

ICS 43.120
CCS T 47



中华人民共和国国家标准
NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 31467-2023
Replaces GB/T 31467.1-2015 and GB/T 31467.2-2015

**Electrical Performance Test Methods for Lithium-Ion
Traction Battery Pack and System of Electric Vehicles**
电动汽车用锂离子动力电池包和系统电性能试验方法

(ISO 12405-4: 2018, Electrically propelled road vehicles-Test specification for lithium-ion traction battery packs and systems-Part 4: Performance testing, NEQ)

Issued on 2023-11-27

Implemented on 2023-11-27

Jointly Issued by
State Administration for Market Regulation of the People's Republic of China &
Standardization Administration of the People's Republic of China

CONTENTS

Foreword	I
1 Scope	1
2 Normative References	1
3 Terms and Definitions	1
4 Symbols and abbreviated terms	1
5 General Test Conditions	2
5.1 General Conditions	2
5.2 Requirements for Accuracy of Test Instruments	2
5.3 Data Record and Record Interval	3
5.4 Test Preparation	3
6 General Tests	4
6.1 Preconditioning Cycle	4
6.2 Standard cycle	4
6.3 Methods of Adjusting SOC to the Test Target Value (n %)	5
7 Basic Performance Tests	5
7.1 Appearance	5
7.2 Polarity	5
7.3 Mass and Overall Dimensions	5
7.4 Capacity and Energy	5
7.5 Power and Internal Resistance	8
7.6 No-load Capacity Loss	25
7.7 Capacity Loss at Storage	29
7.8 Starting Power at High/Low Temperature	30
7.9 Energy Round Trip Efficiency	32
7.10 Energy Density	36
7.11 Charging Performance	37
7.12 Discharging under Driving Cycles	38
Annex A (Informative) Typical Configurations of Battery Pack and System	40
A.1 Battery Pack	40
A.2 Battery System	40
Annex B (Informative) Test Items of Battery Pack and System	43

Electrical Performance Test Methods for Lithium-Ion Traction Battery Pack and System of Electric Vehicles

1 SCOPE

This document describes the test methods for electrical performance of lithium-ion traction battery pack and system of electric vehicles.

This document is applicable to the development and testing of lithium-ion traction battery pack and system of electric vehicles.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 19596 Terminology of Electric Vehicles

GB 38031 Electric Vehicles Traction Battery Safety Requirements

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions given in GB/T 19596 and GB 38031, as well as the following apply.

3.1 High energy application

Device characteristic or application characteristic of a battery pack or system, i.e., the ratio between maximum allowed continuous electric power output (W) and electric energy output at a 1C discharge rate ($W\cdot h$) at room temperature is lower than 10

Note: The high-energy battery is typically applied to battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV).

3.2 High power application

Device characteristic or application characteristic of a battery pack or system, i.e., the ratio between maximum allowed continuous electric power output (W) and electric energy output at a 1C discharge rate ($W\cdot h$) at room temperature is equal to or greater than 10

Note: The high-power battery is typically applied to hybrid electric vehicles (HEV).

3.3 Energy density

electric energy delivered per unit mass of battery pack or system on average

Note: Energy density is expressed in $W\cdot h/kg$.

3.4 Energy round trip efficiency

ratio between total discharge energy and total charge energy of a battery pack or system during test

Note: Total discharge energy and total charge energy are expressed in $W\cdot h$.

4 SYMBOLS AND ABBREVIATED TERMS

For the purpose of this document, the following symbols and abbreviated terms apply.

BCU: Battery Control Unit

FS: Full Scale

RT: Room Temperature

SOC: State-of-Charge

$I_{max}(T)$: Maximum allowed continuous discharge current at a specific test environment



ChinaAutoRegs

中国汽车标准译文库

The following pages are left blank intentionally.

- 现成译文，到款即发。
 - 下单前可任取样页验证译文质量。
 - 免费提供正规普通增值税数电发票。
 - 请联系手机/微信: [13306496964](tel:13306496964)/Email: standardtrans@foxmail.com 获取完整译文。
 - 本英文译本为纯人工专业精翻版本，保证语法术语准确率和专业度！
 - 专业源于专注|ChinaAutoRegs 始终专注于汽车标准翻译领域！
 - 「中国汽车标准译文库」已收录上千个现行汽车国家标准和行业标准的英文版译本，涵盖传统燃油车、新能源汽车和摩托车标准化体系！独家打造千万级汽车专业术语库和记忆库。
-
- ◆ The English Translation of this document (GB, GB/T, QC/T, CNCA, CQC, CAV, etc.) is readily available, and delivered immediately upon payment.
 - ◆ You may request for sample pages to your preference before placing an order.
 - ◆ Please contact standardtrans@foxmail.com for the complete PDF version in English.
 - ◆ Almost all of Chinese automotive/automobile standards, regulations and norms in effect have been included in our well-established database, providing one-stop, up-to-date, efficient and professional solution.
-