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# C3Po1C-01: Measurement of directional hydrodynamic parameters of woven mesh screen by Computational Fluid Dynamic (CFD)

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This study examines the directional hydrodynamic resistance parameters of woven mesh screens under steady-state and oscillating helium flows, relevant for both small-scale and large-scale regenerative cryocoolers. Computational fluid dynamics (CFD) simulations are employed to analyze commercially available mesh screen fillers and determine pressure drops in both axial and lateral (radial) directions under steady and oscillatory mass flow conditions. These findings can guide the selection of appropriate mesh screen lengths for use as flow straighteners, such as at the bounding ends of pulse tubes or in novel regenerator designs, and highlight the importance of anisotropy in mesh screen fillers.

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