PREPARING YOUR LAB

Thermal Analysis

Preparation Checklist

- Site Requirements
- Peripherals and Accessories
- Electrical Requirements
- Gas Requirements
- Environmental Requirements
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DSC 8000: Site Readiness Instructions

Order Overview

Please review this order. Record any discrepancies between the PerkinElmer order and your Purchase Order, along with any agreements or commitments made by your PerkinElmer Sales Representative that are NOT listed on the order. Let your Customer Care Representative now about these discrepancies and/or commitments with your Site Readiness Confirmation.

Site Requirements:

Bench Space

Instrument	Dimensions			
	Width	Depth	Height	Weight
DSC 8000	18 in (45.7 cm)	25 in (63.5 cm)	11.5 in (29.2 cm)	48 lbs. (21.8 kg)
DSC 8000 w/AS	18 in (45.7 cm)	25 in (63.5 cm)	19.5 in (49.5 cm)	48 lbs. (21.8 kg)
Computer (approx)	7 in (17.5 cm)	17 in (44.0 cm)	15.8 in (40.2 cm)	24 lbs. (11.0 kg)

A bench top of 100 cm (39.4 in) W x 76.2 cm (30 in) D will accommodate a DSC 8000 system with no accessories.

An autosampler system requires additional clearance above the DSC. 36 in/91.4 cm is required for the autosampler dust cover clearance.

With accessories (Intracooler 2 V/3 V, CLN2 Liquid Nitrogen Cooling System, Printer, Plotter,) additional bench space will be required.

NOTE: With all cooling accessories a coolant transfer line attaches to the left side of the DSC 8000. Consideration must be given for location of dewar relative to the DSC 8000. Typically, the DSC is located at the left end of the bench. Floor space required for the dewar is approximately 60 cm (24") square. The dewar is 120 cm (48") tall and may NOT fit under the lab bench.

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Peripherals and Accessories:

Accessories	Dimensions			
	Width	Depth	Height	Weight
Water Circulator	8.25 in (21 cm)	15.75 in (40 cm)	22.5 in (57.1 cm)	70 in (32 kg)
Intracooler 2	15.0 in 38.1 cm	21.0 in 53.3 cm	29.0 in 73.7 cm	90 lb 40.8 kg
CLN2	15.0 in 38.1 cm	21.0 in 53.3 cm	29 in 73.7 cm	90 lb/ 0.8 kg

Electrical Requirements:

Power Consumption	
DSC 8000	400 Watts Maximum
Computer	Not Available
Circulator	1440 Watts Maximum
Intracooler 2	1440 Watts Maximum
CLN2	150 Watts Maximum

Power Specifications	
DSC 8000	120 VAC, 2.0 Amps or 240 VAC, 1.1A
Computer	Not Available
Circulator	120 VAC, 12 Amps or 240 VAC, 7 Amps
Intracooler 2	100/115 VAC, 12 Amp or 230 VAC, 6 Amp
CLN2	120 VAC, 1.5 Amp or 240 VAC, 1.0 Amp

This equipment is designed to operate within 10% of the selected line voltage (Except 240VAC +6%, -10%).

The supply must be smooth, clean and free of transient voltages over 40 volts.

Earth grounding: less than 1 ohm resistance between the grounds of any two components of the system.

Power Outlets	
DSC 8000	1 standard outlet
Additional Accessories	1 separate outlet each

All outlets should share a common earth ground.

Gas Requirements:

All gasses and regulators MUST be supplied by customer.

Gas dew point must be lower in temperature than the minimum temperature of the cooling accessory.

If splitting a single gas source is necessary.

Please contact your local service representative for information on the regulator install kit Part number N519-0462. Please visit our website to obtain the address of your nearest PerkinElmer office.

All systems require a "Sample Gas" and "System Gas.

Sample gas flow is controlled by the mass flow controller. This is the gas that is purging the sample cup area. Two inputs are provided, Sample Gas A and Sample Gas B to allow purge gas switching experiments. The flow rate is controlled through the instrument control software.

System gas flow is controlled with a frit (restrictor) system built into the analyzer. The system gas is used to purge the environmental control system of the analyzer. This is the area under and around the sample holder including the area where the cooling accessory is mounted. Flow rates in this area will vary depending on the state of the analyzer. While the cover is in the closed position a lower flow rate is utilized. With the cover open a system boost purge is activated at 8 l min. The DSC 8000 shipping kit contains a Drier Accessory Kit with replaceable drier cartridge (P/N 0992-0018 Reading Drier Cartridge) and a length of copper tubing. The drier must be installed < 6 feet from the analyzer. If additional copper tubing is required it is the responsibility of the customer to provide

Gas	Pressure	Flow	Purity Minimun	Dew Point
Operation at or Above Ambient Temperatures				
Sample Gas: Argon, nitrogen, helium, air or oxygen	20-40 psi/ 2-3 bar	20-40 cc/min	99.95	<-20 °C
Sub-ambient operation using Intracoolers 2				
Sample Gas: Argon, nitrogen, helium, air or oxygen	20-40 psi/ 2-3 bar	20-40 cc/min	99.95	<-70/<-100 °C
System Gas: nitrogen, dry	20-40 psi/ 2-3 bar	0.6– 8 l/min	99.95	<-70/<-100 °C
Sub-ambient operation using CLN2				
Sample Gas: Helium, exceptionally dry	20-40 psi/2-3 bar	20-40 cc/min	99.95	<-190 °C
System Gas: Nitrogen, dry	20-40 psi/2-3 bar	0.6– 8 l /min	99.95	<-190 °C
CLN2 Pressure source: Nitrogen	20-50 psi/2-3 bar	N/A	99.95	<-190 °C

Environmental Requirements:

Laboratory Environment

Clean and dust-free.
Indoor use only on level, vibration-free work surface.
Intracooler must not be located in an enclosed area.

Safety Requirements:

Gas Cylinders and Gas Delivery Lines:

Lock down straps should be present on all gas cylinders.

Ventilation:
Do not operate the Differential Scanning Calorimeter in an enclosed environment without adequate ventilation.

The liquid nitrogen system of PerkinElmer's Differential Scanning Calorimeter emits a small amount of nitrogen during normal operations. If your laboratory is not properly ventilated, the level of oxygen in the laboratory may fall below the normal range. Please follow the applicable laboratory ventilation standards to ensure that an appropriate oxygen level is maintained.

PC Configuration:

Pyris Software is localized to only English and Japanese. The user must set the locale to either of these two settings.

Due to numerous differences in PC hardware, PerkinElmer cannot guarantee that our software will run on a customer-supplied computer.

PerkinElmer installation of a customer-supplied computer is available for an additional fee.

PerkinElmer is not responsible for problems caused by unspecified system components, software, and/or accessories. A maximum of one hour is allowed for installation of a computer and software of a non-PerkinElmer supplied computer. The additional time it takes to verify this type of problem is billable at the current service rate. It is advisable the customer's IT support be available as needed.

Software:
As per requirement.

Installation Overview:

On receipt of the equipment, the customer is to inspect the packaging for physical damage. If damage is present the shipping container should be opened to verify no physical damage to the instrument has occurred and the customer must notify the shipper immediately.

NOTE: Unpacking will only be performed by approved PerkinElmer personnel and contents inventoried.

Physical Installation: (Instrument Only)

The physical installation will vary based on system configuration.

Physical Installation: (Accessories)
As required.

Installation Test Standards:
Our Service Engineer will test the instrument in order to insure that it meets the functionality requirements.

Miscellaneous:

Cooling System Requirements:
In order to get the maximum instrument performance, it is recommended that a cooling system be used for DSC operations at or above ambient temperature.

For Operation at or Above Ambient Temperature:
The DSC 8000 can be configured with a turbulent chamber.

Using the turbulent chamber the DSC 8000 can be configured with a tap water circulating system or circulating system (PolyScience Chiller).

With the tap water configuration (with drain) or a circulating device (chiller), either must be located conveniently near the DSC 8000.

For Subambient Operations:
It is necessary to install an Intracooler or a CLN2 accessory.

Sample Preparation:
All reference materials required for installation check-out are shipped in the instrument start-up kit.

If IQ/OQ Validation is Required for This Instrument:
Please contact your Customer Care Representative or visit our website to obtain the address of your nearest PerkinElmer office.

Miscellaneous Accessories and Spares

Upgrade a DSC 8000 to a DSC 8500

Part Number	Description
N5340509	Upgrade kit for DSC8000 to DSC8500
N5320129	Balance Tare Weight, Medium

Crimper Presses for DSC 8000/8500

Part Number	Description
Part Number	Description
02190048	Standard Sample Pan Crimper Press (for standard pans)
B0139005	Universal Crimper Press (for robotic pans)
03190030	Sample Holder Cover Reforming Tool

Pans and Covers for DSC 8000/8500

Aluminum Open/Crimped Pans

Part Number	Description
02190041	Standard Aluminum Pans & Covers (400/Pkg)
B0198030	Aluminium Pans and quartz disk Covers for Photocalorimeter (100/Pkg)
B0196858	Aluminium Pans for Photocalorimeter (100/Pkg)
B0181091	Quartz disks for Phototcalorimeter pans (100/Pkg)

Aluminum Vented/Pierced Pans

Part Number	Description
B7001014	Aluminum covers – pierced (400/Pkg)
N5190788	Volatile Aluminum Pans and Covers, 20 micro liter – pierced (100/Pkg)
B0143018	Aluminum (vented), 30 micro liter (400/Pkg)
B0143019	Aluminum (vented), 50 micro liter (400/Pkg)

Aluminum Hermetically Sealed/Volatile Pans

Part Number	Description
B0143015	Aluminum Pans, 10 micro liter (400/Pkg)
B0143016	Aluminum Pans, 30 micro liter (400/Pkg)
B0143017	Aluminum Pans, 50 micro liter (400/Pkg)
02190062	Aluminum Pans and Covers, 20 micro liter (400/Pkg)
B0169319	Aluminum Pans and Covers, 10 micro liter (400/Pkg)
B0169320	Aluminum Pans and Covers, 30 micro liter (400/Pkg)
B0169321	Aluminum Pans and Covers, 50 micro liter (400/Pkg)

High Pressure Sample Pans

Part Number	Description
03190218	Large Volume Stainless Steel Pans, Covers and O-rings, 60 micro liter, 24 Atm (20/Pkg)
03190029	Large Volume Stainless Steel Pans, Covers and O-rings, 60 micro liter, 24 Atm (1000/Pkg)
B0182901	Re-useable Stainless Steel Pans, Covers and 20 gold-plated seals, 30 micro liter, 150 Atm (5/Pkg)
B0182902	Gold Pans and Covers, 30 micro liter, 150 Atm (5/Pkg)
B0182903	Titanium Pans and Covers, 30 micro liter, 150 Atm (5/Pkg)

Aluminum sample pan kit

Part Number	Description
B0510800	Aluminum Pans and Covers Starter Kit (400/Pkg)

Specialty Sample Pans and Covers

Part Number	Description
N5203115	HyperDSC™ Aluminum Sample Pans (100/Pkg)
N5190180	Alumina Sample Pans and Covers (6/Pkg)
02190042	Standard Gold Sample Pans and Covers (10/Pkg)
03190025	Graphite Sample Pans and Covers (4/Pkg)

Furnace Covers for DSC 8000/8500

Part Number	Description
03190031	Vented Platinum Furnace Covers with 2 holes (6/Pkg)
04190299	Vented Platinum Furnace Covers with 2 holes (2/Pkg)
03190032	Unvented Platinum Furnace Covers with no holes (6/Pkg)
B0139122	Autosampler Furnace Covers (2/Pkg)
B0182981	Large Autosampler Furnace Covers for Tall Pans (2/Pkg)

Refer to the consumables and accessories reference catalogue for full descriptions of pans and covers.

Calibration Supplies

Part Number	Description
03190033	Indium calibration reference
03190034	Tin calibration reference
03190035	Lead calibration reference
03190036	Zinc calibration reference
02190045	Encapsulated calibration reference kit with large and small indium, tin and lead
N5190762	Encapsulated calibration reference kit with indium and zinc

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