Opening Jenoptik Camera in Micro Manager (WINDOWS 64BIT)

IMPORTANT NOTE:

The DijSDK driver for micro manager requires a Device API version number of 69 to work. To find out if your version of micro manager is compatible go to:

Help -> About Micromanager

🦌 Micro-Manager	2.0.0-gamma1 201	91027		_		×
File Tools Devices	Plugins Window	Help				
Profile: Default User			User's Guide	ram Files\Mic	ro-Manag	er-2.0.cfg
💽 Snap	Imaging setting		Configuration Guide		Sa	ve
🛱 Live	Exposure [ms]		Register your copy of Micro-Manager			
💽 🔿 Album	Changroup		Report Problem			
Multi-D Acq.	Binning		About Micromanager			
🤣 Refresh	Shutter	. —		I		
Close All	- Auto	À	Close			
ROI	Stage	Auto	focus			
	⊕ �	Ä	Group: + - Edit Pre	eset: +	-	Edit
Image info (from came	ra): 0 X 0 X 0 bytes, Ir	ntensity	range: 0 bits, 0 nm/px			

About Micro-Manager	×
Micro-Manager	2.0.0-gamma1 2 oscopy Software
MM Studio version: 2.0.0-gamm MMC	na1 20191027
Device API version 69. Module User: ASH Host: DESKTOP-G3NKOSE	API version 10
Copyright University of Californi Copyright 100X Imaging Inc, 20 Additional copyright on portions projects or individuals: Wayne R BeanShell, JSON, logix4u, libse	a San Francisco, 2010. All rights reserved. 10. All rights reserved s of this software by the following institutions, tasband, NIH, Joachim Walter, boost.org, erial, Todd Klark and Ramon de Klein
home:) bug reports:) feature requests: ;	http://www.micro-manager.org bugs@micro-manager.org features@micro-manager.org
If you've found this software use publications.	ful, please <u>cite Micro-Manager</u> in your
	ок

If the number circled in red is not 69, this version of micro-manager is not compatible.

1. Download Micromanager

In this example we will use a specific version of Micro-Manager in our case *Micro-Manager 2.0.0gamma ver: 20191027*

DOWNLOAD:

https://download.micro-manager.org/nightly/2.0.0-gamma/Windows/MMSetup_64bit_2.0.0-gamma1_20191027.exe

We recommend downloading this version as this is known to work. Later versions may not contain Device API version 69 and therefore will not work.

2. Continue Installation through the wizard in micro manager and install.

3. Use Gryphax Installer

a) Download the gryphax installer from the website (GRYPHAX Version 2.2.0.1234 WINDOWS 64 Bit (EXE | 64,06 MB)):

<u>GRYPHAX Software Download Registration | Jenoptik</u> DIRECT DOWNLOAD: <u>https://www.jenoptik.com/-/media/websitedocuments/optics/progres/software-gryphax/usb-30-camera-2-2-0-1234-win64.exe</u>

b) Open the installer.Select next at the welcome page.



Agree to the license agreement.



Page 2 of 17

Select the Install Location and click next.

🚍 USB 3.0 Camera Setup	_		×
Choose Install Location		_	
Choose the folder in which to install USB 3.0 Camera.		JEN	ΙΟΡΤΙΚ
Setup will install USB 3.0 Camera in the following folder. To install in Browse and select another folder. Click Next to continue.	a different	folder, clic	k
Destination Folder			
C:\Program Files\Jenoptik\GRYPHAX-V2.2.0.1234	Bro	wse]
Space required: 212.5MB			
Space available: 21.2GB			
Jenoptik Optical Systems GmbH			
< Back	Next >	Can	cel

Check the box 'Micromanger 64bit' and click next

📰 USB 3.0 Camera Setup			_		×
Choose Components Choose which features of USB	3.0 Camera you want to install.			JEN	OPTIK
Check the components you wa install. Click Next to continue.	ant to install and uncheck the comp	onents y	ou don	't want to)
Select components to install:	rd Party Driver TWAIN TUAIN DirectShow filter 32bit DirectShow filter 64bit Micromanager 32bit Molecular Devices Meta Molecular Devices Meta	Descr Positic over a see it:	iption – on your a compo s descri	mouse onent to ption,	
Jenoptik Optical Systems GmbH –	< Back	Next :	>	Cano	cel

Click Browse in the Install Dialog

* DO NOT USE THE PRE-WRITTEN PATH TO MICRO MANAGER 1.4*

🚍 USB 3.0 Camera Setup	_		\times
Choose Install Location		_	
Choose Install Location of MicroManager 64 Bit.		JEN	ортік
Setup will install the driver for GRYPHAX cameras for MicroManager 64 folder. Select the folder of your current installation of MicroManager 64 64 Bit MicroManager installed, click Back and disable installation of 64 bi	Bit in the Bit. If yo t MicroMa	following ou don't h mager dri	ave ver.
Destination Folder C:\Program Files\Micro-Manager-1.4	Brow	/se]
Space required: 212.5MB Space available: 21.2GB			
Jenoptik Optical Systems GmbH	t>	Cano	el

Locate the install folder for Micro-Manger-2.0gamma

USE PATH MICRO-MANAGER-2.0gamma

The path will be: (THIS PC) C:\Program Files\Micro-Manager-2.0gamma\

🧮 Browse For Folder	×
Select the folder to install USB 3.0 Camera in:	
> hmbed	^
> Micro-Manager-2.0	
Micro-Manager-2.0gamma	
> 📙 Baumer Optronic	
CoreLogs	
> 🔓 jre	
> 🔒 macros	
OlympuslX3Control	
> 📙 plugins	
scripts	
> Microsoft Office	
Microsoft Office 15	~
Make New Folder OK Cance	

With a final screen that looks like this, now install, and wait for this to complete:

🚍 USB 3.0 Camera Setup	_		×
Choose Install Location		_	
Choose Install Location of MicroManager 64 Bit.		JEN	ЮРТІК
Setup will install the driver for GRYPHAX cameras for MicroManager 64 folder. Select the folder of your current installation of MicroManager 6 64 Bit MicroManager installed, click Back and disable installation of 64 b	Bit in the 4 Bit. If y it MicroM	e following rou don't h anager dri	ave iver.
Destination Folder C:\Program Files\Micro-Manager-2.0gamma\	Bro	wse]
Space required: 212.5MB Space available: 21.2GB			
Jenoptik Optical Systems GmbH	kt >	Can	cel

On completion click Finish

📰 USB 3.0 Camera Setup	- 🗆 X
	Completing USB 3.0 Camera Setup
JENOPTIK	USB 3.0 Camera has been installed on your computer. Click Finish to close Setup.
	< <u>B</u> ack Einish Cancel

4. Setup Micro-Manager

a. Locate the .exe file to start micromanager.

e Home Share View	App Tools			
» 🖹 📺 🔏 cut	📃 🖳 🖌 📑 📜	1 New item *	👔 💽 Open 🔹 🔠 Sele	rct all
Copy pat	h Maya Cany Datata Ranama Nam	Easy access .	Edit 🔡 Sele	ect none
ccess Paste sho	infort to * to * * folder	Flop	History 🔡 Inve	ert selection
Clipboard	Organise	New	Open S	ielect
-> * 🛧 🔜 > This PC > Lor	al Disk (C:) > Program Files > Micro-Manager-2	.0gamma		
		Carlot Managaria	Lane I	Varies I
Cuick access	Mame mmpiugins	Date modified	Pype Pile tokoer	Size
	OlympusIX3Control	09/03/2023 14:56	File folder	
OneDrive - Personal	plugins	09/03/2023 14:56	File folder	
This PC	scripts	09/03/2023 14:56	File folder	
3D Objects	MMCorePy.pyd	27/10/2019 19:41	Python Extension	1,733 KB
Desider	3DView.xml	22/01/2021 13:12	XML Document	9.KB
Desktop	AB_ALC_REV64.dll	27/10/2019 19:41	Application exten	435 KB
Documents	i api.log	09/03/2023 15:36	Text Document	444 KB
🖶 Downloads	i atmcd64d.dll	27/10/2019 19-41	Application exten	5,398 KB
h Music	BUF_USBCCDCamera_SDK_MM.dll	27/10/2019 19:41	Application exten	2,198 KB
E Pictures	BufferCameraUsbLib.dll	27/10/2019 19:41	Application exten	572 KB
Videos	G Cam3DView.dll	22/01/2021 13:12	Application exten	3,418 KB
Local Disk (Cr)	DijSDK.dll	22/01/2021 13:12	Application exten	9,219 KB
Lecal Dirk (D)	DijSDKcamera.dll	22/01/2021 13:12	Application exten	3,658 KB
COLDI DISK (DI)	error.log	09/03/2023 15:12	Text Document	63 KB
System Reserved (F:)	FxLib.dll	27/10/2019 19:41	Application exten	2,249 KB
Local Disk (G:)	gluegen-rt.dll	27/10/2019 19:41	Application exten	18 KB
- New Volume (Q:)	i hidapi.dll	27/10/2019 19:41	Application exten	14 KB
New Volume (Or)	hrfw64.dll	27/10/2019 19:41	Application exten	138 KB
a rara analia (cc)	hs_err_pid7672.log	09/03/2023 15:11	Text Document	35 KB
Network	🚠 ij.jar	27/10/2019 19:41	Executable Jar File	2,148 KB
	U_Prefs.txt	27/10/2019 19:41	Text Document	1 KB
	Imagel.cfg	27/10/2019 19:41	CFG File	1 KB
	🖂 🛃 ImageLexe	27/10/2019 19:41	Application	351 KB
	inpoutx64.dll	27/10/2019 19:41	Application exten	54 KB
	jogl_desktop.dll	27/10/2019 19:41	Application exten	676 KB
	jogl_mobile.dll	27/10/2019 19:41	Application exten	355 KB
	LaserCombinerSDK64.dll	27/10/2019 19:41	Application exten	294 KB
	ibdc1394-22.dll	27/10/2019 19:41	Application exten	324 KB
	libserialport.dll	27/10/2019 19:41	Application exten	127 KB
	🗟 libusb.dll	22/01/2021 13:12	Application exten	221 KB
	libusb0.dll	27/10/2019 19:41	Application exten	74 KB
	C LightEngineAPI.dll	27/10/2019 19:41	Application exten	1,736 KB
	S LumencorDLL64.dll	27/10/2019 19:41	Application exten	30 KB
	imcam64.dll	27/10/2019 19:41	Application exten	821 KB
	mcammr64.dll	27/10/2019 19:41	Application exten	591 KB
	MMConfig_demo.cfg	27/10/2019 19:41	CFG File	5 KB
	MMCorel_wrap.dll	27/10/2019 19:41	Application exten	1,156 KB

The file path will be:

C:\Program Files\Micro-Manager-2.0gamma\ImageJ.exe

b. Double click on the ImageJ.exe to start micromanager:



Ensure the 'Default Configuration File' drop down is set to none and click OK

c. Click on Hardware Configuration Wizard under Devices as seen as below:

🛃 Micro-	Manager	r 2.0.0-gamma1 20191027	_		×
File Tools	Devices	Plugins Window Help			
Profile: Defai	De	evice Property Browser		Config I	File: (none)
🧿 s		onfiguration settings		5	Save
	Ha	ardware Configuration Wizard Broup Preset			
i → A	Lo Re	ad Hardware Configuration Set up hardware devices or modify an existing hardware configurati load Hardware Configuration	on		
🤹 Re	Sw	vitch Hardware Configuration >			
Clo:	34	verhardware configuration As			
ROI	Pip	kel Size Calibration			
	12 51	🕈 🏹 🗐 🥂 Group: 🕂 – Edit Pres	et: +	-	Edit
Image info (f	tom came	vra): 0 X 0 X 0 bytes, Intensity range: 0 bits, 0 pm/py			

d. Select 'Create new configuration' as below and click the next button:

light Hardware Configuration Wizard		×
Step 1 of 6: Select the configuration file		
This wizard will walk you through setting up $\mu\text{Manager}$ to control the hardware in your system.		
O Create new configuration		
Modify or explore existing configuration		
	Browse	
	ck Next >	

e. Locate the folder 'DijSDKCamera' select the contents of the folder as below:

🕌 Hardware Config	guration Wizard				×			
Step 2 of 6: Add or remove devices								
Select devices f	rom the "Available	e Devices" list to	include in this con	figuration.				
Installed Devices:								
Name	Adapter/Module	Description	Status	Edit				
Core	MMCore/Default	Core controller	Default	Peripherals				
				Remove				
Ausilable Devisers	List by Madula							
Available Devices:								
CoherentOB	is			Add				
CoherentScie	entificRemote			Help				
E Corvus								
CSUW1								
DECamera								
DemoCamera	3							
DijSDKca	mera: DijSDKcamera							
Diskovery	Controllers							
					< Back Next >			

- f. Click the add button.
- g. A pop up will appear, keep the name, and select ok.



h. Now the camera SDK should appear in the device list (like below), click next.

🙆 Hardware Configuration Wizard X				×			
Step 2 of 6: Add or remove devices							
Select devices fi	rom the "Available	e Devices" list t	o include in this	s configur	ation.		
Installed Devices:							
Name	Adapter/Module	Description	Status		Edit		
Core	MMCore/Default	Core controller	Default		Peripherals		
DIJSDKcamera	DIJSDKcamera/DIJS	DIJSDKcamera			Remove		
Available Devices:	List by Module 🗸						
CoherentCub	e			^	Add		
CoherentOBI	S IntificRemote				Help		
Corvus							
CSUX							
庄 📃 DECamera							
DemoCamera	1						
DijSDKcar	mera: DijSDKcamera						
Diskovery	Controllora			~			
							Marcha
						< Back	Next >

i. Leave all settings as default and click next on the wizard until you reach the page below:



j. Select a place to store the config file e.g desktop and name it something memorable to remember where it is, such as JenoptikCamera and click finish.



k. Now you must change ImageJs memory allocation by going to the ImageJ control panel and selecting Edit -> Options -> Memory & Threads



I. Once open change the Maximum Memory to 350 MB

🛓 Memory (64-bit)	×		
Maximum memory: 350 MB Parallel threads: 8			
☐ Keep multiple undo buffers			
Run garbage collector on status bar click			
OK Cancel H	elp		

5. Opening Micromanager with configuration.

a. Now you can open micromanager from the desktop/menu icon, double click this.



b. Once open be sure to select the configuration file created previous, in our case 'Jenoptik Camera'



c. Now you are setup to run a Gryphax Camera in MicroManager

6. Changing sequence buffer size

If you run into issues with errors such as the error message below, the sequence buffer size has to be increased:



To do this:

a) Open options by going to Tools -> Options



b) Change this value to 256MB or above like below and click 'close' after this the error should stop, come out of the software and open again to ensure the change.

Micro-Manager Options	\times			
Display Background: Night	~			
Sequence Buffer Size: 350] ME			
Create metadata.txt file with Image Stack Files				
✓ Save XY positions in separate Image Stack Fil	es			
Always use the default user profile				
Ask for config file at startup				
Startup Script: MMStartup.bsh				
✓ Close app when quitting MM				
Enable debug logging				
Delete log files after 7 days				
Delete Log Files Now				
Sync exposure between Main and MDA windows				
Hide MDA display				
Reset Preferences Close				

7. Settings and Parameters

a. To Open settings click Device Property Browser under Devices

Micro-		
File Tools	Devices Plugins Window Help	
Profile: Defa	Device Property Browser Config File: C:\Users\user\Desktop\Jer	noptikCamera.cfg
🧾 s	e onfiguration settings	Save
	Hardware View and set device states and features Preset	
Image: Image	Load Hardware Configuration	
Multi	Reload Hardware Configuration	
Sa Re	Switch Hardware Configuration	
	Save Hardware Configuration As	
ROI	Pixel Size Calibration	
	🐼 <table-cell-rows> 🎌 🗐 🧖 🖉 Group: + - Edit Preset +</table-cell-rows>	- Edit
Image info (f	(from camera): 1400 X 1050 X 4 bytes, Intensity range: 24 bits, 0 nm/px	

b. Here you can edit settings for the camera.

🛃 Device Property Br	owser		_		×
Device type:	Property	Value			
All None	DijSDKcamera-00-Extend property	Show			
🗸 cameras	DijSDKcamera-01-Color mode	Color			
✓ shutters	DijSDKcamera-02-Camera select	GRYPHA	X::SUBRA::	0100000253	
	DijSDKcamera-03-Live	1400 x	1050		
	DijSDKcamera-04-Capture shot	2048 x	1084		
✓ wheels, turrets, etc.	DijSDKcamera-05-Fast capture	No			
✓ other devices	DijSDKcamera-06-Minimize gain	Yes			
	DijSDKcamera-07-Automatic Setup	Off			
Device or property name:	DijSDKcamera-08-Intensity	70	<		>
Clear	DijSDKcamera-09-Exposure	24	<		>
	DijSDKcamera-10-Gain	8	<		>
Property type:	DijSDKcamera-11-Ocular View	0	<		>
Show read-only	DijSDKcamera-12-Contrast	50	<		>
	DijSDKcamera-13-Saturation	50	<		>
	DijSDKcamera-14-Gamma	0.45	<		>
🍲 Refresh	DijSDKcamera-15-Black Point	0	<		>
	DijSDKcamera-Binning	1			
	Core-AutoFocus				
	Core-AutoShutter	1			
	Core-Camera	DijSDKc	amera		
	Core-ChannelGroup				
	Core-Focus				
	Core-Galvo				
	Core-ImageProcessor				
	Core-Initialize	1			
	Core-SLM				
	Core-Shutter				
	Core-TimeoutMs	5000			
	Core-XYStage				

c. To access all parameters, select the drop down next to the tag labeled extended property and click show. Now you can access more settings.

Device type:	Property	Value			
All None	DijSDKcamera-00-Extend property	Hide			
🗸 cameras	DijSDKcamera-01-Color mode	Hide			
✓ shutters	DijSDKcamera-02-Camera select	Show			
	DijSDKcamera-03-Live	1400 x 1050			
✓ stages	DijSDKcamera-04-Capture shot	2048 x 1084			
✓ wheels, turrets, etc.	DijSDKcamera-05-Fast capture	No			
✓ other devices	DijSDKcamera-06-Minimize gain	Yes			
	DijSDKcamera-07-Automatic Setup	Off			
Device or property name:	DijSDKcamera-08-Intensity	70 < >			
Clear	DijSDKcamera-09-Exposure	24 < >			
	DijSDKcamera-10-Gain	8 < >			
-Property type:	DijSDKcamera-11-Ocular View	0 < >			
	DijSDKcamera-12-Contrast	50 < >			
Show read-only	DijSDKcamera-13-Saturation	50 < >			
	DijSDKcamera-14-Gamma	0.45 <			
🤣 Refresh	DijSDKcamera-15-Black Point	0 < >			
	DijSDKcamera-Binning	1			
	Core-AutoFocus				
	Core-AutoShutter	1			
	Core-Camera	DijSDKcamera			
	Core-ChannelGroup				
	Core-Focus				
	Core-Galvo				
	Core-ImageProcessor				
	Core-Initialize	1			
	Core-SLM				
	Core-Shutter				
	Core-TimeoutMs	5000			
	Core-XYStage				