attach the supplied lens cap before storing the lens.


## Making Adjustments

## Making lens shift adjustments (Using projector functions)

Use the projector to make vertical and horizontal adjustments of the lens.


| PROJECTOR SETUP |  |
| :--- | :--- |
| STARTUP INPUT SELECT | LAST USED |
| RS-232C |  |
| STATUS |  |
| NO SIGNAL SHUT-OFF |  |
| REMOTE2 MODE | DISABLE |
| FUNCTION BUTTON |  |
| DEFAULT |  |
| DATE AND TIME |  |
| LENS CALISRATION |  |
| SAVE ALL USER DATA |  |
| LOAD ALL USER DATA |  |
| INITALIZE |  |
| SERVICE PASSWORD |  |
|  |  |



1) Turn on the projector to start the projection.
2) Press the <MENU> button to open the [MAIN MENU] screen. Then select [PROJECTOR SETUP] and press the <ENTER> button.
3) Select [SERVICE PASSWORD] in the [PROJECTOR SETUP] menu and press the <ENTER> button.
4) In the [SERVICE PASSWORD] entry screen, press the numeric button <0> and <3> on the remote control to enter "030" and press the <ENTER> button.

- The [DLE030 POSITION] screen appears.

5) Press the <ENTER> button in the [DLE030 POSITION] screen.

- [PROGRESS] is displayed on the [DLE030 POSITION] screen and lens position moves to the standard projection position for the ETDLE030.


## Note

- This method of adjustment does not work with the PT-DZ770, DW740, DX810, DZ680, DW640, DX610, DW730, DX800, DZ6710, DZ6700, DW6300, D6000 and D5000. Use the supplied lens shift gauge for adjustments.
- Lens position adjustments made from the projector may deviate slightly from adjustments made using the lens shift gauge.
- After returning the lens to the standard projection position, lens shift adjustments are possible within the range where the projector will not interfere with the edges of the projected image.
- If the rear of the projector blocks the bottom edge of the projected image, it may also obscure the view of an On-screen display (OSD) that is positioned at the lower edge of the screen. If this happens, open the [DISPLAY OPTIONS] menu and select [ON-SCREEN DISPLAY] --> [OSD POSITION] to change display location so that the whole OSD menu can be seen.
- The menu screens shown in these operating instructions are only provided as examples. Actual menu screens may vary with the specific model.


## Making Adjustments (continued)

## Making lens shift adjustments (Using the supplied lens shift gauge)

Use the supplied lens shift gauge to adjust vertical lens position.

* The illustrations in these operating instructions show the lens used with the PT-DZ770 projector.


1) As shown in the figure, fold the lens shift gauge at right angles along the dotted line.

- Adjust so that the gauge plane of the lens shift gauge and the front panel of the projector are roughly in the same plane.

2) Move the lens to the home position.

- For details on how to return the lens to the home position, refer to the operating instructions of the projector.

3) Adjust lens shift on the projector so that the bottom edge of the projected image aligns with the line for the specific projector model on the lens shift gauge.

- Use the projector after making the adjustments and lens position settings described here.


## Note

- After adjusting the lens position using the lens shift gauge, lens shift adjustments are possible within the range where the projector will not interfere with the edges of the projected image.


## Focus Adjustment Function

Adjust focus after completing the lens shift adjustments.
The focal balance between the center and periphery of the projected image changes depending on the size of the projected image. The lens is equipped with a focus balance adjustment function for the screen periphery.

Adjusting the Focus


Periphery focus adjustment ring

1) Focus the center of the screen by operating the projector unit.
2) Turn the periphery focus ring by hand as shown in the figure to adjust the focus in the periphery of the screen.
3) Again check focus at the center of the screen and use the projector controls to make fine adjustments.

## Note

- The projected image sizes and scale shown on the periphery focus adjustment ring are an approximate guide.


## Projection relationships

The dimensional relationship between the screen and the projector is shown below.


| SH | Height of the projection area |
| :--- | :--- |
| SW | Width of the projection area |
| SD | Diagonal length of the projection area |
| L1 | Projection distance (screen to mirror reflecting surface) |
| L2 | Screen to lens front end |
| L3 | Screen to projector front end |
| L4 | Screen to projector rear end |
| A1 | Bottom edge of the screen to the top of the projector |
| A2 | Bottom edge of the screen to the bottom of the projector |

## Note

- The illustrations of projectors in this manual are for informational purposes only and do not represent a specific projector model. Configurations may vary with the model.
- After adjusting the lens position on the projector or using the lens shift gauge, lens shift adjustments are possible within the range where the projector will not interfere with the edges of the projected image. Then dimensions A1 and A2 will change according to lens shift amount.
- Dimension L4 is the distance from the projector rear panel to the screen.
- Dimension A2 is the distance from the bottom edge of the screen to the bottom of the adjustable projector legs (with the legs fully screwed in).


## Attention

- Dimension L4 is not the distance from the projector rear panel to a wall, but the distance from the projector rear panel to the screen. Provide at least $500 \mathrm{~mm}\left(19-11 / 16{ }^{\prime \prime}\right)$ of ventilation space between the projector rear panel and a wall or other object.
When placing the projector in a confined space, a ventilation and/or air conditioning system is required. Exhaust heat may accumulate when the ventilation is not sufficient triggering the protection circuit of the projector.


## Projection relationships (continued)

## ■ Projected range using "GEOMETRY(2D)" (PT-DZ870 only)

In a standard configuration and when an optional upgrade kit (part number: ET-UK20) is used, vertical keystone can be corrected within a range of 0 to $5^{\circ}$.
Horizontal keystone correction cannot be made.
"Vertical keystone correction" (side view)


Projected image size and projection distance

## Note

- The listed projection distances involve an error of $\pm 5 \%$.
- "GEOMETRY(2D)" and "VERTICAL KEYSTONE" tend to correct the projected image to a size that is smaller than regular size.
- Throw ratio is based on the value during projection onto a $2.54 \mathrm{~m}(100$ ") screen.
- For PT-DZ870

Units: m (")

| Throw ratio 0.38:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:10) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.346 (52.992") | 2.154 (84.803") | 0.82 (32.28") | 0.14 (5.51") | 0.43 (16.93") |
| 3.05 (120") | 1.615 (63.583") | 2.585 (101.772") | 0.98 (38.58") | 0.30 (11.81") | 0.53 (20.87") |
| 3.81 (150") | 2.019 (79.488") | 3.231 (127.205") | 1.23 (48.43") | 0.55 (21.65") | 0.68 (26.77") |
| 5.08 (200") | 2.692 (105.984") | 4.308 (169.606") | 1.63 (64.17") | 0.95 (37.40") | 0.93 (36.61") |
| 6.35 (250") | 3.365 (132.480") | 5.385 (212.008") | 2.04 (80.31") | 1.36 (53.54") | 1.18 (46.46") |
| 7.62 (300") | 4.039 (159.016") | 6.462 (254.409") | 2.45 (96.46") | 1.77 (69.69") | 1.43 (56.30") |
| 8.89 (350") | 4.712 (185.512") | 7.539 (296.811") | 2.85 (112.20") | 2.18 (85.83") | 1.69 (66.54") |

## Projection relationships (continued)

Units: m (")

| Throw ratio 0.38:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.84 (31.89") | 0.16 (6.30") | 0.51 (20.08") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.01 (39.76") | 0.33 (12.99") | 0.63 (24.80") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.26 (49.61") | 0.58 (22.83") | 0.81 (31.89") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.68 (66.14") | 1.00 (39.37") | 1.10 (43.31") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.10 (82.68") | 1.42 (55.91") | 1.39 (54.72") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.51 (98.82") | 1.84 (72.44") | 1.68 (66.14") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 2.93 (115.35") | 2.25 (88.58") | 1.98 (77.95") |


| Throw ratio 0.46:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000") | 2.032 (80.000") | 0.93 (36.61") | 0.25 (9.84") | 0.50 (19.69") |
| 3.05 (120") | 1.829 (72.008") | 2.438 (95.984") | 1.11 (43.70") | 0.43 (16.93") | 0.61 (24.02") |
| 3.81 (150") | 2.286 (90.000") | 3.048 (120.000") | 1.39 (54.72") | 0.71 (27.95") | 0.78 (30.71") |
| 5.08 (200") | 3.048 (120.000") | 4.064 (160.000") | 1.85 (72.83") | 1.17 (46.06") | 1.07 (42.13") |
| 6.35 (250") | 3.810 (150.000") | 5.080 (200.000") | 2.31 (90.94") | 1.63 (64.17") | 1.35 (53.15") |
| 7.62 (300") | 4.572 (180.000") | 6.096 (240.000") | 2.77 (109.06") | 2.09 (82.28") | 1.63 (64.17") |
| 8.89 (350") | 5.334 (210.000") | 7.112 (280.000") | 3.23 (127.17") | 2.55 (100.39") | 1.92 (75.59") |

- For PT-DW830

| Throw ratio 0.40:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:10) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.346 (52.992") | 2.154 (84.803") | 0.86 (33.86") | 0.18 (7.09") | 0.59 (23.23") |
| 3.05 (120") | 1.615 (63.583") | 2.585 (101.772") | 1.03 (40.55") | 0.35 (13.78") | 0.72 (28.35") |
| 3.81 (150") | 2.019 (79.488") | 3.231 (127.205") | 1.29 (50.79") | 0.61 (24.02") | 0.92 (36.22") |
| 5.08 (200") | 2.692 (105.984") | 4.308 (169.606") | 1.71 (67.32") | 1.04 (40.94") | 1.25 (49.21") |
| 6.35 (250") | 3.365 (132.480") | 5.385 (212.008") | 2.14 (84.25") | 1.46 (57.48") | 1.58 (62.20") |
| 7.62 (300") | 4.039 (159.016") | 6.462 (254.409") | 2.57 (101.18") | 1.89 (74.41") | 1.91 (75.20") |
| 8.89 (350") | 4.712 (185.512") | 7.539 (296.811") | 3.00 (118.11") | 2.32 (91.34") | 2.24 (88.19") |


| Throw ratio 0.40:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.88 (34.65") | 0.20 (7.87") | 0.67 (26.38") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.06 (41.73") | 0.38 (14.96") | 0.82 (32.28") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.32 (51.97") | 0.64 (25.20") | 1.05 (41.34") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.76 (69.29") | 1.08 (42.52") | 1.42 (55.91") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.20 (86.61") | 1.52 (59.84") | 1.79 (70.47") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.64 (103.94") | 1.96 (77.17") | 2.17 (85.43") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 3.08 (121.26") | 2.40 (94.49") | 2.54 (100.00") |

## Projection relationships (continued)

Units: m (")

| Throw ratio 0.48:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000") | 2.032 (80.000") | 0.97 (38.19") | 0.29 (11.42") | 0.67 (26.38") |
| 3.05 (120") | 1.829 (72.008") | 2.438 (95.984") | 1.17 (46.06") | 0.49 (19.29") | 0.82 (32.28") |
| 3.81 (150") | 2.286 (90.000") | 3.048 (120.000") | 1.46 (57.48") | 0.78 (30.71") | 1.05 (41.34") |
| 5.08 (200") | 3.048 (120.000") | 4.064 (160.000") | 1.94 (76.38") | 1.26 (49.61") | 1.42 (55.91") |
| 6.35 (250") | 3.810 (150.000") | 5.080 (200.000") | 2.42 (95.28") | 1.74 (68.50") | 1.79 (70.47") |
| 7.62 (300") | 4.572 (180.000") | 6.096 (240.000") | 2.91 (114.57") | 2.23 (87.80") | 2.17 (85.43") |
| 8.89 (350") | 5.334 (210.000") | 7.112 (280.000") | 3.39 (133.46") | 2.71 (106.69") | 2.54 (100.00") |

## - For PT-DX100

| Throw ratio 0.39:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen(L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000") | 2.032 (80.000") | 0.80 (31.50") | 0.12 (4.72") | 0.41 (16.14") |
| 3.05 (120") | 1.829 (72.008") | 2.438 (95.984") | 0.96 (37.80") | 0.28 (11.02") | 0.50 (19.69") |
| 3.81 (150") | 2.286 (90.000") | 3.048 (120.000") | 1.20 (47.24") | 0.52 (20.47") | 0.65 (25.59") |
| 5.08 (200") | 3.048 (120.000") | 4.064 (160.000") | 1.60 (62.99") | 0.92 (36.22") | 0.88 (34.65") |
| 6.35 (250") | 3.810 (150.000") | 5.080 (200.000") | 1.99 (78.35") | 1.32 (51.97") | 1.12 (44.09") |
| 7.62 (300") | 4.572 (180.000") | 6.096 (240.000") | 2.39 (94.09") | 1.71 (67.32") | 1.36 (53.54") |
| 8.89 (350") | 5.334 (210.000") | 7.112 (280.000") | 2.79 (109.84") | 2.11 (83.07") | 1.60 (62.99") |


| Throw ratio 0.39:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen <br> (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.87 (34.25") | 0.19 (7.48") | 0.66 (25.98") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.05 (41.34") | 0.37 (14.57") | 0.80 (31.50") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.31 (51.57") | 0.63 (24.80") | 1.02 (40.16") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.74 (68.50") | 1.06 (41.73") | 1.39 (54.72") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.17 (85.43") | 1.49 (58.66") | 1.75 (68.90") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.61 (102.76") | 1.93 (75.98") | 2.11 (83.07") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 3.04 (119.69") | 2.36 (92.91") | 2.48 (97.64") |

- For PT-DZ770 / DZ680 / DZ6710 / DZ6700

| Throw ratio 0.38:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:10) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.346 (52.992") | 2.154 (84.803") | 0.82 (32.28") | 0.23 (9.06") | 0.43 (16.93") |
| 3.05 (120") | 1.615 (63.583") | 2.585 (101.772") | 0.98 (38.58") | 0.39 (15.35") | 0.54 (21.26") |
| 3.81 (150") | 2.019 (79.488") | 3.231 (127.205") | 1.23 (48.43") | 0.64 (25.20") | 0.69 (27.17") |
| 5.08 (200") | 2.692 (105.984") | 4.308 (169.606") | 1.63 (64.17") | 1.04 (40.94") | 0.94 (37.01") |
| 6.35 (250") | 3.365 (132.480") | 5.385 (212.008") | 2.04 (80.31") | 1.45 (57.09") | 1.19 (46.85") |
| 7.62 (300") | 4.039 (159.016") | 6.462 (254.409") | 2.45 (96.46") | 1.86 (73.23") | 1.44 (56.69") |
| 8.89 (350") | 4.712 (185.512") | 7.539 (296.811") | 2.85 (112.20") | 2.27 (89.37") | 1.69 (66.54") |

## Projection relationships (continued)

Units: m (")

| Throw ratio 0.38:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.84 (33.07") | 0.25 (9.84") | 0.52 (20.47") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.01 (39.76") | 0.42 (16.54") | 0.64 (25.20") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.26 (49.61") | 0.67 (26.38") | 0.81 (31.89") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.68 (66.14") | 1.09 (42.91") | 1.10 (43.31") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.10 (82.68") | 1.51 (59.45") | 1.40 (55.12") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.51 (98.82") | 1.93 (75.98") | 1.69 (66.54") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 2.93 (115.35") | 2.34 (92.13") | 1.98 (77.95") |


| Throw ratio 0.46:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000") | 2.032 (80.000") | 0.93 (36.61") | 0.34 (13.39") | 0.50 (19.69") |
| 3.05 (120") | 1.829 (72.008") | 2.438 (95.984") | 1.11 (43.70") | 0.52 (20.47") | 0.62 (24.41") |
| 3.81 (150") | 2.286 (90.000") | 3.048 (120.000") | 1.39 (54.72") | 0.80 (31.50") | 0.79 (31.10") |
| 5.08 (200") | 3.048 (120.000") | 4.064 (160.000") | 1.85 (72.83") | 1.26 (49.61") | 1.07 (42.13") |
| 6.35 (250") | 3.810 (150.000") | 5.080 (200.000") | 2.31 (90.94") | 1.72 (67.72") | 1.35 (53.15") |
| 7.62 (300") | 4.572 (180.000") | 6.096 (240.000") | 2.77 (109.06") | 2.18 (85.83") | 1.64 (64.57") |
| 8.89 (350") | 5.334 (210.000") | 7.112 (280.000") | 3.23 (127.17") | 2.64 (103.94") | 1.92 (75.59") |

- For PT-DW740 / DW730 / DW640 / DW6300

| Throw ratio 0.40:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:10) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.346 (52.992") | 2.154 (84.803") | 0.86 (33.86") | 0.27 (10.63") | 0.59 (23.23") |
| 3.05 (120") | 1.615 (63.583") | 2.585 (101.772") | 1.03 (40.55") | 0.44 (17.32") | 0.72 (28.35") |
| 3.81 (150") | 2.019 (79.488") | 3.231 (127.205") | 1.29 (50.79") | 0.70 (27.56") | 0.92 (36.22") |
| 5.08 (200") | 2.692 (105.984") | 4.308 (169.606") | 1.71 (67.32") | 1.13 (44.49") | 1.25 (49.21") |
| 6.35 (250") | 3.365 (132.480") | 5.385 (212.008") | 2.14 (84.25") | 1.55 (61.02") | 1.58 (62.20") |
| 7.62 (300") | 4.039 (159.016") | 6.462 (254.409") | 2.57 (101.18") | 1.98 (77.95") | 1.91 (75.20") |
| 8.89 (350") | 4.712 (185.512") | 7.539 (296.811") | 3.00 (118.11") | 2.41 (94.88") | 2.24 (88.19") |


| Throw ratio 0.40:1 |  |  | Projection distance (mirror reflecting surface to screen) (L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.88 (34.65") | 0.29 (11.42") | 0.68 (26.77") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.06 (41.73") | 0.47 (18.50") | 0.83 (32.68") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.32 (51.97") | 0.73 (28.74") | 1.05 (41.34") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.76 (69.29") | 1.17 (46.06") | 1.43 (56.30") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.20 (86.61") | 1.61 (63.39") | 1.80 (70.87") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.64 (103.94") | 2.05 (80.71") | 2.17 (85.43") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 3.08 (121.26") | 2.49 (98.03") | 2.55 (100.39") |

## Projection relationships (continued)

Units: m (")

| Throw ratio 0.48:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000) | 2.032 (80.000) | 0.97 (38.19) | 0.38 (14.96) | 0.68 (26.77) |
| 3.05 (120") | 1.829 (72.008) | 2.438 (95.984) | 1.17 (46.06) | 0.58 (22.83) | 0.83 (32.68) |
| 3.81 (150") | 2.286 (90.000) | 3.048 (120.000) | 1.46 (57.48) | 0.87 (34.25) | 1.05 (41.34) |
| 5.08 (200") | 3.048 (120.000) | 4.064 (160.000) | 1.94 (76.38) | 1.35 (53.15) | 1.42 (55.91) |
| 6.35 (250") | 3.810 (150.000) | 5.080 (200.000) | 2.42 (95.28) | 1.83 (72.05) | 1.80 (70.87) |
| 7.62 (300") | 4.572 (180.000) | 6.096 (240.000) | 2.91 (114.57) | 2.32 (91.34) | 2.17 (85.43) |
| 8.89 (350") | 5.334 (210.000) | 7.112 (280.000) | 3.39 (133.46) | 2.80 (110.24) | 2.55 (100.39) |

- For PT-DX810 / DX800 / DX610 / D6000 / D5000

| Throw ratio 0.39:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (4:3) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.524 (60.000") | 2.032 (80.000") | 0.80 (31.50") | 0.21 (8.27") | 0.41 (16.14") |
| 3.05 (120") | 1.829 (72.008") | 2.438 (95.984") | 0.96 (37.80") | 0.37 (14.57") | 0.51 (20.08") |
| 3.81 (150") | 2.286 (90.000") | 3.048 (120.000") | 1.20 (47.24") | 0.61 (24.02") | 0.65 (25.59") |
| 5.08 (200") | 3.048 (120.000") | 4.064 (160.000") | 1.60 (62.99") | 1.01 (39.76") | 0.89 (35.04") |
| 6.35 (250") | 3.810 (150.000") | 5.080 (200.000") | 1.99 (78.35") | 1.41 (55.51") | 1.13 (44.49") |
| 7.62 (300") | 4.572 (180.000") | 6.096 (240.000") | 2.39 (94.09") | 1.80 (70.87") | 1.37 (53.94") |
| 8.89 (350") | 5.334 (210.000") | 7.112 (280.000") | 2.79 (109.84") | 2.20 (86.61") | 1.61 (63.39") |


| Throw ratio 0.39:1 |  |  | Projection distance (mirror reflecting surface to screen)(L1) | Projector rear end to screen (L4) | Top of projector to bottom edge of screen <br> (A1) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Projected image size (16:9) |  |  |  |  |  |
| Diagonal (SD) | Height (SH) | Width (SW) |  |  |  |
| 2.54 (100") | 1.245 (49.016") | 2.214 (87.165") | 0.87 (34.25") | 0.28 (11.02") | 0.66 (25.98") |
| 3.05 (120") | 1.494 (58.819") | 2.657 (104.606") | 1.05 (41.34") | 0.46 (18.11") | 0.81 (31.89") |
| 3.81 (150") | 1.868 (73.543") | 3.321 (130.748") | 1.31 (51.57") | 0.72 (28.35") | 1.03 (40.55") |
| 5.08 (200") | 2.491 (98.071") | 4.428 (174.331") | 1.74 (68.50") | 1.15 (45.28") | 1.39 (54.72") |
| 6.35 (250") | 3.113 (122.559") | 5.535 (217.913") | 2.17 (85.43") | 1.58 (62.20") | 1.75 (68.90") |
| 7.62 (300") | 3.736 (147.087") | 6.641 (261.457") | 2.61 (102.76") | 2.02 (79.53") | 2.12 (83.46") |
| 8.89 (350") | 4.358 (171.575") | 7.748 (305.039") | 3.04 (119.69") | 2.45 (96.46") | 2.48 (97.64") |

## Projection relationships (continued)

If you are using a projection screen size not listed in these Operating Instructions, measure the diagonal screen size SD ( m ). Then use the calculation methods provided to determine projection distance (L1) and the distance from the top of the projector to the bottom edge of the screen (A1).
Establishing dimensions L1 and A1 allows you to calculate all other dimensions.
(Units for calculations: m ) (Note that the values obtained in the following calculations are approximations.)

## Projection distance calculation method

Unit: m

- For PT-DZ870

|  | For an aspect ratio of 16:10 | For an aspect ratio of 16:9 | For an aspect ratio of 4:3 |
| :--- | :---: | :---: | :---: |
| Projection distance (L1) | $=0.3205 \times$ SD +0.0047 | $=0.3294 \times$ SD +0.0047 | $=0.3628 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.1977 \times$ SD -0.0721 | $=0.2304 \times$ SD -0.0721 | $=0.2238 \times$ SD -0.0721 |

- For PT-DW830

|  | For an aspect ratio of 16:10 | For an aspect ratio of 16:9 | For an aspect ratio of 4:3 |
| :--- | :---: | :---: | :---: |
| Projection distance (L1) | $=0.3365 \times$ SD +0.0047 | $=0.3459 \times$ SD +0.0047 | $=0.3809 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.2597 \times$ SD -0.0740 | $=0.2942 \times$ SD -0.0740 | $=0.2941 \times$ SD -0.0740 |

For PT-DX100

|  | For an aspect ratio of 4:3 | For an aspect ratio of 16:9 |
| :--- | :---: | :---: |
| Projection distance (L1) | $=0.3133 \times$ SD +0.0047 | $=0.3413 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.1881 \times$ SD -0.0715 | $=0.2866 \times$ SD -0.0715 |

For PT-DZ770 / DZ680 / DZ6710 / DZ6700

|  | For an aspect ratio of 16:10 | For an aspect ratio of 16:9 | For an aspect ratio of 4:3 |
| :--- | :---: | :---: | :---: |
| Projection distance (L1) | $=0.3205 \times$ SD +0.0047 | $=0.3294 \times$ SD +0.0047 | $=0.3628 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.1977 \times$ SD -0.0671 | $=0.2304 \times$ SD -0.0671 | $=0.2238 \times$ SD -0.0671 |

- For PT-DW740 / DW730 / DW640 / DW6300

|  | For an aspect ratio of 16:10 | For an aspect ratio of 16:9 | For an aspect ratio of 4:3 |
| :--- | :---: | :---: | :---: |
| Projection distance (L1) | $=0.3365 \times$ SD +0.0047 | $=0.3459 \times$ SD +0.0047 | $=0.3809 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.2597 \times$ SD -0.0690 | $=0.2942 \times$ SD -0.0690 | $=0.2941 \times$ SD -0.0690 |

- For PT-DX810 / DX800 / DX610 / D6000 / D5000

|  | For an aspect ratio of $4: 3$ | For an aspect ratio of $16: 9$ |
| :--- | :---: | :---: |
| Projection distance (L1) | $=0.3133 \times$ SD +0.0047 | $=0.3413 \times$ SD +0.0047 |
| Top of projector to bottom <br> edge of screen (A1) | $=0.1881 \times$ SD -0.0665 | $=0.2866 \times$ SD -0.0665 |

- Calculation method for L2, L3, L4 and A2

|  | $\begin{aligned} & \text { PT-DZ870 / DW830 / } \\ & \text { DX100 } \end{aligned}$ | $\begin{array}{\|l} \hline \text { PT-DZ770 / DW740 / DX810 / } \\ \text { DZ680 / DW640 / DX610 / DW730 } \\ \text { DX800 / DZ6710 / DZ6700 / DW6300 / } \\ \text { D6000 / D5000 } \end{array}$ |
| :---: | :---: | :---: |
| Front end of lens to screen (L2) |  | L1 + 0.023 |
| Projector front end to screen (L3) |  | L1-0.166 |
| Projector rear end to screen (L4) | L1-0.679 | L1-0.589 |
| Projector bottom to bottom edge of screen (A2) | A1 + 0.200 | A1 + 0.175 |

## Specifications

| Lens Type |  | Fixed-focus lens |
| :--- | :--- | :---: |
| F value |  | 2.0 |
| Focal Length (f) |  | Width |
| Dimensions | Height | $5.3 \mathrm{~mm}(7 / 32$ " $)$ |
|  | Depth | $132 \mathrm{~mm}(5-3 / 16 ")$ |
|  | Net Weight |  | $102 \mathrm{~mm}(4-1 / 32 ")$ |

## Dimensions



## Information for users in the European Union

Importer's name and address within the European Union
Panasonic Marketing Europe GmbH
Panasonic Testing Center
Winsbergring 15, 22525 Hamburg, Germany

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\begin{aligned}
& \text { Information on Disposal for Users of Waste Electrical \& Electronic Equipment (private households) } \\
& \text { and electronic products should not be mixed with general household waste. } \\
& \text { For proper treatment, recovery and recycling, please take these products to designated } \\
& \text { collection points, where they will be accepted on a free of charge basis. } \\
& \text { Alternatively, in some countries you may be able to return your products to your local retailer } \\
& \text { upon the purchase of an equivalent new product. } \\
& \text { Disposing of this product correctly will help to save valuable resources and prevent any } \\
& \text { potential negative effects on human health and the environment which could otherwise arise } \\
& \text { from inappropriate waste handling. Please contact your local authority for further details of } \\
& \text { your nearest designated collection point. } \\
& \text { Penalties may be applicable for incorrect disposal of this waste, in accordance with national } \\
& \text { legislation. } \\
& \text { For business users in the European Union } \\
& \text { If you wish to discard electrical and electronic equipment, please contact your dealer or } \\
& \text { supplier for further information. } \\
& \text { Information on Disposal in other Countries outside the European Union } \\
& \text { This symbol is only valid in the European Union. } \\
& \text { If you wish to discard this product, please contact your local authorities or dealer and ask for } \\
& \text { the correct method of disposal. }
\end{aligned}
$$

## Panasonic Corporation

