Projector Warping Tool

Ver.2.02

User’s Manual

Maxell, Ltd.

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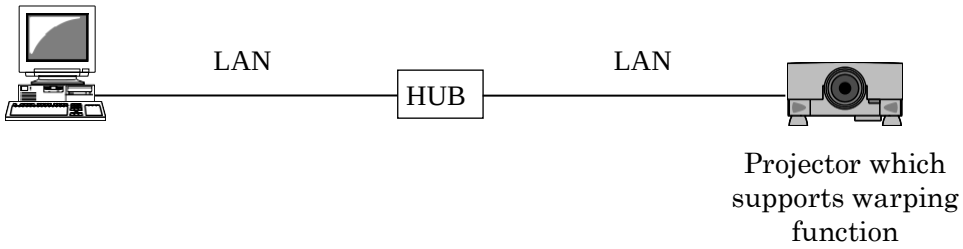
1. Introduction

1.1 Features

The Projector Warping Tool is the application to configure the geometric distortion of the projector's images when the images are projected onto screens which have a particular kind of surface such as a cylinder, a spherical shape, etc. Users can project images on these types of screens by transferring the WarpMap, which is created within this tool, from the PC to a projector which supports the warping function through a network connection.

1.2 System Configuration

The following diagram shows the system configuration for using the projector Warping Tool.



2. Installation

2.1 System Requirements

The following are the requirements of hardware and software to use the Projector Warping Tool.

(1) Operating System

Windows 7

Windows 8

Windows 8.1

Windows 10

(2) Display

XGA 1024 x 768 or higher、65,536-colors or higher

(3) CPU

Acceptable CPU to meet the system requirements of the operating system above

(4) Memory

1GB or higher

(5) Hard Disc

Minimum 150MB free space for installation

(6) Wired or Wireless LAN

2.2 Projector Warping Tool Installation

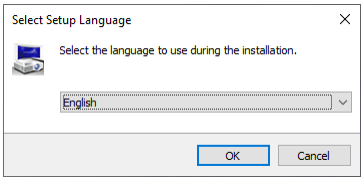
The following describes the installation process for the Projector Warping Tool to the PC with Windows10 installed.

(1) Turn on the PC and log on as Administrator.

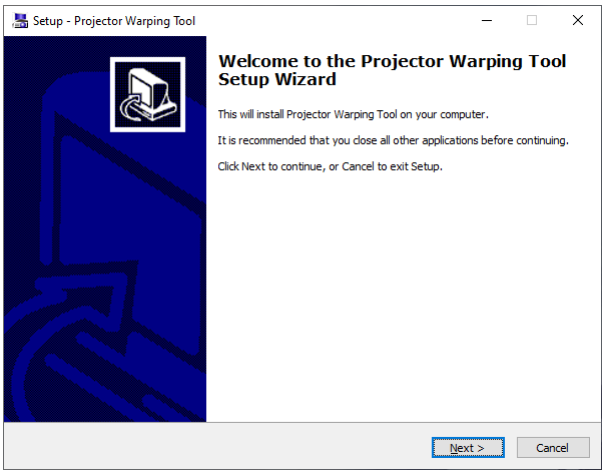
(2) Shut down all the other applications.

(3) Double click the “ProjectorWarpingTool_v2.02_Setup.exe”.

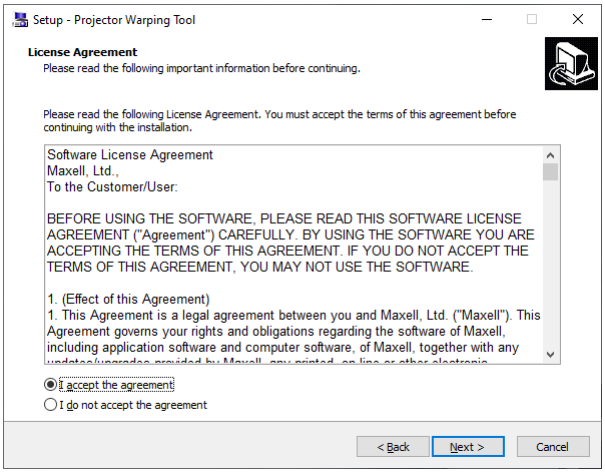
(4) After a moment, the Choose Setup Language dialog will appear. Select the language you will use in the list and click [OK].



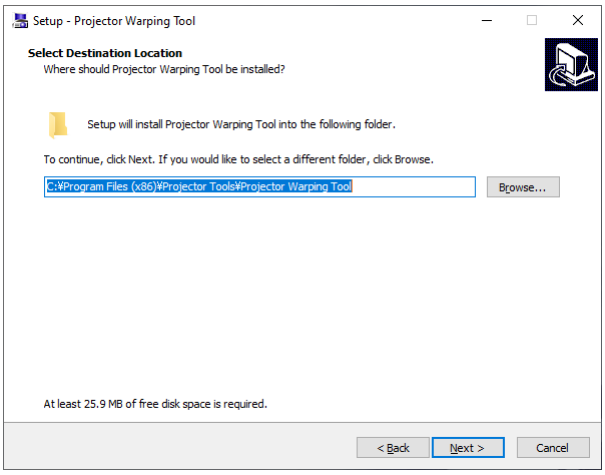
(5) The Welcome dialog will appear. Click [Next].



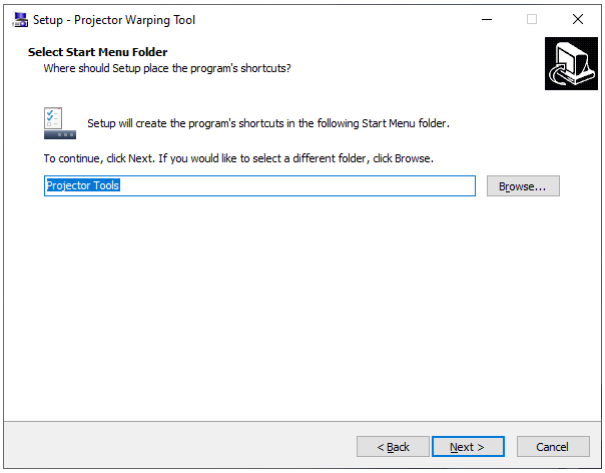
(6) License Agreement dialog appears. If you accept it, select “I accept agreement” and press [Next].



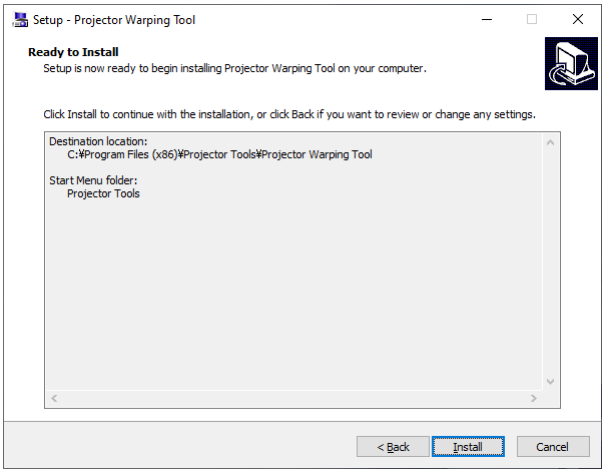
(7) The Select Destination Location dialog appears. Click [Next]. If you want to install to a different destination, click [Browse] and select the destination.



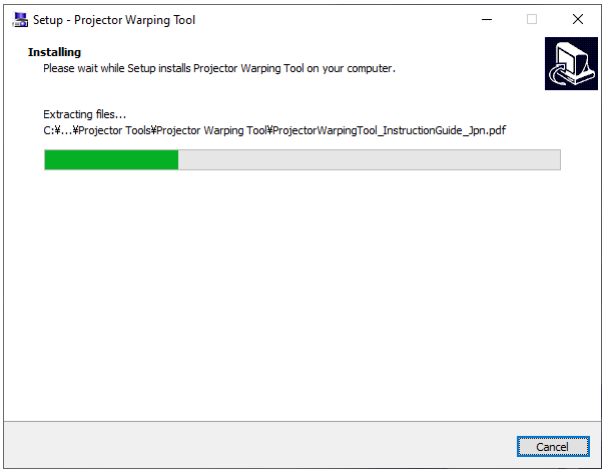
(8) The Select Start Menu Folder diagram appears. Confirm if the name “Projector Tools” is OK to be registered in the [Start] menu’s [Program], and click [Next]. If you want to change the folder name, please input the name you like and click [Next].



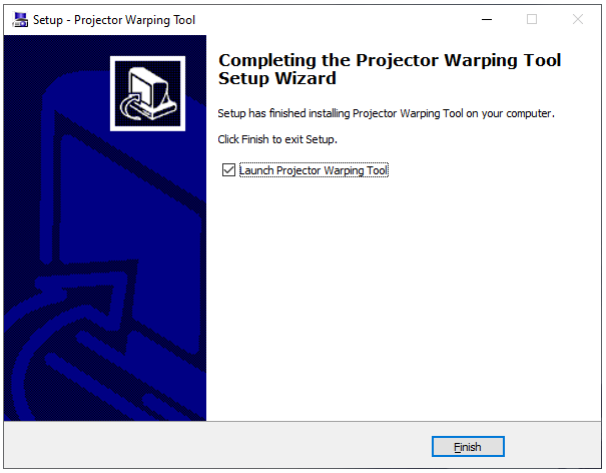
(9) The Ready to Install diagram appears. Click [Install].



(10) The installation process will start.



(11) “Completing the Projector Warping Tool Setup Wizard” dialog will be shown when the installation is completed. Click [Finish] to finish the installation.



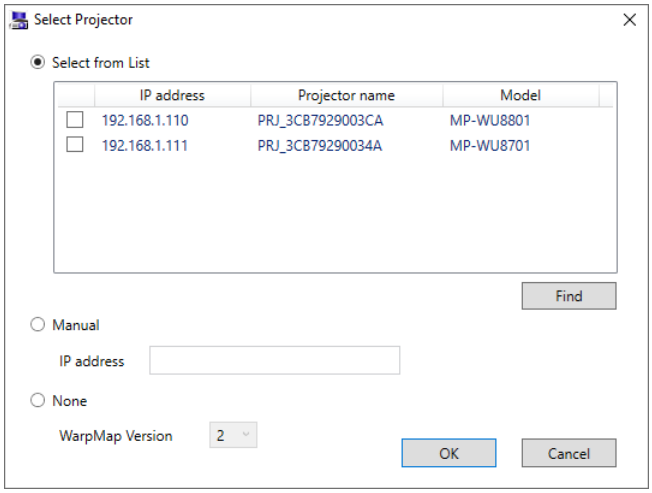
After the installation is completed properly, the folder registered in the step (8) will appear in [Start] menu [All programs]. “Projector Warping Tool” will appear if the installation was successful. The shortcut for “Projector Warping Tool” will also be made on the desktop.

3. Operating Instructions

3.1 Start-up Projector Warping Tool

Select Windows [Start] → [Projector Tools] → [Projector Warping Tool]. Or double click the shortcut of "Projector Warping Tool" icon on the desktop.

The [Select Projector] window will then appear. (*1)



(*1) This is for MP-WU9101B or MMP-BL1000U. Set NETWORK MODE to SERVICE mode in NETWORK menu and then set an IP address of the same network address as USER mode in SETUP menu manually.

Ex. USER

IP ADDRESS : 192.168.0.100

SUBNET MASK : 255.255.255.0

SERVICE

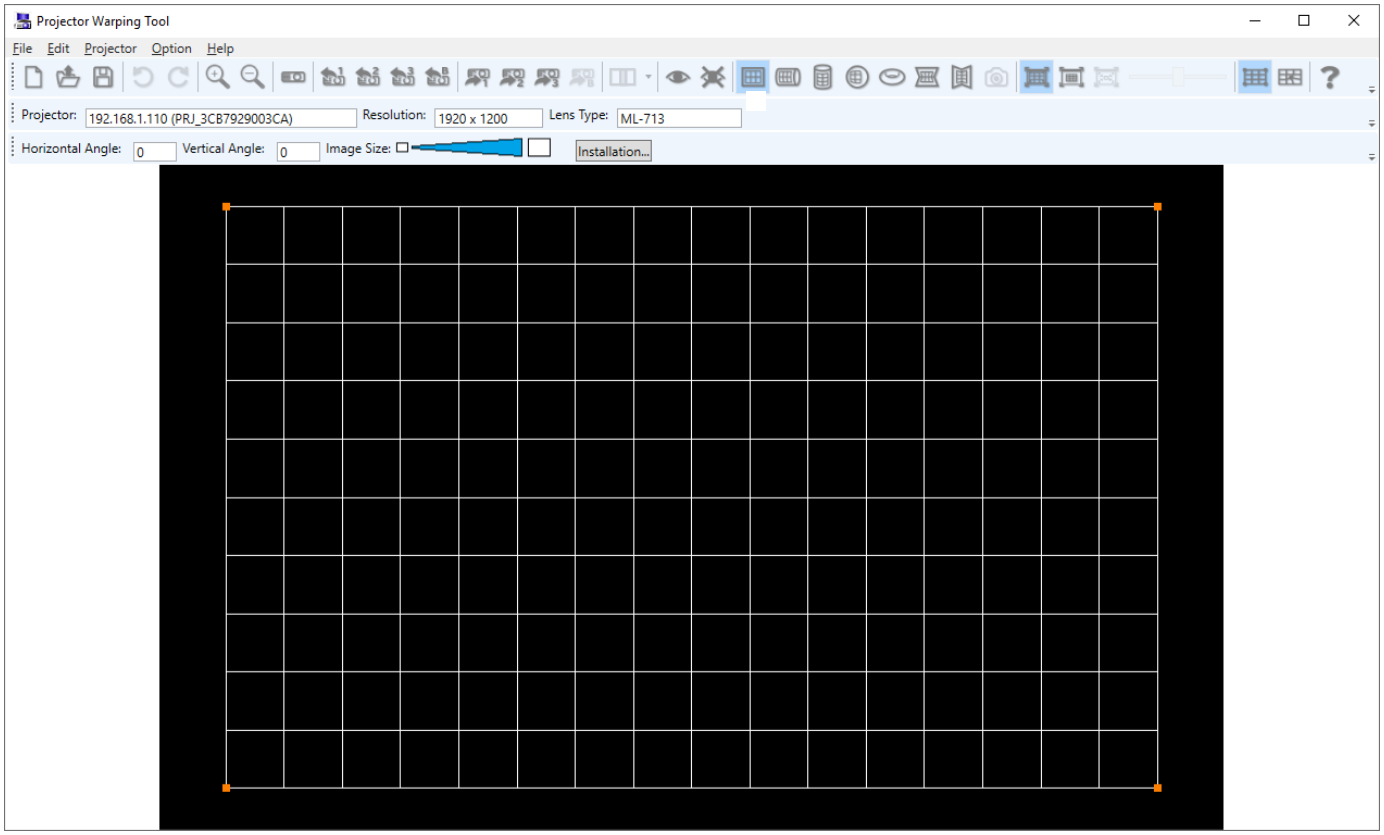
IP ADDRESS : 192.168.0.101

SUBNET MASK : 255.255.255.0

Sometimes the projector to not be able to connect is displayed on the list. If you can't connect with the projector, confirm the network configuration on your PC or the settings of NETWORK menu for USER mode or SERVICE mode at that time.

Specify the available projector or select [None] and click [OK], the Main window will then appear.

When [Cancel] is clicked during this start-up process, the Projector Warping Tool is terminated.



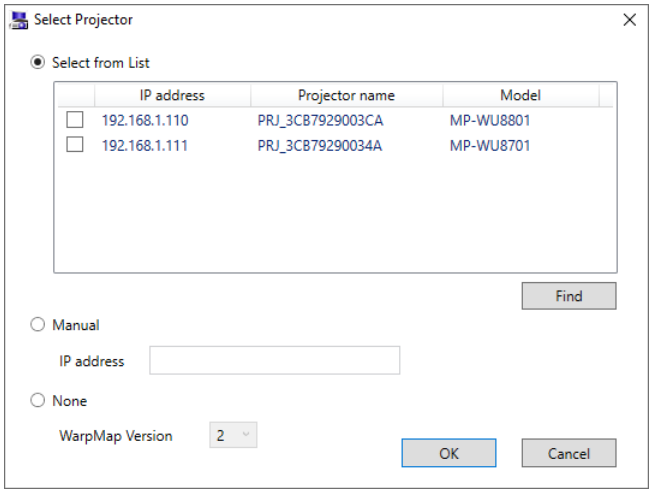
3.2 Quit Projector Warping Tool

Select [File] – [Exit] or click [x] button to quit the Projector Warping Tool.

Confirmation dialogue will then appear, then select [Yes] to finish.

3.3 Select Projector

Following is the [Select Projector] window which appears during the start-up procedure.



Selecting [Projector] - [Select Projector] in the menu or click the [ ] button at the tool bar to show this window.
There are three ways to select the projector which you want to connect to.

(1) Select from List

The projectors, which support the warping function and exist on the network, will be discovered and displayed on the list when the [Projector Select] window appears.

Select the projector from the list which you want to connect to.

Click [Find] to search the projector again.

(2) Manual

Set the IP address of the projector manually to connect.

(3) None

It won't connect to the projector.

Assign WarpMap version because WarpMap is different according to each product. See below for finding the actual WarpMap version.

Model Name	WarpMap Version
<8000 series> MP-WU8101B, MP-WU8101W, MMP-D1000UB, MP-WU8801B, MP-WU8801W, MMP-D8010UB, MMP-D8010UW, MP-WU8701W, MMP-D7010UB, MMP-D7010UW, MMP-D8020UB, MMP-D7020UB, MC-WU8701B, MC-WU8701W, MMX-D878U-W, MC-WU8601W, MMX-D868U, MC-WX8751B, MC-WX8751W, MMX-D878W-W, MC-WX8651W, MMX-D868W, MC-X8801W, MMX-D888X-W <5000 series> MC-WU5505, MMX-FU501H, MC-WU5501, MMX-FU501, MC-WX5505, MMX-FW501H, MC-WX5501, MMX-FW501,	2
<5000 series> MC-WU5506M, MMX-FU501HM, MMX-FW501HM	3
<9000 series> MP-WU9101B, MMP-BL1000U	4

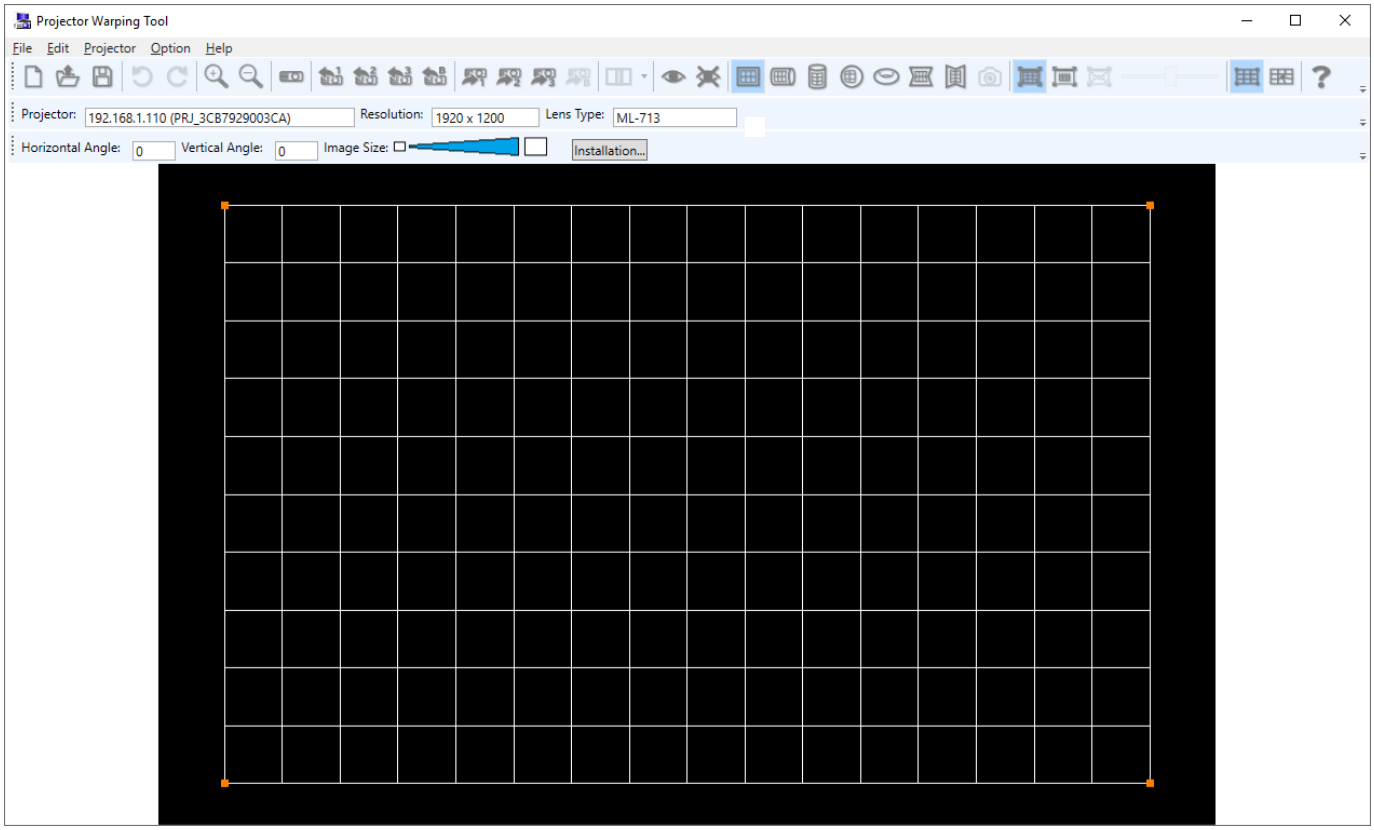
Click the [OK] button and then the connection is checked between the selected projector.
Main window will be shown when successfully connected with the projector.

Error message will appear when the connection fails.

When [Cancel] button is clicked, the procedure for selecting the projector is canceled and terminates the Projector Warping Tool or to go back to the Main window.

3.4 Main Window

Following is the Main window.



(1) Menu

Following are the Menu items and Function overview in Main window.

Menu	Sub Menu	Function overview
File	New	Initialize the edit file
	Open…	Open the existing WarpMap file
	Save As…	Save the WarpMap file
	Exit	Quit Projector Warping Tool
Edit	Undo	Cancel the last operation
	Redo	Re execute the canceled operation
	Zoom in	Zoom in the WarpMap in the edit area.
	Zoom out	Zoom out the WarpMap in the edit area.

Continuation of the list

Projector	Select Projector	Display the [Select Projector] window and set the projector to be connected.
	Resolution	Select the projector's resolution. Acquire the resolution data from the specified projector and the resolution will be selected. The resolution cannot be changed if the data is acquired from projector.
	1024 x 768	Select when projector's resolution is XGA (1024 x 768)
	1280 x 800	Select when projector's resolution is WXGA (1280 x 800)
	1920 x 1200	Select when projector's resolution is WUXGA (1920 x 1200)
	1920 x 1080	Select when projector's resolution is HD (1920 x 1080)
	Installation	Set horizontal angle, vertical angle and image size after displaying a dialog of installation.
	Lens Type	Select the projector's lens type. Acquire the lens type data from the specified projector and the type will be selected. The type cannot be changed if the data is acquired from projector.
	1: USL-901A (*2)	Select when USL-901A is installed.
	2: SL-902 (*2)	Select when SL-902 is installed.
	3: SD-903 (*2)	Select when SD-903 is installed.
	4: ML-904 (*2)	Select when ML-904 is installed.
	5: LL-905 (*2)	Select when LL-905 is installed.
	6: UL-906 (*2)	Select when UL-906 is installed.
	7: FL-920 (*2)	Select when FL-920 is installed.
	1: USL-701 (*3)	Select when USL-701 is installed.
	2: FL-701 (*3)	Select when FL-701 is installed.
	3: SL-712 (*3)	Select when SL-712 is installed.
	4: ML-713 (*3)	Select when ML-713 is installed.
	5: LL-704 (*3)	Select when LL-704 is installed.
	6: UL-705 (*3)	Select when UL-705 is installed.
	7: FL-710/720 (*3)	Select when FL-710/720 is installed.
	1: Fixed (*4)	Select when fixed lens.
	Load WarpMap	Load the WarpMap from the projector
	Warp1	Retrieve the WarpMap saved in Warp1
	Warp2	Retrieve the WarpMap saved in Warp2
	Warp3	Retrieve the WarpMap saved in Warp3
	Load camera blending data	Retrieve the WarpMap saved for camera blending use
	Send WarpMap	Transfer the WarpMap to the projector.
	Warp1	Transfer the WarpMap which is shown in the edit area to Warp1
	Warp2	Transfer the WarpMap which is shown in the edit area to Warp2
	Warp3	Transfer the WarpMap which is shown in the edit area to Warp3
	Send camera blending data	Transfer the WarpMap which is shown in the edit area for camera blending
	Preview	Set On/Off to display the preview of WarpMap
	On	Turn On the WarpMap preview mode of the projector
	Off	Turn Off the WarpMap preview mode of the projector
	Warping Mode	Set projector's Warping mode
	Off	Turn Off the projector's Warping mode
	1	Set projector's Warping to 1
	2	Set projector's Warping to 2
	3	Set projector's Warping to 3
	Blending Mode	Set projector's Blending mode
	Off	Turn Off the projector's Blending mode
	MANUAL	Set projector's Blending mode to MANUAL
	CAMERA	Set projector's Blending mode to CAMERA

(*2) When connecting with the projector which supports WarpMap version 4 or not connecting with any projector, those lens types are indicated by choosing WarpMap version as 4.

(*3) When connecting with the projector which supports WarpMap version 2 or not connecting with any projector, those lens types are indicated by choosing WarpMap version as 2.

(*4) When connecting with the projector which supports fixed lens or not connecting with any projector, those lens types are indicated by choosing WarpMap version as 2/3.

Continuation of the list

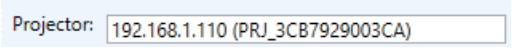
Option	Screen Type		Select Screen type which image will be projected
		Flat	Select when flat surface screen is used
		Horizontal Cylinder	Select when horizontal cylinder surface screen is used
		Vertical Cylinder	Select when vertical cylinder surface screen is used
		Sphere	Select when Sphere surface screen is used
		Torus	Select when torus surface screen is used
		Horizontal Corner Wall	Select when horizontal corner wall surface screen is used
		Vertical Corner Wall	Select when vertical corner wall surface screen is used
		Camera Blending	Select when editing camera blending data
	View mode		Select View mode of the edit area.
		Data will be displayed in selected window size	Display the Edit area in the current window size.
		Data will be displayed in the actual window size	Display the Edit area be fixed in the projector's resolution.
		Data will be displayed by zoom in/out on a slide adjustment	Display the Edit area by zoom in/out on a slide adjustment.
	Edit Mode		Select the Edit mode for WarpMap
		Point	Select when editing the outer frame. The controllable point is different for selected screen type.
		Grid	Select when editing the grid.
	Over-the-limit Correction		Select whether allowing over-the-limit correction.
		Disable	Select when limit the correction range. WarpMap with orange area can not be sent to the projector.
		Enable	Select when allow over-the-limit correction. WarpMap with orange area can be sent to the projector. If WarpMap with orange area is sent to the projector, the projection image may be incorrect. In that case, sent the other WarpMap without orange area.
Help	Contents		Display the user manual for Projector Warping Tool
	About		Display version information of Projector Warping Tool

(2) Tool Bar

Following are the Tool Bar icon's and its corresponding menu.

Icon	Corresponding Menu
	[File] - [New]
	[File] - [Open]
	[File] - [Save As]
	[Edit] - [Undo]
	[Edit] - [Redo]
	[Edit] - [Zoom in]
	[Edit] - [Zoom out]
	[Projector] - [Select Projector]
	[Projector] - [Load WarpMap] - [Warp1]
	[Projector] - [Load WarpMap] - [Warp2]
	[Projector] - [Load WarpMap] - [Warp3]
	[Projector] - [Load camera blending data] - [Camera Blending]
	[Projector] - [Send WarpMap] - [Warp1]
	[Projector] - [Send WarpMap] - [Warp2]
	[Projector] - [Send WarpMap] - [Warp3]
	[Projector] - [Send camera blending data] - [Camera Blending]
	[Projector] - [Blending mode] - [OFF / MANUAL / CAMERA]
	[Projector] - [Preview]－[On]
	[Projector] - [Preview]－[Off]
	[Option] - [Screen Type] - [Flat]
	[Option] - [Screen Type] - [Horizontal Cylinder]
	[Option] - [Screen Type] - [Vertical Cylinder]
	[Option] - [Screen Type] - [Sphere]
	[Option] - [Screen Type] - [Torus]
	[Option] - [Screen Type] - [Horizontal Corner Wall]
	[Option] - [Screen Type] - [Vertical Corner Wall]
	[Option] - [Screen Type] - [Camera Blending]
	[Option] - [View Mode] - [Data will be displayed in selected window size]
	[Option] - [View Mode] - [Data will be displayed in the actual window size]
	[Option] - [View Mode] - [Data will be displayed by zoom in/out on a slide adjustment]
	[Option] - [Edit Mode] - [Point]
	[Option] - [Edit Mode] - [Grid]
	[Help] - [Contents]

(3) Projector Box



Selected projector is displayed in the box in the form of an “IP address (projector name)” when you selected your projector from the “List” in the [Select Projector] window.

When you select your projector by setting the IP address manually, the IP address is only displayed.

“Unselected” is displayed if you selected “None” in the [Select Projector] window.

(4) Resolution Box

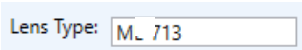


Resolution of the projector which you selected in [Select Projector] window is displayed.

“1920x1200” will be displayed if you didn’t select the projector.

Resolution displayed in the box will change if you change it in the menu.

(5) Lens Type Box



Lens type of the projector which you selected in [Select Projector] window is displayed.

If not selecting a particular projector, show the following projector according to WarpMap version selected.

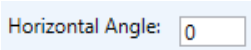
WarpMap Version 2 : “ML-713”

WarpMap Version 3 : “Fixed”

WarpMap Version 4 : “SD-903”

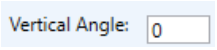
Lens type displayed in the box will change if you change it in the menu.

(6) Horizontal Angle Box



Horizontal angle which user set in the dialog box of installation is displayed.

(7) Vertical Angle Box



Vertical angle which user set in the dialog box of installation is displayed.

(8) Image Size Box



Condition of image size which user set in the dialog box of installation is displayed.

(9) Installation Button

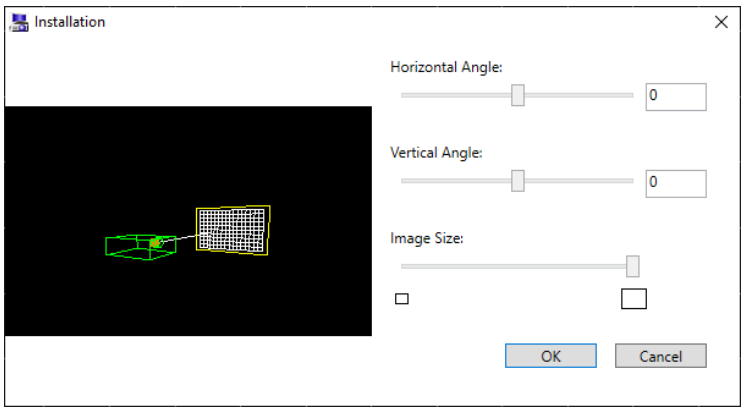


Dialog box of installation is displayed.

You can not use this button if lens type is FL-920 or FL-710/720.

3.5 Installation

The following is a dialog box of installation when selecting [Projector] – [Installation] from the menu or clicking the installation button.



Set horizontal angle, vertical angle and image size depending on the condition of projector installation. You can not operate their items if lens type is FL-920 or FL-710/720.

(1) Preview
Display a preview image of the condition for projector installation according to horizontal angle, vertical angle and image size.

(2) Horizontal Angle
Set horizontal angle from -45 to +45. Default value is 0.

(3) Vertical Angle
Set vertical angle from -45 to +45. Default value is 0.

(4) Image Size
Set image size between minimum size and maximum size. Default value is maximum size.

Apply the installation settings of horizontal angle, vertical angle and image size into WarpMap by clicking [OK] button. If WarpMap is out of the edit area after applying their settings, it will be zoomed out into the edit area. After the WarpMap was zoomed out, if the user turns their settings back to previous settings, the WarpMap will not accept the changes. This is because their settings have already been applied to the WarpMap and set. If user wants to revert back to original form, please select [Edit] – [Undo] in the menu or click ↺ button in the tool bar.

Each setting of horizontal angle, vertical angle and image size is not applied into the WarpMap when editing by clicking [Cancel] button.

3.6 Editing WarpMap

3.6.1 Screen Type

Select the shape of the screen which image will be projected from the [Option] - [Screen type] in the menu the Main window, or click / / / / / / / button at the tool bar. There are 8 types of images you can choose from :

- Flat ---
- Horizontal Cylinder ---
- Vertical Cylinder ---
- Sphere ---
- Torus ---
- Horizontal Corner Wall ---
- Vertical Corner Wall ---
- Camera Blending ---

3.6.2 View Mode

Select view mode from the [Option] - [View mode], or click / / button at the tool bar. There are 2 modes you can choose.

(1) Data will be displayed in selected window size
Edit area is modified to be displayed in the current window size so that the full WarpMap can be shown at all times.

(2) Data will be displayed in the actual window size
Edit area's resolution is fixed to the projector's resolution. If it doesn't fit inside the window, scroll bar will be displayed.

(3) Data will be displayed by zoom in/out on a slide adjustment
Edit area is scaled up/down to improve operability. This mode is selected when editing WarpMap for Camera Blending.

3.6.3 Edit Mode

Select Edit mode from the [Option] - [Edit Mode], or click / button at the tool bar. There are 2 modes you can choose.

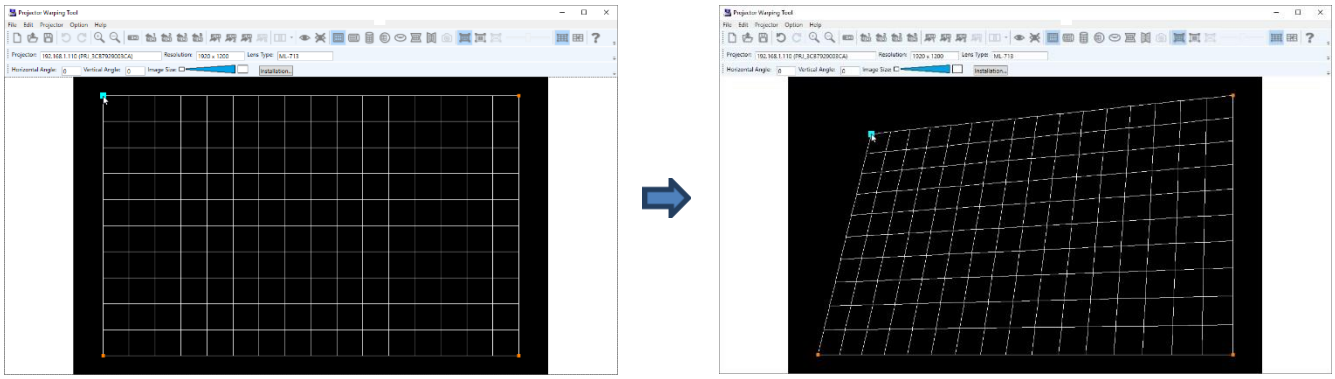
(1) Point
This mode is to edit the outer frame of the WarpMap. The controllable point is different for selected screen type.

(2) Grid
This mode is to edit the grid in the WarpMap individually.

3.6.4 Operating the Editing Area

(1) Mouse Operation

User can edit the WarpMap by Grab, Drag and Drop with the editing point (■) in the edit area. When mouse cursor is moved near the editing point (■), the figure changes from to and you are able to drag with left button of the mouse and drop at the necessary point. At that time, the color of the editing point selected by the mouse is blue (■). You cannot edit the shape anymore if the figure turns to . When the WarpMap is out of the edit area when editing the shape, it will be zoomed out into the edit area and the full shape will be displayed.



(2) Keyboard Operation

The following list is the command keys and the functions when editing the WarpMap using the keyboard.

Command Key	Function
[TAB]	Move mouse cursor to the right side. [Top left → Top right → Bottom left → Bottom right → Disappear the cursor → Top left](In case of 4 point correction)
[Shift] + [TAB]	Move mouse cursor to the left side. [Bottom right → Bottom left → Top right → Top left → Disappear the cursor → Bottom right](In case of 4 point correction)
[→]	Move mouse cursor to the right side. [Top left → Top right → Bottom left → Bottom right → Disappear the cursor → Top left](In case of 4 point correction)
[←]	Move mouse cursor to the left side. [Bottom right → Bottom left → Top right → Top left → Disappear the cursor → Bottom right](In case of 4 point correction)
[↑]	Move mouse cursor to the upper side. [Bottom right → Top right → Bottom left → Top left → Disappear the cursor → Bottom right](In case of 4 point correction)
[↓]	Move mouse cursor to the lower side. [Top left → Bottom left → Top right → Bottom right → Disappear the cursor → Top left](In case of 4 point correction)
[ESC]	Erase the cursor.
[Shift] + [→]	Move the editing point on the cursor position to the right side.
[Shift] + [←]	Move the editing point on the cursor position to the left side.
[Shift] + [↑]	Move the editing point on the cursor position to the upper side.
[Shift] + [↓]	Move the editing point on the cursor position to the lower side.
[Ctrl] + [→]	Move the editing point on the cursor position to the right side 8 times as large as using [Shift] + [→].
[Ctrl] + [←]	Move the editing point on the cursor position to the left side 8 times as large as using [Shift] + [←].

[Ctrl] + [↑]	Move the editing point on the cursor position to the upper side 8 times as large as using [Shift] + [↑].
[Ctrl] + [↓]	Move the editing point on the cursor position to the lower side 8 times as large as using [Shift] + [↓].
[Shift] + [I]	Zoom in the WarpMap of the edit area.
[Shift] + [O]	Zoom out the WarpMap of the edit area.

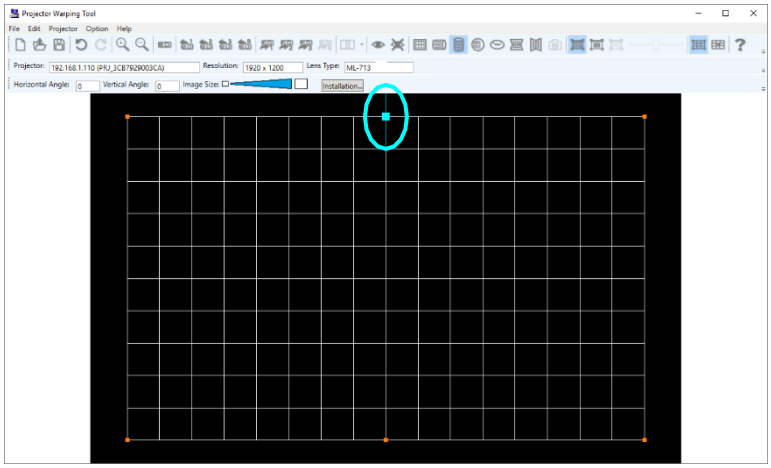
The cursor color is blue (■) and is the same as selecting the editing point using a mouse. Even if user cannot edit the shape anymore using the keyboard, the cursor doesn't change.

(3) View of edit area

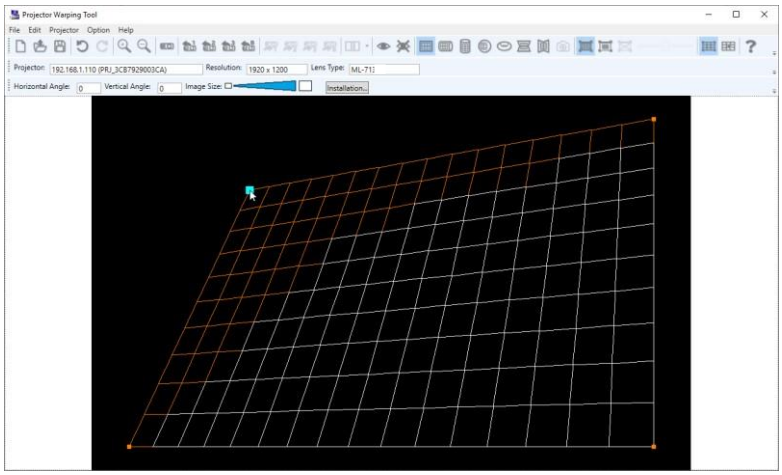
The editing point is displayed by red color (■).

The editing point which currently is selected is displayed by blue color (■).

When selecting horizontal cylinder, vertical cylinder, sphere and torus in screen type, the guide line of blue color is displayed by selecting the editing point except 4 corner positions. The editing point can move on the guide line at that time.



If the WarpMap is changed to the shape which a projector cannot support, the color of the line will turn to orange as shown below.



WarpMap cannot be transferred to the projector if orange lines are displayed.

(Preview is still displayed and available)

Please edit the WarpMap within the range to prevent the line from turning orange.

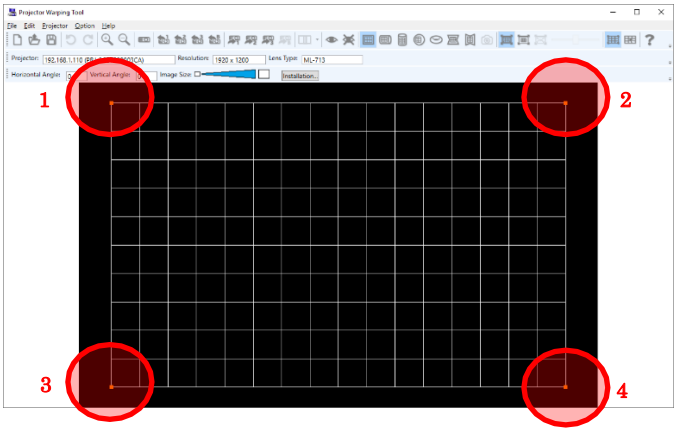
3.6.5 Editing point

Editing point differs based on which Edit Mode and Screen type is selected.

Following describes how the editing point will be displayed based on the selected Edit Mode and Screen type.

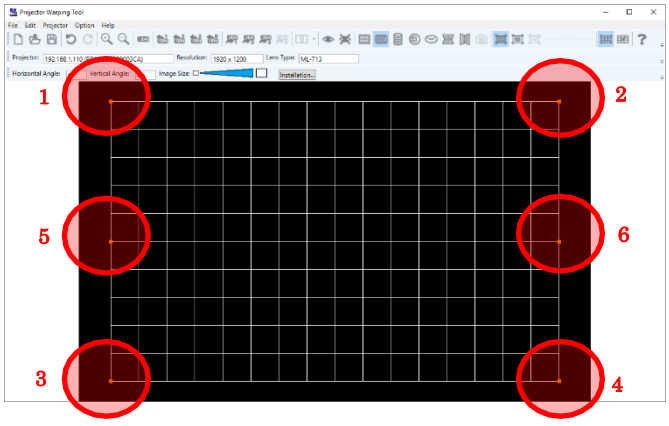
(1) Edit mode: Point, Screen type: Flat

There are 4 Edit points as shown below.

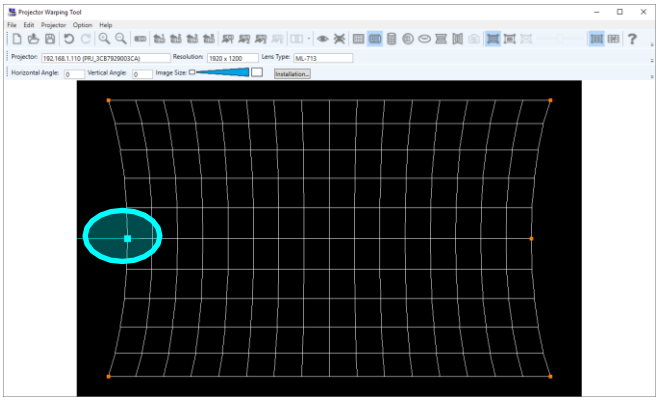


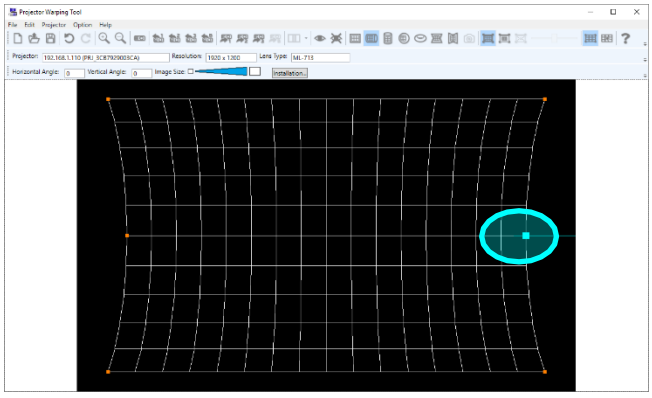
(2) Edit mode: Point, Screen type: Horizontal Cylinder

There are 6 Edit points as shown below.



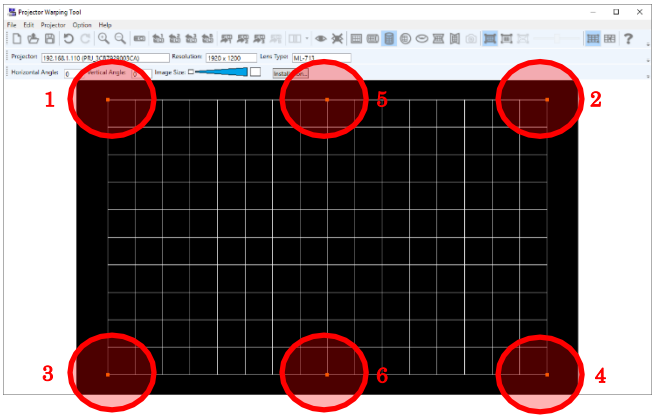
When editing point 5 or 6, the blue guide line appears as shown below. Drag the point along the guide line by using either mouse or keyboard.



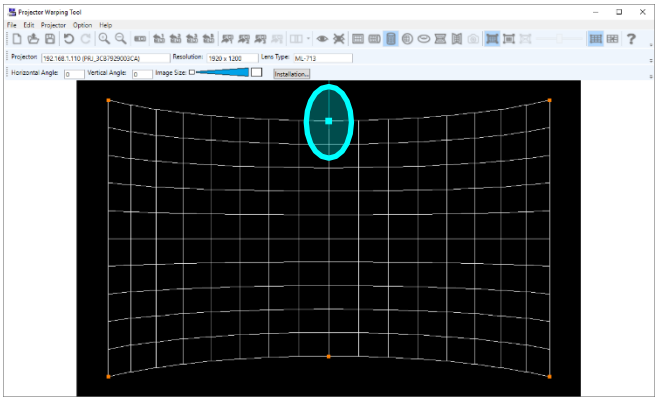


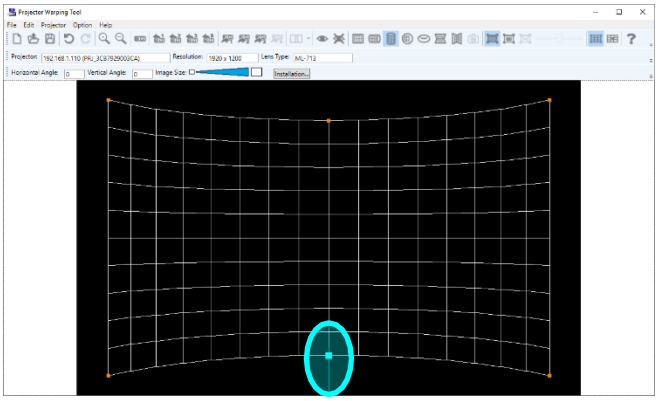
(3) Edit mode: Point, Screen type: Vertical Cylinder

There are 6 Edit points as shown below



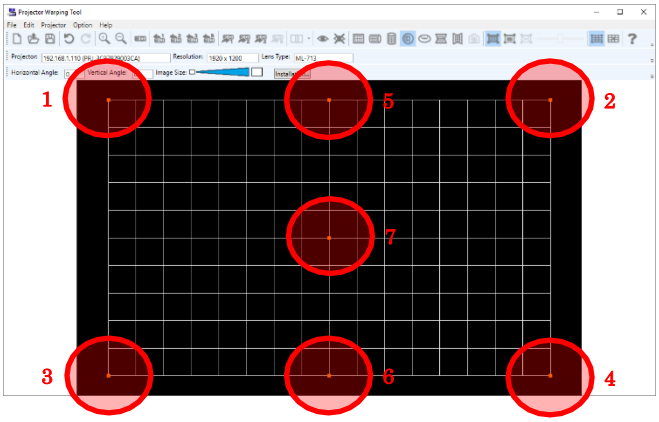
When editing point 5 or 6, the blue guide line appears as shown below. Drag the point along the guide line by using either mouse or keyboard.



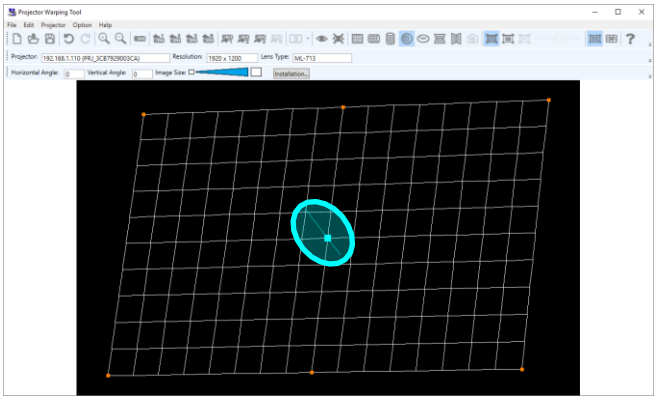


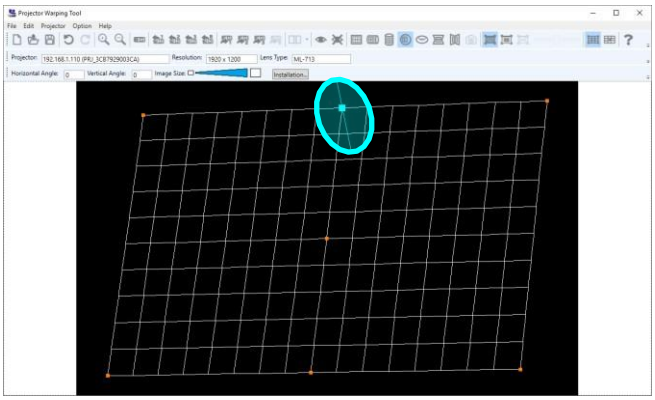
(4) Edit mode: Point, Screen type: Sphere

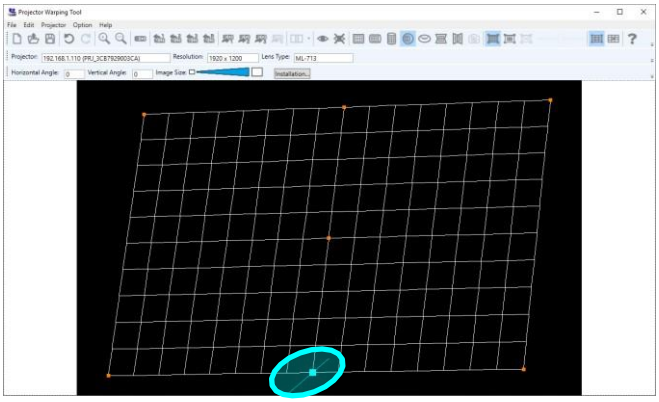
There are 7 Edit points as shown below.



When editing point 5 - 7, the blue guide line appears as shown below. Drag the point along the guide line by using either mouse or keyboard.



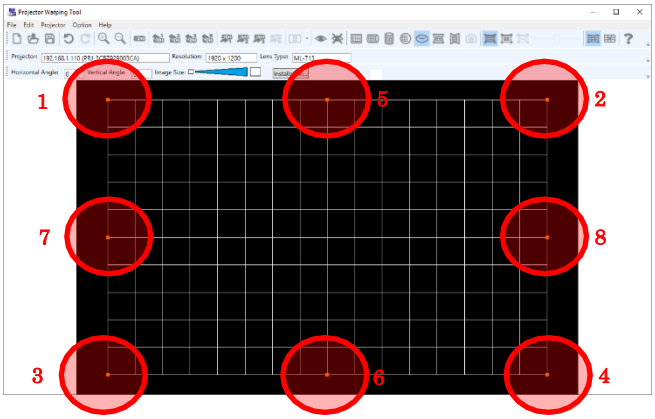




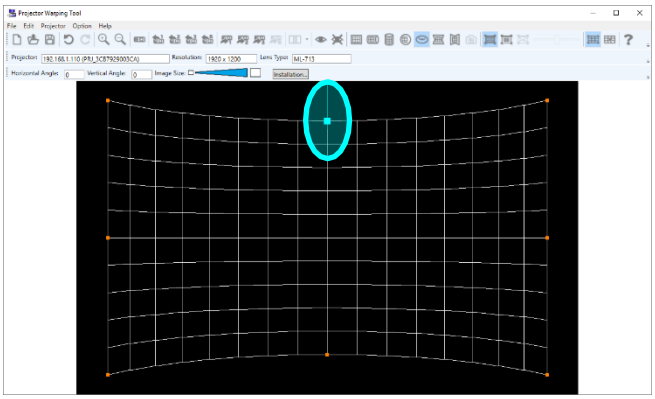
Point 7 can be edited after the point 1 - 4 is moved.

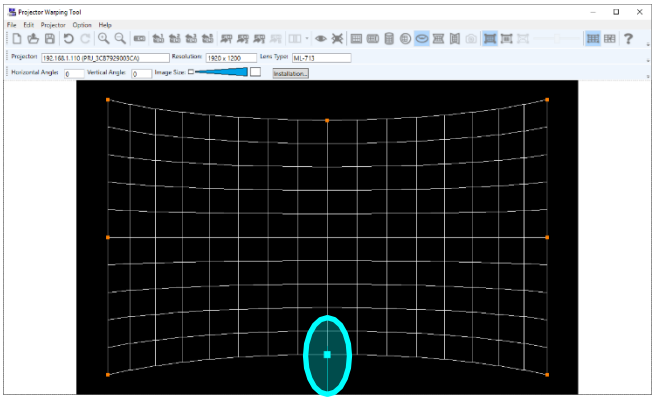
(5) Edit mode: Point, Screen type: Torus

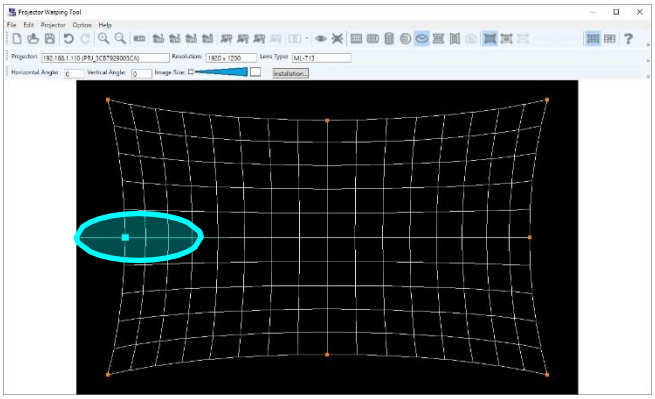
There are 8 Edit points as shown below.

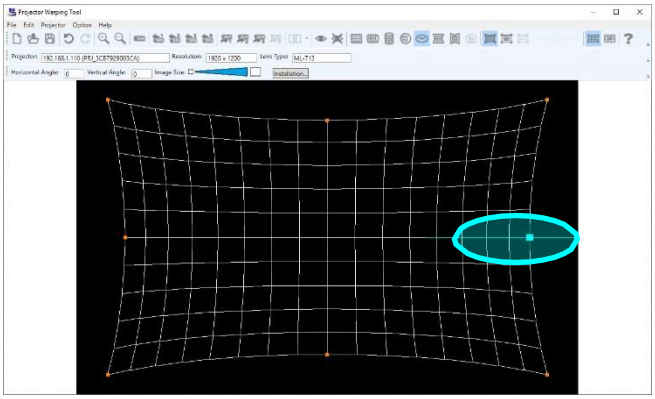


When editing point 5 - 8, the blue guide line appears as shown below. Drag the point along the guide line by using either mouse or keyboard.



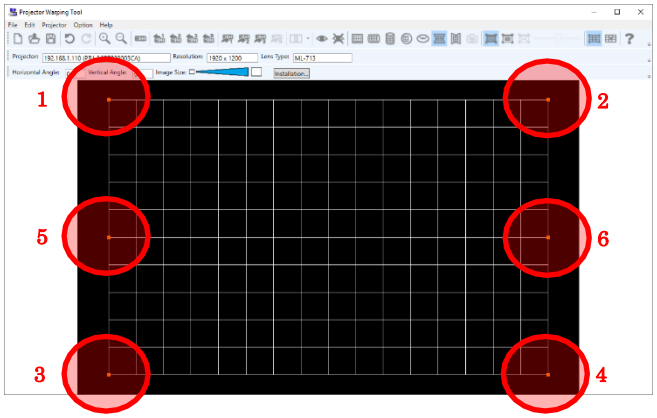


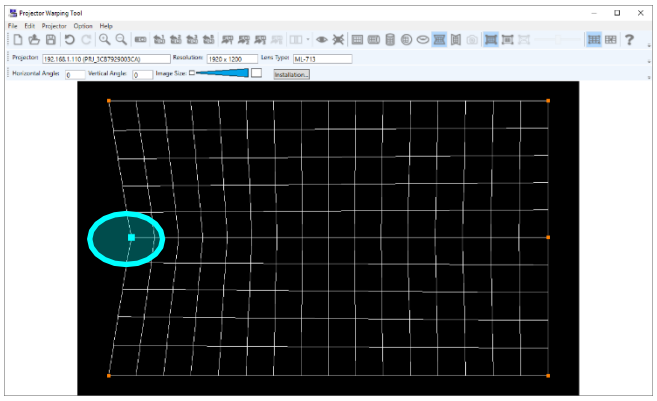


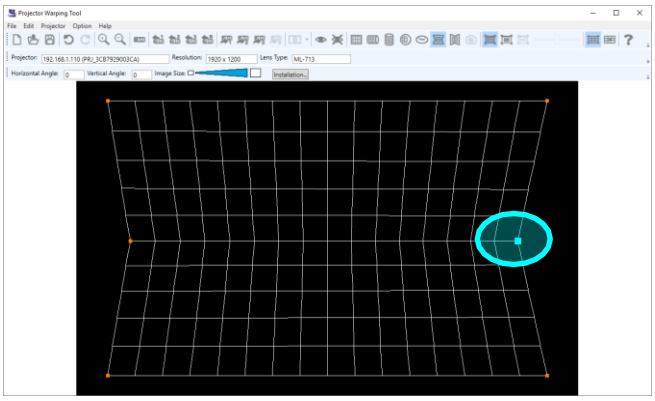


(6) Edit mode: Point, Screen type: Horizontal Corner Wall

There are 6 Edit points as shown below.

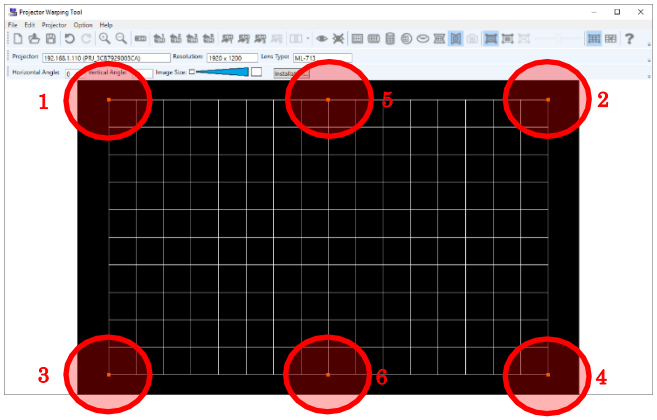


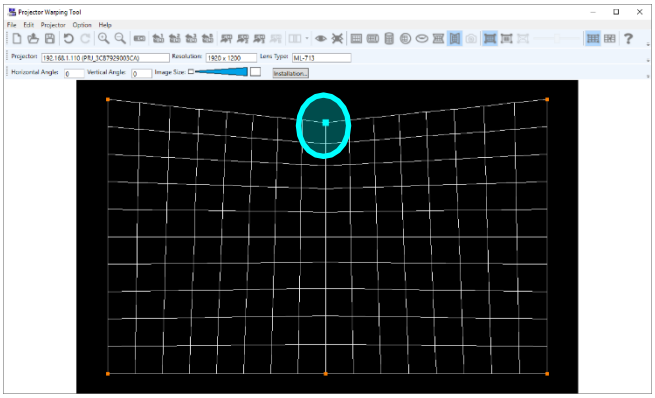


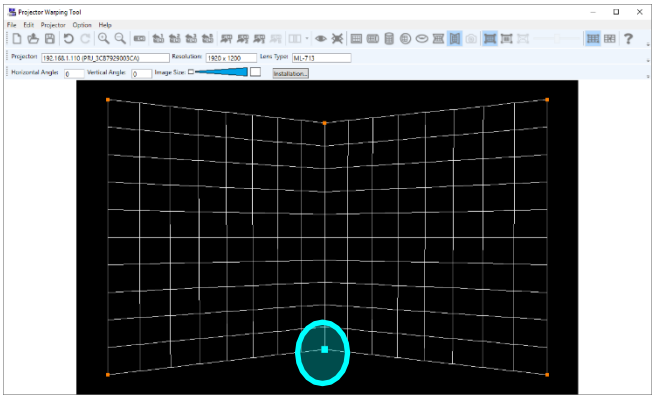


(7) Edit mode: Point, Screen type: Vertical Corner Wall

There are 6 Edit points as shown below.



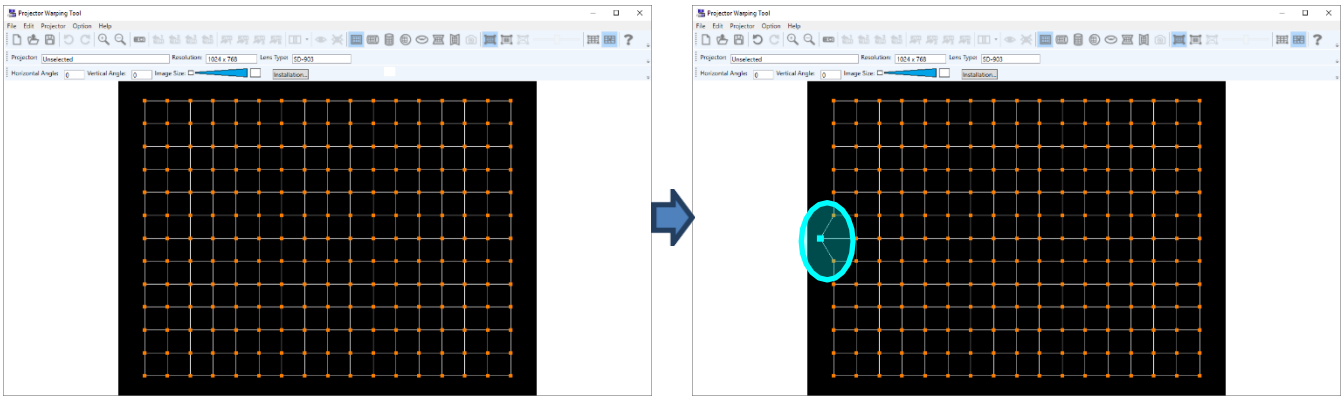




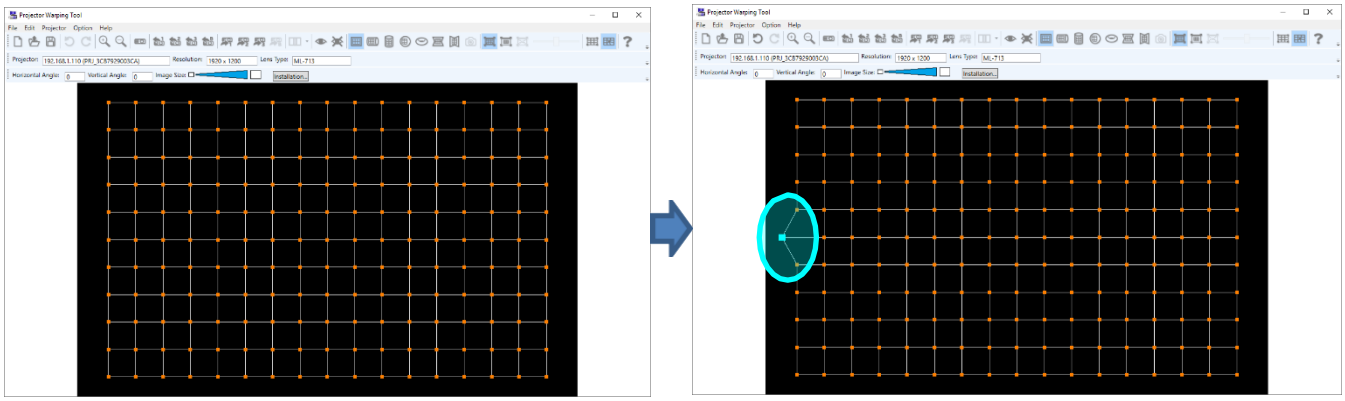
(8) Edit mode: Grid,

There are 221 edit points for XGA and 187 edit points for WXGA/WUXGA/HD regardless of the screen type.

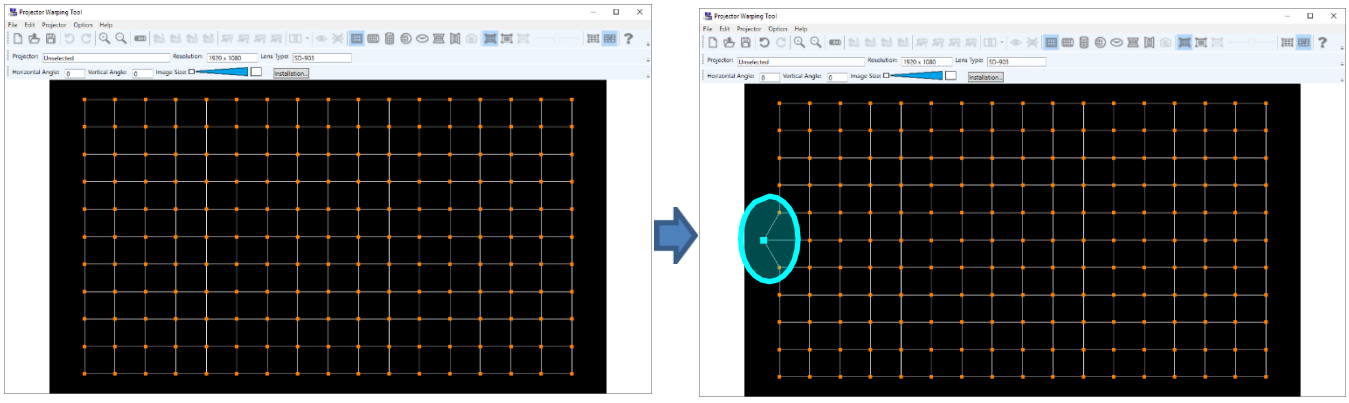
XGA



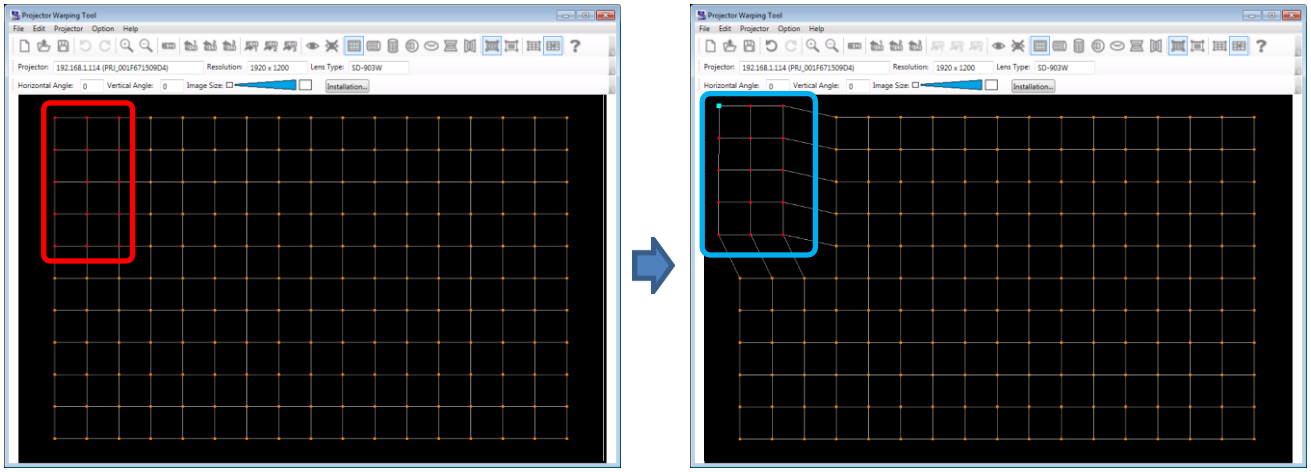
WXGA/WUXGA



HD

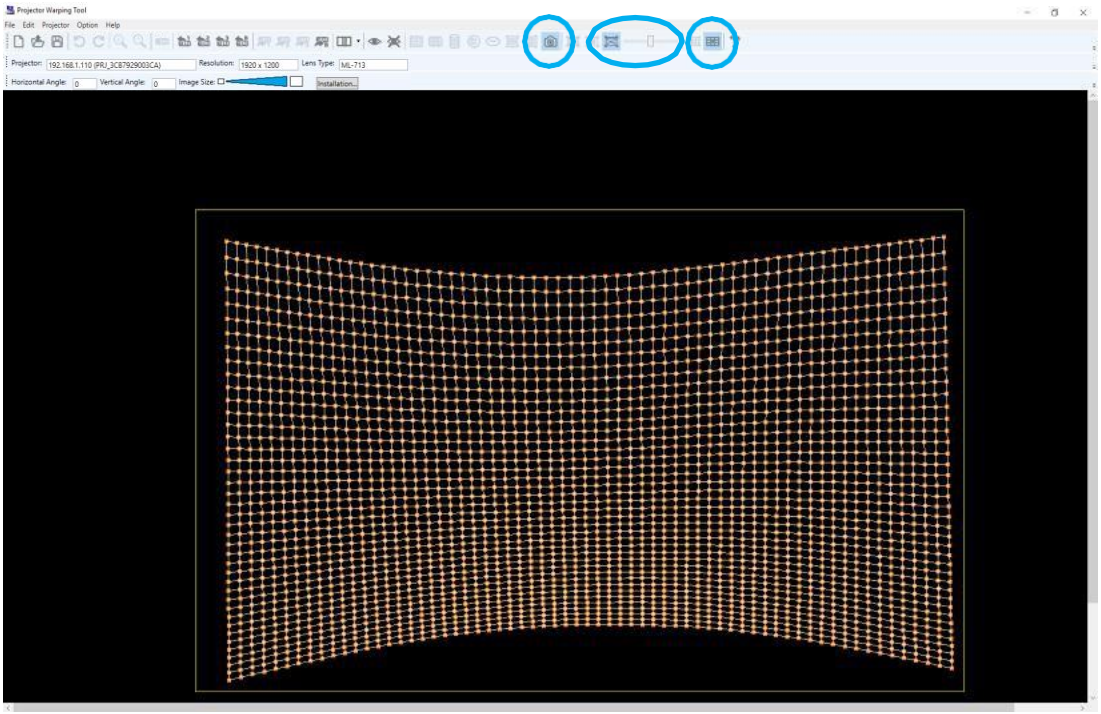


First put the mouse cursor on the edit point which you want to edit and then hold Ctrl button on the keyboard and left click with the mouse to change the color of the edit point from orange to red. Repeat this operation for necessary edit points. After that, the selected edit point is changed to (■) by left clicking the red edit point and change the location of all selected points by drag & drop. Push Esc button on the keyboard, then those selected edit points are unselected and the color of the edit points changes from red to orange.

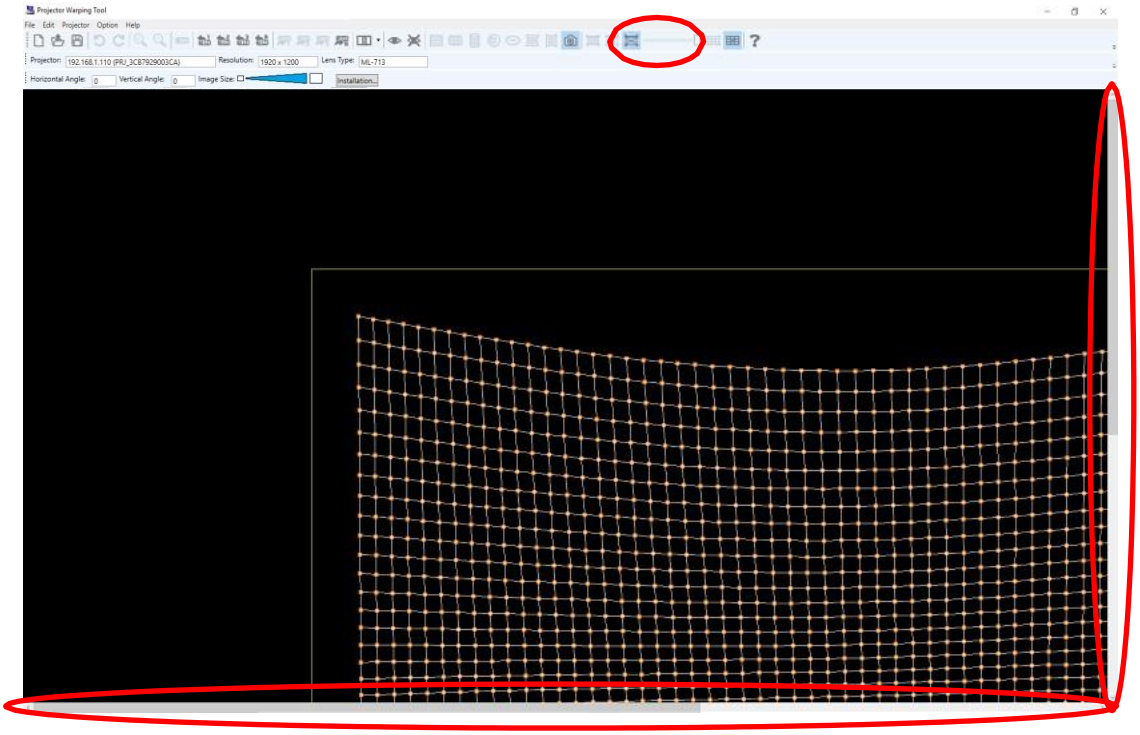


(9) Edit mode: Point, Screen type: Camera Blending

When editing camera blending data, it is selected to Screen type: “Camera Blending”, View mode: “will be displayed by zoom in/out on a slide adjustment” and Edit mode: Point.



Grid pattern on the main window is scaled up/down by moving the slide adjustment to right and left. The location to zoom in/out is changed by controlling each scroll bar on the right side and the bottom side.



3.6.6 Cancel of the edit operation

When canceling the edit operation using mouse, select [Edit] - [Undo] in the menu or click button in the tool bar. In case of keyboard, select [Ctrl] + [Z] at the same time.

When re-executing the edit operation canceled using mouse, select [Edit] - [Redo] in the menu or click button in the tool bar. In case of keyboard, select [Ctrl] + [Y] at the same time.

3.6.7 Zoom in/out of WarpMap

When zooming in the WarpMap of the edit area, select [Edit] - [Zoom in] in the menu or click button in the tool bar. In case of keyboard, select [Shift] + [I] at the same time.

When zooming out the WarpMap of the edit area, select [Edit] - [Zoom out] in the menu or click button in the tool bar. In case of keyboard, select [Shift] + [O] at the same time.

3.7 Initialize the WarpMap

User can Initialize the WarpMap displayed in edit area by selecting [File] - [New] from the menu or clicking the button at the tool bar in the main window.
Confirmation message will appear if there is a WarpMap which the user is editing.

3.8 Open the WarpMap

User can open the existing WarpMap file by selecting [File] - [Open] from the menu or clicking the button at the tool bar in the main window. Select the WarpMap file (extension: warp2) for Projector Warping Tool.
User cannot open the WarpMap file when the resolution or the lens type of the selected projector and WarpMap file doesn't match. User cannot also open the WarpMap file which is different from the selected WarpMap version.
In this case, change the projector to "Unselected" in the [Select Projector] window and open the WarpMap again.
Selected WarpMap is displayed on the main window after it is loaded correctly.
Confirmation message will appear if there is a WarpMap which user is editing.

3.9 Save WarpMap

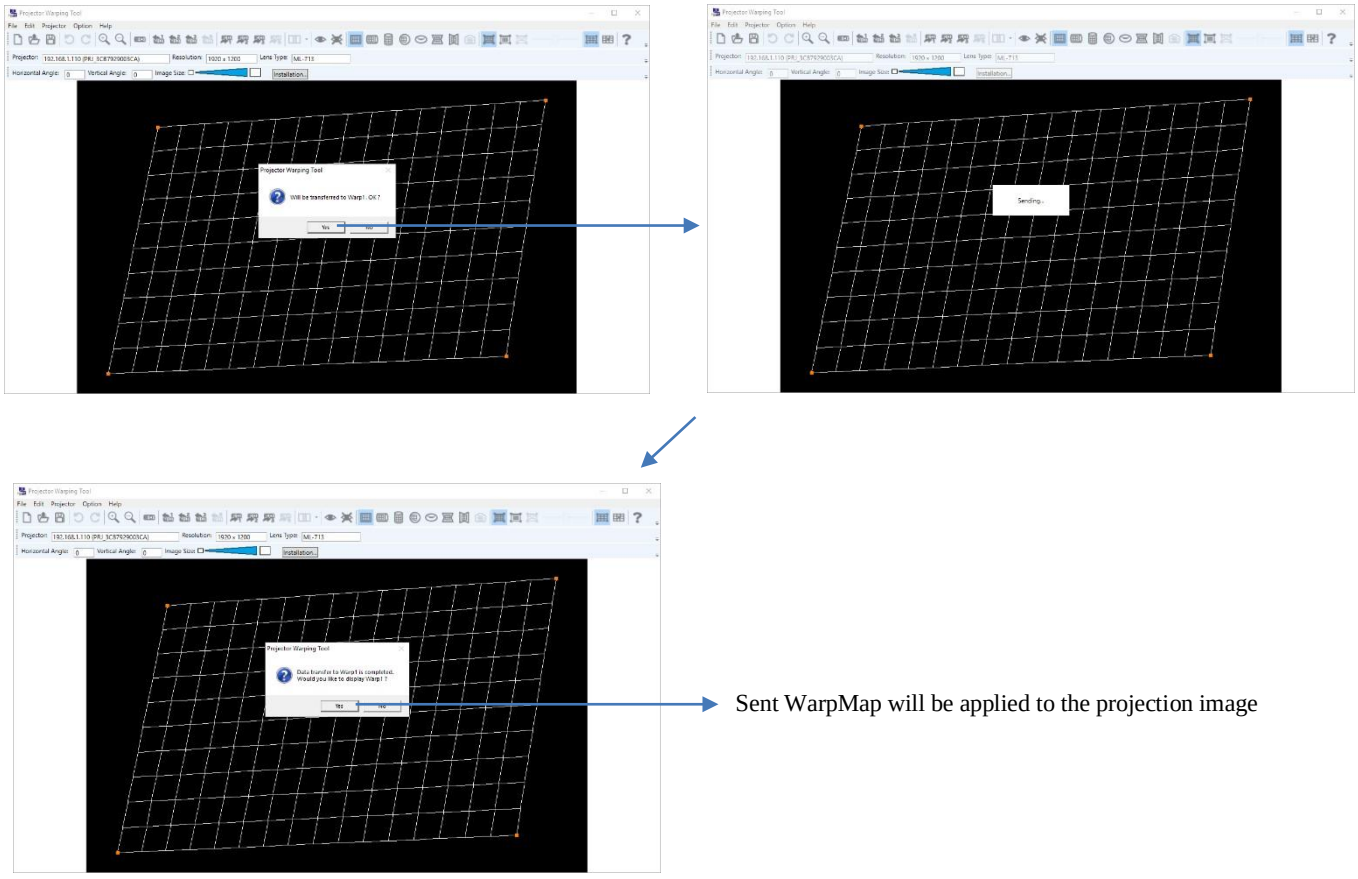
User can save the edited WarpMap by selecting [File] - [Save As] from the menu or click the button at the tool bar in the main window. Select the WarpMap file (extension: warp2) for Projector Warping Tool.
Put the file name and select the destination to save in the Save As window of the Windows Standard type. WarpMap file is saved with the extension of .warp2.

3.10 Display Preview

User can check how the WarpMap under editing is displayed by using the Preview function.
Select [Projector] - [Preview] - [On] from the menu or click the button at the tool bar in the main window. Select the WarpMap file (extension: warp2) for Projector Warping Tool.
The projected image will show the same image as edit area in the main window when preview function is set to On.
When the user moves the cursor in the edit area, the cursor in the projected image will move in the same way.
In case of mouse, the screen image is updated by using the edited WarpMap after dragging and dropping the editing point.
In case of keyboard, the screen image is updated every time a key event is requested. When key event is requested continuously, the screen image is updated at the same time as preview image is updated.
Select [Projector] - [Preview] - [Off] in the menu or click the button at the tool bar in the main window to quit displaying the preview.
When editing camera blending data, user can't use the Preview function. Fine-tune on the screen by confirming the projected image.

3.11 Send WarpMap

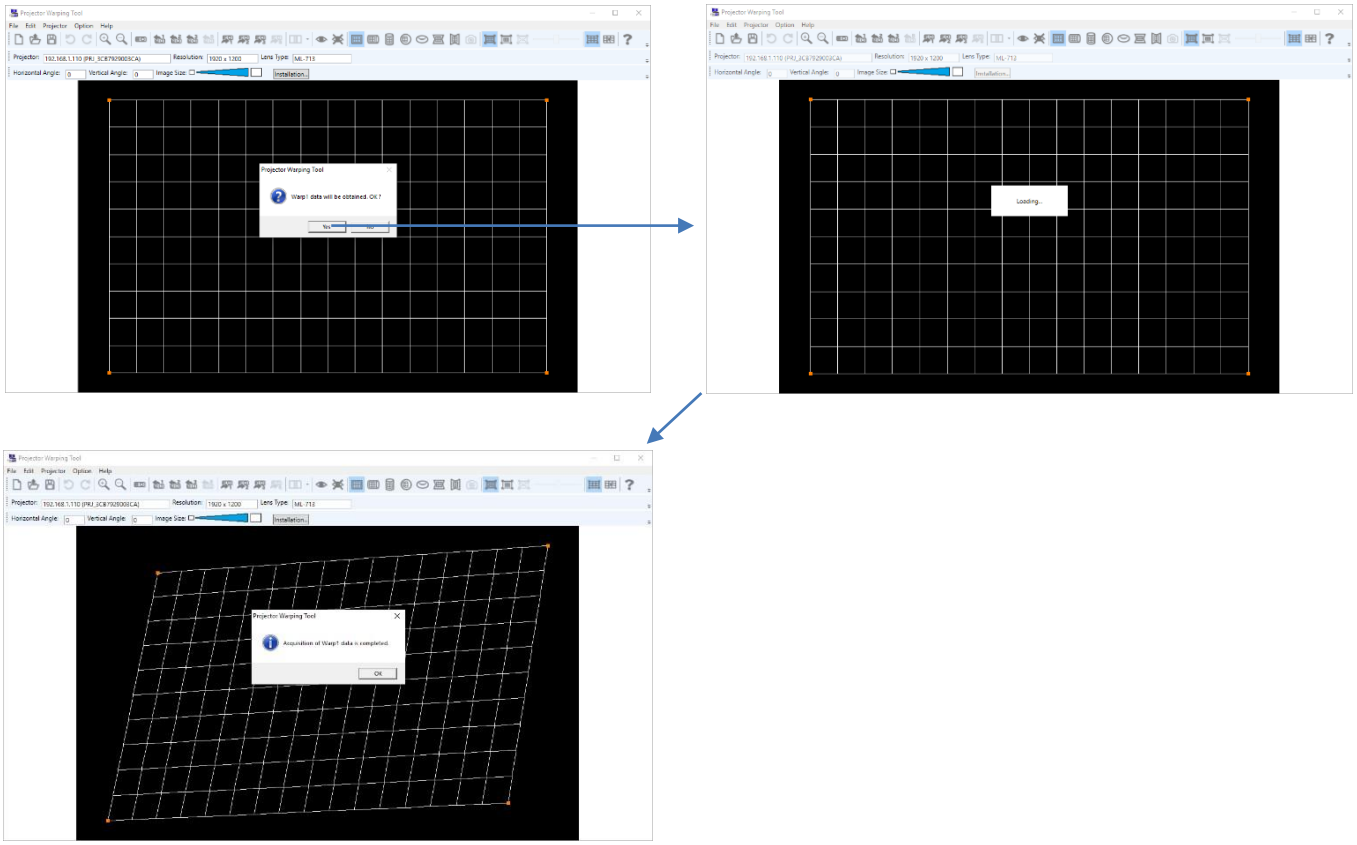
User can send the WarpMap file, which the user created, to the projector by selecting [Projector] - [Send WarpMap] - [Warp1] / [Warp2] / [Warp3] or [Projector] - [Send camera blending data] from the menu or clicking the / / / button at the tool bar in the main window. Click [Yes] in the confirmation message window to transfer the WarpMap displayed in the edit area to the specified storage location. The display confirmation message will appear when sending the WarpMap is completed. Select [Yes] to display the sent WarpMap.



3.12 Load WarpMap

User can load the WarpMap file from Warping mode 1 – 3 and camera blending use, which is saved in the projector, and display the file on the edit area of main window. The WarpMap, which the user can load, is limited to the one that can use on this tool.

User can load the WarpMap file by selecting [Projector] - [Load WarpMap] - [Warp1] / [Warp2] / [Warp3] or [Projector] - [Load camera blending data] from the menu or clicking the / / / button at the tool bar in the main window. Click [Yes] in the confirmation message window to load the WarpMap which is saved in the projector's specified storage location and to display it within the edit area of main window.



3.13 Select Warping Mode

User can switch the Projector's Warping Mode by selecting [Projector] - [Warping Mode] - [OFF] / [1] / [2] / [3] from the menu in the main window.

3.14 Select Blending Mode

User can switch the Projector's Blending Mode by selecting [Projector] - [Blending Mode] - [OFF] / [MANUAL] / [CAMERA] from the menu in the main window.

3.15 Display user manual

User can display the user manual for this tool by selecting [Help] - [Contents] from the menu or clicking the ? button at the tool bar in the main window.

3.16 Display version

User can display the version of this tool by selecting [Help] - [About] from the menu in the main window.

4. Restrictions

Restrictions for this tool are shown below.

- Use this tool when projector is turned ON.
-This tool may not function well when there is firewall software, other than Windows Firewall, installed to the PC. Please register this tool as exceptional or disable the firewall software by referring the manual.
-The connection may fail if the user goes through the connection procedure of the LiveViewer application during the usage of this tool.
-When not displaying correctly despite sending a WarpMap to the projector using Projector Warping Tool, please send another WarpMap to the projector after editing on Projector Warping Tool in order to be displayed correctly.