

DSC 4000/DSC 6000: Site Readiness Instructions

Site Requirements:

Bench Space/Floor Space

Device	Dimensions			
	Width	Depth	Height	Weight
DSC 4000/DSC 6000	37 cm/14.5 in	61 cm/24 in	30 cm/6.3 in	16 kg/35.5 lb
PC	42.5 cm/17 in	49 cm/19 in	49 cm/19 in	21.8 kg/48 lb
Printer	41 cm/16 in	32 cm/12.5 in	21.5 cm/8.5 in	
Circulator	21 cm/8.25 in	40 cm/15.8 in	57 cm/22.5 in	32 kg/70 lb
Intracooler 6P	25.4 cm/10 in	50,8 cm/20 in	47.9 cm/18.5 in	32 kg/70 lb
Cryofill LN2 Accy	Diameter	60 cm/24 in	120 cm/48 in	30 kg/65 lb
	60 cm/24 in			

Peripherals, Accessories

Instrument Cooling Device is required, and is to be customer supplied. Optional cooling devices include Water Circulator/Chiller, Intracooler 6P or Cryofill LN2 Cooling Accessory or customer supplied water chiller/circulator (i.e. Neslab Chiller).

If the analyzer is equipped with an autosampler accessory, an additional height of 10-15 cm/4-6 in above the standard height is required.

An analytical microbalance for weighing samples is required for accurate heat flow determinations.

NOTE: With Intracooler and Cryofill accessory the transfer line attaches to the rear of the analyzer. Consideration must be given for location of Dewar relative to the DSC. Typically, the DSC is located forward on 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.

Electrical Requirements:

Power Consumption

DSC 4000/DSC 6000	230 Watts Maximum
Computer	500 Watts Maximum
Circulator	1440 Watts Maximum
Intracooler 6P	840 Watts Maximum

Cryofill	60 Watts Maximum
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Power Specifications

DSC 4000/DSC 6000	230 VAC, 1 Amp
Computer	230 VAC, 2.3 Amp
Circulator	240 VAC, 7 Amps
Intracooler 6P	220 VAC, 4 Amps
Cryofill	240 VAC, 0.25 Amp

Power Outlets

Each system component (DSC 4000/DSC 6000, Computer, Monitor, Printer and cooling accessory) requires a separate power outlet. All outlets should share a common earth ground. Additional power outlets and power consumption must be allowed for optional cooling accessories

Other:

This equipment is designed to operate within 10% of the selected line voltage. 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 2 components of the system

Gas Requirements:

For operation at or above ambient temperatures:

“**Sample Purge Gas**” such as dry argon, nitrogen, air, oxygen; minimum purity of **99.95%**

Regulator outlet pressure, typical **2-3 bar or 30 to 40 psi**

A Nitrogen “**System Purge Gas**” of 50- 75 ml/min. is required. This gas should be clean and dry having minimum purity of **99.95%**. Regulator Outlet Pressure set to **2-3 bar or 30 to 40 psi** (not to exceed 6.0 bar/90 psi).

For Subambient Intracooler 6P operation:

“**Sample Purge Gas**” such as dry argon, nitrogen, air, oxygen; minimum purity of **99.95%** . (A gas having a dew point ≤ -90 °C is recommended)

Regulator outlet pressure, typical **2-3 bar or 30 to 40 psi** (not to exceed 6.0 bar/90 psi).

A Nitrogen “**System Purge Gas**” of 50- 75 cc is required. This gas should be clean and dry having minimum purity of **99.95%**. Regulator Outlet Pressure **2-3 bar or 30 to 40 psi** (not to exceed 6.0 bar/90 psi).

For Subambient Liquid Nitrogen operation:

A low pressure Nitrogen source is required to pressurize the LN2 Liquid Nitrogen Tank. **10 PSI** is required.

“**Sample Purge Gas**” such as dry argon, nitrogen, helium; minimum purity of **99.95%** . (A gas having a dew point ≤ -180 °C is recommended)

Regulator outlet pressure, typical **2-3 bar or 30 to 40 psi** (not to exceed 6.0 bar/90 psi).

A Nitrogen "**System Purge Gas**" of 50- 75 cc is required. This gas should be clean and dry having minimum purity of **99.95%**. Regulator Outlet Pressure **2-3 bar or 30 to 40 psi** (not to exceed 6.0 bar/90 psi).

For all Autosampler subambient operation:

A dry box purge may be required depending on the relative humidity in the laboratory. A separate purge line is required to control the flow between **35 to 50 ml/min**. This can be accomplished using a restrictor (provided with the analyzer).

Gas Line Tubing:

Provided with the DSC is approximately 6 feet (~2 meter) of 1/8" Teflon tubing and fittings to be used to connect one sample purge and one system purge line to the instrument. Additional lengths if required due to the location of the gas source or additional sample purge gases is the responsibility of the customer. Additional fittings are required to make the connection at the gas source. Customer is to notify the Customer Care Agent if more purge/sample gas tubing is needed.

Regulators:

Customer must provide the necessary regulators to connect the required purge and system gases. Regulators are available from PerkinElmer at an additional cost. **N5190462 Gas Split Kit** provides a convenient method of splitting a single source of gas. One kit required for each split in the source gas.

Filter Driers:

Moisture in purge gases will negatively affect instrument performance. Filter driers **N5370103** are strongly recommended to maintain a clean dry purge gas.

Coolant requirements:

The DSC 4000/DSC 6000 **requires** a coolant of one of the following types:

Circulating water: A source of water and a drain are required. **Flow rate: 0.5-3.0 l/minute required (1 l/min optimum)**

Chiller: A liquid circulating device such as the PolyScience Model 9102. The 9102 water circulator does not include the cooling liquid. 50/50 Ethylene Glycol (non automotive grade, Fisher P/N E1774), Distilled Water and Algaecide (N0776059 8 drops per gallon) is required as the cooling media to -20 °C. Minimum temperature control ± 0.1 °C is required. **Flow rate: 0.5-3.0 l/minute required (1 l/min optimum)**

Intercooler 6P Refrigeration based.

Cryofill: LN2 cooling system requires 50 liters of liquid nitrogen to operate. It is the customer responsibility to make the LN2 available at the installation site of the DSC 4000/DSC 6000. LN2 consumption is approximately 2.5 liters/hour and dependent on temperature range.

NOTE: when handling LN2 wear appropriate safety gear as specified by your corporate safety officer or LN2 supplier

Environmental Requirements:

Laboratory Environment

Temperature Range	15 to 40 °C
Humidity	≤ 80% (Non-condensing)

Clean and dust-free

Level, vibration-free work surface

Safety Requirements:

Gas Cylinders and Gas Delivery Lines

Lock down straps should be present on all gas cylinders and are the responsibility of the customer.

Liquid Nitrogen

When handling LN2 wear appropriate safety gear as specified by your corporate safety officer or LN2 supplier

Ventilation

As required