

Second edition  
2023-07

---

---

## **Electric road vehicles — Reference energy consumption and range — Test procedures for passenger cars and light commercial vehicles**

*Véhicules routiers électriques — Consommation d'énergie de référence et autonomie de référence — Modes opératoires d'essai pour voitures particulières et véhicules utilitaires légers*



Reference number  
ISO 8714:2023(E)

© ISO 2023



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of ISO 8714:2023. Click [here](#) to purchase the full version from the ANSI store.

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Abbreviated terms</b> .....	<b>2</b>
<b>5 Test sequence</b> .....	<b>2</b>
5.1 General.....	2
5.2 Selection of ADT cycle.....	2
5.3 Deviations in speed trace for vehicles with less maximum speed than the maximum speed of the selected ADT cycle.....	2
5.4 Selection of the number of ADT cycles for the shortened test.....	3
5.5 Speed determination and procedure for running a CSS.....	3
<b>6 Tolerances</b> .....	<b>3</b>
<b>7 End-of-test criteria</b> .....	<b>4</b>
<b>8 Measurement of range and energy consumption</b> .....	<b>5</b>
8.1 General.....	5
8.2 Parameters, units and accuracy of measurements.....	5
8.3 Test conditions.....	6
8.3.1 Vehicle conditions.....	6
8.3.2 Ambient temperature conditions.....	6
8.4 Test procedure.....	6
8.4.1 General.....	6
8.4.2 Charging of the RESS.....	7
8.4.3 Application of the designated test sequence and calculation for results.....	8
8.4.4 Test procedure overviews.....	11
<b>9 Presentation of results</b> .....	<b>11</b>
<b>Annex A (informative) Test results of reference energy consumption and range of test vehicle</b> .....	<b>12</b>
<b>Annex B (normative) Determination of CSS speed</b> .....	<b>14</b>
<b>Bibliography</b> .....	<b>18</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 37, *Electrically propelled vehicles*.

This second edition cancels and replaces the first edition (ISO 8714:2002), which has been technically revised.

The main changes are as follows:

- addition of shortened test;
- deletion of the former Annexes A, B and C (regional tests) because their information is obsolete.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).