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Non-destructive testing — Infrared thermography —

Part 1: Characteristics of system and equipment

Essais non destructifs — Thermographie infrarouge —

Partie 1: Caractéristiques du système et des équipements

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Foreword

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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 8, *Thermographic testing*.

A list of all parts in the ISO 18251 series can be found on the ISO website.

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Introduction

The industrial applications of infrared thermographic testing in non-destructive testing (NDT) are growing, along with a remarkable improvement in thermographic technologies. The effectiveness of any application of infrared thermographic testing depends upon proper and correct usage of the system and equipment. The purpose of this document is to provide the characterization description of system and equipment for infrared thermography in the field of industrial NDT. The development of this document resolves the lack of International Standards on infrared equipment and systems. The main interested parties who will benefit from this document are manufacturers and users of such equipment and systems.

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Non-destructive testing — Infrared thermography —

Part 1: Characteristics of system and equipment

1 Scope

This document describes the main components, and their characteristics, constituting an infrared (IR) imaging system and related equipment used in non-destructive testing (NDT). It also aims to assist the user in the selection of an appropriate system for a particular measurement task.

The following items are specified:

— objective lens;

— detector;

— image processor;

— display;

— thermal stimulation source;

— accessories.

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 10878, *Non-destructive testing — Infrared thermography — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10878 apply.

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

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

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

4 IR system setup

Figure 1 represents an imaging arrangement including the IR system. The lens focuses an image of the object on the detector. The array of pixels in the detector produces electrical signals dependent on infrared radiation intensity. The electrical signals are processed to produce an image that is shown on a display and available for storage or further processing.

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