DIGITAL PROJECTION

A Delta Group Company

Projection Simulator

Software Version 1.0.10

USER'S MANUAL

Contents

1. Introductions

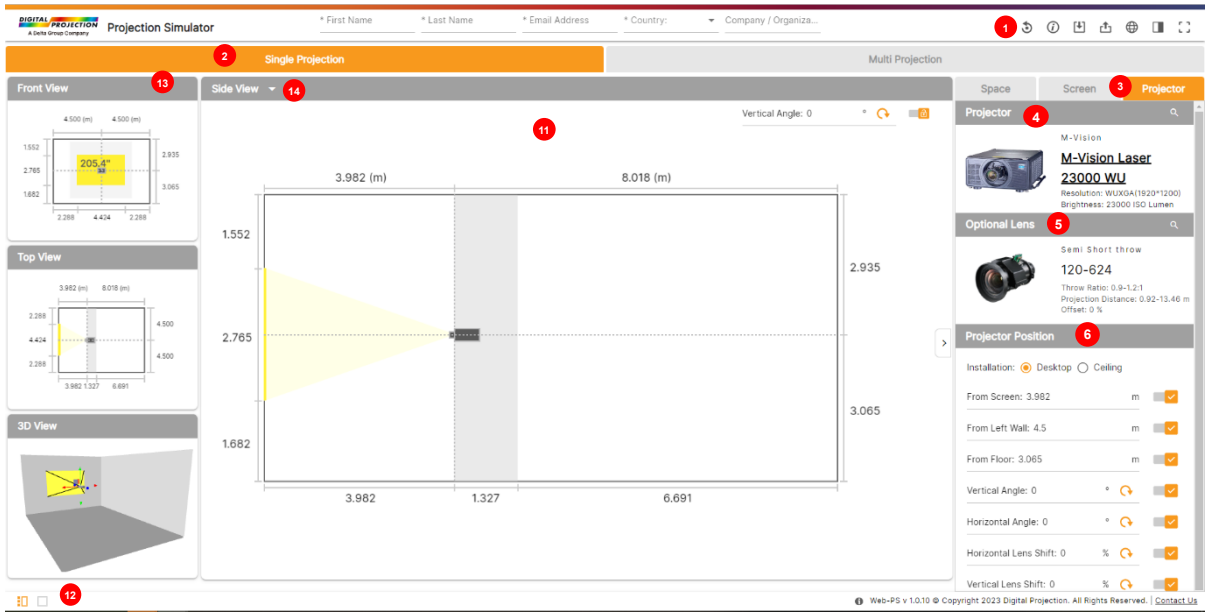
"Projection Simulator" is a Web-based application software that is used to calculating the throw distance between screen and the Vivitek projector. Mainly to help you choose a suitable projector for your room. It calculates the relationship between the size and distance of the projected image, and recommends the proper placement of the projector.

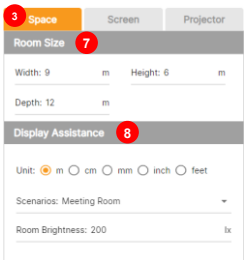
In addition to Single Projection mode where only one projector available, this application software is provided with the Multi Projection mode. Multiple projectors can be selected and arranged in a 3D scene, helping user to pre-install projectors simulated in a scenario of exhibition.

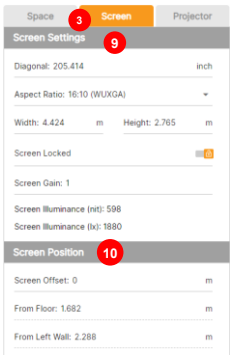
*Please note: The calculation are for estimation purposes only, It can’t absolutely guarantee the actual performance. The projection distance is the distance from the center of the lens tip to the screen. Before installing any parts of the projector, please go to the official website to detail study the product specifications or contact the local system installer for support.

Please Notes: When using the Projection Simulator software, please use the latest version.

2. Main user interface







Menus and Functions in the Main user interface are shown below.

Tab	Description
1. Icons:	Reset, User Guide, Storage, Language, Theme and Full Screen.
2. Mode Selection	Select Single Projection mode
3. Function Category	Select function category: Space, Screen and Projector
4. Projector	Select and show the projector for installation
5. Lens	Show and select the available lens for calculation
6. Projector Position Setting	Select the installation type, position form walls, posture and Lens shift of the projector for all calculation
7. Room Size	Setting the room dimension for calculating
8. Display Assistance	
9. Screen Setting	Setting the screen dimension for calculating
10. Screen Position	Setting the screen position for calculating
11. View area	View area for current view type

12. Views area mode	Default or Fill
13. View type selection (I)	Select current view type: Side / Top / Front / 3D view by icon
14. View type selection (II)	Select current view type: Select Side / Top / Front / 3D view by dropdown list

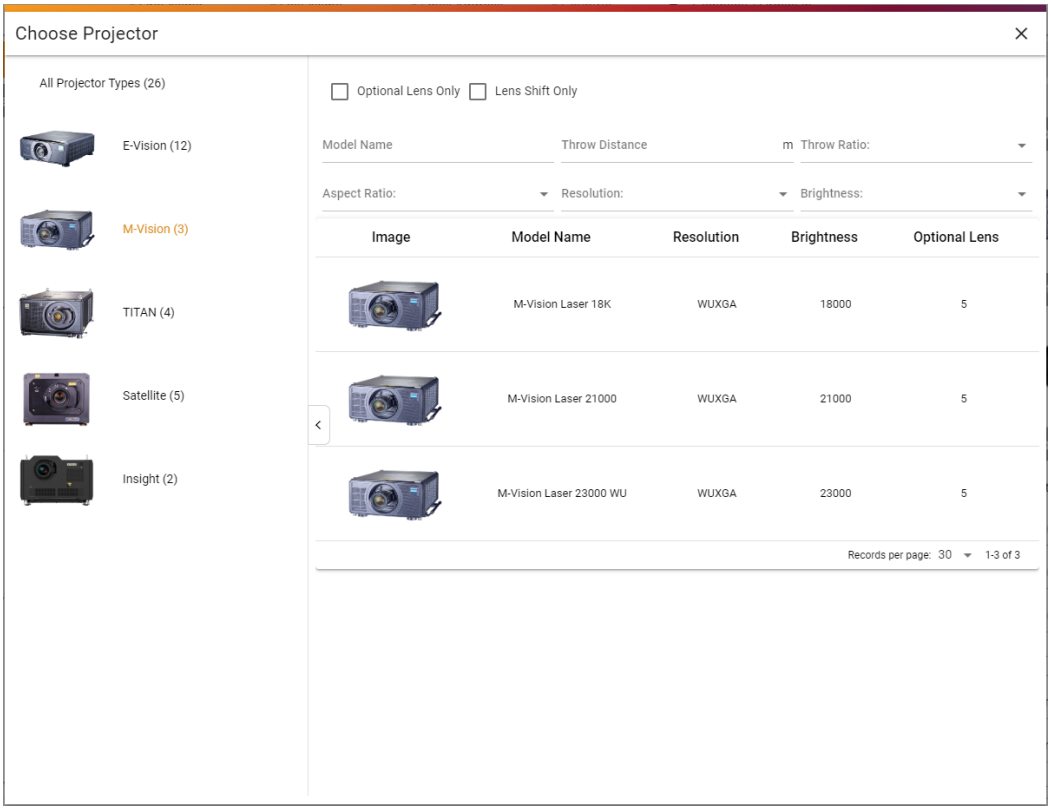
3. Projector & Lens

3.1 Projectors information

The basic specification of the projector include photo, resolution, brightness are summarized in the Projector Information area.
For more detail product information, click on the model name and the website link will take you to the webpage for the more projector information.

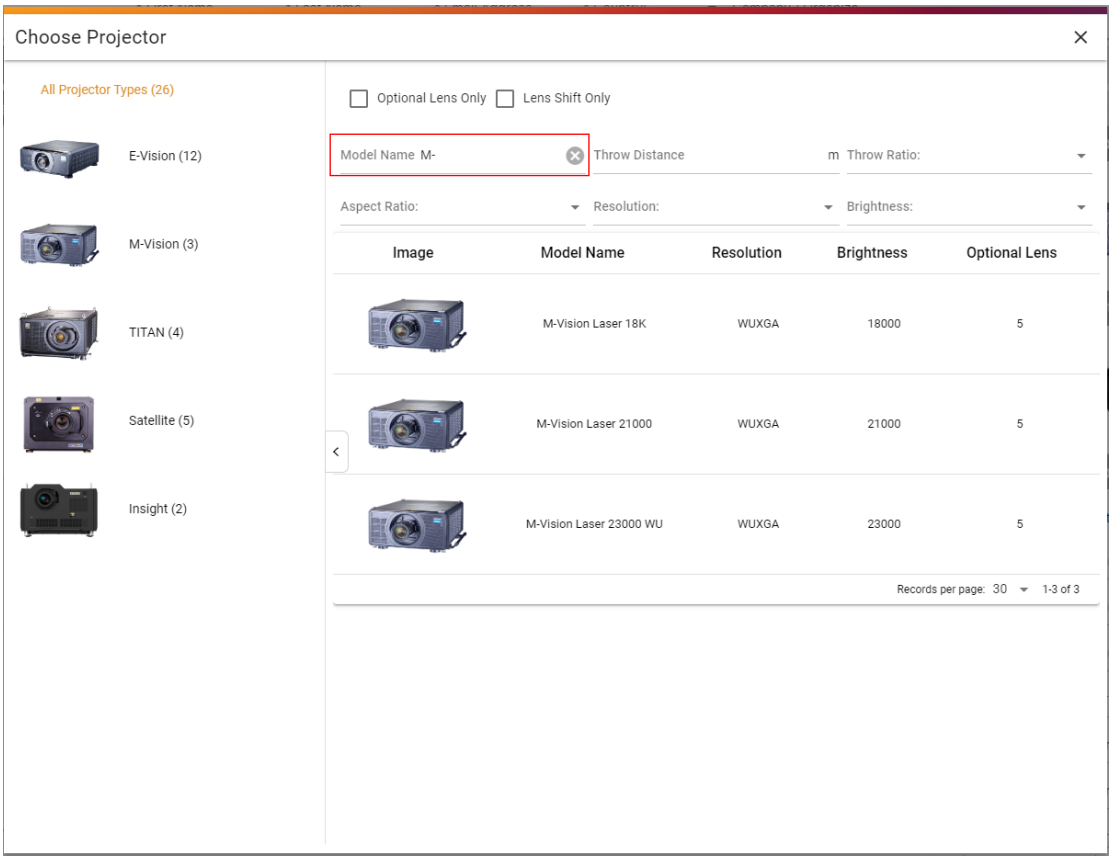
3.2 Select the projector from the project types list

Click [🔍] to select the projector from the type of projector you want to install and enter the model number, or enter the projector installation condition to select the projector.



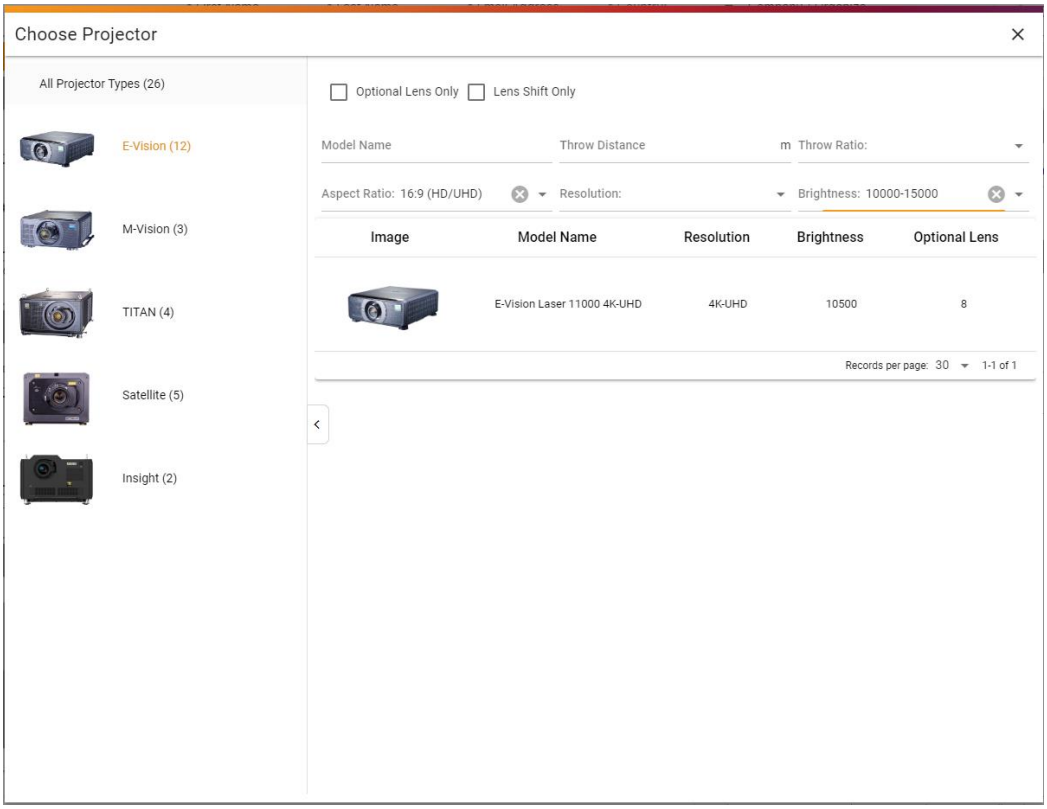
3.3 Search the projector by model name

Please input the partial or complete model number to find a specific model or list of matching projector models. After you input a model name or parts number the automatically populates in the Model Name box and you can select from a list of models from the pull-down menu.



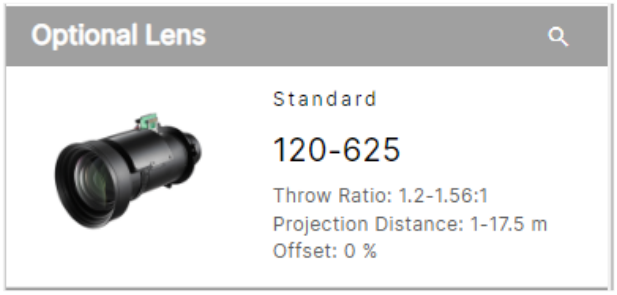
3.4 Search the projector by install condition

Input the installation conditions for the projector and it will automatically find the right projector for you based on these conditions.

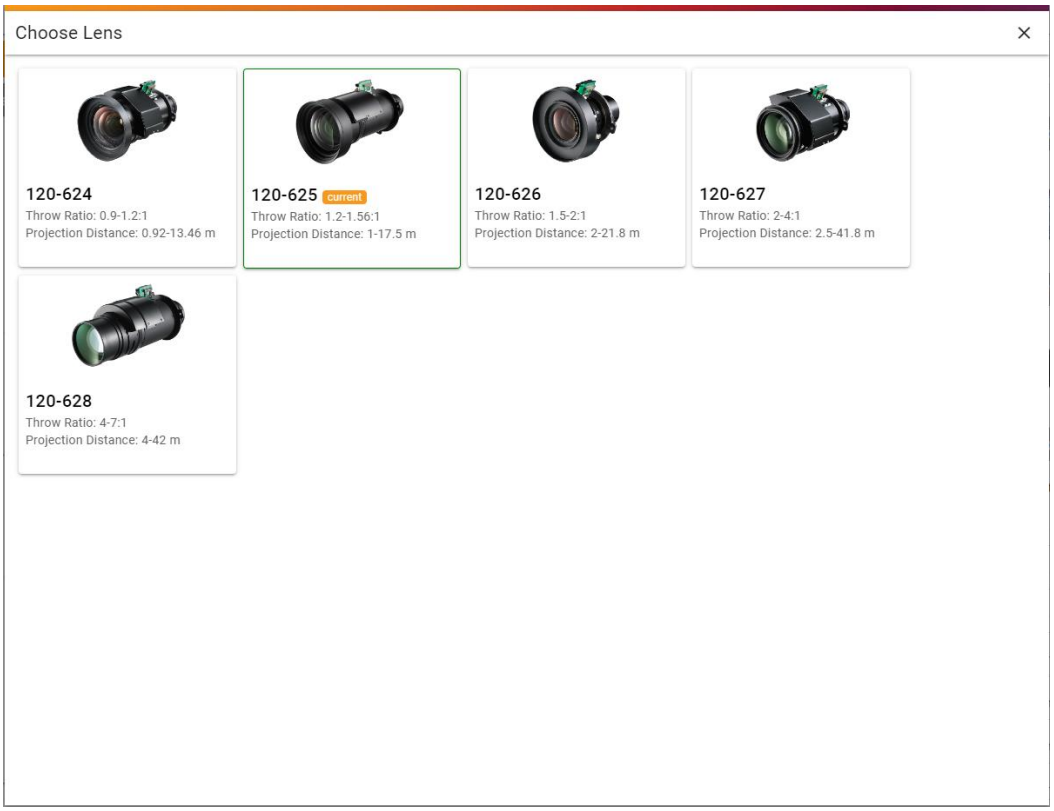


3.5 Lens information

This shows the Lens information of the projector models with lens type (fixed or exchangeable lenses), lens throw ratio, throw distance and offset.



If optional lens are available, you can click  to select a different lens when calculating throw distance, image size, etc. Projectors with single fixed lenses will show up as fixed.



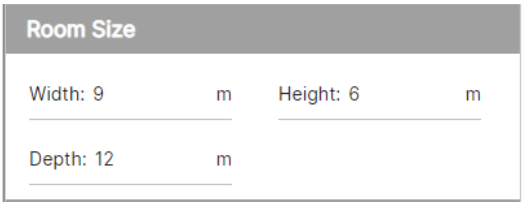
4. Input installation conditions

The settings of input install conditions for the Projection Simulator are divided into 3 categories: Space, Screen and Projector. Major items provided by each category are summarized as following table

Category	Items
Space	Room Size Display Assistance
Screen	Screen Settings Screen Position
Projector	Projector Optional Lens Projector Position

4.1 Room Size

The projection distance and screen size will be limited by the size of the environment. Please enter the room dimension for calculating.



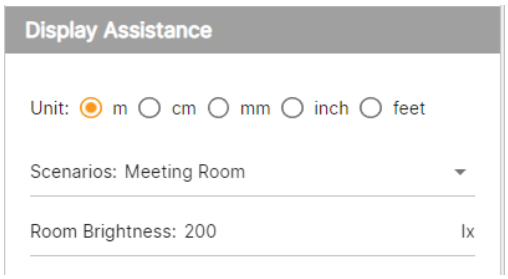
4.2 Display Assistance

- Units
  Select the calculation unit including meters, centimeters, millimeters, inches and feet

- Scenarios
  If you do not know the brightness of the installation environment, please select the application list from the drop-down menu. It will automatically bring into the regular brightness level of each application scenario. If the brightness of the installation environment has a specific brightness level, please select "Custom" and enter the brightness value.

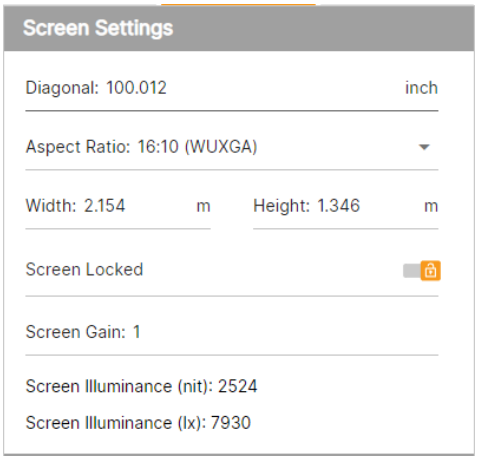
- Room brightness

Key in the brightness value of the installation environment. If you use a measuring tool to measure the actual brightness, it is recommended that you measure the brightness of the wall surface on which the image is projected.

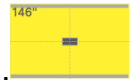


4.3 Screen Setting

Key in your desired screen size. The width, height and diagonal will depend on the aspect ratio you have chosen. These fields adjust automatically when entering a value in any of the boxes, so you don't need to input all values.
If the key in screen size is bigger than the room size, the available value automatically to the maximum or minimum value according to the input value.



- Aspect Ratio
  Select the image aspect ratio you would like to display. When the aspect ratio setting is changed from the initial value, the black band will appear on the left/right or top/bottom of the screen image of front view.

	The default is 16:10 aspect ratio, When you change to "16:9", The black will mask on the top/bottom of projection image.

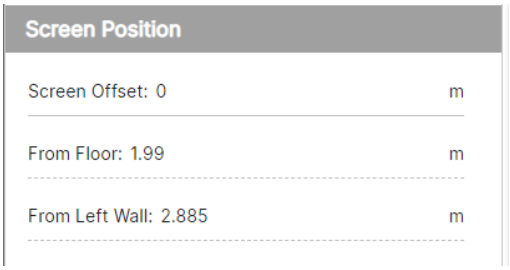
	The default is 16:10 aspect ratio, When you change to “4:3”, The black will mask on the left/right of projection image.

- Screen Locked
  When screen is locked, you can move projector forward or backward by the range of throw ratio while retaining the size of projection

- Screen gain
  Please key in the screen gain according to the screen specification, A normal white wall is designated 1 for screen gain. Screens with better reflective indexes will have a larger screen gain, giving the viewer a brighter perception of the projected image

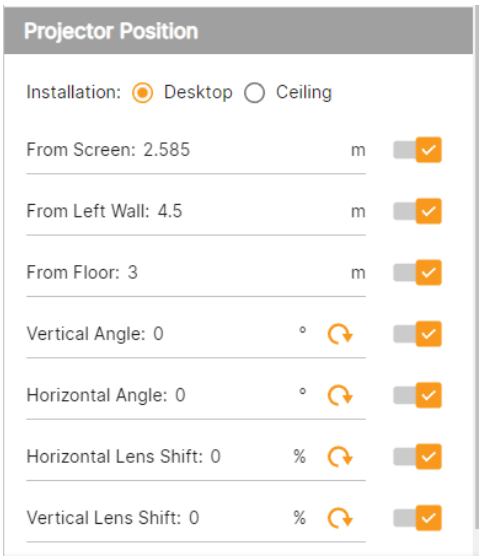
- Brightness Estimation
  This is the brightness of the image based on the distance of your projector to the screen, screen gain and zoom settings, When key in room brightness and screen gain, you can confirm whether the actual brightness is sufficient appropriate for the selected projector

4.4 Screen Position



- Screen Offset
  Key in the thickness if you use whiteboards and so on.
- From floor
  Key in the height from floor to bottom of screen.
- From left wall
  Key in the width from left wall to left of screen.

4.5 Projector Position



- From screen to lens (Throw distance)
  Key in the throw distance, the input value is limited according to the lock status of the screen size.
- From floor
  Key in the height from floor to the center of screen.
- From left wall
  Key in the distance from left wall to the center of screen.
- Projector angle
  Simulate diagonal projection in horizontal or vertical direction. You can enable the function in the vertical and horizontal directions at the same time.
- Lens shift
  Simulate the Lens shift function in horizontal or vertical direction.

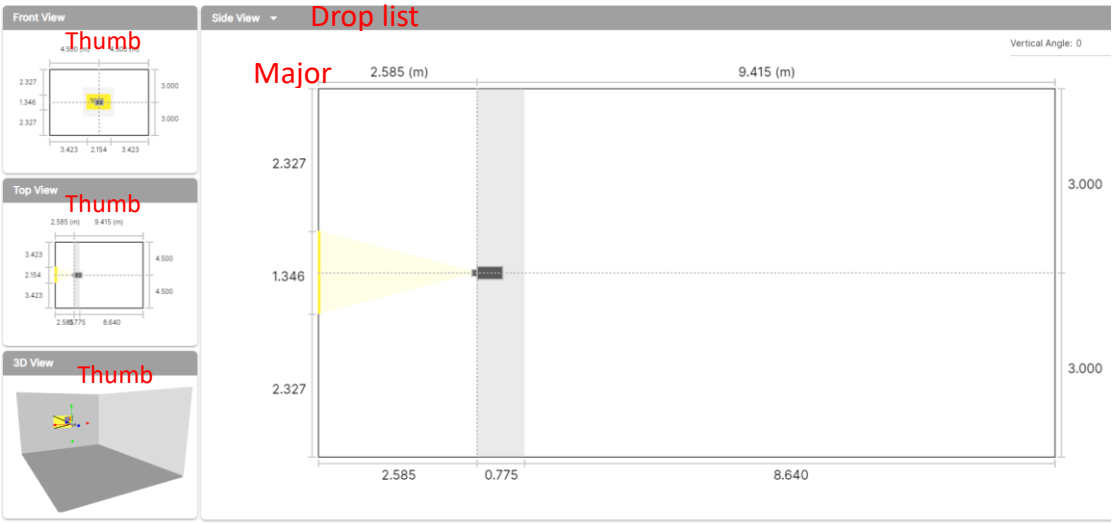
5. View

You can visualize the position of the projector in the 2D and 3D perspective areas. Under the left bottom of viewing window, ‘Default’ and ‘Fill’ layout modes are selectable to show viewing window in different way.

Layout selection	Icons	
Default		One normal view and three thumb views
Fill		One full view occupying whole viewing area

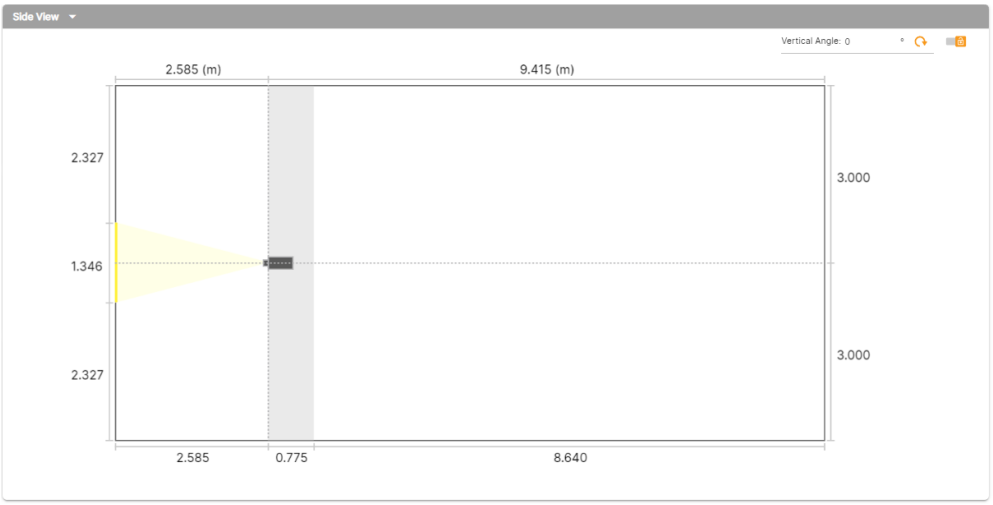
5.1 Change View

There are 4 views, be visualized for the Projection Simulator, including Side View, Front View, Top View and 3D View. Views in major display window and thumb window can be swapped between each other by clicking the thumb or its drop down list in major window.



5.2 Side view

This provides a 2D perspective from the side of the room. This the room viewed from the side. The projector position setting can be changed using a mouse.

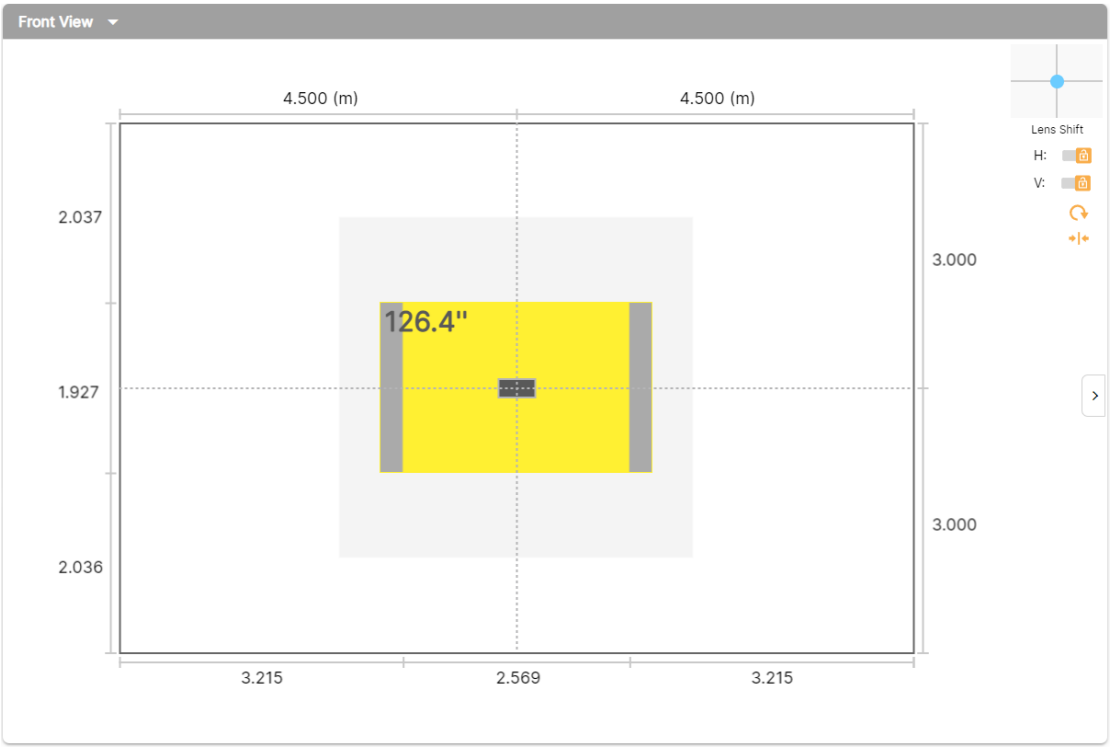


- If you want to change the position of the projector without changing the screen size, first lock the screen size.

- If the selected model uses an optional lens shift function, "Available Range" will be displayed. If you want to change the position of the projector within the available range area, first lock the screen size and screen position.
- When the vertical angle is set to "ON", the slide bar and input box will appear on the right side of the view box.
- The reset button returns the adjustments to their default settings by clearing all entered data and adjustments made to the illustration.

5.3 Front view

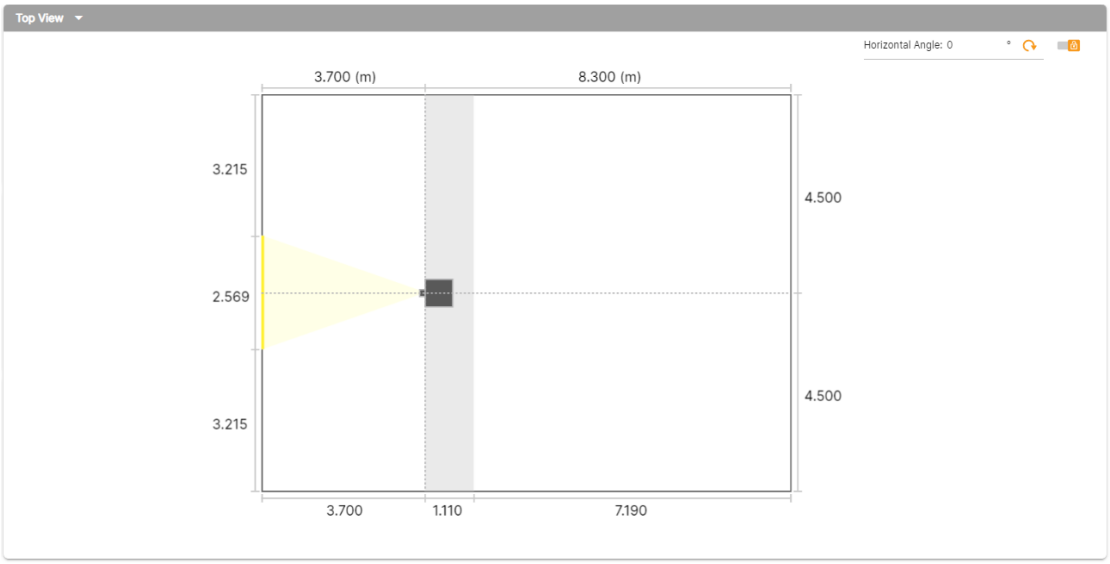
This is the view when facing the wall where the image is projected.



- If the selected projector supports the lens shift function, the "Available Range" will be displayed. If you want to change the position of the projector within the available range, use the lens shift slider (right: vertical lens shift, bottom: horizontal lens shift).
- If you want to move the projector position (and lens shift position) horizontally to the center, press the center button .
- The reset button returns the adjustments to their default settings by clearing all entered data and adjustments made to the illustration.

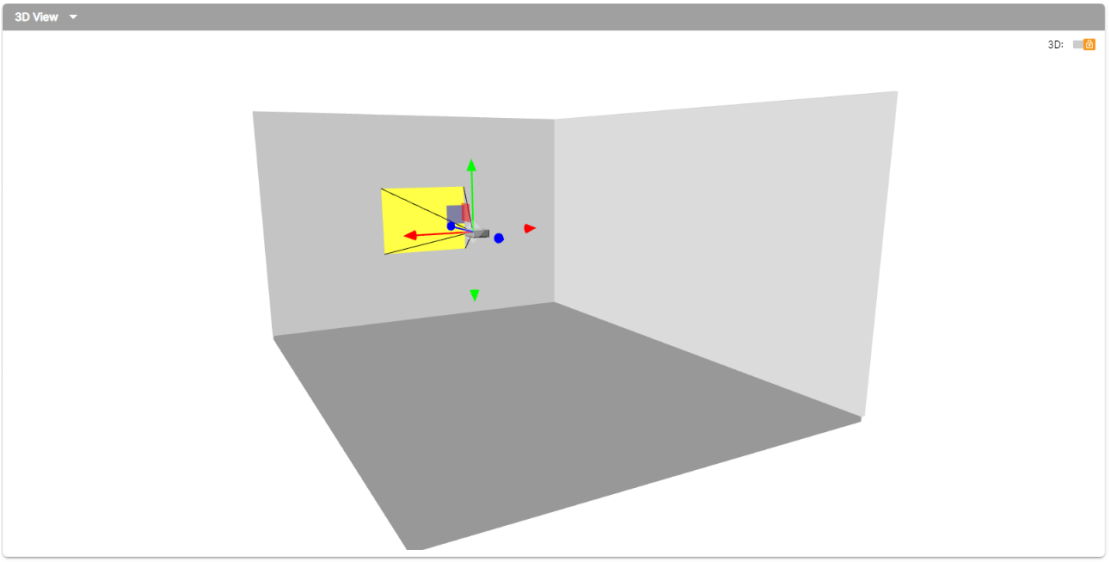
5.4 Top view

This is the room view from the top.



- The basic operation is the same as “Side view”.
- When the horizontal change angle checkbox is enabled, the slider bar and the input box will appear on the right side of top view area.
- The reset button returns the adjustments to their default settings by clearing all entered data and adjustments made to the illustration.

5.5 3D view



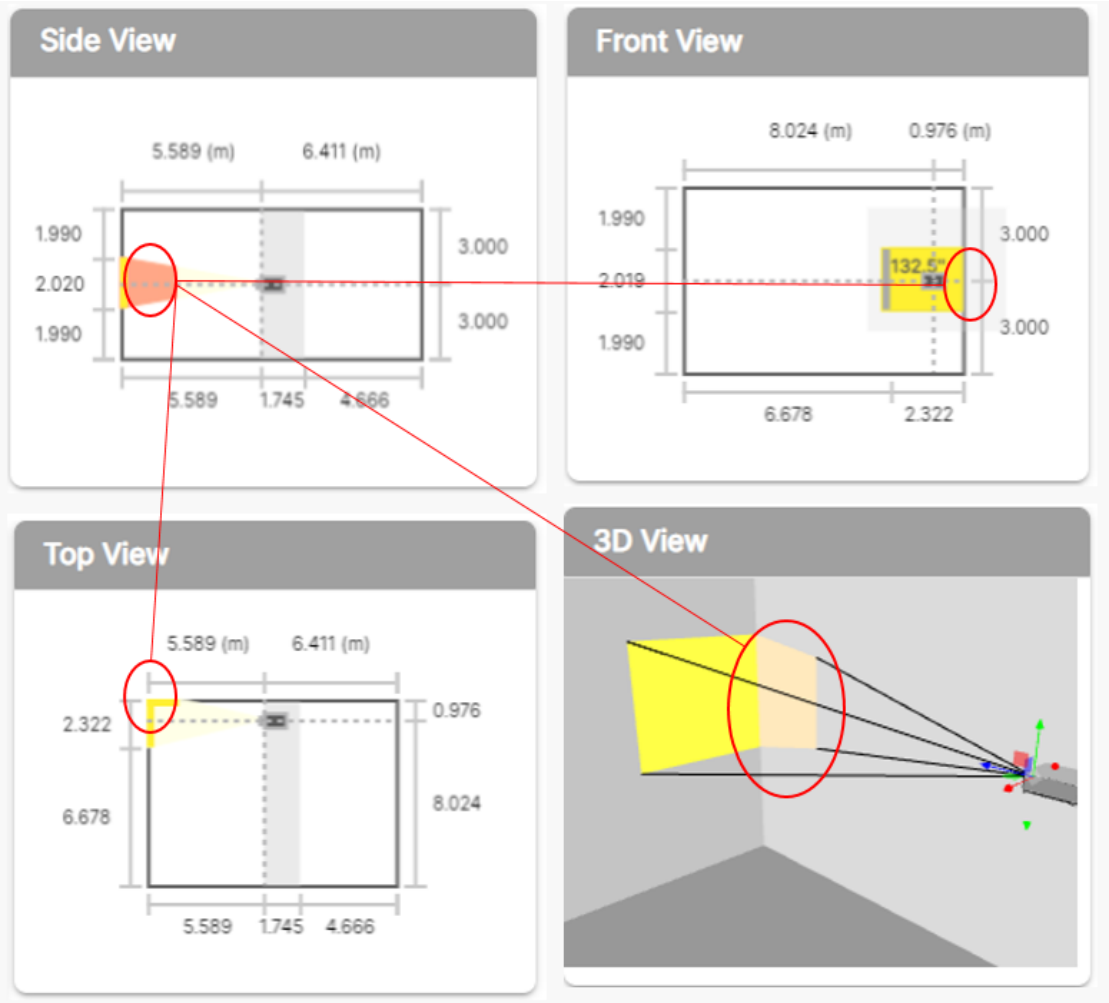
- This is the 3D room view. Operations are as follows:
- Zoom: Rotate the mouse wheel or drag the mouse while clicking the wheel.
- Rotation: Drag the mouse while left clicking.

- Pan: Drag the mouse while drag the mouse while right-clicking.
- Move the projector position by dragging the mouse while left clicking on surface around the projector.

  Rear : Up-down or Left-right direction
  Left/Right : Front-back direction
  Top: Front-back or Left-right direction

5.6 Projected image position

If any part of the projected image hits the side wall, ceiling or floor, the image beam will show a shaded pink – see example below.



6. Others and Export simulation results

Icon	Description
Reset	The reset button reverts the projection distance calculator back to its default settings by clearing all data entered and adjustments made to the illustration.
User Guide	Open user's manual.
Storage	Record simulation result data in the configuration file
Results export	You can save the data and illustrations at the end of the calculation of the installation conditions as a PDF file.
Language	Select the language list from the drop-down menu.
Theme	Change window light or dark background color
Full screen	Maximum view window

6.1 Storage

To store simulation results data, enter the customer name and select the + button.

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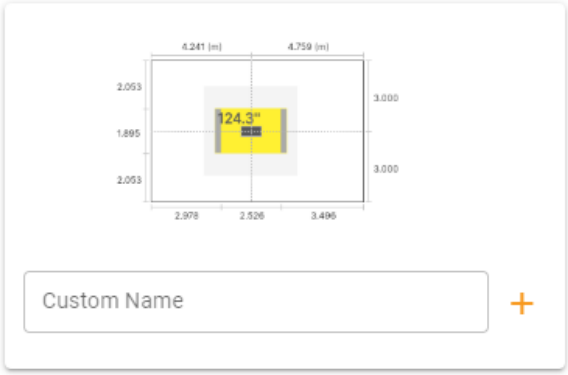
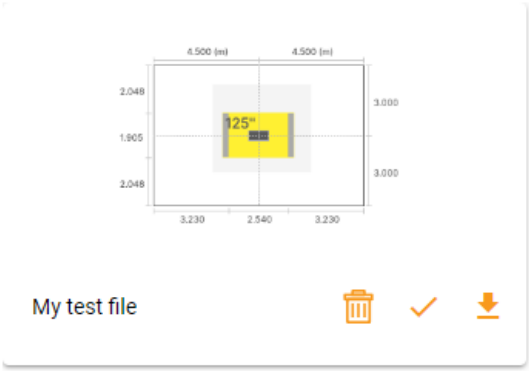
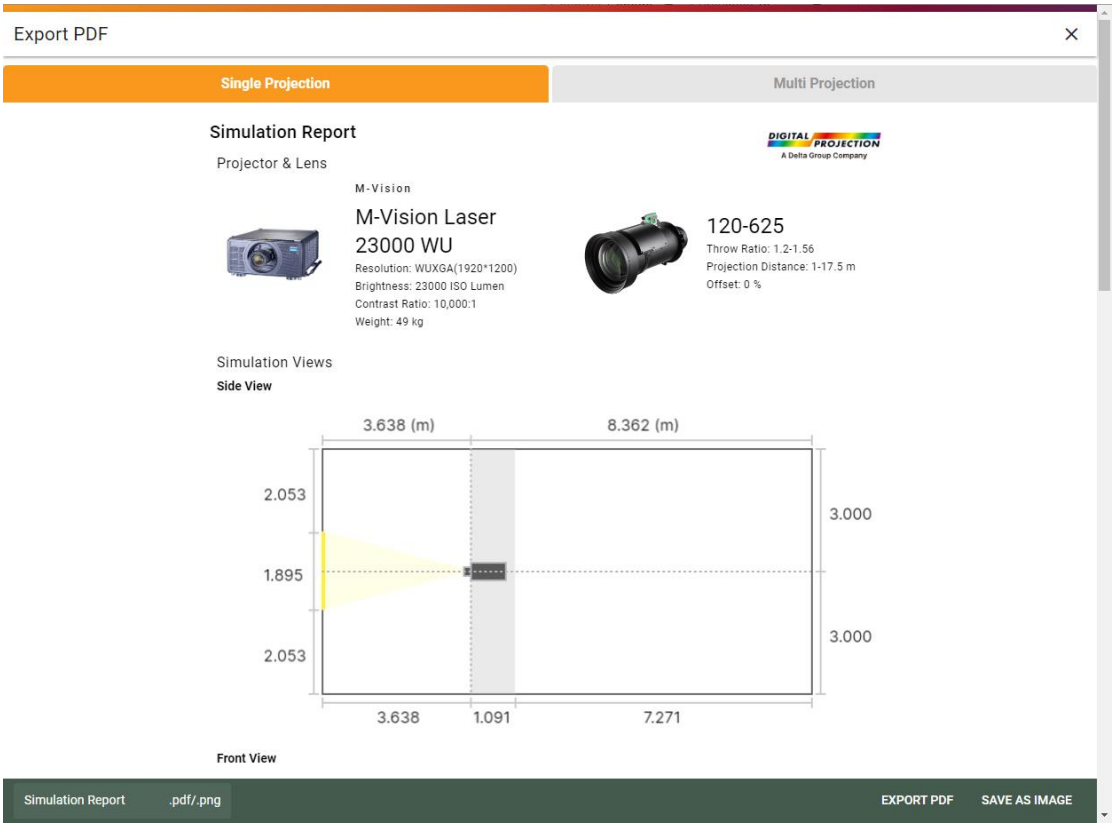


Manage the simulation result data file in the right portion of storage window, you can select to delete simulation result data, or select ✓ to apply simulation data, or select to download simulation data into your local PC



6.2 Results export

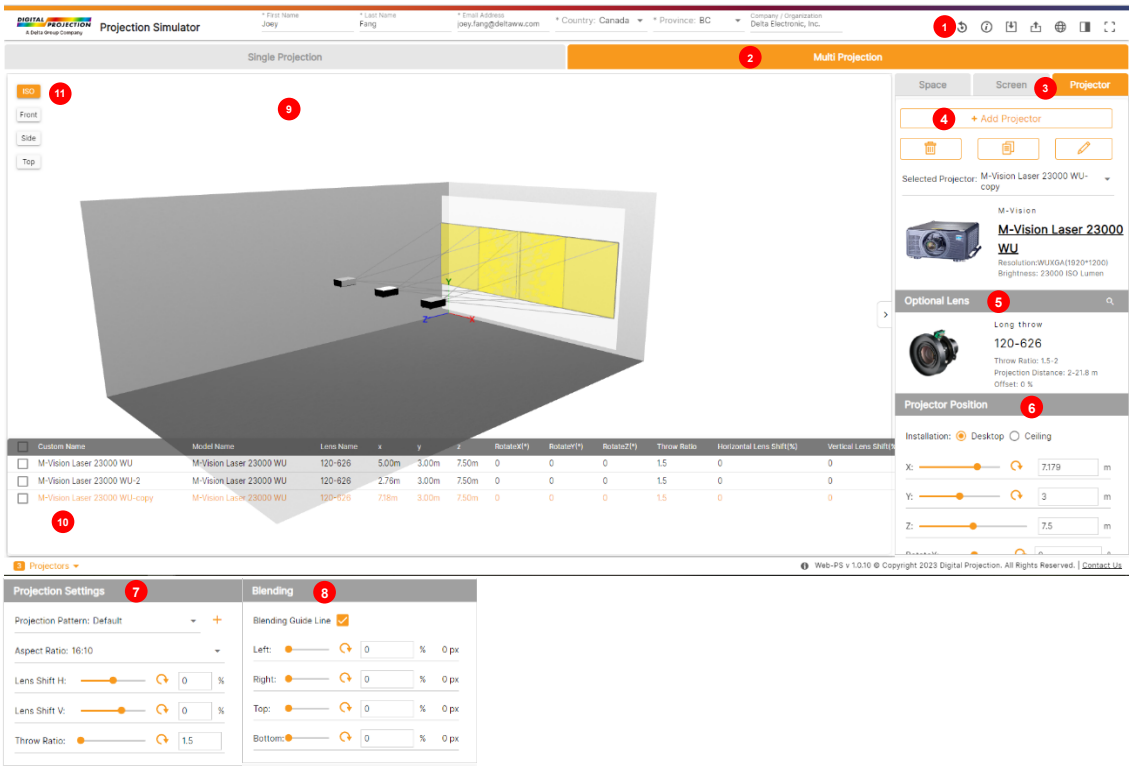
After fill and submit the required form, you can enter the simulation file name and select PDF or PNG file format to export the result data.



7. Multi Projection

7.1 User Interface for Multi Projection mode

The main user interface in Multi Projection mode appear as below:



Menu and functions in the main user interface are shown below

Tab	Description
1. Icons:	Reset, User Guide, Storage, Language, Theme and Full Screen.
2. Mode Selection	Select Multi Projection mode
3. Function Category	Select function category: Space, Screen and Projector
4. Projector	Add, delete and copy projectors. Select the current active projector for installation
5. Lens	Show and select the available lens for calculation
6. Projector Position	Setting the installation type, position and Rotation of the current selected projector
7. Projection Setting	Setting projection pattern, aspect ratio, Lens shift and throw ratio of the current selected projector
8. Blending	Setting the blending guide line edges of the current selected projector
9. View area	3D View of projection simulation
10. Projector listing	Detail listing of all projectors to be simulated
11. Angle of view	Quick change designated angle of view

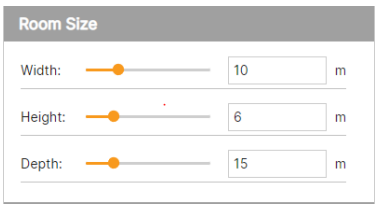
7.2 Categories of settings

The setting items in multi projection mode, are divided into 3 categories: Space, Screen and Projector. Major items provided by each category are summarized as following table

Category	Items
Space	Room Size Display Assistance
Screen	Screen Settings Screen Shape Screen Position Screen Texture
Projector	Projector Management Optional Lens Projector Position Projection Settings Blending

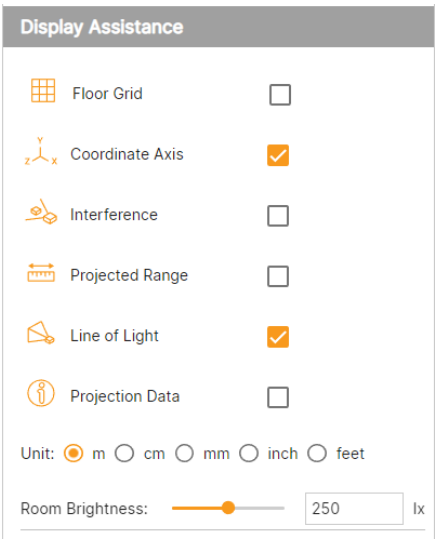
7.3 Room Size

The room size define the extent of 3D scene. Projection distance and screen size will be limited by the size of the environment. Please enter the room dimension for calculating.



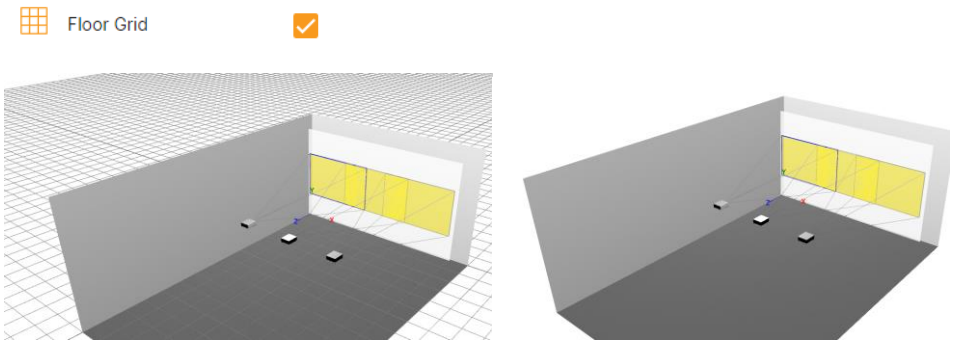
7.4 Display Assistance

The display assistance provides functions as below. In addition Unit and Room Brightness setting, user can enable / disable assistance feature displayed in simulation 3D view.



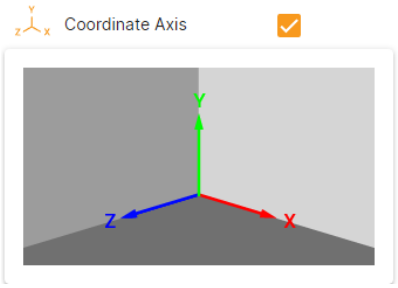
- Floor Grid

  User can select to have floor grid shown on 3D scene; below shows flow grid enable vs. disable



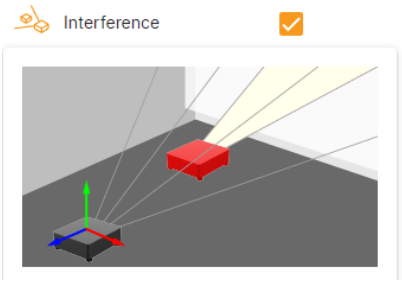
- Coordinate Axis

  Select to show coordinate axis at the left front corner

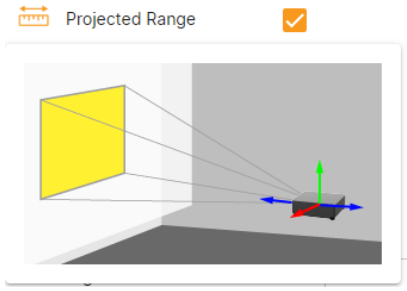


- Interference

  Select to detect the lighting trace interferences between projectors in graphical way

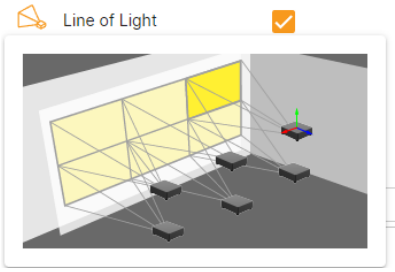


- Projected Range



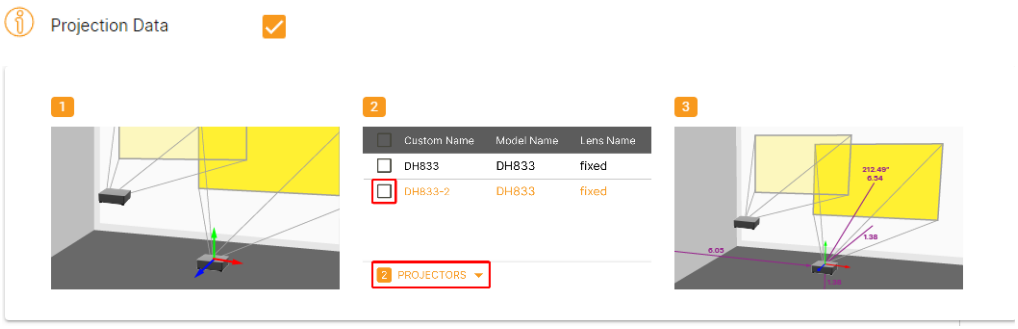
- Line of Light

  Select to show the simulated line of light of projectors



- Projection Data

  Show the data of the selected projector including projector distance to walls, projection distance and size of projection area.



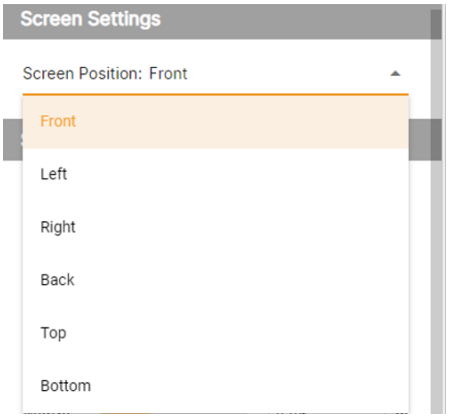
- Units

  Select the calculation unit including meters, centimeters, millimeters, inches and feet

- Room brightness
  Key in the brightness value of the installation environment.

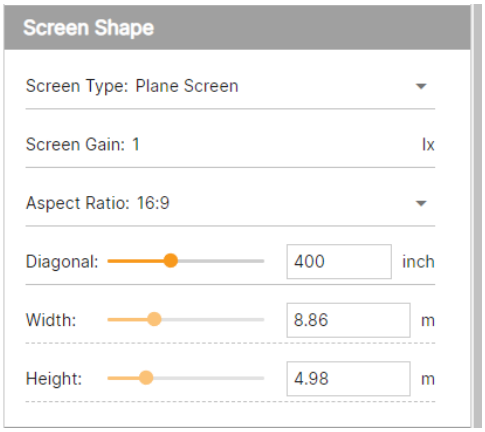
7.5 Screen Settings

You can choose to install the screen to which wall if this room, including Front, Left, Right, Back, Top and Bottom.



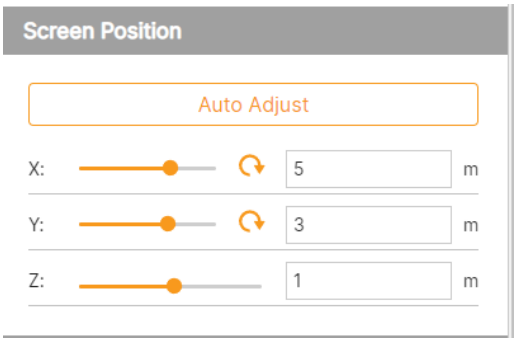
7.6 Screen Shape

The screen shape settings include Screen Type, Screen Gain, Aspect Ratio, Screen Diagonal and Screen width / height ad shown below



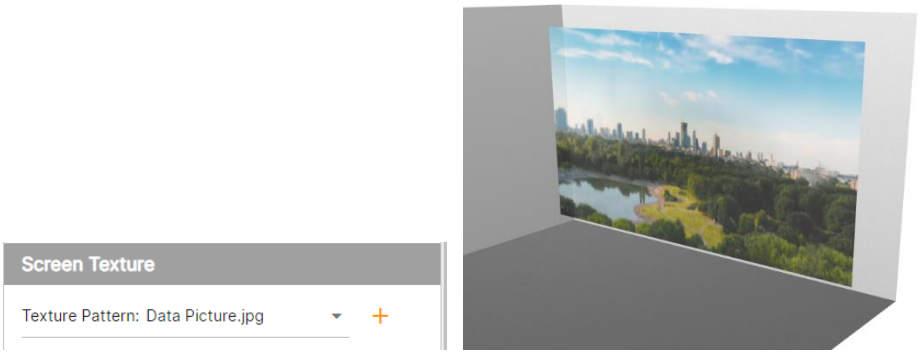
7.7 Screen Position

To adjust the screen position x, y, z located in the room as shown below



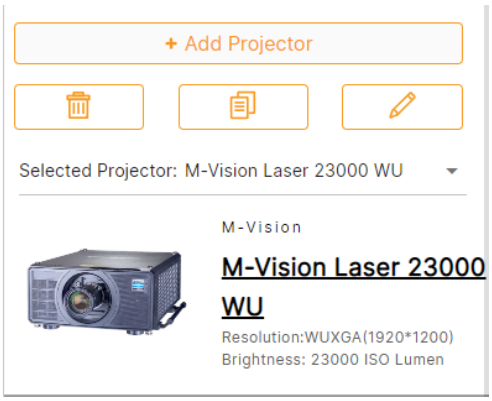
7.8 Screen Texture

Select an external image to be shown on the current screen



7.9 Projector Management

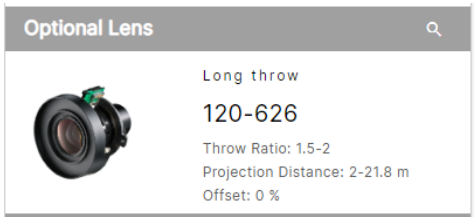
Provide user to add, delete, copy, edit projector. The current active projector can be selected from ‘Selected Projector’ drop list. The brief information of selected projector is shown after ‘Selected Projector’ drop list



7.10 Lens Information

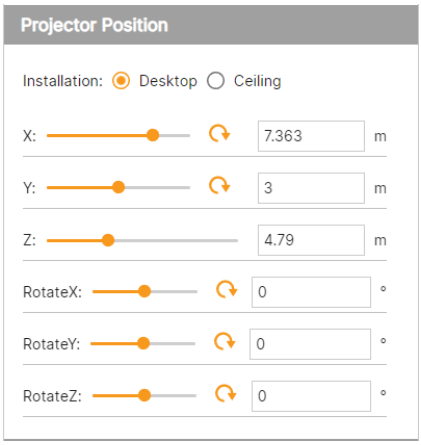
This shows the Lens information of the selected projector model with lens type (fixed or exchangeable lenses), lens throw ratio, throw distance and offset.

If optional lens are available, you can click to select a different lens when calculating throw distance, image size, etc. Projectors with single fixed lenses will show up as fixed.



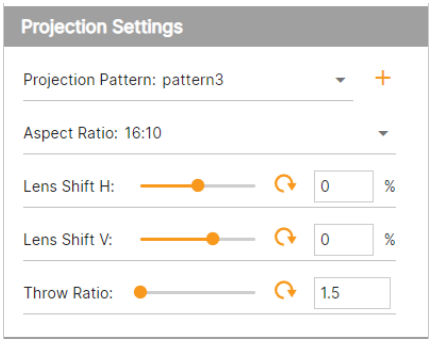
7.11 Projector Position

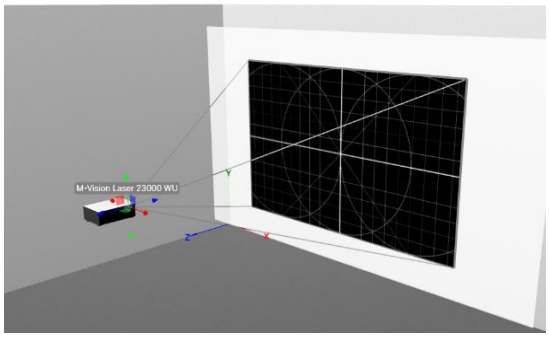
Provide user to setup the installation: Desktop or Ceiling, and arrange the position and rotation of the selected projector.



7.12 Projection Settings

Provide user to set projection pattern, aspect ratio, Lens shift and throw ratio of the current selected projector.





7.13 Blending

Setting the edge blending guide line edges of the current selected projector.