

## ***A Hundred-watts Cooling Power Coaxial Pulse Tube Cryocooler for Space Application***

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In recent years, the cooling capacity of space pulse tube cryocoolers (PTCs) used in cooling space infrared detectors is in tens of watts mostly. For reserving cryogenic liquids and cooling complete optical systems in space, the demand of high cooling power to PTCs has been proposed. However, there are few studies on high cooling power space PTCs. In order to meet the future demand for space cooling capacity, this paper reports a hundred-watts cooling power PTC used in space. The PTC has a cooling power of 100W at 80K, with the Relative Carnot Efficiency relate to the PV power is 19.3%. The entire cold finger measures 140\*140\*210 mm and weighs 8.8kg. With the design of split-type structure, the vibration and noise of the PTC is slighter to adapt to the demand of micro disturbance.