Contribution submission to the conference Erlangen 2018

The bolometer diagnostic at the stellarator Wendelstein 7-X — •Philipp Hacker[1,2], Daihong Zhang[1], Rainer Burhenn[1], Birger Buttenschön[1], Thomas Klinger[1], and W7-x Team[1] — [1]Max-Planck Institut für Plasmaphysik, EURATOM Association, D-17491 Greifswald, Germany — [2]Ernst-Moritz-Arndt Universität Greifswald, D-17491 Greifswald, Germany

The bolometer diagnostic at the stellarator Wendelstein 7-X (W7-X), using metal resistive detectors, aims to investigate the features of the plasma radiation mainly from the impurities and to provide the total radiated power loss for global power balance study. A two-camera system consisting of detector arrays with blackened gold-foil absorbers has been installed at W7-X. They view the plasma at a triangular cross section horizontally and vertically, respectively. The fan-shaped lines of sight provide full coverage of the studied plasma with a spatial resolution of 5 cm. Based on their line-integrated measurements the total radiated power loss of the divertor plasma has been estimated independently. The initial results for helium and hydrogen plasma at different magnetic configurations and heating powers will be presented.

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Email:	**philipp.hacker@ipp.mpg.de**