

ISO/TS 7240-29:2017-06 (E)

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

Contents	Page
Foreword	vii
Introduction	viii
1 Scope	1
2 Normative references	1
3 Terms and definitions, and abbreviated terms	2
3.1 Definitions	2
3.2 Abbreviated terms	2
4 Requirements	3
4.1 Compliance	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	4
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	5
4.14 Ambient light operating level	5
4.15 Operating temperature	5
4.16 Software	6
4.16.1 General	6
4.16.2 Software design	6
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	7
5.1.4 Operating conditions for tests	7
5.1.5 Tolerances	7
5.1.6 Provision for tests	7
5.1.7 Measurement of response threshold value	8
5.1.8 Test schedule	9
5.1.9 Test report	10
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	11

5.4	Detector lens monitoring	11
5.4.1	Object of test	11
5.4.2	Test procedure	11
5.4.3	Requirements	11
5.5	Detector lens blocking	12
5.5.1	Object of test	12
5.5.2	Test procedure	12
5.5.3	Requirements	12
5.6	Detector lens focus fault -- Optional	12
5.6.1	Object of test	12
5.6.2	Test procedure	12
5.6.3	Requirements	13
5.7	Fire sensitivity	13
5.7.1	Object of test	13
5.7.2	Test procedure	13
5.7.3	Requirements	15
5.8	Ambient light (indoor)	15
5.8.1	Object of test	16
5.8.2	Test procedure	16
5.8.3	Requirements	16
5.9	Ambient light (outdoor)	16
5.9.1	Object of test	16
5.9.2	Test procedure	16
5.9.3	Requirements	17
5.10	Non uniform illumination	17
5.10.1	Object of test	17
5.10.2	Test procedure	17
5.10.3	Requirements	17
5.11	Light source immunity	17
5.11.1	Object of test	17
5.11.2	Test procedure	17
5.11.3	Fluorescent light	18
5.11.4	Metal halide light	18
5.11.5	Halogen light	18
5.11.6	LED Beacon	19
5.11.7	Rotating beacon -- Optional	19
5.11.8	Xenon beacon -- Optional	19
5.11.9	High pressure sodium light -- Optional	19
5.11.10	Low pressure sodium light -- Optional	20
5.11.11	Incandescent light -- Optional	20
5.11.12	HID xenon light -- Optional	20
5.11.13	Laser light -- Optional	21
5.12	Arc welding -- Optional	21
5.12.1	Object of test	21
5.12.2	Test apparatus	21
5.12.3	Test procedure	21
5.12.4	Requirements	22
5.13	Variation in supply parameters	22
5.13.1	Object of test	22
5.13.2	Test procedure	22
5.13.3	Final measurements	22
5.13.4	Requirements	22
5.14	Dry heat (operational)	22
5.14.1	Object of test	22
5.14.2	Test procedure	22
5.14.3	Requirements	23
5.15	Dry heat (operational) -- Optional	23
5.15.1	Object of test	23
5.15.2	Test procedure	23
5.15.3	Requirements	24
5.16	Cold (operational)	24

5.16.1	Object of test	24
5.16.2	Test procedure	24
5.16.3	Requirements	25
5.17	Cold (operational) -- Optional	25
5.17.1	Object of test	25
5.17.2	Test procedure	25
5.17.3	Requirements	26
5.18	Damp heat, steady-state (operational)	26
5.18.1	Object of test	26
5.18.2	Test procedure	26
5.18.3	Requirements	27
5.19	Damp heat, steady-state (endurance)	27
5.19.1	Object of test	27
5.19.2	Test procedure	27
5.19.3	Requirements	28
5.20	Protection against ingress of foreign bodies	28
5.20.1	Object of test	28
5.20.2	Enclosure of the VFD	28
5.20.3	Test procedure	28
5.20.4	Requirements	29
5.21	Sulfur dioxide (SO ₂) corrosion (endurance)	29
5.21.1	Object of test	29
5.21.2	Test procedure	30
5.21.3	Requirements	30
5.22	Shock (operational)	30
5.22.1	Object of test	30
5.22.2	Test procedure	30
5.22.3	Requirements	31
5.23	Impact cameras (operational)	31
5.23.1	Object of test	31
5.23.2	Test procedure	31
5.23.3	Requirements	32
5.24	Impact controllers (operational)	32
5.24.1	Object of test	32
5.24.2	Test procedure	33
5.25	Vibration, sinusoidal, (operational)	33
5.25.1	Object of test	33
5.25.2	Test procedure	34
5.25.3	Requirements	35
5.26	Vibration, sinusoidal (endurance)	35
5.26.1	Object of test	35
5.26.2	Test procedure	35
5.26.3	Requirements	36
5.27	Electromagnetic compatibility (EMC) immunity (operational)	36
5.27.1	Object of test	36
5.27.2	Test procedure	36
5.27.3	Requirements	37
5.28	Test report	37
6	Marking	37
7	Data	38
7.1	General	38
7.2	Software documentation	38
7.3	Hardware documentation	39
7.4	Installation and user documentation	39
	Annex A (normative) Fire test room	41
	Annex B (normative) Smouldering (pyrolysis) wood fire (TF2)	43
	Annex C (normative) Glowing smouldering cotton fire (TF3)	46

Annex D (normative) Open plastics (polyurethane) fire (TF4)	49
Annex E (normative) Flaming liquid (n-heptane) fire (TF5)	51
Annex F (normative) Low temperature black smoke (decalin) liquid fire (TF8)	53
Annex G (normative) Long range smouldering (pyrolysis) wood fire (TF2c)	55
Annex H (normative) Long range glowing smouldering cotton fire (TF3c)	57
Annex I (normative) Long range open plastics (polyurethane) fire (TF4a)	59
Annex J (normative) Long range flaming liquid (n-heptane) fire (TF5c)	60
Annex K (normative) Long range low temperature black smoke (decalin) liquid fire (TF8a)	61
Annex L (normative) Open cellulosic (wood) fire (TF1)	62
Annex M (normative) Liquid (methylated spirit) fire (TF6)	65
Annex N (normative) Long range open cellulosic (wood) fire (TF1a)	67
Annex O (normative) Long range liquid (methylated spirit) fire (TF6a)	69
Annex P (normative) Non-uniform illumination test configuration	70
Annex Q (normative) Apparatus for impact test	72
Annex R (normative) Smoke-measuring instruments	74
Annex S (normative) Simulation of dirt particles on a lens	80
Bibliography	90