

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