

ISO 7240-29:2024-01 (E)

Fire detection and alarm systems - Part 29: Video fire detectors

Contents		Page
Foreword		vii
Introduction		ix
1 Scope		1
2 Normative references		1
3 Terms, definitions and abbreviated terms		2
3.1 Terms and definitions.....		2
3.2 Abbreviated terms.....		2
4 Requirements		3
4.1 Conformity.....		3
4.2 Fire phenomena.....		3
4.3 Immunity to unwanted alarms.....		3
4.4 Detection range.....		3
4.5 Camera lenses.....		3
4.6 Camera lens monitoring.....		3
4.7 Individual alarm indication.....		4
4.8 Connection of ancillary devices.....		4
4.9 Monitoring of detachable cameras.....		4
4.10 Connection of more than one VFD to the FDCIE transmission path.....		4
4.11 Manufacturer's adjustments.....		4
4.12 On-site adjustment of response behaviour.....		4
4.13 Protection against the ingress of foreign bodies.....		4
4.14 Ambient light operating level.....		5
4.15 Operating temperature.....		5
4.16 Software.....		5
4.16.1 General.....		5
4.16.2 Software design.....		5
4.16.3 Storage of programs and data.....		6
5 Tests		6
5.1 General.....		6
5.1.1 Atmospheric conditions for tests.....		6
5.1.2 Ambient light level for tests.....		6
5.1.3 Mounting arrangements.....		6
5.1.4 Operating conditions for tests.....		6
5.1.5 Tolerances.....		7
5.1.6 Provision for tests.....		7
5.1.7 Measurement of response threshold value.....		7
5.1.8 Test schedule.....		8
5.1.9 Test report.....		9
5.2 Repeatability.....		10
5.2.1 Object of test.....		10
5.2.2 Test procedure.....		10
5.2.3 Requirements.....		10
5.3 Reproducibility.....		10
5.3.1 Object of test.....		10
5.3.2 Test procedure.....		10
5.3.3 Requirements.....		10
5.4 Detector lens monitoring.....		10
5.4.1 Object of test.....		10

5.4.2	Test procedure	10
5.4.3	Requirements	11
5.5	Detector lens blocking	11
5.5.1	Object of test	11
5.5.2	Test procedure	11
5.5.3	Requirements	11
5.6	Detector lens focus fault	12
5.6.1	Object of test	12
5.6.2	Test procedure	12
5.6.3	Requirements	12
5.7	Fire sensitivity	12
5.7.1	Object of test	12
5.7.2	Test procedure	12
5.7.3	Requirements	14
5.8	Ambient light (minimum)	14
5.8.1	Object of test	14
5.8.2	Test procedure	15
5.8.3	Requirements	15
5.9	Ambient light (maximum)	15
5.9.1	Object of test	15
5.9.2	Test procedure	15
5.9.3	Requirements	15
5.10	Non-uniform illumination (Type A and AB only)	15
5.10.1	Object of test	15
5.10.2	Test procedure	16
5.10.3	Requirements	16
5.11	Light source immunity	16
5.11.1	Object of test	16
5.11.2	Test procedure	16
5.11.3	Fluorescent light	16
5.11.4	Metal halide light	17
5.11.5	Halogen light	17
5.11.6	LED beacon	17
5.11.7	Rotating beacon — Optional	17
5.11.8	Xenon beacon — Optional	18
5.11.9	High-pressure sodium light — Optional	18
5.11.10	Low-pressure sodium light — Optional	18
5.11.11	Incandescent light — Optional	18
5.11.12	HID xenon light — Optional	19
5.11.13	Laser light — Optional	19
5.11.14	Requirements	19
5.12	Arc welding — Optional	19
5.12.1	Object of test	19
5.12.2	Test apparatus	19
5.12.3	Test procedure	19
5.12.4	Requirements	20
5.13	Variation in supply parameters	20
5.13.1	Object of test	20
5.13.2	Test procedure	20
5.13.3	Final measurements	20
5.13.4	Requirements	20
5.14	Dry heat (operational)	20
5.14.1	Object of test	20
5.14.2	Test procedure	20
5.14.3	Requirements	21
5.15	Dry heat (operational) — Optional	21
5.15.1	Object of test	21
5.15.2	Test procedure	21
5.15.3	Requirements	22
5.16	Cold (operational)	22
5.16.1	Object of test	22
5.16.2	Test procedure	22
5.16.3	Requirements	23
5.17	Cold (operational) — Optional	23

5.17.1	Object of test	23
5.17.2	Test procedure	23
5.17.3	Requirements	24
5.18	Cold controllers (operational)	24
5.18.1	Object of test	24
5.18.2	Test procedure	24
5.18.3	Requirements	25
5.19	Damp heat, steady-state (operational)	25
5.19.1	Object of test	25
5.19.2	Test procedure	25
5.19.3	Requirements	25
5.20	Damp heat, steady-state (endurance)	26
5.20.1	Object of test	26
5.20.2	Test procedure	26
5.20.3	Requirements	26
5.21	Protection against ingress of foreign bodies	26
5.21.1	Object of test	26
5.21.2	Enclosure of the VFD	26
5.21.3	Test procedure	27
5.21.4	Requirements	27
5.22	Sulfur dioxide (SO ₂) corrosion (endurance)	27
5.22.1	Object of test	27
5.22.2	Test procedure	28
5.22.3	Requirements	28
5.23	Shock (operational)	28
5.23.1	Object of test	28
5.23.2	Test procedure	28
5.23.3	Requirements	29
5.24	Impact (operational) for cameras	29
5.24.1	Object of test	29
5.24.2	Test procedure	29
5.24.3	Requirements	30
5.25	Impact (operational) for controllers	30
5.25.1	Object of test	30
5.25.2	Test procedure	30
5.26	Vibration, sinusoidal (endurance)	31
5.26.1	Object of test	31
5.26.2	Test procedure	31
5.26.3	Requirements	32
5.27	Vibration, sinusoidal controller (endurance)	32
5.27.1	Object of test	32
5.27.2	Test procedure	32
5.27.3	Requirements	33
5.28	Electromagnetic compatibility (EMC) immunity (operational)	33
5.28.1	Object of test	33
5.28.2	Test procedure	33
5.28.3	Requirements	34
6	Marking	34
7	Data	35
7.1	General	35
7.2	Software documentation	35
7.3	Hardware documentation	36
7.4	Installation and user documentation	36
Annex A	(normative) Fire test room	38
Annex B	(normative) Smouldering (pyrolysis) wood fire (TF2)	40
Annex C	(normative) Glowing smouldering cotton fire (TF3)	43

Annex D (normative) Open plastics (polyurethane) fire (TF4)	46
Annex E (normative) Flaming liquid (<i>n</i>-heptane) fire (TF5)	48
Annex F (normative) Low temperature black smoke (decalin) liquid fire (TF8)	50
Annex G (normative) Long range smouldering (pyrolysis) wood fire (TF2c)	52
Annex H (normative) Long range glowing smouldering cotton fire (TF3c)	54
Annex I (normative) Long range open plastics (polyurethane) fire (TF4a)	56
Annex J (normative) Long range flaming liquid (<i>n</i>-heptane) fire (TF5c)	57
Annex K (normative) Long range low temperature black smoke (decalin) liquid fire (TF8a)	58
Annex L (normative) Open cellulosic (wood) fire (TF1)	59
Annex M (normative) Liquid (methylated spirit) fire (TF6)	62
Annex N (normative) Long range open cellulosic (wood) fire (TF1a)	64
Annex O (normative) Long range liquid (methylated spirit) fire (TF6a)	66
Annex P (normative) Non-uniform illumination test configuration	67
Annex Q (normative) Smoke-measuring instruments	69
Annex R (normative) Simulation of dirt particles on a lens	74
Bibliography	85