

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

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

---

<b>Contents</b>		<b>Page</b>
Foreword .....		vii
Introduction .....		viii
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions, and abbreviated terms .....</b>	<b>2</b>
<b>3.1</b>	<b>Definitions .....</b>	<b>2</b>
<b>3.2</b>	<b>Abbreviated terms .....</b>	<b>2</b>
<b>4</b>	<b>Requirements .....</b>	<b>3</b>
<b>4.1</b>	<b>Compliance .....</b>	<b>3</b>
<b>4.2</b>	<b>Fire phenomena .....</b>	<b>3</b>
<b>4.3</b>	<b>Immunity to unwanted alarms .....</b>	<b>3</b>
<b>4.4</b>	<b>Detection range .....</b>	<b>3</b>
<b>4.5</b>	<b>Camera lenses .....</b>	<b>3</b>
<b>4.6</b>	<b>Camera lens monitoring .....</b>	<b>4</b>
<b>4.7</b>	<b>Individual alarm indication .....</b>	<b>4</b>
<b>4.8</b>	<b>Connection of ancillary devices .....</b>	<b>4</b>
<b>4.9</b>	<b>Monitoring of detachable cameras .....</b>	<b>4</b>
<b>4.10</b>	<b>Connection of more than one VFD to the FDCIE transmission path .....</b>	<b>4</b>
<b>4.11</b>	<b>Manufacturer's adjustments .....</b>	<b>4</b>
<b>4.12</b>	<b>On-site adjustment of response behaviour .....</b>	<b>4</b>
<b>4.13</b>	<b>Protection against the ingress of foreign bodies .....</b>	<b>5</b>
<b>4.14</b>	<b>Ambient light operating level .....</b>	<b>5</b>
<b>4.15</b>	<b>Operating temperature .....</b>	<b>5</b>
<b>4.16</b>	<b>Software .....</b>	<b>6</b>
<b>4.16.1</b>	<b>General .....</b>	<b>6</b>
<b>4.16.2</b>	<b>Software design .....</b>	<b>6</b>
<b>4.16.3</b>	<b>Storage of programs and data .....</b>	<b>6</b>
<b>5</b>	<b>Tests .....</b>	<b>6</b>
<b>5.1</b>	<b>General .....</b>	<b>6</b>
<b>5.1.1</b>	<b>Atmospheric conditions for tests .....</b>	<b>6</b>
<b>5.1.2</b>	<b>Ambient light level for tests .....</b>	<b>6</b>
<b>5.1.3</b>	<b>Mounting arrangements .....</b>	<b>7</b>
<b>5.1.4</b>	<b>Operating conditions for tests .....</b>	<b>7</b>
<b>5.1.5</b>	<b>Tolerances .....</b>	<b>7</b>
<b>5.1.6</b>	<b>Provision for tests .....</b>	<b>7</b>
<b>5.1.7</b>	<b>Measurement of response threshold value .....</b>	<b>8</b>
<b>5.1.8</b>	<b>Test schedule .....</b>	<b>9</b>
<b>5.1.9</b>	<b>Test report .....</b>	<b>10</b>
<b>5.2</b>	<b>Repeatability .....</b>	<b>10</b>
<b>5.2.1</b>	<b>Object of test .....</b>	<b>10</b>
<b>5.2.2</b>	<b>Test procedure .....</b>	<b>10</b>
<b>5.2.3</b>	<b>Requirements .....</b>	<b>10</b>
<b>5.3</b>	<b>Reproducibility .....</b>	<b>10</b>
<b>5.3.1</b>	<b>Object of test .....</b>	<b>10</b>
<b>5.3.2</b>	<b>Test procedure .....</b>	<b>10</b>
<b>5.3.3</b>	<b>Requirements .....</b>	<b>11</b>

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 <sub>2</sub> ) 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

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