PRE-INSTALLATION GUIDE

# ImageXpress Nano High-Content Imaging System with MetaXpress software

Welcome to the family of Molecular Devices ImageXpress® system users. This document provides you with the necessary information to prepare your facility for the installation of your new ImageXpress® Nano High-Content Imaging System.

# **Environment requirements**

The ImageXpress Nano system and all options are designed to operate indoors under laboratory conditions (15° to 30°C; 35% to 50% non-condensing humidity). As with any precision optical instrument, take care to maintain a low-dust, low-vibration environment. Temperature and humidity extremes can compromise performance.

Most low-magnification applications will tolerate non-optical tables that can be purchased from companies specializing in industrial furniture, such as:

- Anthro (http://www.anthro.com)
- RDM (www.rdm-ind.com)
- SteelSentry (http://www.steelsentry.com)

For high-magnification or vibration-sensitive applications, we suggest a sturdy table such as an optical breadboard from vendors such as:

- Newport (www.newport.com)
- Kinetic Systems (www.kineticsystems.com)
- TMC (www.techmfg.com)

Molecular Devices sales representatives may have recommendations for specific tables; however, it is the user's responsibility to verify weight capacity and general sturdiness of product from third party vendors. An optical table will reduce the



Figure 1. Instrument front and sideways installation orientation options.

vibration transmitted to the instrument, allowing better imaging performance in relatively poor vibration environments. We do not recommend air or hydraulic isolation tables.

Avoid installing the instrument with the following lab conditions or situations:

- Avoid installation in or next to a room where there is high-motion equipment, like elevators, air conditioners, and heaters.
- Avoid placement directly in the path of air vents, because sudden temperature changes and air-flow vibrations can degrade performance.
- Avoid placement near external vibration caused by trains or excessive vehicle traffic.
- Avoid placement in any room with noticeable vibration on floors or walls.
- Avoid placement less than 5 m (15 ft) away from refrigerators.
- Avoid placement less than 2 m (6 ft) away from doors.
- Avoid using a table that is mechanically attached to a wall.
- Avoid sharing a table with shakers, stirrers, mixers, or centrifuges.



## Space and table requirements

A table or lab bench suitable for the size and weight of the instrument is required. The size and weight for the instrument portion of the ImageXpress Nano system are provided in Table 1. The size of the system components are provided in Table 2.

ImageXpress Nano system can be purchased with Environmental Control (EC), Transmitted light without phase, and various combinations. The height and weight of the ImageXpress Nano System is increased by the addition of the Transmitted Light option.

To minimize vibrations, the systems power and options controller, light source and computer should not be placed on the same table as the ImageXpress Nano instrument. Often these items are placed on the floor below the instrument. The optimal configuration is to keep components within 1.2 meters/4 feet of the instrument as cables are approximately 1.8 meters/6 feet in length. The acquisition computer for the system can be used with multiple monitors, so ample desk space for monitor placement is needed.

The instrument should be accessible on the front and the sides of the instrument to allow access to the objectives and filters.

The ImageXpress Nano instrument can be installed in two orientations. Sideways installation is the recommended orientation as it allows easier access to the left side door. Space for the instrument as well as adequate clearance around the instrument is necessary for user and service access; see figure 4 for minimum clearance requirements.

Dimensions (cm/in.)	w	L	н	Weight (kg/lbs.)
Instrument, no option, or with EC option	53/21	86/34	49/19	98/215
Instrument with TL option	53/21	86/34	81/32	103/225

# Table 1. Size and weight of the ImageXpress Nano system instrument and base unit with options.

Dimensions (cm/in.)	W	L	Н
Acquisition computer for ImageXpress system	20/8	53/21	43/17
Power and Options Controller	27/11	51/20	20/8
Light source (approximate size)	18/7	25/10	13/5
Monitor, 27"	64/25	41/16	64/25
Monitor, 22"	51/20	25/10	51/20

Table 2. Size and weight of the ImageXpress Nano system components.



Figure 2. Instrument height, width, and length.

А



Figure 3. Distance between the outside edges of the instrument feet.



#### 102 cm (40 in.) wide overall

Figure 4. A. Front installation. B. Sideways installation. Molecular Devices recommends sideways installation to allow optimal access to the upper side door.

# **Power requirements**

- Direct connections to all international supply voltages available.
- Use the included IEC power cord to connect the external ImageXpress Micro systems Power and Options Controller to a GROUNDED power receptacle that is rated for 15 A.
- For systems that do not include the EC option, input voltage range is from 100 VAC to 240 VAC, 50/60 Hz, 12 amps maximum.
- For systems that include EC option, input voltage range is either 100–120 VAC, 50/60Hz, 12 amps maximum or 200–240 VAC, 50/60Hz, 12 amps maximum. The appropriate version is specified at time of order.
- Fluctuations must be within ±10% of the nominal voltage.
- When using a power strip, the computer and monitor should be connected to a different power strip than the ImageXpress Nano Systems Power and Options Controller that connects to the instrument and light source.

It is recommended that the ImageXpress Nano Systems Power and Options Controller be maintained a different circuit than the computer and monitor. To limit the risk of interruption during power loss, a uninterruptible power supply (UPS) can be used to provide backup power and power line conditioning for the instrument and computer.

The power requirements for the individual components are listed in Table 3. To determine the power consumption (watts) or apparent power (volt-amperes or VA) for the ImageXpress Nano System, add together the power of all applicable components. For example the power consumption of a system without options and with 2 large monitors is 505 Watts (185+120+120+40+40). The maximum power requirement of any configuration is 805 Watts. Most of the additional power for the EC option is needed for the EC heater.

Power Requirement	Watts	VA	Power Cables
Instrument, no option	185	195	1
Instrument with TL/EC option	485	511	1
Instrument with TL option	285	300	1
Instrument with EC option	385	405	1
Light source	120	126	1, connects to power and options controller
Computer	120	133	1
Monitor, 27" (each)	40	44	1
Monitor, 22" (each)	20	22	1

Table 3. Power requirement for the ImageXpress Nano system.



Figure 5. Instrument with EC option.







Figure 7. ImageXpress Nano System components without options using MetaXpress Software.

# Installation supplies

Users must provide the following to assist in instrument installation:

- Sturdy table, at least 94 cm (37 in.) by 61 cm (24 in.), with 39" of vertical clearance, and rated for over 104 kg (230 lbs.) with minimal vibration
- Table clearance of 132 cm (52 in.) wide, 84-91 cm (33-36 in.) deep and with 39" of vertical clearance (sideways installation)
- Additional space or a separate table or workstation for computer keyboard, mouse and monitor(s)
- Power strip (optional)
- Online power conditioning UPS (optional)
- Network cable and 1 Gigabit network connection

#### Installation supplies required for Environmental Control option

- A tank or house CO<sub>2</sub>/air mixture (e.g., 5% CO<sub>2</sub>/95% air) as appropriate for your application
- CO<sub>2</sub> regulator that can supply 20 PSI (138 kilopascal)
- Tubing (¼"; 6 mm O.D.) of appropriate length to go between the ImageXpress system and CO<sub>2</sub> regulator
- Adapter for  $CO_2$  regulator that can accept the 1/4" (6 mm) tubing

## Facility receiving requirements

# Only Molecular Devices personnel are authorized to open the crates.

Equipment will arrive in 2 crates for standard system or 3 crates if an option is included. Shipping crate dimensions and weights are shown in Table 4. Crates must be stored inside and protected from environmental extremes until equipment is removed. The instrument crate requires 10 feet of clearance on one side to allow removal of the instrument from the crate.

Due to its weight, the instrument must be moved to installation site on a rolling cart (included) that is approximately 61 cm (24") wide x 92 cm (36") long.

Dimensions (cm/in.)	W	L	н	Weight (kg/lbs.)
Instrument crate	81/32	134/53	112/44	275/605
System components crate	77/30	56/22	77/30	50/110
TL or TL/EC crate, if applicable	77/30	56/22	77/30	50/110

Table 4. Shipping crate dimensions and weight.

### Support and service

For support or service, please contact us at:

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 Check our website for a current listing of worldwide distributors.

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