
**Optics and photonics — Lasers
and laser-related equipment —
Measurement of phase retardation of
optical components for polarized laser
radiation**

*Optique et photonique — Lasers et équipements associés aux lasers
— Mesurage du retard de phase des composants optiques pour le
rayonnement laser polarisé*



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Contents

Page

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Symbols and abbreviated terms.....	1
5 Measurement principle.....	2
6 Preparation of test sample and measuring arrangement.....	3
6.1 General.....	3
6.2 Laser beam preparation.....	3
6.3 Sample adjustment and system calibration.....	3
6.3.1 Reflective samples.....	3
6.3.2 Possible alignment procedure.....	4
6.3.3 Transmissive samples.....	4
6.4 Detection system.....	4
6.4.1 General.....	4
6.4.2 Polarization analyser.....	4
6.4.3 Power detector.....	4
7 Test procedure.....	5
7.1 Test procedure for zero or π phase retardation.....	5
7.1.1 General.....	5
7.1.2 Simple test procedure for zero absorptance difference.....	5
7.1.3 Test procedure for non zero absorptance difference.....	5
7.2 Test procedure for $\pi/2$ phase retardation.....	5
7.2.1 General.....	5
7.2.2 Simple test procedure for zero absorptance difference.....	5
7.2.3 Test procedure for non zero absorptance difference.....	5
8 Evaluation.....	6
8.1 General.....	6
8.2 Evaluation for zero phase retardation.....	6
8.2.1 Evaluation for zero absorptance difference.....	6
8.2.2 Evaluation for non-zero absorptance difference.....	6
8.3 Evaluation for $\pi/2$ phase retardation.....	6
8.3.1 Evaluation for zero absorptance difference.....	6
8.3.2 Evaluation for non-zero absorptance difference.....	6
9 Test report.....	6
Annex A (informative) Theoretical background.....	8
Bibliography.....	16

Foreword

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This document was prepared by Technical Committee ISO/TC 172, *Optics and Photonics*, Subcommittee SC 9, *Laser and electro-optical systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 123, *Lasers and photonics*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 24013:2006), which has been technically revised.

The main changes are as follows:

- [6.3.3](#) was amended to add an additional step requiring that a transmitting optic be aligned so that its optical axis is horizontal;
- [Clauses 2](#) and [6.1](#) were amended to reflect that ISO 14644-1:1999 does not need the year;
- [6.3.1](#), $(\pi/4 \pm 2)$ mrad was changed to $\pi/4$ rad ± 2 mrad;
- [7.1](#) and [8.1](#) were updated to account for phase retardances close to π .

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Introduction

Normally it is desirable that the state of polarization be not influenced by the optical components used. For the generation or maintenance of specific states of polarization the influence of optical components on the beam polarization is crucial. For generating circularly polarized radiation from linearly polarized radiation $\pi/2$ phase retarders are used.

This document describes methods to determine the relative phase retardation of optical components with respect to the X- and Y-axes of the polarization and s- and p-polarization, respectively. This document is necessary for optics manufacturers, suppliers and customers of such optics for the determination of the influence of phase retardation of optical components.