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The Cornell Main Linac Cryomodule: a Full Scale, High Q Accelerator Module for cw Applications

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Cornell University is in the process of building a 10 m long superconducting accelerator module as a prototype of the main linac of a proposed ERL facility. This module houses 6 superconducting cavities- operated at 1.8 K in continuous wave (CW) mode - with individual HOM absorbers and one magnet/ BPM section. In pushing the limits, a high quality factor of the cavities (2e10) and high beam currents (100 mA accelerated plus 100 mA decelerated) were targeted. We will review the design shortly and present the results of the components tested before the assembly. This includes data of the quality-factors of all 6 cavities that we produced and treated in-house, the HOM absorber performance measured with beam on a test set-up as well as testing of the couplers and the tuners.

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