

ICS 33.200
CCS V 80



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

GB/T 38236-2019

**Radiometric calibration method for spaceborne optical remote
sensors in the laboratory**

航天光学遥感器实验室辐射定标方法

Issued on: October 18, 2019

Implemented on: May 1, 2020

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

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and managed by the National Aerospace Technology and its Application Standardization Technical Committee (SAC/TC425). This standard was drafted. Beijing Institute of Space Electromechanical Research, China Aerospace Standardization Institute. The main drafters of this standard. Li Yongqiang, Li Yunfei, Cui Chengguang, Wang Jingyi, Guo Yongxiang, Yang Weitao, Wu Yongliang, Jin Libing. Aerospace optical remote sensor laboratory radiometric calibration method

1 Scope

China's national method for the laboratory radiometric calibration of spaceborne optical remote sensors. It specifies the calibration environment, the equipment and the procedure. This is the calibration performed before launch, and it establishes the relationship between the radiance falling on the instrument and the digital number it reports - the fundamental scale on which every subsequent measurement rests. It is done against an integrating sphere source whose radiance is itself traceable to a national standard, in a clean environment, across the instrument's spectral bands and its full dynamic range, and it produces the coefficients loaded into the ground processing. Everything after launch is a correction to this: the on-board lamps track its drift, and the field campaigns check it against the ground. If the laboratory calibration is wrong, nothing downstream detects it, because there is no other absolute reference.

This standard specifies the calibration environment for the calibration of the aerospace optical remote sensor laboratory with a working band of 0.35 μ m~14 μ m. Standard equipment and calibration methods and uncertainty analysis. This standard is applicable to laboratory radiometric calibration of aerospace optical remote sensors with a working band of 0.35 μ m~14 μ m. Other band navigation The laboratory radiometric calibration of the day optical remote sensor can be referred to.

2 Normative references

The following documents are indispensable for the application of this document. For dated

references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3102.6 Light and related electromagnetic radiation quantity and unit Spectral radiometric measurement of GB/T 26179 source

GB/T 30114.1 Space science and its application terms - Part 1. General

GB/T 34509 (all parts) Land observation satellite optical remote sensor in-orbit site radiation calibration method

3 Terms and definitions

GB/T 3102.6, GB/T 26179, GB/T 30114.1 and GB/T 34509 and the following terms and definitions apply to this file.

3.1 Optical remote sensor opticalremotesensor Optically measure the UV, visible, and infrared energy of a target's reflection or radiation over a long distance to obtain the target's characteristics. Sensor.

3.2 Laboratory radiometric calibration radiometriccalibrationinlaboratory Determining the quantitative relationship between the remote sensor output signal and the amount of incident radiation, or determining each detector unit or detector, under laboratory conditions The process of output inconsistency between channels is inconsistent.

3.3 Absolute radiometric calibration The process of determining the quantitative relationship between the remote sensor output signal and the amount of incident radiation.

3.4 Relative radiometric calibration The process of determining the output response inconsistency between detector units or detector channels.

3.5 Spectral radiance The amount of radiation (passing) of the radiation source over the unit projected area, within the unit solid angle, and within the unit wavelength interval.