

STANDARD INFORMATION

Standard: UL 268 / ULC 529

Standard ID:

Smoke Detectors for Fire Alarm Systems [UL 268:2023 Ed.8+R:30Oct2025]

Smoke Detectors for Fire Alarm Systems [CAN/ULC 529:2023 Ed.5+R:30Oct2025]

Previous Standard ID:

Smoke Detectors for Fire Alarm Systems [UL 268:2023 Ed.8+R:28Apr2025]

Smoke Detectors for Fire Alarm Systems [CAN/ULC 529:2023 Ed.5+R:28Apr2025]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **October 30, 2029**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- Field Testing with Integral Self-Test
- Control Unit Interface – Normal Operation

Specific details of new/revised requirements are found in table below

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



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CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i>
30	Info	Normal Operation Test
30.1	Info	General
		A detector or accessory that employs one or more non-fire alarm features shall operate as follows:
		a) The smoke detector/fire alarm signal shall take precedence or be clearly recognizable over any other signal even when the non-fire alarm signal is initiated first.
		b) Distinctive signals shall be obtained between the smoke detector/fire alarm and other non-fire alarm functions. The use of a common sounding appliance for the fire alarm and non-fire alarm function(s) shall be used only when distinctive signals are obtained. When an audible trouble signal is additionally provided it shall be distinctive from all alarm signals. The trouble signal may be common to all functions employed.
30.1.8		c) Any fault condition of limited life non-fire alarm components shall not interfere with the operation and supervision of the smoke detector.
		<u>d) Any circuitry incorporating functional interfacing with a control unit for purposes such as supervision, point addressing, multiplexing, fault isolation, etc., shall also comply with the applicable functional requirements of standards such as:</u>
		<u>1) In Canada only:</u>
		i) <u>ULC-S545; and</u>
		ii) <u>ULC 527.</u>
		<u>2) In the United States only:</u>
		i) <u>UL 985; and</u>
		ii) <u>UL 864.</u>
77	Info	Field Service Tests
		<i>New section added;</i>
77.4		Smoke entry and functional test as Integral self-test – with or without aerosol stimuli (for the smoke sensor)
		The manufacturer shall:
77.4.1		a) Provide a detailed description of the test method and its supervision;
		b) Describe the method employed to reduce smoke entry;
		c) Provide details regarding the reduction in smoke entry and how this will demonstrate the level of blockage will have on the simulated performance, as defined in 77.4.3 (a)(1) – (3). Examples: no blockage, performance is not



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		compromised; 50 % blockage may result in a trouble signal or may not compromise performance; 70 % blockage will compromise performance and result in a trouble signal; and d) Provide all equipment required to confirm the operation of the test method in accordance with 77.4.2 and 77.4.3.
77.4.2		The number of smoke entry and function field tests – with or without aerosol stimuli, shall be at least 50 for each sample under test. A minimum of 3 samples of each condition specified in 77.4.3 (a)(1), (a)(2), and (a)(3) shall be provided. Each sample for each test condition shall include one sample calibrated to the maximum sensitivity, one calibrated to the minimum sensitivity, and one calibrated to the nominal sensitivity. The samples shall be energized with rated voltage and subject to the smoke entry and functional test at a rate of not more than one field test per 30 minutes or a rate defined by the manufacturer.
		The smoke entry and functional field test - with or without aerosol stimuli, shall be conducted by inducing the smoke sensing chamber blockage and/or fault as specified in 77.4.3(a) and 77.4.3(b). A single application of the functional field test as specified in 77.1.1 shall be conducted following each of the condition levels specified in 77.4.3(a) and 77.4.3(b).
77.4.3		a) Blockage of the smoke entry openings shall be induced to represent approximate levels of blockage, as specified by the manufacturer. Unless additional blockage levels are specified by the manufacturer, blockage of the smoke entry shall represent the following levels: 1) 0 % blockage; 2) If applicable (as specified by the manufacturer), sufficient blockage such that at least one point between 50 % and 100 % will result in a trouble signal; and 3) 100 % blocked smoke entry. b) Functional test for the smoke sensor shall be evaluated by simulating sensitivity loss based on the technology limitations as defined by the manufacturer and identified within this standard such as, Reduction in Light Output Test, Section 38. The reduced sensitivity shall include at least two condition levels: 1) Nominal production sensitivity; and 2) Sufficient sensitivity reduction such that the alarm is at the least sensitive end of its production range prior to producing a trouble signal. c) A minimum of 3 samples shall be supplied for 77.4.3 (a)(1), (a)(2) and (a)(3) a minimum of 3 samples shall be supplied for 77.4.3 (b)(1) and (b)(2). The minimum number of samples may be increased to align with the additional types of blockage and/or to represent approximate levels of blockage specified in 77.4.3(a) and sensitivity degradation conditions specified in 77.4.3(b).



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		The following list of acceptance criteria shall be applied to 77.4.3:
77.4.4		a) Energization of the trouble signal is not permissible in case 77.4.3(a)(1) and 77.4.3(b)(1); b) Energization of the trouble signal is required in case 77.4.3(a)(2); and c) Energization of the trouble signal is required in case 77.4.3(a)(3).
77.4.5		The integral self-test method shall be supervised. Failures preventing the operation of the test method specified in 77.4 shall generate a trouble signal.