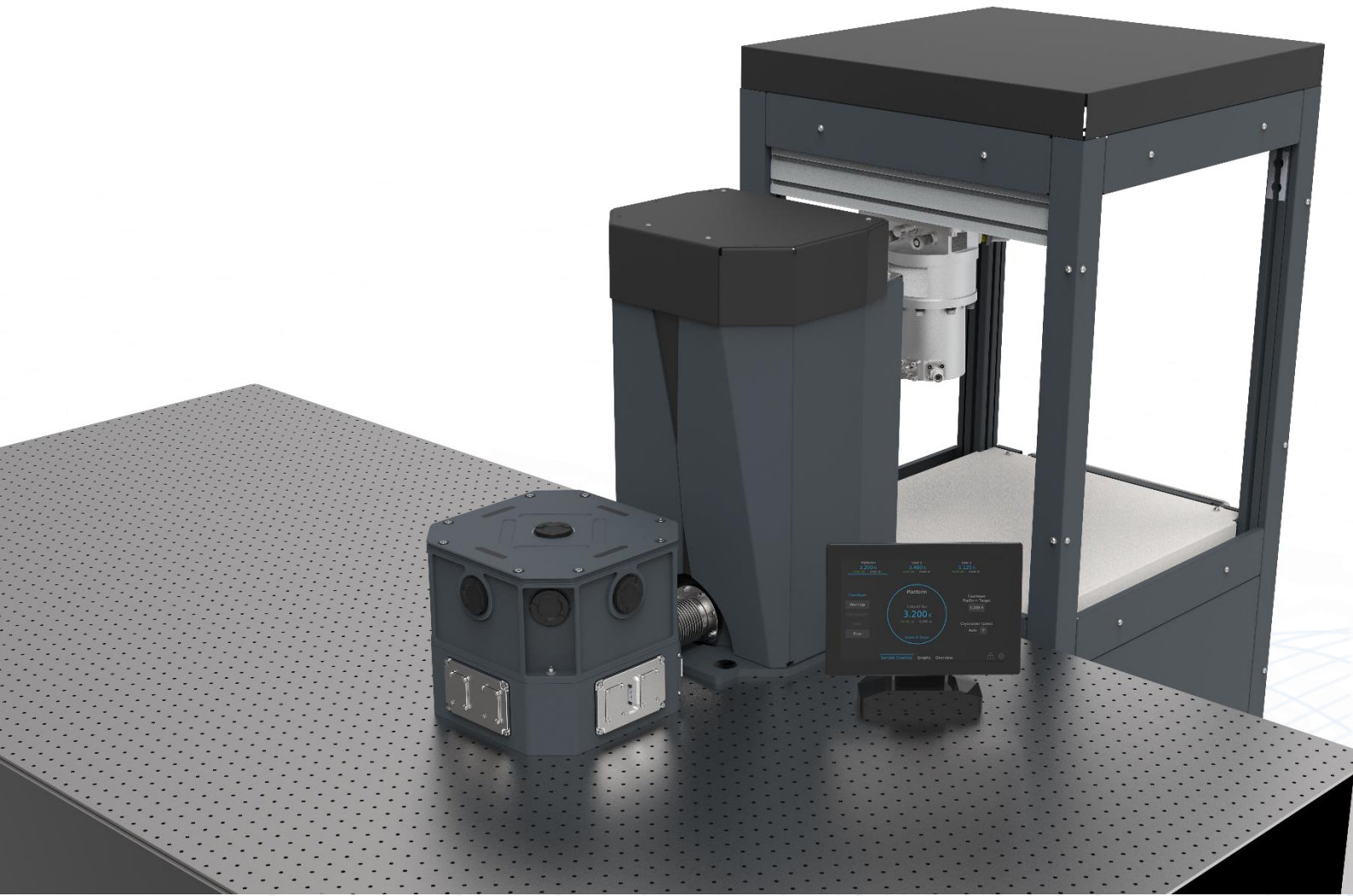




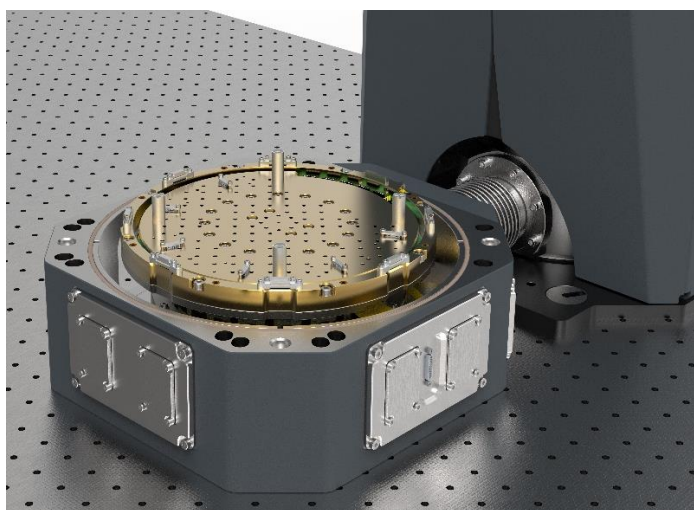
# Cryostation 200 PT

Configurable optical cryostat for demanding applications in quantum

# Optical Cryostat with High Cooling Capacity and Large Configurable Sample Space

High cooling capacity with large configurable sample space allows a user to easily design any experiment in the Cryostation 200 PT. The closed-cycle optical cryostat utilizes a pulse tube cryocooler and Montana Instruments patented low vibration technology to provide users superior mechanical and electrical vibrations. Six customizable vacuum-feedthroughs and >20 watts of cooling on the first stage of the sample platform allows for up to 100 RF feedthroughs or DC connections. Montana Instruments Galaxy Software provides push button cooldown/heat up control of your optical cryostat and advance remote monitoring, control and analysis of your system.

- >250mW Cooling at 4.2 Kelvin
- Low temperature and vibrations
- Cryogen-free/closed-cycle cryostat
- Turn-key equipment solution with push button cooling
- External control via ethernet
- Free-space optical access
- Multiple vacuum feedthroughs for RF, DC, and Fiber Cables

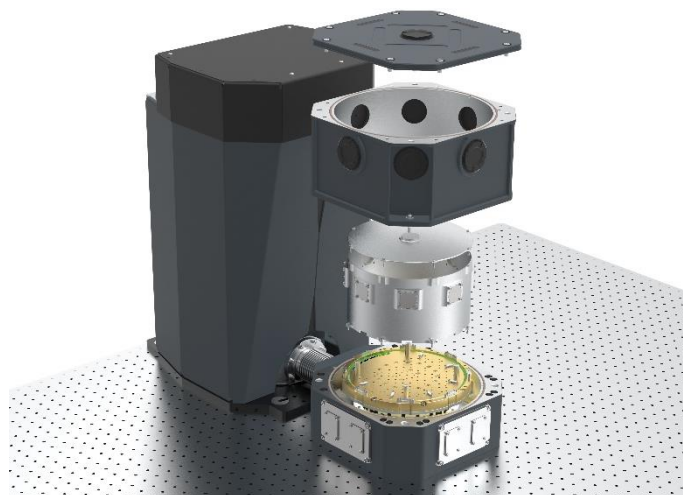


## Sample Platform

The 200mm 4K low vibration breadboard platform offers maximum flexibility in design of your experiment. Eight optical windows allow for transmission or reflective measurements. Unparalleled optical access to your sample can be achieved by either low working distance windows or a Cryo-Optic that integrates a high NA objective into the sample space.

## Sample Chamber

Designed to accommodate a variety of configurations with incredible sample, electrical, and optical access for total experiment flexibility; simply lift off the vacuum housing assembly and radiation shield for unobstructed access to the sample and wiring. Six standard side panels support a wide range of RF, DC, fiber-optic or gas feedthroughs. Three large side panels support high density electrical connections.



# Specifications

## Dimensions

|                                                        |                  |
|--------------------------------------------------------|------------------|
| Sample Space                                           | Ø200 mm x 116 mm |
| <i>Standard configuration, customization available</i> |                  |

## Performance

|                                                |              |
|------------------------------------------------|--------------|
| Temperature                                    | 3.6 K – 50 K |
| <i>Platform Temperature</i>                    |              |
| Temperature Stability (P-P)                    | <20mK        |
| <i>With damped manual positioner</i>           |              |
| Vibrations (P-P)                               | <30nm        |
| Cooling Power at 4.2K                          | >250mW       |
| Cool Down Time to 4.2K                         | 6 Hours      |
| <i>Depending on lab and sample environment</i> |              |
| Warmup Time                                    | 3 Hours      |
| <i>Depending on lab and sample environment</i> |              |

## Optical Access

|                                                        |                |
|--------------------------------------------------------|----------------|
| Optical Windows                                        | 7 Side + 1 Top |
| <i>Standard configuration, customization available</i> |                |
| Beam Height                                            | 137 mm         |
| Acceptance Angle (Full)                                | 113°           |
| <i>Top Window, Standard Sample Height</i>              |                |

## Electrical Access

|                          |       |
|--------------------------|-------|
| Electrical               | 24 DC |
| Configurable Side Panels | 6     |

## Control

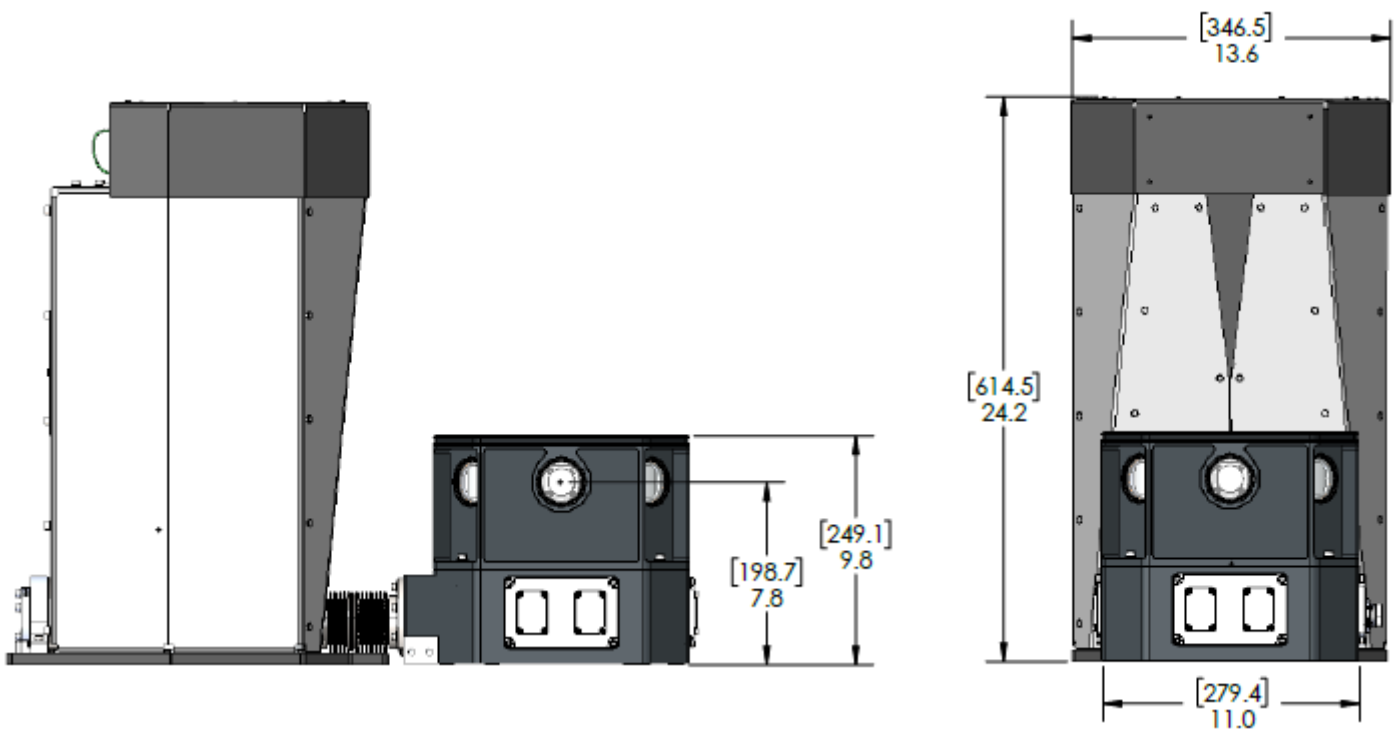
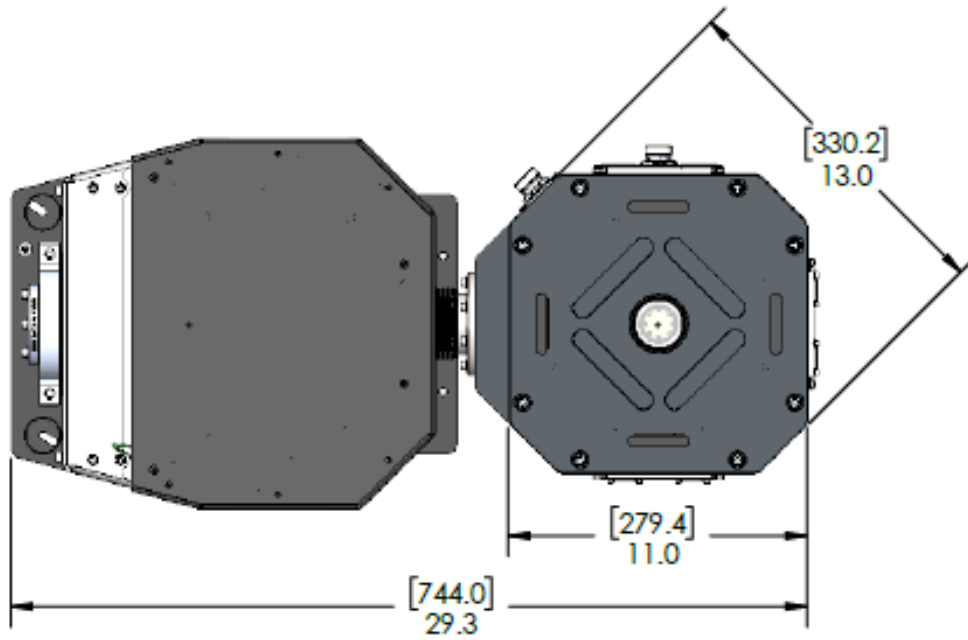
|                              |   |
|------------------------------|---|
| Temperature Control Channels | 2 |
| Remote Control and Scripting | √ |

## Cryo-Cooler

|            |              |
|------------|--------------|
| Compressor | Water-Cooled |
| Cold Head  | Pulse Tube   |
| Flex Lines | 20 meters    |

## Options

|                                       |                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------|
| Sample Mounts                         | Multiple<br>(Including electrical and custom designs)                                 |
| Variable Temperature                  | ATSM (4.2K-350K)                                                                      |
| Optical                               | Cryo-Optic (horizontal)<br>Window Substrate<br>Low Working Distance                   |
| Vacuum                                | Turbo                                                                                 |
| Positioning                           | Manual Positioner<br>The Rook Nanopositioner<br>3 <sup>rd</sup> Party Nanopositioners |
| Interfacing (Side Panel Feedthroughs) | RF, DC, Fiber, Gas, Vacuum                                                            |



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