# DIN 32877-1:2020-04 (E)

## Geometrical product specification (GPS) - Dimensional measuring equipment: Optoelectronic measurement of length - Part 1: Basic principles and terms

## Contents

Page


**Foreword** ... 3

**Introduction** ... 5

**1 Scope** ... 6

**2 Normative references** ... 6

**3 Terms and definitions** ... 7
**3.1 General terms and definitions** ... 7
**3.2 Terms related to backward scattering measuring principles** ... 9
**3.3 Terms related to forward scattering measuring principles** ... 10

**4 Measuring principles** ... 11
**4.1 General** ... 11
**4.2 Backward scattering measuring principles** ... 11
**4.2.1 Triangulation measuring principle** ... 11
**4.2.2 Confocal chromatic measuring principle** ... 13
**4.2.3 Absolute interferometric measuring principle** ... 15
**4.3 Forward scattering measuring principles** ... 17
**4.3.1 Scanning measuring principle** ... 17

**Annex A** (normative) **Extensions of the triangulation measuring principle** ... 18

**Annex B** (informative) **Applications of the confocal chromatic measuring principle and the absolute interferometric measuring principle** ... 20

**Annex C** (informative) **Relationship with the GPS matrix model** ... 21
**C.1 General** ... 21
**C.2 Position in the GPS matrix model** ... 21
**C.3 Related International Standards** ... 21

**Bibliography** ... 22