

# Automated Three-Phase Test System Model 2350

- Winboard™ Software
- Smart Socket™
- Laser Optics
- OPTOCOM™ Option
- Testboard Options
- Turbo Test™



## Introduction

In today's high-tech meter shops and high-output manufacturing plants, getting an accurate meter test fast increases overall workflow, keeping your company operating in the black. Watthour Engineering's line of premier test equipment combines over thirty years of meter industry experience with a vision of innovation to bring you industry leading test solutions.

The Model 2350 sets the benchmark for precision and functionality in today's meter testing industry. This versatile testboard provides fully ANSI compliant testing using either a single or three-phase voltage and current up to 50 Amps. Three-phase power combined with the file/graph capabilities of WECO's Winboard™ software gives you the power to test today's meters with any combination of voltage phase angles, current imbalances, phase angle imbalances and frequencies in .001Hz steps. With the revolutionary Turbo Test™ option, you can run simultaneous series and element tests and increase the productivity of your meter shop five-fold\*.

WECO's advanced laser optics system is safe but powerful enough to drive through the dirtiest covers while still delivering the precision you demand. Coupled with three removable digital reference standards, the Model 2350 boasts unparalleled traceability, reliability, and accuracy. This testboard package is rounded out with WECO's Smart Socket™ technology, KYZ inputs, optional barcode scanner, optional OPTOCOM™ optic-coupler system, plus a two-year warranty†. The Model 2350 is the ideal tool for today's cutting-edge meter shops or manufacturing environments.

A global leader in meter testing, WECO has equipment at work in over twenty countries and is trusted exclusively by North America's leading meter manufacturers. Whether you need a simple on-site solution or a complex "turn-key" system, WECO has the technology and over two hundred years combined industry experience to fill your meter testing needs.

\* Actual test time increase dependent on the manufacturer of the meter under test

† One year overseas.

## Winboard™ Software

Unlock the power and flexibility of your WECO testboard with Winboard™ meter testing software. Winboard™ utilizes software "Wizards" to simplify even the most complicated tasks. A strikingly user-friendly interface makes it easy to select test sequences, elements, and service types. The powerful combination of file/graph, test time, and Hyper Sequence™ features gives you total control over all test parameters. Customizable security options and WECO's dedicated customer support team round out this robust software package.

## Smart Socket™

Smart Socket™ technology extends the life of your testboard by mechanically controlling the inserting and removing of meters. Silver and gold connections inside the socket ensure the best connection to the meter under test. A quiet, cutting-edge solenoid motor means reliable, quiet operation with minimal insertion force.

## OPTOCOM™ Option

With this optional OPTOCOM™ optic-coupler interface, you can test and program meters without changing heads. Just clamp the head on for testing and forget worrying about aligning optics or detecting creep holes. When the test is complete, you can program the meter without replacing heads. The OPTOCOM option takes the error and effort out of meter testing and programming.

## Laser Optics

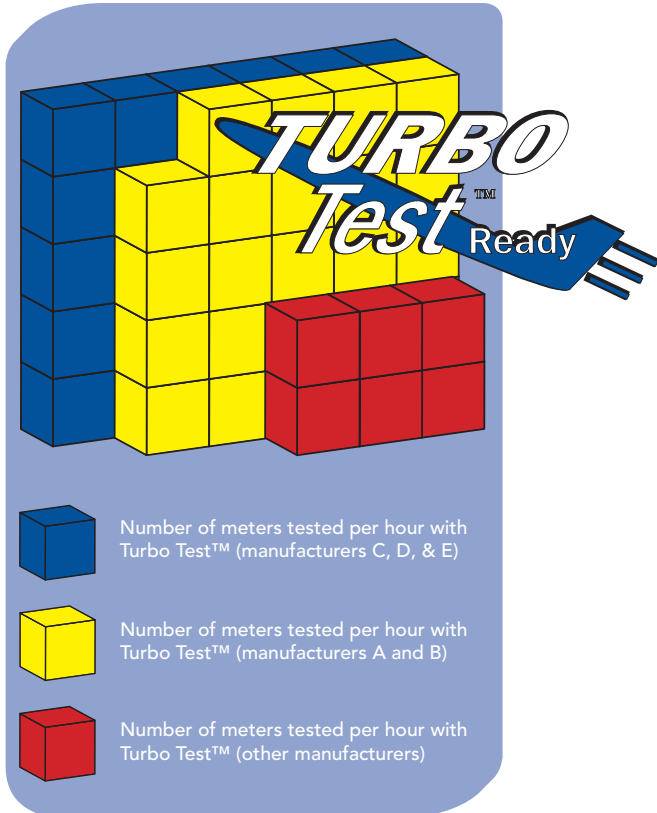
WECO's advanced laser optics has revolutionized meter testing. This innovative system employs a high intensity light beam that safely delivers highly accurate test results even through meter covers coated in dirt and grime. Whether testing off the black mark or through the creep holes, trust the WECO laser optics system to give you the precision that you demand with the ease you deserve.



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## Turbo Test™

WECO has worked hand-in-hand with the industry's leading meter manufacturers to bring you Turbo Test™ technology. Slash the amount of time it takes to test a supported meter on either WECO's 2300 or 2350 three-phase testboards to nearly one fifth of regular testing time. Save your shop valuable time and money with WECO's Turbo Test option.



## Barcode Option



Attach an optional barcode scanner and printer to your testboard to cut meter processing and data entry time. Scan AEP barcodes on meters with a wave of the barcode scanner to automate the data entry process, or print custom barcodes to automate customer information entry during testing. Either way, the optional barcode scanner and printer will save your shop time and money.

## Specifications

- **Input voltage:** 120 or 240VAC (3 wire), 50 or 60Hz single-phase
- **Input power:** 650VA maximum
- **System accuracy:** For current ranges 0.2A–50.0A
  - » KWH  $\pm 0.04\%$  at 1.0 P.F. ( $\pm 0.01\%$  typical)
  - » KWH  $\pm 0.04\%$  at 0.5 P.F. ( $\pm 0.01\%$  typical)
  - » KW  $\pm 0.075\%$
  - » System accuracy is based upon the accuracy of the reference standard.
- **Voltage and current accuracy:** 0.50% true RMS
- **Phase angle accuracy:**  $\pm 0.5^\circ$
- **Test frequency:** 45–65Hz in 0.001Hz steps
- **Voltage harmonic distortion:** Less than 1.0% THD (Less than 0.5% typical)
- **Current harmonic distortion:** Less than 1.0% THD (Less than 0.3% typical)
- **Meter test forms:**
  - » 1S–17S, 19S, 21S, 24S, 26S, 29S, 35S, 36S, 45S, 46S, 56S, 66S
  - » New meter forms can be added using the testboard utility in the package.
- **Dimensions:** Approximately 21" W × 20" H × 21" D
- **Weight:** Approximately 150 pounds
- **Warranty:** One (1) year limited warranty (all parts and labor). Manufacturer warranty on computer

## Testboard Options

- **Additional meter test stations:** Three (3) stations maximum per cabinet. Six (6) stations maximum operated by one computer.
- **OPTOCOM™:** Optics coupler allows pulse testing and meter programming through the optical port of many solid state meters without changing optics coupler.
- **Turbo Test™:** Accelerated testing for some solid state meters (requires OPTOCOM™ option)
- Barcode printer with software
- Barcode reader with software
- Multi-function testing capability
- Higher accuracy reference standard available
- Computer memory and storage upgrades
- Bottom connected single stator adapter
- Bottom connected multi stator adapter
- Custom adapter design available
- Automated standards compare adapter for RM or RD standards



## Testboard Features

- **Test voltage:**
  - » 60–600V; Independently programmable per phase in 0.01V steps.
  - » True three-phase or single-phase
- **Test current:**
  - » 0.001–50A
  - » Independently programmable per phase in 0.001A steps
- **Power factor test angle:**
  - » 0–359.9°
  - » Selectable in 0.1° increments per phase
- **Test revolutions:**
  - » Series full load selectable 1–65,534\*
  - » Elements full load 1–65,534
  - » Series light load selectable 1–65,534\*
  - » Elements light load 1–65,534
  - » Series power factor selectable 1–65,534\*
  - » Elements power factor 1–65,534
- **Test time:** Selectable from 1–9999 seconds (minimum of at least one energy pulse)
- **Demand (KW) testing:**
  - » Standard revolutions (1–99999 revolutions)
  - » Time run (up to 99 HRS, 59 MIN, 59 SEC)
- **Contact device testing:** Form "A" or "C" capability
- **Hyper Sequence™:** Four quadrant automated meter testing
- **File/graph testing**
- **Low current (starting watts) test begins at 0.001A**
- **Solid state voltage and current loading**
- **Voltage and current electronically ramped between tests**
- **Automatic slew between tests to minimize test time**
- **Potential clips closed for testing**
- **Smart Socket™ with minimal insertion force**
- **Front panel controls allow fast, easy test selection**
- **Automatic crossed stator wiring check during three-phase testing**
- **Modulated laser optics for through hole and reflect disk sensing**
- **Three optical pickups: Top, bottom, and middle/center**
- **Visual and audible (volume controlled) pulse indication for aid in aligning optical sensor**
- **LED bar graph indicates signal strength**
- **No sensitivity adjustment necessary for optics**
- **Easily removable reference standards for recertification**
- **PC Minimum System: Dell™ standard business class Mini Tower PC • 17" flat screen monitor • Microsoft Windows® 7 Professional operating system, Vista available**
- **Windows® compatible Winboard™ software**
- **WATT-Net™ data acquisition system**



\*Selectable Per Element



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