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Household and similar electrical air cleaning appliances – Methods for measuring the performance
Part 3-1: Method for assessing the reduction rate of key bioaerosols by portable air cleaners using an aerobiology test chamber

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms and definitions 7
4 Principle 9
5 Apparatus and materials 9
6 Preparation of the stock cultures and working cultures of the test microbes 12
7 Procedures 12
8 Calculation and expression of results 16
9 Test report 20
Annex A (informative) Test chamber 21
Annex B (informative) Example calculations for machine decay 23
Annex C (informative) Alternate microbes for testing 24
Annex D (informative) Slit sampler operation 25
Annex E (informative) Suggested test report using this method 26
Bibliography 28

Figure 1 – SKC biosampler 11
Figure 2 – Process table 16
Figure 3 – Alternate process table 16
Figure A.1 – Example – Main chamber with a glove box for external operation 21
Figure A.2 – See-through of example chamber 22
Figure B.1 − Graphical representation for decay curves 23

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Part 3-1: Method for assessing the reduction rate of key bioaerosols by portable air cleaners using an aerobiology test chamber

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IEC PAS 63086-3-1 has been processed by subcommittee 59N: Electrical air cleaners for household and similar purposes, of IEC technical committee 59: Performance of household and similar electrical appliances, in co-operation with ISO technical committee 142: Cleaning equipment for air and other gases.

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59N/28/DPAS	59N/33/RVDPAS

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned may transform it into an International Standard.

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Words in **bold** type in the text are defined in Clause 3.

A list of all parts in the IEC 63086 series, published under the general title *Household and similar electrical air cleaning appliances*, can be found on the IEC website.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This Publicly Available Specification (PAS) contains test procedures for measuring the reduction by the air cleaner of micro-organisms suspended in the air in the specified test chamber. It also prescribes a method for measuring the operating power and stand-by power of the air cleaner. The test procedures may be applied to any brand or model of household and similar electrical air cleaners within the stated confines of the standard limits of measurability for measuring performance.

The annexes to this PAS are included for informative purposes only unless the annexes are noted as normative.

Warning – The tests given in this document shall be performed by expert staff trained to handle microorganism-related techniques and in properly equipped laboratories under the supervision of a skilled microbiologist. Some of the test micro-organisms might be facultative pathogens for humans, animals and plants and require a laboratory of an appropriate bio-safety level. National and international safety procedures for working with infectious biomaterials shall be followed to prevent any contamination of laboratory staff, apparatus, working place or environment in compliance with national standards or regulations. This document does not purport to address all of the safety aspects, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and ensure compliance with any national, regional or international regulatory conditions.

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HOUSEHOLD AND SIMILAR ELECTRICAL AIR CLEANING APPLIANCES – METHODS FOR MEASURING THE PERFORMANCE –

Part 3-1: Method for assessing the reduction rate of key bioaerosols by portable air cleaners using an aerobiology test chamber

1 Scope

This part of IEC 63086 specifies a method to evaluate the capability of portable household air cleaners to reduce the concentration and viability of key experimentally generated bioaerosols in a specified chamber.

Indoor air free of harmful microbes is important to the health of occupants. This is particularly relevant with regard to increased time spent indoors.

Air cleaners are used to reduce the concentrations of microorganisms in indoor air.

The efficiency of such air cleaners to reduce airborne microorganisms can be assessed in test chambers at controlled air temperature and relative air humidity.

The test is applicable to portable air cleaners commonly used in single room spaces such as those based on mechanical filtration, ultraviolet (UV), ionizers, photocatalytic oxidation, and ozone generators in-unit technology.

If the air cleaner does not claim to have the function of reducing microorganisms, this document may not be applicable unless it is being used to simply evaluate the performance.

This document deals with measurement procedures regarding the reduction of the microbial contamination related to electrical air cleaner appliances for household and similar use.

This document does not apply to appliances intended to be used in medical, veterinary, or pharmaceutical applications.

This document does not address sanitization, disinfection, or sterilization measures.

This document does not support, by itself any health-related claims or conclusions about prevention or treatment of a disease or health improvement.

NOTE 1 IEC 63086-3-1 is created for household and similar electrical air cleaners and is not intended to conflict with or replace standards for commercial or industrial consumers.

NOTE 2 In this document, we do not suggest performance test methods that measure the by-products of either the interaction between microbes or between the air cleaner and the microbes tested in this document. The formation of by-products is an important subject. The subject of measuring by-products is under study, and AHAM will address this in future documents.

NOTE 3 This document does not apply to appliances intended for use in medical treatment locations, such as surgical suites, laboratories, medical treatment rooms, etc.

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.

IEC 63086-1:2020, *Household and similar electrical air cleaning appliances − Methods for measuring the performance − Part 1: General requirements*

ASTM E741-11:2017, *Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution*