

ICS 03.120.30

CCS A 41



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

GB/T 4086.6-2025

Replacing GB/T 4086.6-1983

**Data analysis and decision - Tables for statistical distributions -
Part 6: Poisson distribution**

数据分析与决策 统计分布数值表 第6部分：泊松分布

Issued on: October 5, 2025

Implemented on: October 5, 2025

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

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 6 of GB/T 4086 "Statistical Distribution Numerical Tables for Data Analysis and Decision Making". GB/T 4086 has been published. The following section.

1. Normal Distribution;

---Part 2. χ^2 distribution;

---Part 3. t-distribution;

---Part 4: F-distribution;

5. Binomial Distribution;

6. Poisson Distribution;

7. Non-central t-distribution. This document replaces GB/T 4086.6-1983 "Statistical Distributions - Numerical Tables - Poisson Distribution". Compared with GB/T 4086.6-1983, except for the conclusion... Aside from structural adjustments and editorial changes, the main technical changes are as follows:

---Added notes on table spacing and precision (see Chapter 1). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Statistical Methods Application (SAC/TC21). This document was drafted by: Zhejiang Zhongguang Electric Group Co., Ltd., Beijing University of Technology, China National Institute of Standardization, and Chinese Academy of Sciences. Institute of Mathematics and Systems Science, Beijing Information Science and Technology University, Pingdingshan University.

The main drafters of this document are. Zhang Shuqian, Xie Tianfa, Wang Lei, Yang Yu, Wang Gongming, Zhang Xuan, Zhao Jing, Zhang Fan, Wu Gang, Yang Ziqiang, and Wei Gongyi. This document was first published in 1983, and this is its first revision.

Currently, with the widespread use of computers, using computer programs to obtain the required statistical distribution values is a good method. However, if a computer is not readily available, or if it is desirable to obtain the required statistical distribution values easily, then statistical distribution tables are still necessary. However, it is an indispensable tool. In practice, basic statistical distributions, such as the normal distribution, χ^2 distribution, t distribution, F distribution, binomial distribution, and Poisson's distribution, are essential. Loose distribution and noncentral t-distribution are the distributions that people are most interested in. GB/T 4086 "Statistical Distribution Numerical Tables for Data Analysis and Decision Making" is proposed to consist of 7 parts.

1.Normal Distribution. The aim is to provide the probability density function, distribution function, and quantiles of the standard normal distribution. Numerical value.

2.Chi-square distribution. The purpose is to provide the distribution function of the chi-square distribution and the numerical values of its quantiles.

---Part 3.t-distribution. The purpose is to provide the distribution function of the t-distribution and the numerical values of its quantiles.

1 Scope

GB/T 4086.6-2025 is the Chinese national standard covering the Poisson tables - the probabilities and cumulative values by mean, for counting defects, arrivals and failures where the count is small and the opportunity large. Part 6 of the series. It replaces GB/T 4086.6-1983 and is already in force. Issued on 5 October 2025, it has been in force since 5 October 2025, replacing GB/T 4086.6-1983.

This document provides a table of the distribution function of the Poisson distribution, and its table distances are as follows: $x=0,1,2,\dots,k$ k simultaneously satisfies $F(k;\lambda) \leq 1-5 \times 10^{-7}$ and $F(k+1;\lambda) > 1-5 \times 10^{-7}$. Note

1.Table spacing such as $n=2(1)30(2)50$ indicates that the value range of n is 2~50, where the interval between values $>2\sim30$ is 1, and the interval between values $>30\sim50$ is 1. The value interval is 2. The distribution function table is accurate to 6 decimal places. Note

2.Precision refers to the number of decimal places retained in a numerical value. This document applies to situations where the distribution function value of the Poisson distribution is used in data analysis and decision-making.

2 Normative references

The contents of the following documents, through normative references within the text,

constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 3358.1 Statistical vocabulary and symbols - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 3358.1 apply to this document.

4 Overview

Although the distribution function table provides 6 decimal places, the number of decimal places required in practice depends on the specific problem. If the numerical tables listed in this document do not meet the application requirements, refer to Appendix A and Appendix B for calculations, or use interpolation methods. Rough calculation.

5. Distribution function table of Poisson distribution The distribution function of the Poisson distribution with parameter λ is. $F(x; \lambda) = \sum_{y=0}^x \frac{e^{-\lambda} \lambda^y}{y!}$, $\lambda > 0, x = 0, 1, 2, \dots$. The probability of finding the integer point x is $f(x; \lambda) = F(x; \lambda) - F(x-1; \lambda)$, where $x = 1, 2, \dots$

Note. The distribution function value is the sum of the probabilities of each integer point in the dashed box. Figure