The Korea Superconducting Tokamak Advanced Researches (KSTAR) successfully completed the first plasma generation in the middle of 2008 [1]. In 2011 campaign, the KSTAR produced plasma more than 10 seconds with the 1.5MW of NBI and 0.3MW of electron cyclotron heating (ECH). The machine protection system will be required for real time monitoring of water cooled divertor modules with high spatial resolution, in order to prevent local overheating of the target tiles, which could easily lead to their destruction. The optics of the Infrared TV system for the machine protection can be divided into two parts: a mirror based optical head, a Cassegrain telescope system for creating an intermediate image and lens based imaging optics for Infrared wavelength 3~5 μm. The long view ports make a periscope inevitable to get a field of view for diagnosing the internal space of the vacuum vessel and better observation of plasma discharge on KSTAR.

References