

Before testing:

Prior to testing *any* spot-type smoke detector, always follow NFPA 72 guidelines for detector placement, location, and spacing. NFPA 72, 1999 edition includes the following guidelines:

2-3.5.1 In spaces served by air-handling systems, detectors shall not be located where airflow prevents operation of the detectors.

A-2-3.5.1 Detectors should not be located in a direct airflow nor closer than 3 ft (1m) from an air supply diffuser or return air opening. Supply or return sources larger than those commonly found in residential and small commercial establishments can require greater clearance to smoke detectors. Similarly, smoke detectors should be located farther away from high velocity air supplies.

Follow recommended testing procedures:

System Sensor does not endorse the use of canned smoke, as certain aerosols may leave an oily residue, which over time, may attract dust or dirt, making the detector overly sensitive and prone to nuisance alarms.

However, System Sensor recognizes that canned smoke is a long-standing industry practice, and has designed the i³ detectors' to alarm when tested with canned smoke, provided that both NFPA 72's detector placement guidelines and the canned smoke manufacturer's instructions are followed.

Only use canned smoke that is UL listed, and follow the instructions provided by the canned smoke manufacturer. For example, the instructions provided on Home Safeguard's canned smoke detector tester™, model number 25 S, state:

“USE: From a distance of 2 to 4 ft. (.6 – 1.2m) aim spray for 1-2 seconds at the vents or side of the detector. Alarm will sound within 1-10 seconds if the detector functions properly, unless the detector has a built-in delay circuit. Detectors with delay circuits should be sprayed 1 or 2 additional times to activate the alarm.”

Understanding the i³ series' delay circuit:

The i³ series is equipped with a delay circuit, in the form of smoothing algorithms, intended to reduce the likelihood of nuisance alarms. In a standby condition, i³ series detectors sample the chamber for the presence of smoke every 10 seconds ± 1.5 seconds. When the first sample of smoke is detected, the sampling frequency increases to every 5 seconds. After three consecutive samples of smoke inside the chamber, the i³ detector will alarm.

Testing the i³ series' with canned smoke:

Factoring NFPA 72's detector location and placement guidelines, the nature of the i³ series' delay circuit and the canned smoke manufacturer's instructions, the following procedure is intended to simplify testing i³ series detectors with canned smoke.

Holding the canned smoke at the manufacturer's recommended location and distance, wait until the i³ detector's green LED blinks. After the green LED blinks, count 3 to 4 seconds and then spray the canned smoke. When the green LED blinks again, approximately 1 to 2 seconds later, stop spraying. Repeat step (b) 2 more times, as necessary.