Doc No.: PGD 39(22120)
IS 14820 Part 2 : 2023
ISO 11146-2 : 2021
November 2023

भारतीय मानक मसौदा

लेज़र एव लेज़र संबंधित उपकरण – लेज़र बीम की चौड़ाई, अपसारण कोण एवं बीम प्रेषण अनुपात के परीक्षण की पद्धतियाँ

भाग 2 सामान्य अबिन्दुक किरण

(IS 14820 *भाग*2 *का पहला पुनरीक्षण*)

Draft Indian Standard

Lasers and Laser-related Equipment — Test Methods for Laser Beam Widths, Divergence Angles and Beam Propagation Ratios

Part 2: General Astigmatic Beams

(*First Revision of* IS 14820 *Part* 2)

ICS 31.260

Optics and Photonics Sectional Committee, PGD 39

NATIONAL FOREWORD

(*Formal clause will be added later*)

Lasers are now increasingly used for various industrial, medical and defence applications. The technical committee, therefore, felt the need to develop Indian Standard on the subject for safe deployment of laser systems.

This standard was originally published as IS 14820 : 2000 which was an adoption of ISO 11146 : 1999. ISO 11146 has been revised in 2021 and published in three parts. This revision has been taken up to align with the latest version of ISO 11146-2.

The major changes in this revision are as follows:

a) The terms and definitions were harmonized with the new edition of IS 11145;
b) The "principal axes" were defined more thoroughly and named as x' and y'. Quantities related to the principal axes coordinate system refer to this definition and use *x*' and *y*' in their indices; and
c) The requirements for the integration range for the determination of the second order moments have been relaxed.

The other parts of this standard are:

Part 1 Stigmatic and simple astigmatic beams; and
Part 3 Intrinsic and geometrical laser beam classification, propagation and details of test methods

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, references appear to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 11145 Optics and photonics — Lasers and laser related equipment — Vocabulary and symbols	IS/ISO 11145 : 2018 Optics and optical instruments — Lasers and laser-related equipment — Vocabulary and symbols (*first revision*)	Identical
ISO 11146-1 Lasers and laser related equipment — Test methods for laser beam widths, divergence angles and beam propagation ratios — Part 1: Stigmatic and simple astigmatic beams	IS 14820 Part 1 : 2024/ ISO 11146-1 : 2021 Lasers and laser-related equipment — Test methods for laser beam widths, divergence angles and beam propagation ratios Part 1 Stigmatic and simple astigmatic beams(*Second revision*)	Identical

The technical committee has reviewed the provisions of the following International Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

International Standard	*Title*
EN 61040 : 1992	Power and energy measuring detectors, instruments and equipment for laser radiation

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revised*)'

NOTE: The technical content of draft standard is not available on website. For details please refer to ISO 11146-2 : 2021 or contact:

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