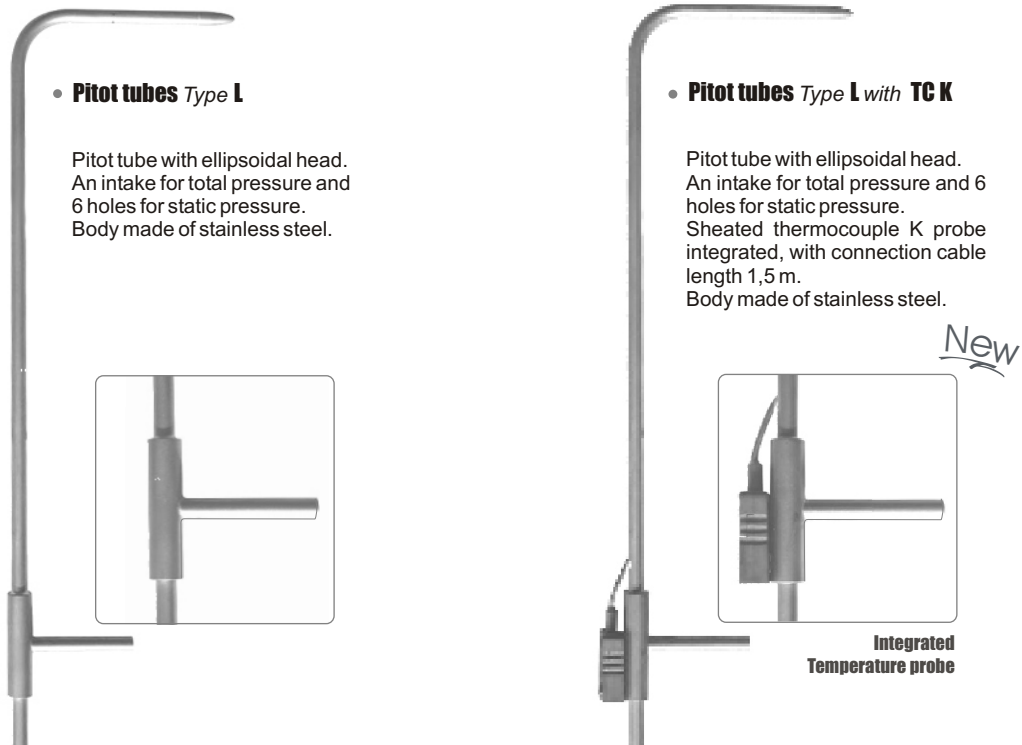


## PITOT TUBES type L



KIMO offers a wide range of high-quality and accurate Pitot tubes, as per the AFNOR NFX 10-112 norm. These Pitot tubes, when being connected to a differential column / or needle / or electronical manometer, can measure the dynamic pressure of a moving fluid in a duct, and then can deduct its air velocity in m/s and its airflow in m<sup>3</sup>/h. These Pitot tubes are used in HVAC field, vacuum cleaning and pneumatical transport. They are mainly dedicated to measure hot and particle-charged air, and also high air velocity.



	Type L	Type L with TC K
<b>Norm</b>	AFNOR NFX10-112. Annex 4 dated 14.9.77. This norm meets the requirements of the International Norm ISO 3966.	
<b>Model</b>	NPL curved with ellipsoidal head	
<b>Coefficient</b>	1,0015	
<b>Accuracy</b>	More than 1 %, for a $\pm 10^\circ$ alignment to the fluid flow.	
<b>Quality</b>	Hard stainless steel 4/4, as per AFNOR / Z2.CDN.17.12.	
<b>Operating temperature</b>	From 0 to 600 °C in standard and up to 1000 °C in option (except $\varnothing$ 3 mm).	
	The extent error of an air velocity or airflow measurement with a KIMO Pitot tube remains inferior to 2%, when being carried out as per the NFX10-112 norm.	
	It is recommended to carry out a calibration of the Pitot tube, in order to determine its exact coefficient.	

# INTRODUCTION OF THE RANGE

## Pitot tubes Type L

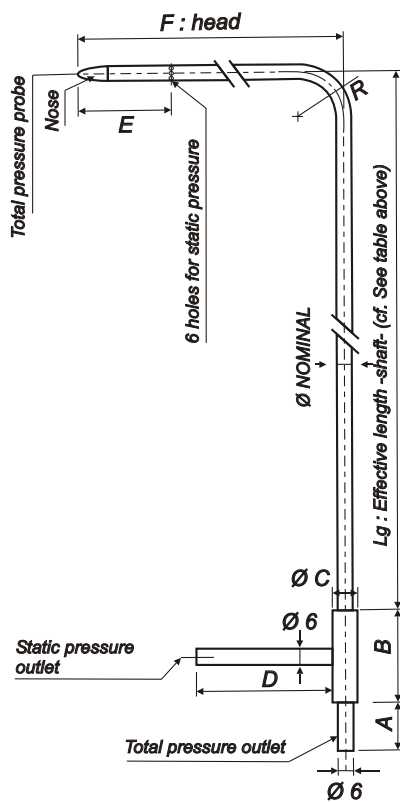
	Ref.	Length
Ø 3 mm	TPL-03-100	100 mm
	TPL-03-200	200 mm
	TPL-03-300	300 mm
Ø 6 mm	TPL-06-300	300 mm
	TPL-06-500	500 mm
	TPL-06-800	800 mm
Ø 8 mm	TPL-08-1000	1000 mm
	TPL-08-1250	1250 mm
Ø 12 mm	TPL-12-1500	1500 mm
	TPL-12-2000	2000 mm
Ø 14 mm	TPL-14-2500	2500 mm
	TPL-14-3000	3000 mm

## Pitot tubes Type L with TC K

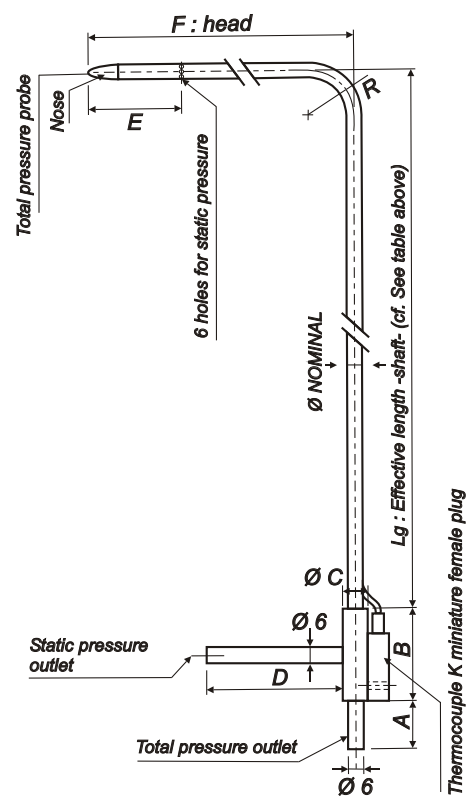
	Ref.	Length
Ø 3 mm	TPL-03-100-T	100 mm
	TPL-03-200-T	200 mm
	TPL-03-300-T	300 mm
Ø 6 mm	TPL-06-300-T	300 mm
	TPL-06-500-T	500 mm
	TPL-06-800-T	800 mm
Ø 8 mm	TPL-08-1000-T	1000 mm
	TPL-08-1250-T	1250 mm
Ø 12 mm	TPL-12-1500-T	1500 mm
	TPL-12-2000-T	2000 mm
Ø 14 mm	TPL-14-2500-T	2500 mm
	TPL-14-3000-T	3000 mm

# DESCRIPTION AND DIMENSIONS

## Pitot tubes Type L



## Pitot tubes Type L with TC K



	A	B	Ø C	D	E	F	R
Pitot tubes Ø 3 mm	17	32	10	30	25	48	9
Pitot tubes Ø 6 mm	25	40	10	45	48	96	18
Pitot tubes Ø 8 mm	25	40	10	45	64	128	24
Pitot tubes Ø 12 mm	25	50	16	60	96	192	36
Pitot tubes Ø 14 mm	25	50	16	60	112	224	42

The Pitot tube must be introduced perpendicularly into the duct, in several points pre-determined (see table "location of measuring points").

The head (ending with an ellipsoidal nose) must be maintained parallel and facing the flow.

The total pressure (+) caught by the nose, is connected to the + of the manometer

The static pressure (-) caught by the holes of the head, is connected to the - of the manometer.

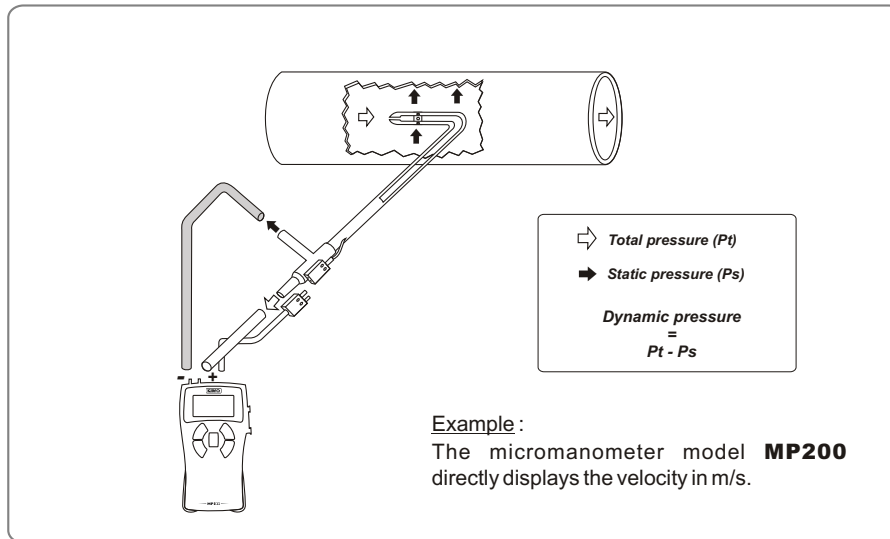
The connection cable of the thermocouple K probe is connected to the thermocouple K inlet of the manometer (only on the Pitot type L with TC K).

Then, the instrument can display the dynamic pressure, also named "velocity pressure".

The dynamic pressure corresponds to the difference between the total pressure and the static pressure :

$$P_d = P_t - P_s$$

Pitot tubes type L with TC K : direct reading of the velocity with or without temperature balancing on the micromanometers of Class 200 and 300.



With the dynamic pressure in mm H<sub>2</sub>O or in Pa, we can calculate the air velocity in m/s, with the simplified BERNOULLI formula :

$$V \text{ in m/s at } 20 \text{ }^\circ\text{C} : 1,291 \sqrt{P_d \text{ in Pa}}$$

Or

$$V \text{ in m/s} : 4,05 \sqrt{\Delta P \text{ in mmH}_2\text{O}}$$

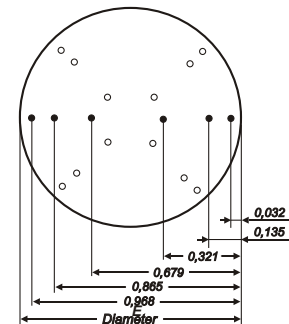
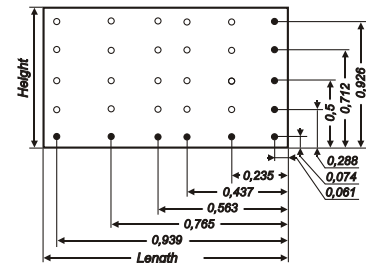
Formula to get the velocity,  
with temperature balancing of the airflow :

$$V \text{ in m/s} = K \times \sqrt{\frac{574,2 \theta + 156842,77}{P_0}} \times \sqrt{\Delta P \text{ in Pa}}$$

With :

$P_0$  = barometric pressure in Pa  
 $\theta$  = temperature in  $^\circ\text{C}$   
K = coefficient of the Pitot tube

### Location of measuring points



Simplified drawing of the NF.X10.112 norm, for measuring points, as per the method "Log. Tchebycheff".

### TIG welding :

This option is recommended when using the Pitot tubes type L and S with TC K up to 1000 $^\circ\text{C}$ , except for Pitot tubes  $\varnothing$  3mm.

• **Connection glands made of nickel plated brass :**

To install the Pitot tube in a fixed location.

- Ref : **PE 458 Ø 3**  
**PE 458 Ø 6**  
**PE 458 Ø 8**



• **Clamp made of stainless steel and cast iron :**

- Ref : **KI-BF-6** Stainless steel clamp for Pitot tube Ø 3 and 6 mm.  
**KI-BF-8** Stainless steel clamp for Pitot tube Ø 8 mm.  
**KI-BF-12-F** Cast iron clamp for Pitot tube Ø 12 mm.  
**KI-BF-14-F** Cast iron clamp for Pitot tube Ø 14 mm.



• **Sliding connections with nipple, made of stainless steel or Teflon :**

- Ref : **KI-RCC-3/14** Sliding connection cylindrical ¼ gas with stainless steel nipple for temperature probe or Pitot tube Ø 3 mm.  
**KI-RCCT-3/14** Sliding connection cylindrical ¼ gas with Teflon nipple for temperature probe or Pitot tube Ø 3 mm.
- Ref : **KI-RCC-6/12** Sliding connection cylindrical ½ gas with stainless steel nipple for temperature probe or Pitot tube Ø 6 mm.  
**KI-RCCT-6/12** Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 6 mm.  
**KI-RCC-8/12** Sliding connection cylindrical ½ gas with stainless steel nipple for temperature probe or Pitot tube Ø 8 mm.  
**KI-RCCT-8/12** Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 8 mm.  
**KI-RCC-12/12** Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 12 mm.  
**KI-RCCT-12/12** Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 12 mm.  
**KI-RCC-14/12** Sliding connection cylindrical ½ gas with stainless steel nipple for temperature probe or Pitot tube Ø 14 mm.  
**KI-RCCT-14/12** Sliding connection cylindrical ½ gas with Teflon nipple for temperature probe or Pitot tube Ø 14 mm.

• **Extension cable for thermocouple K class 1 :**

- Ref : **CEK150M** Length 1,50 m for temperature probe and Pitot tube, with miniature compensated male/male plug.  
**CEK150** Length 1,50 m for temperature probe with miniature compensated male/female plug.  
**CEK300** Length 3 m for temperature probe with miniature compensated male/female plug.  
**CEK500** Length 5 m for temperature probe with miniature compensated male/female plug.

• **Rubber sealing caps :** come in a 10-unit bag

- Ref : **1590/12** Full rubber sealing caps, Ø 8 to 12 mm, height 20 mm.  
**1590/17** Full rubber sealing caps, Ø 12 to 17 mm, height 25 mm.  
**1590/22** Full rubber sealing caps, Ø 17 à 22 mm, height 25 mm.

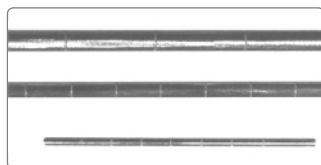
• **Caps :** come in a 10-unit bag

- Ref : **GPN.U3B** Sealing caps (to seal holes in the duct) Ø 7,5 to 9,5 mm.  
**GPN.U5B** Sealing caps (to seal holes in the duct) Ø 9 to 11 mm.  
**GPN.U6B** Sealing caps (to seal holes in the duct) Ø 10 to 11,5 mm.  
**GPN.U8B** Sealing caps (to seal holes in the duct) Ø 11,5 to 13 mm.  
**GPN.U10B** Sealing caps (to seal holes in the duct) Ø 12,5 to 14,5 mm.  
**GPN.U12B** Sealing caps (to seal holes in the duct) Ø 14 to 16 mm.  
**GPN.U17B** Sealing caps (to seal holes in the duct) Ø 18,5 to 21 mm.

• **Graduation (mm) red-marked on the shaft :**

For Pitot tubes Ø 3, 6, 8, 12, 14 mm.

- Ref : **TP GR 03**  
**TP GR 06**  
**TP GR 08**  
**TP GR 12**  
**TP GR 14**



• **Straight Pitot tube type L and type L with TC K :**

You can directly make the measurements by plunging this tube into the air duct.  
 Diameters and dimensions : same as the Pitot tube NPL curved.



*Feel free to contact KIMO for any special case, any special manufacturing.*

• **Tubes :**

- Ref : **TC 5 X 8** Cristal tube Ø 5 X 8 mm for fixed Pitot tubes.  
**TS 4 X 7** Flexible silicone tube Ø 4 X 7 mm Black or white for Pitot tubes.

