

Air flow cones

- Air flow measurement
- Suitable for the hot-wire and vane Ø 100 mm anemometer
- Available in several dimensions

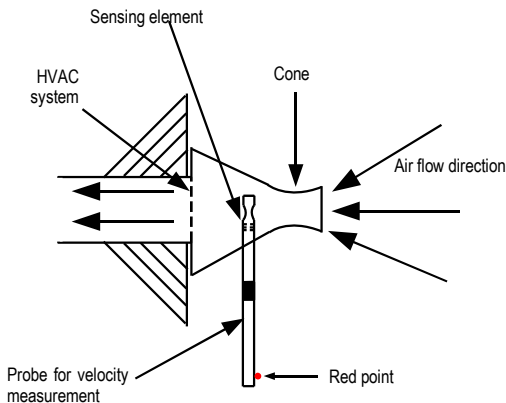
KIMO has designed and manufactured the flow cones as an essential instrument for measuring direct air flows in ventilators and HVAC systems. These instruments can be associated with the hot wire and vane Ø 100 mm anemometers from Class 100, 200 and 300 portable instruments.

Many models are available according to the flow, the dimensions of the diffusers and the probe used.

Measurement principle

The direction and the homogeneity of the incoming and outgoing air flow are often disrupted by the geometry of the HVAC grills. Therefore, it is necessary to canalize the flow to the sensing element of the probe.

As described below, the probe and its sensing element are located in a well known section of the cone which guarantees a good measurement.

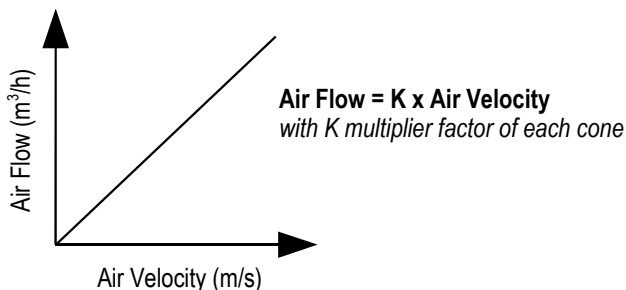


Multiplier factor K

KIMO experimentally determines (in supply and exhaust conditions) the multiplier factor of each cone.

These experimentations are realised in laboratory conditions with stabilized airflows.

This factor gives a proportional relation between measured air velocity and air flow.



CONES for hot-wire anemometers



K35 CONE

Flow.....10 à 400 m³/h
Dimensions.....200 x 200 mm
Height : 330 mm
Weight.....800 g
Material.....Fibreglass 300 PLP
Multiplier factor K.....22 (supply and exhaust)



K75 CONE

Flow.....30 à 750 m³/h
Dimensions.....300 x 300 mm
Height : 470 mm
Weight.....1400 g
Material.....Fibreglass 300 PLP
Multiplier factor K.....50 (supply and exhaust)



K120 CONE

Flow.....50 à 1200m³/h
Dimensions.....450 x 450 mm
Height : 600 mm
Weight.....1700 g
Material.....Fibreglass 300 PLP
Multiplier factor K.....135 (supply and exhaust)



K150 CONE

Flow.....10 à 400 m³/h
Dimensions.....550 x 100 mm
Height : 600 mm
Weight.....1400 g
Material.....Fibreglass 300 PLP
Multiplier factor K.....22 (supply and exhaust)

CONE for vane Ø 100 mm anemometers



K25 CONE

Flow.....10 à 400 m³/h
Dimensions.....200 x 200 mm
Height : 330 mm
Weight.....800 g
Material.....Fibreglass 300 PLP



K85 CONE

Flow.....10 à 400 m³/h
Dimensions.....350 x 350 mm
Height : 450 mm
Weight.....1010 g
Material.....Fibreglass 300 PLP

Multiplier factor K (supply and exhaust)

•K=28.33 (velocity below than 1.45 m/s)

•K=21.26 (velocity between 1.45 m/s and 3.8 m/s)

•K=20.35 (velocity more than 3.8 m/s)

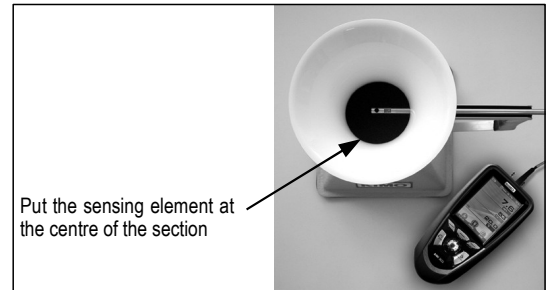
HOW TO USE FLOW CONES

1. Put the probe on the cone

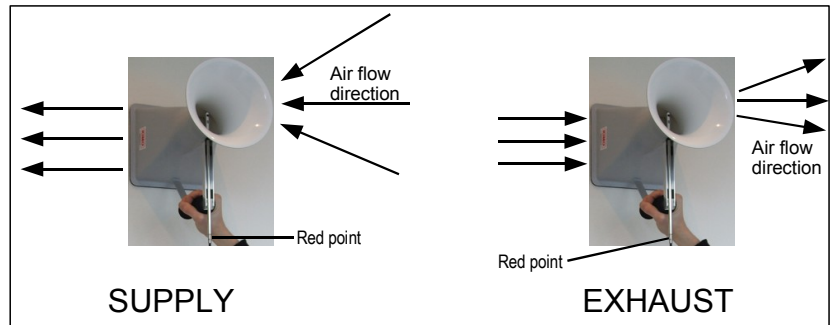
a. Cone for hot-wire anemometers (K35, K75, K120 ET K150)

Clip the hot-wire anemometer probe into the cone.

Put the sensing element at the centre of the orifice and perpendicularly to the air flow. (Remember to slide the protection back on the sensing element).



Red point at the bottom of the hot wire probe must face airflow :

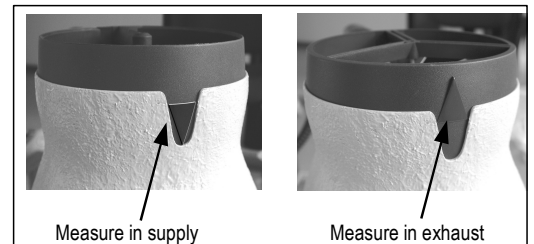


b. Cone for vane Ø 100 mm anemometer on the end of the measurement cone

Put the probe on the end of the measurement cone ;

For a measure in supply, put the vane with the arrow turned towards the outside of the cone.

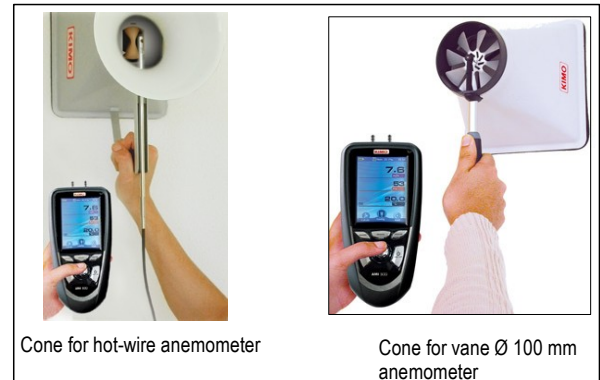
For a measure in exhaust, put the vane with the arrow turned towards the inside of the cone.



2. Put the cone on the grille



- Square side of the cone for anemometer must be placed against the HVAC system.
- Don't take out the vane Ø 100 mm probe of the cone by drawing of the probe handle.



3. Calculate and read the result

a. Anemometers of 100, 200 et 300

Select the cone you are using (K35, K75 ou K25) then press OK.
The flow in m³/h can be read directly on the instrument.

b. Anemometers which don't have the « flow » function

Read the velocity in m/s and multiply this value by the multiplier factor of the cone you are using.

$$\text{Flow (m}^3/\text{h)} = \text{Factor K} \times \text{Velocity (m/s)}$$

Example : Anemometer used with a K75 cone.

Velocity = 12 m/s

Factor (K75) = 50

The flow is 600 m³/h (12x50 = 600)

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