

A photograph of a grand, ornate interior room. The ceiling is white with intricate, carved moldings. Several large, multi-tiered chandeliers with brass frames and multiple glass shades hang from the ceiling. The walls are covered in patterned wallpaper. In the center of the room, there is a large, ornate tiled stove (kachelofen) with a colorful, patterned facade. To the right, there are large, dark wood cabinets or wardrobes with arched doors and decorative carvings. The overall atmosphere is one of historical elegance and grandeur.

SIEMENS

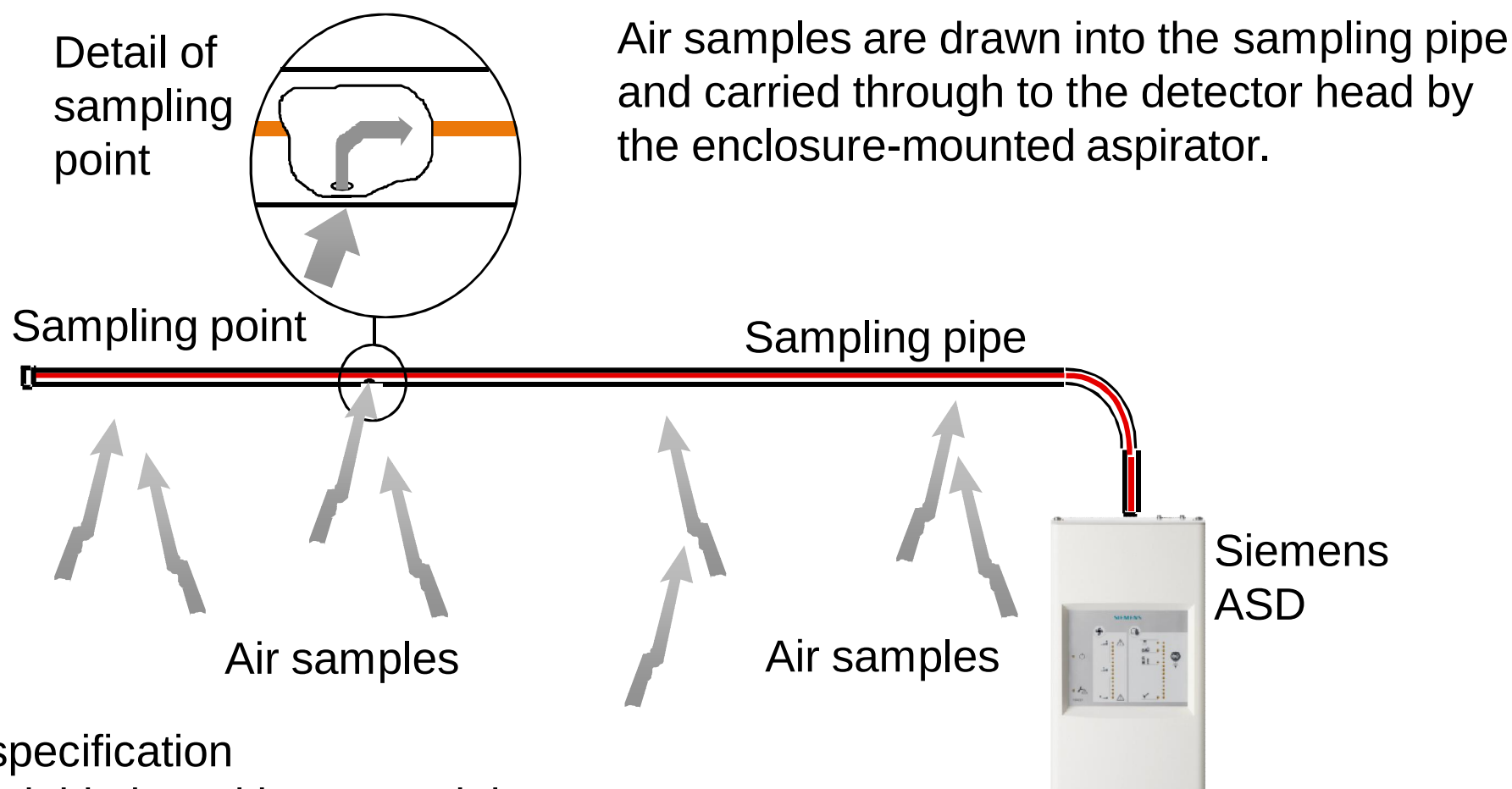
Aspiration Smoke Detection-ASD Introduction

What is Siemens ASD?



- ASD is a Aspirating Smoke Detection System
- It continually samples air from the monitored area
- Able to detect smoke very early during the initial developing fire stages
- Optical dual-wavelength detection technology with one blue and one infrared light source
- Able to differentiate between smoke and dust by measuring a full range of particle sizes
- Pipe is basic component - Usually low-cost PVC

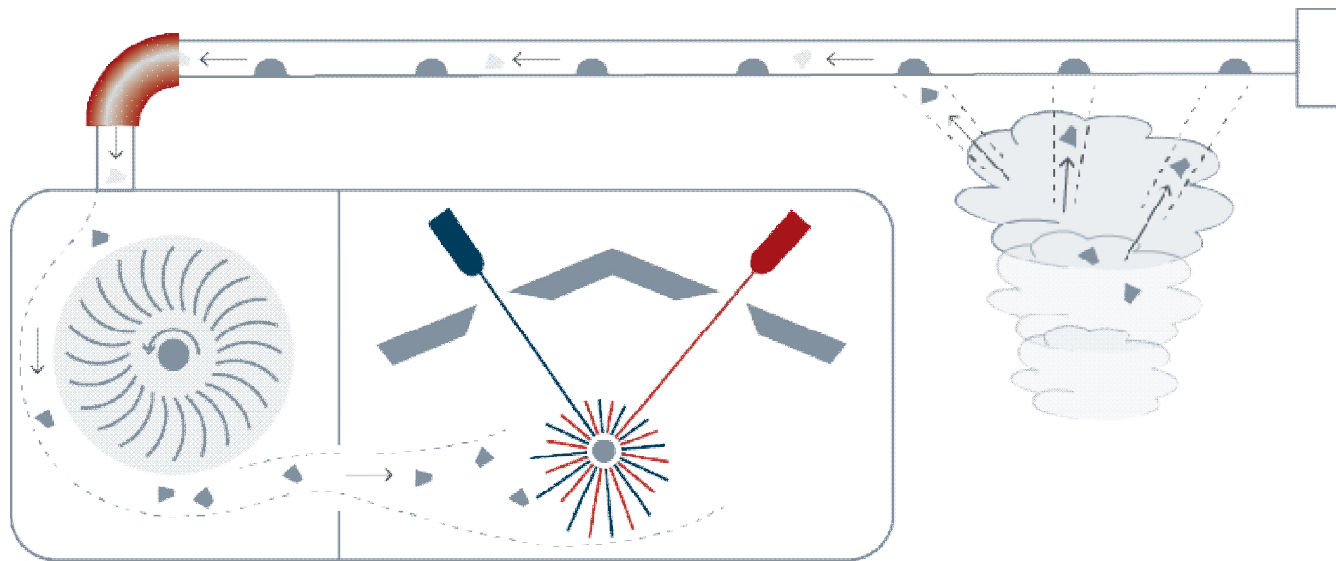
How the Air Sampling System Works



Pipe specification

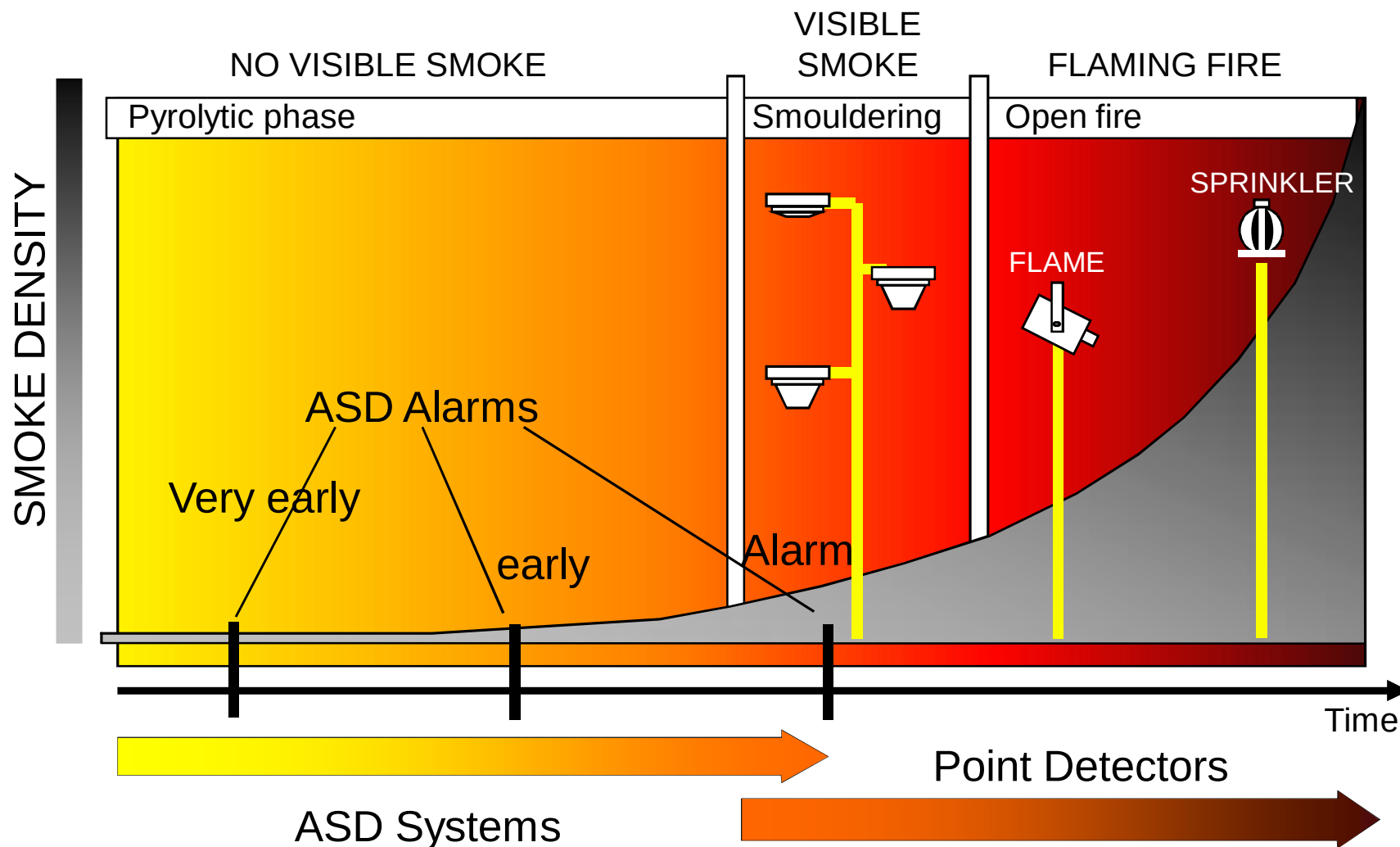
- Any rigid pipe with a smooth bore
- Typically 16-21mm inside diameter, 21-25mm outside diameter

How does the ASD from Siemens work?

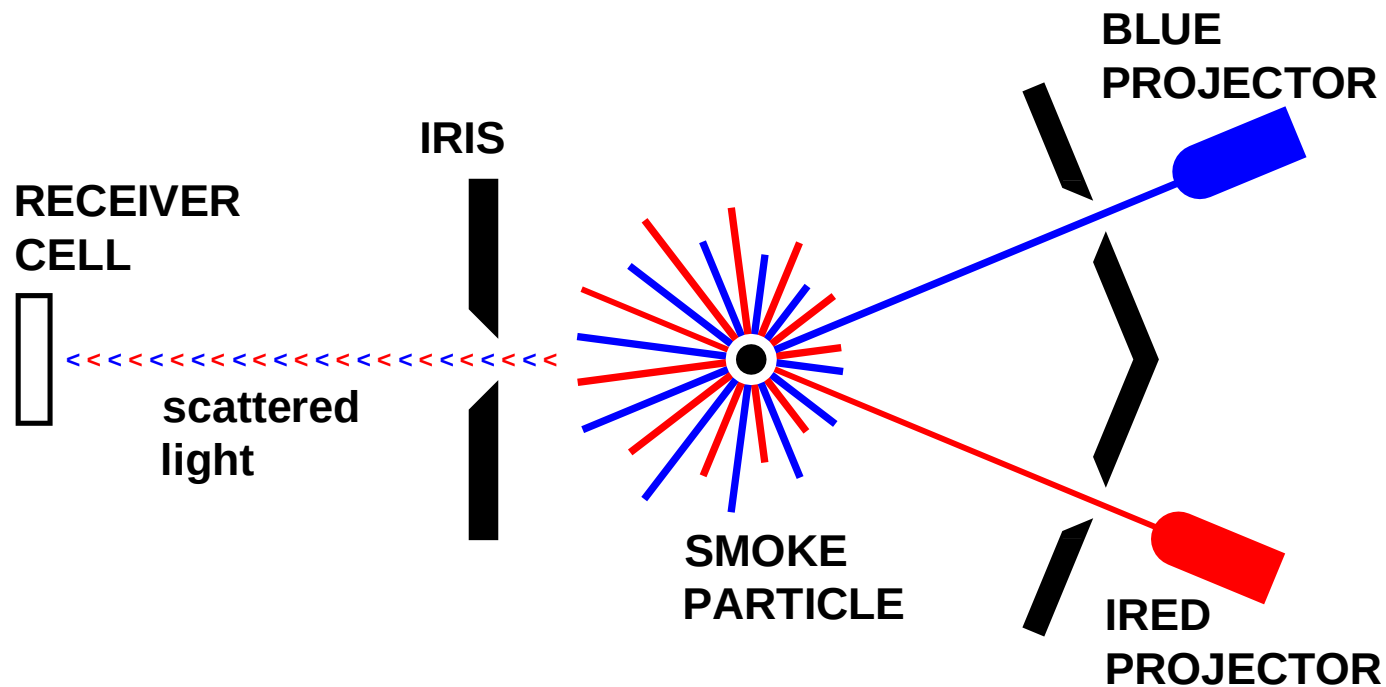


- The ASD continuously draw samples of air from the areas requiring protection – via pipes with sampling holes
- Air samples are evaluated for presence of smoke in detector chamber
- Very early warning for business-critical applications – due to very high sensitivity

Positioning ASD

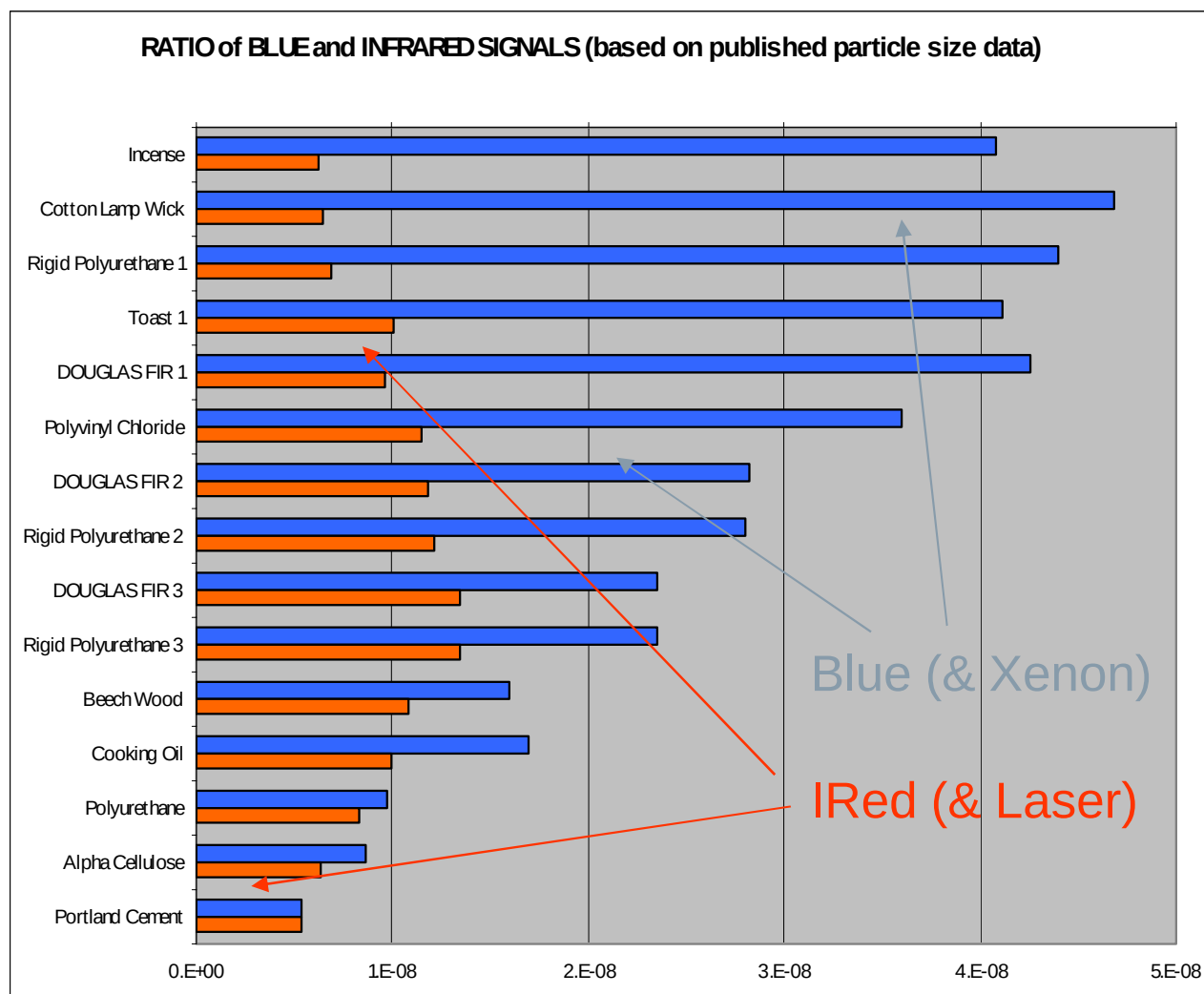


Detector chamber principle



- Use two projectors, blue and infrared
- Flash the projectors alternately
- Receive scattered light

Ratio of colour signals



Blue and infrared are balanced -set equally sensitive to dust (e.g. cement)

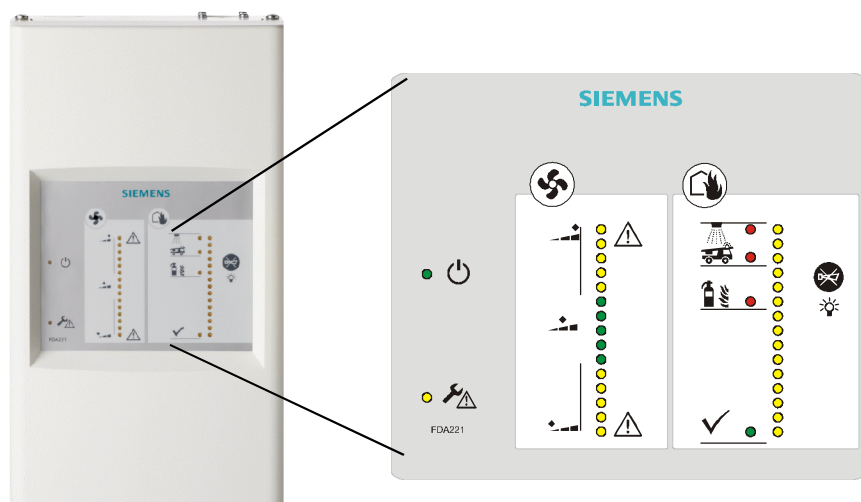
Blue is much more sensitive to small particles

Small particles indicate the early stages of fire

Particle size data from Bankston, Zinn, Browner & Powell, 1981

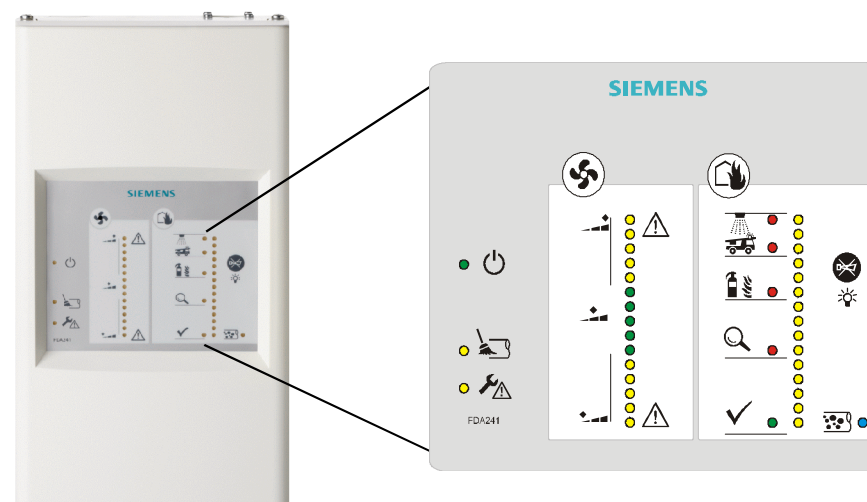
We offer 2 ASD products

FDA221



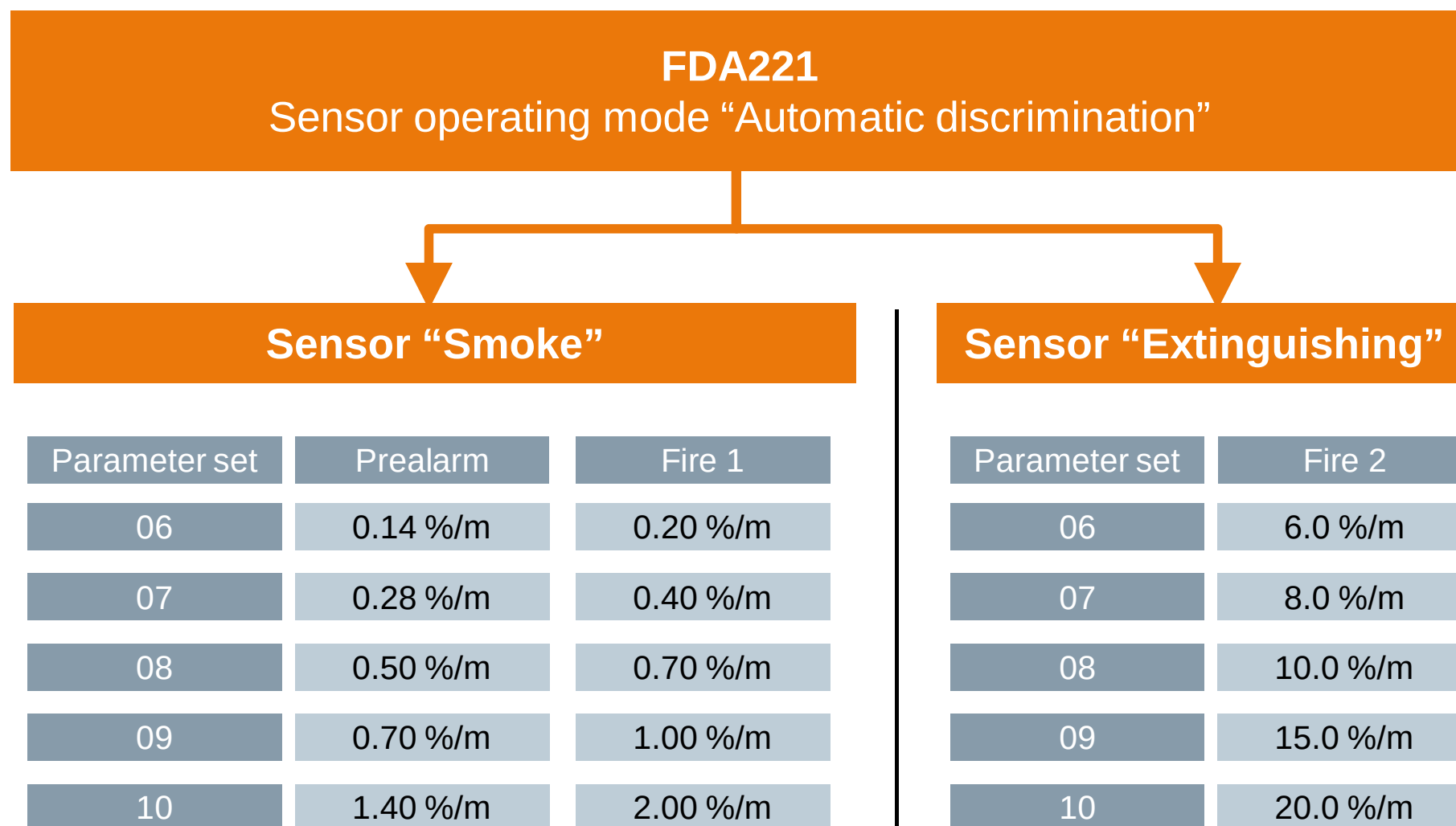
- Covers an area of up to **500m²**
- 3 Alarm outputs
- Fault output
- GPI
- Analogue 4-20mA Output (Smoke)

FDA241



- Covers an area of up to **800m²**
- 4 Alarm outputs
- Fault output
- GPI
- Analogue 4-20mA Output (Smoke / Airflow)
- **Programmable Purge Functionality**
- **Dust LED and Output**

Parameter Sets FDA221



Parameter Sets FDA241

FDA241 Sensor operating mode “Automatic discrimination”

Sensor “Smoke”

Parameter set	Inspect	Prealarm	Fire 1
01	0.030 %/m	0.040 %/m	0.05 %/m
02	0.030 %/m	0.045 %/m	0.06 %/m
03	0.040 %/m	0.055 %/m	0.07 %/m
04	0.050 %/m	0.075 %/m	0.10 %/m
05	0.070 %/m	0.100 %/m	0.15 %/m
06	0.080 %/m	0.140 %/m	0.20 %/m
07	0.180 %/m	0.280 %/m	0.40 %/m
08	0.300 %/m	0.500 %/m	0.70 %/m
09	0.400 %/m	0.700 %/m	1.00 %/m
10	0.800 %/m	1.400 %/m	2.00 %/m

Sensor “Extinguishing”

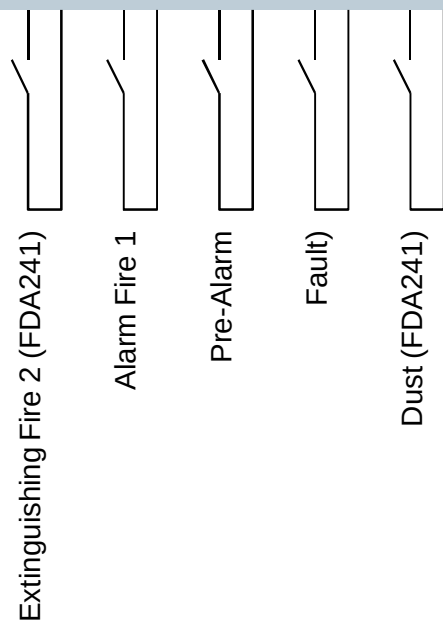
Parameter set	Fire 2
01	2.0 %/m
02	2.5 %/m
03	3.0 %/m
04	4.0 %/m
05	5.0 %/m
06	6.0 %/m
07	8.0 %/m
08	10.0 %/m
09	15.0 %/m
10	20.0 %/m

Range of Application

Standalone

Relay outputs

- Alarm (Fire 1), Pre-Alarm, Fault
- FDA241: Extinguishing (Fire 2), Dust



Supervised 4-20mA Output



Sinteso/ Cerberus PRO

MP4.0 or higher

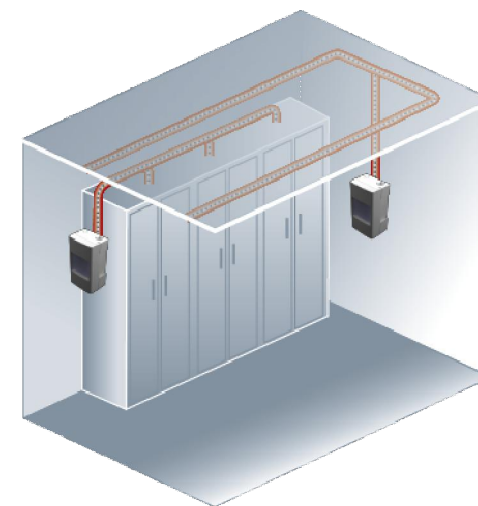
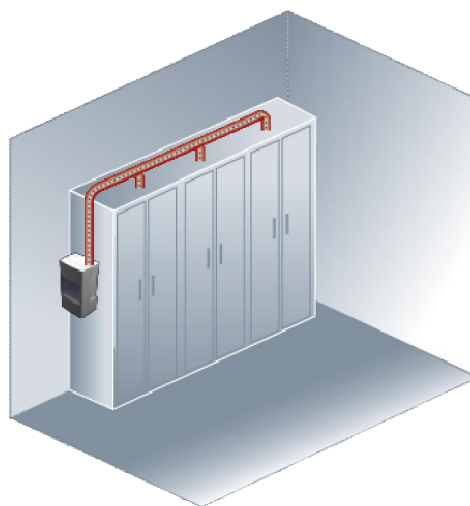
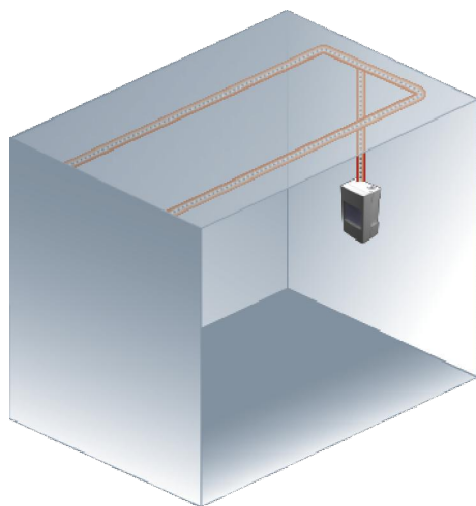


FDnet/C-NET

FDnet/C-NET Interface
FDCC221S



Range of application



Room protection

- Air samples are drawn at defined points in the room
- Are analyzed by detector that is easily accessible
- Easy-to-read alarm status

Object protection

- Air ventilation increases smoke dilution
- Air samples are drawn directly at source for early localization and warning of potential fire
- Earlier response

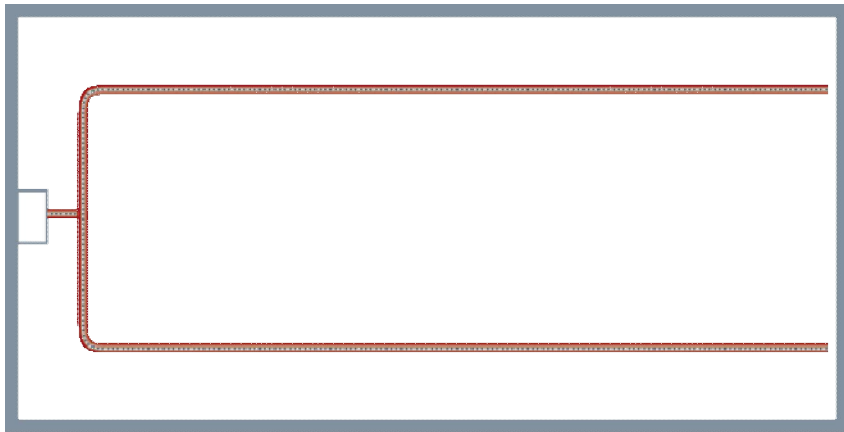
Combined protection

- Volumetric detection and protection of individual equipment
- Monitoring of sensitive or special environmental zones

Multiple Pipe Designs

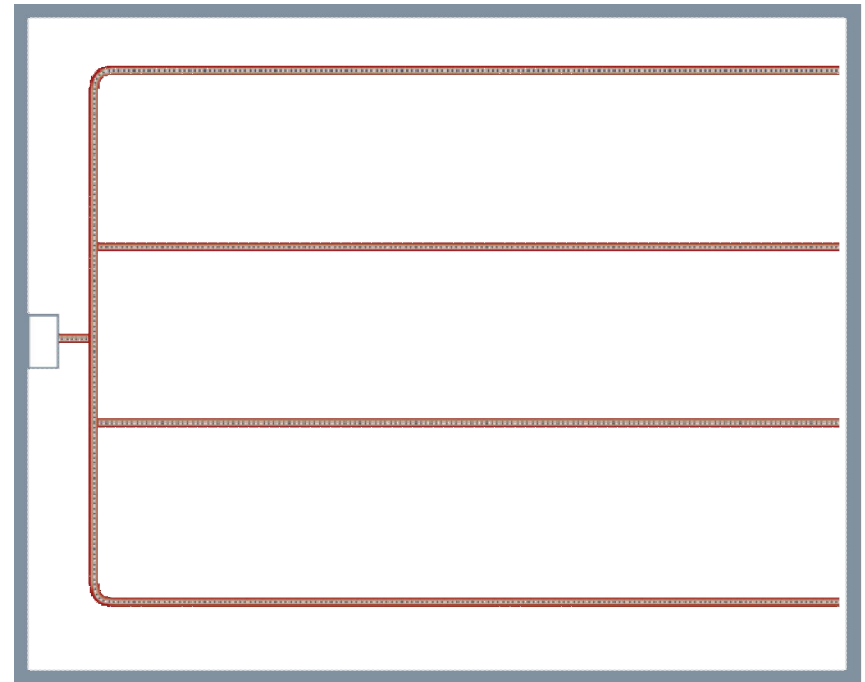
FDA221 protection area: 500 m²

1 or 2 Pipes



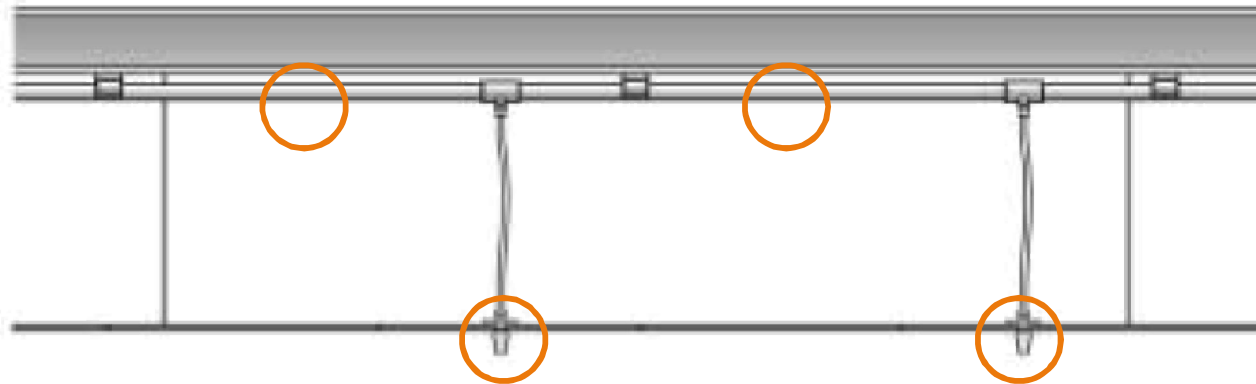
FDA241 protection area: 800 m²

1, 2, 3 or 4 Pipes



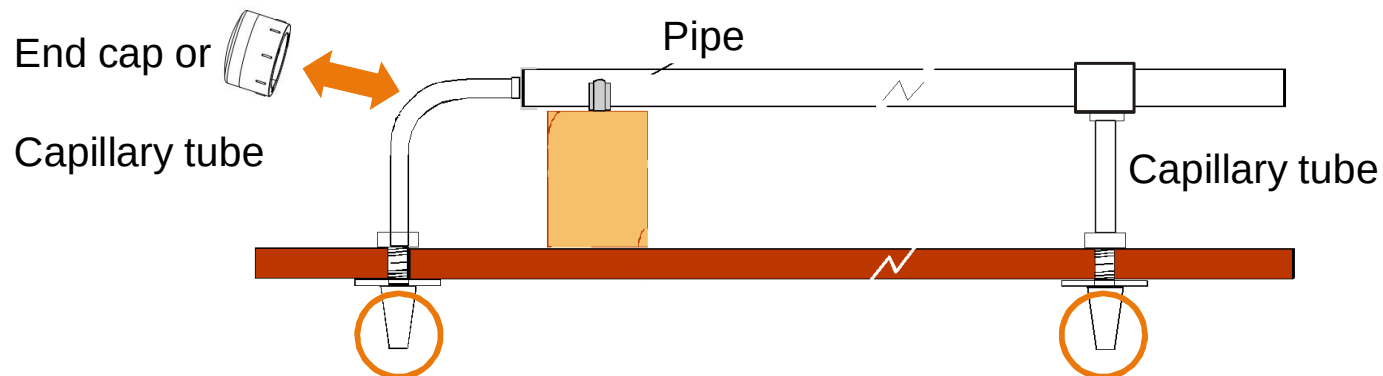
Room Protection - False ceiling

Room and false ceiling protection

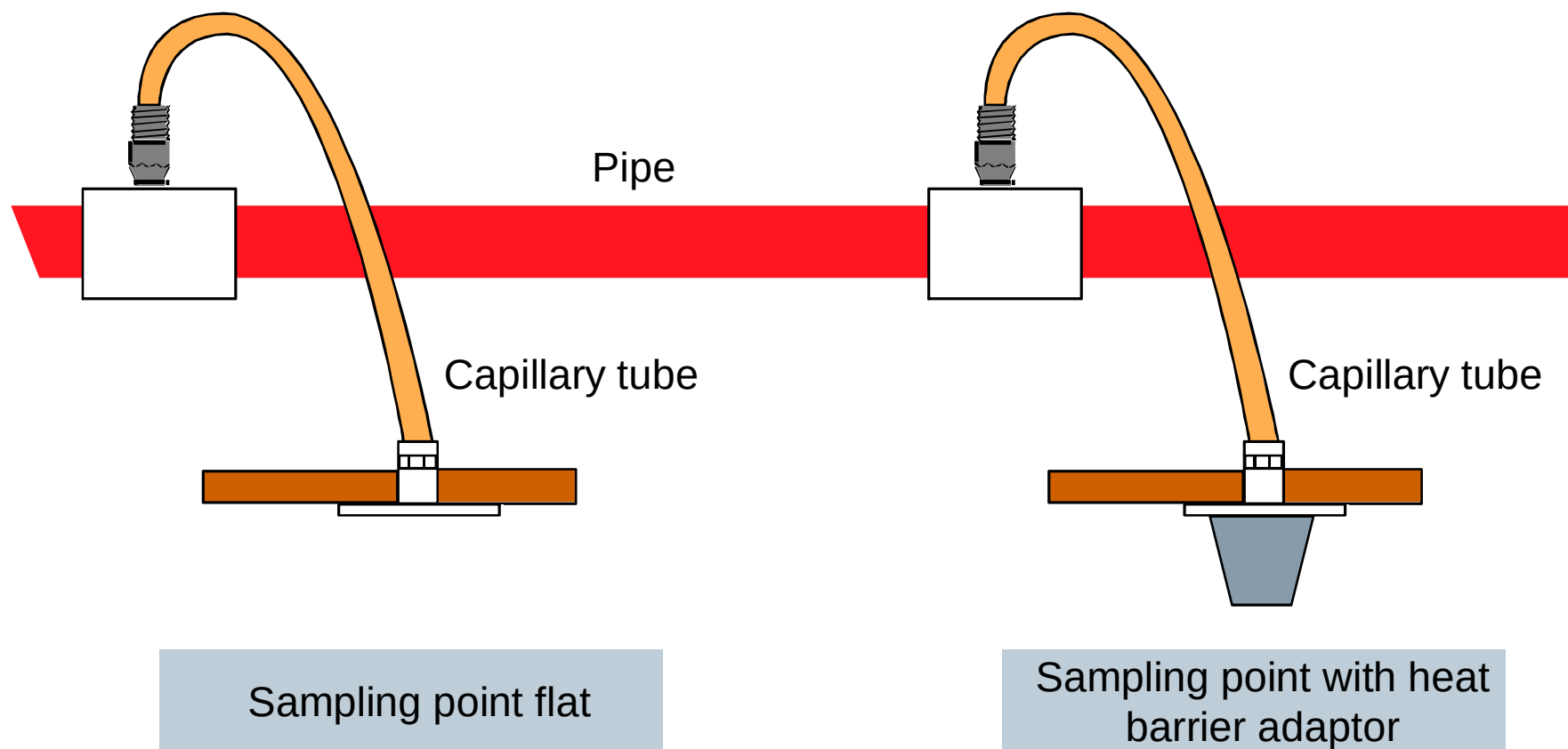


Do not have different air pressure (room and false ceiling)

Room protection only



Room Protection - False ceiling



Characteristic product data

	Sensitivity	Coverage	Fire Relays	Fault Relays	Purge Relay	Single Pipe	Multi Pipe
FDA221	0.14 – 20 %/m	500 m2	3	1	--	30 m Class A with 6 Holes	2 x 25 m (12 Holes per Pipe)
FDA241	0.03 – 20 %/m	800 m2	4	1	1	60 m Class A with 16 Holes	2 x 60 m (18 Holes per Pipe) 4 x 30 m (9 Holes per Pipe)

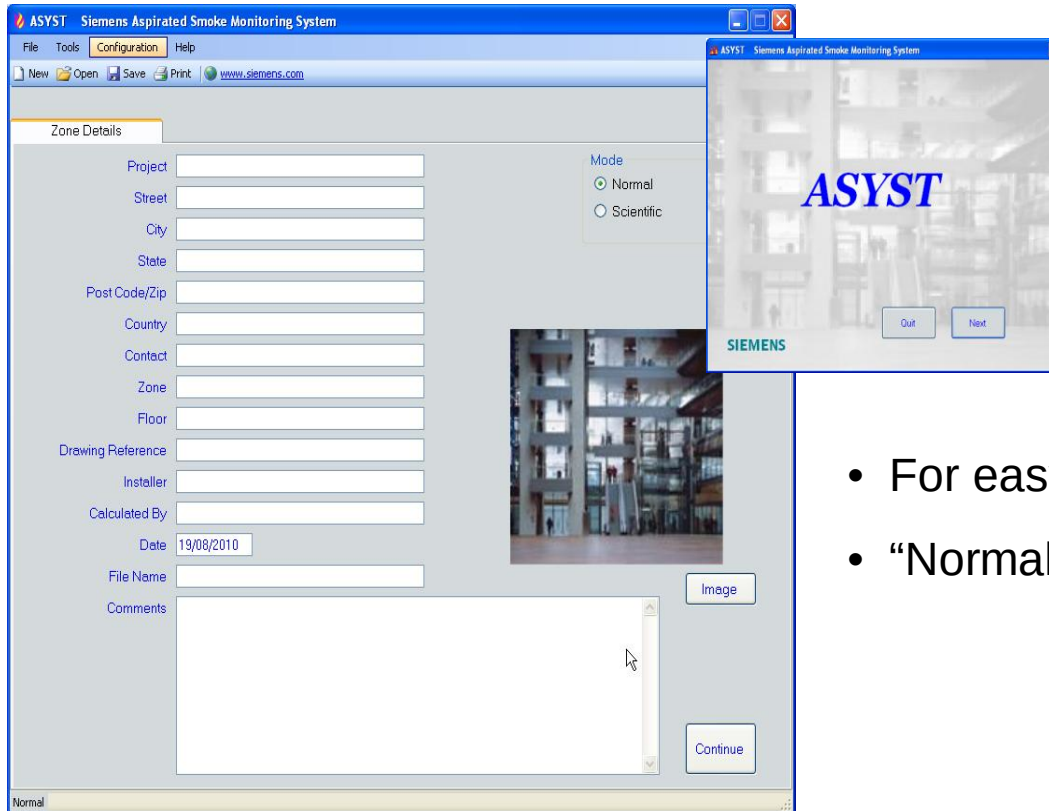
Standards for ASD according EN54-20

- Class A = 1.5 %/m
- Class B = 4.5 %/m
- Class C = 10 %/m

Tools for your support

Planning with “Asyst”

Siemens Aspirating Smoke Monitoring System “Asyst”



- For easy planning of the pipe network
- “Normal” and “Scientific” operating mode

Why Aspirating Smoke Detection?



- Higher sensitivity
- Very early warning for business critical applications
- Suitable for large open areas
- Cold storage applications
- Inaccessible areas
- Unobtrusive detection
- Dusty and humid environments
- Vandalism lower cost
- Reduced maintenance costs

- Very wide application field's
- From clean room up to very dirty and humid environments
- Yet still having the highest sensitivity!

Summary



Siemens ASD offers

- Very early warning
- Sees smaller smoke particles
- Robustness towards dust
- New applications