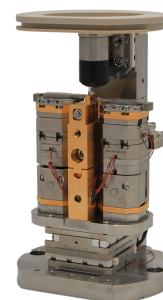


# Cryogenic Photonic Probe Station

## Technical Specifications



| General Specifications               |   |
|--------------------------------------|---|
| type of instrument                   | combined side injection into planar waveguide structures and perpendicular confocal optics on top of the sample. Perpendicular injection is possible          |
| sensor head specifics                | two independent lensed fiber probes with 3 individual degrees of freedom, low temperature compatible apochromatic objective and external confocal optics head |
| Confocal Unit                        |   |
| configuration                        | compact and modular design, two or more optical channels standard configuration   |
| key benefits                         | quick and reliable alignment of each channel, steering mirror for the combined beams<br>exceptional long-term stability                                       |
| quick-exchange of optical components | beamsplitters, filter mounts for up to 4 filters/ polarizers (1" diameter), optional piezoelectric rotator with filter mount                                  |
| pinhole configuration                | two pinholes (fiber apertures), different illumination and collection wavelength possible   |
| pinhole size                         | dependent on fibers, typically 3 .. 9 $\mu\text{m}$ mode field diameter   |
| LT- compatible objective             | LT-APO/VIS, LT-APO/VISIR, LT-APO/NIR(see accessory section for more information)  |
| inspection unit                      | sample imaging with large field of view   |
| long-term stability                  | lateral drift of confocal spot typically <2 nm/h  |
| Sample Positioning                   |   |
| total travel range                   | sample 6 mm x 6 mm (closed loop), fiber probes 3 x 3 x 2.5 mm <sup>3</sup> (closed loop)  |
| step size                            | 0.05..3 $\mu\text{m}$ @ 300 K, 10..500 nm @ 4 K   |
| sample holder                        | carefully thermalized, quick exchange mechanism, including calibrated temperature sensor and heater   |
| Suitable Operating Conditions        |   |
| temperature range                    | < 3K..300K  |
| operating pressure                   | 1E-6 mbar .. 1 bar  |
| Suitable Cooling Systems             |   |
| compatible cryostats                 | attoDRY800(flow cryostats on request)   |
| Compatibility with Electronics       |   |
| laser                                | LDM600 laser/detector module (for detailed specifications please see attoCONTROL section)   |