HEINE DV1 Software Installation and How-to Guide

Software and camera driver have to be installed prior to the first start up. This requires administrator rights. Follow the instructions in the order given below.

1. DOWNLOAD THE FILES

Visit the HEINE website to download the image capture software and camera drivers. From the <u>HEINE OMEGA 500 with DV1 product</u> <u>page</u> click on "Show documents", then click on the "<u>OMEGA500DV1</u> <u>Software EN.zip</u>" to start the download. A downloads pop up window may be displayed depending on your Windows version and your settings. Locate the downloaded ZIP folder.

2. CONNECT THE CAMERA TO YOUR COMPUTER

Connect the camera with the USB cable to your computer. Insert the side with the wide | big USB connection into the USB 2.0 port of your computer and the other side into the mini-USB port of the camera. Please make sure that the camera is connected directly to the computer, e.g. USB hub or other similar instruments are not interconnected.

3. EXTRACTING THE FILES

The ZIP file must be extracted prior to installation. To do this, click with the right mouse button on the download file and select "Extract all". Then, select a new location for storing the extracted files. Once extracted, the following files will be in the respective folder, e. g. "Software_Driver_DV1_ENG".

4. CAMERA DRIVER INSTALLATION

Open the "Software_Driver_DV1_ENG" folder (or the respective folder with the unzipped files) and double click on the directory "usbcam" and then double click on the file "drvinstaller". Follow the instructions of the installation routine.

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I.	usbcam_2.9.8.2001_tis
	OmegaDV1_LED_5MP_Standard.iccf
C	setup_iccapture_2.4.642.2631.en_US

5. IMAGE CAPTURE SOFTWARE INSTALLATION

Double click on the file "setup_iccapture" and follow the instructions of the installation routine. After successful installation, open the program "IC Capture". The connected video camera will be recognized in the "Select Device" window (please note that the device serial number will be unique and will not match the image below). Confirm the device selection by clicking "OK".



6. LOAD THE INITIAL CAMERA CONFIGURATION FILE

It is important to configure the software to provide the best possible performance with the DV1. An initial configuration has been supplied in the download files – "OmegaDV1_LED_5MP_standard.iccf" file. You must load this configuration first. To do this, go to the menu item "File" in IC Capture and select "Load Configuration". Browse to the location where you saved the download files, choose the file

"OmegaDV1_LED_5MP_standard.iccf" and confirm with "Open".

🔁 File	Device Capture	Effects View	Window
	New	Ctrl+N	- 18
iev	Save Image Close	Ctrl+U	PAL NTSC
	Load Configuration	Ctrl+0	Image
	Save Configuration	Ctrl+S	
	Exit		Cont.

IC Capture will then align all necessary settings (e. g. white balance, refresh rate, etc.) to the connected camera.

7. RECOMMENDED TOOLBARS

By the addition of toolbars, settings can be viewed and changed very fast in IC Capture. We recommend the display of the following toolbars:

- ► Main Toolbar
- ► Device Bar
- ► Recording Bar
- ▶ Image Sequence Bar
- ► Exposure Bar

To activate the display of toolbars go to menu and click on "View" \rightarrow "Toolbars" and click on the appropriate toolbars.

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9	-	led		2	-		External Devices	•	4	Recording Bar	Ctrl+3
	*	1	1	_			Histogram		×	Image Sequence Bar	Ctrl+4
							Show All Video Formats		~	Exposure Bar	Chrl+5
						4	Swap Gain & Contrast			Gamma & Sharpness Bar	Ctrl+6

8. VIDEO RECORDING SETTINGS AND HOW-TO

A) Setting the video compression

To ensure smooth video recording the compression has to be set correspondingly.

Before recording to the hard disc, the video compression has to be checked | corrected every time, as the compression is not saved in the configuration file.

On the Recording Bar, choose the codec "MJPEG Compressor" from the dropdown list and click on the gear-wheel on the right to change further settings.



In the newly opened window, use the slide control to set the value to 0.40 and confirm with "OK".

MJPEG Co	dec Parameter	×
Paradigm Matrix M-JPEG Cod Quality OK	Cancel	ılt

B) Setting the storage location of your video files

When recording videos and | or photos, it is important to select a storage location so they can be found quickly. We recommend you create a Target directory folder for your files before performing these steps.

On the very right of the "Recording" toolbar the chosen folder is displayed. To change the Recording settings for the file generated, click on the File Manager button on the right of this field.



In the "Video File" tab that opens, perform the following operations: choose "Enable automatic video filename generation", select the Target folder you created as the Target directory by clicking on the "Change …" button, type in the Filename prefix you wish all of your video files to have, and choose a "Time stamp" to select a date format.

		Recording Settings	
Codec	Video File	Advanced	
Ta Fi	rget directo	y: C: DV 11 V: Video I me stamp Due was se	Change
-	o File :\DV1\Video	0001 15-03-17 14-01-57.avi	50
		OK Cancel A	pply Help

Confirm your selections with "Apply" and close the window by clicking "OK".

C) How-to record videos

Video recording can be started via the Recording toolbar (see image below) or the dialogue box "Record Video File".

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To display the dialogue box "Record Video File", go to the menu item "Capture" and select "Toggle Recording Info Dialog". You will find the buttons to control the recording at the bottom of the dialog box.

Codec	
AVT	
MJPEG Compressor	4
Filename	
C:\DV1\Video_0001 15-03-17 <time>.a</time>	₿ I
Information	
Recorded: 00:00:00.0	\odot
Frames: 0	

9. STILL IMAGE CAPTURE SETTINGS AND HOW-TO

Photographs can be taken directly with IC Capture. Alternatively, photographs can also be generated from the recorded videos. These produce higher quality images, especially with quickly changing images. For this, software such as VLC is required.

A) Setting the storage location of the photographs

Settings of these snapshots can be defined using the toolbar "Image Sequence Bar". Click on the gear-wheel (see image below) to open the dialogue.



On the "Filename and Target" tab select the field "Target directory" and click on the button "Change ..." to select the storage location. On this tab you can also define a Filename prefix, and an Index and a Time stamp for every file. Save your selections with "Apply" and close the window by clicking "OK".

Filename and Target	File Type	Miscellaneous	Automate	ed Sequence
Target directory:	C:\DV1\			Change
Filename prefix:	Photo_			
Index 🗸	$\overline{\mathbf{C}}$			
	Time stam			
Time stamp	OHH-MN () YY-MM	-DD HH-MM-SS		

B) File Type Settings

The File Type of the Saved Image Files is defined on the "File Type" tab. To display the tab go to the menu item "Capture" \rightarrow "Image Sequence Settings" and choose the "File Type" tab. 3 file formats are available:

BMP – Windows Bitmap Uncompressed image file 3.5 MB Compressed imagefile, file size depends on the compression factor Uncompressed image file 3.5 MB

► TIFF

▶ JPG – JPEG

We recommend JPG setting for Image File Type

ilename and Target	File Type	Miscellaneous	Automated Sequence
Image File Type			
	s Bitmap		
IPG - JPEG Co	mpressed		
JPG-Quality			
a o Louity		100 %	
		100 %	
		100 %	0
		100 %	0

Click "Apply" to save any changes.

C) Action and Hotkey Selection

Additional settings for capturing photographs can be selected on the "Miscellaneous" tab. The check box "Displayed Saved Image" must be deactivated. We recommend using the key "Space" as Hotkey. This activates the Space bar as the key you press to take a photo and save it in the folder you defined beforehand.

	and the second	AUTO	mated Sec	Juence
Action	He	otkey		
Display Saved Image		Key:	Space	~

To save the settings click on the button "Apply" and then click "OK" to close the window.

D) How-to Take Still Images

To take photographs click on the header of the Live Window of the video to activate the window. The activated window can be recognized by the darker window bar (see in the first image below). If the Live Window is not activated, the window header is lighter in colour and the text is not as dark (see the second image below).



Photo capturing can be triggered by pressing the Hotkey defined earlier (the space bar). The recorded images will not be shown, but will be automatically saved in the destination folder.

NOTE: Check the Photo settings via the toolbar

The most important settings can be controlled via the "Image Sequence Bar" on the toolbar. To display the toolbar go to menu and click on "View" \rightarrow "Toolbars" \rightarrow "Image Sequence Bar". On the toolbar you can see at first glance whether the check box "Display Saved Image" is activated and in which folder images are saved. The file name is also displayed – if the index number is higher after recording a photo, the still shot was saved successfully



10. Saving the updated configuration file

Once you have selected all of your preferences, we recommend you save the configuration file to avoid having to select the same settings again when opening IC Capture the next time. To do so, go to "File" \rightarrow "Save Configuration". We recommend assigning a new file name, in order to keep the original

configuration file. You can create as many files as needed, for example you could create one for every user of the DV1. Close the dialog box by clicking the button "Save". Next time you start IC Capture load the configuration you wish to use by going to "File" and select "Load Configuration".Browse to the location where you saved the configuration file and confirm with "Open".

C File	Device Capture	Effects View	Window
	New	Ctrl+N	
ev	Save Image Close	Ctrl+U	PAL NTSC
	Load Configuration	Ctrl+0	Image 4
	Save Configuration	Ctrl+S	1784 B
	Exit		Mar Sa

IC Capture will then align all necessary settings to the connected camera.

11. Switching off the Power Option of your computer

For the best video quality possible, your computer needs to be operating at its best performance. First, it needs to be connected to the power supply and second; the Power Option needs to be switched off. To do so, proceed as follows: Select the "Control Panel" in the Windows Start menu and then click on "Power Options".



In the next window, select "High Performance". To do so, you might have to display additional power saving profiles by clicking on the down arrow.

	Control Panel Home	Select a power plan	
	Require a password on wakeup	Power plans can help you maximize your computer's performance or conserve en selecting it, or choose a plan and customize it by changing its power settings. Ter	
	Choose what the power buttoes do	Later	TOP THE APPRIL POPUL
	Choese what closing the lid	Plans shown on the battery meter	
	does	a Dell	Change plan settings
	Create a power plan	Automatically balances performance with energy consumption on capable	
9	Choose when to turn off the display	C Power Saver	Change plan settings
3	Change when the computer steept	Saves energy by reducing your computer's performance where possible.	
2.	Dell Battery Information	Show additional plane	8

Control Fanel Home	Select a power plan	
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Choose when to turn off the display	Power saver	Change plan tettings
Change when the computer	Saves energy by reducing your computer's performance where possible.	
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	m Ralanced (recommended)	Change plan settings
	Automatically balances performance with energy consumption on capable	hardware.
	Cool (Reduced Temp Level)	Change plan settings
	CPU and fan spred are adjusted to help maintain a lower system surface to bottom).	mperature (cooler
	Extended Battery Life (Max nun-time).	Change plan settings
	Reduces the energy used and extends the run time of your battery by powe ports and devices and adjusting display settings.	ning down non-essential
	C High performance	Change plan settings
	Favors performance, but may use more energy	
	(*) Quiet (Reduced Fan Levels)	Change plan settings
	Limits the CPU and fan speed to reduce fan noise.	
Tere also	O Ultra Performance (Max Fan Levelu)	Change plan settings
Personalization	Limits CPU throttling and allows the fan to run at higher RSM and noise lev	ek.
Windows Mahility Canter		

Activate the setting "High performance" and click on "Change plan settings". Then click on "Change advanced power settings".

	On batte	Ŋ	Plugge	d in
Dim the display:	2 minutes	•	4 minutes	•
Turn off the display:	30 minutes	-	1 hour	•
Put the computer to sleep:	30 minutes	•	1 hour	•
🔆 Adjust plan brightness:	0	Q 💥	•	- Q 💥
hange advanced power setting				
Restore default settings for this p				

In the following window browse to the entry "USB settings" and click on "+" to change the setting. Then select "Disabled" for both "On battery" and "Plugged in" by clicking on the entry highlighted in blue. Close the window by clicking "Apply" and confirm with "OK".

vanced settings	
Select the power plan that you want to then choose settings that reflect how y computer to manage power.	ou want your
ligh performance [Active]	sole
Internet Explorer Desktop background settings Wireless Adapter Settings	•
Sleep USB settings USB selective suspend setting	E
On battery: Disabled - Plugged in: Enabled	
Intel(R) Graphics Settings Power buttons and lid	-

Select "Never" in all drop-down windows of the newly opened window as shown below.

Choose the sleep and display set	0	attery	Plugge	d in
Dim the display:	Never	• Ne	ver	•
Turn off the display:	Never	▼ Ne	ver	•]
Put the computer to sleep:	Never	▼ Ne	ver	•
🔆 Adjust plan brightness:	•	-0 * o		-0 *
Change advanced power setting:				
Restore default settings for this p	lan			

Close the window by clicking "Save changes".

12. TIPS & TRICKS

A) Change image orientation

The easiest way to change the image orientation is by using the arrows and drop-down window at the right end of the "Device bar".



Once you found the correct setting make sure to save the configuration via "File" \rightarrow "Save Configuration" as otherwise it needs to be set again when opening IC Capture the next time.

B) Influences on colour display

As computer screens are usually not colour calibrated the appearance of colours in a video can differ. Only by using a colour calibrated screen is it possible to guarantee that the colour on the screen is correct.

C) Adjust the colour – white balance

If you are not satisfied with the colour of the video image, first try restarting IC Capture and reloading the configuration file. Then aim the instrument at a white piece of paper and align the illuminated field with the camera. Compare the colours seen at the screen with the illuminated paper. If you feel they don't match (i. e. the paper doesn't appear white), change the adjustment of the white balance by performing the following steps while still illuminating the white piece of paper: Click on "Device" \rightarrow "Properties".



Click the button "One-Push". Make sure that "Auto" is NOT activated and "Grey World" is chosen for the White Balance Mode drop down.

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White Balance Bue	-0		-1	103	ŀ
Color Enhancement	Enable				

D) Enhance single colour settings

Sometimes adjusting the white balance may not lead to a satisfying colour display. Single colours (red, blue, or green) can be adjusted as follows:

In the menu click on "Device" \rightarrow "Properties". In the lower part use either the slide control or the up- and down arrows to increase or decrease a colour.

Color	Exposure	Image	Partial se	can Spec	ial				
Hue	,		_	-Q		0	-	3	
Sat	uration		-0			64	÷	3	
Wh	teBalance	[Auto	OnePu	sh				
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	Auto-Preset		Any					Ŷ	
	Temperature	Preset	Daylig	ht				÷	
	Temperature		-	-0		-	6000	* *	
<	White Balan	ce Red	_		0	_	173	-	>
	White Balan	ce Green		0		-	64	•	
	White Balan	ce Blue	-	-0-		-	103	•	
Cold	or Enhancem	ent [Enable						
	b		—	odate	-	efault		OK	

E) Reduce glare and reflections

Depending on the surface which is displayed with DV1 the camera image might be brighter in the middle or there might be glare from wet surfaces such as teeth. Those can be reduced as follows: Show the tool bar "Exposure bar" by either pressing "CTRL + 5" or select: "View" \rightarrow "Toolbars" \rightarrow "Exposure Bar". On the very right end of this toolbar you can find a controller for setting theauto reference value. If the centre of the image is too bright, slightly reduce the value until you see a glare-free centre.



Below is an image taken with a lower auto reference value than above.



F) Brightness of light spot

In order to ensure that the image obtained with the DV1 is best, make sure that the LED light from the instrument is brighter than the surrounding light. Check this by looking at the edge of the light spot.

G) Function Vignetting

The overall brightness of the video image can be changed by setting the "Auto Reference Value". Depending on your setting, the edges of the image might be too dark and details in these areas might not be visible any more. These dark edges can be brightened up, if necessary, with the help of the function "Vignetting" To activate this function go to "Effects" → "Vignetting".

<u>F</u> ile	<u>D</u> evice <u>(</u>	apture	Effects View Window Help	
		6	False Colors Perspective Distortion	
Device	DFM 42BL	JC03-ML	Vignetting	
	• II ta II		Settings	ec

To change the settings go to the menu item "Effects" \rightarrow "Settings".



✓ Enable			
Amount		-0	0.50
Power		_0	1.00
Inner Offset	-		0.00
Outer Offset	· 🛛 🗌 🗕		0.00

Any adjustments of these settings can be seen directly in the live image display of the camera.

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We reserve the right to change specification without notice.

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