

Institut luxembourgeois de la normalisation de l'accréditation, de la sécurité et qualité des produits et services

ILNAS-EN ISO 14880-2:2006

Optics and photonics - Microlens arrays - Part 2: Test methods for wavefront aberrations (ISO 14880-2:2006)

Optique et photonique - Réseaux de microlentilles - Partie 2: Méthodes d'essai pour les aberrations du front d'onde (ISO 14880-2:2006)

Optik und Photonik - Mikrolinsenarrays -Teil 2: Prüfverfahren für Wellenfrontaberrationen (ISO 14880-2:2006)

01011010010 0011010010110100101010101111

National Foreword

This European Standard EN ISO 14880-2:2006 was adopted as Luxembourgish Standard ILNAS-EN ISO 14880-2:2006.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

EUROPEAN STANDARD LINAS-EN ISO 14880-2:2006 ISO 14880-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2006

ICS 31.260

English Version

Optics and photonics - Microlens arrays - Part 2: Test methods for wavefront aberrations (ISO 14880-2:2006)

Optique et photonique - Réseaux de microlentilles - Partie 2: Méthodes d'essai pour les aberrations du front d'onde (ISO 14880-2:2006) Optik und Photonik - Mikrolinsenarrays - Teil 2: Prüfverfahren für Wellenfrontaberrationen (ISO 14880-2:2006)

This European Standard was approved by CEN on 12 November 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 14880-2:2006 has been prepared by Technical Committee ISO/TC 172 "Optics and optical instruments" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 14880-2:2006 by Technical Committee CEN/TC 123 "Lasers and photonics", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 14880-2:2006 has been approved by CEN as EN ISO 14880-2:2006 without any modifications.

INTERNATIONAL STANDARD

ISO 14880-2

First edition 2006-02-01

Optics and photonics — Microlens arrays —

Part 2:

Test methods for wavefront aberrations

Optique et photonique — Réseaux de microlentilles —
Partie 2: Méthodes d'essai pour les aberrations du front d'onde



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Page

Contents

Forewe	ordiv
	uctionv
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols and abbreviated terms 1
5 5.1 5.2 5.3 5.4 5.5 5.6	Apparatus 2 General 2 Standard optical radiation source 2 Standard lens 2 Collimator 2 Beam reduction optical system 2 Aperture stop 3
6	Test principle3
7 7.1 7.2 7.3 7.4	Measurement arrangement
8	Procedure 4
9	Evaluation4
10	Accuracy4
11	Test report
Annex	A (normative) Measurement requirements for test methods for microlenses
Annex	B (normative) Microlens test Methods 1 and 2 using Mach-Zehnder interferometer systems 8
Annex	C (normative) Microlens test Methods 3 and 4 using a lateral shearing interferometer system
Annex	D (normative) Microlens test Method 5 using a Shack-Hartmann sensor system 18
Annex	E (normative) Microlens array test Method 1 using a Twyman-Green interferometer system 20
Annex	F (normative) Measurement of uniformity of microlens array determined by test Method 2 22

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 14880-2 was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 9, *Electro-optical systems*.

ISO 14880 consists of the following parts, under the general title *Optics and photonics — Microlens arrays*:

- Part 1: Vocabulary
- Part 2: Test methods for wavefront aberrations
- Part 3:Test methods for optical properties other than wavefront aberrations
- Part 4: Test methods for geometrical properties