Product Announcement

The OptiCool® Vector is a magneto-optical cryostat with a 4-1-1 vector magnet which is based on the cutting edge OptiCool design. The cryogen-free OptiCool platform leverages Quantum Design's 40+ years' experience in engineering and manufacturing automated temperature and magnetic field control systems. With fully automated cooldown and seamless temperature control through the range of 350 K to 1.7 K, the OptiCool also has the low vibration and stability that is critical to optical measurements. OptiCool sample pod technology allows researchers to create and build customized set-ups for optical measurements.

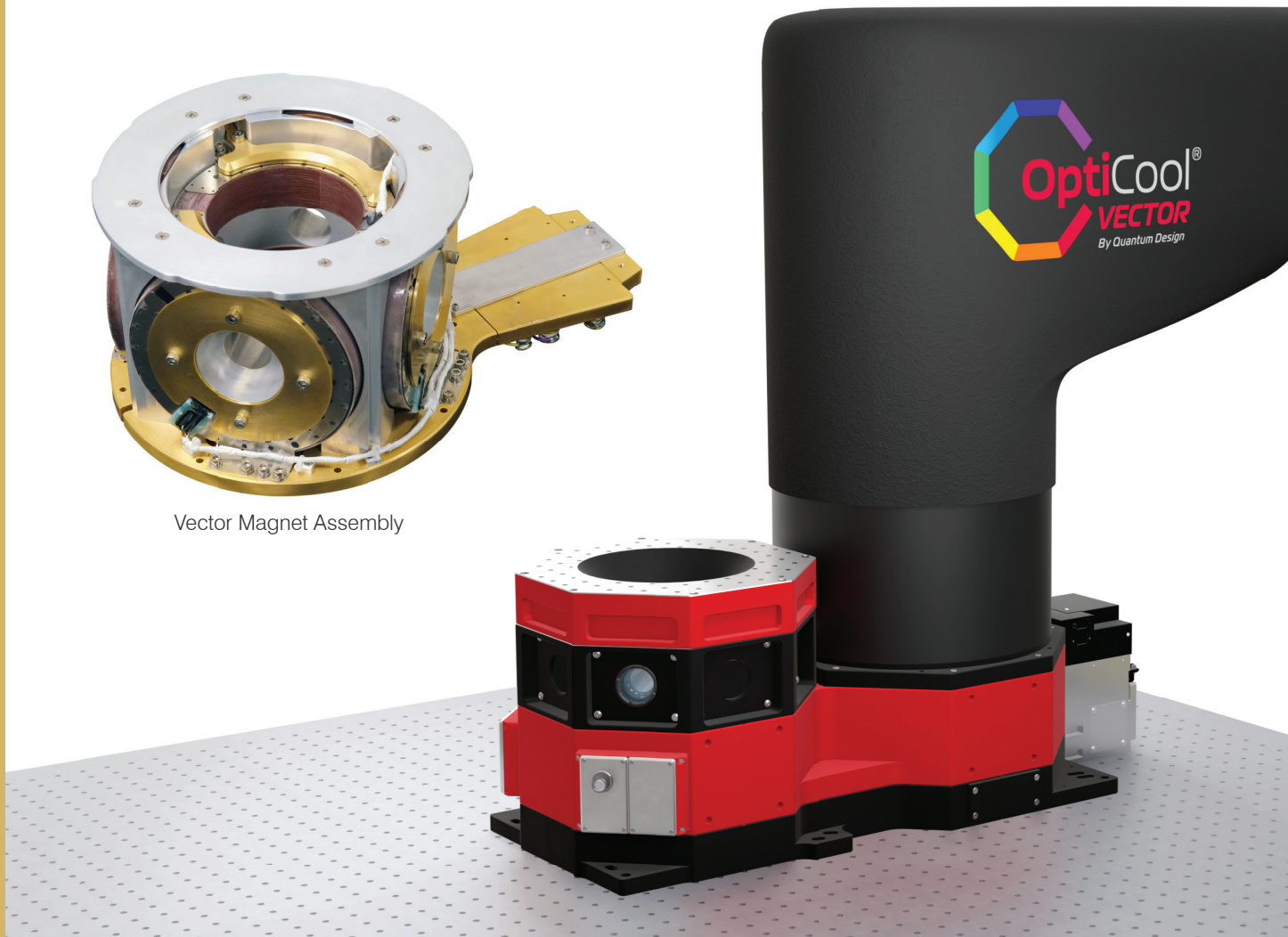
The OptiCool Vector magnet provides a magnetic field up to ±4 T perpendicular to the optical table and ±1 T in the plane parallel to the optical table. The four side windows in the X and Y axes of the magnet allow for transmission and reflection experiments in-plane parallel to the table. The top and optional bottom window in the Z direction allow for reflection or transmission experiments perpendicular to the optical table. The magnet power supplies in the OptiCool Vector allow users to precisely set the magnetic field direction relative to their sample and optical systems.

OptiCool® VECTOR By Quantum Design

The vector magnet of the OptiCool Vector makes it the perfect platform to study:

- **Color Centers**
  (e.g., Diamond Nitrogen Vacancies)
- **2D Materials**
  (e.g., Transition Metal Dichalcogenides)
- **Magneto-Excitons**
- **Anisotropic Magnetic Single Crystals**
- **Magnetic Thin Films**
- **Magneto Optic Kerr Effect**
- **Spin-Orbit Coupling**

Vector Magnet Assembly



OptiCool®Vector Specifications*

Temperature Control	
Temperature Range:	1.7 K to 350 K
Magnetic Field Control	
Z Maximum Field: X and Y Maximum Field: Field Uniformity, Z Axis: Field Uniformity, X and Y Axes:	±40,000 Oe (±4 T) ±10,000 Oe (±1 T) ±0.3% over a 3 cm diameter spherical volume ±1.0% over a 1 cm diameter spherical volume
Optical Access	
1 Top and 1 Optional Bottom Window: 4 Side Windows:	50 mm diameter, 41.5 mm clear bore (user-replaceable) 40 mm diameter, 24.5 mm clear bore (user-replaceable)
Vibrational Stability	
Horizontal: Vertical:	< 10 nm peak-to-peak < 4 nm peak-to-peak
Sample Space	
Maximum Sample Volume: Sample Environment:	89 mm diameter by 84 mm tall Sample in cryostat vacuum space
Dimensions	
Optical Table: Floor Space:	Cryostat footprint: 1 m x 0.5 m (minimum) Cryostat height: 1 m (minimum) Tower footprint: 0.75 m x 0.75 m Tower height: 2 m (minimum) Cabinet footprint**: 1 m x 1 m Cabinet height** (w/ magnet power supplies): 1 m

* Specifications subject to change without notice. (March 2025)
** Cabinet not shown.

OptiCool Vector Platform
(Optical vibration table not included)

Quantum Design

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