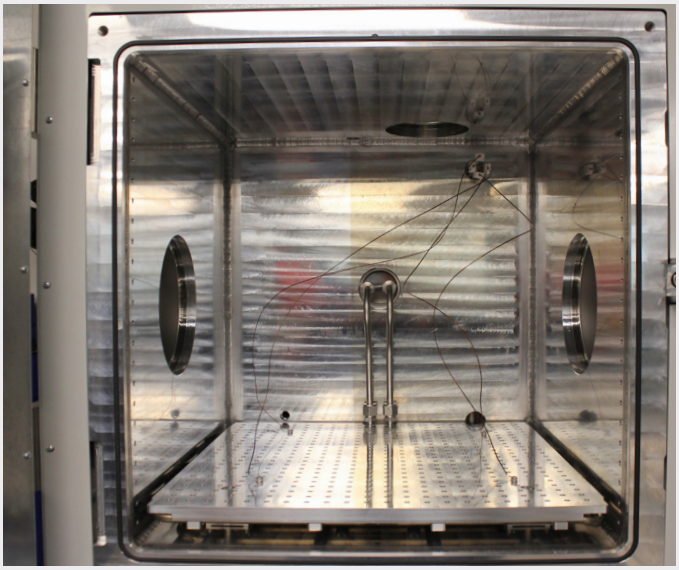
THERMAL VACUUM COMPONENT TESTING

MMWAVE COMPONENT TESTING

Eravant offers thermal vacuum test services with a recently acquired Ideal Vacuum ExploraVAC MAX Thermal Vacuum Test Chamber System. The chamber can simulate the extreme temperature ranges and vacuum conditions required for component testing for space qualification.

The interior dimensions of the chamber are 24” x 24” x 24” (60 cm x 60 cm x 60 cm) and the operating vacuum pressure is 1 x 10^{-6} torr. A 23” x 23” (58 cm x 58 cm) thermal platen with embedded resistive heaters and piping for liquid nitrogen (LN2) cooling allows for temperature testing from-160°C to +250°C. The chamber walls contain embedded resistive heaters for vacuum bakeout of the DUT and chamber up to a temperature of +140°C. The chamber is equipped with K-type thermocouple sensors for measuring the temperature of the device under test (DUT) and a dual convection and ion pressure gauge for vacuum pressure measurements. An embedded computer and software with a front-mounted touch screen display GUI allows for temperature control, automated testing, and data recording/logging of pressure and temperature.

The chamber is configured with standard ISO-KF vacuum access ports for the customer to add instrumentation, power, RF, or other kinds of vacuum feedthroughs needed for the testing. Eravant can also provide a variety of in-house RF test equipment and components covering a combined frequency range from DC to 110 GHz for customer selection and use with the thermal vacuum test chamber at additional charge.



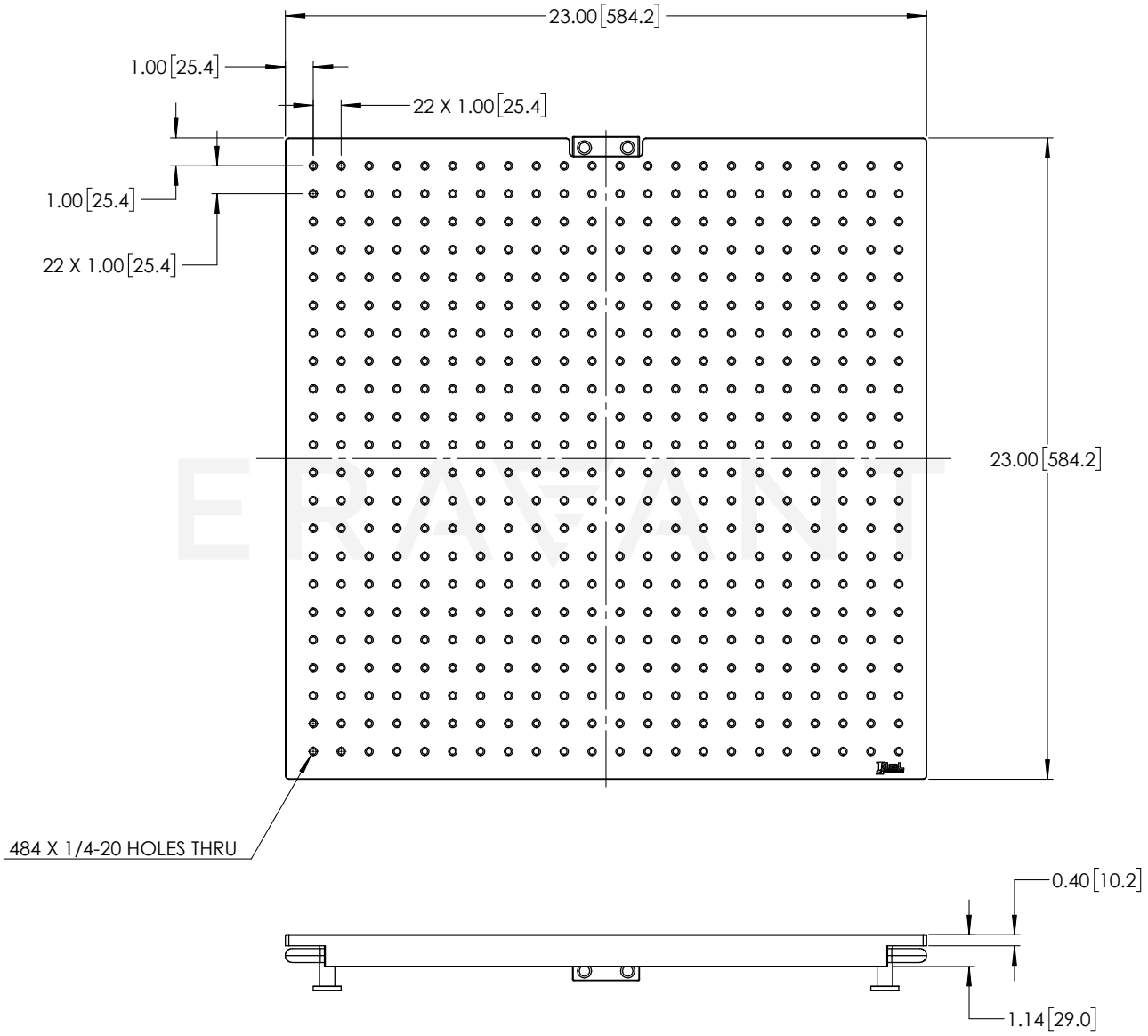
THERMAL VACUUM TEST CHAMBER

MMWAVE COMPONENT TESTING

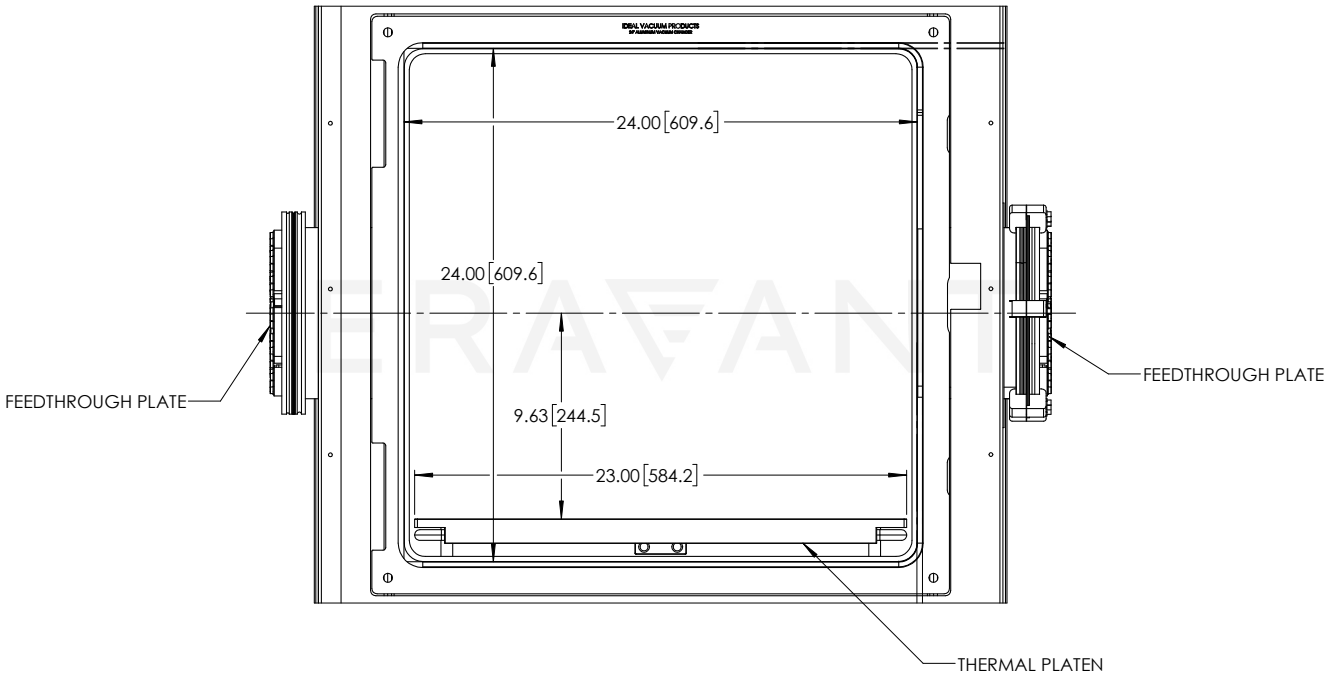
PARAMETER	
Thermal Platen Temperature Range	-160 °C to 250 °C
Thermal Platen Heating Ramp Rate	Up to 10 °C / min
Thermal Platen Cooling Ramp Rate	Up to 5 °C / min
Chamber Heating Temperature Range	Ambient to +140 °C
Chamber Vacuum Pressure	1 x 10^{-6} torr
RF Feedthrough Frequency Range	DC to 110 GHz
Chamber Internal Dimensions	24” x 24” x 24” [61 cm x 61 cm x 61 cm]
Thermal Platen Dimensions	23” x 23” [58 cm x 58 cm]
Access Ports	KF
Temperature Sensors	4 x Type-K Thermocouples

TEST SERVICE FEATURES
Thermal Platen temperature range:-160 °C to +250 °C
Vacuum Pressure: 1 x 10-6 torr
Vacuum Bakeout up to +140°C
Cubic 24” interior chamber space
KF flanged access ports for instrumentation and feedthroughs
Automated testing, data recording/logging.
In-House RF Test Equipment and components covering DC to 110 GHz available for customer selection/ use at additional charge.

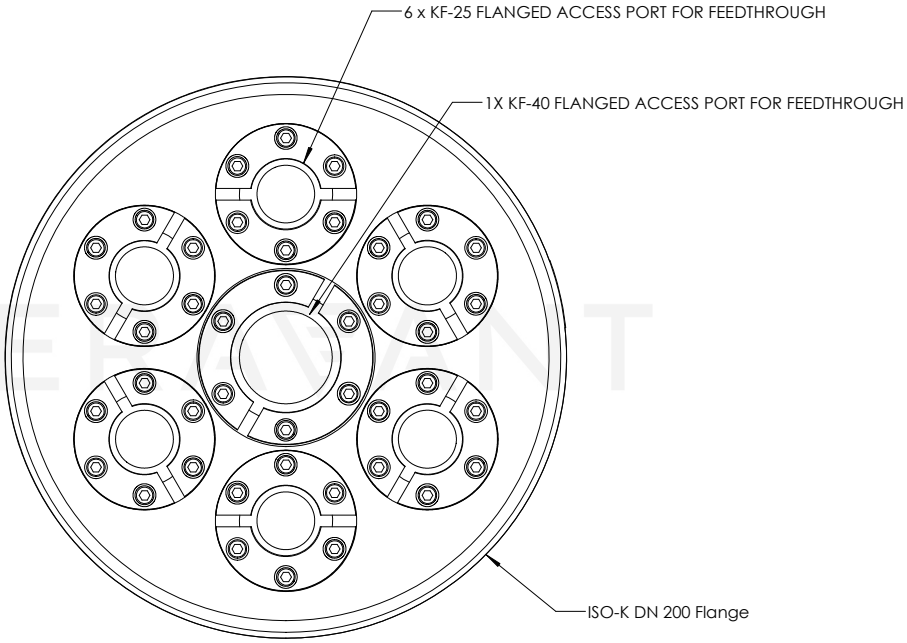
Thermal Platen Mounting Pattern for DUT:



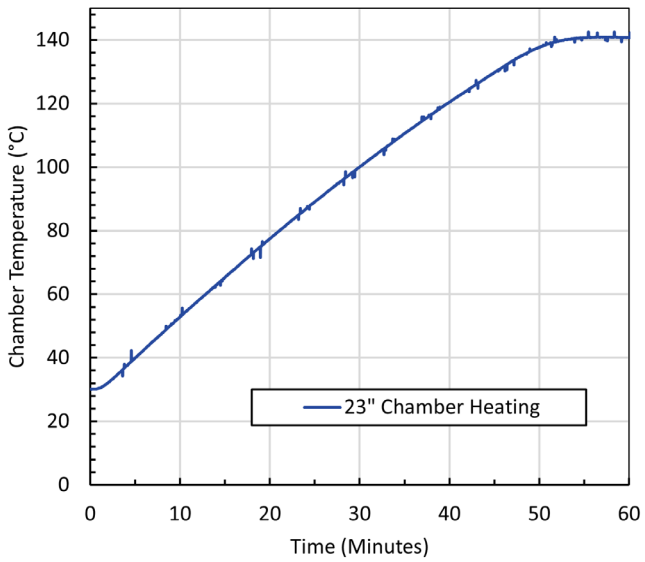
Chamber Workspace Diagram:



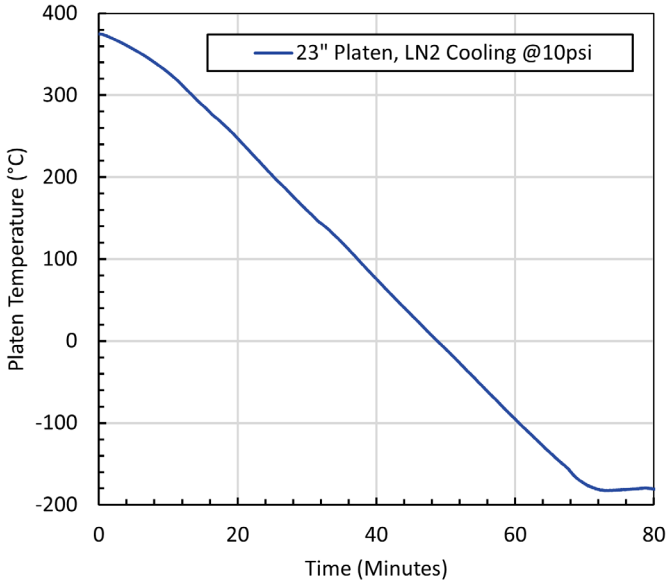
Feedthrough Plate Diagram:



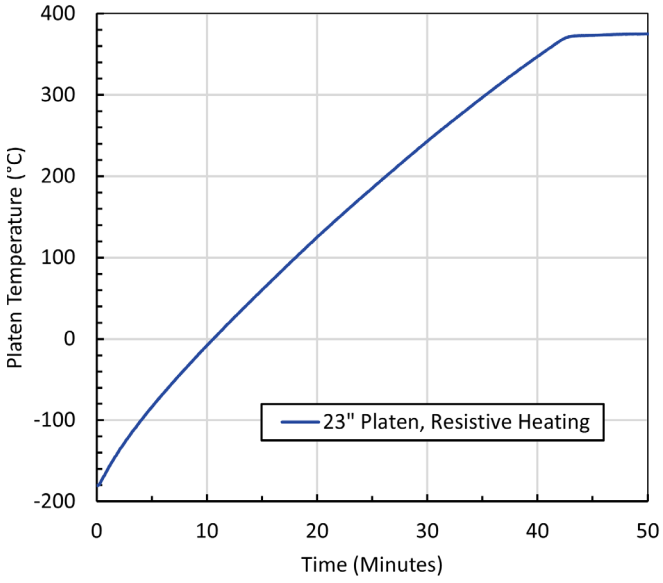
CHAMBER HEATING



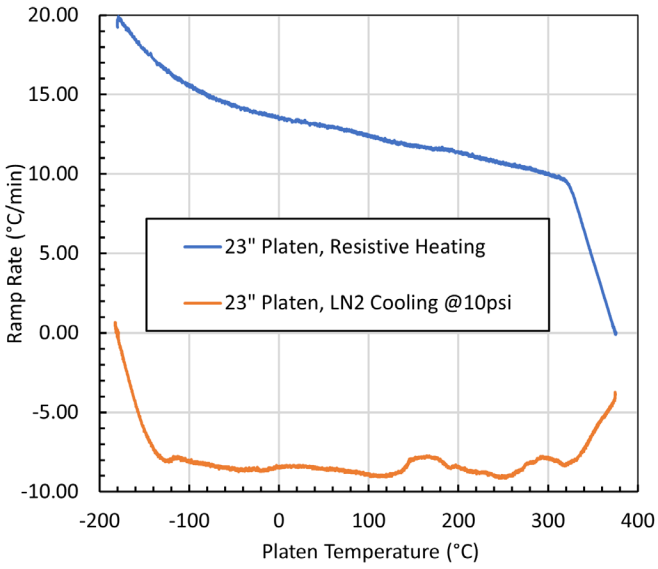
PLATEN COOLING



PLATEN HEATING



PLATEN RAMP RATES



CHAMBER EVACUATION - LOG PRESSURE SCALE