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C4Or1D-06: Ball Low Cost, Low EFT, High Capacity Cryocooling Systems

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Over the past 5 years, Ball Aerospace working with teammates that include Sunpower/Ametek, Iris, and SDL and sponsored by both internal and external customers, has developed a product line of low cost, low EFT, high capacity, high reliability cryocooler systems. A key element is the high efficiency, long life, low cost Sunpower cryocoolers. Specifically, the products include the DS-30, DS-10, and DS-Mini coolers. Ball has augmented these coolers by integrating them with several EFT and launch vibration attenuating platforms. Additionally, these systems can drive the coolers with either an Iris CCE or a Ball MACCE. The result has been a flight qualified product line of cooling systems that compared to traditional space coolers are 2-5X lower cost, 10-40X lower EFT output, 3-5X higher capacity and efficiency. These cooler products have been delivered for several flight programs.

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