
**SESSION 10: Stirling & Pulse Tube Cryocoolers -
Experimental**

Paper No. 10-3 Thursday Morning 8:30 AM

***High-Availability Cooler Developments at
Thales Cryogenics***

D. Willems, R. Arts, G. De Jonge, P. Bollens, B. de Veer, and J. Mullié, Thales Cryogenics, The Netherlands

Thales Cryogenics has previously presented its developments in the field of High-Availability (HA) coolers. In this paper, we will present the recent advances in this development program. The initial development was aimed at a HA Stirling cooler for HTS filter applications. An update of lifetime numbers of those Stirling coolers, now running continuously for nearly 5 years without degradation, will be given, indicating the current and expected availability of the technology.

Recent advances include the development of two new Stirling coolers. We will present development status and performance measurements of these coolers which are developed to be integrated with industry-standard ¼” and ½”(SADA2) dewars. This allows the use of HA Stirling coolers in a wide variety of Infrared applications. In addition, the use of pulse-tube coolers for infrared sensing applications will be discussed, as the pulse-tube cooler remains the technology of choice for applications requiring a vanishingly small failure probability.