ERA\ANT



CRYOGENIC COMPONENT TEST

MMWAVE COMPONENT TESTING (4K)

Eravant can offer cryogenic component test services using a custom built cryogenic test chamber. The chamber features a two-stage GM type cryo-cooler that provides around 1 Watt of cooling power at 4.2K and a compact turbo pumping system with an integrated dry scroll roughing pump and turbomolecular high vacuum pump that can reach pressures up to 10^-8 torr. The test chamber is configured with standard KF access ports for the customer to add instrumentation, power, RF, and other vacuum feedthroughs. The OFHC cold plate is directly connected to the 2nd stage of the cryocooler and is surrounded on all sides by a mirror-finish polished radiation shield that is connected to the 1st stage of the cryocooler. The chamber is equipped with cryogenic silicon diode sensors for temperature measurements and a vacuum pressure transducer for vacuum measurements. The sensors and pressure transducer are connected to temperature/pressure controllers which can log and output the temperature/pressure readings to an external computer. The chamber's avaliable DUT enclosure space is 7.5" x 7.5" x 7.5". Eravant also can provide test equipment and components that can enable up to 110 GHz testing for customer use with the cryogenic test chamber.





CRYOGENIC TEST CHAMBER

MMWAVE COMPONENT TESTING

PARAMETER	SPECIFICATIONS
Operating Temperature Range*	293 K to 4.2 K (No Load)
Operating Vacuum**	10^-5 to 10^-8 torr (No Load)
Operating Frequency Range	DC to 110 GHz
Cold Plate Dimensions	7.5" [190mm] x 7.5" [190mm]
Cool Down Time (2nd Stage)	2 hrs
Cryogenic Cooling Power***	1 Watt @ 4.2 K
Test Ports	KF-50 x 2 KF-40 x 2 KF-25 x 3 KF-16 x 3

*Operating temperature was tested with no load and no feedthroughs other than the temperature sensor feedthrough. Actual operating temperature with DUT and additional feedthroughs installed will vary.

**Operating vacuum was tested with no load, no feedthroughs other than the temperature sensor feedthrough, and with the cryocooler turned on. Actual operating vacuum with DUT and additional feedthroughs installed will vary.

***Cryogenic cooling power is based on the cryocooler 2nd stage capacity cooling power rating. Actual cooling power with DUT and other components attached will vary.

TEST SERVICE FEATURES

Cryogenic Chamber with temperature testing capability down to 4K @ 1 Watt

KF-50, KF-40, KF-25, and KF-16 access ports available for customer use.

Temperature and Pressure Measurement Recording and Logging.

Test Equipment and components for up to 110 GHz testing available for customer use.

7.5" x 7.5" x 7.5" available internal enclosure space for DUT.

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COLD PLATE MOUNTING PATTERN FOR DUT:



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VACUUM PORT LOCATIONS:



CHAMBER COOL-DOWN TEMPERATURE VS TIME

(NO LOAD)



— 1st Stage — 2nd Stage

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CRYOCOOLER CAPACITY MAP

