

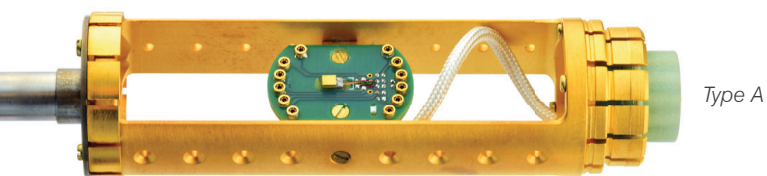
Developed for users desiring to leverage the sample environment of a PPMS for their own custom experiments, the Multi-Function Probe (MFP) provides a compatible basic probe framework for further additions and specialization. All types allow access to the sample space by customizing the top-plate, include baffles to prevent heat from the room temperature top-plate from propagating to the isothermal region, and some variants enable connection to the 12-pin socket at the base of the sample chamber.

Relevant Application Notes

- ESD-sensitive probe (1070-212)
- Photoconductivity probe (1084-752)
- CryoFMR (1087-201)
- Microwave Resonator / EPR (1084-750)

Specifications

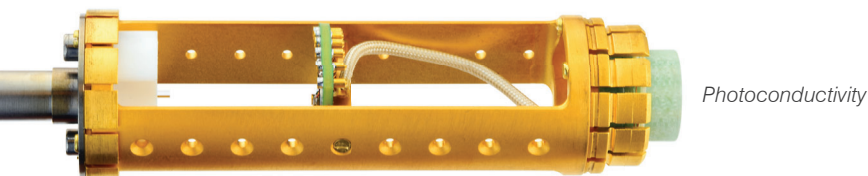
Operational Range: 1.8 to 400 K; 0 to 16 T
 CryoFMR Operational Range: 4 to 400 K; 0 to 16 T
(as delivered before modification)



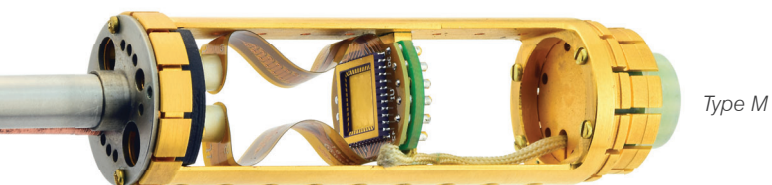
Type A



Type B



Photoconductivity



Type M

Available MFP Types

DynaCool (D450A/B/C/M) / PPMS (P450A/B/C/M)
 VersaLab (V450A/B/C/M):

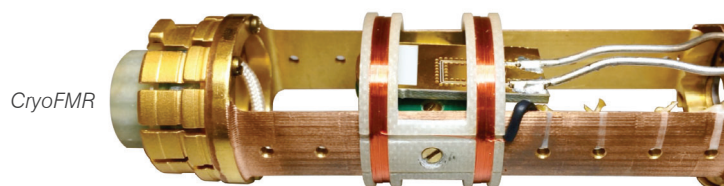
- **“A” Type:** includes a wired socket already connected to the 12-pin puck interface which has integrated thermometry and accepts standard QD sample mounting boards. The socket can be placed at various heights in the bottom fixture and also can be manually rotated when the probe is out of the PPMS.
- **“B” Type:** includes a wired 16-pin DIP-type socket connected to the 12-pin puck interface.
- **“C” Type:** only includes the probe body with no transfer case at the bottom end.
- **“M” Type:** for use with a removeable chip carrier / flex-cable ribbon assembly; allows for up to 48 connections to be carried down into the sample space. Includes integrated thermometry.

DynaCool (D790) / PPMS (P790):

- **Photoconductivity Variant:** modified A-Type including one (or optionally, two) 1 mm core diameter optical fibers running down to the sample for sample illumination and/or spectroscopy.

DynaCool (D886A/B) / (P886A/B) / (V886A/B):

- **“CryoFMR” Variant:** heavily modified A-Type intended for spectroscopically probing a material's ferromagnetic resonance (FMR) response. Includes Helmholtz coils for low-frequency AC field modulation and cryo-coaxial cables for delivery and return of RF signals (886A supports up to 18 GHz RF signals, 886B supports up to 40 GHz). Specialized waveguides orient a thin-film sample perpendicular or parallel to the DC field. Compatible NanoOsc spectrometer also available for a complete integrated measurement option.



CryoFMR

Top plate construction is common to all MFPs (though some have additional modifications not pictured here).

