

Electrical Conductivity Measurement

PowerEC® CM

Equipment Highlights

- Non-contact Eddy Current technique.
- Independent calibration station.
- Maximum measurement error of +/-0.3%IACS. Meets MIL-STD-1537C for coverage and accuracy.
- Automatic temperature and lift-off compensation during scanning.
- Traversing speed of up to 3m/s.
- Seamlessly integrates with factory's Level II for fully automated inspection.
- Custom software with easy-to-interpret C-Scan-type views.
- Built on ITOP software with NDT-Web™ user interface.

The PowerEC® CM permits automated electrical conductivity measurement of non-ferrous metallic plates in production environments. Conductivity measurements are required to verify proper alloy/temper and to detect problems during heat treatment. Arrays of sensors are moved across the top and bottom surfaces of the plate, while it travels through the measuring station, to provide a complete conductivity map. The technique meets the most stringent international standards for accuracy, and can be adapted to fit different coverage and speed requirements.

Innerspec's proprietary technique automatically equalizes the sensors during the calibration process. The application is built on Innerspec Technologies Operating Platform (ITOP) with NDT-Web(TM) user interface.

The PowerEC CM is designed to be integrated into any process, with easy-to-interpret results. The system has negligible operation and maintenance costs, and can be fully automated requiring no human intervention.

The PowerEC CM is designed for integration into any process. With easy setup and operation, unlimited configuration storage, user-friendly results, and straight-forward installation, results are immediate. The system has negligible operation and maintenance costs, and is fully automated with little human intervention required.

PowerEC[®] CM - Specifications

Materials Inspected	<ul style="list-style-type: none"> Non-ferrous metallic strip, plates, or slabs. +/- 0.150" (4mm) convex or concave bow in longitudinal or transverse directions.
Inspection Technique	<ul style="list-style-type: none"> Multi-channel eddy current
Measurement Accuracy	<ul style="list-style-type: none"> +/-0.3%IACS. Meets MIL-STD-1537C for coverage and accuracy
Software Features	<p>Real Time Acquisition & Processing.</p> <ul style="list-style-type: none"> Uses fast FPGA-based signal acquisition and processing. Provides uninterrupted control and analysis of all time sensitive operations, including real-time display and disposition. <p>Link & Render.</p> <ul style="list-style-type: none"> Connects real-time acquisition & processing with the user interface using standard communication protocols. Decouples acquisition from user interface for easy hardware upgrades, and rapid customization of user interface. Organizes and prepares data received from real time acquisition & processing for representation in user interface. <p>NDT-Web™ User Interface</p> <ul style="list-style-type: none"> Provides display and user controls customized for the application using proprietary NDT-Web™ real-time web technology. Broadcasts its own Wi-Fi signal for simple access by any device using a regular browser and IP address (no client software needed). Alternatively, users can connect to the equipment using an external video monitor or ethernet port. Permits easy customization of user controls and display without affecting the operation of the equipment. Includes built-in features for web support and ordering of spare parts when connected to the internet.
Sensor Head Assembly	<ul style="list-style-type: none"> One sensor assembly on both top and bottom surfaces. Each assembly includes 4 eddy current probes. Sensor to surface separation controlled by non-marring ball rollers.
Data Acquisition Electronics	<ul style="list-style-type: none"> Primo: Innerspec's standard high-performance electronic modules. High speed data acquisition Receiver/encoder Integrated I/O controls Power supplies
Power and Environmental Ranges	<ul style="list-style-type: none"> Data Acquisition Cabinet: 110/220 VAC (+/-10%), 60/50 Hz, minimum circuit capacity at 20/10 Amps, single phase. Gantry electrical power at 220VAC +/- 10%, 3-phase at 25 Amps. Operating temperature 32 °F (0 °C) to 105 °F (40 °C). Humidity, non-condensing, 5% to 95% RH.

