
**Vacuum technology — Standard
methods for measuring vacuum-pump
performance —**

**Part 4:
Turbomolecular vacuum pumps**

*Technique du vide — Méthodes normalisées pour mesurer les
performances des pompes à vide —*

Partie 4: Pompes à vide turbomoléculaires



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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	3
5 Test methods	4
5.1 Test gas	4
5.2 Volume flow rate measurement (pumping speed)	4
5.2.1 General	4
5.2.2 Size of backing pump	4
5.2.3 Volume flow rate (pumping speed) measurement by the throughput method	4
5.2.4 Volume flow rate (pumping speed) measurement by the orifice method	5
5.3 Maximum throughput measurement	5
5.3.1 Measurement method	5
5.3.2 Test procedure	5
5.4 Critical backing pressure measurement	5
5.5 Measurement of compression ratio	5
5.6 Measurement of base pressure	6
5.7 Vibration measurement	6
5.7.1 General	6
5.7.2 Test apparatus	6
5.7.3 Test procedure	6
6 Test report	6
6.1 Volume flow rate measurement	7
6.2 Compression ratio measurement	7
6.3 Maximum throughput measurement	7
6.4 Critical backing pressure measurement	7
6.5 Base pressure measurement	8
6.6 Vibrational measurement	8
Annex A (informative) Derivation of Formulae (4) and (5)	9
Bibliography	10

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.

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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.

This document was prepared by Technical Committee ISO/TC 112, *Vacuum technology*.

A list of all parts in the ISO 21360 series can be found on the ISO website.

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.

Introduction

This document specifies methods for measuring the performance data of turbomolecular vacuum pumps. This document complements ISO 21360-1, which provides a general description of the measurement of performance data of vacuum pumps.

The methods described here are well known from existing national and international standards. The aim in drafting this document was to collect together suitable methods for the measurement of performance data of turbomolecular vacuum pumps. This document takes precedence in the event of a conflict with ISO 21360-1.

Vacuum technology — Standard methods for measuring vacuum-pump performance —

Part 4: Turbomolecular vacuum pumps

1 Scope

This document, in conjunction with ISO 21360-1, specifies methods for the measurement of performance characteristics of turbomolecular vacuum pumps. It is applicable to all sizes and all types of turbomolecular vacuum pumps, including those

- with mechanical or magnetic bearings;
- with or without an additional drag stage(s) or other pumping stages on the shaft;
- with one or more inlet ports.

Since turbomolecular vacuum pumps are backed by primary pumps, their performance cannot be completely defined by the volume flow rate curve. Also, the driving device and the backing pressure of the turbomolecular vacuum pump is important to the performance.

The following completes the performance characteristics:

- information about throughputs and backing pressure of the turbomolecular vacuum pump;
- the compression ratio curve (compression ratio vs backing pressure of turbomolecular vacuum pump).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21360-1:2012, *Vacuum technology — Standard methods for measuring vacuum-pump performance — Part 1: General description*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21360-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>