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8.47 Upgrades to Thomson Scattering Detectors at General Fusion

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General Fusion is assembling an upgraded Thomson scattering system in preparation for measurements on the new PI3 plasma injector. Major changes include a shift of laser wavelength from 532 nm to 1064 nm and switching from a spectrometer and photomultiplier detector setup to polychromator and avalanche photodiode (APD) detector setup. A novel, inexpensive, tunable polychromator design will be tested. A comparison will be made between a variety of custom and off the shelf APD modules. Previously, a 532 nm based system was used with five chords on the smaller SPECTOR machine, measuring temperature and density of plasmas ranging over 50-400 eV and 0.3-1x1020 m-3. After initial testing, the new system will be expanded to eight modular chords.

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