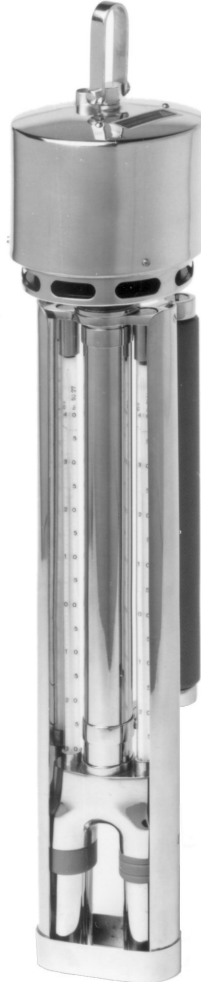




Aspirated Psychrometer by Assmann

GROUP 3	HUMIDITY
NO.	3060.0000
VERSION / DATE / NAME	05/ 03.2018 / Zi



water evaporates more or less from the wick of the wet bulb thermometer. The evaporative cooling causes the column of the wet bulb thermometer to drop. The dry bulb thermometer is indicating the true air temperature. From the difference in temperature of both thermometers results the psychrometric depression. From this the relative humidity, the dew point temperature and the vapour pressure of the air may be computed or determined from tables. Both thermometer bulbs are ventilated during measurements by fan.

TECHNICAL DATA

Temperature range:	Refer to ordering code	
Scale divisions:	0.2 °C	
Size:	Length:	410 mm
	max. Ø:	90 mm
Weight:	approx. 1.5 kg	
Material:	Brass, nickel plated	

DESCRIPTION

The aspirator psychrometer by Assmann serves for measuring the air temperature and the humidity. Two parallel mounted, equal thermometers with coloured petroleum are used. The bulb of one thermometer (wet bulb thermometer) is covered by a wick, which must be moistened for a measurement.

The bulb of the other thermometer remains without wick. Both bulbs are encased by two radiation tubes. In order to achieve an effective radiation shield the surface of the instrument is polished. Depending on the amount of water vapour in the ambient air the



ORDERING CODE

Aspirated psychrometer by Assmann, complete with wooden case including accessories:

Measuring range: -10 ... +60 °C	3060.1000
Measuring range: -30 ... +40 °C	3060.2000

Technical data are subject to change!



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OPERATING INSTRUCTIONS

PLACE OF INSTALLATION

It is to be noted that near the aspirated psychrometer no objects radiating heat should be located. During measurements the instrument is to be held with the arm extended or it should be suspended by eye-ring.

MOISTENING THE WICK

An appliance for moistening the aspirated psychrometer is supplied. This consists of a rubber ball, a small glass tube and a spring clip. Before starting to measure, distilled water is drawn in with the rubber ball. Then by pressing the rubber ball the water is brought up to the upper rim of the glass tube. After this the spring clip is clamped on the nipple of the ball. The glass tube is now slid over the wet bulb thermometer as far as possible, so that the wick will be moistened completely. This procedure must be repeated before every measurement.

MEASURING METHOD

After the moistening of the wick is completed the mechanism of the fan is to be started. The aspirating fan is designed for an average ventilating speed at the thermometer bulbs of approx. 2 m/s.

A reading is taken when the columns of both thermometers have reached their minimum value (in the summer after approx. 3 minutes and in winter after about 5 minutes).

At temperatures below 0°C it must be watched if ice or water is on wick of the wet bulb thermometer. By under cooling the water the formation of ice may be delayed. This can be observed when the column will not stop at the freezing point but drop further. As soon as ice is formed on the wick the column will rise to the freezing point and subsequently drop again. Detailed psychrometric tables may be supplied on request.

INSTRUCTIONS FOR WINDING THE SPRING MOTOR

The attached key for winding the spring motor of the fan is entered through the hole in the housing next to the eye ring of the psychrometer. By turning clockwise to the stop the spring is tightened. The spring mechanism is designed in such a way that after running for 5 minutes the fan will still provide a ventilating speed of > 2 m/s which is required for the proper evaluation of the measurement.

By observing the mark on the spring (visible through the window in the aspirator) the rotational period will increase during measurements lasting several minutes. The average value of 65 seconds corresponds to a ventilating speed of 2.8 m/s at the thermometer bulbs. The rotational period must not be greater than 75 seconds (= 2.2 m/s ventilation). If the spring housing is turning slower than this the ventilating speed will be less than 2.0 m/s and this results in a faulty evaluation of measurement.

MAINTENANCE

Besides an occasional cleaning of the instrument no maintenance is required. If the wick has become soiled after a longer period of time so that moistening it properly is no longer warranted, it has to be replaced by a new one.

