The Kálmán System Ltd. (H–1125 Budapest, Trencséni 16., further on the *Client*) has commissioned the Department of Fluid Mechanics Budapest University of Technology and Economics (H–1111 Budapest, Bertalan L. u. 4–6., further on the *Department*) to carry out wind tunnel calibration tests of the KS-412-w1_50 type (Nr. 582010) sampling probe. The calibration procedure fulfils the requirements specified in the International Standard ISO 10780:1994(E).
The present report contains of the methods and measurement result of the calibration procedure.

INDEX:	p	pressure
	Δp	differential difference
	w	velocity
	ρ	density
	t, T	temperature
	R	gas constant
SUB–SCRIPTS:	$_r$	reference data
	$_{dyn}$	dynamic pressure
	$_{st}$	static pressure
	$_0$	ambient data (e.g. ambient temperature, pressure)
	$_1$	sampling probe data

The present report is organized as follows: background of the calibration method is given, experimental apparatus and measurement techniques are introduced, measured data are given in tables and diagrams and conclusions are drawn.

1. CALIBRATION METHOD

General parameters of the calibration procedure carried out on the KS-412-w1_50 type sampling probe are as it is requested by the *Client*: measurements taken at 10 different reference velocities (w_r) in the velocity range of 4÷25 [*m/s*], at flow directions of 0° angle of attack (i.e. probe head axis is parallel to the airflow). The calibration test is carried out in the Theodore von Kármán Wind Tunnel Laboratory of the *Department* using the vertical flow, GÖTTINGEN type wind tunnel. The tests are conducted in presence of the *Client* and with their technical assistance of operating the sampling probe and its data acquisition / processing system.
The velocity range for probe calibration of 4÷25 [*m/s*] is requested by the *Client*. Within this velocity range 10 different - well distributed in the whole velocity range - reference velocity settings are to be adjusted.

1.1 EXPERIMENTAL APPARATUS FOR THE SAMPLING PROBE CALIBRATION

Calibration of the sampling probe is carried out in the vertical flow wind tunnel that is of recirculation type, having open test section, known also as GÖTTINGEN-type wind tunnel that is dedicated for such probe calibration purposes. The airflow velocity in the test section of the wind tunnel outlet of Ø1,4*m* diameter can be adjusted continuously within the velocity range of max. 35 *m/s*. The sketch of the facility is shown in **Fig.1.** Photographs of the experimental apparatus can be seen in **Fig.2.1.–2.2.**

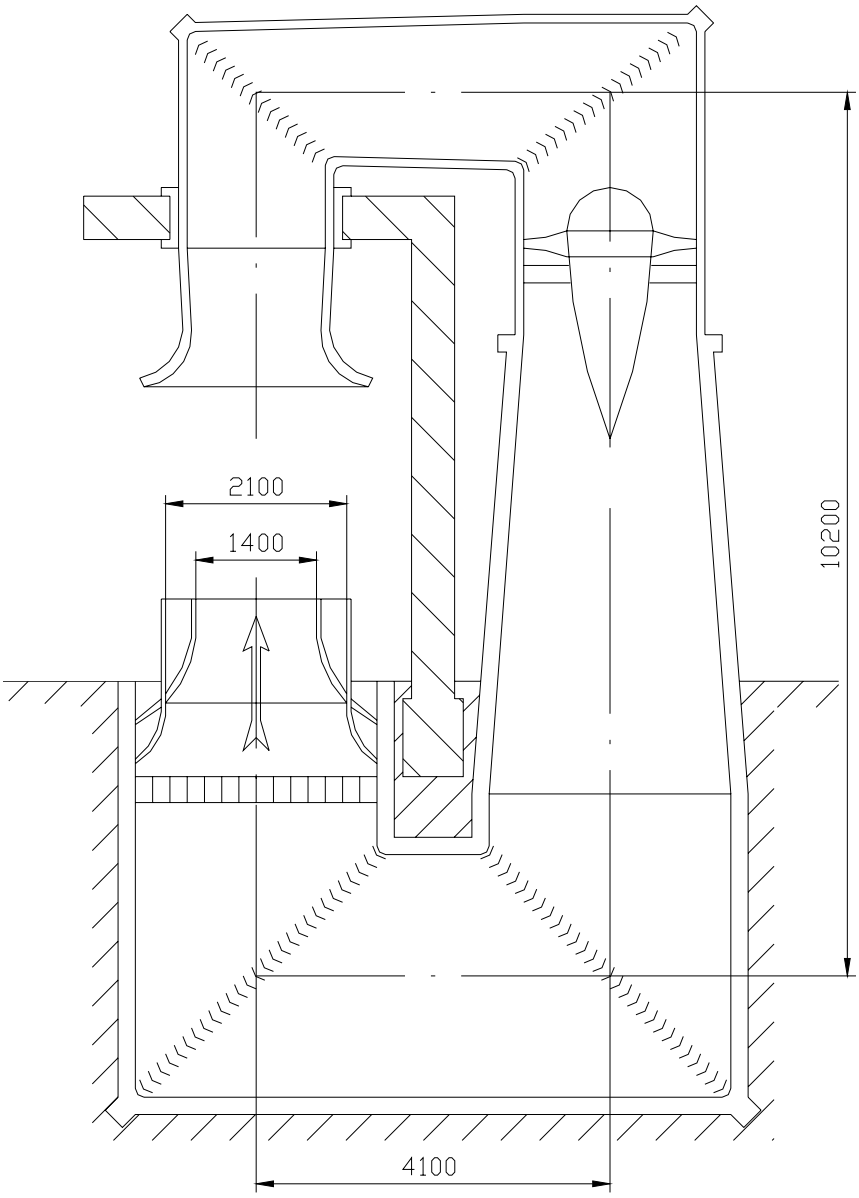

Fig.1. Vertical flow, open test section type wind tunnel of the Department of Fluid Mechanics /BME/

Fig.2.1. Wind tunnel and experimental set-up

Fig.2.2. Reference Pitot-static tube (left) and KS-412-w1_50 type sampling probe (right) in the test section