

# SMOKE EXTRACTION SYSTEMS



Comprehensive gravitational smoke extraction systems including smoke vents, louvers, smoke curtains and control equipment.

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## **NSHEV** - Natural smoke and heat exhaust ventilators

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# Smoke extraction systems are a must

Most fire victims die not because of the fire itself, but through poisoning with gaseous toxins

Most fire victims die not because of the fire itself, but through poisoning with gaseous toxins. Smoke resulting from a fire can fill all rooms and entire areas in just a few minutes, quickly becoming a death trap.

Not only does smoke lead to the inhalation of harmful vapours, but it also reduces visibility, making it more difficult to leave the hazard zone in time. In addition to the loss of orientation due to the lack of visibility, the senses become dulled by inhaling toxic gases.

To prevent this, smoke exhaust ventilators (NSHEV) remove the smoke through the roof before it collapses. Well-designed and manufactured smoke exhaust ventilators provide not only the air that

people need to breathe and survive, but also the ability to leave the room and avoid panic under fire conditions. Smoke-free zones make it much easier for fire services to quickly locate and extinguish the source of the fire.

Since the NSHEV systems save lives in an emergency, no compromise should be made regarding their functionality. ALUCO SYSTEM offers high quality, guaranteeing the operation of certified NSHEV systems even after many years of being used.

Our products have been tested in accordance with the applicable standards, displaying high performance parameters. Thanks to their high quality, our systems can be used for daily ventilation.





# SMOKE VENTS

## ALUCO FIRE

Smoke vents  
to be installed  
in the roof skylights

Smoke or smoke-ventilation vents designed to remove smoke, harmful gases and excess heat from buildings, are adapted to be installed in continuous or spot roof skylights.

As one of the basic elements of the gravitational smoke exhaust system, they can operate automatically or as one of the main elements of extensive fire protection systems.

The vents have all the necessary documents allowing them to be used on the European Union market and beyond as a fire protection element that meets the highest standards.



## Quality. Reliability. Durability.

The series of ALUCO FIRE SL smoke exhaust vents for continuous skylights, due to the top quality of the materials it is made of, is intended for customers who see the reliability of life-saving systems (such as the NSHEV system) as a priority.

Therefore, our system is characterized by reliable operation, high durability parameters and proven operation in extremely unfavourable conditions and additionally it shows a high aerodynamic coefficient.

The vents are adapted to be installed in the continuous and spot roof skylights.

Flexible design with flaps in various dimensions is another advantage of ALUCO FIRE system.

The possibility of using anti-slip gratings under the smoke vents makes them safe for service teams and the user, additionally securing against the risk of falling from height.



## Types of ALUCO FIRE smoke exhaust vents

Our smoke exhaust vents system is divided into four categories depending on the implementation method and the number of flaps (wings)

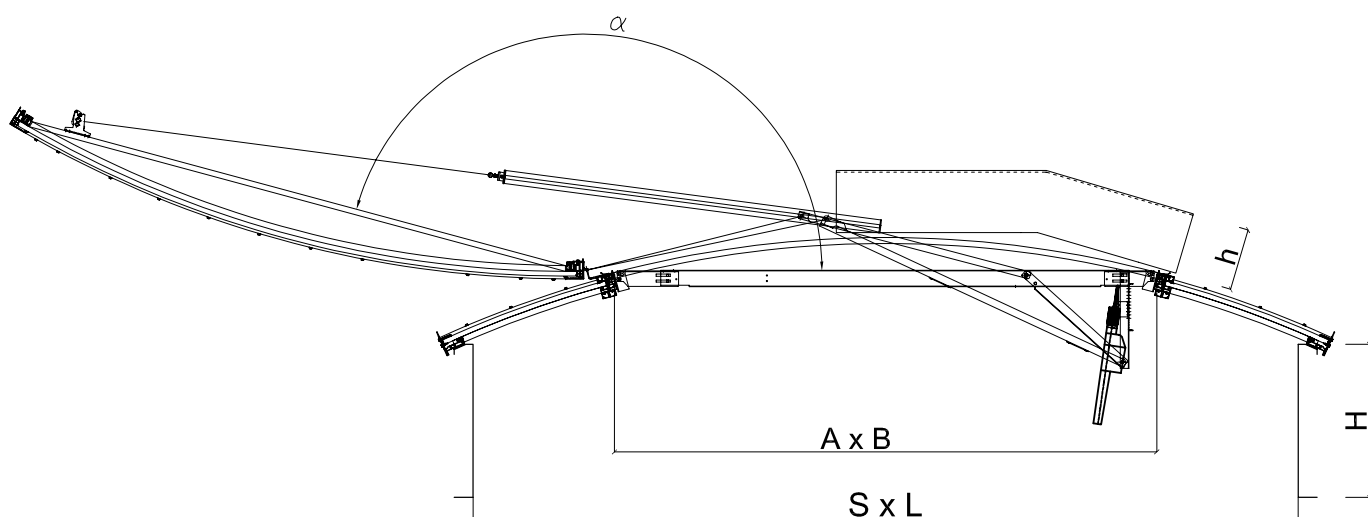
### VENTS TYPES

|                  |    |
|------------------|----|
| Aluco Fire SL 1P | 8  |
| Aluco Fire SL 2P | 12 |
| Aluco Fire SP 1P | 16 |
| Aluco Fire SP 2P | 22 |



# ALUCO FIRE SL 1P

*Single-flap smoke exhaust vents  
for continuous roof skylights*



## Key

A, B – smoke vent aperture dimensions

S – skylight's width

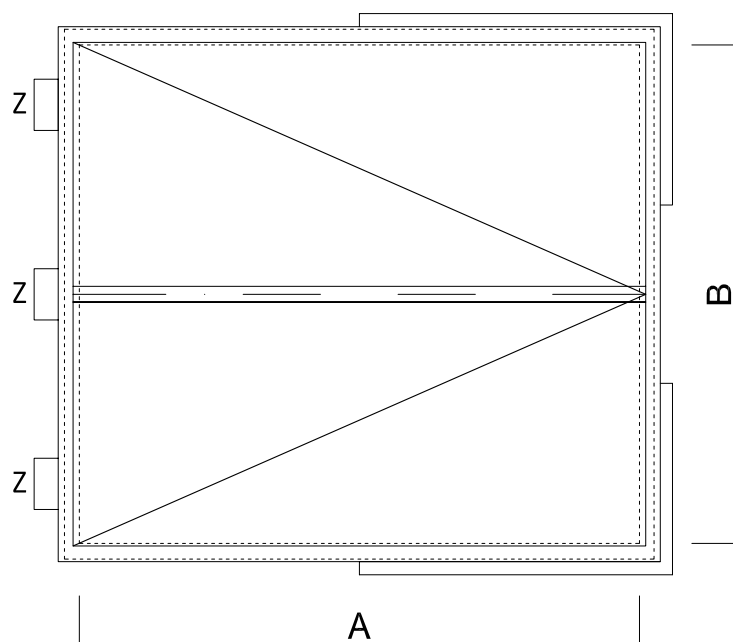
L – skylight's length

H – upstand's height

h – deflector's height

Z – hinges

$\alpha$  – flap opening angle



Dimensions even up to  
2,500 x 2,500 mm



## Mechanical and physical properties



**SL 2000**

Maximum snow load



**WL 1500**

Wind exposure classification



**T - 15**

Confirmed performance in extremely low temperatures



**B 300**

High temperature resistance class



**160°**

Opening angle



**RE 10000**

Operation reliability - 10,000 cycles for vents with electric ventilation function

## Dimensions and aerodynamic surface of smoke exhaust

| VENT DIMENSIONS |             | GEOMETRIC SURFACE | AERODYNAMIC SURFACE |
|-----------------|-------------|-------------------|---------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v [m^2]$       | $A_a [m^2]$         |
| 1000            | 1000        | 1,000             | 0,810               |
| 1000            | 1100        | 1,100             | 0,891               |
| 1000            | 1200        | 1,200             | 0,972               |
| 1000            | 1300        | 1,300             | 1,040               |
| 1000            | 1400        | 1,400             | 1,120               |
| 1000            | 1500        | 1,500             | 1,200               |
| 1000            | 1600        | 1,600             | 1,264               |
| 1000            | 1700        | 1,700             | 1,343               |
| 1000            | 1800        | 1,800             | 1,422               |
| 1000            | 1900        | 1,900             | 1,501               |
| 1000            | 2000        | 2,000             | 1,580               |
| 1000            | 2100        | 2,100             | 1,659               |
| 1000            | 2200        | 2,200             | 1,716               |
| 1000            | 2300        | 2,300             | 1,794               |
| 1000            | 2400        | 2,400             | 1,872               |
| 1000            | 2500        | 2,500             | 1,950               |
| 1000            | 2600        | 2,600             | 2,028               |
| 1000            | 2700        | 2,700             | 2,106               |
| 1000            | 2800        | 2,800             | 2,184               |
| 1000            | 2900        | 2,900             | 2,262               |
| 1000            | 3000        | 3,000             | 2,340               |
| 1100            | 1000        | 1,100             | 0,891               |
| 1100            | 1100        | 1,210             | 0,968               |
| 1100            | 1200        | 1,320             | 1,056               |
| 1100            | 1300        | 1,430             | 1,144               |
| 1100            | 1400        | 1,540             | 1,217               |
| 1100            | 1500        | 1,650             | 1,304               |





| VENT DIMENSIONS |             | GEOMETRIC SURFACE       | AERODYNAMIC SURFACE     |
|-----------------|-------------|-------------------------|-------------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ] |
| 1100            | 1600        | 1,760                   | 1,390                   |
| 1100            | 1700        | 1,870                   | 1,477                   |
| 1100            | 1800        | 1,980                   | 1,544                   |
| 1100            | 1900        | 2,090                   | 1,630                   |
| 1100            | 2000        | 2,200                   | 1,716                   |
| 1100            | 2100        | 2,310                   | 1,802                   |
| 1100            | 2200        | 2,420                   | 1,888                   |
| 1100            | 2300        | 2,530                   | 1,973                   |
| 1100            | 2400        | 2,640                   | 2,059                   |
| 1100            | 2500        | 2,750                   | 2,145                   |
| 1100            | 2600        | 2,860                   | 2,231                   |
| 1100            | 2700        | 2,970                   | 2,287                   |
| 1100            | 2800        | 3,080                   | 2,372                   |
| 1100            | 2900        | 3,190                   | 2,456                   |
| 1100            | 3000        | 3,300                   | 2,541                   |
| 1200            | 1000        | 1,200                   | 0,972                   |
| 1200            | 1100        | 1,320                   | 1,056                   |
| 1200            | 1200        | 1,440                   | 1,152                   |
| 1200            | 1300        | 1,560                   | 1,232                   |
| 1200            | 1400        | 1,680                   | 1,327                   |
| 1200            | 1500        | 1,800                   | 1,422                   |
| 1200            | 1600        | 1,920                   | 1,498                   |
| 1200            | 1700        | 2,040                   | 1,591                   |
| 1200            | 1800        | 2,160                   | 1,685                   |
| 1200            | 1900        | 2,280                   | 1,778                   |
| 1200            | 2000        | 2,400                   | 1,872                   |
| 1200            | 2100        | 2,520                   | 1,966                   |
| 1200            | 2200        | 2,640                   | 2,033                   |
| 1200            | 2300        | 2,760                   | 2,125                   |
| 1200            | 2400        | 2,880                   | 2,218                   |
| 1200            | 2500        | 3,000                   | 2,310                   |
| 1300            | 1000        | 1,300                   | 1,040                   |
| 1300            | 1100        | 1,430                   | 1,144                   |
| 1300            | 1200        | 1,560                   | 1,232                   |
| 1300            | 1300        | 1,690                   | 1,335                   |
| 1300            | 1400        | 1,820                   | 1,438                   |
| 1300            | 1500        | 1,950                   | 1,521                   |
| 1300            | 1600        | 2,080                   | 1,622                   |
| 1300            | 1700        | 2,210                   | 1,724                   |
| 1300            | 1800        | 2,340                   | 1,825                   |
| 1300            | 1900        | 2,470                   | 1,927                   |
| 1300            | 2000        | 2,600                   | 2,002                   |
| 1300            | 2100        | 2,730                   | 2,102                   |
| 1300            | 2200        | 2,860                   | 2,202                   |
| 1300            | 2300        | 2,990                   | 2,302                   |
| 1300            | 2400        | 3,120                   | 2,402                   |
| 1300            | 2500        | 3,250                   | 2,503                   |
| 1300            | 2600        | 3,380                   | 2,603                   |
| 1300            | 2700        | 3,510                   | 2,703                   |
| 1300            | 2800        | 3,640                   | 2,803                   |
| 1300            | 2900        | 3,770                   | 2,903                   |
| 1300            | 3000        | 3,900                   | 2,964                   |
| 1400            | 1000        | 1,400                   | 1,120                   |
| 1400            | 1100        | 1,540                   | 1,217                   |
| 1400            | 1200        | 1,680                   | 1,327                   |
| 1400            | 1300        | 1,820                   | 1,438                   |
| 1400            | 1400        | 1,960                   | 1,529                   |
| 1400            | 1500        | 2,100                   | 1,638                   |
| 1400            | 1600        | 2,240                   | 1,747                   |
| 1400            | 1700        | 2,380                   | 1,856                   |

| VENT DIMENSIONS |             | GEOMETRIC SURFACE       | AERODYNAMIC SURFACE     |
|-----------------|-------------|-------------------------|-------------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ] |
| 1400            | 1800        | 2,520                   | 1,940                   |
| 1400            | 1900        | 2,660                   | 2,048                   |
| 1400            | 2000        | 2,800                   | 2,156                   |
| 1400            | 2100        | 2,940                   | 2,264                   |
| 1400            | 2200        | 3,080                   | 2,372                   |
| 1400            | 2300        | 3,220                   | 2,479                   |
| 1400            | 2400        | 3,360                   | 2,587                   |
| 1400            | 2500        | 3,500                   | 2,695                   |
| 1400            | 2600        | 3,640                   | 2,766                   |
| 1400            | 2700        | 3,780                   | 2,873                   |
| 1400            | 2800        | 3,920                   | 2,979                   |
| 1400            | 2900        | 4,060                   | 3,086                   |
| 1400            | 3000        | 4,200                   | 3,192                   |
| 1500            | 1000        | 1,500                   | 1,200                   |
| 1500            | 1100        | 1,650                   | 1,304                   |
| 1500            | 1200        | 1,800                   | 1,422                   |
| 1500            | 1300        | 1,950                   | 1,521                   |
| 1500            | 1400        | 2,100                   | 1,638                   |
| 1500            | 1500        | 2,250                   | 1,755                   |
| 1500            | 1600        | 2,400                   | 1,872                   |
| 1500            | 1700        | 2,550                   | 1,964                   |
| 1500            | 1800        | 2,700                   | 2,079                   |
| 1500            | 1900        | 2,850                   | 2,195                   |
| 1500            | 2000        | 3,000                   | 2,310                   |
| 1500            | 2100        | 3,150                   | 2,426                   |
| 1500            | 2200        | 3,300                   | 2,541                   |
| 1500            | 2300        | 3,450                   | 2,622                   |
| 1500            | 2400        | 3,600                   | 2,736                   |
| 1500            | 2500        | 3,750                   | 2,850                   |
| 1500            | 2600        | 3,900                   | 2,964                   |
| 1500            | 2700        | 4,050                   | 3,078                   |
| 1500            | 2800        | 4,200                   | 3,192                   |
| 1500            | 2900        | 4,350                   | 3,306                   |
| 1500            | 3000        | 4,500                   | 3,420                   |
| 1600            | 1000        | 1,600                   | 1,264                   |
| 1600            | 1100        | 1,760                   | 1,390                   |
| 1600            | 1200        | 1,920                   | 1,498                   |
| 1600            | 1300        | 2,080                   | 1,622                   |
| 1600            | 1400        | 2,240                   | 1,747                   |
| 1600            | 1500        | 2,400                   | 1,872                   |
| 1600            | 1600        | 2,560                   | 1,971                   |
| 1600            | 1700        | 2,720                   | 2,094                   |
| 1600            | 1800        | 2,880                   | 2,218                   |
| 1600            | 1900        | 3,040                   | 2,341                   |
| 1600            | 2000        | 3,200                   | 2,464                   |
| 1600            | 2100        | 3,360                   | 2,554                   |
| 1600            | 2200        | 3,520                   | 2,675                   |
| 1600            | 2300        | 3,680                   | 2,797                   |
| 1600            | 2400        | 3,840                   | 2,918                   |
| 1600            | 2500        | 4,000                   | 3,040                   |
| 1600            | 2600        | 4,160                   | 3,162                   |
| 1600            | 2700        | 4,320                   | 3,283                   |
| 1600            | 2800        | 4,480                   | 3,405                   |
| 1600            | 2900        | 4,640                   | 3,526                   |
| 1600            | 3000        | 4,800                   | 3,648                   |
| 1700            | 1000        | 1,700                   | 1,343                   |
| 1700            | 1100        | 1,870                   | 1,477                   |
| 1700            | 1200        | 2,040                   | 1,591                   |
| 1700            | 1300        | 2,210                   | 1,724                   |
| 1700            | 1400        | 2,380                   | 1,856                   |

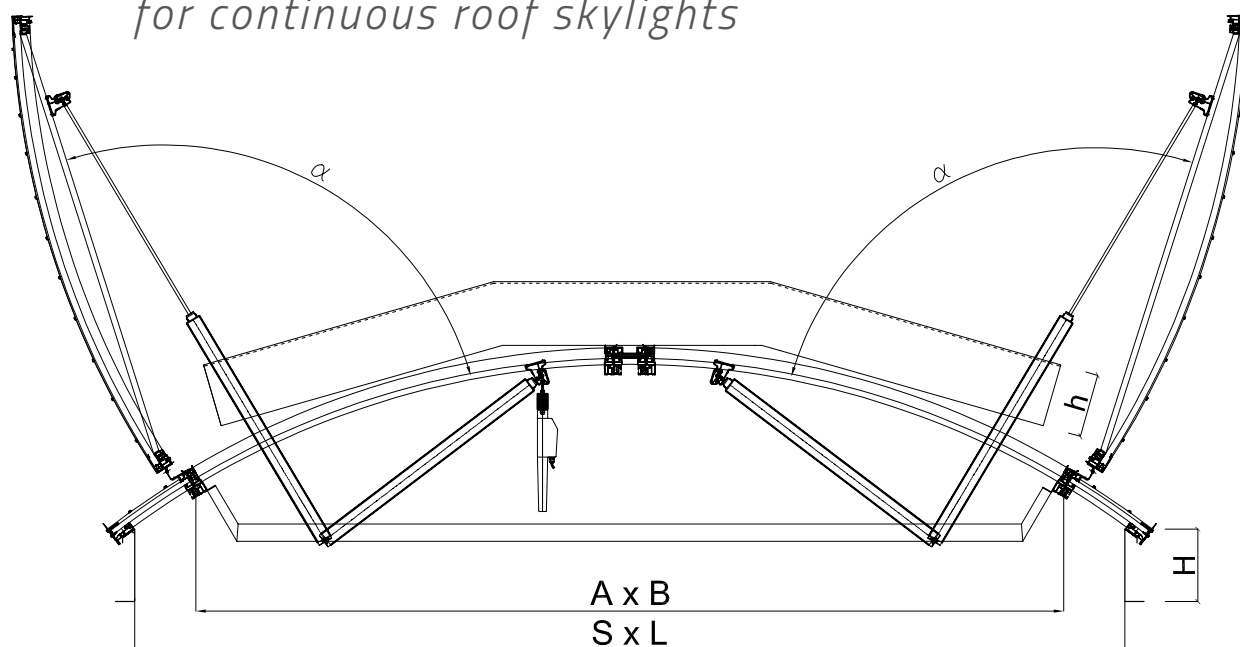
| VENT DIMENSIONS |             | GEOMETRIC SURFACE       | AERODYNAMIC SURFACE     |
|-----------------|-------------|-------------------------|-------------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ] |
| 1700            | 1500        | 2,550                   | 1,964                   |
| 1700            | 1600        | 2,720                   | 2,094                   |
| 1700            | 1700        | 2,890                   | 2,225                   |
| 1700            | 1800        | 3,060                   | 2,356                   |
| 1700            | 1900        | 3,230                   | 2,487                   |
| 1700            | 2000        | 3,400                   | 2,584                   |
| 1700            | 2100        | 3,570                   | 2,713                   |
| 1700            | 2200        | 3,740                   | 2,842                   |
| 1700            | 2300        | 3,910                   | 2,972                   |
| 1700            | 2400        | 4,080                   | 3,101                   |
| 1700            | 2500        | 4,250                   | 3,230                   |
| 1700            | 2600        | 4,420                   | 3,359                   |
| 1700            | 2700        | 4,590                   | 3,488                   |
| 1700            | 2800        | 4,760                   | 3,618                   |
| 1700            | 2900        | 4,930                   | 3,698                   |
| 1700            | 3000        | 5,100                   | 3,825                   |
| 1800            | 1000        | 1,800                   | 1,422                   |
| 1800            | 1100        | 1,980                   | 1,544                   |
| 1800            | 1200        | 2,160                   | 1,685                   |
| 1800            | 1300        | 2,340                   | 1,825                   |
| 1800            | 1400        | 2,520                   | 1,940                   |
| 1800            | 1500        | 2,700                   | 2,079                   |
| 1800            | 1600        | 2,880                   | 2,218                   |
| 1800            | 1700        | 3,060                   | 2,356                   |
| 1800            | 1800        | 3,240                   | 2,462                   |
| 1800            | 1900        | 3,420                   | 2,599                   |
| 1800            | 2000        | 3,600                   | 2,736                   |
| 1800            | 2100        | 3,780                   | 2,873                   |
| 1800            | 2200        | 3,960                   | 3,010                   |
| 1800            | 2300        | 4,140                   | 3,146                   |
| 1800            | 2400        | 4,320                   | 3,283                   |
| 1800            | 2500        | 4,500                   | 3,420                   |
| 1800            | 2600        | 4,680                   | 3,557                   |
| 1800            | 2700        | 4,860                   | 3,645                   |
| 1800            | 2800        | 5,040                   | 3,780                   |
| 1800            | 2900        | 5,220                   | 3,915                   |
| 1800            | 3000        | 5,400                   | 4,050                   |
| 1900            | 1000        | 1,900                   | 1,501                   |
| 1900            | 1100        | 2,090                   | 1,630                   |
| 1900            | 1200        | 2,280                   | 1,778                   |
| 1900            | 1300        | 2,470                   | 1,927                   |
| 1900            | 1400        | 2,660                   | 2,048                   |
| 1900            | 1500        | 2,850                   | 2,195                   |
| 1900            | 1600        | 3,040                   | 2,341                   |
| 1900            | 1700        | 3,230                   | 2,487                   |
| 1900            | 1800        | 3,420                   | 2,599                   |
| 1900            | 1900        | 3,610                   | 2,744                   |
| 1900            | 2000        | 3,800                   | 2,888                   |
| 1900            | 2100        | 3,990                   | 3,032                   |
| 1900            | 2200        | 4,180                   | 3,177                   |
| 1900            | 2300        | 4,370                   | 3,321                   |
| 1900            | 2400        | 4,560                   | 3,466                   |
| 1900            | 2500        | 4,750                   | 3,563                   |
| 1900            | 2600        | 4,940                   | 3,705                   |
| 1900            | 2700        | 5,130                   | 3,848                   |
| 1900            | 2800        | 5,320                   | 3,990                   |
| 1900            | 2900        | 5,510                   | 4,133                   |
| 1900            | 3000        | 5,700                   | 4,275                   |
| 2000            | 1000        | 2,000                   | 1,580                   |
| 2000            | 1100        | 2,200                   | 1,716                   |

| VENT DIMENSIONS |             | GEOMETRIC SURFACE       | AERODYNAMIC SURFACE     |
|-----------------|-------------|-------------------------|-------------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ] |
| 2000            | 1200        | 2,400                   | 1,872                   |
| 2000            | 1300        | 2,600                   | 2,002                   |
| 2000            | 1400        | 2,800                   | 2,156                   |
| 2000            | 1500        | 3,000                   | 2,310                   |
| 2000            | 1600        | 3,200                   | 2,464                   |
| 2000            | 1700        | 3,400                   | 2,584                   |
| 2000            | 1800        | 3,600                   | 2,736                   |
| 2000            | 1900        | 3,800                   | 2,888                   |
| 2000            | 2000        | 4,000                   | 3,040                   |
| 2000            | 2100        | 4,200                   | 3,192                   |
| 2000            | 2200        | 4,400                   | 3,344                   |
| 2000            | 2300        | 4,600                   | 3,450                   |
| 2000            | 2400        | 4,800                   | 3,600                   |
| 2000            | 2500        | 5,000                   | 3,750                   |
| 2000            | 2600        | 5,200                   | 3,900                   |
| 2000            | 2700        | 5,400                   | 4,050                   |
| 2000            | 2800        | 5,600                   | 4,704                   |
| 2000            | 2900        | 5,800                   | 4,350                   |
| 2000            | 3000        | 6,000                   | 4,500                   |
| 2100            | 1600        | 3,360                   | 2,554                   |
| 2100            | 1700        | 3,570                   | 2,713                   |
| 2100            | 1800        | 3,780                   | 2,873                   |
| 2100            | 1900        | 3,990                   | 3,032                   |
| 2100            | 2000        | 4,200                   | 3,192                   |
| 2100            | 2100        | 4,410                   | 3,352                   |
| 2100            | 2200        | 4,620                   | 3,465                   |
| 2100            | 2300        | 4,830                   | 3,623                   |
| 2100            | 2400        | 5,040                   | 3,780                   |
| 2100            | 2500        | 5,250                   | 3,938                   |
| 2100            | 2600        | 5,460                   | 4,095                   |
| 2200            | 1600        | 3,520                   | 2,675                   |
| 2200            | 1700        | 3,740                   | 2,842                   |
| 2200            | 1800        | 3,960                   | 3,010                   |
| 2200            | 1900        | 4,180                   | 3,177                   |
| 2200            | 2000        | 4,400                   | 3,344                   |
| 2200            | 2100        | 4,620                   | 3,465                   |
| 2200            | 2200        | 4,840                   | 3,630                   |
| 2200            | 2300        | 5,060                   | 3,795                   |
| 2300            | 1600        | 3,680                   | 2,797                   |
| 2300            | 1700        | 3,910                   | 2,972                   |
| 2300            | 1800        | 4,140                   | 3,146                   |
| 2300            | 1900        | 4,370                   | 3,321                   |
| 2300            | 2000        | 4,600                   | 3,450                   |
| 2300            | 2100        | 4,830                   | 3,623                   |
| 2300            | 2200        | 5,060                   | 3,795                   |
| 2400            | 1600        | 3,840                   | 2,918                   |
| 2400            | 1700        | 4,080                   | 3,101                   |
| 2400            | 1800        | 4,320                   | 3,283                   |
| 2400            | 1900        | 4,560                   | 3,466                   |
| 2400            | 2000        | 4,800                   | 3,600                   |
| 2500            | 1600        | 4,000                   | 3,040                   |
| 2500            | 1700        | 4,250                   | 3,230                   |
| 2500            | 1800        | 4,500                   | 3,420                   |
| 2500            | 1900        | 4,750                   | 3,563                   |
| 2500            | 2000        | 5,000                   | 3,750                   |
| 2500            | 2100        | 5,250                   | 3,938                   |
| 2500            | 2200        | 5,500                   | 4,125                   |
| 2500            | 2300        | 5,750                   | 4,313                   |
| 2500            | 2400        | 6,000                   | 4,500                   |
| 2500            | 2500        | 6,250                   | 4,688                   |



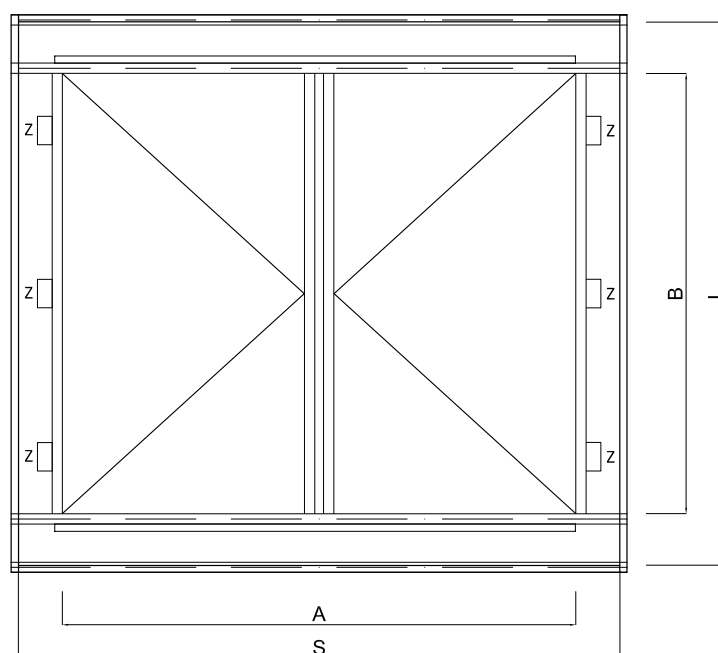
# ALUCO FIRE SL 2P

*Double-flap smoke exhaust vents  
for continuous roof skylights*



## Key

- A, B – smoke vent aperture dimensions
- S – skylight's width
- L – skylight's length
- H – upstand's height
- h – deflector's height
- Z – hinges
- α – flap opening angle



Dimensions even up to  
3500 x 3000 mm

## Mechanical and physical properties



**SL 1500**

Maximum snow load



**WL 1500**

Wind exposure classification



**T - 15**

Confirmed performance in extremely low temperatures



**B 300**

High temperature resistance class



**90°**

Opening angle



**RE 10000**

Operation reliability - 10,000 cycles for vents with electric ventilation function

## Dimensions and aerodynamic surface of smoke exhaust

| VENT DIMENSIONS |             | GEOMETRIC SURFACE | AERODYNAMIC SURFACE |
|-----------------|-------------|-------------------|---------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v [m^2]$       | $A_a [m^2]$         |
| 1900            | 1800        | 3,42              | 2,54                |
| 1900            | 1900        | 3,61              | 2,68                |
| 1900            | 2000        | 3,80              | 2,82                |
| 1900            | 2100        | 3,99              | 2,97                |
| 1900            | 2200        | 4,18              | 3,11                |
| 1900            | 2300        | 4,37              | 3,25                |
| 1900            | 2400        | 4,56              | 3,40                |
| 1900            | 2500        | 4,75              | 3,54                |
| 1900            | 2600        | 4,94              | 3,68                |
| 1900            | 2700        | 5,13              | 3,83                |
| 1900            | 2800        | 5,32              | 3,97                |
| 1900            | 2900        | 5,51              | 4,12                |
| 1900            | 3000        | 5,70              | 4,26                |
| 2000            | 1800        | 3,60              | 2,67                |
| 2000            | 1900        | 3,80              | 2,82                |
| 2000            | 2000        | 4,00              | 2,97                |
| 2000            | 2100        | 4,20              | 3,13                |
| 2000            | 2200        | 4,40              | 3,28                |
| 2000            | 2300        | 4,60              | 3,43                |
| 2000            | 2400        | 4,80              | 3,58                |
| 2000            | 2500        | 5,00              | 3,73                |
| 2000            | 2600        | 5,20              | 3,88                |
| 2000            | 2700        | 5,40              | 4,03                |
| 2000            | 2800        | 5,60              | 4,19                |
| 2000            | 2900        | 5,80              | 4,34                |
| 2000            | 3000        | 6,00              | 4,49                |
| 2100            | 1800        | 3,78              | 2,81                |





| VENT DIMENSIONS |             | GEOMETRIC SURFACE | AERODYNAMIC SURFACE |
|-----------------|-------------|-------------------|---------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v [m^2]$       | $A_a [m^2]$         |
| 2100            | 1900        | 3,99              | 2,97                |
| 2100            | 2000        | 4,20              | 3,13                |
| 2100            | 2100        | 4,41              | 3,28                |
| 2100            | 2200        | 4,62              | 3,44                |
| 2100            | 2300        | 4,83              | 3,60                |
| 2100            | 2400        | 5,04              | 3,76                |
| 2100            | 2500        | 5,25              | 3,92                |
| 2100            | 2600        | 5,46              | 4,08                |
| 2100            | 2700        | 5,67              | 4,24                |
| 2100            | 2800        | 5,88              | 4,40                |
| 2100            | 2900        | 6,09              | 4,56                |
| 2100            | 3000        | 6,30              | 4,72                |
| 2200            | 1800        | 3,96              | 2,94                |
| 2200            | 1900        | 4,18              | 3,11                |
| 2200            | 2000        | 4,40              | 3,28                |
| 2200            | 2100        | 4,62              | 3,44                |
| 2200            | 2200        | 4,84              | 3,61                |
| 2200            | 2300        | 5,06              | 3,78                |
| 2200            | 2400        | 5,28              | 3,94                |
| 2200            | 2500        | 5,50              | 4,11                |
| 2200            | 2600        | 5,72              | 4,28                |
| 2200            | 2700        | 5,94              | 4,45                |
| 2200            | 2800        | 6,16              | 4,61                |
| 2200            | 2900        | 6,38              | 4,78                |
| 2200            | 3000        | 6,60              | 4,95                |
| 2300            | 1800        | 4,14              | 3,08                |
| 2300            | 1900        | 4,37              | 3,25                |
| 2300            | 2000        | 4,60              | 3,43                |
| 2300            | 2100        | 4,83              | 3,60                |
| 2300            | 2200        | 5,06              | 3,78                |
| 2300            | 2300        | 5,29              | 3,95                |
| 2300            | 2400        | 5,52              | 4,13                |
| 2300            | 2500        | 5,75              | 4,30                |
| 2300            | 2600        | 5,98              | 4,48                |
| 2300            | 2700        | 6,21              | 4,65                |
| 2300            | 2800        | 6,44              | 4,83                |
| 2300            | 2900        | 6,67              | 5,00                |
| 2300            | 3000        | 6,90              | 5,18                |
| 2400            | 1800        | 4,32              | 3,21                |
| 2400            | 1900        | 4,56              | 3,40                |
| 2400            | 2000        | 4,80              | 3,58                |
| 2400            | 2100        | 5,04              | 3,76                |
| 2400            | 2200        | 5,28              | 3,94                |
| 2400            | 2300        | 5,52              | 4,13                |
| 2400            | 2400        | 5,76              | 4,31                |
| 2400            | 2500        | 6,00              | 4,49                |
| 2400            | 2600        | 6,24              | 4,68                |
| 2400            | 2700        | 6,48              | 4,86                |
| 2400            | 2800        | 6,72              | 5,04                |
| 2400            | 2900        | 6,96              | 5,23                |
| 2400            | 3000        | 7,20              | 5,41                |
| 2500            | 1800        | 4,50              | 3,35                |
| 2500            | 1900        | 4,75              | 3,54                |
| 2500            | 2000        | 5,00              | 3,73                |
| 2500            | 2100        | 5,25              | 3,92                |
| 2500            | 2200        | 5,50              | 4,11                |
| 2500            | 2300        | 5,75              | 4,30                |
| 2500            | 2400        | 6,00              | 4,49                |
| 2500            | 2500        | 6,25              | 4,68                |
| 2500            | 2600        | 6,50              | 4,88                |

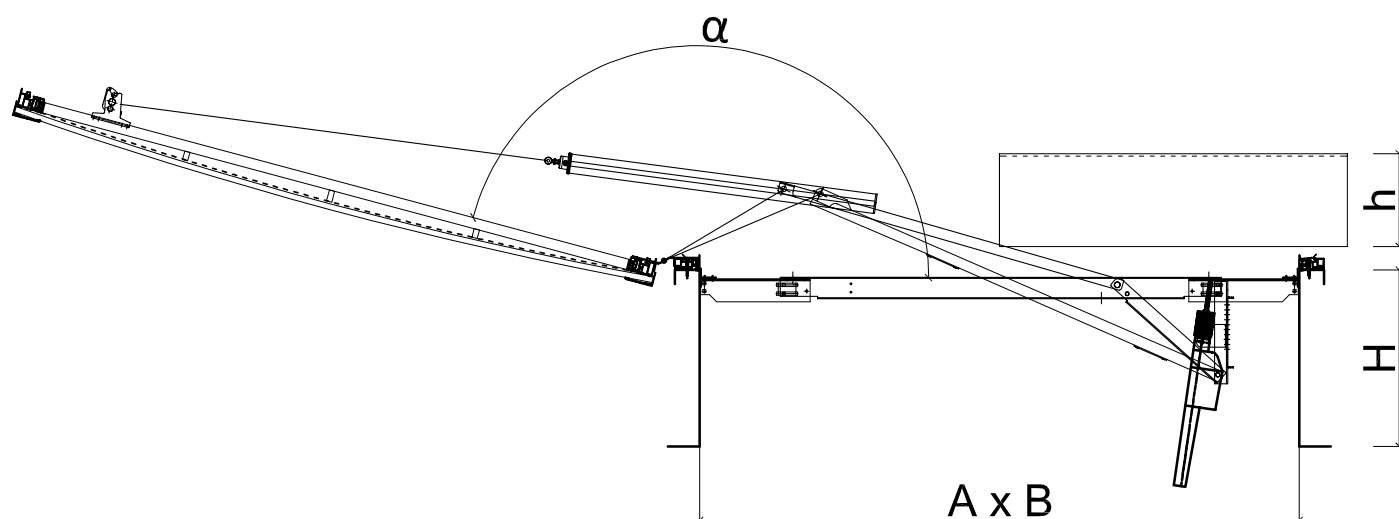
| VENT DIMENSIONS |             | GEOMETRIC SURFACE | AERODYNAMIC SURFACE |
|-----------------|-------------|-------------------|---------------------|
| WIDTH [mm]      | LENGTH [mm] | $A_v [m^2]$       | $A_a [m^2]$         |
| 2500            | 2700        | 6,75              | 5,07                |
| 2500            | 2800        | 7,00              | 5,26                |
| 2500            | 2900        | 7,25              | 5,45                |
| 2500            | 3000        | 7,50              | 5,64                |
| 2600            | 1800        | 4,68              | 3,49                |
| 2600            | 1900        | 4,94              | 3,68                |
| 2600            | 2000        | 5,20              | 3,88                |
| 2600            | 2100        | 5,46              | 4,08                |
| 2600            | 2200        | 5,72              | 4,28                |
| 2600            | 2300        | 5,98              | 4,48                |
| 2600            | 2400        | 6,24              | 4,68                |
| 2600            | 2500        | 6,50              | 4,88                |
| 2600            | 2600        | 6,76              | 5,07                |
| 2600            | 2700        | 7,02              | 5,27                |
| 2600            | 2800        | 7,28              | 5,47                |
| 2600            | 2900        | 7,54              | 5,67                |
| 2600            | 3000        | 7,80              | 5,87                |
| 2700            | 1800        | 4,86              | 3,62                |
| 2700            | 1900        | 5,13              | 3,83                |
| 2700            | 2000        | 5,40              | 4,03                |
| 2700            | 2100        | 5,67              | 4,24                |
| 2700            | 2200        | 5,94              | 4,45                |
| 2700            | 2300        | 6,21              | 4,65                |
| 2700            | 2400        | 6,48              | 4,86                |
| 2700            | 2500        | 6,75              | 5,07                |
| 2700            | 2600        | 7,02              | 5,27                |
| 2700            | 2700        | 7,29              | 5,48                |
| 2700            | 2800        | 7,56              | 5,69                |
| 2700            | 2900        | 7,83              | 5,90                |
| 2700            | 3000        | 8,10              | 6,10                |
| 2800            | 1800        | 5,04              | 3,76                |
| 2800            | 1900        | 5,32              | 3,97                |
| 2800            | 2000        | 5,60              | 4,19                |
| 2800            | 2100        | 5,88              | 4,40                |
| 2800            | 2200        | 6,16              | 4,61                |
| 2800            | 2300        | 6,44              | 4,83                |
| 2800            | 2400        | 6,72              | 5,04                |
| 2800            | 2500        | 7,00              | 5,26                |
| 2800            | 2600        | 7,28              | 5,47                |
| 2800            | 2700        | 7,56              | 5,69                |
| 2800            | 2800        | 7,84              | 5,90                |
| 2800            | 2900        | 8,12              | 6,12                |
| 2800            | 3000        | 8,40              | 6,33                |
| 2900            | 1800        | 5,22              | 3,89                |
| 2900            | 1900        | 5,51              | 4,12                |
| 2900            | 2000        | 5,80              | 4,34                |
| 2900            | 2100        | 6,09              | 4,56                |
| 2900            | 2200        | 6,38              | 4,78                |
| 2900            | 2300        | 6,67              | 5,00                |
| 2900            | 2400        | 6,96              | 5,23                |
| 2900            | 2500        | 7,25              | 5,45                |
| 2900            | 2600        | 7,54              | 5,67                |
| 2900            | 2700        | 7,83              | 5,90                |
| 2900            | 2800        | 8,12              | 6,12                |
| 2900            | 2900        | 8,41              | 6,34                |
| 2900            | 3000        | 8,70              | 6,57                |
| 3000            | 1800        | 5,40              | 4,03                |
| 3000            | 1900        | 5,70              | 4,26                |
| 3000            | 2000        | 6,00              | 4,49                |
| 3000            | 2100        | 6,30              | 4,72                |





# ALUCO FIRE SP 1P

*Single-flap spot smoke exhaust vents  
with straight or straight-slanted upstand*



## Key

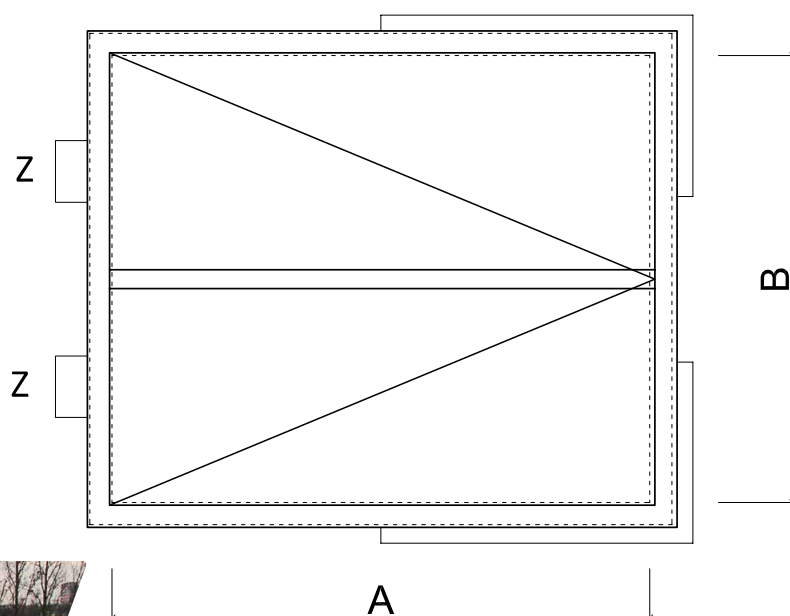
A, B – smoke vent aperture dimensions

H – upstand's height

h – deflector's height

Z – hinges

$\alpha$  – flap opening angle



Dimensions even up to  
2000 x 3000 mm

## Mechanical and physical properties



**SL 2000**

Maximum snow load



**WL 1500**

Wind exposure classification



**T - 15**

Confirmed performance in extremely low temperatures



**B 300**

High temperature resistance class



**160°**

Opening angle



**RE 10000**

Operation reliability - 10,000 cycles for vents with electric ventilation function

## Dimensions and aerodynamic surface of smoke exhaust

|                                  |                |                                    | AERODYNAMIC SURFACE                  |                                                      |                                      |                                                      |
|----------------------------------|----------------|------------------------------------|--------------------------------------|------------------------------------------------------|--------------------------------------|------------------------------------------------------|
|                                  |                |                                    | STRAIGHT UPSTAND                     |                                                      | STRAIGHT-SLANTED UPSTAND             |                                                      |
| VENT DIMENSIONS<br>WIDTH<br>[mm] | LENGTH<br>[mm] | GEOMETRIC<br>SURFACE<br>$A_v$ [m²] | AERODYNAMIC<br>SURFACE<br>$A_a$ [m²] | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] | AERODYNAMIC<br>SURFACE<br>$A_a$ [m²] | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] |
| 1000                             | 1000           | 1,00                               | 0,67                                 | 0,76                                                 | 0,68                                 | 0,76                                                 |
| 1000                             | 1100           | 1,10                               | 0,74                                 | 0,83                                                 | 0,74                                 | 0,84                                                 |
| 1000                             | 1200           | 1,20                               | 0,80                                 | 0,91                                                 | 0,80                                 | 0,91                                                 |
| 1000                             | 1300           | 1,30                               | 0,86                                 | 0,98                                                 | 0,87                                 | 0,99                                                 |
| 1000                             | 1400           | 1,40                               | 0,92                                 | 1,06                                                 | 0,93                                 | 1,07                                                 |
| 1000                             | 1500           | 1,50                               | 0,98                                 | 1,13                                                 | 0,99                                 | 1,14                                                 |
| 1000                             | 1600           | 1,60                               | 1,05                                 | 1,21                                                 | 1,06                                 | 1,22                                                 |
| 1000                             | 1700           | 1,70                               | 1,11                                 | 1,29                                                 | 1,12                                 | 1,30                                                 |
| 1000                             | 1800           | 1,80                               | 1,17                                 | 1,36                                                 | 1,18                                 | 1,38                                                 |
| 1000                             | 1900           | 1,90                               | 1,23                                 | 1,44                                                 | 1,25                                 | 1,45                                                 |
| 1000                             | 2000           | 2,00                               | 1,29                                 | 1,51                                                 | 1,31                                 | 1,53                                                 |
| 1000                             | 2100           | 2,10                               | 1,35                                 | 1,59                                                 | 1,37                                 | 1,61                                                 |
| 1000                             | 2200           | 2,20                               | 1,41                                 | 1,66                                                 | 1,43                                 | 1,68                                                 |
| 1000                             | 2300           | 2,30                               | 1,47                                 | 1,74                                                 | 1,49                                 | 1,76                                                 |
| 1000                             | 2400           | 2,40                               | 1,53                                 | 1,81                                                 | 1,56                                 | 1,84                                                 |
| 1000                             | 2500           | 2,50                               | 1,59                                 | 1,89                                                 | 1,62                                 | 1,92                                                 |
| 1000                             | 2600           | 2,60                               | 1,65                                 | 1,96                                                 | 1,68                                 | 1,99                                                 |
| 1000                             | 2700           | 2,70                               | 1,71                                 | 2,04                                                 | 1,74                                 | 2,07                                                 |
| 1000                             | 2800           | 2,80                               | 1,77                                 | 2,11                                                 | 1,80                                 | 2,15                                                 |
| 1000                             | 2900           | 2,90                               | 1,83                                 | 2,19                                                 | 1,86                                 | 2,23                                                 |
| 1000                             | 3000           | 3,00                               | 1,89                                 | 2,26                                                 | 1,93                                 | 2,30                                                 |
| 1100                             | 1000           | 1,10                               | 0,74                                 | 0,83                                                 | 0,74                                 | 0,84                                                 |
| 1100                             | 1100           | 1,21                               | 0,80                                 | 0,92                                                 | 0,81                                 | 0,92                                                 |
| 1100                             | 1200           | 1,32                               | 0,87                                 | 1,00                                                 | 0,88                                 | 1,01                                                 |
| 1100                             | 1300           | 1,43                               | 0,94                                 | 1,08                                                 | 0,95                                 | 1,09                                                 |
| 1100                             | 1400           | 1,54                               | 1,01                                 | 1,16                                                 | 1,02                                 | 1,18                                                 |
| 1100                             | 1500           | 1,65                               | 1,07                                 | 1,25                                                 | 1,09                                 | 1,26                                                 |





| AERODYNAMIC SURFACE              |                |                                                 |                         |                                        |                          |                                        |
|----------------------------------|----------------|-------------------------------------------------|-------------------------|----------------------------------------|--------------------------|----------------------------------------|
|                                  |                |                                                 | STRAIGHT UPSTAND        |                                        | STRAIGHT-SLANTED UPSTAND |                                        |
| VENT DIMENSIONS<br>WIDTH<br>[mm] | LENGTH<br>[mm] | GEOMETRIC<br>SURFACE<br>$A_v$ [m <sup>2</sup> ] | AERODYNAMIC<br>SURFACE  | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS | AERODYNAMIC<br>SURFACE   | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS |
|                                  |                |                                                 | $A_a$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ]                | $A_a$ [m <sup>2</sup> ]  | $A_a$ [m <sup>2</sup> ]                |
| 1100                             | 1600           | 1,76                                            | 1,14                    | 1,33                                   | 1,15                     | 1,35                                   |
| 1100                             | 1700           | 1,87                                            | 1,21                    | 1,41                                   | 1,22                     | 1,43                                   |
| 1100                             | 1800           | 1,98                                            | 1,27                    | 1,50                                   | 1,29                     | 1,52                                   |
| 1100                             | 1900           | 2,09                                            | 1,34                    | 1,58                                   | 1,36                     | 1,60                                   |
| 1100                             | 2000           | 2,20                                            | 1,40                    | 1,66                                   | 1,42                     | 1,69                                   |
| 1100                             | 2100           | 2,31                                            | 1,47                    | 1,74                                   | 1,49                     | 1,77                                   |
| 1100                             | 2200           | 2,42                                            | 1,53                    | 1,83                                   | 1,56                     | 1,86                                   |
| 1100                             | 2300           | 2,53                                            | 1,60                    | 1,91                                   | 1,63                     | 1,94                                   |
| 1100                             | 2400           | 2,64                                            | 1,66                    | 1,99                                   | 1,69                     | 2,03                                   |
| 1100                             | 2500           | 2,75                                            | 1,73                    | 2,07                                   | 1,76                     | 2,11                                   |
| 1100                             | 2600           | 2,86                                            | 1,79                    | 2,16                                   | 1,83                     | 2,20                                   |
| 1100                             | 2700           | 2,97                                            | 1,86                    | 2,24                                   | 1,89                     | 2,28                                   |
| 1100                             | 2800           | 3,08                                            | 1,92                    | 2,32                                   | 1,96                     | 2,37                                   |
| 1100                             | 2900           | 3,19                                            | 1,99                    | 2,40                                   | 2,03                     | 2,45                                   |
| 1100                             | 3000           | 3,30                                            | 2,05                    | 2,49                                   | 2,09                     | 2,54                                   |
| 1200                             | 1000           | 1,20                                            | 0,80                    | 0,91                                   | 0,80                     | 0,91                                   |
| 1200                             | 1100           | 1,32                                            | 0,87                    | 1,00                                   | 0,88                     | 1,01                                   |
| 1200                             | 1200           | 1,44                                            | 0,94                    | 1,09                                   | 0,95                     | 1,10                                   |
| 1200                             | 1300           | 1,56                                            | 1,02                    | 1,18                                   | 1,03                     | 1,19                                   |
| 1200                             | 1400           | 1,68                                            | 1,09                    | 1,27                                   | 1,10                     | 1,28                                   |
| 1200                             | 1500           | 1,80                                            | 1,16                    | 1,36                                   | 1,18                     | 1,38                                   |
| 1200                             | 1600           | 1,92                                            | 1,23                    | 1,45                                   | 1,25                     | 1,47                                   |
| 1200                             | 1700           | 2,04                                            | 1,30                    | 1,54                                   | 1,32                     | 1,56                                   |
| 1200                             | 1800           | 2,16                                            | 1,37                    | 1,63                                   | 1,40                     | 1,66                                   |
| 1200                             | 1900           | 2,28                                            | 1,44                    | 1,72                                   | 1,47                     | 1,75                                   |
| 1200                             | 2000           | 2,40                                            | 1,51                    | 1,81                                   | 1,54                     | 1,84                                   |
| 1200                             | 2100           | 2,52                                            | 1,58                    | 1,90                                   | 1,61                     | 1,94                                   |
| 1200                             | 2200           | 2,64                                            | 1,65                    | 1,99                                   | 1,69                     | 2,03                                   |
| 1200                             | 2300           | 2,76                                            | 1,72                    | 2,08                                   | 1,76                     | 2,12                                   |
| 1200                             | 2400           | 2,88                                            | 1,79                    | 2,17                                   | 1,83                     | 2,21                                   |
| 1200                             | 2500           | 3,00                                            | 1,86                    | 2,26                                   | 1,90                     | 2,31                                   |
| 1200                             | 2600           | 3,12                                            | 1,93                    | 2,35                                   | 1,97                     | 2,40                                   |
| 1200                             | 2700           | 3,24                                            | 2,00                    | 2,44                                   | 2,04                     | 2,49                                   |
| 1200                             | 2800           | 3,36                                            | 2,07                    | 2,53                                   | 2,12                     | 2,59                                   |
| 1200                             | 2900           | 3,48                                            | 2,14                    | 2,62                                   | 2,19                     | 2,68                                   |
| 1200                             | 3000           | 3,60                                            | 2,21                    | 2,71                                   | 2,26                     | 2,77                                   |
| 1300                             | 1000           | 1,30                                            | 0,86                    | 0,98                                   | 0,87                     | 0,99                                   |
| 1300                             | 1100           | 1,43                                            | 0,94                    | 1,08                                   | 0,95                     | 1,09                                   |
| 1300                             | 1200           | 1,56                                            | 1,02                    | 1,18                                   | 1,03                     | 1,19                                   |
| 1300                             | 1300           | 1,69                                            | 1,09                    | 1,28                                   | 1,11                     | 1,29                                   |
| 1300                             | 1400           | 1,82                                            | 1,17                    | 1,38                                   | 1,19                     | 1,39                                   |
| 1300                             | 1500           | 1,95                                            | 1,25                    | 1,47                                   | 1,27                     | 1,49                                   |
| 1300                             | 1600           | 2,08                                            | 1,32                    | 1,57                                   | 1,35                     | 1,59                                   |
| 1300                             | 1700           | 2,21                                            | 1,40                    | 1,67                                   | 1,42                     | 1,70                                   |
| 1300                             | 1800           | 2,34                                            | 1,48                    | 1,77                                   | 1,50                     | 1,80                                   |
| 1300                             | 1900           | 2,47                                            | 1,55                    | 1,86                                   | 1,58                     | 1,90                                   |
| 1300                             | 2000           | 2,60                                            | 1,62                    | 1,96                                   | 1,66                     | 2,00                                   |
| 1300                             | 2100           | 2,73                                            | 1,70                    | 2,06                                   | 1,73                     | 2,10                                   |
| 1300                             | 2200           | 2,86                                            | 1,77                    | 2,16                                   | 1,81                     | 2,20                                   |
| 1300                             | 2300           | 2,99                                            | 1,85                    | 2,25                                   | 1,89                     | 2,30                                   |
| 1300                             | 2400           | 3,12                                            | 1,92                    | 2,35                                   | 1,96                     | 2,40                                   |
| 1300                             | 2500           | 3,25                                            | 1,99                    | 2,45                                   | 2,04                     | 2,50                                   |
| 1300                             | 2600           | 3,38                                            | 2,07                    | 2,54                                   | 2,12                     | 2,61                                   |
| 1300                             | 2700           | 3,51                                            | 2,14                    | 2,64                                   | 2,19                     | 2,71                                   |
| 1300                             | 2800           | 3,64                                            | 2,21                    | 2,74                                   | 2,27                     | 2,81                                   |
| 1300                             | 2900           | 3,77                                            | 2,29                    | 2,84                                   | 2,34                     | 2,91                                   |
| 1300                             | 3000           | 3,90                                            | 2,36                    | 2,93                                   | 2,42                     | 3,01                                   |
| 1400                             | 1000           | 1,40                                            | 0,92                    | 1,06                                   | 0,93                     | 1,07                                   |
| 1400                             | 1100           | 1,54                                            | 1,01                    | 1,16                                   | 1,02                     | 1,18                                   |
| 1400                             | 1200           | 1,68                                            | 1,09                    | 1,27                                   | 1,10                     | 1,28                                   |

| AERODYNAMIC SURFACE              |                |                                                 |                         |                                        |                          |                                        |
|----------------------------------|----------------|-------------------------------------------------|-------------------------|----------------------------------------|--------------------------|----------------------------------------|
|                                  |                |                                                 | STRAIGHT UPSTAND        |                                        | STRAIGHT-SLANTED UPSTAND |                                        |
| VENT DIMENSIONS<br>WIDTH<br>[mm] | LENGTH<br>[mm] | GEOMETRIC<br>SURFACE<br>$A_v$ [m <sup>2</sup> ] | AERODYNAMIC<br>SURFACE  | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS | AERODYNAMIC<br>SURFACE   | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS |
|                                  |                |                                                 | $A_a$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ]                | $A_a$ [m <sup>2</sup> ]  | $A_a$ [m <sup>2</sup> ]                |
| 1400                             | 1300           | 1,82                                            | 1,17                    | 1,38                                   | 1,19                     | 1,39                                   |
| 1400                             | 1400           | 1,96                                            | 1,25                    | 1,48                                   | 1,27                     | 1,50                                   |
| 1400                             | 1500           | 2,10                                            | 1,33                    | 1,59                                   | 1,36                     | 1,61                                   |
| 1400                             | 1600           | 2,24                                            | 1,42                    | 1,69                                   | 1,44                     | 1,72                                   |
| 1400                             | 1700           | 2,38                                            | 1,50                    | 1,80                                   | 1,52                     | 1,83                                   |
| 1400                             | 1800           | 2,52                                            | 1,57                    | 1,90                                   | 1,60                     | 1,94                                   |
| 1400                             | 1900           | 2,66                                            | 1,65                    | 2,01                                   | 1,69                     | 2,05                                   |
| 1400                             | 2000           | 2,80                                            | 1,73                    | 2,11                                   | 1,77                     | 2,15                                   |
| 1400                             | 2100           | 2,94                                            | 1,81                    | 2,21                                   | 1,85                     | 2,26                                   |
| 1400                             | 2200           | 3,08                                            | 1,89                    | 2,32                                   | 1,93                     | 2,37                                   |
| 1400                             | 2300           | 3,22                                            | 1,97                    | 2,42                                   | 2,01                     | 2,48                                   |
| 1400                             | 2400           | 3,36                                            | 2,05                    | 2,53                                   | 2,09                     | 2,59                                   |
| 1400                             | 2500           | 3,50                                            | 2,12                    | 2,63                                   | 2,18                     | 2,70                                   |
| 1400                             | 2600           | 3,64                                            | 2,20                    | 2,74                                   | 2,26                     | 2,81                                   |
| 1400                             | 2700           | 3,78                                            | 2,28                    | 2,84                                   | 2,34                     | 2,92                                   |
| 1400                             | 2800           | 3,92                                            | 2,35                    | 2,95                                   | 2,42                     | 3,03                                   |
| 1400                             | 2900           | 4,06                                            | 2,43                    | 3,05                                   | 2,50                     | 3,14                                   |
| 1400                             | 3000           | 4,20                                            | 2,51                    | 3,16                                   | 2,58                     | 3,25                                   |
| 1500                             | 1000           | 1,50                                            | 0,98                    | 1,13                                   | 0,99                     | 1,14                                   |
| 1500                             | 1100           | 1,65                                            | 1,07                    | 1,25                                   | 1,09                     | 1,26                                   |
| 1500                             | 1200           | 1,80                                            | 1,16                    | 1,36                                   | 1,18                     | 1,38                                   |
| 1500                             | 1300           | 1,95                                            | 1,25                    | 1,47                                   | 1,27                     | 1,49                                   |
| 1500                             | 1400           | 2,10                                            | 1,33                    | 1,59                                   | 1,36                     | 1,61                                   |
| 1500                             | 1500           | 2,25                                            | 1,42                    | 1,70                                   | 1,44                     | 1,73                                   |
| 1500                             | 1600           | 2,40                                            | 1,51                    | 1,81                                   | 1,53                     | 1,84                                   |
| 1500                             | 1700           | 2,55                                            | 1,59                    | 1,92                                   | 1,62                     | 1,96                                   |
| 1500                             | 1800           | 2,70                                            | 1,67                    | 2,03                                   | 1,71                     | 2,08                                   |
| 1500                             | 1900           | 2,85                                            | 1,76                    | 2,15                                   | 1,79                     | 2,19                                   |
| 1500                             | 2000           | 3,00                                            | 1,84                    | 2,26                                   | 1,88                     | 2,31                                   |
| 1500                             | 2100           | 3,15                                            | 1,92                    | 2,37                                   | 1,97                     | 2,43                                   |
| 1500                             | 2200           | 3,30                                            | 2,00                    | 2,48                                   | 2,05                     | 2,55                                   |
| 1500                             | 2300           | 3,45                                            | 2,09                    | 2,60                                   | 2,14                     | 2,66                                   |
| 1500                             | 2400           | 3,60                                            | 2,17                    | 2,71                                   | 2,22                     | 2,78                                   |
| 1500                             | 2500           | 3,75                                            | 2,25                    | 2,82                                   | 2,31                     | 2,90                                   |
| 1500                             | 2600           | 3,90                                            | 2,33                    | 2,93                                   | 2,40                     | 3,02                                   |
| 1500                             | 2700           | 4,05                                            | 2,41                    | 3,04                                   | 2,48                     | 3,13                                   |
| 1500                             | 2800           | 4,20                                            | 2,49                    | 3,16                                   | 2,56                     | 3,25                                   |
| 1500                             | 2900           | 4,35                                            | 2,57                    | 3,27                                   | 2,65                     | 3,37                                   |
| 1500                             | 3000           | 4,50                                            | 2,65                    | 3,38                                   | 2,73                     | 3,49                                   |
| 1600                             | 1000           | 1,60                                            | 1,05                    | 1,21                                   | 1,06                     | 1,22                                   |
| 1600                             | 1100           | 1,76                                            | 1,14                    | 1,33                                   | 1,15                     | 1,35                                   |
| 1600                             | 1200           | 1,92                                            | 1,23                    | 1,45                                   | 1,25                     | 1,47                                   |
| 1600                             | 1300           | 2,08                                            | 1,32                    | 1,57                                   | 1,35                     | 1,59                                   |
| 1600                             | 1400           | 2,24                                            | 1,42                    | 1,69                                   | 1,44                     | 1,72                                   |
| 1600                             | 1500           | 2,40                                            | 1,51                    | 1,81                                   | 1,53                     | 1,84                                   |
| 1600                             | 1600           | 2,56                                            | 1,59                    | 1,93                                   | 1,63                     | 1,97                                   |
| 1600                             | 1700           | 2,72                                            | 1,68                    | 2,05                                   | 1,72                     | 2,09                                   |
| 1600                             | 1800           | 2,88                                            | 1,77                    | 2,17                                   | 1,81                     | 2,22                                   |
| 1600                             | 1900           | 3,04                                            | 1,86                    | 2,29                                   | 1,90                     | 2,34                                   |
| 1600                             | 2000           | 3,20                                            | 1,95                    | 2,41                                   | 1,99                     | 2,47                                   |
| 1600                             | 2100           | 3,36                                            | 2,03                    | 2,53                                   | 2,08                     | 2,59                                   |
| 1600                             | 2200           | 3,52                                            | 2,12                    | 2,65                                   | 2,17                     | 2,72                                   |
| 1600                             | 2300           | 3,68                                            | 2,20                    | 2,77                                   | 2,26                     | 2,84                                   |
| 1600                             | 2400           | 3,84                                            | 2,29                    | 2,89                                   | 2,35                     | 2,97                                   |
| 1600                             | 2500           | 4,00                                            | 2,37                    | 3,01                                   | 2,44                     | 3,10                                   |
| 1600                             | 2600           | 4,16                                            | 2,46                    | 3,13                                   | 2,53                     | 3,22                                   |
| 1600                             | 2700           | 4,32                                            | 2,54                    | 3,24                                   | 2,62                     | 3,35                                   |
| 1600                             | 2800           | 4,48                                            | 2,63                    | 3,36                                   | 2,71                     | 3,47                                   |
| 1600                             | 2900           | 4,64                                            | 2,71                    | 3,48                                   | 2,80                     | 3,60                                   |
| 1600                             | 3000           | 4,80                                            | 2,80                    | 3,60                                   | 2,89                     | 3,72                                   |





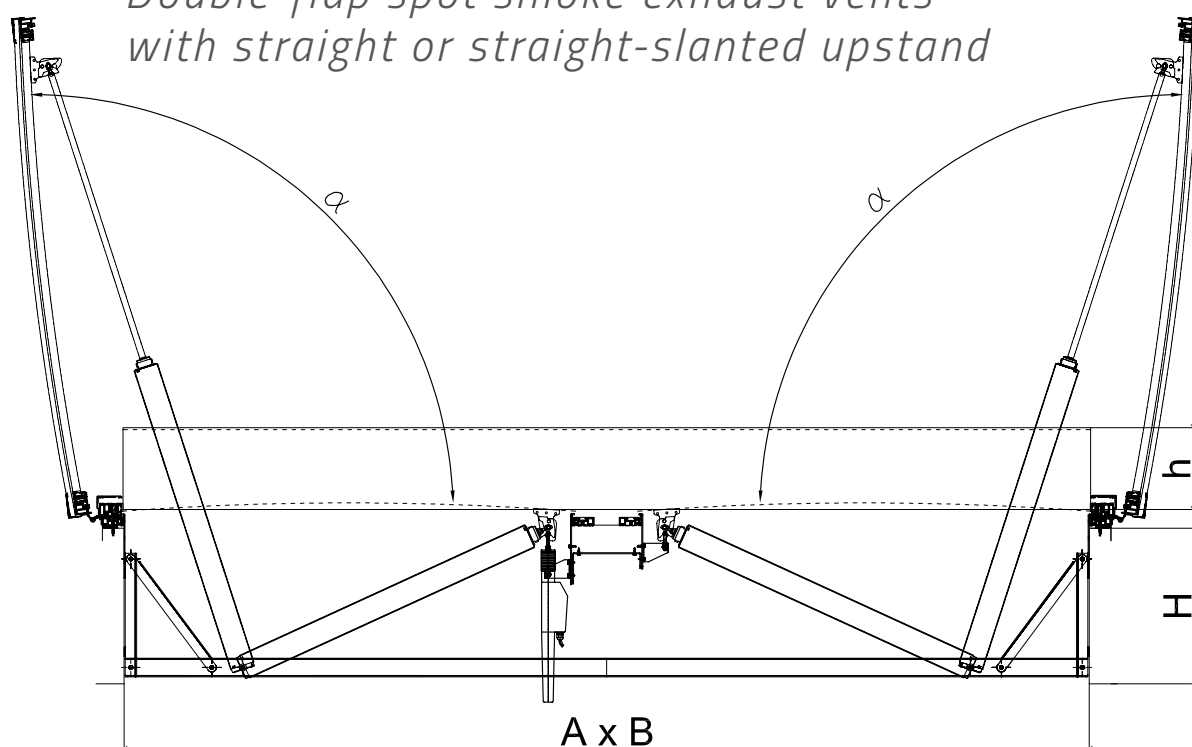
| AERODYNAMIC SURFACE |             |                                              |                         |                                  |                          |                                  |
|---------------------|-------------|----------------------------------------------|-------------------------|----------------------------------|--------------------------|----------------------------------|
|                     |             |                                              | STRAIGHT UPSTAND        |                                  | STRAIGHT-SLANTED UPSTAND |                                  |
| VENT DIMENSIONS     |             | GEOMETRIC SURFACE<br>$A_v$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE     | AERODYNAMIC SURFACE + DEFLECTORS | AERODYNAMIC SURFACE      | AERODYNAMIC SURFACE + DEFLECTORS |
| WIDTH [mm]          | LENGTH [mm] |                                              | $A_a$ [m <sup>2</sup> ] | $A_a$ [m <sup>2</sup> ]          | $A_a$ [m <sup>2</sup> ]  | $A_a$ [m <sup>2</sup> ]          |
| 1700                | 1000        | 1,70                                         | 1,11                    | 1,29                             | 1,12                     | 1,30                             |
| 1700                | 1100        | 1,87                                         | 1,21                    | 1,41                             | 1,22                     | 1,43                             |
| 1700                | 1200        | 2,04                                         | 1,30                    | 1,54                             | 1,32                     | 1,56                             |
| 1700                | 1300        | 2,21                                         | 1,40                    | 1,67                             | 1,42                     | 1,70                             |
| 1700                | 1400        | 2,38                                         | 1,50                    | 1,80                             | 1,52                     | 1,83                             |
| 1700                | 1500        | 2,55                                         | 1,59                    | 1,92                             | 1,62                     | 1,96                             |
| 1700                | 1600        | 2,72                                         | 1,68                    | 2,05                             | 1,72                     | 2,09                             |
| 1700                | 1700        | 2,89                                         | 1,78                    | 2,18                             | 1,82                     | 2,23                             |
| 1700                | 1800        | 3,06                                         | 1,87                    | 2,30                             | 1,91                     | 2,36                             |
| 1700                | 1900        | 3,23                                         | 1,96                    | 2,43                             | 2,01                     | 2,49                             |
| 1700                | 2000        | 3,4                                          | 2,05                    | 2,56                             | 2,10                     | 2,63                             |
| 1700                | 2100        | 3,57                                         | 2,14                    | 2,68                             | 2,20                     | 2,76                             |
| 1700                | 2200        | 3,74                                         | 2,23                    | 2,81                             | 2,29                     | 2,89                             |
| 1700                | 2300        | 3,91                                         | 2,32                    | 2,94                             | 2,39                     | 3,03                             |
| 1700                | 2400        | 4,08                                         | 2,41                    | 3,06                             | 2,48                     | 3,16                             |
| 1700                | 2500        | 4,25                                         | 2,50                    | 3,19                             | 2,57                     | 3,29                             |
| 1700                | 2600        | 4,42                                         | 2,59                    | 3,32                             | 2,67                     | 3,43                             |
| 1700                | 2700        | 4,59                                         | 2,67                    | 3,44                             | 2,76                     | 3,56                             |
| 1700                | 2800        | 4,76                                         | 2,76                    | 3,57                             | 2,85                     | 3,70                             |
| 1700                | 2900        | 4,93                                         | 2,85                    | 3,70                             | 2,94                     | 3,83                             |
| 1700                | 3000        | 5,10                                         | 2,93                    | 3,82                             | 3,04                     | 3,96                             |
| 1800                | 1000        | 1,80                                         | 1,17                    | 1,36                             | 1,18                     | 1,38                             |
| 1800                | 1100        | 1,98                                         | 1,27                    | 1,50                             | 1,29                     | 1,52                             |
| 1800                | 1200        | 2,16                                         | 1,37                    | 1,63                             | 1,40                     | 1,66                             |
| 1800                | 1300        | 2,34                                         | 1,48                    | 1,77                             | 1,50                     | 1,80                             |
| 1800                | 1400        | 2,52                                         | 1,57                    | 1,90                             | 1,60                     | 1,94                             |
| 1800                | 1500        | 2,70                                         | 1,67                    | 2,03                             | 1,71                     | 2,08                             |
| 1800                | 1600        | 2,88                                         | 1,77                    | 2,17                             | 1,81                     | 2,22                             |
| 1800                | 1700        | 3,06                                         | 1,87                    | 2,30                             | 1,91                     | 2,36                             |
| 1800                | 1800        | 3,24                                         | 1,96                    | 2,44                             | 2,01                     | 2,50                             |
| 1800                | 1900        | 3,42                                         | 2,06                    | 2,57                             | 2,11                     | 2,64                             |
| 1800                | 2000        | 3,60                                         | 2,15                    | 2,71                             | 2,21                     | 2,78                             |
| 1800                | 2100        | 3,78                                         | 2,25                    | 2,84                             | 2,31                     | 2,92                             |
| 1800                | 2200        | 3,96                                         | 2,34                    | 2,97                             | 2,41                     | 3,07                             |
| 1800                | 2300        | 4,14                                         | 2,43                    | 3,11                             | 2,51                     | 3,21                             |
| 1800                | 2400        | 4,32                                         | 2,53                    | 3,24                             | 2,61                     | 3,35                             |
| 1800                | 2500        | 4,5                                          | 2,62                    | 3,38                             | 2,70                     | 3,49                             |
| 1800                | 2600        | 4,68                                         | 2,71                    | 3,51                             | 2,80                     | 3,63                             |
| 1800                | 2700        | 4,86                                         | 2,80                    | 3,65                             | 2,90                     | 3,78                             |
| 1800                | 2800        | 5,04                                         | 2,89                    | 3,78                             | 2,99                     | 3,92                             |
| 1800                | 2900        | 5,22                                         | 2,98                    | 3,91                             | 3,09                     | 4,06                             |
| 1800                | 3000        | 5,40                                         | 3,07                    | 4,05                             | 3,19                     | 4,20                             |
| 1900                | 1000        | 1,90                                         | 1,23                    | 1,44                             | 1,25                     | 1,45                             |
| 1900                | 1100        | 2,09                                         | 1,34                    | 1,58                             | 1,36                     | 1,60                             |
| 1900                | 1200        | 2,28                                         | 1,44                    | 1,72                             | 1,47                     | 1,75                             |
| 1900                | 1300        | 2,47                                         | 1,55                    | 1,86                             | 1,58                     | 1,90                             |
| 1900                | 1400        | 2,66                                         | 1,65                    | 2,01                             | 1,69                     | 2,05                             |
| 1900                | 1500        | 2,85                                         | 1,76                    | 2,15                             | 1,79                     | 2,19                             |
| 1900                | 1600        | 3,04                                         | 1,86                    | 2,29                             | 1,90                     | 2,34                             |
| 1900                | 1700        | 3,23                                         | 1,96                    | 2,43                             | 2,01                     | 2,49                             |
| 1900                | 1800        | 3,42                                         | 2,06                    | 2,57                             | 2,11                     | 2,64                             |
| 1900                | 1900        | 3,61                                         | 2,16                    | 2,71                             | 2,22                     | 2,79                             |
| 1900                | 2000        | 3,80                                         | 2,26                    | 2,86                             | 2,32                     | 2,94                             |
| 1900                | 2100        | 3,99                                         | 2,35                    | 3,00                             | 2,42                     | 3,09                             |
| 1900                | 2200        | 4,18                                         | 2,45                    | 3,14                             | 2,53                     | 3,24                             |
| 1900                | 2300        | 4,37                                         | 2,55                    | 3,28                             | 2,63                     | 3,39                             |
| 1900                | 2400        | 4,56                                         | 2,64                    | 3,42                             | 2,73                     | 3,54                             |
| 1900                | 2500        | 4,75                                         | 2,74                    | 3,56                             | 2,83                     | 3,69                             |
| 1900                | 2600        | 4,94                                         | 2,83                    | 3,70                             | 2,93                     | 3,84                             |
| 1900                | 2700        | 5,13                                         | 2,93                    | 3,85                             | 3,03                     | 3,99                             |





# ALUCO FIRE SP 2P

*Double-flap spot smoke exhaust vents  
with straight or straight-slanted upstand*



## Key

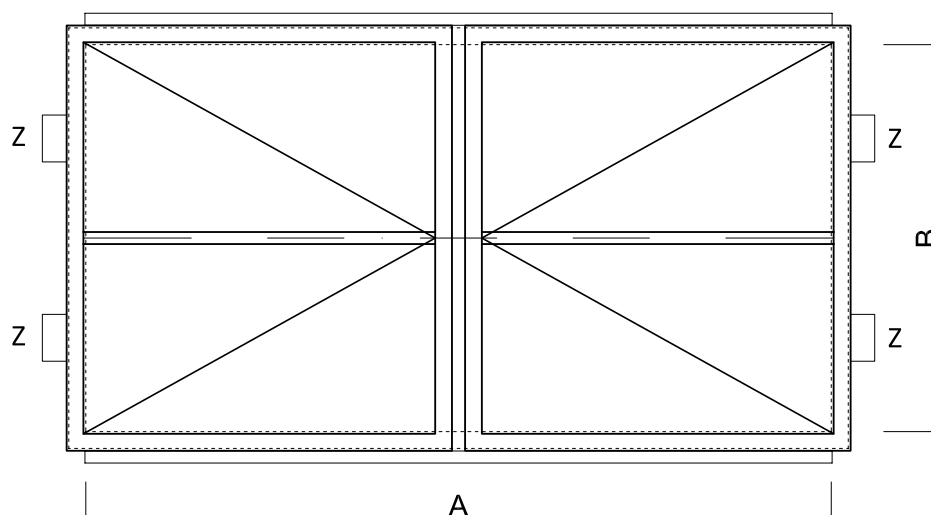
A, B – smoke vent aperture dimensions

H – upstand's height

h – deflector's height

Z – hinges

α – flap opening angle



Dimensions even up to  
3500 x 3000 mm

## Mechanical and physical properties



**SL 2000**

Maximum snow load



**WL 1500**

Wind exposure classification



**T - 15**

Confirmed performance in extremely low temperatures



**B 300**

High temperature resistance class



**90°**

Opening angle



**RE 10000**

Operation reliability - 10,000 cycles for vents with electric ventilation function

## Dimensions and aerodynamic surface of smoke exhaust

|                                  |                |                                    | AERODYNAMIC SURFACE                  |                                                      |                                        |                                                      |
|----------------------------------|----------------|------------------------------------|--------------------------------------|------------------------------------------------------|----------------------------------------|------------------------------------------------------|
|                                  |                |                                    | STRAIGHT UPSTAND<br>H = 500 MM       |                                                      | STRAIGHT-SLANTED UPSTAND<br>H = 500 MM |                                                      |
| VENT DIMENSIONS<br>WIDTH<br>[mm] | LENGTH<br>[mm] | GEOMETRIC<br>SURFACE<br>$A_v$ [m²] | AERODYNAMIC<br>SURFACE<br>$A_a$ [m²] | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] | AERODYNAMIC<br>SURFACE<br>$A_a$ [m²]   | AERODYNAMIC<br>SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] |
| 1900                             | 1800           | 3,42                               | 1,87                                 | 2,22                                                 | 1,88                                   | 2,33                                                 |
| 1900                             | 1900           | 3,61                               | 2,01                                 | 2,35                                                 | 1,98                                   | 2,46                                                 |
| 1900                             | 2000           | 3,80                               | 2,10                                 | 2,48                                                 | 2,07                                   | 2,60                                                 |
| 1900                             | 2100           | 3,99                               | 2,20                                 | 2,62                                                 | 2,17                                   | 2,73                                                 |
| 1900                             | 2200           | 4,18                               | 2,29                                 | 2,75                                                 | 2,26                                   | 2,87                                                 |
| 1900                             | 2300           | 4,37                               | 2,38                                 | 2,88                                                 | 2,36                                   | 3,00                                                 |
| 1900                             | 2400           | 4,56                               | 2,47                                 | 3,01                                                 | 2,45                                   | 3,14                                                 |
| 1900                             | 2500           | 4,75                               | 2,56                                 | 3,15                                                 | 2,55                                   | 3,28                                                 |
| 1900                             | 2600           | 4,94                               | 2,65                                 | 3,28                                                 | 2,64                                   | 3,41                                                 |
| 1900                             | 2700           | 5,13                               | 2,75                                 | 3,41                                                 | 2,74                                   | 3,55                                                 |
| 1900                             | 2800           | 5,32                               | 2,84                                 | 3,55                                                 | 2,83                                   | 3,68                                                 |
| 1900                             | 2900           | 5,51                               | 2,93                                 | 3,68                                                 | 2,92                                   | 3,82                                                 |
| 1900                             | 3000           | 5,70                               | 3,01                                 | 3,82                                                 | 3,02                                   | 3,96                                                 |
| 2000                             | 1800           | 3,60                               | 2,01                                 | 2,34                                                 | 1,97                                   | 2,46                                                 |
| 2000                             | 1900           | 3,80                               | 2,10                                 | 2,48                                                 | 2,07                                   | 2,60                                                 |
| 2000                             | 2000           | 4,00                               | 2,20                                 | 2,62                                                 | 2,17                                   | 2,74                                                 |
| 2000                             | 2100           | 4,20                               | 2,30                                 | 2,76                                                 | 2,27                                   | 2,88                                                 |
| 2000                             | 2200           | 4,40                               | 2,39                                 | 2,90                                                 | 2,37                                   | 3,03                                                 |
| 2000                             | 2300           | 4,60                               | 2,49                                 | 3,04                                                 | 2,47                                   | 3,17                                                 |
| 2000                             | 2400           | 4,80                               | 2,58                                 | 3,18                                                 | 2,57                                   | 3,31                                                 |
| 2000                             | 2500           | 5,00                               | 2,68                                 | 3,33                                                 | 2,67                                   | 3,46                                                 |
| 2000                             | 2600           | 5,20                               | 2,77                                 | 3,47                                                 | 2,77                                   | 3,60                                                 |
| 2000                             | 2700           | 5,40                               | 2,87                                 | 3,61                                                 | 2,86                                   | 3,75                                                 |
| 2000                             | 2800           | 5,60                               | 2,96                                 | 3,75                                                 | 2,96                                   | 3,89                                                 |
| 2000                             | 2900           | 5,80                               | 3,05                                 | 3,89                                                 | 3,06                                   | 4,03                                                 |
| 2000                             | 3000           | 6,00                               | 3,14                                 | 4,04                                                 | 3,16                                   | 4,18                                                 |
| 2100                             | 1800           | 3,78                               | 2,09                                 | 2,47                                                 | 2,06                                   | 2,58                                                 |





| AERODYNAMIC SURFACE                                                                       |      |      |                                                |                                                             |                                                |                                                             |
|-------------------------------------------------------------------------------------------|------|------|------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------|
| VENT DIMENSIONS<br>WIDTH [mm]    LENGTH [mm]    GEOMETRIC SURFACE $A_v$ [m <sup>2</sup> ] |      |      | STRAIGHT UPSTAND<br>H = 500 MM                 |                                                             | STRAIGHT-SLANTED UPSTAND<br>H = 500 MM         |                                                             |
|                                                                                           |      |      | AERODYNAMIC SURFACE<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE + DEFLECTORS<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE + DEFLECTORS<br>$A_a$ [m <sup>2</sup> ] |
| 2100                                                                                      | 1900 | 3,99 | 2,20                                           | 2,62                                                        | 2,17                                           | 2,73                                                        |
| 2100                                                                                      | 2000 | 4,20 | 2,30                                           | 2,76                                                        | 2,27                                           | 2,88                                                        |
| 2100                                                                                      | 2100 | 4,41 | 2,40                                           | 2,91                                                        | 2,38                                           | 3,03                                                        |
| 2100                                                                                      | 2200 | 4,62 | 2,50                                           | 3,06                                                        | 2,48                                           | 3,18                                                        |
| 2100                                                                                      | 2300 | 4,83 | 2,60                                           | 3,21                                                        | 2,58                                           | 3,34                                                        |
| 2100                                                                                      | 2400 | 5,04 | 2,69                                           | 3,36                                                        | 2,69                                           | 3,49                                                        |
| 2100                                                                                      | 2500 | 5,25 | 2,79                                           | 3,50                                                        | 2,79                                           | 3,64                                                        |
| 2100                                                                                      | 2600 | 5,46 | 2,89                                           | 3,65                                                        | 2,89                                           | 3,79                                                        |
| 2100                                                                                      | 2700 | 5,67 | 2,99                                           | 3,80                                                        | 2,99                                           | 3,94                                                        |
| 2100                                                                                      | 2800 | 5,88 | 3,08                                           | 3,95                                                        | 3,09                                           | 4,10                                                        |
| 2100                                                                                      | 2900 | 6,09 | 3,18                                           | 4,10                                                        | 3,19                                           | 4,25                                                        |
| 2100                                                                                      | 3000 | 6,30 | 3,27                                           | 4,26                                                        | 3,30                                           | 4,40                                                        |
| 2200                                                                                      | 1800 | 3,96 | 2,18                                           | 2,59                                                        | 2,16                                           | 2,71                                                        |
| 2200                                                                                      | 1900 | 4,18 | 2,29                                           | 2,75                                                        | 2,26                                           | 2,87                                                        |
| 2200                                                                                      | 2000 | 4,40 | 2,39                                           | 2,90                                                        | 2,37                                           | 3,03                                                        |
| 2200                                                                                      | 2100 | 4,62 | 2,50                                           | 3,06                                                        | 2,48                                           | 3,18                                                        |
| 2200                                                                                      | 2200 | 4,84 | 2,60                                           | 3,21                                                        | 2,59                                           | 3,34                                                        |
| 2200                                                                                      | 2300 | 5,06 | 2,70                                           | 3,37                                                        | 2,70                                           | 3,50                                                        |
| 2200                                                                                      | 2400 | 5,28 | 2,80                                           | 3,53                                                        | 2,80                                           | 3,66                                                        |
| 2200                                                                                      | 2500 | 5,50 | 2,90                                           | 3,69                                                        | 2,91                                           | 3,82                                                        |
| 2200                                                                                      | 2600 | 5,72 | 3,00                                           | 3,84                                                        | 3,01                                           | 3,98                                                        |
| 2200                                                                                      | 2700 | 5,94 | 3,10                                           | 4,00                                                        | 3,12                                           | 4,14                                                        |
| 2200                                                                                      | 2800 | 6,16 | 3,20                                           | 4,16                                                        | 3,22                                           | 4,30                                                        |
| 2200                                                                                      | 2900 | 6,38 | 3,30                                           | 4,32                                                        | 3,33                                           | 4,46                                                        |
| 2200                                                                                      | 3000 | 6,60 | 3,40                                           | 4,48                                                        | 3,43                                           | 4,62                                                        |
| 2300                                                                                      | 1800 | 4,14 | 2,27                                           | 2,72                                                        | 2,25                                           | 2,84                                                        |
| 2300                                                                                      | 1900 | 4,37 | 2,38                                           | 2,88                                                        | 2,36                                           | 3,00                                                        |
| 2300                                                                                      | 2000 | 4,60 | 2,49                                           | 3,04                                                        | 2,47                                           | 3,17                                                        |
| 2300                                                                                      | 2100 | 4,83 | 2,60                                           | 3,21                                                        | 2,58                                           | 3,34                                                        |
| 2300                                                                                      | 2200 | 5,06 | 2,70                                           | 3,37                                                        | 2,70                                           | 3,50                                                        |
| 2300                                                                                      | 2300 | 5,29 | 2,81                                           | 3,54                                                        | 2,81                                           | 3,67                                                        |
| 2300                                                                                      | 2400 | 5,52 | 2,91                                           | 3,70                                                        | 2,92                                           | 3,84                                                        |
| 2300                                                                                      | 2500 | 5,75 | 3,02                                           | 3,87                                                        | 3,03                                           | 4,00                                                        |
| 2300                                                                                      | 2600 | 5,98 | 3,12                                           | 4,03                                                        | 3,14                                           | 4,17                                                        |
| 2300                                                                                      | 2700 | 6,21 | 3,22                                           | 4,20                                                        | 3,24                                           | 4,34                                                        |
| 2300                                                                                      | 2800 | 6,44 | 3,32                                           | 4,37                                                        | 3,35                                           | 4,51                                                        |
| 2300                                                                                      | 2900 | 6,67 | 3,42                                           | 4,53                                                        | 3,46                                           | 4,68                                                        |
| 2300                                                                                      | 3000 | 6,90 | 3,52                                           | 4,70                                                        | 3,57                                           | 4,85                                                        |
| 2400                                                                                      | 1800 | 4,32 | 2,36                                           | 2,84                                                        | 2,34                                           | 2,97                                                        |
| 2400                                                                                      | 1900 | 4,56 | 2,47                                           | 3,01                                                        | 2,45                                           | 3,14                                                        |
| 2400                                                                                      | 2000 | 4,80 | 2,58                                           | 3,18                                                        | 2,57                                           | 3,31                                                        |
| 2400                                                                                      | 2100 | 5,04 | 2,69                                           | 3,36                                                        | 2,69                                           | 3,49                                                        |
| 2400                                                                                      | 2200 | 5,28 | 2,80                                           | 3,53                                                        | 2,80                                           | 3,66                                                        |
| 2400                                                                                      | 2300 | 5,52 | 2,91                                           | 3,70                                                        | 2,92                                           | 3,84                                                        |
| 2400                                                                                      | 2400 | 5,76 | 3,02                                           | 3,87                                                        | 3,03                                           | 4,01                                                        |
| 2400                                                                                      | 2500 | 6,00 | 3,13                                           | 4,05                                                        | 3,14                                           | 4,19                                                        |
| 2400                                                                                      | 2600 | 6,24 | 3,23                                           | 4,22                                                        | 3,26                                           | 4,36                                                        |
| 2400                                                                                      | 2700 | 6,48 | 3,34                                           | 4,40                                                        | 3,37                                           | 4,54                                                        |
| 2400                                                                                      | 2800 | 6,72 | 3,44                                           | 4,57                                                        | 3,48                                           | 4,72                                                        |
| 2400                                                                                      | 2900 | 6,96 | 3,55                                           | 4,75                                                        | 3,59                                           | 4,89                                                        |
| 2400                                                                                      | 3000 | 7,20 | 3,65                                           | 4,92                                                        | 3,70                                           | 5,07                                                        |
| 2500                                                                                      | 1800 | 4,50 | 2,45                                           | 2,97                                                        | 2,43                                           | 3,09                                                        |
| 2500                                                                                      | 1900 | 4,75 | 2,56                                           | 3,15                                                        | 2,55                                           | 3,28                                                        |
| 2500                                                                                      | 2000 | 5,00 | 2,68                                           | 3,33                                                        | 2,67                                           | 3,46                                                        |
| 2500                                                                                      | 2100 | 5,25 | 2,79                                           | 3,50                                                        | 2,79                                           | 3,64                                                        |
| 2500                                                                                      | 2200 | 5,50 | 2,90                                           | 3,69                                                        | 2,91                                           | 3,82                                                        |
| 2500                                                                                      | 2300 | 5,75 | 3,02                                           | 3,87                                                        | 3,03                                           | 4,00                                                        |
| 2500                                                                                      | 2400 | 6,00 | 3,13                                           | 4,05                                                        | 3,14                                           | 4,19                                                        |
| 2500                                                                                      | 2500 | 6,25 | 3,24                                           | 4,23                                                        | 3,26                                           | 4,37                                                        |
| 2500                                                                                      | 2600 | 6,50 | 3,34                                           | 4,41                                                        | 3,38                                           | 4,55                                                        |

| AERODYNAMIC SURFACE                                                          |      |      |                                   |                                                   |                                        |                                                   |
|------------------------------------------------------------------------------|------|------|-----------------------------------|---------------------------------------------------|----------------------------------------|---------------------------------------------------|
| VENT DIMENSIONS<br>WIDTH [mm]    LENGTH [mm]    GEOMETRIC SURFACE $A_v$ [m²] |      |      | STRAIGHT UPSTAND<br>H = 500 MM    |                                                   | STRAIGHT-SLANTED UPSTAND<br>H = 500 MM |                                                   |
|                                                                              |      |      | AERODYNAMIC SURFACE<br>$A_a$ [m²] | AERODYNAMIC SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] | AERODYNAMIC SURFACE<br>$A_a$ [m²]      | AERODYNAMIC SURFACE<br>+ DEFLECTORS<br>$A_a$ [m²] |
| 2500                                                                         | 2700 | 6,75 | 3,45                              | 4,60                                              | 3,49                                   | 4,74                                              |
| 2500                                                                         | 2800 | 7,00 | 3,56                              | 4,78                                              | 3,61                                   | 4,92                                              |
| 2500                                                                         | 2900 | 7,25 | 3,67                              | 4,96                                              | 3,72                                   | 5,11                                              |
| 2500                                                                         | 3000 | 7,50 | 3,77                              | 5,15                                              | 3,84                                   | 5,29                                              |
| 2600                                                                         | 1800 | 4,68 | 2,54                              | 3,09                                              | 2,52                                   | 3,22                                              |
| 2600                                                                         | 1900 | 4,94 | 2,65                              | 3,28                                              | 2,64                                   | 3,41                                              |
| 2600                                                                         | 2000 | 5,20 | 2,77                              | 3,47                                              | 2,77                                   | 3,60                                              |
| 2600                                                                         | 2100 | 5,46 | 2,89                              | 3,65                                              | 2,89                                   | 3,79                                              |
| 2600                                                                         | 2200 | 5,72 | 3,00                              | 3,84                                              | 3,01                                   | 3,98                                              |
| 2600                                                                         | 2300 | 5,98 | 3,12                              | 4,03                                              | 3,14                                   | 4,17                                              |
| 2600                                                                         | 2400 | 6,24 | 3,23                              | 4,22                                              | 3,26                                   | 4,36                                              |
| 2600                                                                         | 2500 | 6,50 | 3,34                              | 4,41                                              | 3,38                                   | 4,55                                              |
| 2600                                                                         | 2600 | 6,76 | 3,46                              | 4,60                                              | 3,50                                   | 4,75                                              |
| 2600                                                                         | 2700 | 7,02 | 3,57                              | 4,79                                              | 3,62                                   | 4,94                                              |
| 2600                                                                         | 2800 | 7,28 | 3,68                              | 4,99                                              | 3,74                                   | 5,13                                              |
| 2600                                                                         | 2900 | 7,54 | 3,78                              | 5,18                                              | 3,85                                   | 5,32                                              |
| 2600                                                                         | 3000 | 7,80 | 3,89                              | 5,37                                              | 3,97                                   | 5,52                                              |
| 2700                                                                         | 1800 | 4,86 | 2,62                              | 3,22                                              | 2,61                                   | 3,35                                              |
| 2700                                                                         | 1900 | 5,13 | 2,75                              | 3,41                                              | 2,74                                   | 3,55                                              |
| 2700                                                                         | 2000 | 5,40 | 2,87                              | 3,61                                              | 2,86                                   | 3,75                                              |
| 2700                                                                         | 2100 | 5,67 | 2,99                              | 3,80                                              | 2,99                                   | 3,94                                              |
| 2700                                                                         | 2200 | 5,94 | 3,10                              | 4,00                                              | 3,12                                   | 4,14                                              |
| 2700                                                                         | 2300 | 6,21 | 3,22                              | 4,20                                              | 3,24                                   | 4,34                                              |
| 2700                                                                         | 2400 | 6,48 | 3,34                              | 4,40                                              | 3,37                                   | 4,54                                              |
| 2700                                                                         | 2500 | 6,75 | 3,45                              | 4,60                                              | 3,49                                   | 4,74                                              |
| 2700                                                                         | 2600 | 7,02 | 3,57                              | 4,79                                              | 3,62                                   | 4,94                                              |
| 2700                                                                         | 2700 | 7,29 | 3,68                              | 5,00                                              | 3,74                                   | 5,14                                              |
| 2700                                                                         | 2800 | 7,56 | 3,79                              | 5,20                                              | 3,86                                   | 5,34                                              |
| 2700                                                                         | 2900 | 7,83 | 3,90                              | 5,40                                              | 3,98                                   | 5,54                                              |
| 2700                                                                         | 3000 | 8,10 | 4,01                              | 5,60                                              | 4,11                                   | 5,74                                              |
| 2800                                                                         | 1800 | 5,04 | 2,71                              | 3,35                                              | 2,70                                   | 3,48                                              |
| 2800                                                                         | 1900 | 5,32 | 2,84                              | 3,55                                              | 2,83                                   | 3,68                                              |
| 2800                                                                         | 2000 | 5,60 | 2,96                              | 3,75                                              | 2,96                                   | 3,89                                              |
| 2800                                                                         | 2100 | 5,88 | 3,08                              | 3,95                                              | 3,09                                   | 4,10                                              |
| 2800                                                                         | 2200 | 6,16 | 3,20                              | 4,16                                              | 3,22                                   | 4,30                                              |
| 2800                                                                         | 2300 | 6,44 | 3,32                              | 4,37                                              | 3,35                                   | 4,51                                              |
| 2800                                                                         | 2400 | 6,72 | 3,44                              | 4,57                                              | 3,48                                   | 4,72                                              |
| 2800                                                                         | 2500 | 7,00 | 3,56                              | 4,78                                              | 3,61                                   | 4,92                                              |
| 2800                                                                         | 2600 | 7,28 | 3,68                              | 4,99                                              | 3,74                                   | 5,13                                              |
| 2800                                                                         | 2700 | 7,56 | 3,79                              | 5,20                                              | 3,86                                   | 5,34                                              |
| 2800                                                                         | 2800 | 7,84 | 3,90                              | 5,40                                              | 3,99                                   | 5,55                                              |
| 2800                                                                         | 2900 | 8,12 | 4,02                              | 5,61                                              | 4,11                                   | 5,76                                              |
| 2800                                                                         | 3000 | 8,40 | 4,13                              | 5,83                                              | 4,24                                   | 5,97                                              |
| 2900                                                                         | 1800 | 5,22 | 2,80                              | 3,47                                              | 2,79                                   | 3,61                                              |
| 2900                                                                         | 1900 | 5,51 | 2,93                              | 3,68                                              | 2,92                                   | 3,82                                              |
| 2900                                                                         | 2000 | 5,80 | 3,05                              | 3,89                                              | 3,06                                   | 4,03                                              |
| 2900                                                                         | 2100 | 6,09 | 3,18                              | 4,10                                              | 3,19                                   | 4,25                                              |
| 2900                                                                         | 2200 | 6,38 | 3,30                              | 4,32                                              | 3,33                                   | 4,46                                              |
| 2900                                                                         | 2300 | 6,67 | 3,42                              | 4,53                                              | 3,46                                   | 4,68                                              |
| 2900                                                                         | 2400 | 6,96 | 3,55                              | 4,75                                              | 3,59                                   | 4,89                                              |
| 2900                                                                         | 2500 | 7,25 | 3,67                              | 4,96                                              | 3,72                                   | 5,11                                              |
| 2900                                                                         | 2600 | 7,54 | 3,78                              | 5,18                                              | 3,85                                   | 5,32                                              |
| 2900                                                                         | 2700 | 7,83 | 3,90                              | 5,40                                              | 3,98                                   | 5,54                                              |
| 2900                                                                         | 2800 | 8,12 | 4,02                              | 5,61                                              | 4,11                                   | 5,76                                              |
| 2900                                                                         | 2900 | 8,41 | 4,13                              | 5,83                                              | 4,24                                   | 5,98                                              |
| 2900                                                                         | 3000 | 8,70 | 4,25                              | 6,05                                              | 4,37                                   | 6,20                                              |
| 3000                                                                         | 1800 | 5,40 | 2,88                              | 3,60                                              | 2,88                                   | 3,74                                              |
| 3000                                                                         | 1900 | 5,70 | 3,01                              | 3,82                                              | 3,02                                   | 3,96                                              |
| 3000                                                                         | 2000 | 6,00 | 3,14                              | 4,04                                              | 3,16                                   | 4,18                                              |
| 3000                                                                         | 2100 | 6,30 | 3,27                              | 4,26                                              | 3,30                                   | 4,40                                              |





| AERODYNAMIC SURFACE                                                                       |      |      |                                                |                                                                |                                                |                                                                |
|-------------------------------------------------------------------------------------------|------|------|------------------------------------------------|----------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------|
| VENT DIMENSIONS<br>WIDTH [mm]    LENGTH [mm]    GEOMETRIC SURFACE $A_v$ [m <sup>2</sup> ] |      |      | STRAIGHT UPSTAND<br>H = 500 MM                 |                                                                | STRAIGHT-SLANTED UPSTAND<br>H = 500 MM         |                                                                |
|                                                                                           |      |      | AERODYNAMIC SURFACE<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE<br>+ DEFLECTORS<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE<br>$A_a$ [m <sup>2</sup> ] | AERODYNAMIC SURFACE<br>+ DEFLECTORS<br>$A_a$ [m <sup>2</sup> ] |
| 3000                                                                                      | 2200 | 6,60 | 3,40                                           | 4,48                                                           | 3,43                                           | 4,62                                                           |
| 3000                                                                                      | 2300 | 6,90 | 3,52                                           | 4,70                                                           | 3,57                                           | 4,85                                                           |
| 3000                                                                                      | 2400 | 7,20 | 3,65                                           | 4,92                                                           | 3,70                                           | 5,07                                                           |
| 3000                                                                                      | 2500 | 7,50 | 3,77                                           | 5,15                                                           | 3,84                                           | 5,29                                                           |
| 3000                                                                                      | 2600 | 7,80 | 3,89                                           | 5,37                                                           | 3,97                                           | 5,52                                                           |
| 3000                                                                                      | 2700 | 8,10 | 4,01                                           | 5,60                                                           | 4,11                                           | 5,74                                                           |
| 3000                                                                                      | 2800 | 8,40 | 4,13                                           | 5,83                                                           | 4,24                                           | 5,97                                                           |
| 3000                                                                                      | 2900 | 8,70 | 4,25                                           | 6,05                                                           | 4,37                                           | 6,20                                                           |
| 3000                                                                                      | 3000 | 9,00 | 4,37                                           | 6,28                                                           | 4,50                                           | 6,42                                                           |
| 3100                                                                                      | 1800 | 5,58 | 2,97                                           | 3,72                                                           | 2,97                                           | 3,87                                                           |
| 3100                                                                                      | 1900 | 5,89 | 3,10                                           | 3,95                                                           | 3,11                                           | 4,09                                                           |
| 3100                                                                                      | 2000 | 6,20 | 3,24                                           | 4,18                                                           | 3,25                                           | 4,32                                                           |
| 3100                                                                                      | 2100 | 6,51 | 3,37                                           | 4,41                                                           | 3,40                                           | 4,55                                                           |
| 3100                                                                                      | 2200 | 6,82 | 3,50                                           | 4,64                                                           | 3,54                                           | 4,78                                                           |
| 3100                                                                                      | 2300 | 7,13 | 3,63                                           | 4,87                                                           | 3,68                                           | 5,01                                                           |
| 3100                                                                                      | 2400 | 7,44 | 3,75                                           | 5,10                                                           | 3,82                                           | 5,25                                                           |
| 3100                                                                                      | 2500 | 7,75 | 3,88                                           | 5,33                                                           | 3,95                                           | 5,48                                                           |
| 3100                                                                                      | 2600 | 8,06 | 4,00                                           | 5,57                                                           | 4,09                                           | 5,71                                                           |
| 3100                                                                                      | 2700 | 8,37 | 4,12                                           | 5,80                                                           | 4,23                                           | 5,95                                                           |
| 3100                                                                                      | 2800 | 8,68 | 4,24                                           | 6,04                                                           | 4,36                                           | 6,18                                                           |
| 3100                                                                                      | 2900 | 8,99 | 4,36                                           | 6,27                                                           | 4,50                                           | 6,41                                                           |
| 3100                                                                                      | 3000 | 9,30 | 4,48                                           | 6,51                                                           | 4,63                                           | 6,65                                                           |
| 3200                                                                                      | 1800 | 5,76 | 3,05                                           | 3,85                                                           | 3,05                                           | 4,00                                                           |
| 3200                                                                                      | 1900 | 6,08 | 3,19                                           | 4,08                                                           | 3,20                                           | 4,23                                                           |
| 3200                                                                                      | 2000 | 6,40 | 3,33                                           | 4,32                                                           | 3,35                                           | 4,47                                                           |
| 3200                                                                                      | 2100 | 6,72 | 3,46                                           | 4,56                                                           | 3,50                                           | 4,71                                                           |
| 3200                                                                                      | 2200 | 7,04 | 3,59                                           | 4,80                                                           | 3,64                                           | 4,94                                                           |
| 3200                                                                                      | 2300 | 7,36 | 3,73                                           | 5,04                                                           | 3,78                                           | 5,18                                                           |
| 3200                                                                                      | 2400 | 7,68 | 3,85                                           | 5,28                                                           | 3,93                                           | 5,42                                                           |
| 3200                                                                                      | 2500 | 8,00 | 3,98                                           | 5,52                                                           | 4,07                                           | 5,66                                                           |
| 3200                                                                                      | 2600 | 8,32 | 4,11                                           | 5,76                                                           | 4,21                                           | 5,91                                                           |
| 3200                                                                                      | 2700 | 8,64 | 4,23                                           | 6,00                                                           | 4,35                                           | 6,15                                                           |
| 3200                                                                                      | 2800 | 8,96 | 4,35                                           | 6,25                                                           | 4,49                                           | 6,39                                                           |
| 3200                                                                                      | 2900 | 9,28 | 4,48                                           | 6,49                                                           | 4,62                                           | 6,63                                                           |
| 3200                                                                                      | 3000 | 9,60 | 4,60                                           | 6,74                                                           | 4,76                                           | 6,88                                                           |
| 3300                                                                                      | 1800 | 5,94 | 3,14                                           | 3,98                                                           | 3,14                                           | 4,13                                                           |
| 3300                                                                                      | 1900 | 6,27 | 3,28                                           | 4,22                                                           | 3,30                                           | 4,37                                                           |
| 3300                                                                                      | 2000 | 6,60 | 3,42                                           | 4,46                                                           | 3,45                                           | 4,61                                                           |
| 3300                                                                                      | 2100 | 6,93 | 3,56                                           | 4,71                                                           | 3,60                                           | 4,86                                                           |
| 3300                                                                                      | 2200 | 7,26 | 3,69                                           | 4,96                                                           | 3,74                                           | 5,11                                                           |
| 3300                                                                                      | 2300 | 7,59 | 3,82                                           | 5,20                                                           | 3,89                                           | 5,35                                                           |
| 3300                                                                                      | 2400 | 7,92 | 3,96                                           | 5,45                                                           | 4,04                                           | 5,60                                                           |
| 3300                                                                                      | 2500 | 8,25 | 4,09                                           | 5,70                                                           | 4,18                                           | 5,85                                                           |
| 3300                                                                                      | 2600 | 8,58 | 4,21                                           | 5,95                                                           | 4,32                                           | 6,10                                                           |
| 3300                                                                                      | 2700 | 8,91 | 4,34                                           | 6,21                                                           | 4,47                                           | 6,35                                                           |
| 3300                                                                                      | 2800 | 9,24 | 4,46                                           | 6,46                                                           | 4,61                                           | 6,60                                                           |
| 3300                                                                                      | 2900 | 9,57 | 4,59                                           | 6,71                                                           | 4,75                                           | 6,85                                                           |
| 3300                                                                                      | 3000 | 9,90 | 4,71                                           | 6,97                                                           | 4,89                                           | 7,11                                                           |
| 3400                                                                                      | 1800 | 6,12 | 3,23                                           | 4,10                                                           | 3,23                                           | 4,25                                                           |
| 3400                                                                                      | 1900 | 6,46 | 3,37                                           | 4,35                                                           | 3,39                                           | 4,51                                                           |
| 3400                                                                                      | 2000 | 6,80 | 3,51                                           | 4,61                                                           | 3,54                                           | 4,76                                                           |
| 3400                                                                                      | 2100 | 7,14 | 3,65                                           | 4,86                                                           | 3,70                                           | 5,01                                                           |
| 3400                                                                                      | 2200 | 7,48 | 3,79                                           | 5,12                                                           | 3,85                                           | 5,27                                                           |
| 3400                                                                                      | 2300 | 7,82 | 3,92                                           | 5,37                                                           | 4,00                                           | 5,52                                                           |
| 3400                                                                                      | 2400 | 8,16 | 4,06                                           | 5,63                                                           | 4,15                                           | 5,78                                                           |
| 3400                                                                                      | 2500 | 8,50 | 4,19                                           | 5,89                                                           | 4,29                                           | 6,04                                                           |
| 3400                                                                                      | 2600 | 8,84 | 4,32                                           | 6,15                                                           | 4,44                                           | 6,29                                                           |
| 3400                                                                                      | 2700 | 9,18 | 4,45                                           | 6,41                                                           | 4,59                                           | 6,55                                                           |
| 3400                                                                                      | 2800 | 9,52 | 4,57                                           | 6,67                                                           | 4,73                                           | 6,81                                                           |
| 3400                                                                                      | 2900 | 9,86 | 4,70                                           | 6,94                                                           | 4,87                                           | 7,07                                                           |



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Smoke vents with  
thermal insulation

## ALUCO FIRE HI

We have expanded the basic series of smoke vents with a highly insulated HI version (HIGH INSULATED)

The HI version of Aluco Fire utilizes insulated aluminum profiles in order to eliminate the problem of “thermal bridges”. With above-average thermal insulation properties, these vents achieve the total heat transfer coefficient at the level of:  $U < 0.5 \text{ W/m}^2\text{K}$ .

ALUCO FIRE HI smoke exhaust vents are dedicated to facilities with strict thermal insulation requirements and users that value products minimizing heat loss.









# ALUCO VENTRA

*Louvers designed for installation on the roof or facade, with functions for smoke removal, ventilation and aeration.*

Aluco VENTRA louvers are installed in the facade or on the roof as smoke ventilation systems compliant with PN-EN 12101-2, or as ventilation and aeration equipment for smoke ventilation systems. They can rapidly extract substantial quantities of hot air and smoke from the building. The louvers are manufactured in accordance with ISO 9001 quality control standards and can be operated using pneumatic or electric systems.

## Materialy

The louvers are constructed from high-quality AlMg3 aluminum, ensuring 100% corrosion resistance.

## Dimensions

- Width: 300–2400 mm
- Length: 761–3804 mm (up to 17 louver lamellas)

## Opening angle

Individual control in the range from 0° to 90°

## Ventilation control

- P – pneumatic (opening)
- P2 – pneumatic (opening / closing)
- M230V – 230 V electrical

## Smoke extraction control

- PF – pneumatic (opening)
- P2F – pneumatic (opening / closing)
- M24V – 24 V electrical

## Louvre lamellas

- AL – single aluminum
- AL ISO – thermally insulated aluminum
- PC16 – 16-mm polycarbonate panels
- PC25 – 25-mm polycarbonate panels
- GLASS – single or double glass



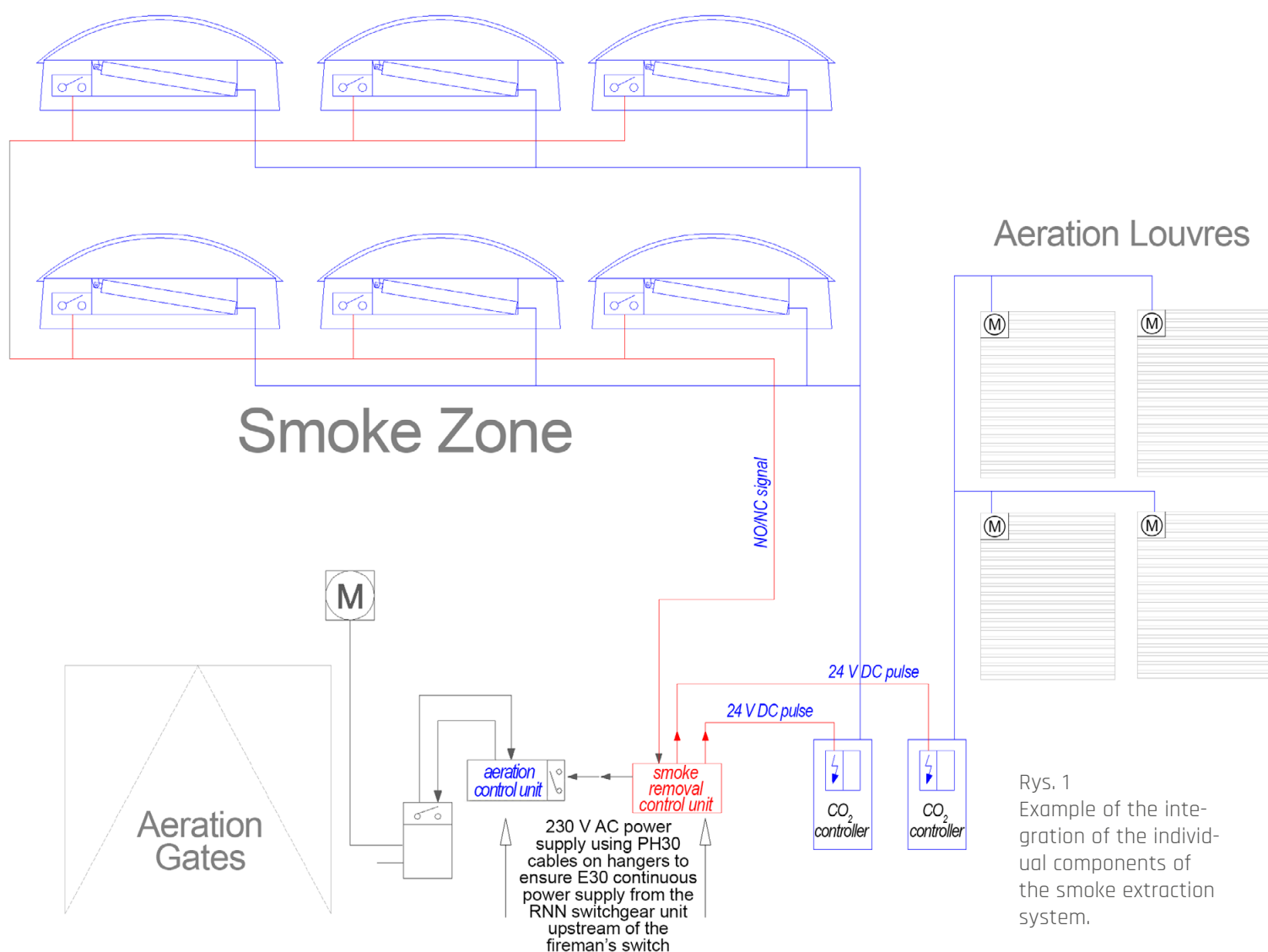
# Smoke extraction and aeration control systems

Our smoke ventilation systems are mainly used in industrial facilities and they are typically operated using compressed carbon dioxide. The individual sections are released by electromagnetic pulses from our control units, following predefined priorities.

Our product range includes smoke vent emergency switch boxes equipped with CO<sub>2</sub> cartridges weighing up to 1500 g. These can be operated manually or triggered by a 24-V pulse from the fire alarm system or an integrated smoke ventilation control unit.

The individual control components are interconnected to form complete systems that are integrated with the building's fire

alarm systems (Fig. 1). This integration allows for fire detection, control of the smoke ventilation section, and control of the air make-up section (including fresh air louvres, traffic doors, etc.).



Rys. 1  
Example of the integration of the individual components of the smoke extraction system.





The ALUCO curtain is certified and manufactured in accordance with PN-EN 12101-1

# ALUCO SMOKE BLOCKER

*Smoke curtains to separate smoke zones and restrict smoke spreading*

ALUCO SMOKE BLOCKER textile smoke curtains, typically made from TEG-120 grey fabric composed of continuous glass fiber, are designed for large-scale facilities, mainly industrial buildings like warehouses or production facilities.

ALUCO SMOKE BLOCKER fixed textile smoke curtains are used to separate smoke zones and limit the spread of smoke in large-scale buildings. They possess an extremely lightweight structure, simplifying installation. Their most notable attribute is the non-flammable material. They can also be combined in modules to create a product of any size, rendering them suitable for larger spaces.

## Curtain design

- **Top mounting angles** are attached to any structure used for installing the smoke curtain. This system does not require a dedicated support structure for the curtain.
- **Non-flammable smoke curtain material** is made from glass fiber with varying lengths and widths. For larger areas, the

curtain is constructed from sheets of material with an overlap of 100 mm or wider to ensure smoke tightness in accordance with PN-EN 12101-1.

- **Bottom curtain tensioning angles** consist of two angles bolted together to tighten the curtain and maintain its tidy appearance.

## Advantages of smoke curtains

- Lower implementation costs and reduced weight. Additionally, smoke curtains do not require an additional steel support structure for installation.
- Quick and easy installation.
- Fixed smoke curtains can be used to precise seal service penetrations.
- The smoke curtain can be installed on various structures, including troughed sheets.
- There is no need to install a support structure.



Let There Be  
Daylight



# About us

We help our customers take full advantage of natural light

At Aluco System, we have been helping our customers to make the most of the benefits of natural daylight for over 20 years.

Our company's product range includes:

- roof skylight systems,
- natural smoke exhaust systems,
- polycarbonate façades,
- aluminium joinery,
- industrial ventilation,
- Lumira® aerogel,
- thermal modernization.

Our priorities are technological development, energy efficiency and top materials. Our solutions have been used in dozens of facilities throughout Poland, both in industrial buildings and architectural projects with a bold concept. We are a 100% Polish capital company.

We perform orders all over the European Union and beyond.

**Selected customers:** Fiat Chrysler Automobiles, Skanska, Volkswagen, LOT, PKP CARGO, MAN, Eiffage, Budimex, Castorama, Cersanit, MediaMarkt, Rockwool, Echo Investment, Targi Kielce, DS Smith, Cerrad, Forte, Browary Tyskie.



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