

HELPFUL OPERATING TIPS

1. If taking measurements near a hot lamp, do not place the meter too close to the light source. If the end of the meter begins to feel hot to the touch, it is too close to the light source. Extended periods of heat exposure can cause deformation of the filters, resulting in a change in the accuracy of the meter.
2. When taking readings to measure transmission percentage, it is important that the meter is held in the exact same position for both readings taken (when possible). Any change in angle or proximity to your light source can adversely affect the accuracy of your measurements. **FOR BEST RESULTS**, place the meter on its box or other stationary item. To read transmission readings, slide the glass sample in front of the meter, without moving the position of the meter. This will guarantee the most accurate readings possible.
3. When performing transmission percentage readings, it is advised to take multiple readings to reduce the amount of error that occurs. Be aware that a changing light source (sun with moving clouds) can affect your transmission readings.
4. The light sensor is located at the top end of the enclosure. For the greatest accuracy in measurements, this sensor should be directly facing the light source. **DO NOT** alter the condition of the sensor opening by touching or pushing on the filter. Any modifications or altering of the exterior surface of the filter **WILL** affect the calibration of the meter. This area should be kept clean at all times. Compressed air or a lint-free cloth should be used to clean the filter surface if it becomes soiled.
5. Do not attempt to open the enclosure. Opening the enclosure will void the product warranty and affect the calibration of the meter.

BATTERY REPLACEMENT -- BLINKING DISPLAY

The VP1165 is powered by a 9 volt battery. When the battery voltage is getting too low to operate the meter, the display will begin blinking. Once the display begins blinking you will want to replace the battery soon. To replace the battery, turn off the power meter. Remove the battery cover near the bottom of the meter and replace with a new battery. Alkaline batteries will provide the longest service, but are not required for this product.

CALIBRATION

This instrument has been calibrated to detect total incident visible light. The largest incident visible power values are obtained when the end of the meter faces the sun or artificial light source directly. When the meter does not face the sun directly, the incident visible light power is reduced by the cosine curve of the angle to the sun. Make sure the transparent materials being tested are reasonably clean.

This instrument is factory calibrated to a NIST (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY) traceable broad band silicon detector and requires no field adjustment.

VP1165 WARRANTY

The manufacturer warrants all models of the VP1165 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 six (6) 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. 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 VP1165 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 VP1165, as established by EDTM, Inc.

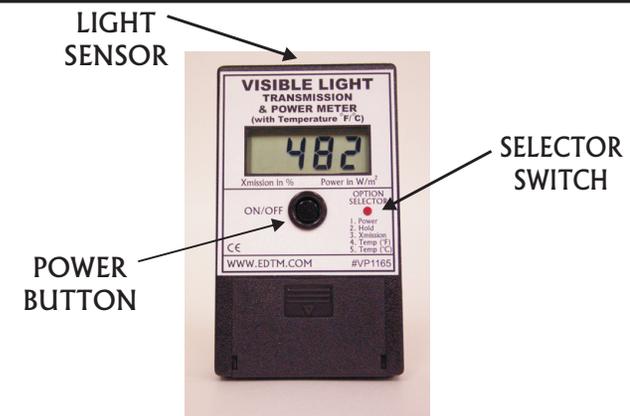
VISIBLE LIGHT TRANSMISSION (VLT) & POWER METER

(With Temperature Measurement)

MODEL #VP1165

GENERAL DESCRIPTION:

The (VLT) VISIBLE LIGHT TRANSMISSION & POWER METER incorporates several beneficial products into one meter. In Power Mode, the meter measures the power per unit area of incident visible light reaching the meter's sensing area (irradiance). In Transmission Mode, the VP1165 is able to calculate the Visible Light Transmission (VLT) percentage associated with a given material. The design includes a "HOLD" feature that allows the user to freeze the display on a given power reading. The meter also includes temperature measurement in Fahrenheit and Celsius. The VP1165 may be used to measure the tint of glass, film or other transparent materials.



FEATURES:

- VISIBLE LIGHT TRANSMISSION & POWER MEASUREMENTS IN W/m²
- TEMPERATURE MEASUREMENT (FAHRENHEIT & CELSIUS)
- "HOLD" FEATURE TO FREEZE DISPLAY
- SHARP-CUT FILTERS FOR ACCURATE VISIBLE LIGHT MEASUREMENT
- REAL-TIME READINGS CONTINUALLY UPDATED
- VAST OPERATING RANGE WITH EXCELLENT RESOLUTION
- MICROPROCESSOR CONTROL USING DIGITAL TECHNOLOGY
- END VIEWING SENSOR
- PUSH-ON/PUSH-OFF POWER SWITCH
- SMALL, PORTABLE CONVENIENT SIZE

KEEP THE COMPETITIVE EDGE WITH PRODUCTS FROM



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Toledo, Ohio 43615 USA

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The VP1165 includes a selector switch on the front panel that allows the user to sequentially move through the 5 possible operating modes:

1. Power readings
2. HOLD display
3. Visible Light Transmission % (VLT)
4. Temperature (Fahrenheit)
5. Temperature (Celsius)



When the meter is turned on, it will operate in Power Mode, reading in W/m^2 . While taking power readings you can push the selector switch a single time to freeze the current reading on the display. Pushing the selector a second time will toggle the meter into Transmission Mode (VLT). The third and fourth push of the selector switch toggles the meter into Temperature Measurement Mode, Fahrenheit & Celsius respectively. Pushing the selector switch a fifth time will roll the meter back to the starting operating sequence (Power Mode). At any time during your measurements you can turn the meter off and back on to reset it to Power Mode (top of the operating sequence). When pushing the selector switch, hold the button down briefly and release it, watching for the display to change into the next sequence before pushing the button again.

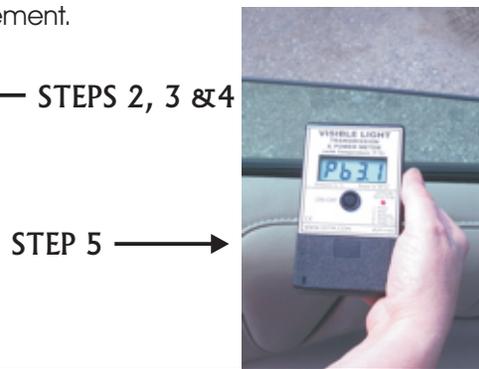
WINDOW TINT MEASUREMENT FOR AUTOMOTIVE GLASS

For the best results, position the vehicle in a location that is in the direct sun if possible. To complete your VLT measurements, follow the steps below:

- 1) Turn on the VP1165 by pushing the power button
- 2) Open the automobile window half way and place the meter directly above the window in the opening. The light sensor (top end of meter) should be facing directly outward. Confirm that a power reading has registered on the display.
- 3) Self-calibrate the meter by pressing the RED Selector Switch 2 times (slowly).
- 4) The display should now read P100 (= 100% transmission). Your meter is now prepared to take a transmission measurement (VLT) with the current light conditions. (If the surrounding light conditions change, repeat STEP 3).
- 5) Now slide the VP1165 meter downward so the end of the meter is placed directly behind the window OR close the window while holding the meter in the exact same position. Hold the meter at the exact same angle as it was held in Step #3. The resulting transmission (VLT) percentage for the window will be displayed.
- 6) To confirm your reading, slide the VP1165 meter back to its original location above the open window (Step 3). The display should return to P100. If the meter does not display P100, it is possible that your light conditions have changed. You may choose to perform the measurement again. We recommend taking a couple readings to confirm your measurement.



← STEPS 2, 3 & 4



STEP 5 →

TABLETOP SALES PRESENTATIONS

To set up a *dynamic TABLETOP PRESENTATION*, or to perform readings in a bench-type QC application, place a light source facing the VP1165. The light source should be stable and held in position so it cannot move during the measurements. Position the meter flat on the table with the sensor facing the light source directly. If necessary, place the VP1165 on top of its box to position the meter in the center of the light beam. To obtain the most accurate results, DO NOT move the light source or the meter during the readings. To take transmission measurements (VLT), follow the same format described under automotive glass on the previous page. Instead of opening the window, simply perform Step 2 by setting up the lamp and meter as shown in the picture below. After you have completed Step 4 (self-calibrate), you can begin sliding samples of glass or film between the lamp and meter. The resulting Visible Light Transmittance (VLT) will be displayed on the meter (See STEP 5 below).



← STEPS 2, 3 & 4



← STEP 5

MEASURING INSTALLED WINDOWS

The best results are obtained when the meter is operated on windows inside of a building that are directly facing the sun. The position of the meter is EXTREMELY important in obtaining an accurate reading. The meter should be placed on the window sill on top of its box or other stationary item that will hold the meter in the same position. To take a transmission reading, the meter should be self-calibrated with the window open (Step 2 - 4 above). The sensing area of the meter should NOT be looking through any glass or film at this time. In step #5 of the instructions, you should close the window without moving the position of the meter. Once the window is closed, the meter will measure the Visible Light Transmittance (VLT) of the window. Several readings should be taken to guarantee the most accurate information is obtained.