

LBT21084 Benchtop Series

Key Features

- ✓ **80ppm Precision** with industry-leading 24-bit resolution across four current ranges per test channel
- ✓ **Temperature controlled** sampling circuit reduces measurement variation and noise
- ✓ **Embedded MCU** for real-time calculations of battery capacity, power, energy, IR, and efficiency metrics
- ✓ Optional **integrated MZTC** chamber providing a turn-key benchtop testing solution
- ✓ **Built-in** 2nd voltage input and temperature PT100 input dedicated per test channel

Beyond Precision

Arbin's next generation Laboratory Battery Testing (**LBT**) series offers industry leading 24-bit resolution and high-precision measurements. The all-purpose tester provides true bipolar circuitry ensuring cross-zero linearity, four auto switching current ranges per test channel, and embedded MCUs for real-time calculations.

Developed in collaboration with industry leaders Ford Motors and Sandia National Lab, and supported by US DOE funding through DOE ARPA-E, Arbin utilizes exclusive technology to elevate battery testing standards.

Standard Configurations

LBT21084UC Configurations	
Voltage Range	Current Range
-5 to 5V	1A/500mA/20mA/100μA
0 to 5V	5A/500mA/20mA/1mA

LBT21084 Configurations	
Voltage Range	Current Range
-5 to 5V	5A/500mA/20mA/1mA
0 to 5V	10A/500mA/20mA/1mA

System Information

System Characteristics		
Channels per Module	8	
Channels per Chassis	8 or 16	
Current Ranges per Channel	4 (auto switching)	
Channel Parallel	Up to 80 A	
Current Rise Time	<100 µs	
Built-In Auxiliary Inputs		
Temperature PT100	1 input/channel	
2nd Voltage	1 input/channel	
Control & Measurement Specifications		
Parameter	LBT21084	LBT21084UC
Accuracy	±0.02% FSR	±0.01% FSR
Precision	±0.01% FSR	±0.008% FSR
Measurement Resolution	24 Bit	
Control Resolution	16 Bit	
Time Resolution	100 µs	
Data Acquisition Rate	Up to 1 kHz	
MZTC Chamber Specifications		
Chamber Zone Qty	1 zone with 8 cell fixtures	
Temperature Range	[Ambient-10°C] to 60°C	
Temperature Uniformity	±1.5°C	
Temperature Control Stability	±0.5°C	
Chassis Specifications		
Cooling	Air-cooled with built-in variable speed fans	
Input Power	110V1P – 240V1P	
Chassis Size	Width: 16" (407 mm) Depth: 17" (432 mm) Height: 16" (407 mm)	

Application Focus



dQ/dV & High Precision Coulombic Efficiency



Cyclic & Linear Voltammetry
PITT/GITT
Symmetric-Cell Testing



Dynamic data acquisition based on changes in time, voltage, and current to capture more data when it's needed and maintain efficient file sizes.



Simulation of Real World Test Profiles



Data Sampling and Logging: Powerful embedded controllers provide ultra-fast data sampling and logging.



Comprehensive safety features for lithium-ion battery testing.

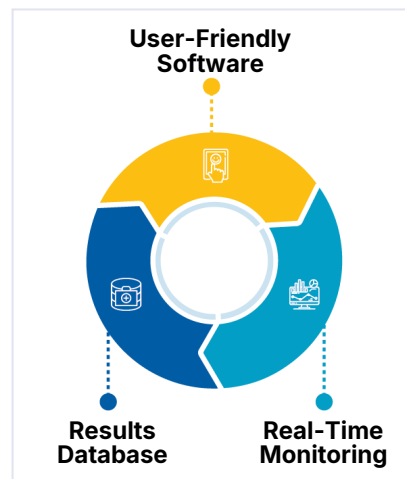


Facility integration to interface with temperature chambers, test facilities, or other third party systems.

Powerful Software Integration

Arbin's LBT system, powered by our latest MITS software, optimizes the battery testing process by simplifying control of the testing process, and integrating the test station into a test facility.

- ✓ Create and manage test schedules, monitor real-time testing, and analyze results.
- ✓ Integration with third-party hardware and automation software.
- ✓ Suitable for both laboratory and production environments.
- ✓ Test data securely stored in a range of robust databased formats including MS SQL, PostgreSQL, or utilize Apache Kafka for additional flexibility.



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