DELTAVISION OMX

Microscopy System
Site Preparation Guide
Rev 08.15.2011

applied precision
A GE Healthcare Company

1040 12th Ave NW
Issaquah, WA 98027
USA

T +1 425 557 1000
F +1 425 557 1055

Legal Notices

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Applied Precision | A GE Healthcare Company
1040 12th Ave. NW
Issaquah, WA 98027
(425) 557-1000 FAX: (425) 557-1055

www.appliedprecision.com

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Overview

This Site Preparation Guide provides you with the information required to prepare your site for a successful installation of your new DeltaVision OMX Microscopy System. It also contains and requests information that will ensure efficient scheduling of the system installation and training.

Implementing the requirements described in this document sets up the foundation necessary for optimal system performance during operation.

Please read this entire document before your system arrives and ensure that all system requirements are met.

Important!

The requirements in this document are recommended guidelines that will provide an ideal operating environment for the instrument. We do, however, realize that it may not be possible to provide the recommended space or the recommend degree of environmental control in a particular room, especially if other instruments are in use.

Please consult a local engineer if you have any concerns regarding the provided specifications and contact us if you need more information.

Contact Information

If you have any questions regarding the information specified in this document, please contact the Applied Precision Hotline at :

Customer Service Department
Phone: (800) 862-5166
Email: hotline@api.com

Delivery Information and Requirements

Shipping Containers

The system will arrive in five crates. Crate sizes and weights are described in the following table. These values are approximate and may vary depending on system configuration.

Crate #	Size (L x W x H)	Weight
1 - Main Enclosure	72 x 40 x 80 inches (183 x 102 x 204 cm)	834 lbs (379 kgs)
2 - Laser Module	77 x 44 x 60 inches (196 x 112 x 153 cm)	1065 lbs (484 kgs)
3 – Front Enclosure	78 x 36 x 84 inches (199 x 92 x 214 cm)	474 lbs (215 kgs)
4 – Work Table	62 x 42 x 70 inches (158 x 107 x 178 cm)	460 lbs (209 kgs)
5 - Microscope	44 x 38 x 62 inches (112 x 97 x 158 cm)	750 lbs (340 kgs)

If the system is purchased with the optional PersonalDV, an additional crate will be delivered. This crate will have one of the following specifications, depending on whether the PersonalDV is configured with or without the optional Weather Station.

Crate #6	Size (L x W x H)	Weight
PersonalDV	44 x 40 x 53 inches (112 x 102 x 135 cm)	555 lbs (252 kgs)
PersonalDV (with Weather Station)	57 x 38 x 55 inches (145 x 97 x 140 cm)	612 lbs (278 kgs)

NOTE: Crates are not waterproof and should not be stored outside.

Handling of Shipping Containers

A staging area (either a large hallway or nearby room) will be necessary during the installation period.

Instruct your receiving department to document any damage to the shipping containers with the shipper at the time of delivery acceptance; please check for tripped tilt / shock sensors located on the outside of the crate.

Do not unpack the instruments or computer workstation. An authorized Applied Precision representative will perform the unpacking. Unpacking by any person not authorized by Applied Precision constitutes responsibility of the equipment and any damage that may have occurred during shipment.

An Installation Specialist will install the system on the planned installation date. At this time Applied Precision personnel will also perform on-site training covering basic system operations.

Installation & Training Requirements

Item	Approximate Time Required
Installation	4 days
Training	2 days

Ideally, there will be one (or two) primary users of the system. These individuals need to be available for 100% of the training. Other users can be trained in basic system operation in an hour or two.

Important Installation Notes!

- During installation, the Applied Precision representative may need access to the building and lab after normal working hours, as the installation may continue into the evening.
- Due to the size of some OMX system components, moving them up or down stairs is not possible. If an elevator is not available at the installation facility, please contact us as soon as possible to discuss options for installing the equipment.
- Applied Precision's service personnel will require the customer's assistance in moving and setting up heavier components of the system. This assistance will be necessary for initial installation, plus any future moves or service calls requiring replacement of heavy parts. Installation and subsequent service calls may be delayed and/or rescheduled if the customer's assistance is not available.

Operating Environment Requirements

Room Requirements

Parameter	Size (minimum)	Height (minimum ceiling clearance)
Room Size	220 sq ft (24 m^2)	8 ft (2.5 m)

The previous measurements provide sufficient space for the system components and the user. See "Equipment & Working Area Dimensions" later in this document for more details.

The Microscope Enclosure should be placed within 8.2 ft (2.5 m) of the Laser/Electronics Enclosure.

Vibration

To achieve and maintain performance specifications, all precautions should be taken to isolate this device from vibrations during its operation. The environment should be free from external sources of vibration, such as refrigerators, elevators, and ventilation equipment.

Dry, Clean Air or Nitrogen Lines

Item	Value
for De-ionized Clean Gun (supplied with system)	Regulated at 50 PSI (345 kPa) at 4.2 CFM
for Imaging Table in Microscope Enclosure	Up to 80 PSI (550 kPa) @ 4 CFM

Temperature

The OMX microscope system is enclosed in its own cabinet. While this offers a large degree of temperature control, dust protection, and environmental stability, maintaining stability of the surrounding room temperature and environment will significantly minimize thermal drift issues.

Parameter	Value
Room Temperature	Stable between 18-22°C (66-74°F)
Fluctuation Rate	No more than +/- 2°C over four hours, with an hourly variation of no more than 1°C.

Of the two temperature parameters, fluctuation rate is the most critical. More dramatic temperature fluctuations than described above may affect image quality and potentially introduce alignment drift into the system.

Heat Sources & Venting

Several heat sources may impact temperature values:

- The primary heat source is the Laser/Electronics Enclosure which has multiple internal fans that draw air over the components and one primary exhaust vent which draws most of the heat from this enclosure. The flow rate of the fan is 240 CFM (6800 L/min). Providing a duct to conduct this exhaust from the room may help with maintaining temperature stability in small spaces.
- Other potential heat sources are minor and include:
  - Heat exchange/chiller unit for the cameras. This can be placed anywhere within the range of the cooling hoses.
  - Workstation PCs and monitors
  - The Microscope Enclosure has no specific venting as the cameras are the primary heat source and heat from the cameras is transferred to the external chiller unit.

Any air conditioning (AC) vents should be redirected so that they are not blowing directly over the system or causing strong airflow near doors that are opened regularly. This helps prevent dramatic changes in the internal temperature of the enclosure when the doors are opened.

Air Filtering

Filtering of incoming room air is recommended to control dust. It is important to minimize dust on the microscope components, as dust particles can cause spots on images.

Humidity

Parameter	Value
Humidity	Stable under 50% (non-condensing)

Maintaining humidity below 50% helps prevent condensation on the CCD camera window, which may obscure image acquisition. **Humidity fluctuations can affect optical performance, especially during time-lapse acquisition.**

Power Consumption

Parameter	Value
Power Consumption	3-4 kW

A large proportion of this energy is converted to heat. This is equivalent to 30-40, 100 Watt light bulbs. Please ensure the environmental controls in the facility are adequately sized to manage this load and maintain a constant temperature.

Electrical Requirements

Power Requirements	Specification Range
Primary Circuit (all installations)	208V, single phase 20A 50-60Hz branch circuit (US/Canada), with enclosure rated 10A or 230V, single phase 16A 50-60Hz branch circuit (UK, Europe, and Asia), with enclosure rated 15A 208V outlet to be located within 8 ft (2.5m) of Laser/Electronics Enclosure NEMA L6-20P Plug (US, Canada, Japan, and other 110-120V countries) EN60309 (332P6) 20A rated plug (EU and other 220-240V countries) IMPORTANT: If another socket is to be used, be sure to provide details on the customer feedback form or contact API. If possible, provide a digital photograph or diagram of the socket.
Secondary Circuit	100-127V, single phase 15 or 20A 50-60Hz branch circuit (US and Canada), with enclosure rated 10A, with NEMA Type5-15P plug or 200-240V, single phase min 10A 50-60Hz branch circuit (UK, Europe, and Asia), with enclosure rated 10A, with standard minimum 10A plug (appliance coupler with detachable power cord
Power Consumption	Estimated at 3-4 kW
Overvoltage	CATII

Check with your Facilities Manager if you are unsure about the wiring in your environment.

Network Connections

We strongly recommend that the OMX System workstation be connected to your computer network. We perform much of our service and support via the Internet, and you will find that a network connection will improve the usability and serviceability of the system.

Three dedicated network connections are desirable. If this is not possible, other configurations can be explored. Please provide any pertinent details on network availability on the customer feedback form.

If possible, plan to have the system workstations connected to the network by your computer support services during the week of installation. Prior to installation, determine what type of port you have (thick wire, thin wire, or RJ45), your IP address, and your network mask.

Miscellaneous

Parameter	Value
Ingress Protection	IP2X
Altitude	Up to 6500ft (2000m)

A lamp or other means of controlling room lighting, situated close to the microscope, often proves convenient.

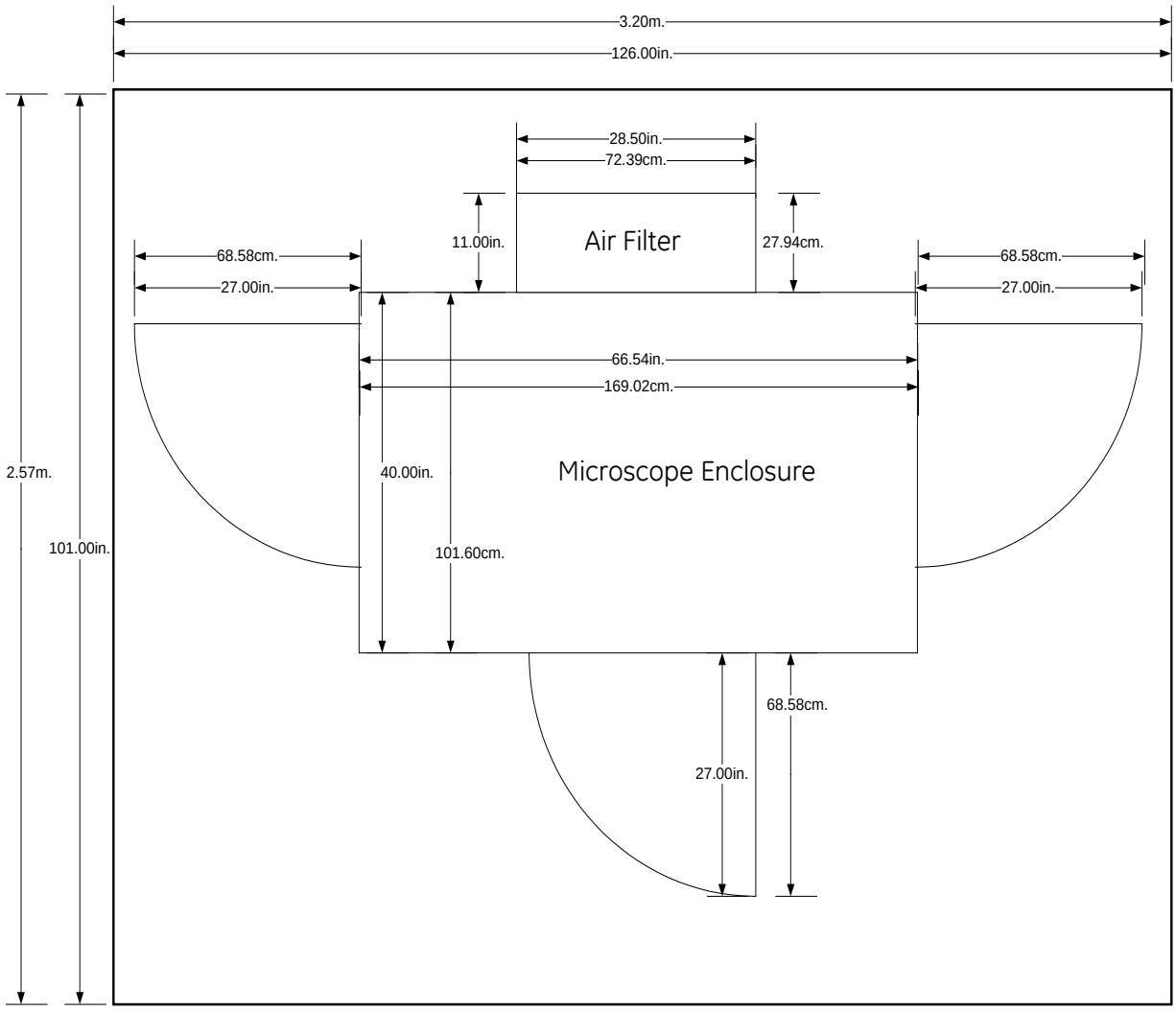
Please have scientific grade chloroform (>99.9% pure) available at the time of installation for cleaning the optics.

Equipment & Working Area Dimensions

Microscope Enclosure & Recommended Working Area

Component	Height	Width	Depth
Microscope Enclosure (approximate values)	72 in. (184 cm)	67 in. (170 cm)	40 in. (102 cm)
Recommended Working Area for Microscope Enclosure (approximate values)	84 in. (2.2 m)	126 in. (3.2 m)	101 in. (2.6 m)

Figure 1. Microscope Enclosure and Recommended Working Area

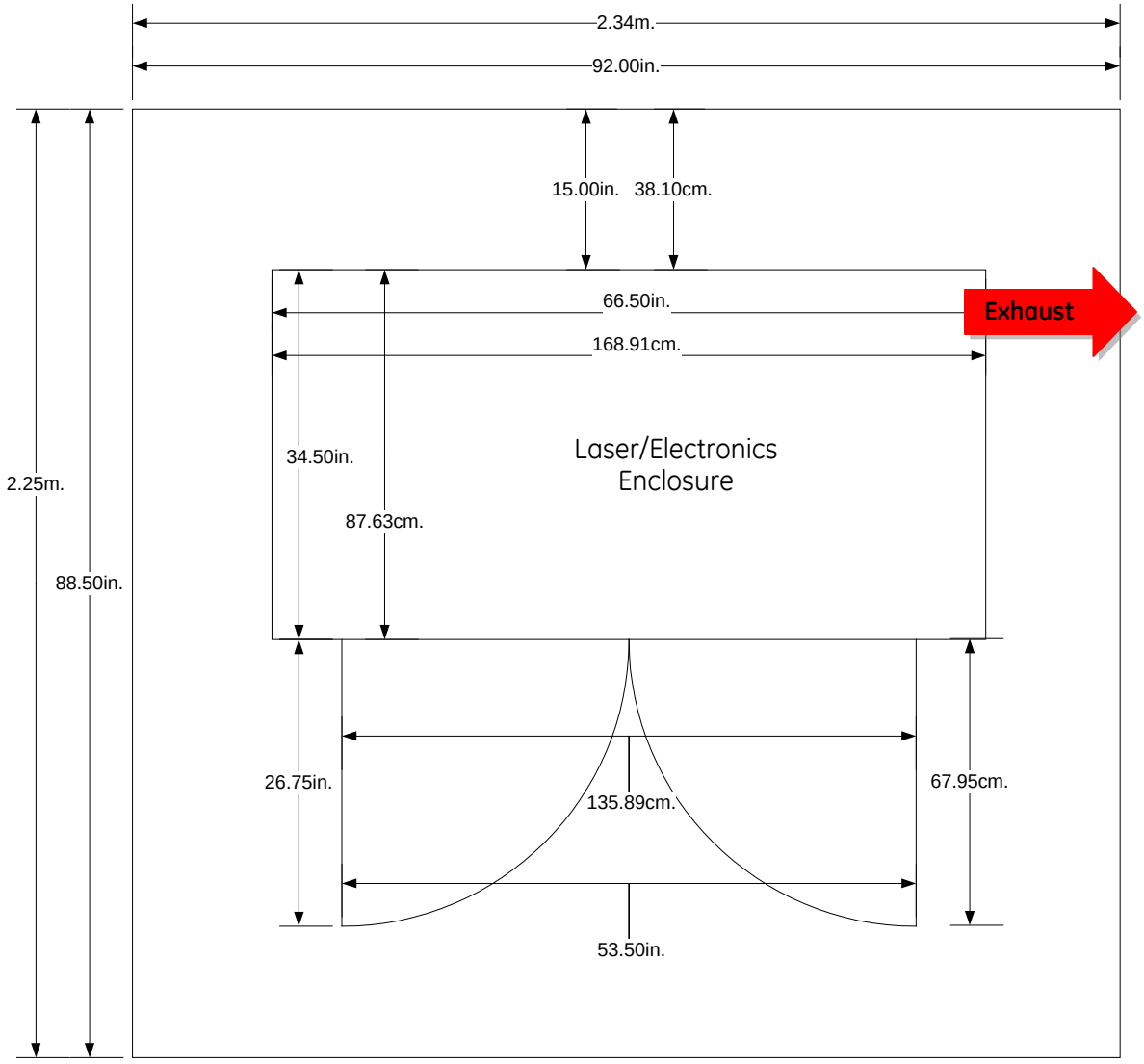


Laser/Electronics Enclosure & Recommended Working Area

The lid of the Laser/Electronics Enclosure opens to a vertical height of approximately 72 in (184 cm). Ensure that there is sufficient clearance behind the enclosure to allow the lid to be raised for servicing.

Component	Height	Width	Depth
Laser/Electronics Enclosure (approximate values)	With lid open 72 in. (184 cm)	67 in. (169 cm)	35 in. (88 cm)
Recommended Working Area for Laser/Electronics Enclosure (approximate values)	84 in. (2.2 m)	92 in. (2.4 m)	89 in. (2.3 m)

Figure 2. Laser/Electronics Enclosure and Recommended Working Area



More Installation Notes

- Doors leading to the installation location need to be **AT LEAST 34" (87 cm)** wide at a MINIMUM. Some doors may need to be removed to allow for this clearance. In special cases, the Laser/Electronics Enclosure may need to be partially disassembled to fit through doors narrower than this. If so, please ensure you let us know as soon as possible so we can plan for extra time during our install.
- The Microscope Enclosure will be assembled onsite but the main panels are 72" (184 cm) tall, so please ensure sufficient height clearance through doors and corridors. Also ensure there are no hanging pipes, cables or gas lines suspended from the ceiling that may limit the height.
- If possible allow 24" (60 cm) behind the Microscope Enclosure and to the side of the Laser/Electronics Enclosure. This space is necessary for cabling and service access.
- An additional 30" (77 cm) in front of the laser cabinet is desirable to allow access to the control electronics and switches.
- Make sure you leave adequate space for doors, entry and exit, and comfortable seating at the system.
- The Laser/Electronics Enclosure is pre-assembled and you must ensure there is enough clearance to maneuver this unit.

OMX Installation Customer Feedback Form - Introduction

The final two pages of this document will help us with the scheduling and installation of your new system. Please provide the requested information and, where appropriate, send digital photographs of electrical connections.

Email this form to us within two weeks of receiving this document and no less than 21 days prior to shipment of the system.

Failure to notify us of installation issues may result in a delay in system installation and/or setup.

Applied Precision | A GE Healthcare Company
Customer Service Department

Tel 1.800.862.5166

hotline@api.com

OMX System Installation Form

EMAIL: Applied Precision Customer Service (hotline@api.com)

Your Name: _____

Company Name: _____

Please fill out this two-page form and email it to Applied Precision Customer Service. The information you provide will allow us to effectively plan the installation of your new OMX Imaging System. You will be contacted shortly after we receive the form so that we can to schedule installation and training.

Important Notes

- Due to the size of some OMX system components, moving them up or down stairs is not possible. If an elevator is not available at the installation facility, please contact us as soon as possible to discuss options for installing the equipment.
- Applied Precision's service technician will require the customer's assistance in moving and setting up heavier components of the system. This assistance will be necessary for initial installation, plus any future moves or service calls requiring replacement of heavy parts. Installation and subsequent service calls may be delayed and/or rescheduled if the customer's assistance is not available.

Site Name: _____

(where system will be shipped and installed)

Address: _____

Building Name/Number: _____ Room Number: _____

Delivery Instructions (circle choices):	Dock To Dock	Inside Delivery
Is a lift gate required?	Yes	No
Is an elevator available?	Yes	No
Is a fork lift available?	Yes	No

Doorway width: _____

OMX System Installation Form, page 2

Note any anticipated obstacles or special considerations:

_____

_____

_____

_____

Do you have a storage facility in the event your room is not ready for install (circle one)? Yes No

International Deliveries Only:

VAT _____ or GST # _____

Customs Broker (agent): _____

Contact: _____

Phone: _____ Email: _____

Contact for scheduling installation:

Name: _____ Email _____

Phone: _____ Fax: _____

Best way to reach (circle one): Phone Fax Email

Primary user of equipment (if different from above):

Name: _____ Email _____

Phone: _____ Fax: _____

Best way to reach (circle one): Phone Fax Email

Thank you for your purchase of the OMX Imaging System. We appreciate your support and wish you success in your scientific endeavors.

Please do not hesitate to contact us with any questions.