# CDX Range of Detectors and Bases

## Technology Guide

NEW

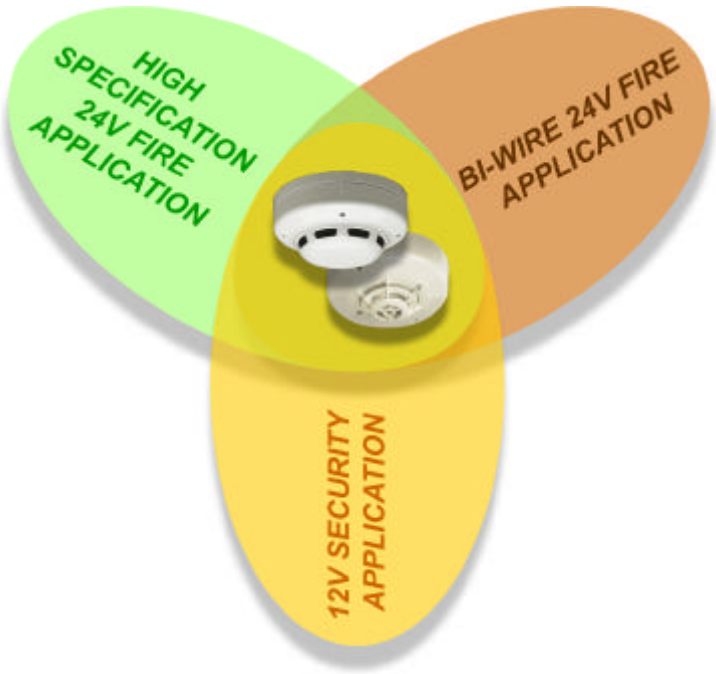
## Introduction

The CDX Conventional Range of Smoke and Heat Detectors are the most innovative and advanced product ranges available. The SLR-E3 Photoelectric Detector incorporates Hochiki's unique 'Flat Response Technology', which removes the need for Ionisation Smoke Detectors, removing End of Life cost and protecting the environment from radioactive element disposal.

This new range can be utilised across both fire detection systems **AND** security systems satisfying **ALL** your conventional detection needs in one simple easy-to-install range, the benefits include:

**Quick Installation**
**Disposable Chambers**
**Anti-Tamper Locking Mechanism**
**Easy-fit Bases**
**Twin Alarm LEDs**

This new range has minimised the number of detectors and bases required to fulfil the requirements of even the most demanding applications, reducing the stock holding required and ensuring that the installer has the correct detector or base available.




## Versatility

High specification combined with the ability to work on 2-Wire systems and Security Systems make this Conventional Range the No.1 choice for installers, system designers and specifiers.

## Reliability

All Hochiki products are backed by a three year warranty, Third party approved to European Standards (EN54) and ISO14001 Environmental Approval from LPCB, which makes this range suitable for all high reliability fire detection requirements.

# Detectors

## *Key Benefits*

- Wide voltage range 9.5 - 30V for use on fire detection **AND** security systems
- Third terminal for remote indicator output
- Electronics-free mounting base
- Twin fire LED's allow 360° viewing
- Environmentally friendly - Ionisation detection phased out

### SLR-E3 Photoelectric Smoke Detector

- LPCB Approved to EN54-7
- Removable, Flat Response chamber

### DCD-AE3 and DCD-CE3 Rate of Rise Heat Detectors

- 60° (Classification A1) or 90° (Classification C) rate of rise temperature detection
- LPCB Approved to EN54-5

### DFJ-AE3 and DFJ-CE3 Fixed Temperature Heat Detectors

- 60° (Classification A1) or 90° (Classification C) fixed temperature detection
- LPCB Approved to EN54-5

## High Specification 24V Fire Application

- Flat Response Technology enabling the detector to be equally sensitive to a much wider range of combustible materials.
- Removable Chamber for simple maintenance and/or replacement
- Quality and reliability backed by our 3 year warranty
- Schottky Diode ensures safe head removal without compromising system integrity

## 12V Security Application

- Same High Performance range of detectors
- Ultra wide operating voltage range, will operate on 12V security systems
- Simple Relay Base

## 2-Wire 24V Fire Application

- Same High Performance range of detectors
- Sounders and Call Points on the same wiring as detectors
- Specialised base uniquely designed for this type of application (YBO-R/6PA)
- Simple installation and wiring method
- Compatible with 2-Wire Fire Alarm Control Panels from Firesense, Haes, Kentec and Protector.


## Which New Conventional Products do I use?

Use the following chart to compare the existing CDX range detectors and bases with the new CDX Range:

| CDX RANGE | | COMMENTS |
|---|---|---|
| EXISTING | NEW! | |
| SLR-E | SLR-E3 | As per existing SLR-E but with additional features as described above. |
| SIJ-E | SLR-E3 | Flat Response Technology negates the use of the Ionisation Smoke Detection method. |
| DFJ-60E | DFJ-AE3 | 60° fixed temperature Heat Detector, denoted by the "A", which stands for Class A1 and Class A1S in the new EN54 Classifications. |
| DFJ-90E | DFJ-CE3 | 90° fixed temperature Heat Detector, denoted by the "C", which stands for Class C and Class CS in the new EN54 Classifications. |
| DCD-1E | DCD-AE3 | 60° combined rate of rise and fixed temperature Heat Detector, denoted by the "A", which stands for Class A1 and Class A1R in the new EN54 Classifications. |
| DCD-2E | DCD-AE3 | *(As above)* |
| DCD-R1E | DCD-CE3 | 90° combined rate of rise and fixed temperature Heat Detector, denoted by the "C", which stands for Class C and Class CR in the new EN54 Classifications. |
| YBN-R/4 | YBN-R/6 | Electronics-free standard Base |
| YBO-R/5 | YBN-R/6 | Electronics-free standard Base |
| YBN-R/4SK | YBN-R/6SK | Electronics-free Base with Schottky Diode |
| YBO-R/5SK | YBN-R/6SK | Electronics-free Base with Schottky Diode |
| YBO-R/5PA | YBO-R/6PA | 2-Wire Base |
| N/A | YBO-R/6R | Relay Base (latching) |
| N/A | YBO-R/6RN | Relay Base (non-latching) |
| N/A | YBO-R/6RS | Conventional Relay Base (latching and featuring an in-line Schottky Diode) |

# Flat Response Technology

## Overview

Typically Photoelectric smoke detectors have been more sensitive to smoke emitted by smouldering fires and less sensitive to smoke emitted from flaming fires. Generally if the sensitivity to the flaming fire is improved, the sensitivity to the smouldering fire would become very high, significantly increasing the possibility of unwanted alarms.

To produce a stable smoke detector with the minimum of unwanted alarms the sensitivity to smoke produced in smouldering fires should be reduced rather than increased. To overcome this problem Hochiki undertook a major research project to examine the key parameters of light scattering principals.

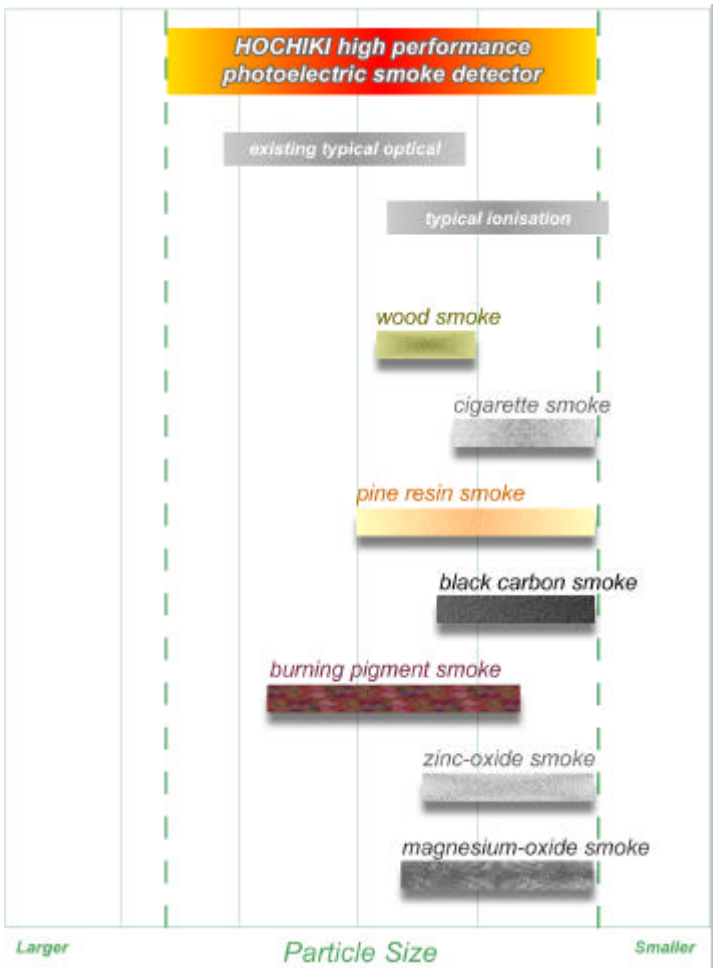



fig 1

## Hochiki's Solution

Hochiki's research found that the angle of internal optics within the Photoelectric smoke chamber could minimise the differences between the smoke particles produced by flaming and smouldering fires. By honing this angle Hochiki developed the ' Flat response chamber' in the Optical Smoke detector that gave very similar results to that of an Ionisation smoke detector. This technique has removed the requirement for additional thermal elements adding cost and complexity to the product and additional products within the range.

This innovative design has been used both in Hochiki's conventional detector (SLR-E3) and analogue sensor (ALG-E) and this change has allowed these Photoelectric smoke detectors to be exceed **all** the EN54 - part 9 sensitivity tests that are called for within the EN54 part 7:2000 standard for smoke detectors.

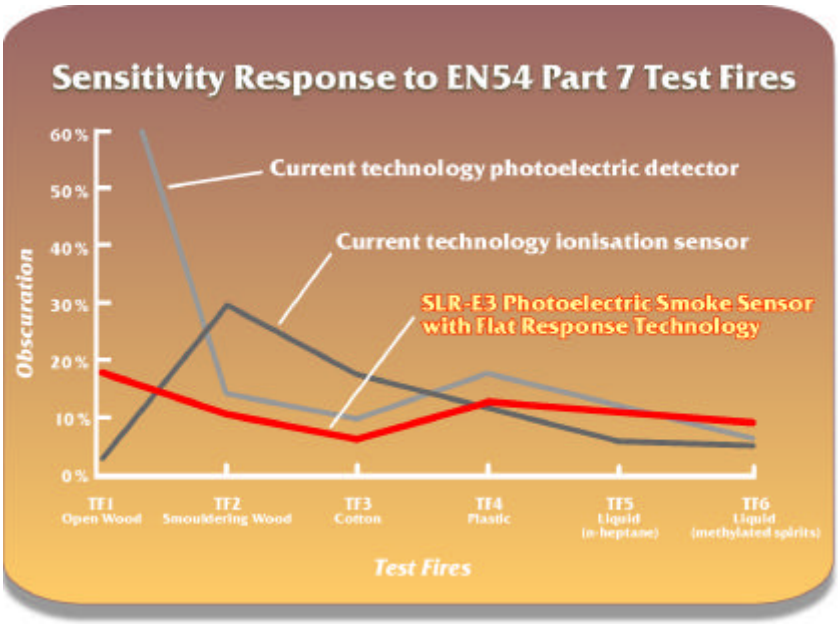
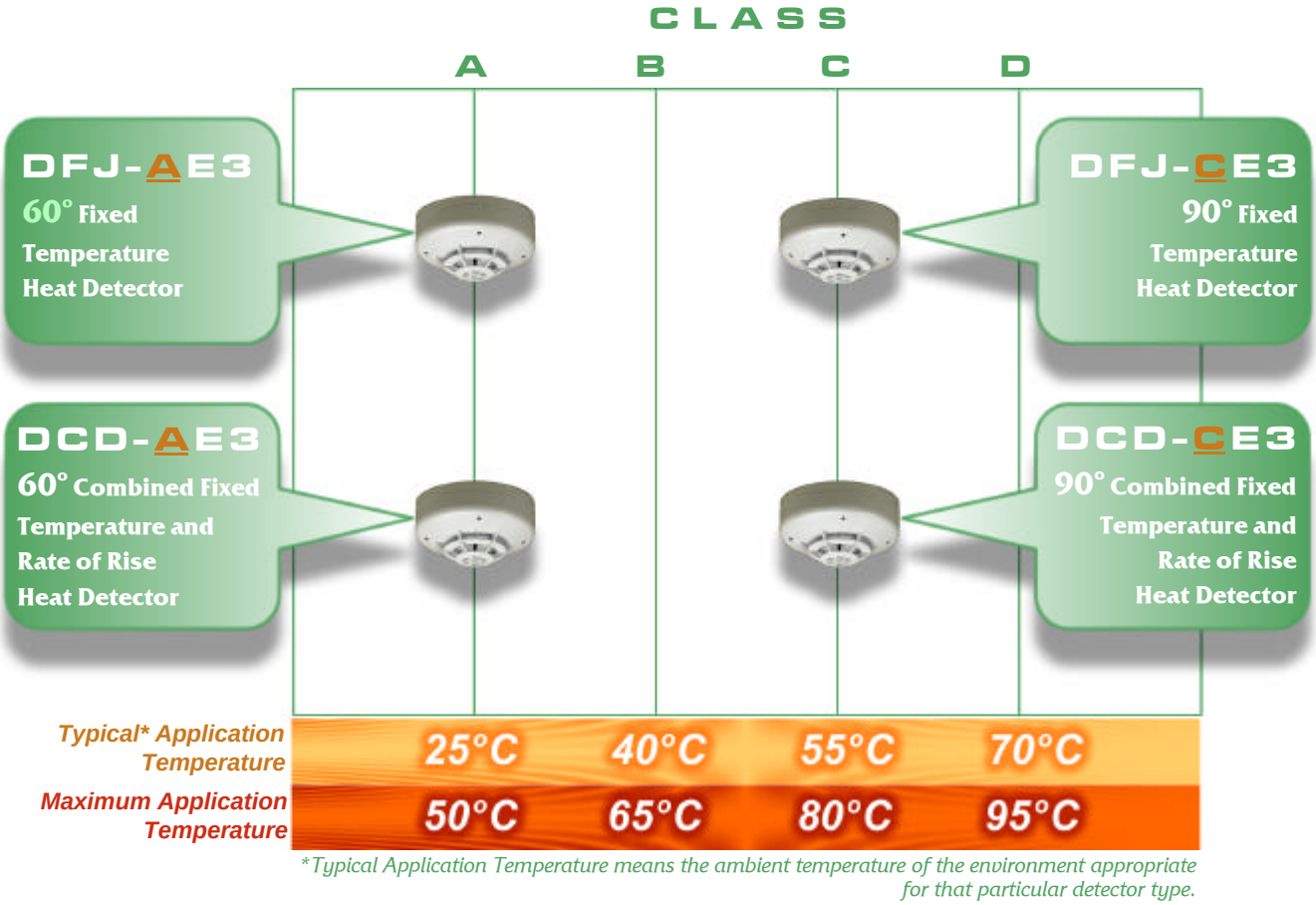



fig 2

The illustration above (fig 1) shows the effect of this in a more practical form, showing the causes of smoke in terms of particle sizes and the ability of Hochiki's Photoelectric smoke chamber to detect the widest range of particles. It can be seen that the performance of Hochiki's Photoelectric Smoke detector exceeds the combination of both the typical optical and ionisation smoke detectors.

The 'Flat Response' graph (fig 2) shows the response to the EN54 test fires and the sensitivity of the Photoelectric smoke detector against a typical ionisation smoke detector.

## EN54 Heat Classifications



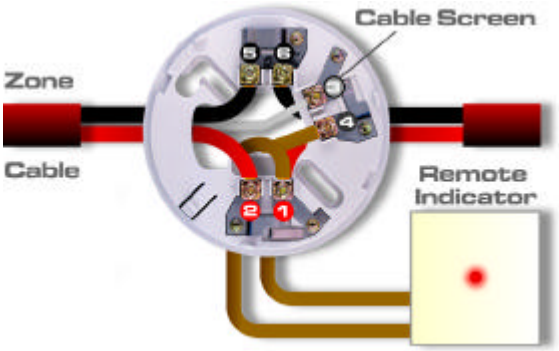

*Typical Application Temperature means the ambient temperature of the environment appropriate for that particular detector type.

## Bases and Wiring

### YBN-R/6 Standard Conventional Base

- Easy-fit - fast installation
- Simple locking mechanism
- Low Profile, only 8mm
- Rugged design
- Electronics free
- Integral remote indicator output
- Quick connections via square cable clamps
- Accepts 2.5mm² cables
- Bayonet slot, low insertion force for detectors

The standard Conventional base (YBN-R/6) should be wired as shown below. The remote indicator output is taken from terminals 1 and 4 (if required).




### Base Variations

#### YBN-R/6SK

As per the standard base (YBN-R/6) but including an in-line Schottky Diode.

#### YBO-R/6PA

For use with compatible 2-Wire systems.

#### YBO-R/6R

A latching Relay version of the standard base (YBN-R/6).

#### YBO-R/6RN

A non-latching Relay version of the standard base (YBN-R/6).

#### YBO-R/6RS

A latching Relay version of the standard base (YBN-R/6) but including an in-line Schottky Diode.

LPCB Quality System Certificate No. 164 Assessed to ISO9001

LPCB Environmental Management System Certificate No. EMS 286 Assessed to ISO 14001 : 1996

HOCHIKI
World Class Leaders in Fire Detection since 1918

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