



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

GB/T 43407.2-2023

**Road vehicles -- Ergonomic requirements for the driver's
compartment in low-floor line-service buses -- Part 2: Visibility**

道路车辆 低地板专线行驶客车驾驶区人体工程学要求 第2部分:视野

(English Translation)

Issued on: December 28, 2023

Implemented on: April 1, 2024

Issued by: State Administration for Market Regulation

Table of Contents

Foreword...	3
Introduction...	5
1 Scope...	6
2 Normative References...	6
3 Terms and Definitions...	6
4 Requirements for Visibility...	7
4.1 Forward Visibility...	7
4.2 Lateral Visibility...	8
4.3 Upper Visibility...	9
4.4 Passenger Compartment's Visibility...	10
4.5 Requirements for Reflection...	10

Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives

for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This document is Part 2 of GB/T 43407 Road Vehicles - Ergonomic Requirements for the Driver's Compartment in Low-floor Line-service Buses. GB/T 43407 has issued the following parts:

---Part 1: General Description and Basic Requirements;

---Part 2: Visibility;

---Part 3: Information Devices and Controls;

---Part 4: Compartment Environment.

This document modifies and adopts ISO 16121-2:2011 Road Vehicles - Ergonomic Requirements for the Driver's Workplace in Line-service Buses - Part 2: Visibility.

In comparison with ISO 16121-2:2011, the structural adjustments are as follows:

---3.1 in ISO 16121-2:2011 is deleted, and 3.1 and 3.2 in this document correspond to 3.2 and 3.3 in ISO 16121-2:2011;

---4.1.1 and 4.1.2 in this document correspond to 4.1.1 in ISO 16121-2:2011, and the "NOTE" to 4.2.2 correspond to 4.2.2.3 in ISO 16121-2:2011;

---4.3.1, 4.3.2, 4.5.1 and 4.5.2 are added.

In comparison with ISO 16121-2:2011, the technical differences and the reasons for these differences are as follows:

---The normative reference GB/T 43407.1-2023 is used to replace ISO 16121-1 (see Chapter 3 and Chapter 4), so as to adapt to the technical conditions of China and enhance the operability;

---The term "low-floor" and its definition are deleted (see 3.1 of ISO 16121-2:2011), so as to avoid duplication of definitions;

---The normative reference of GB 15084 is added (see Chapter 4), so as to adapt to the technical conditions of China and enhance the operability;

---The requirement that "the diameter of the circular rod shall be less than or equal to 20 mm" is added, and meanwhile, the determination method for the visibility area is added (see 4.1), so as to facilitate the detection of the forward visibility. At the same time, the relevant requirements for the lower viewing angle of buses and the normative reference Road Vehicles - Ergonomic Requirements for the Driver's Compartment in Low-floor Line-service Buses - Part 2: Visibility

1 Scope

This document specifies the requirements for the driver's visibility in front of the buses, at the entrance and exit toward the driver's seat, and in the interior passenger compartment area. This document is applicable to the design of the driver's compartment of Category-M3 low-floor line-service buses with a width greater than 2.30 m. Other buses may take this as a reference.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date,

only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 13053-2008 Bus Inner Dimensions

GB 15084 Motor Vehicles - Devices for Indirect Vision - Requirements of Performance and Installation

GB/T 43407.1-2023 Road Vehicles - Ergonomic Requirements for the Driver's Compartment

in Low-floor Line-service Buses - Part 1: General Description and Basic Requirements (ISO 16121-1:2012, MOD)

3 Terms and Definitions

What is defined in GB/T 43407.1-2023, and the following terms and definitions are applicable

to this document.

3.1 vision point V1

Within the driver's seat point-H adjustment range defined in GB/T 43407.1-2023, when the seat

is adjusted to the final and highest positions, the point located 635 mm vertically above the seat

point-H (see the definition in GB/T 43407.1-2023).

4.1.2 Detection method

When checking this item, regardless of the obstruction caused by the steering wheel to the cross-bar, the determination method for the visibility area shall be carried out in accordance with the relevant stipulations of GB 15084.

4.2.1 Requirements

If there is a passenger door in front of the front axle, then, the driver shall be able to see at least

3/4 of one side of a cube with overall dimensions of 100 mm x 100 mm x 100 mm placed at

the position of the passenger door at a height of 800 mm from the ground through direct or indirect visibility.

4.2.2.1 When the passenger door is open, place the cube in 4.2.1 at the foremost end of the

passenger door area. The upper and lower planes of the cube are parallel to the ground, and its

lower plane is located at a height of 800 mm from the ground. The front end surface depends

on the rear edge (including sealing tape) of the front door frame of the passenger door, the side

surface is parallel to the vehicle's longitudinal symmetry plane, and the inner side depends on

the outer edge (including sealing tape) of the front door frame of the passenger door (see Figure 2).

4.2.2.2 Respectively observe the cube placed in accordance with 4.2.2.1 from vision point V1

and vision point V2 (see 4.1.1) through direct or indirect visibility and measure the area of each

face of the cube that can be observed. The determination method for the visibility area shall be

carried out in accordance with the relevant stipulations of GB 15084.

NOTE: for vehicles equipped with position-adjustable dashboard, when detecting in accordance with the requirements of 4.1 and 4.2, place the dashboard in the middle position specified by the manufacturer.

.....