ISO 12239:2010-12 (E)

Smoke alarms using scattered light, transmitted light or ionization

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 General requirements 4
4.1 Compliance 4
4.2 Alarm condition 4
4.3 Mains-on visual indicator 5
4.4 Fault condition visual indicator -- Optional function 5
4.5 Smoke alarm signals 5
4.6 Test facility 5
4.7 Means of calibration 5
4.8 User-replaceable components 5
4.9 Primary power source 5
4.10 Secondary power source 6
4.11 Battery connections 6
4.12 User-replaceable battery 7
4.13 Electrical safety 7
4.14 Connection of external ancillary devices 7
4.15 Terminals for external conductors 7
4.16 Protection against the ingress of foreign bodies 7
4.17 Interconnectable smoke alarms -- Optional function 8
4.18 Alarm-silence facility -- Optional function 8
4.19 Radioactive material in type B smoke alarms 8
4.20 Smoke alarms with voice -- Optional function 8
4.21 Marking 9
4.22 Data 10
4.23 Additional requirements for software controlled smoke alarms 11

5 Tests 12
5.1 General 12
5.2 Directional dependence 16
5.3 Initial sensitivity 16
5.4 Repeatability 16
5.5 Air movement 17
5.6 Dazzling 17
5.7 Dry heat (operational) 18
5.8 Cold (operational) 19
5.9 Damp heat (operational) 20
5.10 Sulfur dioxide (SO2) corrosion 21
5.11 Impact (operational) 22
5.12 Vibration, sinusoidal (operational) 23
5.13 Vibration, sinusoidal (endurance) 24
5.14 Extended temperature (operational) -- Optional function 25
5.15 Electromagnetic compatibility (EMC) immunity tests (operational) 25
5.16 Fire sensitivity 26

5.17 Battery-low condition 27
5.18 85 dBA Sound output -- Optional function 28
5.19 70 dBA Sound output -- Optional function 29
5.20 Sounder durability 30
5.21 Interconnectable smoke alarms 31
5.22 Alarm-silence facility 32
5.23 Variation in supply voltage 32
5.24 Polarity reversal 33
5.25 Secondary power source 34
5.26 Electrical safety 34
5.27 Sequence timing for smoke alarms with voice 35

6 Test report 36

Annex A (normative) Smoke tunnel for response-threshold value measurement 37

Annex B (normative) Test aerosol for response threshold value measurements 38

Annex C (normative) Smoke-measuring instruments 39

Annex D (normative) Apparatus for dazzling test 43

Annex E (normative) Apparatus for impact test 44

Annex F (normative) Fire test room 46

Annex G (normative) Smouldering pyrolysis wood fire (TF2) 48

Annex H (normative) Glowing smouldering cotton fire (TF3) 51

Annex I (normative) Flaming plastics (polyurethane) fire (TF4) 53

Annex J (normative) Flaming liquid (n-heptane) fire (TF5) 55

Annex K (informative) Information concerning the construction of the smoke tunnel 56

Annex L (informative) Information concerning the construction of the measuring ionization chamber 58