
**Laboratorijske lokalne odsesovalne naprave - Členkaste odsesovalne roke - 2. del:
Zagon in preskušanje na kraju samem**

Laboratory local exhaust devices - Articulated extraction arms - Part 2: Commissioning
and on-site testing

Lokale Absaugeinrichtungen im Labor - Gelenkabsaugarm - Teil 2: Inbetriebnahme und
Vor-Ort Prüfverfahren

Dispositifs d'aspiration locale de laboratoire - Bras articulés d'extraction - Partie 2 : Mise
en service et essais sur site

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English Version

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arms - Part 2: Commissioning and on-site testing**

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Ort-Prüfverfahren

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European foreword

This document (EN 16589-2:2026) has been prepared by Technical Committee CEN/TC 332 “Laboratory equipment”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2027, and conflicting national standards shall be withdrawn at the latest by February 2027.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Introduction

Articulated extraction arms (AEA) are local exhaust devices consisting of capture devices that can be constructed in a variety of geometric shapes (hoods, nozzles, flat screens etc.) which are connected to or mounted on extraction arms or arms with flexible joints. They are used for a variety of different applications in the laboratory where contaminants are encountered. The design of articulated extract arms for laboratories can differ for different applications.

The ability of capture devices to capture contaminants is subject to a number of factors. These factors are, extract volume flow, capture velocity, capture hood design, manoeuvrability, position in relation to emission source, user activity, air speed etc. The capture ability is rapidly decreased with increased distance to the emission source. Higher air velocity in the opening of the device improves the capture ability but commonly results in increased noise level and pressure drop of the capture device and extract arm.

Good information to the user on how to use the device as well as information about the limitations of the device are essential for safety and health in the laboratories.

Articulated extract arms are useful for very small emission sources or when the emission source is too large to reasonably be enclosed but has distinct emission points where the pollution might occur like e.g. a high-performance liquid chromatography (HPLC).

Type test protocols detailed in EN 16589-1 cannot be replicated on site due to the large variances in room conditions and AEA positioning.

This document therefore provides methods for Commissioning and Testing of AEAs that will provide practical detail on the function and basic flow characteristics of air at an installed AEA.

The suitability of an AEA to provide effective ventilation at or near a source of contamination is the responsibility of the customer and will be subject of a risk assessment. Good practice dictates that full consideration is given to both local regulatory guidance and hygiene practice.

1 Scope

This document is applicable to test methods designed to be used at the place of installation of the articulated extraction arms (AEA), usually a laboratory and for various laboratory applications that require local extraction. They are used for commissioning after installation, for maintenance and for qualification purposes. For certain customer requirements additional or modified test methods can be necessary.

This document includes product functional performance referring to product standard detailed in EN 16589-1. Occupational health and safety assessments methods are not included in this document.

This document does not consider performance requirements for the extract air system associated with the AEA installation and therefore extract system performance is not part of the scope.

This document does not confirm or establish a capture zone of an AEA capture device only the functional extract capacity and mechanical functions of the AEA.

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.

EN 16211, *Ventilation for buildings - Measurement of air flow rates on site – Methods*

EN 16589-1:2022, *Laboratory local exhaust devices - Part 1: General requirements and type test methods for articulated extraction arms*

EN ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements (ISO 5167-1)*

EN ISO 11204, *Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16589-1 and the following apply.

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

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

3.1

capture device

equipment designed to capture or collect air pollutants near their source connected directly to a duct or mounted on an extraction arm

EXAMPLE hood, flat screen, suction nozzle

[SOURCE: EN 16589-1:2022, 3.1, modified]

3.2

extraction arm

fixed, flexible or articulated ducting connecting the capture device with the main extract air duct