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# C1Po2A-05: Design and Optimization of a High Frequency Miniature Pulse Tube Cryocooler

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A micro coaxial pulse tube cryocooler has been developed for infrared detection by Key Laboratory of Technology on Space Energy Conversion, CAS. It has a tiny size and high frequency, driving by the linear compressor, and using the combination of inertance tube and buffer as phase shifter. At present, the operating frequency of this pulse tube cryocooler is 175Hz - 215 Hz, and it can provide a cooling power of 0.3 W - 0.5 W at 80 K with an input electric power of 30 W at 300 K reject temperature. This paper presents the performance tests data and describes the design and optimization process of this micro coaxial pulse tube cryocooler in detail.

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