# CADEX

C8000

Advanced Battery Analyzer

cadex.com/c8

AN OUT-OF-THIS-WORLD BATTERY ANALYZER

CREATED FOR ADVANCED USERS

The Cadex C8000 delivers the versatility needed to ensure you get the right performance from the batteries used in your applications. The C8000 is a multi-purpose tool that allows you to optimize batteries at every stage of product life.

ACCEPTS
**NICKEL
LEAD-ACID
LITHIUM**
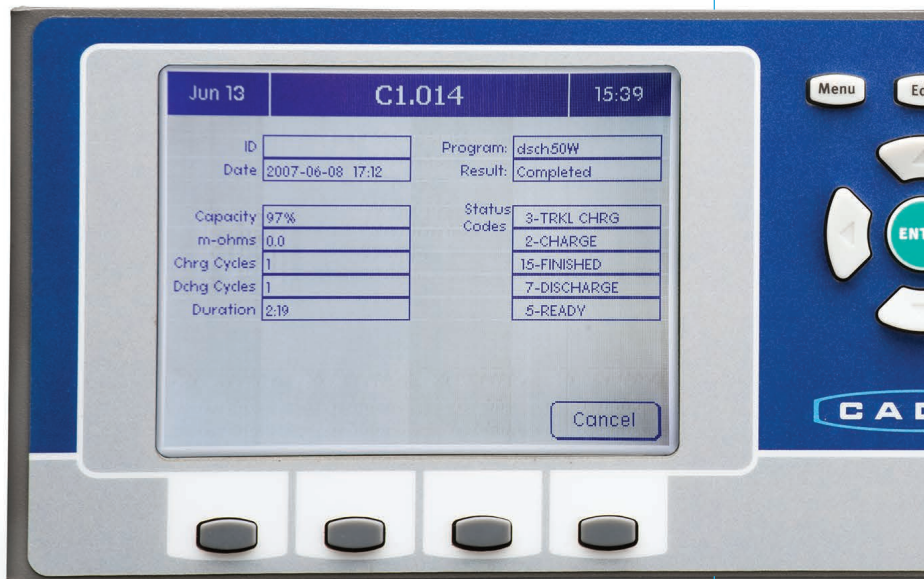
THE ULTIMATE
BATTERY LAB TOOL

Capture load signatures of power tools and laptops and then perform simulated battery runtime by replaying the stored data. Or add a thermal chamber, external load bank and other accessories.

CONNECT VIA
**ETHERNET
SERIAL
PORT**

BORN VERSATILE
YOUR LAB SWISS KNIFE

- Choose the right battery by simulating a device
- Characterize the battery thanks to Life Cycle Testing
- Monitor quality and performance with Custom Programming
- Maintain your batteries with built-in Service Programs

UP TO
36V,10A, 100W
PER PORT

CAPACITY RANGE
50mAh- 1,000Ah

Print   Fn   Alt   ESC

7 8 9
4 5 6
1 2 3
0 .

1 2
CHANNEL
3 4

Battery Port

Battery Port

I/O Port

I/O Port

Battery Port

Battery Port

I/O Port

I/O Port

DEX®   *C8000* Battery Analyzer

4
INDEPENDENT
CHANNELS

MOUNTING OPTIONS
DESK & RACK

THE SKY
IS THE LIMIT

When you acquire a C8000, you're getting one of the most advanced and flexible battery analyzers in the industry. Create your own lab system and transform your C8000 into the command center

POWERFUL SOFTWARE
PC-BATTERYLAB™

Cadex PC-BatteryLab™ provides a simple, yet powerful interface to control and monitor the C8000. With a PC, the control shifts from the analyzer's front panel to the PC.

Start programming by entering the battery parameters or choose a battery from the existing built-in database. PC-BatteryLab™ will display the test results using real-time graphics.

Learn more at **cadex.com/batterylab**

SERVICE PROGRAMS

Format, condition and restore batteries

AUTO
Exercises batteries and applies recondition if the user-set target capacity cannot be reached (nickel-based batteries)

CHARGE
Applies fast charge; terminates charge when the battery is full; applies trickle charge (depending on battery chemistry)

PRIME
Prepares batteries for field use by repeated cycling until maximum capacity is reached

EXTENDED PRIME
Applies 16-hour trickle charge prior to Prime. Prepares difficult to charge batteries

BOOST
Activates seemingly dead batteries

RAPID TESTS

Checks batteries without discharging

OHMTEST™
Measure battery resistance with DC pulses (based on IEC61436), 13 seconds

IMPEDANCE
Measures battery resistance with 1000Hz signal. (Channel 1 only)

ADVANCED PROGRAMS

Automated testing for specialty requirements

WAVEFORM TESTS
GSM, CDMA or customized tests

RUN TIME
Allows three different discharge levels, programmable in hours and minutes

LIFE CYCLE
Cycles battery until end-of-life

SELF-DISCHARGE
Measures self-discharge

DISCHARGE ONLY
For storage, test applications

CUSTOM PROGRAMS

 Via PC

If none of the built-in Programs are what you're looking for, you can create your own test routines for your specific requirements.

- 100 Programs — allows up to 100 user-defined programs

C8000
ANALYZER

The Cadex C8000 is intuitive to use and requires minimal training. Chemistry-specific programs provide safe operation for all major battery types.

Take advantage of a large selection of standard programs or create your own custom routine to meet your exact testing requirement.

Connectivity
I/O Capability

- 4 differential analog inputs: up to 50V
- 4 digital inputs: 0–5V
- 2 general purpose analog outputs: 0–5V
- SMBus Enabled: 5 possible termination signals

Range
Voltage: Nominal 1.2V – 36V Current:

- Up to 10A charge and discharge
- 20A with Dual Port Power Cables (DPPCs) to combine channels
- Up to 240A discharge with external digital load
- Battery Capacity: 50 mAh – 1000 Ah

Accuracy:

- Voltage = ±0.1%
- Current = ±0.25% full scale

Battery Chemistries
All standard battery types

- Lead Acid
- Ni-based: NiMH, NiCad
- Li-based: Li-ion, Li-Phosphate

Accessories

Cadex Load Capture Unit (LCU)
Part Number: 11-308-0011

Captures load signatures of up to 100A and digitizes the information for reply in the C8000.

External adapter unit

Power and auxiliary port cables

Dual power port cables (DPPC)

Third Party Accessories

High Power Digital Load

Thermal Chambers

Most Digital and Analog I/O devices

UP TO THE
HIGHEST STANDARD

AEROSPACE
Higher power available to test your aircraft batteries

INDUSTRIAL
Perform a full battery analysis for your tools, and End-of-Line quality control

MANUFACTURING
Ensure device consistency, cell and pack quality, device simulation and extreme testing

MILITARY
Deploy only performing batteries by doing regular analysis and conditioning

RESEARCH
Perform whatever test you wish with extreme program-mability, I/O ports to develop your own tools

UAV/DRONES
Analyze and condition your drone batteries to ensure maximum reliability in the air

American Communication Systems
Discover the Power of Communications ™
http://www.ameradio.com

CADEX

DON'T LET A BATTERY STOP YOU

C8000
Advanced Battery Analyzer
Powered by PC-BatteryLab™ Software

CADEX
DON'T LET A BATTERY STOP YOU

Part Number: 11-308-0000

- **Created For Advanced Users**: a multi-purpose tool that allows you to optimize batteries at every stage of product life.
- **The Ultimate Battery Lab Tool**: create your own lab system and transform your C8000 into the command center
- **Born Versatile**: choose, characterize, and maintain your batteries with simulation, Life Cycle Testing, and built-in and custom programs

ACCESSORIES

Included: PC-BatteryLab™ software, 1.8m (6') power port cables (4x), 1.8m (6') auxiliary data cables (4x), dual port power cable (DPPC), 3m (10') Ethernet cable, AC power cords (x3: N.America, Europe, UK), rack mount brackets.

Sold Separately:

Adapter Unit
For SnapLock™ Adapters
Part# 07-510-0000

Load Capture Unit (LCU)
Captures load signatures of up to 100A and digitizes the information for replay in the C8000.
Part# 11-308-0011

Third Party: Thermal chambers, high power digital load, and most digital and analog i/o devices.

PROGRAMS

SERVICE PROGRAMS:
Auto, Charge, Prime, Extended Prime, Boost

RAPID TESTS:
Ohmtest™, Impedance

ADVANCED PROGRAMS:
Waveform Tests, Run Time, Self-Discharge, Discharge Only, Life Cycle, CDMA, Load Capture (requires BatteryLab + LCU)

SMBus PROGRAMS:
Battery Info, Fuel Gauge Calibrate, SMB Charge, SMB Discharge

CUSTOM PROGRAMS:
Create programs for your specific needs. Maximum Steps = 100. Requires PC-BatteryLab™.

ELECTRICAL SPECIFICATIONS

- **Battery Chemistries**: all standard types: Li-based: Li-ion, Li-Phosphate; Lead Acid; Ni-based: NiMH, NiCd
- **Battery Capacity Range**: 50mAh to 1000Ah
- **Battery Voltage Range**: Nominal 1.2V-36V (max 45V total) supports serial connection of: Up to 10 Li-ion cells (3.6V/cell); Up to 18 Lead Acid cells (2.0V/cell); Up to 30 Nickel-based cells (1.2V/cell).
- **Maximum Charge Power**: 100W per channel, 400W total
- **Maximum Discharge Power**: 80W per channel, 320W total. 160W per channel pair using Dual Power Port cable. External Load may be used to increase discharge up to 2400W.
- **Maximum Charge/Discharge Current**: 30mA to 10A set in 1mA increments. 20A maximum discharge rate using Dual Power Port cable. External Load may be used to increase discharge up to 240A
- **Output Frequency**: Square 2kHz (500 microseconds)
- **Accuracy**: Voltage = 0.1%, Current = 0.25% full scale
- **Power Management**: Current automatically scaled down if power limits are exceeded. Message indicates scaled test.
- **Charge Methods**: Charge methods are dependent upon chemistry: *Li-ion & Lead Acid* = constant voltage with a current limit. *Nickel-based* = constant current with optional Reverse Load Charge method.
- **Discharge Methods**: Constant current / Constant power
- **Input Power**: 100-240 VAC, 50-60 Hz

PC-BATTERYLAB™

- **System Requirements**: PC with the following available: Windows XP O/S; Ethernet connection; 1.2 GHz processor; 512 MB RAM; 10 GB storage memory
- **# Test Systems**: Each BatteryLab license operates: Up to 8 C8000 test systems; Up to 32 individual batteries

BATTERY & DATA INTERFACES

- **Channels**: 4 Independent Channels each including: 1 Battery Port + 1 I/O Port.
- **Battery Ports (front panel)**: 4 Ports each including:
- Battery Positive (+); Battery Negative (-);
- Sense Positive (+); Sense Negative (-);
- Thermistor Input; Thermistor Ground.
- **Input/Output (I/O) Ports (front panel)**:
4x DB25 Type, each including:
- 4 Differential Analog Inputs: 0-5V, 0-10V, or 0-15V;
- 4 Digital Inputs: 0-5V;
- 2 General Purpose Analog Outputs: 0-5V;
- SMBus Enabled: 5 Possible Termination Signals.
- **Active Data Ports (back panel)**: Ethernet 10/100 MB for connection to PC; Designated Serial Port for External; Load Designated Serial Port for Environmental Chamber
- **Power Port Cable (Standard) - power**: 4 pcs. 1.8m (6') with alligator type clips
- **Auxiliary Cable (Standard) - data**: 4 pcs. 1.8m (6')
- **Dual Port Power Cable - power**: 1.8m (6'), connects to channels 1+2 or 3+4 to increase current capability from 10A to 20A
- **SnapLock Battery Adapter Unit**: 2-bay unit connects to C8000 standard cables supports SnapLock Battery Adapters (4-Wire type only)

DATA ACQUISITION

- **System Sample Rate**: 500 microseconds
- **Terminal Data (last 500 samples) Capture Rate**: 2-200 mS
- **Capture/Display Rate (non-termination)**: 1-60 S
- **Load Capture**: Minimum Sample Rate Increment = 500 microseconds; # of Samples = 10-500

HARDWARE SPECIFICATIONS

- **Dimensions**: 480mm x 380mm x 140mm (18.9" x 15.0" x 5.5")
- **Weight**: 15.5 kg (34 lb)
- **Mounting Options**: Desktop or 19" (483mm) 3U Rack-mount (brackets included)
- **Display**: 5.7" (145mm) QVGA 320x240 graphics with backlight
- **Recommended Operating Temperature**: 5 to 35ºC (40 to 95ºF)
- **Recommended Storage Temperature**: -20 to 70ºC (-4 to 160ºF)
- **Safety Certification**: CSA, UL, CE
- **Environmental Certification**: RoHS, WEEE
- **Security**: Password protection
- **Warranty**: *Standard*: 2 year limited warranty (materials & workmanship). *Extended (Optional)*: Additional 2 years (total 4).
- **Calibration**: Recommended factory calibration every 1 year. Contact Cadex for further information
- **Upgrades**: Firmware upgrades enabled by BatteryLab software

EXTERNAL TEST EQUIPMENT

- **Environmental Chambers**: Models supported: Thermotron 2800/3800/8800, Test Equity Watlow 4
- **External Digital Loads**: B&K Precision Programmable DC Electronic Loads 8500 Series models supported:
- 8510 (0.1V-120V/120A/600W);
- 8514 (0.1V-120V/240A/1200W);
- 8518 (0.1V-60V/240A/1200W);
- 8520 (0.1V-120V/120A/2400W)
- **Load Capture**: Cadex Load Capture Unit (LCU)

| ANALYZERS | CHARGERS | TESTERS | BATTERY PACKS | CUSTOM SOLUTIONS |