roundshot
fast 360 degree panoramic equipment

FOVEX

Instruction Manual

Roundshot VR Drive Metric
Software release:

Roundshot VR Drive Metric version 2.14 (12 March 2015)
FOVEX PanoMaker Version 1.6.16.365.55 (12 March 2015)


roundshot
VR Drive
Metric


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VR Drive
Metric
roundshot VR Drive Metric


roundshot VR Drive Metric


roundshot VR Drive Metric

CONTENTS

1. System Set-Up

1.1 Roundshot VR Drive Metric - overview

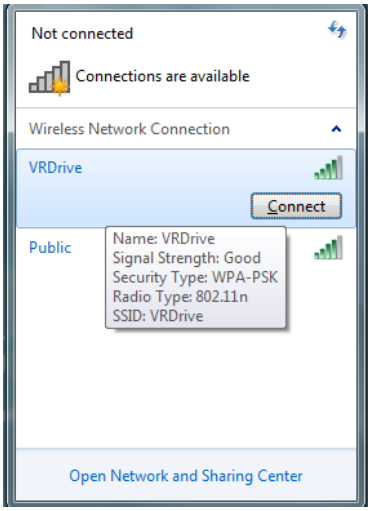
VR Drive Metric components

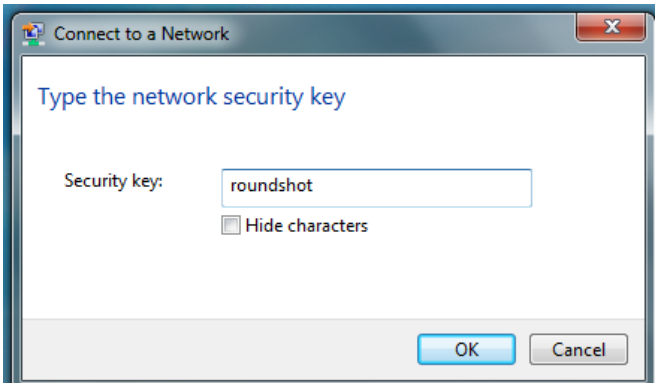
1. on/off button
2. touch screen interface
3. battery case
4. battery case lock
5. light meter
6. spirit level
7. 360° quick lock
8. USB socket
9. ethernet socket
10. Digital camera
11. Digital camera screen
12. Viewfinder
13. Digital camera controls – please refer to separate user manual
14. 2 LP-E6 camera batteries on slider
15. battery charger LC-E6E for LP-E6

1.2 Remote controlling the VR Drive Metric with wifi devices

It is possible to remote control the VR Drive Metric with any computer or smart phone equipped with wifi.

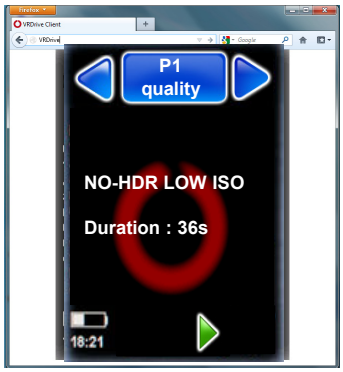
The first step is to connect the computer or smart phone to the **VR Drive** wireless network and type the following password: ***roundshot***





Then open any web browser and type in the URL : **http://192.168.169.15.**

The browser window will now show the screen content of the VR Drive Metric. All functionalities are identical with the ones displayed on the touch screen.



Summary of default IPs:

Router:	192.168.169.2
VR Drive Metric:	192.168.169.15
Browser:	192.168.169.15

The default IPs can be changed, for example to adapt them to a different network. To do this, access the router software by opening a browser window with the IP 192.168.169.2 and change the IP range in the router. Adapt the IPs in the VR Drive Metric and in the Browser window.

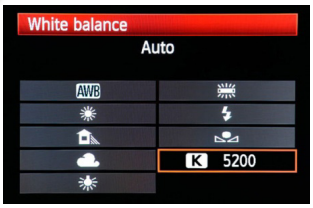
1.3 Checklist: setting up the digital camera

Your VR Drive Metric is delivered with the following **camera parameters** already correctly set. **Please make sure not to change these** as otherwise the capture or processing of images may not work properly.

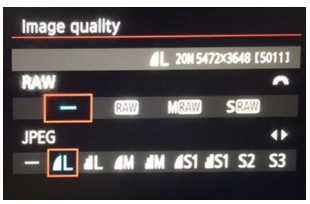
Always use **manual exposure**. With automatic exposure the VR Drive Metric can no longer set up the exposure values (exposure speed, f-stop, ISO/ASA).

Always use **manual focusing**. To prevent any focus variation, the lens is covered with a calibration ring.

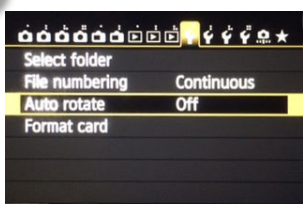
Use a **fast storage card** with enough capacity.



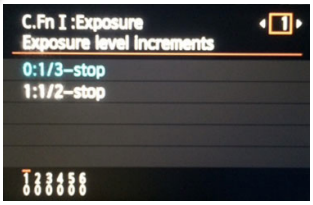
Set the **white balance to a fixed value.** When setting the white balance to “auto”, every image will have a different tone, making the stitching of the sphere problematic.



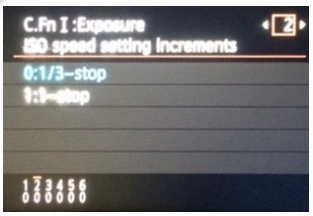
Choose **image quality JPEG L fine.** Saving the images in RAW has no benefit as the stitching libraries in PanoMaker rely on 8-bit processing.



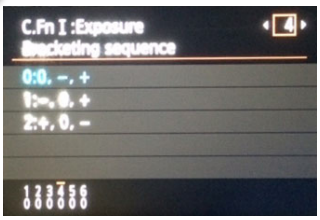
Turn the **“Auto rotate”** feature to **“off”.** When automatically rotating the images the stitching will not perform correctly.



Set the **exposure increments to 1/3 steps**. When selecting 1/2 steps the VR Drive Metric can no longer set up the correct exposures for HDR bracketing.



Set the **ISO speed setting increments to 1/3 steps**. When selecting 1/1 steps the VR Drive Metric can no longer set up the correct exposures for HDR bracketing.



Turn off any exposure bracketing sequence. The VR Drive Metric creates its own bracketing sequence by controlling the camera exposures, f-stop and ISO.

1.4 Setting up the computer and activating FOVEX PanoMaker

1.4.1 Setting up the computer

FOVEX PanoMaker uses GPU processing for high speed stitching and tone-mapping of panoramas. The following computer configurations are compatible with the software:

Minimum requirements
(for example for a laptop for mobile use)

CPU:	Intel or AMD supporting SSE2 instructions (4 cores)
CPU speed:	n/a
RAM:	8 GB
OS:	Windows 7 (64-bit)
Video Card:	NVIDA or ATI (released in 2013 or later) with at least 3 GB memory
Free Disk Space:	at least 10 GB (depends on the scope of project/number of images)
Hard Disk:	ideally SSD disks for fast image storage

Please make sure to connect the laptop to a power source (mains) when processing the images. If the laptop runs on battery while processing, the performance of the video card will be reduced and the stitching will take significantly longer.

Many laptops are equipped with two graphic (video) cards, the less powerful one being configured for battery use. When setting up the computer please make sure to assign the more powerful video card to be used with PanoMaker, otherwise the stitching will not work. This can be done by accessing the control panel of the graphic card by right mouse click on the desktop.

1.4 Setting up the computer and activating FOVEX PanoMaker (continued)

1.4.1 Setting up the computer

Recommended requirements
(for example a workstation for office use)

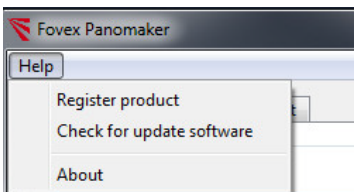
CPU:	Intel or AMD supporting SSE2 instructions (8 cores)
CPU Speed:	~4.7 GHz
RAM:	at least 16 GB
OS:	Windows 7 (64-bit)
Video Card:	NVIDA or ATI (released in 2013 or later) with at least 4 GB memory
Free Disk Space:	at least 10 GB (depends on the scope of project/number of images)
Hard Disk:	SSD disks for fast image storage

When using computers with video/graphics cards older than 2013 and /or with less than 2 GB of memory the stitching may nevertheless be completed, however, with **errors. It is therefore very important to use the latest computer technology, in particular a high performance video/graphics card.**

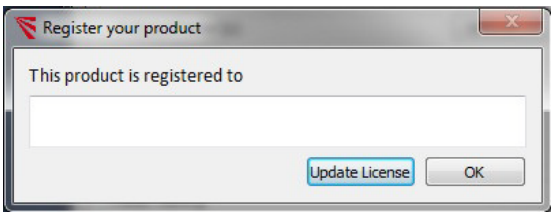
1.4 Setting up the computer and activating FOVEX PanoMaker (continued)

1.4.2 Activating FOVEX PanoMaker

After installing FOVEX PanoMaker on the computer, open the software and activate it with the customer identification key supplied with your VR Drive Metric.

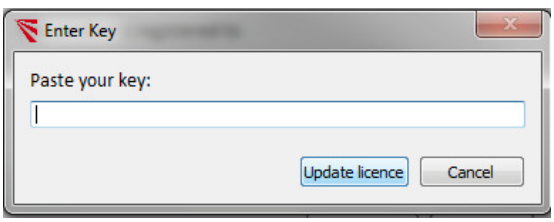


Go to **“Help / Register product”**

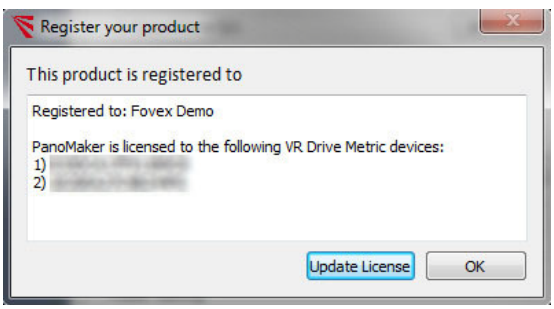


When registering the product for the first time, a **blank page** is displayed.

Press “Update License”



Enter the **customer identification key** that has been provided with the purchase of your VR Drive Metric.



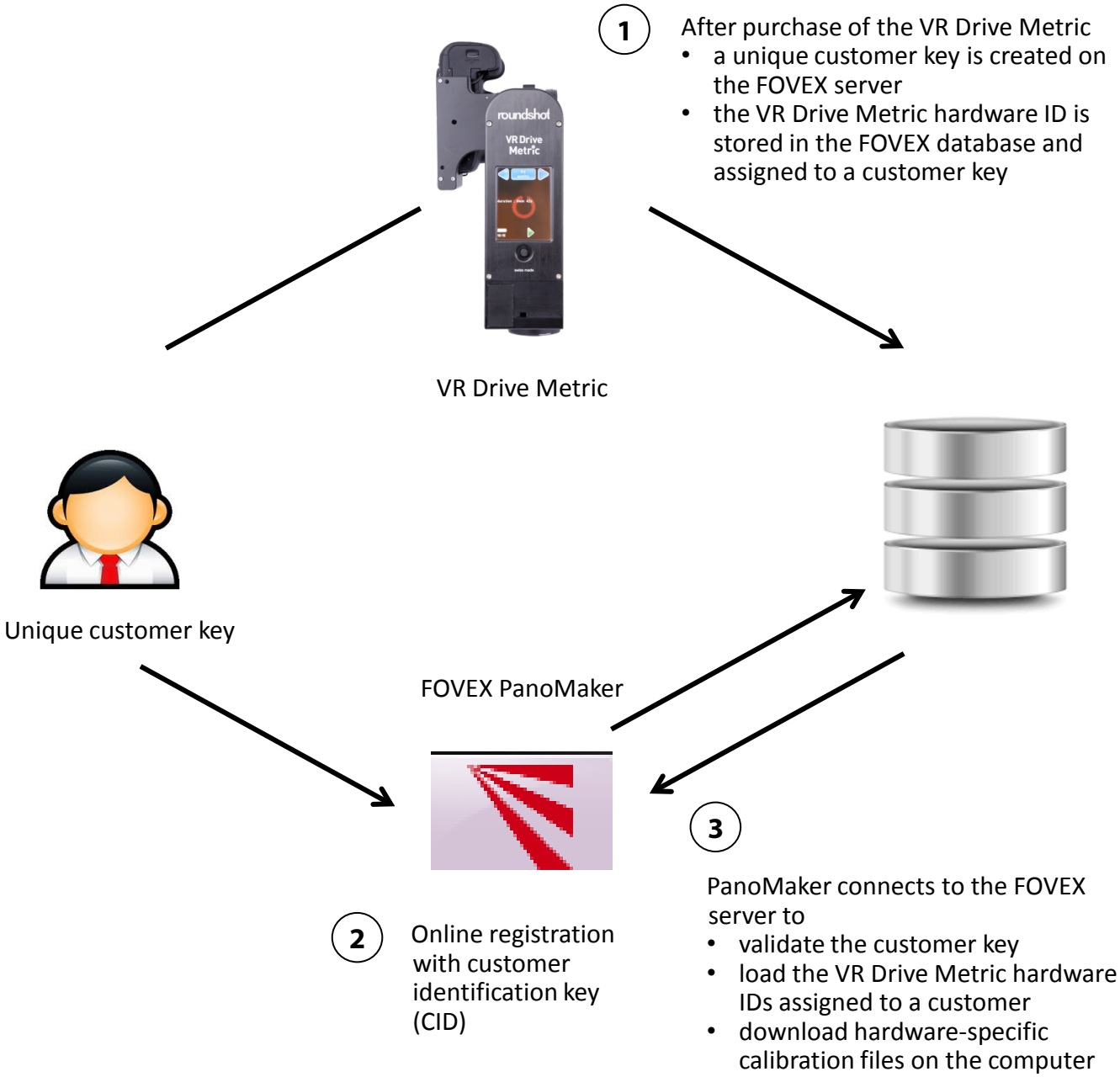
The software connects with the FOVEX server and **loads the Hardware IDs of the VR Drive Metric devices** that are linked to the unique customer key. These Hardware IDs are provided in a list.

At the same time, the software downloads the **calibration files corresponding to the VR Drive Metric hardware.** These calibration files are automatically applied when stitching images.

We deliver every VR Drive Metric with a unique customer identification key (CID). If you possess several VR Drive Metric units and would like to group them under one only CID, please contact us by email.

1.4 Setting up the computer and activating FOVEX PanoMaker (continued)

1.4.2 Activating FOVEX PanoMaker (continued)



- A PanoMaker software with one unique customer key can be installed on up to 3 computers.
- For customers owning several VR Drive Metric devices their hardware IDs can be grouped and can be used with one PanoMaker software (on up to 3 computers).
- It is not possible to process images in PanoMaker from VR Drive Metric devices other than the ones licensed to the software.

2. VR Drive Metric Workflow

2.1 Workflow overview

Setting up the hardware

Typical time requirements

- 1-2 minutes for start-up
- Few seconds per new location depending on light situation

Image capture

Depends on
- type of program (normal or HDR)
- level of bracketing
- choice of ISO/ASA
- pausing/resuming

Typical capture time:
- No HDR: 36 seconds
- HDR with 3 brackets: 1 minute 10 seconds
- HDR with 5 brackets: 1 minute 53 seconds
- HDR with 7 brackets: 2 minutes 30 seconds

Image transfer

- Depends on reading speed of memory card (USB 2.0 or 3.0), with high speed card 70 MB/sec.
- 20 seconds for copying (reading + writing) 1 GB of data

Stitching with FOVEX PanoMaker

- No HDR: 1 minute 15 seconds
- HDR 3 brackets: 2 minutes 7 seconds
- HDR 5 brackets: 2 minutes 20 seconds
- HDR 7 brackets: 2 minutes 33 seconds

Post production

- When arranging the scene well and pausing/resuming to avoid movement no post production necessary

Optional post production in Photoshop:
- White balance
- Specific tone-mapping of 32-bit HDR into 8- or 16-bit RGB image*
- Colour adjustments (especially for tone-mapped HDR panoramas)

* When using a VR Drive Metric HDR program, PanoMaker automatically creates an 32-bit HDR file and a tone-mapped 8-bit jpg image

2.2 Setting up the hardware

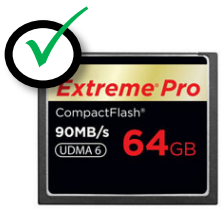
Tripod
Place the VR Drive Metric on top of a heavy-duty, solid tripod.
Avoid using any additional levelling equipment.
Most professional tripods come with a large 3/8'' thread.

Levelling
Adjust the tripod with its legs so that the spirit on the VR Drive Metric is perfectly level.

Turn VR Drive on
Turn on the VR Drive Metric by pressing the "on" button. The camera will now swing into horizontal position pointing forward.

Starting position + light meter
Open the 360° quick lock and turn the VR Drive Metric into its starting position. When doing this, point the light meter into an area with average light intensity. Avoid turning the light meter directly into the sun or into the dark as otherwise the resulting panorama will be either under- or overexposed.

Connect wifi remote control (optional)
Connect a device (smart phone or computer) for remote control by enabling the wifi network (VR Drive) and by opening a browser window with the following IP: 192.168.169.15. It is also possible to connect the VR Drive Metric by ethernet cable to a computer.

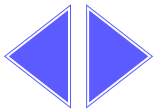


Check camera settings + empty memory card
Make sure that all camera parameters are correctly set according to the check-list provided in section 1.3. Delete the images stored on the memory card to make space for new projects.

2.3 Image capture

The VR Drive Metric is shipped with **8 standard programs:**

- **P1 no HDR ISO 100**
- **P2 no HDR ISO 400**
- **P3 HDR-3 ISO 100**
- **P4 HDR-3 ISO 400**
- **P5 HDR-5 ISO 100**
- **P6 HDR-5 ISO 400**
- **P7 HDR-7 ISO 100**
- **P8 HDR-8 ISO 400**



Select the arrows right/left to change programs

Features of "no HDR" programs

- Releases one image per position
- Provides the images for a standard 8-bit panorama
- Option "ISO 400" for faster capture in lower-light conditions

- 15 positions
- 15 images

36 seconds

For all programs the exposure is read by the **VR Drive Metric light meter** and set via **USB control** on the camera. The USB connection is also used to **release the images**, for **release control** and for **writing capture information** into image metadata.

To guarantee large and consistent depth of field the **aperture (f-stop)** of the camera is always **fixed to f=11.**

The indicated **program durations are estimates** and depend on available light. The above examples are correct for daylight conditions (fast exposure speeds). When shooting indoors image capture may take longer – depending on choice of ISO/ASA.

Capturing the images with low ISO/ASA provides better quality images (less noise). This is a benefit when using the spheres for 3D measurement applications. For 3D measurement projects please always use ISO/ASA=100 (P1, P3, P5 or P7 only).

We can provide special programs for image capture at higher ISOs. However, the spheres created with such high ISO values will not be suitable for 3D applications. Please contact us by email to obtain these programs and follow the instructions for importing the programs provided in this instruction manual.

2.3 Image capture (continued)

Features of HDR programs

- Releases **three images** per position with 2-stop difference in exposure (bracketing) between images
- Enables 32-bit HDR panoramas allowing better visibility of features
- Option “ISO 400” for faster capture in lower-light conditions

• 15 positions
• 45 images

1 minute 10 seconds

- Releases **five images** per position with 2-stop difference in exposure (bracketing) between images
- Enables 32-bit HDR panoramas allowing better visibility of features
- Option “ISO 400” for faster capture in low-light conditions

• 15 positions
• 75 images

1 minute 53 seconds

- Releases **seven images** per position with 2-stop difference in exposure (bracketing) between images
- Enables 32-bit HDR panoramas allowing better visibility of features
- Option “high ISO” for faster capture in low-light conditions (1600 instead of 200)

• 15 positions
• 105 images

2 minutes 30 seconds

Capturing the images with low ISO/ASA provides better quality images (less noise). This is a benefit when using the spheres for 3D measurement applications. For 3D measurement projects please always use ISO/ASA=100 (P1, P3, P5 or P7 only).

We can provide special programs for image capture at higher ISOs. However, the spheres created with such high ISO values will not be suitable for 3D applications. Please contact us by email to obtain these programs and follow the instructions for importing the programs provided in this instruction manual.

2.3 Image capture (continued)

Import additional (custom) programs

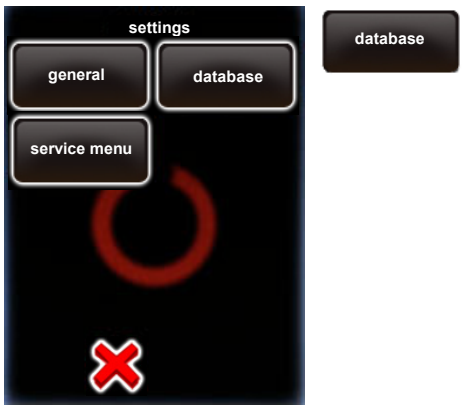
If you require additional programs with different settings, please contact us so we can provide those programs to you. You can then import the programs and add them to the list of available programs:

Important: Due to driver incompatibilities, not all USB data sticks can be used for updating the VR Drive Metric.

For security, we supply a Roundshot USB data stick (capacity: 2 GB) with your VR Drive.

1. Copy the programs received by email on the Roundshot USB key
2. Insert the USB key into the VR Drive Metric USB port
3. Restart the VR Drive and quickly press on the “gear” symbol when the unit restarts:

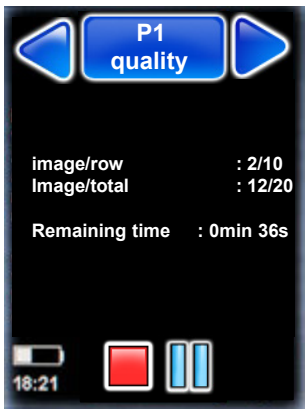
4. Press database/import/append



The new programs are added at the end of the existing programs with new program IDs.

2.3 Image capture (continued)

Select the desired program and press **“start”**

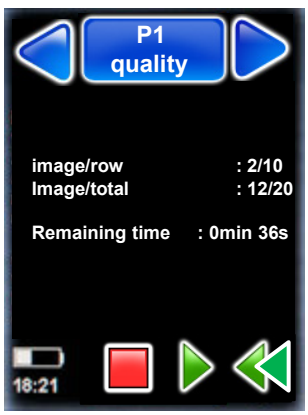


While the VR Drive is running, the touch screen display shows the **progress of image takin**g:

- Image / row – shows the current row and image
- Image / total – counts the completed images vs. total
- Remaining time – gives an estimate of time remaining

Stop the program any time by pressing the **“stop”** button.
The VR Drive will return to its initial position.

Pause the program any time by pressing the **“pause”** button.
The VR Drive will pause at its current position.



Once the program is **paused,** it is possible to

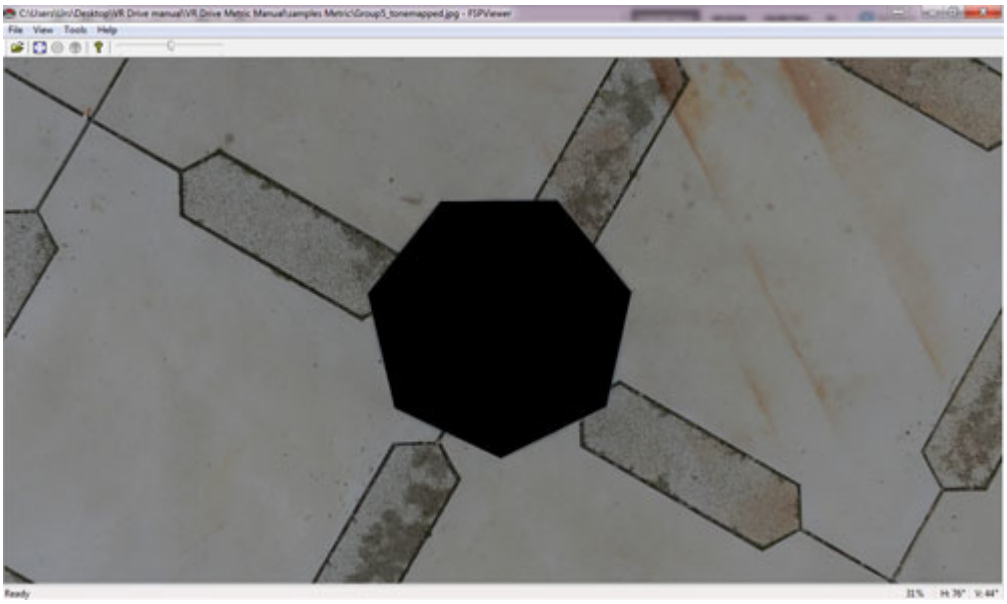
- Completely stop the image sequence by pressing **“stop”**
- Resuming the image sequence by pressing **“start”**
- Returning to any image and by pressing **“back”** and resuming by pressing **“play”**

Pause and resume a program in case there is movement in the scene close to the camera. Moving objects or individuals in the scene will lead to ghosting effects in the HDR mixing. A clean panorama reduces the need for post-production and allows optimum results for 3D measurement.

2.3 Image capture (continued)

The images are distributed in such a way that the area of the tripod will be covered with a black mask in the final panorama.

Not capturing the nadir has the benefit of speed: less images need to be captured, making the capture process more efficient.



2.4 Image transfer

Remove the memory card from the camera.

Create a new folder called “input” on your computer, **introduce the memory card in a card reader and start transferring the images.**

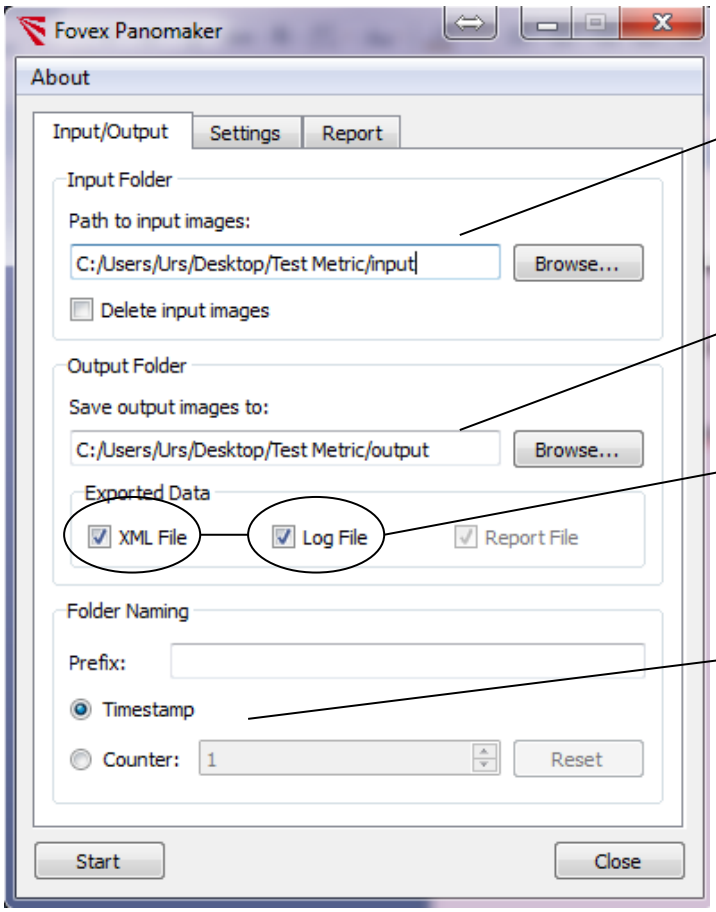
Important:
Do not transfer the images using the wifi transfer feature of the camera. The camera-internal wifi relies on USB and may interfere with the VR Drive Metric USB control.

2.5 Stitching with FOVEX PanoMaker

Start the FOVEX PanoMaker software.

The software is structured along **3 tabs**:
- Input/Output
- Settings
- Report

Input/Output tab



As a first step, select the **input folder** from where PanoMaker will load the images for the stitching.

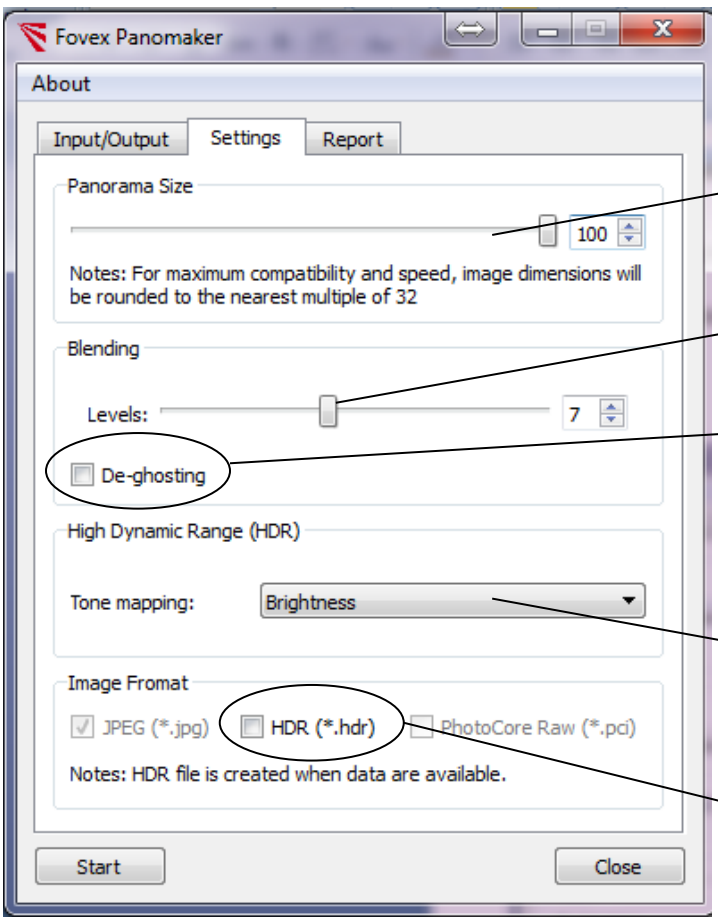
Then define the **output folder** for the stitched panoramas.

Activate or deactivate the **xml file** and/or **log file.** The xml file is only required when the images should also be stitched in third party stitching software.

Define how the folders and output images should be **named:**
- Timestamp: adds the current date/time as a file name
- Counter: adds consecutive numbering to the output files

2.5 Stitching with FOVEX PanoMaker (continued)

Settings tab



Select the output size of the panorama in percent.

Set the level of blending to be applied between images. A value of "7" normally provides best results.

Activate/deactivate de-ghosting. This feature eliminates movement artefacts in HDR images. It will slow down the rendering process.

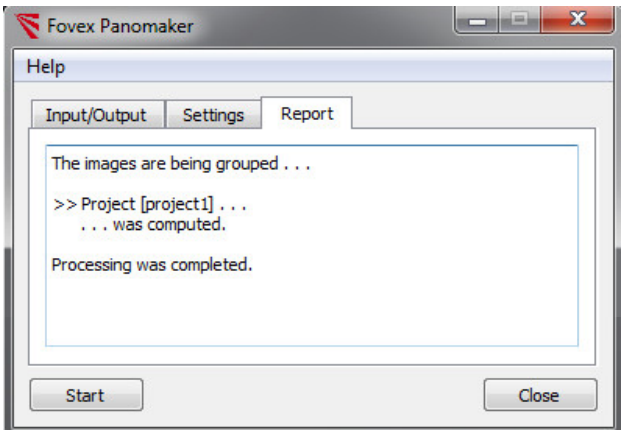
Choose the type of tone-mapping to be performed for converting 32-bit HDR images into tonemapped 8-bit images.

Activate HDR output for images captured with an HDR program (P2 and P3). This HDR output is only created if a series of bracketed images is available.

2.5 Stitching with FOVEX PanoMaker (continued)

Report tab

Press **“start”** to launch the processing.



As a first step all images are grouped into projects and the corresponding xml data and log file data is created.

The software confirms the successful stitching with “Project was computed… Processing was completed.”

Once the processing is successfully completed, PanoMaker saves the stitched panoramas and subfolders in the **output folder**. This folder contains the following data:

Contents of **input folder**:

Original jpg images

Contents of **output folder**:

Stitched panoramas
- 1 or several jpeg images (depending on level of bracketing)
- 32-bit image (optional, with bracketing)
- Tone-mapped 8-bit jpeg (with bracketing)

Subfolders with
- grouped jpeg images
- log file
- xml file
- report file

Most error messages are related to insufficient computation power of the video/graphics card. Please refer to section “Setting up the computer and activating FOVEX PanoMaker” for minimum computer processing requirements.

2.5 Stitching with FOVEX PanoMaker (continued)

Log file

The log file checks the consistency of grouped projects. It documents received images vs. missed images while indicating their distribution in the grid.

```
[Complete]

Panorama internal tag: 141119132424
Camera name: Canon EOS 6D

Number of positions: 15
Number of exposures: 3

Total received images: 45
Total missed images  : 0

---
O: Received images
X: Missed images

 1  OOO
 2  OOO
 3  OOO
 4  OOO
 5  OOO
 6  OOO
 7  OOO
 8  OOO
 9  OOO
10  OOO
11  OOO
12  OOO
13  OOO
14  OOO
15  OOO
---
---
 1  IMG_4217 IMG_4218 IMG_4219
 2  IMG_4220 IMG_4221 IMG_4222
 3  IMG_4223 IMG_4224 IMG_4225
 4  IMG_4226 IMG_4227 IMG_4228
 5  IMG_4229 IMG_4230 IMG_4231
 6  IMG_4232 IMG_4233 IMG_4234
 7  IMG_4235 IMG_4236 IMG_4237
 8  IMG_4238 IMG_4239 IMG_4240
 9  IMG_4241 IMG_4242 IMG_4243
10  IMG_4244 IMG_4245 IMG_4246
11  IMG_4247 IMG_4248 IMG_4249
12  IMG_4250 IMG_4251 IMG_4252
13  IMG_4253 IMG_4254 IMG_4255
14  IMG_4256 IMG_4257 IMG_4258
15  IMG_4259 IMG_4260 IMG_4261
---
```

2.5 Stitching with FOVEX PanoMaker (continued)

Report file

With the report file the user can check the following:
- Time for stitching
- Quality of stitching (RMS – root mean square of residuals- in pixels)
- Possible reasons for unsuccessful stitching

A typical RMS value lies between 0.2 and 0.5 pixels, indicating good quality stitching (sub-pixel accuracy).

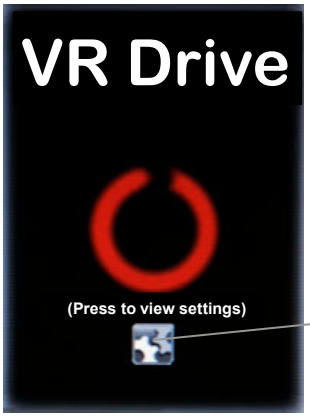
The main reason for unsuccessful stitching can be traced back to in insufficient features, for examples in regions without texture such as blue skies or blank walls.

```
>> Project [Group_1] . . .

Feature extraction & matching: 49.353 seconds.

Bundle adjustment: images: 15, tie points: 19725, RMSR x(col): 0.330, y(row): 0.333 pixel.
-----------------------------------------
Total stitching time: 50.418 seconds.

Creating panorama from exposure 1 of 3...

Loading images...
Panorama size is 9856x19712 (194 megapixels)

Load all input images into memory...  2063.12 ms
Find segment regions 57.003 ms
Create low-resolution maps...  1293.07 ms
Ghost removal...
  Create diffmaps on GPU 337.019 ms
  ExtractRegions 70.004 ms
  Create graph 174.01 ms
  Calculate ROD weights 79.004 ms
  Update masks...  7 ms
  668.038 ms
Creating composited image...
  Create low-res composite...  2848.16 ms
  Use low-res composite to blend full resolution...  1757.1 ms
  5199.3 ms


Creating panorama from exposure 2 of 3...

Creating panorama from exposure 3 of 3...

-------------------------------------

Creating HDR...
Saving hdr...
Applying tone map...
Saving tone mapped JPEG...
-----------------------------------------
Total Rendering time: 76.114 seconds.
```

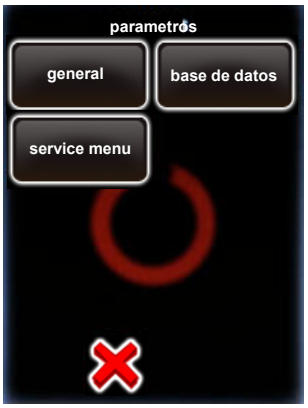
3. Maintenance & Warranty

3.1 Accessing the VR Drive Metric settings menu

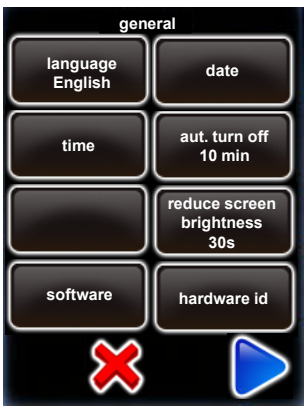
Restart the VR Drive and quickly press on the “gear” symbol when the unit restarts:



press database/import/append



The following general settings are available:



3. Settings menu

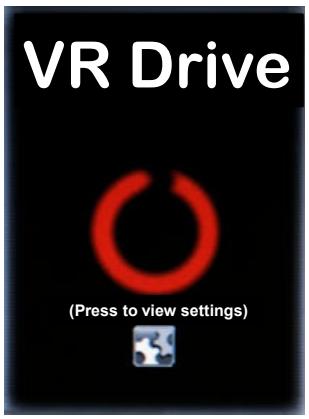
3.1 Accessing the VR Drive Metric settings menu

In settings/general it is possible to import or export Metric programs:

To import or export programs, please use the roundshot USB key provided with the VR Drive Metric.

The “service menu” is reserved for factory service only.

Restart the VR Drive Metric to exit the settings menu.



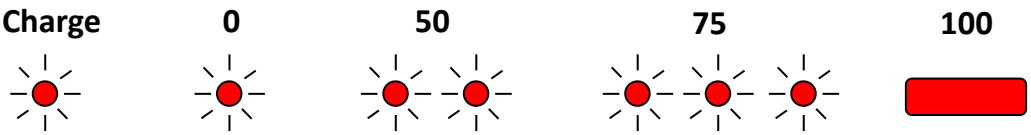
4. Maintenance & Warranty

4.1 Recharging the VR Drive

The VR Drive and the connected camera are both powered by **2 rechargeable Li-Ion batteries**. The battery status is indicated permanently on the display. 

Open the **battery case lock** and **pull the battery case out of the VR Drive Metric hardware**. Place the battery in the **universal speed charger** supplied with the VR Drive Metric. Connect the charger to a power source (110-220V).

The normal recharge time is **2 hours per battery** (red blinking LED). As soon as the charging process is complete, the LED changes to constant red.



4.2 Transport & storage

When transporting the VR Drive Metric from one location to the next, turn it off and place it in the explorer case. When turning the unit off, the camera will swing into its parking position looking straight up (+90°).

If the VR Drive Metric is not used for a longer period of time, store it in the explorer case and keep it dry and cool.

4.3 International Warranty

Your Roundshot VR Drive Metric is covered by the international 2-year Seitz warranty. The warranty is linked to the hardware ID (serial number) and is stored in our database.

If there is any malfunction or defect of the equipment we will repair the VR Drive Metric at no cost. The warranty extends to technical defaults that are not caused by careless use, damage by transportation or other defaults not related to the manufacturing of the equipment.

We invite you to register your product with us. Registering your product has several advantages:

- Access to the latest VR Drive Metric software downloads and instruction manuals
- Email software update alerts + release notes
- Direct technical assistance in case of a problem

Registering your product is a simple 2-step process:

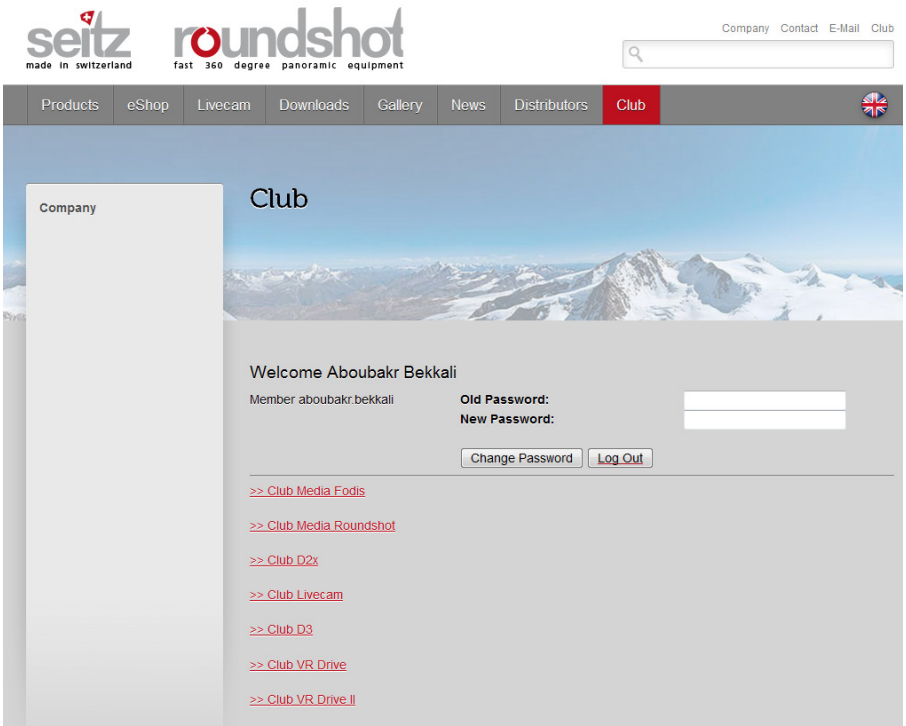
1. Send us an email to club@roundshot.com indicating the hardware ID of your VR Drive Metric as well as where you bought the equipment.

2. We will activate your membership and confirm your “Club” registration by email.

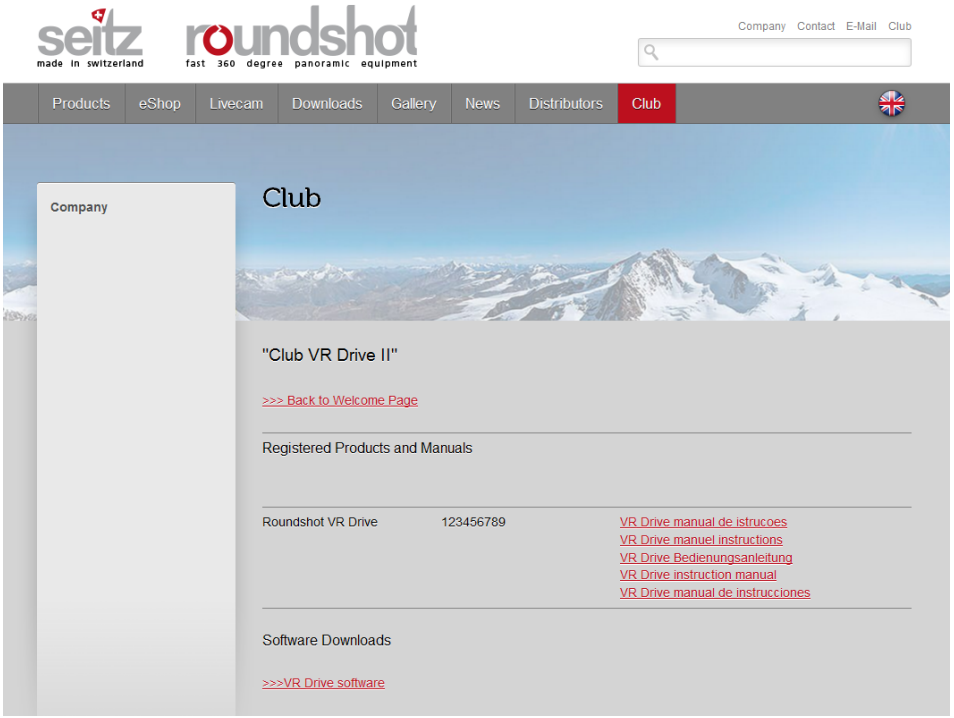
4.4 Software update VR Drive Metric: “Club VR Drive Metric”

Connect to the “Club” website at www.roundshot.com.

Please change your password on your first visit.



The **“Club VR Drive Metric”** contains your registered product(s), the **latest instruction manuals** as well as the **up-to-date VR Drive Metric software for download**.

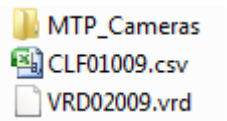


4.4 Software update VR Drive Metric: “Club VR Drive Metric” (continued)

Download the latest VR Drive software from the “Club VR Drive Metric” website.

Important: unzip the zipped folder.

The software download consists of one directory and two files:



The directory **MTP_Cameras** includes the parameters required for USB communication between VR Drive Metric and camera.

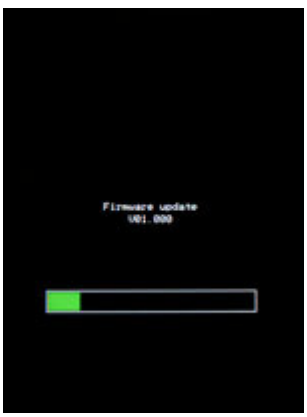
The .vrd file contains the **VR Drive Metric software**. This software will also be updated to include new features and enhanced usability.

Load the directory and the two files on the USB data stick provided with the VR Drive Metric.

Important: Due to driver incompatibilities, not all USB data sticks can be used for updating the VR Drive Metric.

For security, we supply a Roundshot USB data stick (capacity: 2 GB) with your VR Drive.

We recommend that you use the original (and tested) Roundshot USB stick and keep it with your VR Drive Metric at all times.



Turn the VR Drive Metric off by pressing the on/off button during several seconds. The screen will go black.

Insert the Roundshot USB key into the USB drive. 

Start up the VR Drive Metric by pressing the on/off button during several seconds until the green Firmware Update progress bar appears.

4.4 Software update VR Drive Metric: “Club VR Drive Metric” (continued)

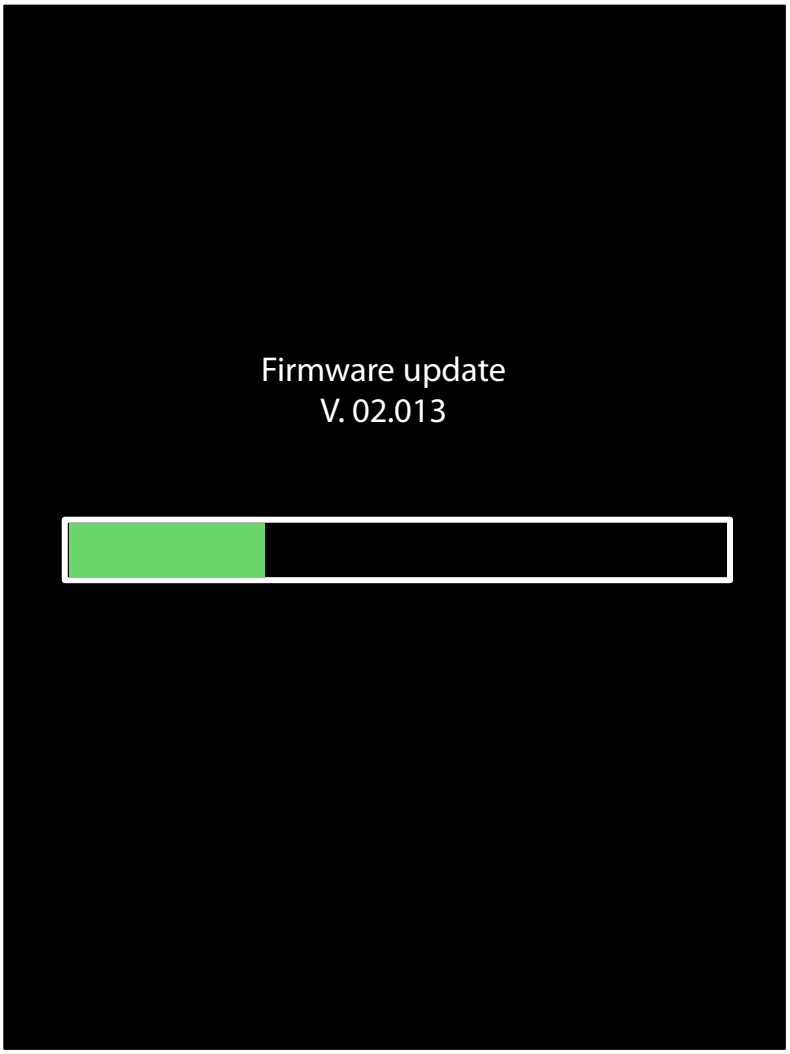
On/off button

Press several seconds

Keep the VR Drive Metric on/off button **pressed.**

Keep it pressed.

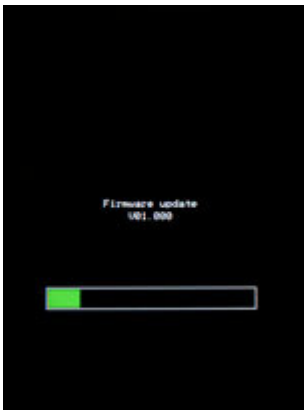
Keep it pressed until the green Firmware update progress bar is displayed:



4.4 Software update VR Drive Metric: “Club VR Drive Metric” (continued)

The VR Drive Metric will now load the new software from the USB key.

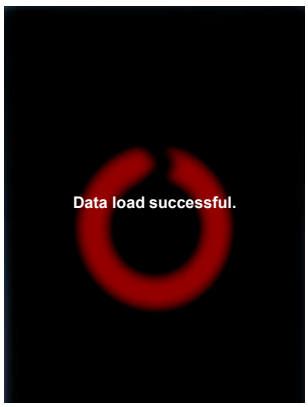
This is confirmed with the status: **“Firmware update / v xx.xxx”.**

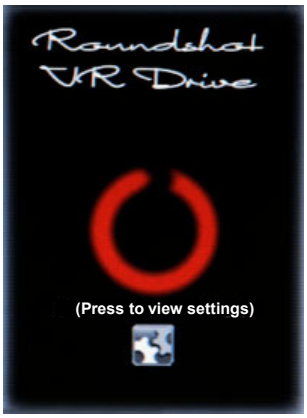


- Please wait until the camera database is fully loaded before unplugging the USB key
- Removing the USB before may lead to an incompatibility between VR Drive Metric software and camera database

Once the software update is complete, the VR Drive Metric will also **update the camera database** if the update file is also loaded on the USB key.

This process is confirmed with the message **“camera data are being loaded”.**





As soon as the camera database upload is finished, the VR Drive Metric will go into normal **start-up mode**.

This is confirmed with the **start-up screen**.

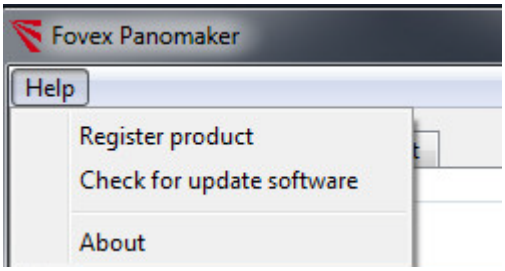
The software updates are now complete.

All previous programs and settings remain intact.

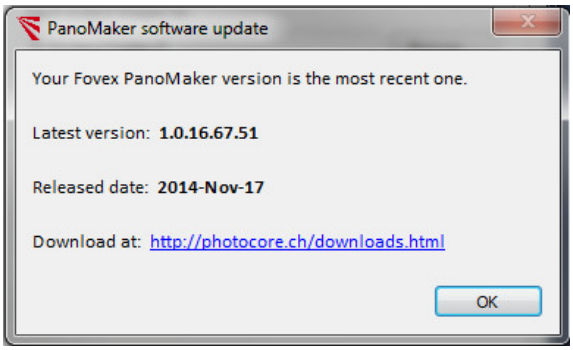
It is now safe to remove the USB stick.

4.5 Software update FOVEX PanoMaker: “Club FOVEX”

Updating FOVEX PanoMaker



Go to **“Help / Check for software update”**



The software connects with the FOVEX server and checks for the last available software version.

Download and install the software update by following the link.

The VR Drive Metric purchase comes with a membership to the “FOVEX Club”. Depending on the duration and level of the membership, it entitles to software updates within versions or to new versions.

4.6 Return of equipment / recycling

Your Roundshot product and the accessories are produced from highest quality materials and parts and will provide you continued pleasure. Should you nevertheless want to dispose of your Roundshot equipment one day, it should not be placed in normal waste. The correct disposal of your old equipment is a contribution to preventing possible negative causes for the environment.

For optimum recycling we kindly ask you to return us your camera (with accessories) to the following address:

Seitz Phototechnik AG
Environment & Recycling Department
Hauptstr. 14
8512 Lustdorf / Switzerland

swico *Recycling-Garantie*
Garantie de recyclage

This return shipment to the manufacturer is **free of charge**. The service is available **worldwide**.

Please contact us to arrange the return shipment and prepare the materials for the delivery. Your camera and accessories will be picked up by our courier service and will be recycled in our factory.

We wish you continued success and fun with your Roundshot VR Drive Metric!

5. Technical Data

Roundshot VR Drive Metric

Camera compatibility	Canon EOS 6D
Lens	Canon EF 20mm f/2.8 USM
Min. time for image capture	without bracketing (15 images): 36 seconds with HDR bracketing (3x15 images): 1 minute 10 seconds
Min. time for stitching	without bracketing (15 images): 1 minutes 15 seconds with HDR bracketing (3x15 images): 2 minutes 7 seconds
Exposure control	automatic by integrated VR Drive light meter + VR Drive Metric capture software
Wifi remote control	built in wifi router for transfer of VR Drive screen contents to smart phones or computer devices
Image transfer	images stored in flash card in camera
Weight	3.7 kg (VR Drive Metric with Canon EOS 6D, lens and batteries)
Dimensions	width: 205 mm, height: 270 mm, depth: 160 mm
Power supply	2x battery pack LP-E6 for both VR Drive Metric and Canon camera both connected inside VR Drive Metric to supply camera and VR Drive
Battery autonomy	several hours
Battery charger	battery charger LCE-6E
Modes	quality, HDR
Language support	English, German, French, Italian, Spanish, Portuguese, Chinese, Japanese, Russian
Software features	simplified (locked) software interface for easy control can be unlocked to access full VR Drive software interface with identical features as VR Drive base model

Technical changes reserved
March 2015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VR Drive Metric
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Impressum

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March 2015

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fast 360 degree panoramic equipment

FOVEX