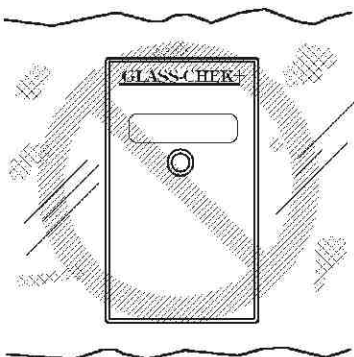


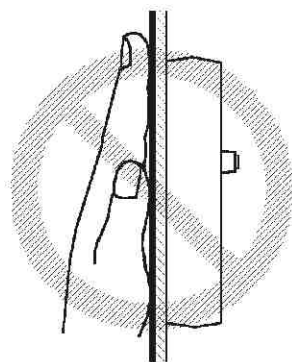
## GLASS-CHEK/GLASS-CHEK+ -- DISPLAY FORMAT

The display of the GLASS-CHEK meter will set up at the factory to reflect the customers requested format. To change the display format in the field, place the meter against a dual lite assembly and take a full set of readings. After the readings are displayed, continue to hold the button for approximately 30 to 40 seconds. The screen will blank and the version of software will be displayed. Next the screen will begin flashing through several display formats. When the screen shows the display format you desire, release the button. Your meter is now equipped to read in the display format you selected.

## GLASS-CHEK+ -- IMPROPER LOW-E OPERATING CONDITIONS



If the window area under test is excessively dirty or contaminated, the GLASS-CHEK+ will give improper results. The window area under test must be **RELATIVELY CLEAN**. Clean the test area or move the GLASS-CHEK+ to a clean location on the window.



Placing the hand or an object on a single lite of glass opposite the GLASS-CHEK+ may give improper results. Remove hand or object.

## GC1000/GC2000 WARRANTY

The manufacturer warrants all models of the GC1000/GC2000 to be free from defects in material and workmanship under normal use and service as specified within the operator's manual. The manufacturer shall repair or replace the unit within twelve (12) months from the original date of shipment after the unit is returned to the manufacturer's factory, prepaid by the user, and the unit is disclosed to the manufacturer's satisfaction, to be thus defective. This warranty shall not apply to any unit that has been repaired or altered other than by the manufacturer. The aforementioned provisions do not extend the original warranty period of the unit which has been repaired or replaced by the manufacturer. Batteries are not covered by warranty.

EDTM, Inc. assumes no liability for the consequential damages of any kind through the use or misuse of the GC1000/GC2000 product by the purchaser or others. No other obligations or liabilities are expressed or implied. All damage or liability claims will be limited to an amount equal to the sale price of the GC1000/GC2000, as established by EDTM, Inc.

July 2006 manualE060725.cdr

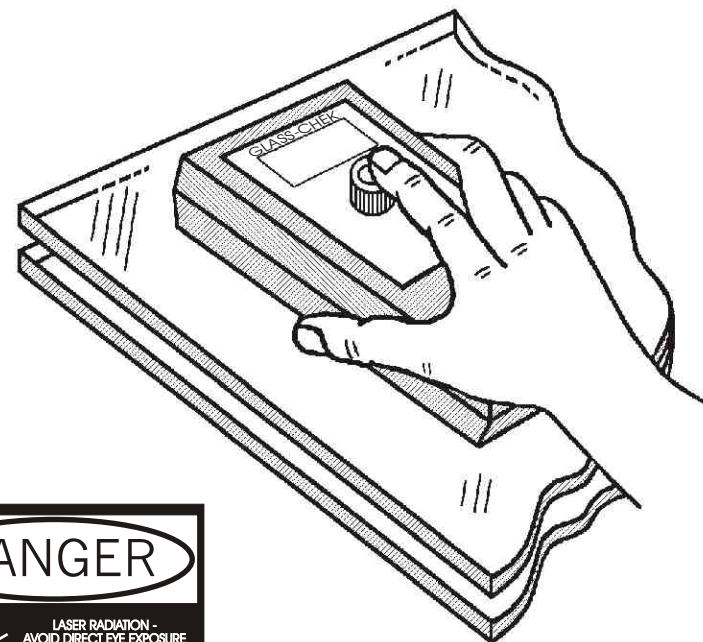
# GLASS-CHEK/GLASS-CHEK+<sup>TM</sup>

## GLASS AND AIR SPACE METERS

MODEL# GC1000/GC2000

### GENERAL DESCRIPTION:

The GLASS-CHEK family of test instruments measures the thickness of both lites of glass, as well as the air space of an insulating glass window assembly. All measurements can be obtained from a single side. Simply press the GLASS-CHEK meter against a single lite of glass, or a dual lite window assembly, push the power button and hold it until the measurements are digitally displayed. The thickness of each lite of glass, the air space, and the overall thickness of the IG unit will simultaneously appear on the 2-line LCD display.



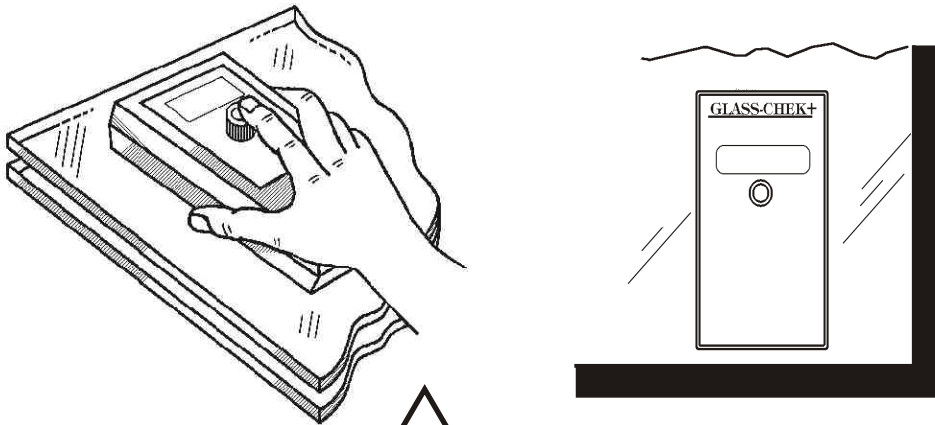
The GLASS-CHEK+ contains a single lite LOW-E coating detector. The single lite LOW-E detector will test the nearest lite of glass in an IG unit. To fully characterize an IG unit, the window must be tested on both sides to confirm the presence or absence of the LOW-E coating. All LOW-E coatings are conductive, unfortunately so is pollution. Make sure that the window is reasonably clean. This instrument is factory calibrated and needs no field adjustment.

## ELECTRONIC DESIGN TO MARKET, INC.

745 Capital Commons Drive  
Toledo, Ohio 43615  
WWW.EDTM.COM

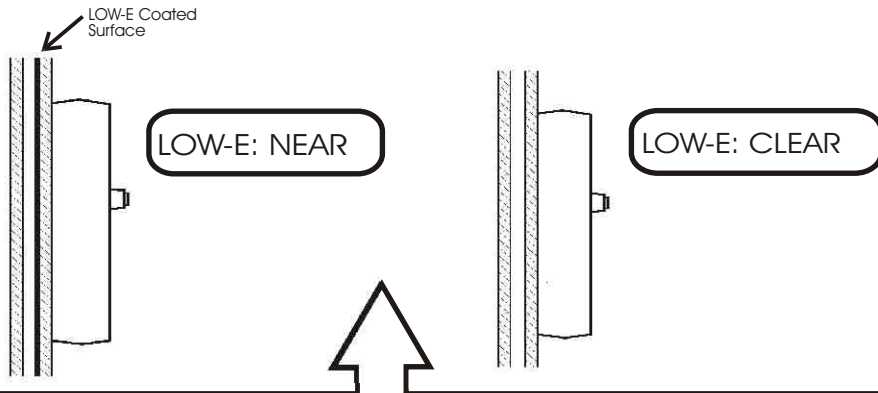
PH. (419) 861-1030  
FX. (419) 861-1031  
Email: sales@edtm.com

## GLASS CHEK/GLASS-CHEK+ GLASS THICKNESS/AIR SPACE MEASUREMENT



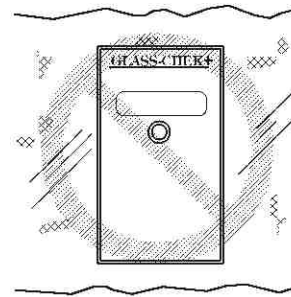
Before each reading is taken, check the opposite side of the window under test to ensure that no one will be looking directly into the laser aperture. Simply press the GLASS-CHEK/GLASS-CHEK+ meter against the single or dual lite window assembly and push the button. The measurement will appear in approximately 4 seconds. We recommend taking your measurement in the bottom right corner of the window for best accuracy. Windows often deflect inward or outward due to varying barometric pressures. The window will hold closest to its original designed specification at the corners where the spacer bars hold the glass fixed. The sensing area for the GLASS-CHEK meter is located on the right side of the meter. Therefore the bottom right corner of the window will yield the best results. We recommend taking multiple readings to verify your results. If a reading does not appear on the display, ensure that the glass sample under test is clean and that the exit location (aperture) of the laser is clear of lint, dirt or other contaminants. The laser aperture is on the back side of the GLASS-CHEK enclosure (opposite the power button). **ALWAYS USE AIR OR A CLEAN, LINT-FREE, NON-ABRASIVE CLOTH TO CLEAN THE LASER APERTURE AREA.**

## GLASS CHEK+ LOW-E DETECTOR OPERATION



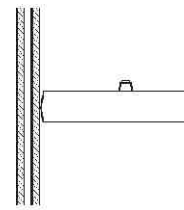
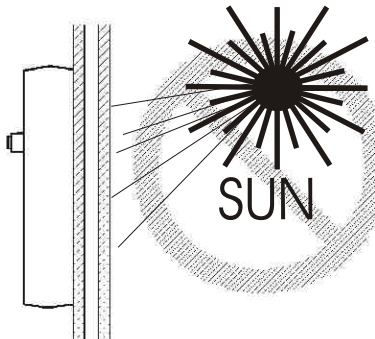
When the GLASS-CHEK+ is contacting a lite of glass with a LOW-E coating, the message "**LOW-E: NEAR**" will appear. If the glass under test does not contain LOW-E coating, the message "**LOW-E: CLEAR**" will appear. The GLASS-CHEK+ is a single lite LOW-E detector; it will test only one lite of glass at a time. Therefore, you must test both sides of a DUAL LITE window assembly to fully identify the presence of a LOW-E coating.

## GLASS-CHEK/GLASS-CHEK+ -- IMPROPER GLASS THICKNESS/AIR SPACE MEASUREMENT



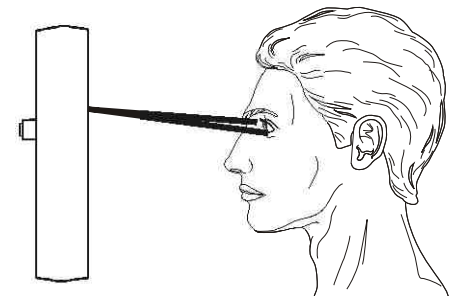
If the window area under test is excessively dirty or contaminated, the GLASS-CHEK/GLASS-CHEK+ will give improper results or display a blank line with IN (inches) or MM (millimeters) by itself at the far right side of the display. The window area under test must be **RELATIVELY CLEAN**. Clean the test area or move the GLASS-CHEK/GLASS-CHEK+ to a clean location on the window.

The GLASS-CHEK/GLASS-CHEK+ uses a light/laser beam to measure the thickness of the glass and air space. The unit may be affected by extremely bright lights or facing the sun directly. The screen will blank after testing and display only an IN (inches) or MM (millimeter) symbol at the end of the display line or the message "EXCESSIVE LIGHT" will appear. Move to a different location on the unit under test or shade the laser aperture. **METHOD OF SHADING:** 1: Cup your hand over the right side of the unit if the light source is behind you. 2: If directly facing the light, attempt to block it or move to another location.



The GLASS-CHEK/GLASS-CHEK+ must be used with the surface opposite the Power button against the window. Using the small end surface of the unit or tilting the unit away from the surface will give improper results.

The GLASS-CHEK family of glass thickness and air space meters use a laser to take its measurements. **DO NOT PUSH THE POWER/ACTIVATE BUTTON AND POINT THE GLASS-CHEK AT ANYONES EYES.** Always check the other side of the window being tested to ensure that no one will be looking directly into the laser.



Operating the GLASS-CHEK/GLASS-CHEK+ while in contact with a hand or object other than a window surface constitutes improper operation. Operate only while the testing surface of the unit is in contact with a legitimate window surface.

- REPLACE BATTERY WITH A 9 VOLT ALKALINE ONLY (NEDA 1604A).
- DO NOT OPEN THE ENCLOSURE OR ADJUST THE SCREWS WHICH HOLD THE ENCLOSURE TOGETHER. THIS WILL VOID THE WARRANTY AND ALTER THE CALIBRATION OF THE GLASS-CHEK METER.

### SAFETY PRECAUTIONS

1. The laser aperture is located on the back side of the Glass-Chek enclosure (opposite side of the power switch).
2. DO NOT look directly into the laser aperture or into a reflection of the laser beam in any glass or mirrored surface. A laser can be damaging to the eyes.
3. The Glass-Chek incorporates an FDA approved Class IIIA laser as defined by FDA regulation 21 CFR 1040.10. The Glass-Chek has been labelled according to FDA regulation 21 CFR 1040.10.
4. CAUTION: Using this product in any other method than described within this manual, or making alterations to the physical design of the product may result in hazardous radiation exposure.
5. DO NOT point the laser aperture in the direction of another person while pushing the power button.

### APPLICATIONS

- GLASS-CHEK meters are optimized for clear (no low-E coating) and transparent, low-E coated glass.
- Single or dual life assemblies are allowable.
- HEAVILY TINTED AND REFLECTIVE GLASS are not guaranteed applications of the GLASS-CHEK meter. These types of glass must be tested by the customer to guarantee proof of application. If dealing with these types of glass, the best possibility of obtaining good readings is to position the meter on the side of the IG assembly which contains the clear life of glass.
- Triple glazed assemblies are NOT guaranteed applications of the GLASS-CHEK meter. The meter is programmed to detect only 2 lifes of glass and 1 air space per reading. A possible solution to triple-glazed assemblies, is to take a reading from both sides of the window. The center life of glass will be repeated in both sets of readings. The total window may then be identified.
- For laminated glass, the GLASS-CHEK meter will measure the overall thickness of the laminated assembly of glass. It will not measure the inner layer thickness of the laminate itself. For instance, 2 pieces of 3mm glass laminated together will register as a single piece of 6mm glass on the GLASS-CHEK display.

### SPECIFICATIONS

- POWER SOURCE: 9 volt alkaline battery (NEDA 1604A) only
- PHYSICAL DIMENSIONS: 3.5" x 5.5" x 1.25"
- STORAGE TEMPERATURE: -20 to +60 degrees Celsius
- OPERATING TEMPERATURE: 0 to +40 degrees Celsius
- MAXIMUM LASER OUTPUT: 5 mW (CLASS IIIA LASER)
- LASER WAVELENGTH: 630 - 680 nm
- ACCURACY: +/- 0.015"
- MINIMUM GLASS THICKNESS: 1.5mm
- MINIMUM AIR SPACE: 3/16"
- WINDOW THICKNESS RANGE: 0.30" to 1.20" overall IG thickness
- MIN/MAX GLASS THICKNESS ALLOWED FOR LOW-E READINGS: 2.5/7 mm

### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) *Tolerance specifications for flat glass*

TRADITIONAL DESIGNATION	DESIGNATION		TOLERANCE			
			mm.		inches	
	mm.	inches	min.	max.	min.	max.
single	2.5	0.09	2.16	2.57	0.085	0.101
lami	2.7	0.11	2.59	2.90	0.102	0.114
double - 1/8 in.	3.0	0.12	2.92	3.40	0.115	0.134
5/32 in.	4.0	0.16	3.78	4.19	0.149	0.165
3/16 in.	5.0	0.19	4.57	5.05	0.180	0.199
7/32 in.	5.5	0.21	5.08	5.54	0.200	0.218
1/4 in.	6.0	0.23	5.56	6.20	0.219	0.244
5/16 in.	8.0	0.32	7.42	8.43	0.292	0.332
3/8 in.	10.0	0.39	9.02	10.31	0.355	0.406

# TROUBLE-SHOOTING GUIDE

### PROBLEM:

Glass-Chek displays a partial reading or no reading at all (only "mm" or "in" appear on the display).

### CORRECTIVE ACTION:

1. Ensure that the Glass-Chek is placed against the glass surface correctly.
2. Make sure the unit is placed flatly against the glass surface.
3. Clean the glass surface or move to a cleaner area of the glass.
4. Remove dust particles from the laser aperture area on the back of the Glass-Chek. Use air or a soft, lint-free cloth to remove any dirt or dust particles from the laser filter area.
5. Check that the two window surfaces are relatively parallel to each other and to the Glass-Chek unit. Take a measurement in the lower right hand corner of the window.
6. Verify the operating temperature range.
7. If only a partial reading occurs, move to another location on the glass or take a reading from the other side.

The temperature where I need to take readings is outside the Glass-Chek operating range.

### For cold temperatures:

1. Attempt to keep the unit in a warmer environment until you are ready to take the readings. The Glass-Chek will record accurate readings up to the point the electronics reach the outside temperature which is below the operating range. Depending on the degree of coldness, this will allow for several readings to be taken.
2. Carry the Glass-Chek in your pocket or in some other manner which will keep the unit near a warmer temperature.
3. Operate the unit several times repeatedly in an attempt to warm up the die of the laser module itself. This will work in temperatures which are not greatly beneath the operating temperature range.

### For hot temperatures:

1. Attempt to keep the unit in a cooler environment until you are ready to take readings. The Glass-Chek will record accurate readings up to the point the electronics reach the outside temperature which is above the operating range. Depending on the extent of the heat, several accurate readings should be obtained.

1. Replace the battery with a 9 volt alkaline battery ONLY (NEDA 1604A).

"REPLACE BATTERY" appears on the display.

"EXCESSIVE LIGHT" appears on the display

1. Attempt to block the source of the bright light. If the light is coming from behind you, cup your hand over the right edge of the Glass-Chek while you are taking the reading. If the light source is on the other side of the window you are testing, move to another location or block the light source.
2. Pointing the Glass-Chek directly into the sun will typically result in an "excessive light" condition. Shift your glass sample so the Glass-Chek is at an angle of approximately 15 to 20 degrees with respect to the sun.