

CONFIRMED
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Specification for

Whirling hygrometer

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Laboratory Apparatus Standards Policy Committee (LBC/-) to Technical Committee LBC/36, upon which the following bodies were represented:

Association for Science Education
British Glass Manufacturers' Confederation
British Laboratory Ware Association
CLEAPSS School Science Service
Department of Trade and Industry (Laboratory of the Government Chemist)
Institute of Medical Laboratory Science

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

British Medical Association
Department of Health
Department of Trade and Industry (National Physical Laboratory)
Institute of Petroleum
Medical Sterile Products Association

This British Standard, having been prepared under the direction of the Laboratory Apparatus Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 October 1992

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Foreword

This British Standard has been prepared under the direction of the Laboratory Apparatus Standards Policy Committee, and supersedes BS 2842:1975 which is withdrawn.

This British Standard is one of a series prepared at the request of the Temperature Measuring Instruments Sub-committee (since disbanded) of the Defence Materials Standardisation Committee of the Ministry of Defence. It is intended to cover the Service requirements for this type of hygrometer as well as the requirements of commercial users. This standard was first published in 1957, with the title *Whirling hygrometer (medium size)*. It was revised in 1966 to permit a wider range of bulb diameters, to specify an alternative thermometer with a plain front, and to relax the dimensional requirements for the button top.

Experience in using the whirling hygrometer specified in the 1966 edition showed that the figures for maximum error given in Table 2 understated the actual error values.

The 1975 edition specified a larger hygrometer incorporating a longer thermometer of improved design to overcome the inaccuracy. At the same time, the increased length was to allow a single thermometer with an extended temperature range to be used.

Though more accurate, the 1975 larger model was never produced. Consumers demanded manufacture of the smaller 1966 medium size model. In response to this demand the present standard reinstates the medium size model, but with realistic revised error figures.

Thermometers with a Fahrenheit scale have not been included in this revision. In order to avoid confusion between the various revisions of this specification, the thermometers now specified are to be marked to indicate the year of issue of this British Standard.

For the information of users a method of using the hygrometer is given in Annex A.

The whirling hygrometer is used, in conjunction with appropriate relative humidity tables (see Annex B), for the determination of the temperature and relative humidity of the air. Annex C indicates, for each hygrometer, the size of errors in relative humidity arising from thermometer errors. Figure 1 illustrates the general design of the hygrometer, but the details shown are not to be taken as being requirements of this British Standard except as indicated in the text.

When wet-bulb and dry-bulb measurements of humidity of a higher precision are required, an aspirated hygrometer conforming to BS 5248:1990 should be used.

NOTE For accurate determination of humidity, hygrometers of the whirling or aspirated type are not recommended for use in isolation from other, more direct means of measurement.

Product certification. Users of this British Standard are advised to consider the desirability of third party certification of product conformity with this British Standard based on testing and continuing product surveillance, which may be coupled with assessment of a supplier's quality systems against the appropriate Part of BS 5750.

Enquiries as to the availability of third party certification schemes are forwarded by BSI to the Association of Certification Bodies. If a third party certification scheme does not already exist, users should consider approaching an appropriate body from the list of Association members.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.