

LC PRIVACY FILM

A Self-Adhesive, Retrofit, Switchable Privacy Film

Measurement & Installation Instructions

PROFESSIONAL INSTALLATION RECOMMENDED



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LC PRIVACY FILM

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Introduction

Please read and understand this entire document before ordering or installing the product.

This document covers the method to properly measure and install our self-adhesive switchable LC Privacy Film onto an existing glass window or surface.

In order to have a successful installation of the self-adhesive LC Privacy Film, it is important that you have the following skills and resources on hand:

1. An experienced window tint installer that can accurately measure and apply the film to the glass.
2. A qualified and capable electrician or A/V installer to neatly run the wire and hook-up to the supplied 120 VAC - 65 VAC transformer. This may require the installation of a 120 VAC outlet by a licensed electrician.

How to Measure

Measuring Guidelines

ACCURATE MEASUREMENTS ARE CRITICAL — FILM CANNOT BE CUT OR ALTERED ON SITE!

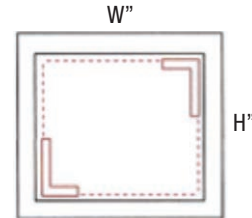
- Always use a steel measuring tape for accuracy.
- Measure every window/glass panel, even if they appear to be of similar size.
- All measurements should be provided in inches and rounded down to the nearest 1/16".
- Only measure the inside dimensions of a window or glass panel encompassing the surface area to which film is to be applied. Do not include the frame, sealant, beveled edges, or butt joints in the measurements.

IMPORTANT! The precise measurement of the window or glass panel is extremely important to the success of a switchable film installation. The film comes pre-sized to fit and cannot be altered on site. If the measurement is too small, the film won't cover the entire glass area. However, if your measurement is too large, the film won't fit within the allotted spot.

Step 1: Determine if the window or glass panel is square. This can be done in a few different ways:

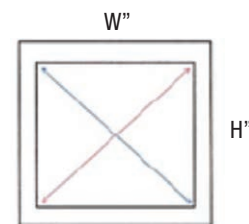
- A) Check each corner of the window/glass with a framing square to determine if the corners form 90 degree angles. If they do, proceed to Step 2.

Example A



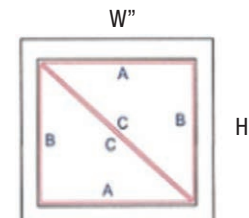
- B) With a true square or rectangle, the lengths of the diagonals are equal. If you measure the diagonals and get the same length for both, you can proceed to Step 2.

Example B



- C) Use Pythagorean Theorem ($A^2 + B^2 = C^2$) to determine if the window/glass creates two equal triangles. If it does, proceed to Step 2.

Example C



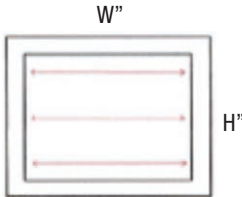
Note: If the window or glass is found to be out of square, a template of the window may need to be sent to Innovative Glass Corp to ensure accuracy of film size required.

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How to Measure (continued)

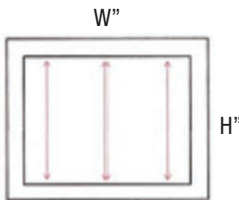
Step 2: Measure the horizontal dimensions of the glass at the top, center, and bottom as shown. Do not take any deductions from your measurements for clearance. Innovative Glass will make the necessary deductions (generally 1/8" on each side) for the final film size.

Example



Step 3: Measure the vertical dimensions of the glass on the left, center, and right as shown. Do not take any deductions from your measurements for clearance. Innovative Glass will make the necessary deductions (generally 1/8" on each side) for the final film size.

Example



Step 4: Use the Innovative Glass order form for each piece of film required and fill in all requirements including the location of the copper bus bars. An Innovative Glass representative will contact you if any further clarification is required.

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Installation

A) Receiving and Handling

1. Before signing and accepting the shipment from the carrier, inspect the container (i.e. box, crate) for any signs of physical damage. If there is any indication of damage, it is critical to open the container and inspect the shipment in the presence of the carrier. If any damage is found, the shipping documents should be noted accordingly and signed by the driver as a witness. Photographs should also be taken as proof of damage and submitted to Innovative Glass for review. **Failure to do so will hold you liable for any damage to the product and alleviate the carrier and Innovative Glass from any responsibility.**
2. Carefully open the container to prevent causing any damage to the film and handle with care.
3. Do not fold or crease the film, as this will cause permanent damage to the product. The film must be kept loosely rolled or flat at all times (see images below).
4. Always use nitrile gloves when handling and installing this product.
5. When moving the film, it is best to hold it as close to the corners as possible. It is beneficial to have 2 people move larger sheets to reduce the risk of damage. Use adequate numbers of skilled workers (based on project size) who are trained and experienced in the craft.

Correct:



Incorrect:



B) Required Tools



Nitrile gloves	Packaging tape
Glass cleaner (<i>non-ammonia based</i>)	Wire mold / trim
Silicone adhesive sealant	Electrical tester
Applicator squeegee and roller	Soldering iron
Glass scraper / flat razor blade	Electrical wire leads
Lint-free cloth (<i>microfiber</i>)	Ladder (<i>if necessary</i>)
Low adhesive tape (<i>painters tape</i>)	

C) Unpack and Inspect All Materials

1. Remove film from shipping container and place in a clean, safe location near the installation area (*preferably on a clean table top*).
2. Inspect each piece of film immediately prior to start of installation. Verify sizes and confirm that the film is cut to the proper glass size by holding it up to the glass. **Do not install film pieces that are improperly sized, have damaged edges, or are deficient in any other manner.** Refer to the warranty letter provided by Innovative Glass for additional information.
3. Test all pieces of film with the supplied transformer and alligator clips to ensure they operate properly. **Please notify an Innovative Glass representative immediately should there be an issue with the operation of the product.**
4. Once all materials are gathered and the product has been properly inspected and tested, you can proceed with the installation of the switchable privacy film.

D) Apply to Glass

Step 1: Thoroughly clean the surface of the glass with the glass cleaner and squeegee, and be sure there are no particles/debris left on the glass. It is best to clean both sides of the glass (if possible) in order to clearly see any debris on the application side. Use a glass scraper if necessary to remove any debris stuck onto the glass surface.

Note: *The cleaner you get the glass from the start, the quicker the installation time, as there will be fewer air bubbles to deal with during installation. Glass must be completely dry prior to application of film.*

Step 2: With nitrile gloves on, clean the non-adhesive side of the film using a dry microfiber cloth. Turn film over and wipe down the back adhesive side before removing the protective covering. **Do not remove the protective covering while cleaning.**

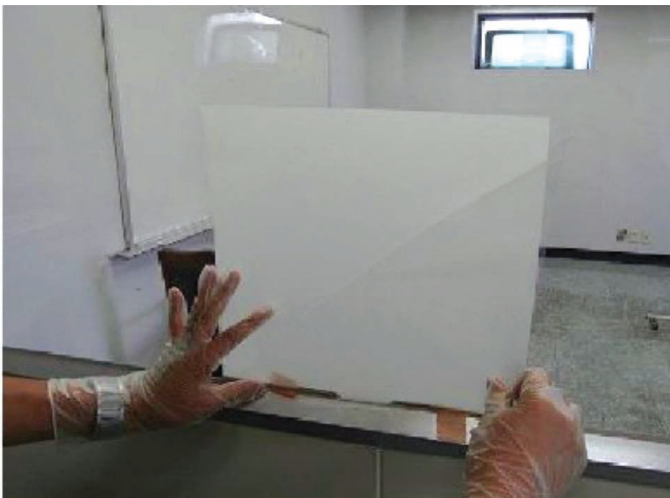


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Installation (continued)

Step 3: Before removing the protective covering, place a sheet of film on the glass surface and hold into place with painters tape to be sure it fits properly.

Note: There are 2 copper bus bar along one side of the film as specified. Make sure that the film is oriented correctly so that the copper bus bars are located on the intended side. **Bus bars are not to come in contact with any metal framing or stops.**



Step 4: Create tabs with packaging tape and place at each corner of the film's protective covering on the back adhesive side. This will act as a handle which will allow for easy release of the protective covering. **Do not use sharp items (i.e. nail, knife) to remove the protective covering, as that could create risk of film delaminating at the edge.**

Step 5: Starting at the top corner on the back, gradually remove the protective covering (about 8"-12") from the top by pulling down on the tape tabs while carefully applying the exposed portion of the film to the glass.

Step 6: Continue to work the protective covering down the sheet slowly, and focus the squeegee or roller in the center of the film to allow edges to lay themselves down. If you discover dust/air bubbles once the film adheres to the glass, slowly pull the film back up past that location, and remove any debris with a piece of painters tape wrapped around your index finger (*adhesive side out*). Please note that the film will start to lose adhesiveness with repeated removal from the glass.



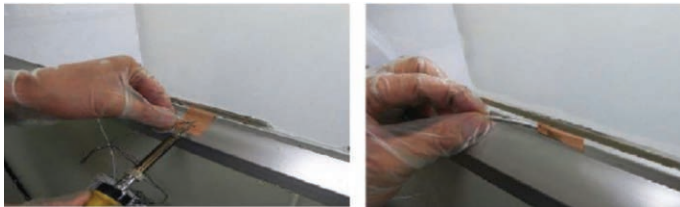
Step 7: Repeat Steps 1-6 until all film pieces are installed on glass.

Note: Any imperfections in glass (i.e. indentations, protrusions) may leave small air bubbles in the film. Also any holes required in the film (to accommodate door hardware) should have the edges sealed with a non-acetic silicone.

Electrical Hook-Up

Note: All switchable privacy film requires electricity (65 VAC) to switch the film from private / frosted white to transparent. We suggest enlisting the support of a certified electrician and/or A/V installer to route and dress the wires exiting the film.

Step 1: Connect electrical wiring to copper bus bars using a soldering iron (*be sure to protect the film from potential solder drops*). Solder a wire to one bus bar on the left, and to one on the right.



Step 2: Test the film to ensure it is working before proceeding.



Off

On

Step 3: Use non-acid based silicone (*Dow Corning 7091*) along the bus bar edge to hold the wire mold/trim in place. **Using acid based silicone can cause irreparable damage to the film product and will void all warranties.**



Step 4: Completely cover the bus bar area within existing frame or with Wiremold / trim (*match existing finishes*) to avoid exposure to electric shock. It is recommended to use a non-conductive wiremold (*i.e. plastic*). If you wish to use a metal wiremold we suggest you contact an electrician. **Notch wiremold with dremel to accommodate wiring and attach prior to soldering.** It is optional to cover remaining three edges with trim to meet any aesthetic requirements.

Your Installation is Now Complete!

You can now do a final cleaning of the film with a non-ammonia based cleaner, and wipe down with a soft dry lint-free cloth.

For detailed Care & Maintenance instructions, see page 8.

If you have any questions, please contact us:

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Care & Maintenance

To preserve and maximize the life of LC Privacy Film, please follow these instructions.

OPERATING LC PRIVACY FILM

1. LC Privacy Film is **PRIVATE/FROSTED in the default unpowered (OFF) state.**
LC Privacy Film is **CLEAR/TRANSPARENT*** when in the powered (ON) state.
2. When Clear/Transparent glass is *NOT* needed, **film should always be in PRIVATE/FROSTED (OFF) state.**

**NOTE: LC Privacy Film will never appear 100% clear when powered and there will always be a certain amount of white haze. This is normal and is not considered a material defect.*

CLEANING LC PRIVACY FILM

1. **WHEN CLEANING, ALWAYS SWITCH FILM TO THE PRIVATE/FROSTED (OFF) STATE.**
2. **Do not clean LC Privacy Film for 30 days after install.**
3. Always **use a soft microfiber cloth with cleaner applied to cloth – DO NOT use a spray bottle** to apply cleaner.
4. **Use a non-ammonia-based cleaner only.**
5. **Never ever use abrasive cleaners.** Scratches will result.
6. **Avoid liquids pooling at bottom of glass or edges of film** to avoid water damage and film failure.
7. **Avoid liquids getting behind the film** as this will affect its adhesiveness and create bubbles.
8. **Do not let liquids or metal come in contact with the copper bus bars.**
9. **Avoid applying pressure to the edges of the film** to mitigate possible damage. If necessary, wipe towards the edges of the film, not away from the edges.
10. **Never ever scrape film with a razor blade** or any sharp objects.
11. **Properly dry the film** using a soft dry lint-free microfiber cloth.
12. **Film should remain in the PRIVATE/FROSTED (OFF) state for one hour after cleaning** to allow it to fully dry.



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