

This is a preview of "ISO 11145:2018". [Click here to purchase the full version from the ANSI store.](#)

Fifth edition
2018-11

Optics and photonics — Lasers and laser-related equipment — Vocabulary and symbols

*Optique et photonique — Lasers et équipements associés aux lasers
— Vocabulaire et symboles*



Reference number
ISO 11145:2018(E)

© ISO 2018



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a preview of "ISO 11145:2018". [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Beam position	2
3.2 Beam axis	2
3.3 Beam diameter	3
3.4 Beam radius	3
3.5 Beam width	4
3.6 Beam cross-sectional area	4
3.7 Beam waist	5
3.8 Divergence	7
3.9 Rayleigh length	7
3.10 Beam parameter product	8
3.11 Coherence	8
3.12 Polarization	9
3.13 Power and Energy	10
3.14 Pulse duration and repetition rate	11
3.15 Optical resonator	12
3.16 Mode	12
3.17 Spectral bandwidth	12
3.18 Relative intensity noise	13
3.19 Laser	13
3.20 Efficiency	14
4 Symbols and units of measurement	15
Annex A (informative) Explanation of the difference in terminology between IEC 60825-1 and ISO 11145	17
Annex B (informative) List of symbols	18
Bibliography	19
Alphabetical index	20

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 9, *Laser and electro-optical systems*.

This fifth edition cancels and replaces the fourth edition ISO 11145:2016, which has been technically revised. The main changes compared to the previous edition are as follows:

- a) the term beam position has been renamed "beam centroid" and defined formally as a first-order moment;
- b) the term beam ellipticity has been clarified;
- c) the term beam waist location has been included;
- d) the term optical resonator has been included;
- e) the term 10 % pulse duration has been generalized to a selected percentage pulse duration;
- f) the formula in the term beam diameter has been adjusted;
- g) the order of the terms has been adjusted.

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.