

## DIII-D diagnostic systems

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**Abstract.** The DIII-D tokamak, located at General Atomics in San Diego, California, has long been recognized as being one of the best diagnosed magnetic fusion experiments. Composed of more than 50 individual systems, the diagnostic set takes advantage of a high number of large aperture access ports. These instruments are used in support of basic control of the tokamak and experiments in the transport, stability, boundary and heating and current drive science areas. These systems have contributed to the success of the Advanced Tokamak (AT) program, in addition to the many contributions to our physics understanding and real-time control of fusion-relevant plasmas. Numerous novel techniques have been developed, tested, and fielded on DIII-D including new approaches required for a Burning Plasma Experiment (BPX). Details of the diagnostic systems will be described along with some illustrative recent results.