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A closed-cycle dilution refrigerator with free-space and fiber optical access for quantum optomechanics experiments at 25mK SIMON GROEBLACHER, WITLUF WIECZOREK, University of Vienna, Austria, PETER CHRIST, MATTHIAS BUEHLER, Oxford Instruments, Munich, Germany, DOREEN WERNICKE, Entropy GmbH, Munich, Germany, JENS HOEHNE, Oxford Instruments, Munich, Germany, MARKUS ASPELMEYER, University of Vienna, Austria — We report on the operation of a closed-cycle dilution refrigerator for quantum optomechanics experiments at 25mK. The dilution fridge is accessible both via free-space as well as fiber coupling, allowing us to perform a variety of optical experiments at low temperatures. It is designed to vibrationally isolate the experiment allowing for stable operation of a high-finesse optical cavity. This enables us to perform cavity-optomechanics experiments at ultra-low temperatures.

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