

LAMP REPLACEMENT

The TS1420 includes a custom short wave UV lamp inside the enclosure. If the lamp stops working, confirm that the lamp is bad by cycling power. If there is no glow at start up, it may be necessary for you to replace the short wave UV lamp. The replacement lamp is PART# TS1310 and is available from your dealer.

To replace the lamp, unplug the unit. **WARNING: YOU MUST REMOVE THE POWER BEFORE SERVICING THE INSTRUMENT.** There are dangerous high voltages present inside the enclosure, and the electronics should never be touched when powered. Use a Phillips screwdriver to remove the 4 screws of the enclosure. Please note, remove the rubber boot to locate the 4 screws on the bottom of the meter. See Figure 7 below.

The body of the lamp is held in place by foam pieces, while the terminals are inserted into sockets in the circuit board. Carefully pull the old lamp out of the sockets. Pay special attention to the foam pieces as you may have to peel them away from the bulb. Leave as much of the foam in place as possible, as this helps provide shock absorption to the bulb during use. See Figure 8 below.

The replacement lamp should never be handled with bare fingers. Please use gloves when handling the replacement lamp. The replacement lamp will be sent to you with the terminals crimped at the proper location. DO NOT MAKE ANY ADJUSTMENTS TO THE TERMINALS, AS THEY ARE EXTREMELY FRAGILE. Carefully press the lamp terminals into the receptacles. Fully reassemble the unit before turning power on to check the new lamp.

Remember, DO NOT stare at the lamp output directly. Either look at the image through a piece of float glass, or put on your UV blocking safety glasses (included).

Figure 7
Remove power



Figure 8
4 screws from enclosure

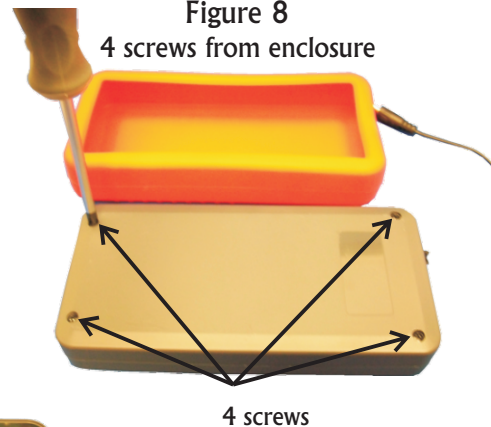
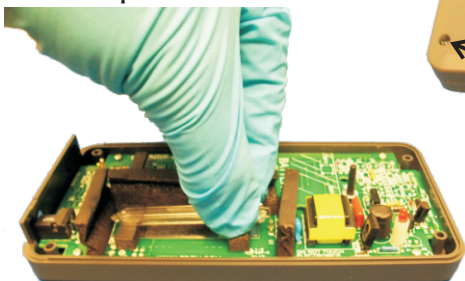


Figure 9
Remove the old lamp and replace with new



WARRANTY

The manufacturer warrants the electronics included in all models of the TS1420 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 manufacturers factory, prepaid by the user, and the unit is disclosed to the manufacturers 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. Lamps, rubber boots, and power supplies are not covered by warranty.

The manufacturer assumes no liability for the consequential damages of any kind through the use or misuse of the TS1420 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 TS1420, as established by the manufacturer.

Power Requirement

5 or 6 Vdc, 1.5 Amp power supply is required.

RELATED PRODUCTS



Tin Side Detector

Line-powered with Automatic Glass Detection

MODEL# TS1420

MADE IN THE USA

OPERATOR'S MANUAL

During the production of float glass, one side of the molten glass comes into contact with a bath of molten tin. Traces of tin or tin oxide metal are deposited on the surface of glass as it is removed from the molten tin bath. This surface of the glass is identified as the "TIN SIDE" surface of the glass. The opposite side of the glass is denoted as the "AIR SIDE". The presence of the tin is invisible to the human eye. Glass processors find it beneficial to know which surface of the glass is the tin side surface, since the tin side of the glass results in a smoother surface (among other reasons).

The TS1420 Line-powered Tin Side Detector is very helpful in identifying the tin side. Short-wave UV energy causes the tin to fluorescence at a frequency that is visible to the human eye. When the lamp is placed on the tin side surface, the tin will fluoresce and produce a milky white image that is visible to the human eye. If you place the lamp on the non-tin side of the glass, the lack of tin results in no fluorescence and therefore only the duller image of the UV lamp is seen. Since the float glass substrate does not transmit the UV light, the tin coating on the opposite side of the glass is not exposed to the UV energy, and therefore it will only fluoresce when the lamp is placed on the tin side of the glass.



WARNING: Do not expose eyes and skin to shortwave ultraviolet light, as rays are harmful to unprotected eyes and skin. Never view the image of the lamp directly without placing a piece of glass between your eyes and the lamp. We recommend the user wear the UV Blocking safety glasses supplied with the product. UV light is not visible to the human eye. Although the UV lamp may appear dim, recognize that this is only a small percentage of the intensity being emitted by the lamp. Your eyes cannot detect the full intensity of the short-wave UV lamp.

KEEP THE COMPETITIVE EDGE WITH PRODUCTS FROM



Glass, Window & Film Test Equipment

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Toledo, Ohio 43615 USA
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FEATURES

- Identify the tin side of float glass using a custom UV lamp for detection
- Works on coated glass as long as coating does not block UV-C energy
- Commercial design includes a rubber boot for rugged applications
- Bulb mounting system absorbs shock of dropping the unit better than previous competing models
- Intelligent sensor detects the presence of glass and turns on the lamp automatically for hands-free operation
- “Max-Bright” software keeps the bulb warm to maximize the glow
- Lamp-on indicator warns users of UV light
- Line-powered to eliminate battery usage
- Protective UV blocking safety glasses included
- Replaceable UV lamp with convenient insertion sockets for easy installation

POWER SWITCH

POWER-ON INDICATOR
illuminates when instrument power is turned on

TEST WINDOW
view the tin side glow here



OPERATION

Press the power button to turn on the instrument. The red power LED will illuminate. When the power is initially turned on the LAMP-ON indicator and the UV lamp will also turn on for a “warm-up” period of approximately 90 seconds. During warm-up, you may begin testing glass, but the glow might not be as strong. After the warm-up the “Max-Bright” software will blink the lamp once every minute for approximately 10 seconds in duration if no glass is detected. This is done to keep the lamp warm and ready for measurements at any time.

To test a piece of glass, simply place the glass on top of the entire sensor. The glass sensor will automatically detect the glass and turn the lamp on for 90 seconds. The 90 seconds will allow you to complete your test and potentially begin a second test of your next piece of glass. The 90 second count will be reset if glass is removed and another piece is placed on the instrument. The “Max-Bright” software also includes an energy saving feature. If the TS1420 is left idle for more than 30 minutes the unit will enter a standby mode denoted by the blinking power indicator. When in this mode, the Max-Bright software will not blink the lamp every minute. To exit the energy saving mode, either remove the resting piece of glass from the sensor or place a new piece on it.

You can use the TS1420 in three different methods. You can either choose to view the image of the lamp through the glass by placing the instrument on the bottom side of the glass, OR you can tilt the TS1420 on the top surface of the glass and view the reflection of the lamp under the meter. You can also view the glow through the edge of the glass. You may find that one approach works better for certain glass samples and various lighting conditions. BEFORE performing any tests, we recommend putting on the protective UV blocking safety glasses that were supplied with the product.

OPERATION - continued

RECOMMENDED METHOD

The TS1420 is designed to be used as a hands free test. The instrument should be positioned on a flat surface with the label facing up. With the meter powered on, glass is then placed on top of the meter, as shown in Figure 1. If the bottom side is the TIN SIDE of the glass, the image of the lamp will appear milky white (Figure 1). If you are on the air side of the glass, there will be no milky white glow. The image of the lamp will remain unchanged as shown in Figure 2.

Figure 1: Tin Side



Figure 2: Air Side (NOT Tin Side)

Dull violet lamp reflection



TOP-SIDE METHOD

Using this method, it is important that you put on your UV blocking safety glasses. To test glass using the top-side method, power on the TS1420 and place on the top surface of the glass as shown in Figure 3. Tilt the unit at a slight angle so you can view the REFLECTION of the lamp.

If the reflection of the lamp on the glass appears milky white (Figure 3), then the surface touching the glass is the TIN SIDE. If the reflection result in a dull violet lamp image (Figure 4), then the surface touching the glass is the AIR SIDE.

Figure 3: Tin Side

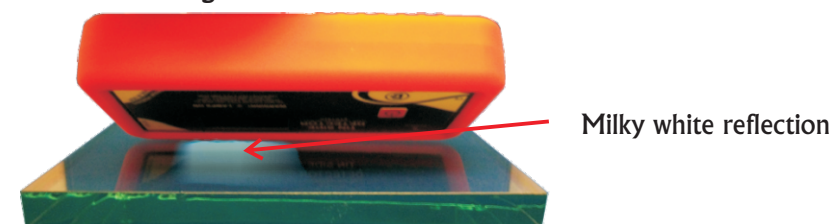


Figure 4: Air Side

Dull violet lamp reflection



OPERATION - continued

SIDE METHOD

As long as you can view the edge surface of the glass, you can use this method. Look at the edge of the glass where the meter is placed. If the resulting image in the edge of the glass appears milky white (Figure 5), then the surface touching the glass is the TIN SIDE. If there is no milky white glow (Figure 6), then the surface touching the glass is the AIR SIDE. This feature is great when you only have access to one side of the glass, and also when you are working in brighter light environments.

Figure 5: Tin Side

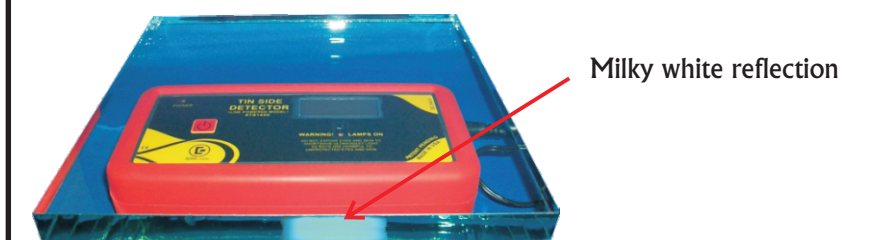


Figure 6: Air Side

No reflection



ADDITIONAL OPERATING TIPS

1. If lamps will not turn on when the glass is over the meter. Check to make sure the glass sensor area is clean.
2. If the instrument lamp does not turn on when meter is powered on, replace the lamp as described in the lamp replacement section
3. To improve the viewing of the glow, it may be helpful to move the glass and TS1420 closer and further apart from each other to magnify the glow differential.
4. In certain situations it may be easier to view the milky white image at a slight angle. Viewing the image at an angle is especially helpful when working with tinted and reflective glass.
5. If working in a bright environment, it may help to shadow the area of glass you are testing to better see the fluorescing glow
6. Mounting the meter flush with the work surface will protect the meter and glass.

REPLACEMENT PARTS

PART # DESCRIPTION

- TS1310 ---- Replacement Lamp
- TS1440 ---- Replacement Rubber Boot
- TS1441 ---- Replacement Power Supply