Quantum Design

Multi-Function Probes

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 originating at the top of the probe from propagating to the isothermal region, and some variants enable connection to the 12-pin socket at the base of the sample chamber.

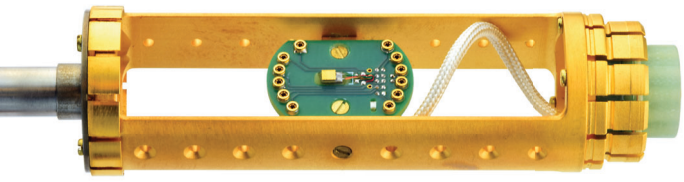
Relevant Application Notes

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

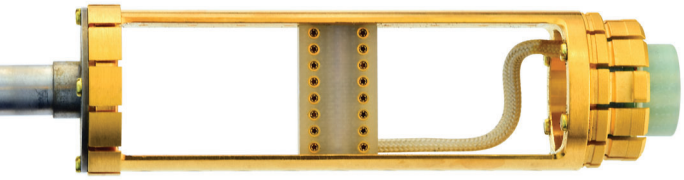
Specifications

Operational Range: 1.8* to 400 K; 0 to 16 T

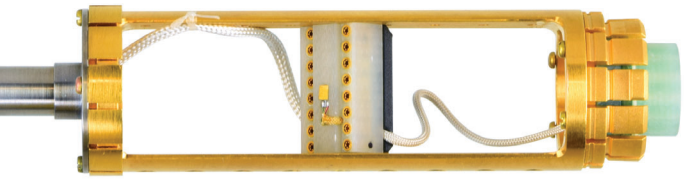
*Base temperature as delivered, before modification. The minimum temperature of the CryoFMR probe depends upon the modulation amplitude and RF frequency/power.



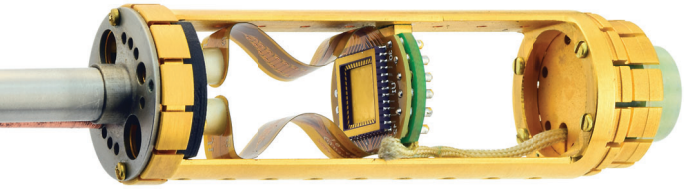
Type A



Type B



Type G



Type M

Available MFP Types

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

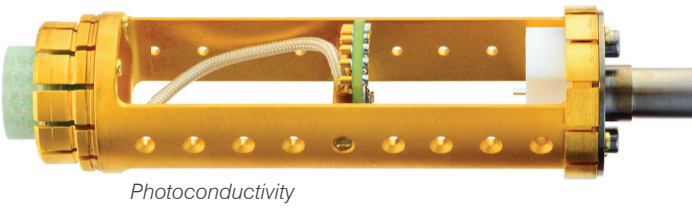
- **"A" Type:** includes a wired socket already connected to the 12-pin puck interface which has integrated thermometry and accepts standard QD sample mounting boards. The socket can be placed at various heights in the bottom fixture and also can be manually rotated when the probe is out of the PPMS.
- **"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. *(Pictured on page 26)*
- **"G" Type:** for use with a removeable DIP chip carrier with use of all 16 DIP connections. Includes integrated thermometry.
- **"M" Type:** for use with a removeable chip carrier/flex-cable ribbon assembly; allows for up to 48 connections to be carried down to the sample space. Includes integrated thermometry. Both 48-pin chip carrier assembly and 20-pin LCC socket assembly available.

DynaCool (D886B) / PPMS (P886B) / VersaLab (V886B):

- **CryoFMR:** Modified A-Type that includes Helmholtz coils for low-frequency AC fields and cryo-coaxial cables suitable for RF signals up to 40 GHz. Specialized waveguides orient thin-film samples parallel or perpendicular to the applied field. *(Pictured on page 29)*

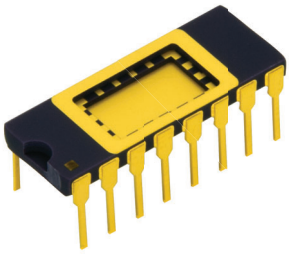
DynaCool (D790A/B) / PPMS (P790A/B):

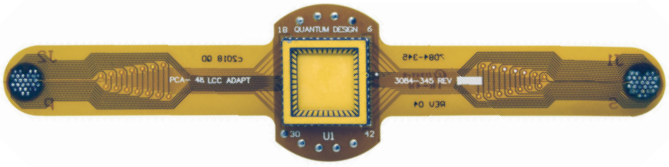
- **Photoconductivity Variant:** modified A-Type including one (or optionally, two) 1 mm core diameter optical fibers running down to the sample for illumination and/or spectroscopy.



Photoconductivity

16-pin DIP Chip Carrier





48-pin Chip Carrier Assembly