Product Brief

NHR 9300 High-Power System

100kW Mobile-Friendly and Scalable Battery Cycler Solution

Highlighted Features

- Dual voltage range design: 600V, 1200V
- Modular & scalable power up to 2.4MW
  - 100kW per cabinet (parallel up to 24 cabinets)
  - Current 333A per cabinet (up to 8,000A)
- Regenerative power > 95% (Typical)
- 100% SiC-based technology
- Fast transient speeds: Slew Rate < 2mS
- Fully integrated battery cycler: built-in isolation contactor relays, pre-charge circuit, reverse polarity checker
- Modes: Charge/Discharge, Load, and Battery Emulation
- High insulation resistance to ensure product safety
- Air-cooled (no liquid cooling) provides simplified maintenance
- Advanced digital measurements with charting
- Multiple control options: touch panel, LabVIEW®, IVI Drivers, and SCPI
- Battery Test Software: Enerchron® or NI BTS Software
- Drive cycle simulation testing including FUDS, SFUDS, GSFUDS, WLDC, JC08, and ECE-15L

The need to quickly increase EV battery testing capacity is making validation labs harder to manage and forcing engineering teams to explore ways to sustainably scale up their test lab operations.

From few to dozens of test cells, managing power from the battery cyclers is one of the main challenges that impacts lab efficiency, CO2 footprint, and operational expenses.

A software- and data-centric test strategy can help but requires flexible test equipment that can be synchronized, orchestrated, and operated effectively.

Battery cycler flexibility and openness is critical to achieve the scale needed in modern battery validation labs.

Customer Needs

01 Test existing 400V and 800V EV battery architectures, and future-proofing for higher voltage and test capacity needs.

02 Define battery validation lab layouts that work for current and future needs

03 Maximize lab equipment utilization and integrate existing equipment

04 Monitor and manage full lab operation to optimize operational cost

NHR-9300

01 100kW battery cycler with software controlled dual-voltage range (600V and 1200V)

02 Mobile-friendly, non-fixed installation provides flexible configurations of power

03 Modular 100kW cabinets allow for incremental increase/split of power.

04 NI's software-connected approach to automate configuration, execution, and reporting on test operations

9300 High-Power System Specifications

OUTPUT POWER, MAX	100 kW (Parallelable up to 2.4 MW)	
RATED SUPPLY VOLTAGE (UNIVERSAL INPUT)	360-415 V rms, 3-PHASE DELTA (NO NEUTRAL)	480 V rms, 3-PHASE DELTA (NO NEUTRAL)
RATED INPUT CURRENT, FULL-LOAD AMPERES	200 A	160 A
RATED FREQUENCY	50 Hz - 60 Hz	
SIC-BASED POWER	100%	
Multiple Control Options	Touch panel, LabVIEW®, IVI Drivers, SCPI	
OUTPUT VOLTAGE, MAX	600 V DC (HIGH CURRENT MODE) 1200 V DC (HIGH VOLTAGE MODE)	
OUTPUT CURRENT, MAX	+/- 333 A (HIGH CURRENT MODE) +/- 167 A (HIGH VOLTAGE MODE)	
DIMENSIONS (L X W X H)	1981 mm X 711 mm X 991 mm (78 in X 28 in X 39 in)	
WEIGHT	544 kg (1200 lb)	
COOLING	FORCED AIR	

NHR-9300 Advantage

Mobile-Friendly: Door-sized cabinet with wheels provides mobile solution to move hardware easily within facility. Set-up, reconfigure, or service test stations efficiently and effectively.

Future-Proof Investments: Right-sized 100kW blocks make it easy to increase and split power incrementally at the cabinet level.

Maximize Lab Space: The cycler's high-power density provides a small footprint, saving floorspace and optimizing lab layout.

Ease of Use: The wide operating range allows testing of a broad list of applications. Switch easily between low and high voltages through an easy-to-use software command.

System Integration on Your Terms

NI offers a variety of solution integration options customized to your application-specific requirements. You can use your own internal integration terms for full system control or leverage the expertise of our worldwide network of partners to obtain a turnkey system.

To learn how you can increase product quality and shorten test timelines, contact your account manager or NI at (888) 280-7645 or info@ni.com.

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