



# CA416 Optical Smoke Detector

## Product Datasheet CAST Compatible



Illustration shows a CA416 CAST smoke detector mounted on a CA408 base. The smoke detector has a grey colour coded ring.

### Product Description

The CA416 CAST optical smoke detector offers medium optical fire sensitivity. The detector is compatible with C-TEC's XFP and ZFP range of 'CAST' protocol analogue addressable fire panels and is fully compliant with EN 54-7 and EN 54-17.

The detector must be fitted to either a CA408 CAST detector base (which has an integrated locking mechanism to prevent tampering), or a CAST Base Mount device (Part Nos. CA431A/W, CA432A/W, CA456A/W, CA459A/W, CA460A/W). Refer to CA408 Document No. DFU0002408 for detector wiring and fitting details.

Part Number	Description
CA416	CAST Optical Smoke Detector
CA408	CAST Detector Base

### Key Features

- Third-party certified to EN 54-7 & EN 54-17
- Compatible with C-TEC's XFP and ZFP range of 'CAST' protocol fire panels
- Medium sensitivity setting of 0.16dB/m\*
- 22-40 Vdc operating voltage
- Onboard short-circuit loop isolator
- Two ultra-bright red LED indicating strips
- Manufactured from white polycarbonate
- Simple 'click and twist' design and easy-fit base ensures reduced installation time
- Compatible with C-TEC's CA408 CAST base and CAST Base Mount devices
- Programmable heat and multisensor variants are also available (see separate datasheets for details)

\* Detector sensitivity is set up via the panel's programming tools

### Operation/Application

Optical detectors use an infrared light source and a photodiode to detect smoke. In the absence of smoke, light passes in front of the photodiode in a straight line. When smoke enters the optical chamber across the path of the infrared beam, light is scattered by particles of smoke in all directions, some of which falls on the photodiode thus triggering the alarm.

Optical detectors are typically used in escape routes, living areas, bedrooms and enclosed spaces to give an early indication of fire. They are particularly effective at detecting slow burning fires (such as those caused by overheated electrical wiring or smouldering materials) which tend to generate larger particles of visible smoke.

### Technical Specification

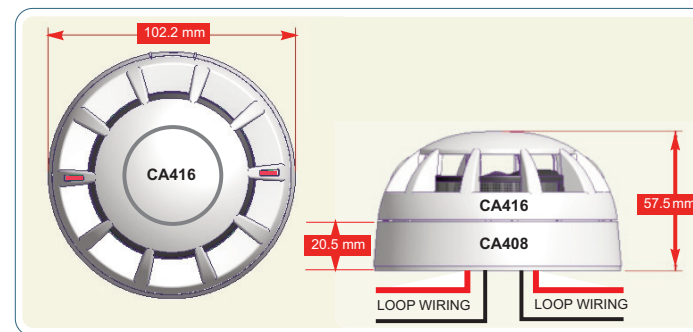
Part Number:	CA416
Description:	Optical Smoke Detector
Certifications:	EN54-7:2018, EN54-17:2005 The approval certificate can be viewed at <a href="http://www.c-tec.com">www.c-tec.com</a>
LPCB Certificate No.:	176k/01
CPR Certificate No.:	2831-CPR-F2269
UKCA Certificate No.:	0832-UKCA-CPR-F0795
DoP:	DoP0000044
Comms Protocol:	CAST (C-TEC)
Compatible Panels:	XFP or ZFP (CAST versions)
Compatible Bases:	CA408 CAST detector base and CAST Base Mount devices (Part Nos. CA431A/W, CA432A/W, CA456A/W, CA459A/W, CA460A/W)
Optical Trigger:	0.16 dB/m
Sampling Frequency:	Once per second
Operating Voltage:	22 to 40 Vdc
Quiescent Current:	370 µA at 40 Vdc
Alarm Current:	5 mA (LEDs illuminated)

LED Indicators:	Two red LED indicator strips offering 360° visibility
Wiring & Connections:	Via CA408 CAST base (see Document No. DFU0002408)
Detector Materials:	Robust white polycarbonate outer casing rated to UL94 V-2 with nylon internal parts
Dimensions (detector only):	102.2 mm diameter; 37 mm deep.
Dimensions (detector & base):	102.2 mm diameter; 57.5 mm deep.
Weight:	Detector 99 g; CA408 Base 55 g.
Atmospheric Pressure:	Insensitive to atmospheric pressure
Operating Temp.:	-10°C to +55°C
Humidity:	0% to 95% relative humidity

### EN 54-17 SC-Isolator Specification (Controllable Isolator)

Maximum Loop Voltage (V max):	40 Vdc
Nominal Loop Voltage (V nom):	40 Vdc
Minimum Loop Voltage (V min):	22 Vdc
Maximum Current Device Isolates, switches from closed to open (Iso max):	55 mA
Minimum Current Device Isolates, switches from closed to open (Iso min):	15 mA
Maximum Rated Continuous Current with switch closed (Ic max):	1 A
Maximum Rated Switching Current under short circuit conditions (Is max):	1.6 A
Maximum Leakage Current with switch open (Il max):	20 µA
Maximum Series Impedance with switch closed (Zc max):	100 mohms

### Dimensions (CA416 Head & CA408 Base)



Manufacturer: Comptonics Limited (C-TEC), Challenge Way, Martland Park, Wigan, Lancashire WN5 0LD. [www.c-tec.com](http://www.c-tec.com)  
E&OE. No responsibility can be accepted by the manufacturer or distributors of these devices for any misinterpretation of this instruction, or for the compliance of the system as a whole. The manufacturers policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice.