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Diagnostic Suite for High Power Electron Beams

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A suite of diagnostic was designed to fully characterize a high current electron beam in a short section of a beamline. The entire suit of diagnostics is housed in ˜1.2 m in length and contains 7 diagnostic assemblies that have 78 fast channels and two cameras. The suite contains a slit-harp emittance diagnostic, energy analyzer, two beam position monitors, a Faraday cup/beam stop with 14 sampling cups, OTR camera for 2D imaging, and streak system with temporal 2D reconstruction. The system was designed to accommodate large and small diameter beams up to 1.5 kA of electron beam. The paper will outline the utility and regime of operation, along with anticipated measurement accuracy.

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Footnotes

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Yes

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