The Multi-slit Spectro-Polarimeter for the 2.5-meter Wide-field and High-resolution Solar Telescope

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We developed a multi-slit spectropolarimeter for the 2.5-meter wide-field and high-resolution solar telescope of China (WeHoST) with the ability to simultaneously observe the full Stokes profiles of the Fe I 617.3 nm and Mg I b 517.3 nm lines within a solar region up to 300 arcsec × 300 arcsec. Being a spectrograph, four slits are employed, achieving a spectral resolution of approximately 0.001 to 0.0014 nm and a spectral band of about 0.7 nm for each slit. A polarimeter, which is based on a dual-beam setup, has been equipped with this spectrograph and adopts a spatial-temporal modulation scheme. It includes an achromatic waveplate as a modulator and a polarizing beamsplitter as an analyzer. In addition, an assembly is designed to calibrate the instrument polarization of the telescope. Here we present the main characteristic of the design, layout, and the current state of this spectrograph