Discovery DSC 25, DSC 25L, DSC 250, DSC 2500, X3 DSC

Site Preparation Guide

Revision O Issued August 2026

Table of Contents

Table of Contents 2

Ideal Setup 3

System Components 4

Instrument Measurements 5

Utility Requirements 6–7

- Power 6
- Gas 7

Computer Requirements 8–9

- Hardware 8
- Software 9

Accessories 10-15

- Refrigerated Cooling System (RCS) 10–11
- Finned Air Cooling System (FACS) 12
- Liquid Nitrogen Pump (LN Pump) 13-14
- Photocalorimeter Accessory 15

Site Preparation Checklist 16

Waters Technologies Corporation Offices 17

Ideal Setup

IDEAL PLACEMENT AND BENCH MEASUREMENTS

Select a location with adequate floor space and a rigid laboratory bench that is level, in a vibration-free environment, and away from exposure to direct sunlight and direct air drafts.

Bench width: 183 cm (72 in)

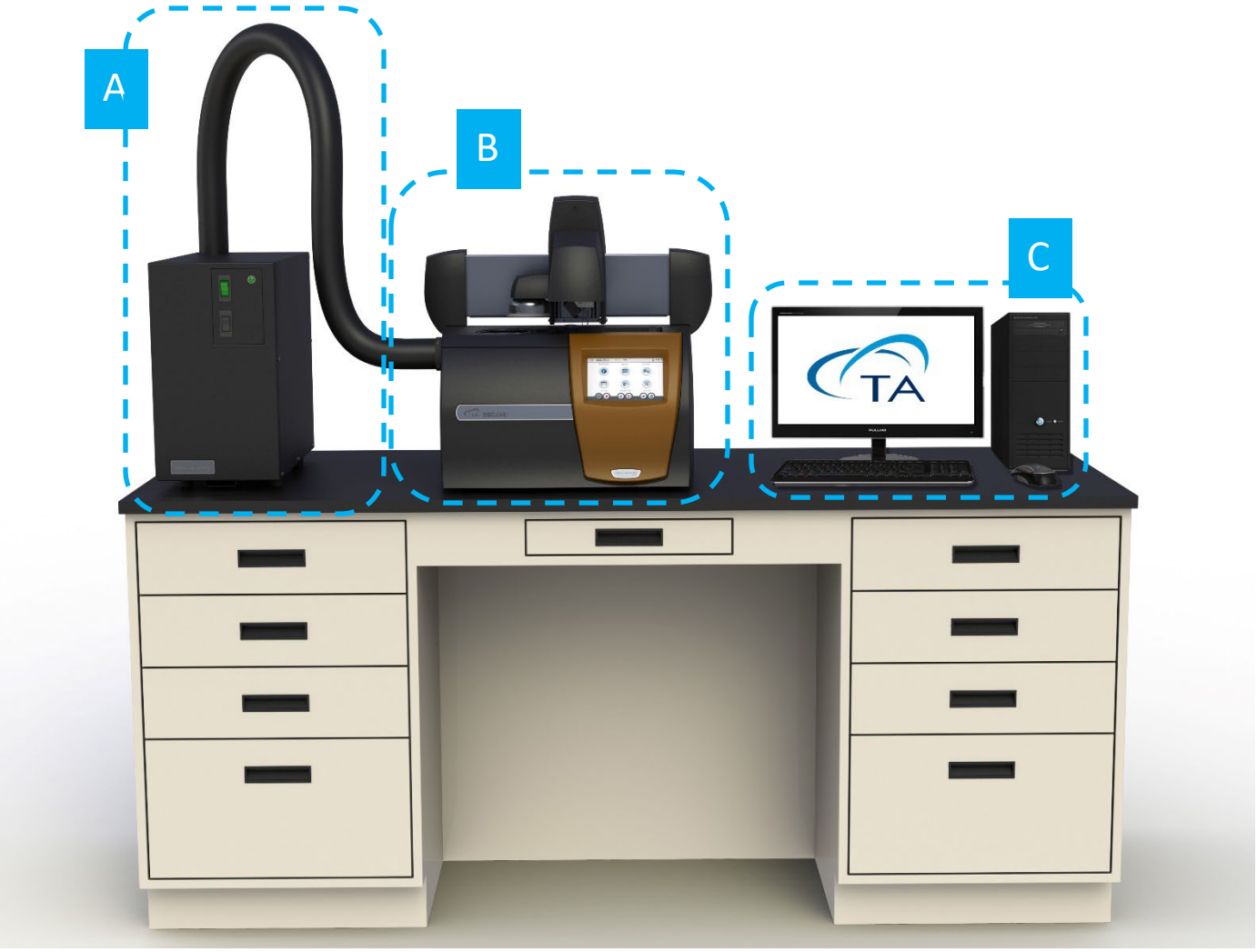
Bench depth: 76 cm (30 in)

Distance from the wall: 30.5 cm (12 in) min.

The casters on the LN Pump dewar are 61 cm (24 in) x 61 cm (24 in). Allow for 1–3 ft of space between the DSC and the LN Pump depending on how the supply/return line is oriented.

System Components

MAIN SYSTEM COMPONENTS



A. Cooling Accessory (RCS shown)

B. Instrument

C. Computer (Controller)

Instrument Measurements

DSC *WITH* AUTOSAMPLER

Height: 61 cm (24 in)

Width: 53 cm (21 in)

Depth: 51 cm (20 in)

DSC *WITHOUT* AUTOSAMPLER

Height: 43 cm (17 in)

Width: 53 cm (21 in)

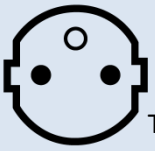
Depth: 51 cm (20 in)

Weight*: 22 kg (48 lbs)

*Includes Autosampler, Autolid, and FACS

Utility Requirements

POWER

Item	Requirement
Power	• 100–240 VAC, 47–63 Hz, 600 W • Power consumption in Idle condition: < 90 W • Neutral to Ground (NG) voltage max 2 volt • Safety ground per local regulation
Power cords provided	• NEMA 5-15 plug • Type F plug  Type F NEMA 5-15

Use power cords with plugs appropriate for your circuit.

Supply voltages lower than indicated may result in a degradation of performance.

Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.

An independent heavy GROUND wire must be provided through the power hookup. Improper grounding may cause severe damage for which the supplier will not accept responsibility. All power strips must be fully grounded and carry the ground through to the sockets into which the computer is plugged.

Utility Requirements

GAS

Item	Requirement
Cell purge gases	Air, nitrogen, oxygen, argon, helium
Cell/base purge gas pressure:	100–140 kPa (10–20 psig)
Cooling gas (air) pressure for **FACS**:	170 kPa (25 psig max)
Cooling gas (nitrogen) pressure for **RCS**:	170 kPa (25 psig max)
Conditions	• Grade 5 • Must be free from oil and dirt
Pressure Regulator	Pressure regulator required – must be rated for required gases
Cooler	Use dry nitrogen as the base purge gas when using a cooler.
Other	1/8” and 1/4” polyethylene tubing and fittings are supplied in the accessory kit

Computer Requirements

HARDWARE REQUIREMENTS

Description	Requirement
Processor	• Intel® Core™ i5 8400 or better • 2.8 GHz with 9 MB L2 cache
Memory	≥ 16 GB RAM DDR4 2666 SDRAM
Hard drive	≥ 80 GB free space • 1.5 GB required for Full version of TRIOS • 675 MB required for Lite version of TRIOS (without Online help)
DVD (Optional)	≥ 48x CD-ROM or DVD. Optional for software installation.
Screen resolution	Required: 1280 x 1024 with 24-bit colors Recommended: 1920 x 1080 with 24-bit colors
Graphic memory	128 MB
Screen (LCD) size	Required: 19” or greater Recommended: 24” wide screen

Computer Requirements

SOFTWARE REQUIREMENTS

Item	Requirement
Operating System	• Windows 10 or 11 Ultimate & Professional • Home version not supported • 64-bit version
Internet	**Internet connection is strongly recommended for ongoing support after installation**
Service Pack	Microsoft Operating System Service Pack
Updates	Windows Operating System and associated Microsoft updates must be up to date
Network	*A second network card for corporate connection is recommended.* *Waters is not responsible for resolving issues associated with connections to your corporate network.*
Conflicts	*Waters is not responsible for resolving hardware/software conflicts created by the addition of third-party hardware or software to the computer.*

Accessories

REFRIGERATED COOLING SYSTEM (RCS) MEASUREMENTS

	RCS 120	RCS 90	RCS 40
Height	88 cm (34.6 in)	46 cm (18 in)	26 cm (10 in)
Width	35.6 cm (14.5 in)	26 cm (10 in)	26 cm (10 in)
Depth	56 cm (22 in)	51 cm (20 in)	51 cm (20 in)
Weight	102 kg (225 lbs)	47.7 kg (105 lbs)	24.8 kg (55 lbs)

Accessories

REFRIGERATED COOLING SYSTEM (RCS) REQUIREMENTS

Requirements

	RCS 120*	RCS 90*	RCS 40*
	230 VAC/8 A/50 Hz 240 VAC/9 A/60 Hz Uses NEMA L6-20 plug L6-20 250V	120 VAC/14 A/60 Hz 230 VAC/6 A/50 Hz Power consumption in Idle condition: < 650.0 W Uses NEMA 5-20P plug 5-20 250V OLD 220	120 VAC/6.25 A/60 Hz 230 VAC/4 A/50 Hz Uses NEMA 5-15 plug 5-15 125V STANDARD

*There is an acceptable voltage tolerance range of 10%

- RCS 90/RCS 40: Place RCS 90 and RCS 40 on a table separate from the laboratory bench. If no table is available, place the RCS on the bench to the left of the instrument.
- RCS 120: RCS 120 must be kept on the floor

- A base and cooling purge (nitrogen) is required in addition to the standard cell purge
- Use 99.999% pure nitrogen or LN boil-off gas to reduce moisture
- New or recently used calibrated regulator is recommended
- Make sure tubing is cut cleanly and squarely on the ends. Use of the Legris Tubing Cutter #3000-71-00 is recommended
- Leak check all tubing

Do not use Tygon® tubing due to its high moisture permeability

Customer-supplied:
- Regulator
- Moisture trap (P/N 200266.001) to prevent moisture build-up

Circulator | Power | Cooling | Gas | LN_2 | Fluid | Light | Hardware | Software | Temp | Lab | Customer

Accessories

FINNED AIR COOLING SYSTEM (FACS) REQUIREMENTS

The FACS cannot be used with the X3 DSC.

Requirements

- Cooling gas (air) maximum air pressure: 25 psig (170 kPa gauge)
- Use standard grade nitrogen and clean house air
- Leak check all tubing
- Make sure tubing is cut cleanly and squarely on the ends. Use of the Legris Tubing Cutter #3000-71-00 is recommended

Recommendations:

- Use a filter
- Use a new or recently calibrated regulator

Customer-supplied: Regulator

Circulator Power Cooling Gas LN_2 Fluid Light Hardware Software Temp Lab Customer

Accessories

LIQUID NITROGEN (LN) PUMP MEASUREMENTS

Height: 122 cm (48 in)

Width: 86 cm (34 in)

Depth: 86 cm (34 in)

Weight EMPTY: 50 kg (110 lbs)

Weight FULL: 92.5 kg (204 lbs)

Accessories

LIQUID NITROGEN (LN) PUMP REQUIREMENTS

Requirements

100–240 VAC, 200 W, 50/60 Hz

Requirements

- Cooling gas (nitrogen or LN boil-off) maximum pressure for use with the LN2P = 170 kPa gauge (25 psig)
- Low pressure Liquid Nitrogen dewar required

CAUTION Do not use Tygon® due to its high moisture permeability

- Use new or recently serviced/calibrated regulator
- Use 99.999% pure helium to reduce moisture build-up in the cell

Recommendations

- Helium gas recommended for cell purge via the GAS 2 port
- Make sure tubing is cut cleanly and squarely on the ends. Use of the Legris Tubing Cutter #3000-71-00 is recommended

- Leak check all tubing
- Use the gas dryer (P/N 200266.001) to pre-dry and indicate unsatisfactory moisture levels
- Use the purge gas purifier (P/N 970425.901) to achieve a dew point of -180°C

Circulator Power Cooling Gas LN_2 Fluid Light Hardware Software Temp Lab Customer

Accessories

PHOTOCALORIMETER ACCESSORY MEASUREMENTS

NOTE The PCA cannot be used with the DSC 25 or X3 DSC.

Height: 15 cm (6 in)

Width: 28 cm (11 in)

Depth: 44 cm (17 in)

Weight: 9.4 kg (21 lbs)

PHOTOCALORIMETER ACCESSORY REQUIREMENTS

Requirements	
	Same general requirements as DSC. See pages 5–7.

Circulator Power Cooling Gas LN_2 Fluid Light Hardware Software Temp Lab Customer

Site Preparation Checklist

Discovery DSC 25, DSC 250, DSC 2500, X3 DSC

	Enough bench space for instrument, computer, and cooling accessory (if needed) ☐ Bench width: 183 cm (72 in) ☐ Bench depth: 76 cm (30 in)
	Instrument power is 100–240 VAC, 47–63 Hz, 600 W
	Purge gas– Air, nitrogen, oxygen, argon, or helium ☐ Base purge gas pressure is 100–140 kPa (10–20 psig) ☐ Cooling gas (air) pressure for FACS is 170 kPa (25 psig max) OR ☐ Cooling gas (nitrogen) for RCS or LN Pump is 170 kPa (25 psig max) ☐ Use 99.999% pure nitrogen or LN boiloff gas to reduce moisture ☐ Pressure regulator is present and rated for required gases ☐ Moisture trap (P/N 200266.001) to prevent moisture buildup
	☐ Computer meets all hardware requirements ☐ Computer meets all software requirements
	☐ The Customer assumes responsibility for any damage that occurs when the instrument is moved by someone other than a trained Waters Service Representative.

I hereby acknowledge that all utility requirements have been met per the checklist above and that they will be ready at the agreed time of installation.

<u>If all utility requirements are not met at the agreed time of installation, additional charges may be incurred for a return Service trip.</u>

_____ / _____ / _____

Customer *DD* *MM* *YYYY*

_____ _____ _____ _____

Company *City* *State* *Country*

Please send a signed copy of the completed checklist to your local Service representative.

Waters Technologies Corporation Offices

For information on our latest products, contact information, and more, see our website at: http://www.tainstruments.com.

To find your local Waters office and contact information, visit http://www.tainstruments.com/contact/ta-directory/

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