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Optique et photonique — Méthode de mesure des lasers semi-conducteurs pour la sensibilité

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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.*

This first edition cancels and replaces the Technical Specification ISO/TS 17915:2013, which has been technically revised.

The main changes compared to ISO/TS 17915:2013 are as follows:

— interband cascade semiconductor lasers have been included in 4.2.5.

— in A.3: Regarding the monitor photodiode, “option” has been inserted.

— Tables in Annex A have been separated for clarity.

Introduction

Sensing technologies for materials related to the environment or wellness, etc., by using lasers have been researched and developed in academic and industrial fields. Semiconductor lasers including quantum cascade semiconductor lasers have been widely used in sensing applications because of their advantages of compactness and wide selectivity of lasing wavelengths. The tunable laser absorption spectroscopy, the cavity ring down spectroscopy and the photoacoustic spectroscopy are commonly used sensing techniques. In those sensing techniques, wavelength and/or spectrum analysis by changing temperature or injected current is the key for determining the composition or element of the material or the mixture to be examined. Therefore measuring methods of semiconductor lasers for sensing applications are described with an informative annex for an example of essential ratings and characteristics.