

# 4000 Series

Automated Test Platforms

*The Touchstone In Meter Testing Hardware*



## Model 4150 Model 4330



**CAUTION**  
LASER RADIATION  
DO NOT STARE INTO BEAM  
650 nm LASER DIODE  
<1.0 mW MAX OUTPUT  
CLASS II LASER PRODUCT  
AVOID EXPOSURE. LASER LIGHT  
IS EMITTED FROM THIS APERTURE

*Accuracy - Convenience - Versatility*

**R A D I A N**  
WECO  
*Power and Energy Measurement Solutions*

# Automated Test Platform Models 4150 and 4330

The Models 4150 and 4330 automated test platforms are the touchstone in meter testing hardware. Building on our tradition of delivering testing solutions that provide a powerful mix of accuracy, convenience, and versatility, both models add next generation features and cutting-edge technology. The NIST traceable Radian Research RD-30 series reference standard provides unparalleled accuracy to the testboards. The difference between the two models lies only in the current and the weight. Need a current range between 0.001A to 150.0A? The Model 4150 is the testboard for you. Should you need higher current capability the Model 4330 provides a range of current from 0.001A to 330.0A, making Full Load Class 320 testing a snap.

The foundations for this revolutionary system are the features and innovations that have put WECO at the forefront of the industry for over thirty years. Low insertion force Smart Socket™ technology, fitted with high conduction silver and gold connections, and an electronic socket control, provide an excellent connection and extended hardware lifespan. A laser based optics system employing high intensity light delivers highly accurate results from black marks or creep holes through even the dirtiest covers. Front mounted controls allow simple test selection and testboard control. An optional barcode scanner and printer cuts meter processing and data entry time. The optional OPTOCOM™ interface allows the meter to be tested and programmed without ever having to change the head. This foundation of innovative hardware is bolstered by WECO's fully integrated Winboard 3™, WATT-Net™, and WATT-Net Plus™ software.

With Winboard 3 you can build advanced test sequences that allow you to control every parameter of a test, simplifying even complex tasks, and generate results that are compatible with all major databases (MS SQL, Oracle, Sybase). The WATT-Net family of data management solutions gives you unparalleled test result organization, reporting, and exporting abilities. The innovative Model 4150 and Model 4330 automated test platforms are designed to help utilities maneuver today's real world metering issues.

## ***Harmonic Generation***

The Model 4150 and 4330 both have harmonic generation capabilities, you can now put various meter brands and meter technologies through a full harmonic analysis. With generation to the 60th harmonic and independent harmonic control in each of the current and voltage circuits (6 channels) as defined by order, magnitude and phase, you can get the full picture of how a metering device is going to perform.

We've extended the analysis functionalities to bring real world field conditions back to the shop. Captured harmonic and/or trend data from the RW-3X can be played back allowing various meters to be tested under actual field load conditions. The load condition can be automatically played back from the captured data, providing an accuracy per meter "revolution" and the average accuracy of the entire test.

## ***Multiple VAR Test Types***

There is more than one way to run a VAR test, and ANSI is constantly approving new calculation methods. Unlike other test systems, the Models 4150 and 4330 allow you to select from any ANSI approved calculation method to test a meter. This gives your utility the ability to choose the method that best fits its structure and needs, rather than having to accept the single method that a particular system is capable of testing.

## ***Voltage and Current Circuit Burden Testing***

Little things can add up when you're talking about the thousands, or millions, of meters and attached modules that a utility might have out in the field. For instance, how much power does a particular brand of meter draw, or how much demand does running an AMR module pull? The Model 4330 and the Model 4150 can let you get those answers before a meter ever leaves the shop. During testing the VA burden is displayed as a metric.

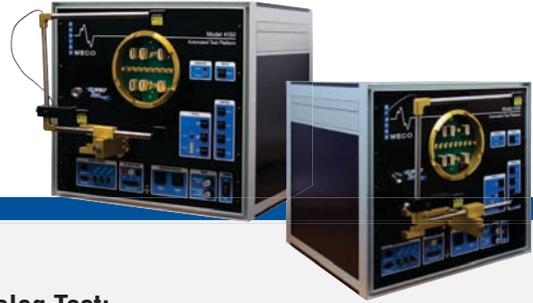
## ***Fuseless Hardware Protection***

With this latest generation of test system we aimed to build the most reliable hardware on the market. Voltage and current sources feature fuseless self-protection technology, providing hardware protection from short-circuit, thermal, and over-current fault conditions.

## ***Ease Of Maintenance***

Our state-of-the-art card cage provides ease of maintenance. The labeled circuit boards easily plug into the cage. If necessary, simple as well as fast troubleshooting is possible because the boards can be swapped between phases to quickly check for hardware failures.

# Features



## Test Voltage:

20–600V; independently programmable per phase in 0.01V steps, with four digits of resolution

True three-phase or single-phase

Voltage phase-angle setting relative to  $V_a$ , 0-359.99° in 0.01° increment

## Test Current:

Model 4150: 0.001-150A; Model 4330: 0.001-330A; independently programmable per phase in 0.001A steps, with four digits of resolution

Current phase-angle setting relative to  $V_A$ , 0-359.99°, selectable in 0.01° increments per phase

## Test Revolutions:

Selectable from 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)

## VAR Testing:

All ANSI defined VAR calculation methods are supported.

## Contact Device Testing:

Form “A” or “C” capability

## Voltage and Current Circuit Burden:

Displays the actual VA load per active element

## Harmonic Generation:

Generation to the 60th harmonic, independent control in each current and voltage circuits, 6 channels

## Analog Test:

Analog testing using a current loop configuration of voltage, current, phase, power factor, Watt, Var, and VA transducers

All analog devices with a maximum output of  $\pm 20\text{mA}$  are supported

Supports internal loop power or external loop power transducers

## Meter Disconnect Switch Test:

Requires a user supplied method to communicate to the AMI Module, typically provided by the AMI vendor or meter manufacture.

***Automatic crossed stator wiring check during three-phase testing.***

***Modulated laser optics for through hole and reflect disk sensing.***

## Three IR Optical Pickups:

Top, bottom, and middle/center

***Visual and audible (volume controlled) pulse indication for aid in aligning optical sensor.***

***LED bar graph for signal strength for mechanical meters.***

***Easily removable reference standard for recertification or standard upgrade***

## PC Minimum System:

Dell™ standard business class Mini Tower PC, 17” flat screen monitor, Microsoft Windows® 7 Pro OS

# Specifications

## Input Voltage:

90 - 264VAC (3 wire), 50 or 60Hz single-phase auto ranging

## Input Power:

1500W Maximum

## System Accuracy:

KWH +/- 0.04% at 1.0 P.F.

Higher accuracy standards available

System accuracy is based upon the high accuracy of the NIST traceable Radian RD-30 series reference standard.

## Test Frequency:

45 – 65Hz in 0.001Hz steps, accuracy 25ppm

## Voltage and Current Harmonic Distortion:

Less than 1.0% THD (pure sine selected)

## Voltage and Current Sources:

Features fuseless self-protection technology

## Meter Forms Tested:

All current and future ANSI meter forms:  
*except for forms without a common current return (i.e. Form 7).*

New meter forms can be added using the testboard utility included in the software package.

## Dimensions and Weight:

21"W x 20"H x 21"D

Model 4150: 150 LBS (Approximately)

Model 4330: 160 LBS (Approximately)

## Warranty:

Two (2) limited warranty (all parts and labor).  
Manufacturer warranty on computer.

## Testboard Options:

OPTOCOM™: Optics coupler allows pulse testing and meter programming through the optical port of many solid state meters without changing the optics coupler.

Barcode printer with software

Barcode reader with software

Multi-function testing capability

Higher accuracy reference standards available:

RD-31, accuracy 200ppm ( $\pm 0.02\%$ )

RD-33, typical accuracy 100ppm ( $\pm 0.01\%$ )

Model 4330: A unit with a RD-33-xxx standard requires a maximum ambient temperature of 30°C to remain within specification.

Computer memory, storage, and operating system upgrades

Bottom connected single stator adapter

Bottom connected multi stator adapter

Custom adapter designs available

Standards compare adapter for RM or RD standards, single-phase or three-phase

WATT-Net Plus™ Asset and Smart Grid Device Management Software

