

***Mid-Infrared Instrument Cryocooler on  
James Webb Space Telescope:  
Cooldown, Commissioning and Initial  
Performance.***

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The focal plane modules and the optical bench of the Mid-Infrared Instrument (MIRI) on James Webb Space Telescope (JWST) require temperatures below 7K to operate. While other, near-IR instruments in the Observatory are cooled passively, MIRI cryogenic components are cooled by a dedicated distributed 4-stage hybrid Pulse Tube/Joule Thomson mechanical cryocooler, spanning all of the Observatory regions. MIRI cryocooler is designed to meet stringent heat lift, thermal stability, power draw, exported vibration, and reliability requirements. Cryocooler components stowed for launch are designed to be released as part of the JWST deployment sequence. Cryocooler pneumatic and thermal control configurations are progressed through a coordinated sequence as the Observatory is cooled. Here, we describe the initial stages of MIRI cryocooler commissioning and present functional performance results after the first three months on orbit.