

## ***Development of Integral Rotary and Split Linear Stirling Cryocoolers for SWaP Applications***

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Current development of SWaP cryocoolers at LE-TEHNIKA is finishing prototype phase for two new products, both based on a Stirling cooling cycle. The aim is to broaden our Stirling cooler product range also for the applications where small, light and efficient low power coolers are required. The first one is a split linear cooler (SLC) and the second one is an integral rotary cooler (IRC). IRC has 0.5W of cooling power at 130K while its mass (without electronics) is below 100g. Both cryocoolers are based on motors with moving permanent magnets, have separated electronics and integrated position sensors. With promising results regarding cooling power, noise and induced vibrations, both types are now entering industrialization phase which should provide data on lifetime and MTTF. Considering several design improvements over larger cryocoolers existing in production, substantial extension of lifetime is expected also in presented new generation of Swap coolers.