INTERNATIONAL STANDARD

ISO 12858-2

Second edition
2020-06

Optics and optical instruments — Ancillary devices for geodetic instruments —

Part 2: Tripods

Optique et instruments d'optique — Équipements annexes pour les instruments géodésiques —

Partie 2: Trépieds

Reference number
ISO 12858-2:2020(E)

© ISO 2020



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Design **1**
5 General features — Dimensions **1**
6 Requirements **3**
6.1 Tripod head 3
6.2 Joints 3
6.3 Clamping screw 3
6.4 Tripod legs 3
6.5 Tripod shoes 3
6.6 Torsional rigidity 7
6.7 Height stability under load 7
6.8 Material 7
6.9 Protection from corrosion 7
7 Tools **7**
8 Designation and marking **7**
Annex A (informative) **Parallel screw threads of Whitworth form** **9**
Bibliography **10**

© ISO 2020 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 6, *Geodetic and surveying instruments*.

This second edition cancels and replaces the first edition (ISO 12858-2:1999), which has been technically revised. It also incorporates the Amendment ISO 12858-2:1999/Amd.1:2013. The changes compared to the previous edition are as follows:

— editorial corrections.

A list of all parts in the ISO 12858 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2020 – All rights reserved

Introduction

ISO 12858 consists of a series of parts which detail specifications for ancillary devices to be used with geodetic instruments in surveying. This second part specifies requirements for tripods.

Additional parts, covering further ancillary devices, may be added to ISO 12858 as the need arises.

© ISO 2020 – All rights reserved

Optics and optical instruments — Ancillary devices for geodetic instruments —

Part 2: Tripods

1 Scope

This document specifies the most important requirements of telescopic tripods for surveying instruments and the connection between instrument and tripod.

The requirements in this document enable instruments and tripods of different manufacturers to be joined to one another, without prejudicing their performance and their usefulness.

This document is applicable to tripods which are used for levels, theodolites, tacheometers, GPS equipment, EDM instruments and in combination with targets, reflectors, antennae, etc.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9849, *Optics and optical instruments — Geodetic and surveying instruments — Vocabulary*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9849 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Design

Two main types of tripod with telescopic legs are used:

— Type L: for light-weight or small instruments, with flat head (LF) or spherical head (LS);

— Type H: for heavy instruments.

5 General features — Dimensions

The mechanical properties of the tripod shall conform to the values given in Table 1. The shape of the tripod and the details as shown in Figure 1 are examples for information only.

© ISO 2020 – All rights reserved