

ICS 07.060
CCS A 47



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 45795-2025

**Determination of PM10/PM2.5 mass concentration in
atmosphere - Light scattering method**

大气颗粒物PM10、PM2.5质量浓度观测 光散射法

Issued on: May 30, 2025

Implemented on: December 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Principles and system composition	2
4.1 Principle and calculation method	2
4.2 System Configuration	3
5 Measuring instruments	3
6 Measurement environment	4
6.1 Indoor Environment	4
6.2 Outdoor Environment	4
7 Installation and testing	4
7.1 Pre-installation inspection	4
7.2 Installation	4
7.3 Testing	5
8 Measurement, operation inspection and maintenance	6
8.1 Measurement	6
8.2 Operation Inspection and Maintenance	6
9 Calibration	6
9.1 General requirements	6
9.2 Flow meter	6
9.3 Temperature, humidity and pressure sensors	7
9.4 Number concentration	7
9.5 Mass concentration	7
10 Data recording, quality control and average value processing	7
10.1 Data Recording	7
10.2 Quality Control	7
10.3 Average value processing	8
References	9

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Meteorological Administration.

This document is under the jurisdiction of the National Technical Committee on Climate and Climate Change Standardization (SAC/TC 540).

This document was drafted by: China Meteorological Administration Meteorological Observation Center, Taiyuan Rockwell Automation Co., Ltd., Beijing Weidi Technology Development Co., Ltd.

Company, China Meteorological Science Research Institute, China Environmental Science Research Institute, China Meteorological Administration Meteorological Cadre Training Institute, Beijing Xiangyuan Meteorological Observation Technology Research Institute, Yunnan Atmospheric Sounding Technology Support Center, Hangzhou Weizhizhao Intelligent Technology Co., Ltd., Zhejiang Hengda Instrument Co., Ltd.

Ltd., Shandong Nuofang Electronic Technology Co., Ltd., Nanchang Panteng Technology Co., Ltd., Hebei Xianhe Environmental Protection Technology Co., Ltd., Jiangsu Provincial Jingchuang Electric Co., Ltd., Tianjin Tongyang Technology Development Co., Ltd., Zhejiang University, Hubei Meteorological Information and Technology Support Center (Hubei Meteorological Archives, Wuhan Branch Center for Technical Support of New Generation Weather Radar), National Meteorological Information Center, Beijing Meteorological Detection Center, Xinjiang Uygur Autonomous Region Meteorological Technology and Equipment Support Center.

The main drafters of this document are: Zhang Xiaochun, Ma Fang, Wang Yaohua, Li Weimin, Xue Xueqin, Sun Zhiyu, Du Bo, Zhao Yanan, Gao Jian, Jing Junshan, Liu Wen, Wang Yao, Yu Liping, Li Yanan, Wang Jinglei, Pan Zhidong, Zhou Zhibin, Si Shuchun, Wang Qiang, Li Xiaofan, Chen Wenliang, Shen Chaofeng, Sun Junying.

Observation of mass concentration of atmospheric particulate matter PM10 and PM2.5
Light scattering method

1 Scope

This document establishes the principle of measuring the mass concentration of atmospheric particulate matter by light scattering method, and specifies the measuring instrument, measuring environment, instrument installation, Requirements for operational inspection and maintenance, calibration, data recording, quality control and averaging are described, and test and measurement methods are described.

This document is applicable to the measurement of mass concentration of atmospheric particulate matter PM₁₀ and PM_{2.5} using the light scattering method; mass concentration of particulate matter of other particle sizes Measurement reference is used.

2 Normative references

GB/T 4883

GB/T 39193

JJF 1659-2017

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 atmospheric aerosol particle

atmospheric particulate matter atmospheric particle; PM Solid and liquid particles suspended in the atmosphere.

[Source: GB/T 31159-2014, 2.2]

3.2 aerodynamic equivalent diameter

da The diameter of a spherical particle with a density of 1 g/cm³ and moving at the same speed as the particle being characterized.