# SPECIALIZED EQUIPMENT SPECIFICATIONS

Fenn R&D Institute (FRDI)
Fenn College of Engineering, Cleveland State University

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| Name: | Thermal Advantage Instruments Q200 Differential Scanning Calorimeter |
| Description/Use: | measures temperature and heat flow associated with material transitions that are caused by phase changes, melting, oxidation, etc |
| User fee: | Call, Email |
| Fee basis: | per sample |
| Contact Person: | Prof. Jorge E. Gatica, (216) 523-7274, j.gatica@csuohio.edu |

DETAILED DESCRIPTION:
The Differential Scanning Calorimeter (DSC) determines the temperature and heat flow associated with material transitions as a function of time and temperature. It also provides quantitative and qualitative data on endothermic (heat adsorption) and exothermic (heat evolution) processes of materials during physical transitions. The DSC instrument works in conjunction with a controller and associated software to make up the thermal analysis system.

OPERATION:
The system is not automated. The heating rate and starting/ending temperatures of the DSC are set by the operator. Trained assistants or technicians perform the experiments. Experimental protocol can be adjusted to requirements.

SPECIFICATIONS:

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| Dimensions: | D 56 cm; H 48 cm; W 46 cm |
| Weight: | 65 lb |
| Power: | 120 Vac, 47-63 Hz, 500 W (4.5 amps) |
| Accessory Outlets: | Power 120 V, 47-63 Hz, 400 W each |
| Operating Environment Conditions: | Temperature: 15-30 °C<br>Relative Humidity: 5-80%<br>Installation Category II<br>Pollution Degree 2<br>Maximum Altitude: 2000 m |
| Temperature Range: | -40 to 400 °C |
| Sample Size: | 0.5 to 100 mg (nominal) |
| Sample Volume: | 100 $mm^3$ hermetic pans |
| Sample Pans: | Various open or hermetically sealed |
| Purge Gas: | Nitrogen |
| Purge Flow Rate: | 50 mL/min |
| Cell Volume: | 3.4 m |