

DIN CEN/TS 18086:2025-02 (E)

Workplace exposure - Direct-reading low-cost particulate matter sensors for measuring airborne NOAA - Guidelines for application; English version CEN/TS 18086:2024

| Contents | Page |
|--|-------------|
| European foreword | 3 |
| Introduction | 4 |
| 1 Scope..... | 6 |
| 2 Normative references..... | 6 |
| 3 Terms and definitions | 6 |
| 4 Symbols and abbreviations | 9 |
| 4.1 Symbols | 9 |
| 4.2 Abbreviations..... | 9 |
| 5 Measurement principle of low-cost PM sensors | 10 |
| 6 Usability of low-cost sensors for monitoring NOAA concentrations in workplaces..... | 12 |
| 7 Calibration and adjustment of low-cost PM sensors | 13 |
| 7.1 General..... | 13 |
| 7.2 Laboratory calibration and adjustment | 16 |
| 7.2.1 General..... | 16 |
| 7.2.2 Particle size dependence of sensor reaction | 16 |
| 7.2.3 Calibration and adjustment for polydisperse aerosols..... | 20 |
| 7.3 Comparability of sensors | 26 |
| 7.4 On site calibration in workplaces | 27 |
| 8 Interfering factors and error sources..... | 29 |
| Annex A (informative) Sampling convention for different mass concentration fractions | 31 |
| Annex B (informative) Calibration of low-cost PM sensors with monodisperse particles - Results from prenormative research | 33 |
| Annex C (informative) Calibration of low-cost PM sensors with polydisperse particles - Results from prenormative research | 37 |
| Annex D (informative) Workplace measurements - Results from prenormative research..... | 47 |
| Annex E (informative) Measurement principle of low-cost PM sensors..... | 58 |
| Bibliography | 64 |