

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 (SO ₂) 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