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

GB/T 33988-2017

**Visible and shortwave infrared spectral reflectance
measurement of urban surface features**

城镇地物可见光-短波红外光谱反射率测量

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard proposed by the Chinese Academy of Sciences. This standard by the National Standardization Technical Committee remote sensing technology (SAC/TC327) centralized. This standard drafting unit. Shanghai Meteorological Bureau, Chinese Academy of Sciences Shanghai Institute of Technical Physics, Chinese Academy of Sciences Institute of Optoelectronics, China Branch Institute of Remote Sensing and Digital Earth. The main drafters of this standard. Yin ball, Gong Selan, Hu Yong, Jia Yuanyuan, Li Li, Ren Yuhuan, Wang Xinhong, Yang Hequn. Urban features visible - shortwave Infrared spectral reflectance measurement

1 Scope

China's national standard for measuring the spectral reflectance of urban surfaces across the visible and shortwave infrared range. It specifies the measurement conditions, the basic and specific measurement requirements, the measurement records, the processing of results and the measurement summary, and it applies to building and using spectral libraries of urban features. Remote sensing identifies what is on the ground by comparing the spectrum a satellite records against a library of known materials, and for natural cover - vegetation, water, bare soil - those libraries are mature. Cities are the hard case. An urban scene is a mosaic of manufactured surfaces at a scale finer than many sensors resolve: concrete, asphalt of several ages, clay tile, metal roofing, glass, painted render, artificial turf. Several of them are spectrally similar, they weather, and they are almost never viewed flat. So a usable urban spectral library has to be built from field measurements made under stated and repeatable conditions, which is what this standard exists to fix.

This standard specifies the requirements for visible light - shortwave infrared reflectance measurement of urban landforms, including the measurement conditions, the basic measurement requirements, measurement Specific requirements, measurement records, measurement results processing and measurement summary. This standard applies to access to the development and utilization of non-agricultural land within the typical region in the 380nm ~ 2500nm wavelength range Within the spectral reflectance measurement.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document. Glossary of terms for thermal solar energy use

GB/T 12936-2007 Photogrammetry and remote sensing terminology

GB/T 14950-2009 Spectral radiance measurement of light sources Dispersive Hyperspectral Remote Sensing Laboratory Calibration Spectrometer Specification for surface meteorological observatories - Part 2. Observation of clouds Specifications for surface meteorological observatories - Part 3. Observation of meteorological visibility Specifications for surface meteorological observatories - Part 7. Observation of wind direction and wind speed

3 Terms and definitions

GB/T 12936-2007, GB/T 14950-2009, GB/T 26179-2010, GB/T 31010-2014, QX/T 46-2007, QX/T 47-2007, QX/T 51-2007 and the following terms and definitions apply to this document.

3.1 Reflective spectrum reflectionspectrum Radiation reflected by the object varies with wavelength.

3.2 Spectral reflectance spectralreflectivity At a given wavelength, the ratio of pi times the reflected radiance of an object to the incident radiation flux density.

3.3 Spectral resolution spectralresolution A parameter characterizing the resolution of the variation of radiation as a function of wavelength. The spectral bandwidth is usually expressed as the spectral response of the radiation measurement channel 1/2 of the peak of the curve corresponds to the wavelength interval.

3.4 Standard reference standardreferenceplate Homogeneous flat sheet. Its uniform reflectivity and satisfies the Langbian surface characteristics, reflectance with wavelength and time changes gently and changes can be determined.