



IEC/TR 62130

Edition 1.0 2012-09

TECHNICAL REPORT



Climatic field data including validation

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

U

ICS 19.040

ISBN 978-2-83220-342-2

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Current IEC 60721-2-1 standard dealing with temperature and humidity	6
4 Task 1	9
5 Task 2	10
5.1 General	10
5.2 Description of the comparison process	10
5.3 Traceability of temperature and humidity parameters by using the main process	11
5.3.1 General	11
5.3.2 Process phase 1 – Decide what standard and what parameters to review	11
5.3.3 Process phase 2 – Identify data sources and other references	11
5.3.4 Process phase 3 – Comparison process to ensure traceability of data	12
5.3.5 Process phase 4 – Make decision about change needs	12
6 Task 3	12
6.1 General	12
6.2 Process for analysing the map	13
6.3 Impact analysis	14
7 Task 4 – To make traceable recommendations for updating IEC 60721-2-1	14
7.1 General	14
7.2 Recommendation 1 – Naming of new climatic types	14
7.3 Recommendation 2 – Definitions for new climatic types	14
7.4 Recommendation 3 – Values for new climatic types	15
7.5 Recommendation 4 – Update of the map of climatic classes	16
Annex A (informative) Analysis of temperature and absolute humidity	18
Annex B (informative) Climatic data from various locations	25
Bibliography.....	30
Figure 1 – Current map showing types of climate and their combinations	8
Figure 2 – Current map showing the groups of climates	9
Figure 3 – Screenshot from data analysis spreadsheet	10
Figure 4 – High level comparison process to ensure traceability of data.....	11
Figure 5 – Main climatic types from reference [5]	17
Figure A.1 – Polar: Daily mean values	18
Figure A.2 – Polar: Annual means.....	18
Figure A.3 – Polar – Extremes	19
Figure A.4 – Cold: Daily mean values	19
Figure A.5 – Cold: Annual means.....	20
Figure A.6 – Cold: Extremes	20
Figure A.7 – Warm temperate: Daily mean values	21

Figure A.8 – Warm temperate: Annual means	21
Figure A.9 – Warm temperate: Extremes.....	21
Figure A.10 – Arid: Mean daily values	22
Figure A.11 – Arid: Annual means.....	22
Figure A.12 – Arid: Extremes	23
Figure A.13 – Arid: Daily means.....	23
Figure A.14 – Arid: Annual means.....	24
Figure A.15 – Arid: Extremes	24
Table 1 – Types of climate by extreme daily mean values from the current standard.....	7
Table 2 – Types of climate by annual extreme values from the current standard	7
Table 3 – Types of climate by absolute extreme value from the current standard	8
Table 4 – Process phases and actions in the each phase	11
Table 5 – Recommended climatic types	14
Table 6 – Definitions for proposed climatic types (reference [6])	15
Table 7 – Types of climate by extreme daily mean values	15
Table 8 – Types of climate by annual extreme values	15
Table 9 – Types of climate by absolute extreme value	16
Table 10 – Cross reference table between different climatic types	17
Table B.1 – Data for polar climatic type	25
Table B.2 – Data for cold climatic type.....	26
Table B.3 – Data for temperate climatic type.....	27
Table B.4 – Data for arid climatic type	28

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CLIMATIC FIELD DATA INCLUDING VALIDATION

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC/TR 62130, which is a technical report, has been prepared by IEC technical committee 104: Environmental conditions, classification and methods of test.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
104/572/DTR	104/577/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

CLIMATIC FIELD DATA INCLUDING VALIDATION

1 Scope

IEC/TR 62130, which is a technical report, provides traceable recommendations from validated field data for updating IEC 60721-2-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60721-1:1982, *Classification of environmental conditions – Part 1: Environmental parameters and their severities*

IEC 60721-2-1:1982, *Classification of environmental conditions – Part 2-1: Environmental conditions appearing in nature – Temperature and humidity*
Amendment 1:1987