

Optics and optical instruments — Quality evaluation of optical systems — Determination of distortion

ICS 37.020

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee CPM/17, Fundamental aspects of optical standards, upon which the following bodies were represented:

- British College of Optometrists
- Department of Trade and Industry (National Physical Laboratory)
- Engineering Equipment and Materials Users' Association
- Flat Glass Manufacturers' Association
- Institute of Physics
- Ministry of Defence
- Sira Limited
- Society of British Aerospace Companies Limited
- United Kingdom Laser and Electro-optic Association

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board (W/-), was published under the authority of the Standards Board and comes into effect on 15 March 1995

© BSI 18 August 2004

The following BSI references relate to the work on this standard:
Committee reference CPM/17
Draft for comment 91/45533 DC

ISBN 0 580 23910 1

Amendments issued since publication

Amd. No.	Date	Comments
15314 Technical Corrigendum No. 1	18 August 2004	Correction to equation in Clause A.2

National foreword

This British Standard reproduces verbatim ISO 9039:1994, including Technical Corrigendum July 2004, and implements it as the UK national standard.

This British Standard is published under the direction of the Consumer Products and Services Sector Board whose Technical Committee CPM/17 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

NOTE International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London WA 4AL.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, national foreword page, a blank page, the ISO title page, pages ii to iv, pages 1 to 16, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

blank

INTERNATIONAL STANDARD

**ISO
9039**

First edition
1994-08-01

Incorporating Technical
Corrigendum
2004-07-01

Optics and optical instruments — Quality evaluation of optical systems — Determination of distortion

*Optique et instruments d'optique — Évaluation de la qualité des systèmes
optiques — Détermination de la distorsion*



Reference number
ISO 9039:1994(E)

Contents

	Page
Foreword	iii
Introduction	1
1 Scope	1
2 Normative reference	1
3 Definitions	1
4 Classes of application	3
5 Test methods	4
6 Procedure	10
7 Evaluation	11
8 Presentation of the results	12
9 Test report	12
Annex A (informative) Example for a method of shifting the zero point	13
Annex B (informative) Picture-height distortion value	16
Figure 1 — Setup	7
Figure 2 — Camera setup with opposite radiation direction	8
Figure 3 — Setup for nodal slide lens bench method	8
Figure 4 — Setup for measuring the distortion of an afocal system	9
Figure 5 — Setup for measuring the distortion at finite object and image distance	10
Figure A.1 — Origin of symmetry of distortion	15
Figure B.1 — Picture-height distortion	16
Table 1	11

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.

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.

International Standard ISO 9039 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 1, *Fundamental standards*.

Annex A and Annex B of this International Standard are for information only.

