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C3Or4C-02: BAE Low Cost, High Capacity, Scalable Cryocooler Solutions

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Over the past eight years, BAE Systems Inc. has been working with teammates that include Sunpower/Ametek, Iris, and SDL on next generation cryocooler systems. These cryocooler systems have been sponsored by both internal and external customers and has resulted in development of 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, Sunpower products include the DS-30, MT, GT, and DS-Mini coolers. BAE has augmented these coolers by integrating them with several EFT and launch vibration attenuating platforms. Additionally, these cryocoolers systems are scalable from Mission Class A to C using cryocooler control electronic solutions from Iris Technology or BAE Systems Inc. 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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