

INTERNATIONAL STANDARD

**Methods of measurement and declaration of the detection range of detectors –
Passive infrared detectors for major and minor motion detection**

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
INTRODUCTION to Amendment 1	6
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	7
4 General requirements on tests.....	9
5 Test environment.....	10
6 Test equipment.....	11
6.1 Test person for major motion detection	11
6.2 Test dummies for major motion detection when using automated test systems	11
6.3 Test arm for minor motion detection	16
7 Test procedure	18
7.1 General.....	18
7.2 Pre-conditioning of the detector	19
7.3 Major motion detection.....	20
7.3.1 Detection via walking test	20
7.3.2 Detection via an automated test system.....	22
7.4 Minor motion detection.....	23
7.5 Determining the detection boundary.....	25
7.5.1 Determining the detection boundary for during the human walking test (tangential movement +10 5° from the detector)	25
7.5.2 Determining the detection boundary for automated test (tangential movement ±5° from the detector).....	27
8 Presentation of test results	28
8.1 General.....	28
8.2 Major motion radial and tangential area	29
8.3 Minor motion area (D)	30
8.5 Large major motion tangential areas and detection boundary	32
8.4 Creation of 3D data model for detection display of major motion	32
Bibliography.....	35
Figure 1 – Radial motion.....	8
Figure 2 – Tangential motion	8
Figure 3 – Example of a major motion detector detection area	9
Figure 4 – Test dummy perspective view	12
Figure 5 – Full size test dummy for testing motion detection	13
Figure 6 – Scaled 1:2 test dummy for testing motion detection.....	14
Figure 7 – Scaled 1:5 test dummy for testing motion detection.....	15
Figure 8 – Test arm for testing minor motion detection.....	17
Figure 9 – Example of a test grid for tangential walking and minor motion.....	20
Figure 10 – Test grid for radial walking test	21
Figure 11 – Test setup for tangential movements (top view).....	22
Figure 12 – Test setup for radial movements (side view).....	23

Figure 13 – Test setup for minor motion detection (view from above)	24
Figure 14 – Walking test pattern for determining the detection boundary.....	27
Figure 15 – Symbol used when the major motion coverage pattern has been determined using a human subject.....	29
Figure 16 – Symbol used when the major motion coverage pattern has been determined by an automated test system	29
Figure 17 – Diagram for major motion and detection boundary with sample results for 90°	30
Figure 18 – Example of measurement result of a minor motion measurement	31
Figure 19 – Display of minor motion measurement.....	31
Figure 20 – Example of a 3D model	34
 Table 1 – Relation between the declared mounting height, the mounting height of the device under test (DUT) and test dummy used	16
Table 2 – Tangential moving distance related –5° to +5° to the distance from the detector	28

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**METHODS OF MEASUREMENT AND DECLARATION
OF THE DETECTION RANGE OF DETECTORS –****Passive infrared detectors for major and minor motion detection**

FOREWORD

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60730-1 edition 1.1 contains the first edition (2020-06) [documents 23B/1319/FDIS and 23B/1320/RVD] and its amendment 1 (2025-05) [documents 23B/1491/CDV and 23B/1509A/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 63180 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
23B/1319/FDIS	23B/1320/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

Passive infrared detectors are an important element in an energy efficient building. They allow for switching on and off and for controlling loads in order to achieve an optimum degree of comfort and energy efficiency.

The detectors covered in this document are motion detectors using passive infrared (PIR) technology in electronic control devices and appliance switches whether stand-alone (direct control of one or more applications) or as part of home and building electronic systems or building automation control systems (HBES/BACS) or similar. In the case of HBES/BACS, the resulting action depends on the programming of the relevant HBES/BACS.

The purpose of these detectors is to detect the movement of persons.

Detectors linked to a system may also be assigned other tasks: state reporting, power consumption, event reporting, scenarios, etc. These additional functions are not part of this document.

In order to achieve the energy efficiency targets and comfort, the detectors should operate accurately. In addition, the detection area will need to be provided with sufficient accuracy in order to allow integrators to choose the correct detectors for the needed action.

This document provides a methodology and test procedures for a manufacturer to declare and verify the detection performance of these devices with respect to the detection area.

INTRODUCTION to Amendment 1

This amendment includes the following significant technical changes with respect to the base edition:

- a) improvement of general tolerances of the test environment and test equipment;
- b) definition of the rotating point of the test arm;
- c) addition of the recommended mounting heights for performing the tests;
- d) addition of acceleration and deceleration speeds for scaled dummies;
- e) modification of the pre-conditioning test at minimum and maximum declared ambient temperature with new performance criteria;
- f) addition of an alternative test procedure for large tangential major motion detection areas.

METHODS OF MEASUREMENT AND DECLARATION OF THE DETECTION RANGE OF DETECTORS –

Passive infrared detectors for major and minor motion detection

1 Scope

This document provides a methodology and test procedures to be able to declare and verify the detection area for motion detectors using passive infrared technology in electronic control devices and appliance switches, whether stand-alone (direct control of one or more applications) or as part of home and building electronic systems or building automation control systems (HBES/BACS) or similar.

It also provides a uniform way to present the test results.

The purpose of these detectors is to detect the major and minor movements of persons.

2 Normative references

There are no normative references in this document.

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
INTRODUCTION to Amendment 1	6
1 Scope.....	7
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3 Terms and definitions	7
4 General requirements on tests.....	9
5 Test environment.....	10
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7.1 General.....	16
7.2 Pre-conditioning of the detector	18
7.3 Major motion detection.....	18
7.3.1 Detection via walking test	18
7.3.2 Detection via an automated test system.....	20
7.4 Minor motion detection.....	22
7.5 Determining the detection boundary.....	24
7.5.1 Determining the detection boundary during the human walking test (tangential movement + 5° from the detector)	24
7.5.2 Determining the detection boundary for automated test (tangential movement ±5° from the detector).....	25
8 Presentation of test results	26
8.1 General.....	26
8.2 Major motion radial and tangential area	27
8.3 Minor motion area (D)	28
8.5 Large major motion tangential areas and detection boundary.....	30
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Bibliography.....	31
 Figure 1 – Radial motion.....	8
Figure 2 – Tangential motion	8
Figure 3 – Example of detection area.....	9
Figure 4 – Test dummy perspective view	11
Figure 5 – Full size test dummy for testing motion detection	12
Figure 6 – Scaled 1:2 test dummy for testing motion detection.....	13
Figure 7 – Scaled 1:5 test dummy for testing motion detection.....	14
Figure 8 – Test arm for testing minor motion detection.....	16
Figure 9 – Example of a test grid for tangential walking and minor motion.....	19
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Figure 11 – Test setup for tangential movements (top view).....	21
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Figure 17 – Diagram for major motion and detection boundary with sample results for 90°	28
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Table 1 – Relation between the declared mounting height, the mounting height of the device under test (DUT) and test dummy used	15
Table 2 – Tangential moving distance related -5° to $+5^{\circ}$ to the distance from the detector	26

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