

# Grid Apply Laser Thick/Thin Calibration

## Section 7.1

This calibration adjusts the laser for the difference between thick and thin units. Before doing this calibration, you should make sure the laser is physically secure, and that the circle that it displays with no glass data is in the original location.

If the circle is not in the original location, use the LPM calibration on the PC at the start of the line to adjust.

### Thin Calibration

- 1 Load a unit that has thin spacer, or load a single pane of glass with no spacer. A single pane of glass will be much easier to use if there is masking tape on the edges.

The screenshot shows the 'PARAMETERS 15 Grid Apply Laser' screen. It features several input fields for calibration parameters, a grid location table, and navigation buttons. The parameters include Current Z Thickness, Current X Offset, Current Y Offset, Current X Scalar, Current Y Scalar, Calibration Thin Z Thickness, Calibration Thin X Offset, Calibration Thin Y Offset, Calibration Thin X Scalar, Calibration Thin Y Scalar, Calibration Thick Z Thickness, Calibration Thick X Offset, Calibration Thick Y Offset, Calibration Thick X Scalar, and Calibration Thick Y Scalar. The grid locations are listed in a table with X1-X7 and Y1-Y7 positions. Navigation buttons for 'Previous Screen', 'Next Screen', and 'Return to Index' are at the bottom.

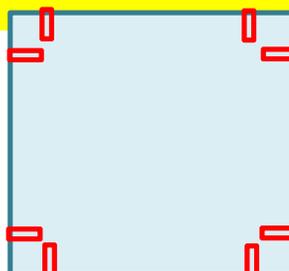
Current Z Thickness ###.### "	Current X Offset: #.### "	Current Y Offset: ###.### "	Current X Scalar: ##.####	Current Y Scalar: ##.####	Grid Apply Laser Test Image	Y7 ###.### "
Calibration Thin Z Thickness ###.### "	Calibration Thin X Offset #.### "	Calibration Thin Y Offset ###.### "	Calibration Thin X Scalar ##.####	Calibration Thin Y Scalar ##.####		Y6 ###.### "
Calibration Thick Z Thickness ###.### "	Calibration Thick X Offset ###.### "	Calibration Thick Y Offset ###.### "	Calibration Thick X Scalar ##.####	Calibration Thick Y Scalar ##.####		Y5 ###.### "
Corner Reference Offset ###.### "	Decrease both values the same to move laser marks toward the stop.		Decrease both values the same to move laser marks toward the bottom.		Glass Y Size Vertical Size Vert - 1"	Y4 ###.### "
Corner Reference Length ###.### "	X7 ###.### "	X6 ###.### "	X5 ###.### "	X4 ###.### "		X3 ###.### "
Corner Reference Width ###.### "	Grid Laser Mark Length ###.### "	Grid Laser Mark Width ###.### "	Glass X Size Horizontal Size Hor - 1"		Previous Screen	Y2 1"
						Next Screen
PARAMETERS 15 Grid Apply Laser						Return to Index

- 2 Enter data for the thin unit.
 

Glass Thickness + Spacer Thickness into the Current Z Thickness.	48"X48"X3mm example
Glass Thickness + Spacer Thickness into the Calibration Thin Z Thickness.	0.118
Horizontal Size of the piece of glass into the Glass Y Size.	0.118
Vertical Size of the piece of glass into the Glass X Size.	48.000
1" for the X1 grid location.	48.000
Horizontal Size - 1" for the X2 grid location.	1.000
1" for Y1 grid location.	47.000
Vertical Size - 1" for the Y2 grid location.	1.000
	47.000

- 3 The grid pattern should like this.

NOTE: grid marks positions are considered to be from the CENTER of the grid marks the edge of the glass.



If there is no grid pattern at all, go to the line data and Copy Last into the grid apply to get a head start.

# Grid Apply Laser Thick/Thin Calibration

## Section 7.1

Current Z Thickness ###.### "	Current X Offset: ###.### "	Current Y Offset: ###.### "	Current X Scalar: #.#####	Current Y Scalar: #.#####	Grid Apply Laser Test Image	Y7 ###.### "	
Calibration Thin Z Thickness ###.### "	Calibration Thin X Offset ###.### "	Calibration Thin Y Offset ###.### "	Calibration Thin X Scalar #.#####	Calibration Thin Y Scalar #.#####		Y6 ###.### "	
Calibration Thick Z Thickness ###.### "	Calibration Thick X Offset ###.### "	Calibration Thick Y Offset ###.### "	Calibration Thick X Scalar #.#####	Calibration Thick Y Scalar #.#####		Y5 ###.### "	
Corner Reference Offset ###.### "	Decrease both values the same to move laser marks toward the stop.		Decrease both values the same to move laser marks toward the bottom.		Glass Y Size ###.### "	Y4 ###.### "	
Corner Reference Length ###.### "	Glass X Size ###.### "		Grid Apply Grid Locations			Y3 ###.### "	
Corner Reference Width ###.### "	X7 ###.### "	X6 ###.### "	X5 ###.### "	X4 ###.### "	X3 ###.### "	X2 ###.### "	
	Grid Laser Mark Length ###.### "	Grid Laser Mark Width ###.### "	Previous Screen			Next Screen	Return to Index

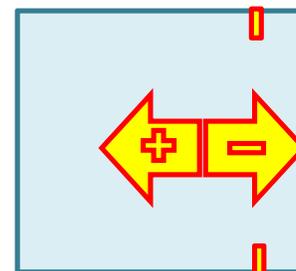
**PARAMETERS 15** Grid Apply Laser

4 If these two marks are not exactly 1" from the right edge of the glass, adust the

**Calibration Thin X Offset**

Increase to move them to the left.  
Decrease to move them to the right.

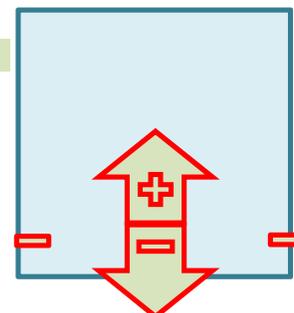
If this pair of marks, or any of the pairs that follow are not the same distance from the edge of the glass as each other, check that the glass is square.  
If the glass is square, redo the LPM calibration with the pc.



5 If these two marks are not exactly 1" from the bottom of the glass, adust the

**Calibration Thin Y Offset**

Increase to move them up.  
Decrease to move them down.



## Grid Apply Laser Thick/Thin Calibration

### Section 7.1

Current Z Thickness ###.### "	Current X Offset: ###.### "	Current Y Offset: ###.### "	Current X Scalar: ##.####	Current Y Scalar: ##.####	Grid Apply Laser Test Image	Y7 ###.### "	
Calibration Thin Z Thickness ###.### "	Calibration Thin X Offset ###.### "	Calibration Thin Y Offset ###.### "	Calibration Thin X Scalar ##.####	Calibration Thin Y Scalar ##.####		Y6 ###.### "	
Calibration Thick Z Thickness ###.### "	Calibration Thick X Offset ###.### "	Calibration Thick Y Offset ###.### "	Calibration Thick X Scalar ##.####	Calibration Thick Y Scalar ##.####		Y5 ###.### "	
Corner Reference Offset ###.### "	Decrease both values the same to move laser marks toward the stop.		Decrease both values the same to move laser marks toward the bottom.		Glass Y Size ###.### "	Y4 ###.### "	
	Corner Reference Length ###.### "	Glass X Size ###.### "		Grid Apply Grid Locations		Y3 ###.### "	
Corner Reference Width ###.### "	X7 ###.### "	X6 ###.### "	X5 ###.### "	X4 ###.### "	X3 ###.### "	X2 ###.### "	
	Grid Laser Mark Length ###.### "	Grid Laser Mark Width ###.### "	Previous Screen			Next Screen	Return to Index

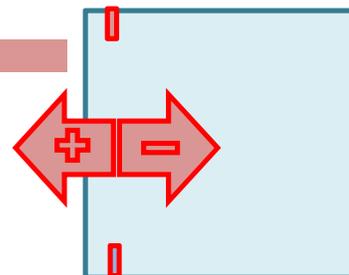
**PARAMETERS 15** Grid Apply Laser

6 If these two marks are not exactly 1" from the left edge of the glass, adjust the

**Calibration Thin X Scalar**

Increase to move them to the left.

Decrease to move them to the right.

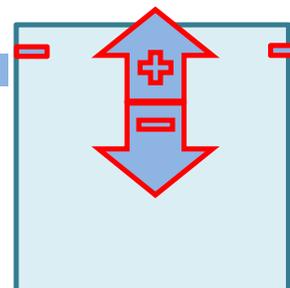


7 If these two marks are not exactly 1" from the top of the glass, adjust the

**Calibration Thin Y Scalar**

Increase to move them up.

Decrease to move them down.



# Grid Apply Laser Thick/Thin Calibration

## Section 7.1

### Thick Calibration

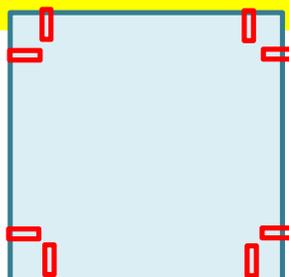
8 Load a complete unit with two pieces of glass and thick spacer. It will be much easier to use if there is masking tape on the edges.

**PARAMETERS 15 Grid Apply Laser**

9 Enter data for the thick unit.

Glass Thickness + SpacerThickness into the Current Z Thickness.	0.986
Glass Thickness + SpacerThickness into the Calibration Thick Z Thickness.	0.986
Horizontal Size of the piece of glass into the Glass X Size.	48.000
Vertical Size of the piece of glass into the Glass Y Size.	48.000
1" for the X1 grid location.	1.000
Horizontal Size - 1" for the X2 grid location.	47.000
1" for Y1 grid location.	1.000
Vertical Size - 1" for the Y2 grid location.	47.000

10 The grid pattern should like this.



## Grid Apply Laser Thick/Thin Calibration Section 7.1

Current Z Thickness ###.### "	Current X Offset: ###.### "	Current Y Offset: ###.### "	Current X Scalar: ##.####	Current Y Scalar: ##.####	Grid Apply Laser Test Image	Y7 ###.### "	
Calibration Thin Z Thickness ###.### "	Calibration Thin X Offset ###.### "	Calibration Thin Y Offset ###.### "	Calibration Thin X Scalar ##.####	Calibration Thin Y Scalar ##.####		Y6 ###.### "	
Calibration Thick Z Thickness ###.### "	Calibration Thick X Offset ###.### "	Calibration Thick Y Offset ###.### "	Calibration Thick X Scalar ##.####	Calibration Thick Y Scalar ##.####		Y5 ###.### "	
Corner Reference Offset ###.### "	Decrease both values the same to move laser marks toward the stop.		Decrease both values the same to move laser marks toward the bottom.		Glass X Size ###.### "	Y4 ###.### "	
Corner Reference Length ###.### "	Glass Y Size ###.### "		Grid Apply Grid Locations			Y3 ###.### "	
Corner Reference Width ###.### "	X7 ###.### "	X6 ###.### "	X5 ###.### "	X4 ###.### "	X3 ###.### "	X2 ###.### "	
	Grid Laser Mark Length ###.### "	Grid Laser Mark Width ###.### "	Previous Screen			Next Screen	Return to Index

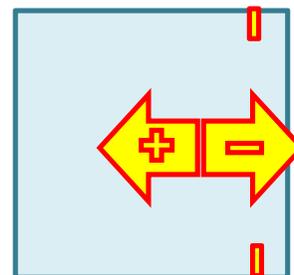
**PARAMETERS 15** Grid Apply Laser

11 If these two marks are not exactly 1" from the right edge of the glass, adust the

### Calibration Thick X Offset

Increase to move them to the left.  
Decrease to move them to the right.

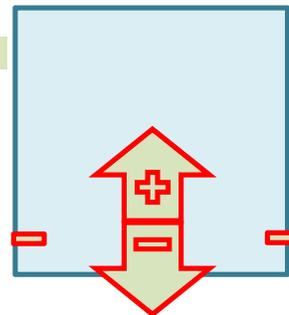
If this pair of marks, or any of the pairs that follow are not the same distance from the edge of the glass as each other, check that the glass is square.  
If the glass is square, redo the LPM calibration with the pc.



12 If these two marks are not exactly 1" from the bottom of the glass, adust the

### Calibration Thick Y Offset

Increase to move them up.  
Decrease to move them down.



## Grid Apply Laser Thick/Thin Calibration

### Section 7.1

Current Z Thickness ###.### "	Current X Offset: ###.### "	Current Y Offset: ###.### "	Current X Scalar: ##.####	Current Y Scalar: ##.####	Grid Apply Laser Test Image	Y7 ###.### "	
Calibration Thin Z Thickness ###.### "	Calibration Thin X Offset ###.### "	Calibration Thin Y Offset ###.### "	Calibration Thin X Scalar ##.####	Calibration Thin Y Scalar ##.####		Y6 ###.### "	
Calibration Thick Z Thickness ###.### "	Calibration Thick X Offset ###.### "	Calibration Thick Y Offset ###.### "	Calibration Thick X Scalar ##.####	Calibration Thick Y Scalar ##.####		Y5 ###.### "	
Corner Reference Offset ###.### "	Decrease both values the same to move laser marks toward the stop.	Decrease both values the same to move laser marks toward the bottom.	Glass X Size ###.### "		Glass Y Size ###.### "	Y4 ###.### "	
			Corner Reference Length ###.### "	X7 ###.### "		X6 ###.### "	X5 ###.### "
Corner Reference Width ###.### "	Grid Laser Mark Length ###.### "	Grid Laser Mark Width ###.### "	Grid Apply Grid Locations			Y3 ###.### "	
			Previous Screen	Next Screen	Return to Index	Y2 ###.### "	
						Y1 ###.### "	

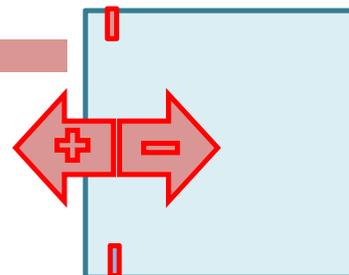
**PARAMETERS 15** Grid Apply Laser

13 If these two marks are not exactly 1" from the left edge of the glass, adjust the

**Calibration Thick X Scalar**

Increase to move them to the left.

Decrease to move them to the right.

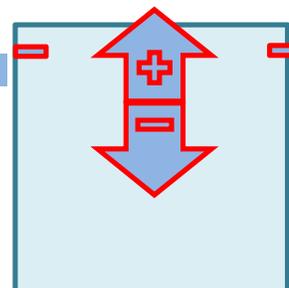


14 If these two marks are not exactly 1" from the top of the glass, adjust the

**Calibration Thick Y Scalar**

Increase to move them up.

Decrease to move them down.



The laser is now calibrated to compensate for different glass and spacer thicknesses.

Glass + spacer thicknesses less than, between, and greater than these thicknesses are scaled using these parameters.