

INTRODUCTION

Easy4Pro is the new software included in the Studio4 Pro and Pro 3D versions.

The topics covered in this guide are:

1. computer requirements to install Easy4Pro
2. installation of Easy4Pro software
3. installation of Easy4Pro software updates
4. Easy4Pro software instructions



Easy4Pro software is always improving. Thus, once available, every update is uploaded on our website <https://www.fourpro.com/en/easy4pro-2/>.

We strongly suggest checking periodically the link above and downloading the software's latest version available.

You can also register your company on <https://www.fourpro.com/en/restricted-area/> to watch how to assemble the photo studio and learn how to use it with our software.

1. COMPUTER REQUIREMENTS TO INSTALL EASY4PRO

The Easy4Pro software is designed for Full HD computers with Windows 10/11 operating system.

If you have a Mac you need to purchase an emulator or a virtual machine, such as Parallel, which allows you to use the Windows operating system on your Mac when needed.

For a correct display of all software features, a Full HD screen is needed (resolution 1920X1080).

To check the resolution of your computer you need to:

1. Click on the desktop with the right mouse button
2. Click on Display Settings
3. Check that you have the settings as on the photo

Ridimensionamento e layout

Modifica la dimensione di testo, app e altri elementi

100%

Impostazioni ridimensionamento avanzate

Risoluzione dello schermo

1920 x 1080 (scelta consigliata)

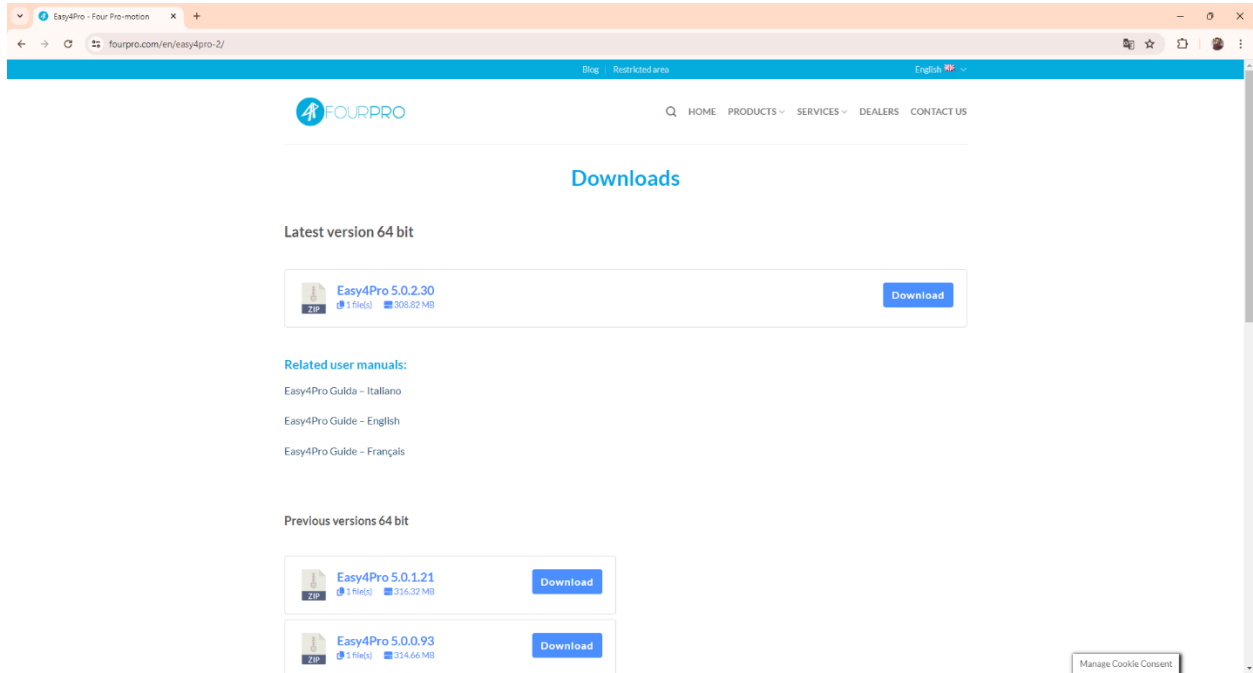
Orientamento dello schermo

Orizzontale

2. INSTALLATION OF EASY4PRO SOFTWARE

STEP 1:

Click on the link sent by email and click on “Download” next to the latest version available.



STEP 2:

Open the folder “Download” on the computer, click with the right button of your mouse, select “Extract everything” and click on “Extract”.

Open the extracted folder, then open the file “setup.exe”.

STEP 3:

Follow these steps:

- "Do you want to allow this app to make changes to your device?" → click "Yes"
- Select the language and click "Yes"
- Accept the license agreement and click "Next"
- "Select Installation Folder" → click "Next"
- Tick "Create an icon on the desktop" → click "Next"
- "Ready for installation?" → click "Install"

At the end of the installation, the first time you open the software, you have to write the license code found in the email we sent you and that will be valid for all future updates.

3. INSTALLATION OF EASY4PRO SOFTWARE UPDATES

Every time a new version of the software Easy4Pro is available on our page <https://www.fourpro.com/en/easy4pro-2/>, we suggest proceeding with the update through the following steps. To get the latest update, it is important to uninstall the latest version of Easy4Pro from your computer, and then proceed with the installation of the updated software.

STEP 1:

Open the Control Panel and click on “Software” to uninstall the last version of Easy4Pro.

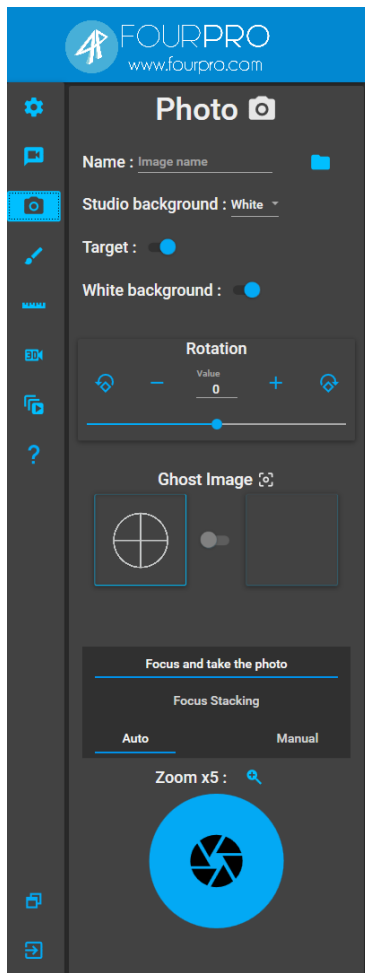
STEP 2:

Click on “Easy4Pro” to uninstall it and click on “Yes” to complete the uninstallation.

Once the old Easy4Pro version has been uninstalled from your computer, follow again the guide to install the new version (point 2. INSTALLATION OF EASY4PRO SOFTWARE).

4. EASY4PRO SOFTWARE INSTRUCTIONS

4.0 SOFTWARE ICONS



- 1: SETTINGS
- 2: VIDEOCALL TO SHOW THE PRODUCTS AND THE SHOP
- 3: PHOTOGRAPHY - CAMERA CONTROL
- 4: PHOTOGRAPHY - EDITOR
- 5: COORDINATE MEASUREMENT SYSTEM
- 6: VIDEO AND 3D ANIMATION RECORDING – ROBOTIC MOVEMENT AND CAMERA CONTROL
- 7: VIDEO AND 3D ANIMATION - EDITOR
- 8: software version



- 9: minimize the software
- 10: close the software

If you are using a non-Canon camera or a Canon model that is not compatible with the software, you can skip the explanation:

1. SETTINGS: INSTRUCTIONS FOR SETTING UP THE CAMERA AND STUDIO
2. PHOTOGRAPHY - CAMERA CONTROL.

With a camera that cannot be controlled by the software, you need to take the photo using the camera itself, transfer it to the computer via the SD card and open the photo from the Editor section .

4.1 SETTINGS: HOW TO SET UP THE CAMERA AND STUDIO

The photographic system is compatible with any camera model, thanks to the different adapters.

However, we normally suggest using Canon-compatible cameras that can be remotely controlled by the software and that can communicate in real-time to create in a few seconds the photo on a white background. A list of compatible cameras is available [HERE](#) , but if your camera is not on the list, please write us an email with the name of your camera model and lens.

IN CASE YOU USE A CANON COMPATIBLE CAMERA:

The camera must be set to Manual (M) and the lens must be in AF (Autofocus).

ATTENTION: lenses are often blocked for transport, so before assembling the camera and the lens on the rotating arm structure we suggest checking that you have the following settings on the zoom:

- AF
- STABILIZER: ON
- LOCK: OFF

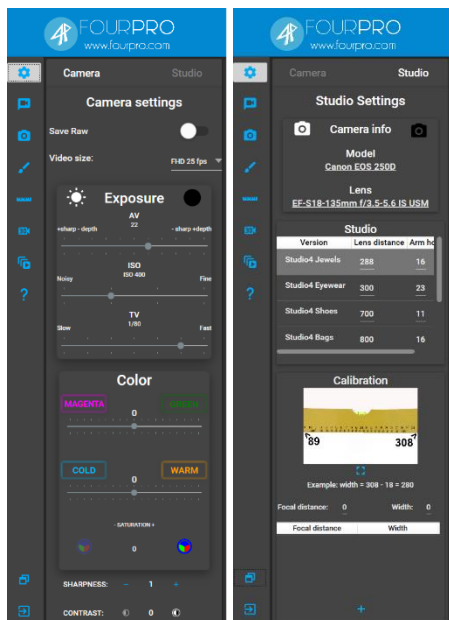
Once the camera and lens have been applied to the rotating arm structure following our tutorial videos available from the Restricted Area of our website, connect the USB cable to the computer to connect the two devices.

IMPORTANT: the camera must not be connected via Bluetooth or Wi-Fi, so both the Bluetooth and the Wi-Fi settings of the camera must be disabled from the camera menu.

When the USB cable is connected and the camera is turned on, a message should appear at the bottom right of your computer with the camera model connected. Once you have received the connection message, you can open Easy4Pro using the icon on the desktop and watch the camera preview on the software.

Click on the first button at the top with the setting icon to choose the camera and studio settings .

Here there are two sections of setting: Camera and Studio.



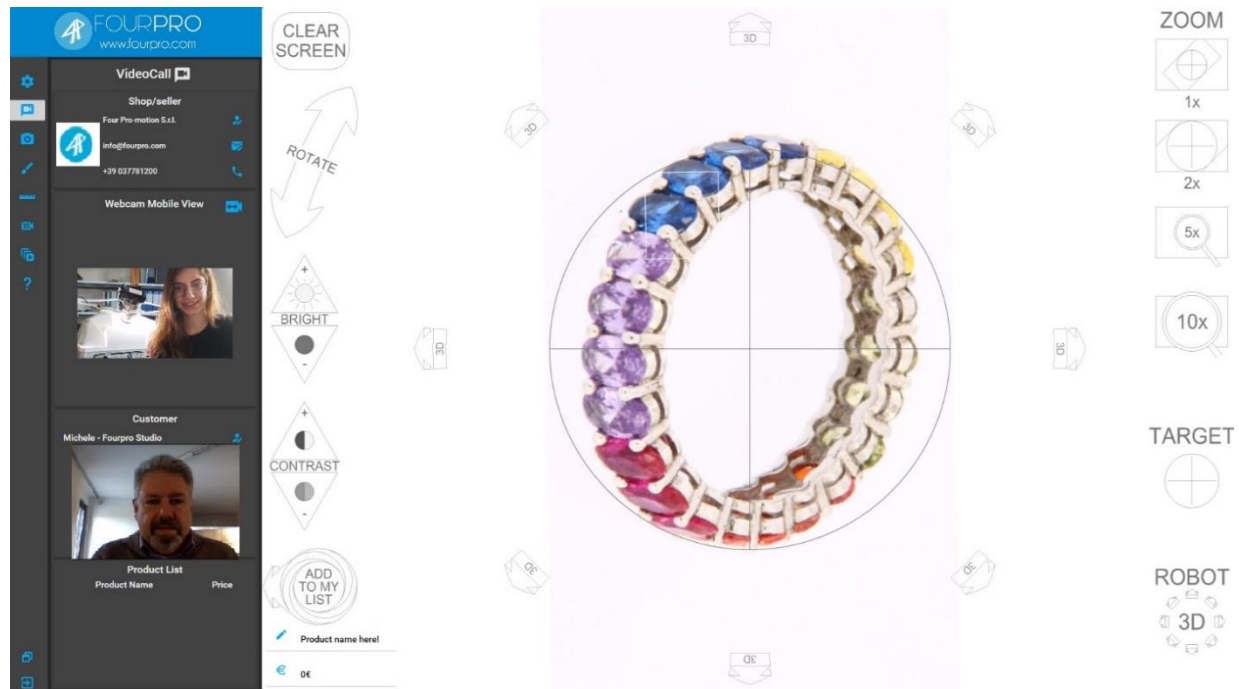
In the Camera section, you can change the camera settings:

- Activate the function to save a copy of the picture in Raw
- Set the video size
- Change the camera exposure, we advise:
AV 22, ISO 400, TV from 1/30 to 1/60 for a light grey
- Change some parameters of the camera settings to modify the picture's colours through two grids, saturation, sharpness and contrast, to meet your preference.

ATTENTION: for the camera settings it is needed that the camera is turned on and that it is communicating with the software; the camera must not be disconnected from the computer or be on standby.

In the Studio section, you can read the camera and zoom model detected by the software, and select the kind of studio (Jewels, Eyewear, Shoes, Bags and You) and calibrate the 1:1 scale.

4.2 VIDEOCALL TO SHOW THE PRODUCTS AND THE SHOP



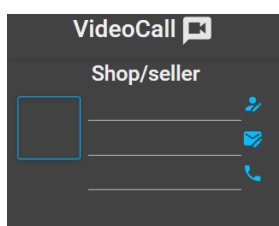
The Videocall page is dedicated to jewelry remote selling, as it allows you to show your products through photo shooting within the lightbox. Further to this, you can also show your physical shop and introduce yourself through the webcam of your computer or your smartphone, thanks to the App Iriun.

The two frames (product and shop/seller) are shown on the big screen on the right of the software and on the smaller screen on the left, and they are interchangeable. Thanks to the possibility of speaking with the retailer and showing the shop and the jewelry through cameras controlled by the software, the customer will be able to choose the products remotely and visit the physical shop. Thanks to the screen sharing, the seller can also guide the client through the e-commerce.

In the top left menu, it is possible to show and set the company logo, the name of the company (and of the seller), the email and the telephone number with the smartphone webcam underneath to show the seller, the shop, shop windows, displays etc.

In the "Customer" section the seller writes the customer's name and moves the customer's webcam window obtained from the videoconferencing program (e.g., Skype, Zoom, Meet). Introducing the customer's name is important, to create the list of products chosen by the customer with his name, which will then be automatically saved on your computer and can be sent to the customer with the payment link.

In the last section "Product list" you will create the list of products preferred by the customer, entered using the "Add to my list" button, in which you can read the models and prices of the products that the customer is interested in.



The first thing to do is to set up your company's information:

1. click on the square on the left to insert the image of the company logo
2. click on the first icon to enter the name of the company and/or seller
3. click on the next icons to enter the company email and telephone number (useful in case of audio problems during the videoconference).

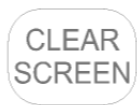
To have your smartphone as a mobile webcam you need to install the Iriun program: <https://iriun.com/> on your PC. Once the program is installed on the computer with Easy4Pro, install the "Iriun" or "Iriun Pro" App on the smartphone that the vendor will use to show himself and move around the shop via video call. The free "Iriun" App is on Google Play or Apple Store, upgrade to Pro is recommended.

ATTENTION: Easy4Pro connects with the first smartphone detected with Iriun on the same Wi-Fi as the computer, so if you install the "Iriun" App on multiple smartphones, it is important to have only one smartphone with the App switched on and connected to the same Wi-Fi of the computer.

Under your video camera you can indicate the name of the customer you will make the video call with and in the space under the name you can move the small window with the interlocutor's video camera which is normally created automatically by the program used to start the video call (e.g., Skype).

As soon as the left menu has been set and the video call with the customer or partner has started with any video calling program (e.g., Skype, Zoom, Google Meet or others), click on the screen sharing function and open Easy4Pro in the screen dedicated to Videocall, and place the view of the customer's webcam under his name.

SOFTWARE FEATURES IN THE CAMERA PREVIEW OF THE VIDEOCALL



CLEAR SCREEN: it makes the software features transparent, leaving them always active. In this way, an expert user could use them without the function icons being visible and disturbing the customer's view of the product.

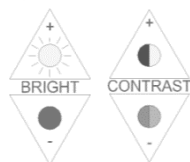
ZOOM



ZOOM 1x – 2x – 5x – 10x: it allows you to enlarge the camera preview as indicated on the icon.



ROTATE: it allows you to rotate the preview of the camera to make the product appear as worn without the use of glues or supports.

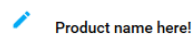


BRIGHT: it makes the camera preview more or less bright.

CONTRAST: to change the contrast of the camera preview.



ADD TO MY LIST: it allows you to add in the folder "c: / Pictures / productlist" the screenshot of the screen with the product the customer is interested in *



PRODUCT NAME HERE!: to indicate the name of the product you are showing

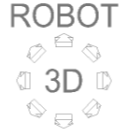


€: with the price of the product, which can be modified if it is negotiated or discounted.

TARGET



TARGET: it allows you to show or not the viewfinder for centering the object.



ROBOT 3D: it activates the robotic movements if the motors card is available, that is, if you have a Studio4 in the Pro 3D version. The movements can be made using the arrows around the camera preview on the software.

* The software in the Videocall section saves the screenshots of the products the customer is interested in. To do this, it manages a folder with path "c: / Pictures / productlist" in which a subfolder related to each video call is automatically created, identified by the customer's name (taken from the field: "Your customer name here!") followed by year, month and the day of the video call.

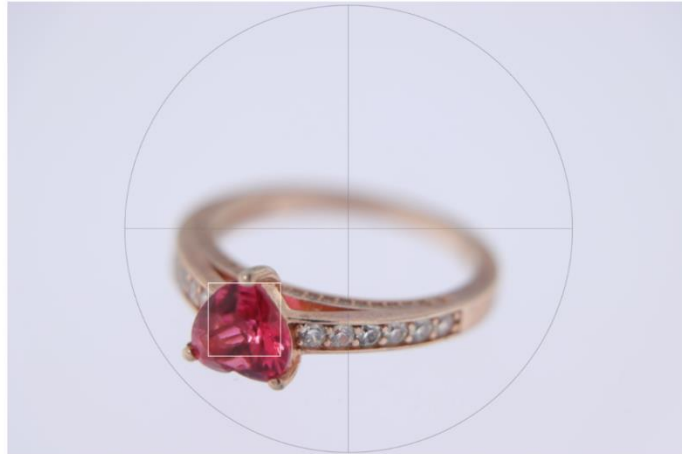
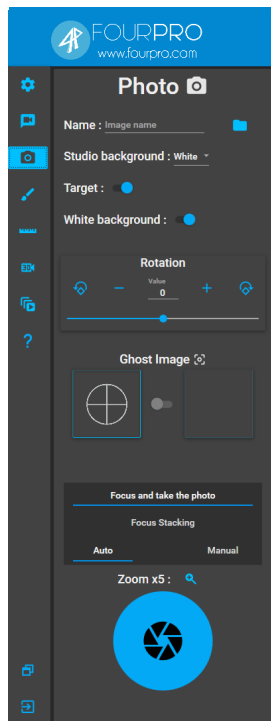
Within this folder, the screenshots of the products the customer is interested in and of the products he wants to be added to his list will be automatically saved. These files are identified with the product code/name (taken from the field: "Product name here!").

In this way the seller has all the information about the products in which the customer says he is interested and will be able, at the end of the video call, to prepare the order proposal with photos of the selected products and the link to the payment system with the total amount.

In addition, saving product screenshots from previous video calls allows you to perform useful searches such as:

- which products a specific customer was interested in in the past, sorting the productlist folder by folder name (i.e., by customer names) and opening each folder that shows, through the file name, the products the customer was interested in during the video call;
- which customers have used the videoconference recently, sorting the productlist folder by date;
- how often a product is chosen by the customers (search for files using product code/name).

4.3 PHOTOGRAPHY - CAMERA CONTROL



Once the camera has been set up, it is possible to shoot the photo by the Photo menu.

Before proceeding with the shot, you should decide on the following settings:

- **Name:** for writing the file name and choosing the folder where to save the original photo
- **Studio Background:** White / Gray / Black
- **White Background:** OFF / ON
- **Target:** OFF / ON
- **Focus Time:** -/+ sec
- **Rotation**
- **Ghost image:** Target / Ghost Image
- **Choose Action:** Focus and take the picture / Focus Stacking (Auto/Manual)
- **Zoom:** Max / Min

In “**Studio Background**” it is possible to indicate the color of the lightbox background. A folder with different background colors is supplied with the Studio4:

- translucent, for a perfect shadowless white background (R: 255, G: 255, B: 255)
- white, to have a white/light grey background with the shadow effect under the product
- silver, to obtain the mirror effect (more or less clear according to the nr. of translucent papers on it)
- black, to have the photo on a black background.

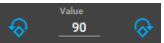
IMPORTANT: the only background that allows you to have a shadowless photo or without any reflection under the product is the translucent background, as it allows the light to filter from below and remove shadows and reflections. The translucent background is, in fact, the most used background and it is perfect for taking photos for your website, online shop and catalogs.

If you want to use a different background rather than the translucent one, it is important to change the "Studio Background" from "White" to "Gray" or "Black". In this way, the automatic whitening function will be disabled to apply the correct camera settings.

As you can see from the camera preview, the photo is always with a light grey background, then the software turns the photo to a perfectly white background thanks to the "**White Background**" function. The "White Background" function can be disabled to receive the photo with a natural background as shown in the preview.

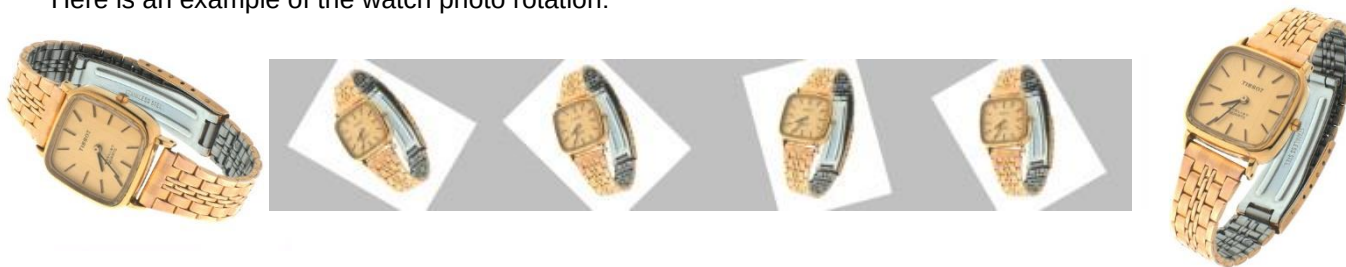
The "**Target**" allows you to show or not the viewfinder for centering the subject. Full-screen image preview allows you to work comfortably and to show products to customers remotely. In case you want to use the software to show the products remotely to your customers, we suggest removing the "Target" before starting the Skype videocall and sharing the screen.

Through the "**Rotation**" function it is possible to change the rotation of the product through a double choice:

- rotation at predetermined angles 
- rotation by the cursor 

The rotation function is very useful for jewelry photography to make the product look as worn on the body, but it can also be useful for eyewear photography when you want to create the position as worn: placing the glasses on the lightbox base upside down and rotating the preview.

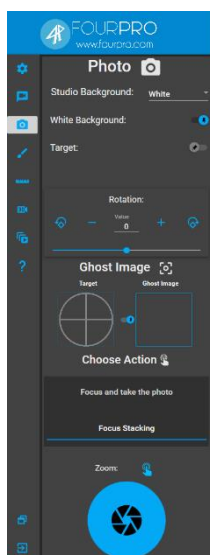
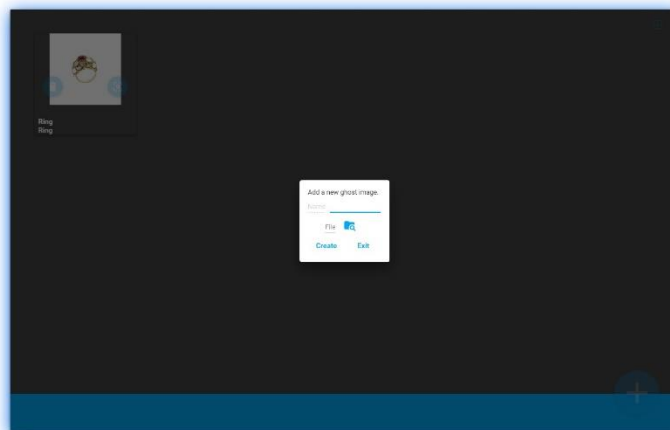
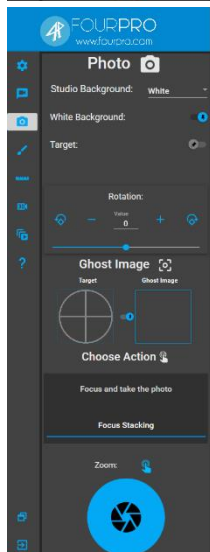
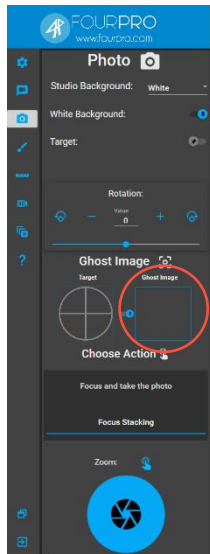
Here is an example of the watch photo rotation:



Easy4Pro offers several features to improve and standardize shots:

- **Target**: it shows a semi-transparent product-centering crosshair that allows you to align the vertical
- **Ghost Image**: it allows to apply the same position of a jewel in a picture compared to a sample picture chosen previously as a reference. To repeat the position of the selected reference image, the software recreates the margins of the product of the reference image, overlapping them on the shooting preview. By selecting "Ghost image" and clicking on the underlying frame, you can pick any picture of the archive taken with the photographic system with the latest version of the software, saved with the Multisave function, hence available in the "Origin" format. The reference picture selected will be overlapped as semi-transparent on the preview. This will allow you to take a picture with the same position thanks to the outlines of the reference picture. Moreover, before saving (clicking on Frame), with this function a cutting frame is automatically applied just like the one used in the reference image.

GHOST IMAGE PROCESS



At the first start of the software there are no Ghost Images because they are a very subjective choice.

The steps to create a new Ghost Image are:

1. activate the "Ghost Image" and click on the square under "Ghost Image"
2. click on the icon  located in the tab at the bottom right
3. write the name of the Ghost Image and choose the file by clicking on the folder icon, then click on "Create".

To use a Ghost Image:

4. activate the "Ghost Image" and click on the square under "Ghost Image"
5. choose the Ghost Image previously inserted and click 
6. at this point the edges of the selected Ghost Image will appear on the preview and you can use them to recreate the position of the chosen photo
7. then proceed with taking the photo using the blue pushbutton.

Once you have chosen the settings explained above, you can proceed with the shot by choosing:

- **"Focus and take the photo"**: shot with only one point of focus (a faster process)
- **"Focus Stacking"**: shot with multiple focus points that allows you to have all the product very sharp (slower process, needed when the photographic subject is small and deep such as rings)

"FOCUS AND TAKE THE PHOTO" PROCESS:

The process of taking the photo with the **"Focus and take the photo"** function requires two steps:

1. **SELECT THE FOCUS POINT**: by clicking on the camera preview that you see on the right of the software; the focus square turns green if the camera can focus, or it turns red or grey if the camera cannot focus.
2. **TAKE THE PHOTO**: if the square turns green you can take the photo using the button  located at the bottom left of the software.

ATTENTION: if you fail to take the picture, check the below:

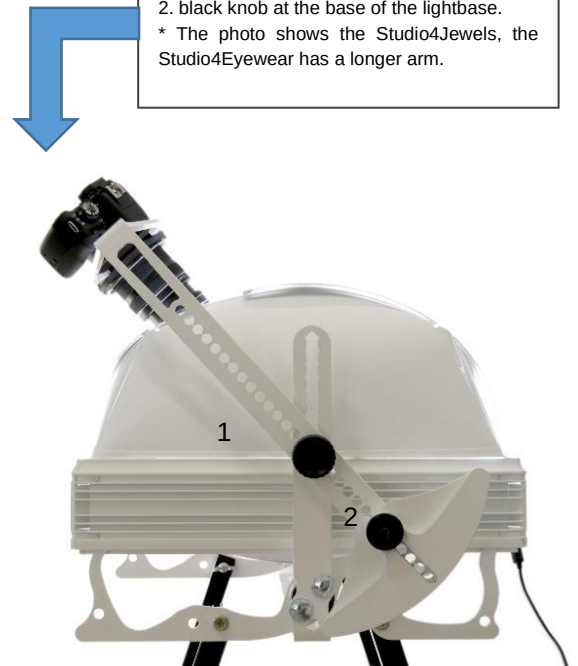
1. The zoom must be set on AF (autofocus) and not MF (manual focus). To check this setting, remove the camera from the rotating arm as the selector switcher (AF/MF) is at the base of the zoom
2. The photographic system must be assembled properly, as in the photo
3. (if you are using Studio4 Jewels Pro and Pro 3D) the macro lens must be screwed in front of the zoom Canon 18-135mm, while with our Studio4 Eyewear the macro lens is not needed, as the zoom Canon 18-55mm must be used

Studio4Jewels in Pro and Pro 3D versions:

1. arm mounted on the sixteenth hole
2. black knob at the base of the lightbase.

Studio4Eyewear in Pro / Pro 3D versions:

1. arm mounted at the 28th hole
 2. black knob at the base of the lightbase.
- * The photo shows the Studio4Jewels, the Studio4Eyewear has a longer arm.



FOCUS STACKING PROCESS:

To get a completely sharp product photo you need to use the Focus Stacking feature, which allows you to choose more focus points to have in a single photo of the complete product sharp.

Focus Stacking can be done in two modalities:

- **AUTOMATIC – completely done using Easy4Pro:**

1. click on "Focus Stacking" → Auto
2. click on the image preview from the software to choose the points you want to focus on. All points must be on the product and the focus square has to become green (to remove a previously chosen point click on the blue circle)
3. click on the icon to shoot the photo by Easy4Pro and wait for the automatic process that allows you to receive the final photo on the Editor part of the software.

IMPORTANT:

We recommend using the automatic process only with a good memory and performance computer, and a new generation camera (not older models).

If the focus points do not change from the camera preview during the focus stacking process, check from the camera menu that "image review: OFF" has been set.

ATTENTION: to use Focus Stacking (automatic or manual) your camera must be remotely controlled by Easy4Pro.

- **MANUAL – it requires Easy4Pro for multi-shooting and Affinity Photo to merge the shots:**

1. click on "Focus Stacking" → Manual
2. click on the image preview from the software to choose the points you want to focus on. All points must be on the product and the focus square has to become green (to remove a previously chosen point click on the blue circle)
3. Press the shutter button and wait for the photos to be taken by the camera
4. Once the pictures are taken, a message will appear: the new pictures are temporarily saved in the folder C:\Easy4Pro\Photo\FocusTemporary. Hence, you need to click into Affinity Photo and import the images through File → New Focus Merge → Add. Select the images in FocusTemporary and click Open → OK.
5. Affinity Photo will merge the images in a few seconds
6. Go back to Easy4Pro, click on the fourth icon on the left (Editor), click on "Import" on the central column of the menu and leave the program processing until you get the picture on Easy4Pro

IMPORTANT:

To use the Manual Focus Stacking process it is needed to have Affinity Photo installed and open on the computer without any open warning windows (e.g., new features or updates available)

ZOOM

This new software feature allows you to control the motorized zoom directly from the software, allowing you to zoom in and zoom out simply by moving the cursor on the vertical line.

This software feature is visible only if you use cameras that allow Zoom control.

So, to use this feature, a camera with power zoom is needed like the Canon Powershot SX70-IS.

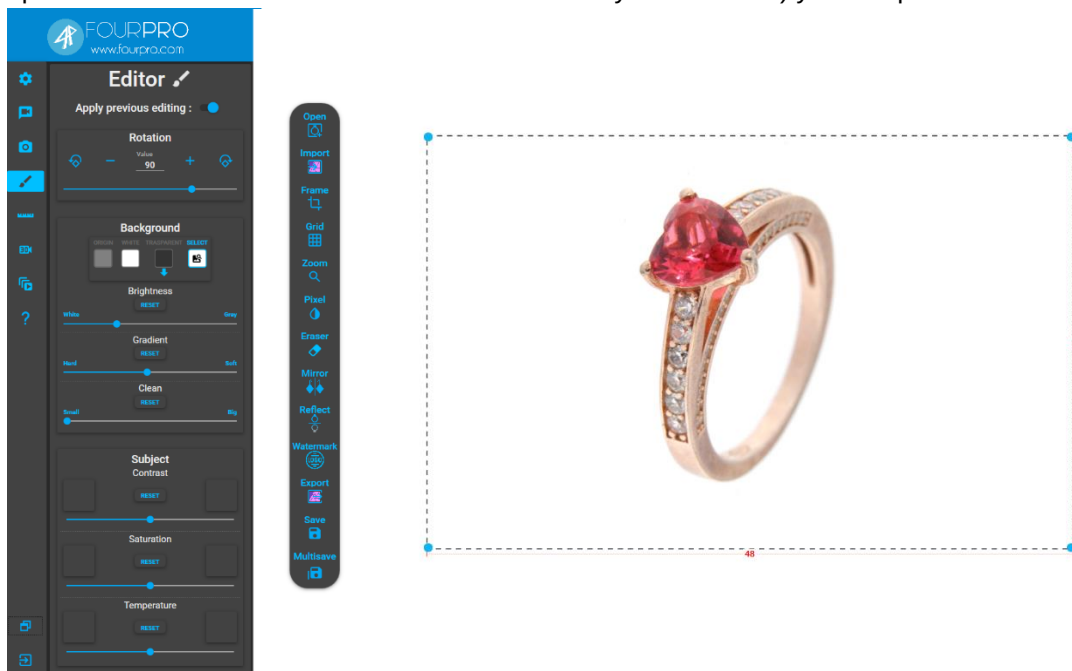
For more information regarding what is needed to purchase to have this feature available, contact info@fourpro.com asking for more information on the power Zoom.

4.4 PHOTOGRAPHY – EDITOR

If the camera is compatible with the software, the picture will be automatically opened in the Editor section. If the camera cannot be controlled by the software, the picture must be taken directly with the camera and then transferred to the computer with an SD card. Then, open it on Easy4Pro from the Editor page by clicking on the button Open and selecting the image.

Suppose the photo you want to open was taken by an uncalibrated camera (not a Canon EOS with zoom) or there is no information for calculating the actual size of the photo. In that case, a warning message will appear in the software to do the process of calibration (see page 18 for the step-by-step process).

Once the photo has been opened on the software (both in case it has been obtained automatically or opened because the camera cannot be controlled by the software) you can proceed to edit and save it.

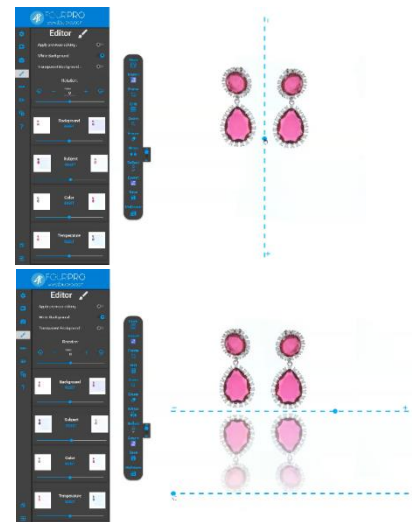


The editing functions on the principle menu on the left are:

- **Apply previous editing:** deactivate/activate the previous editing on the photo
- **White Background:** available only if the photo has not already been edited on a white background
- **Background:**
 - Origin: to get the original photo taken by the camera
 - White (automatically active): to obtain a photo with a white background
 - Transparent: to obtain photos with a transparent background and to work with greater precision, you can change the aesthetics of the viewing background by clicking on the arrow at the bottom
 - Select: to change the background using the window that allows you to change the background and obtain the background of another color or insert another image into the photo
- **Rotation:** rotation of the photo at predetermined angles or rotation by the cursor
- **Gradient:** controls the gradual transition between what is considered transparent (background) and what must remain opaque (subject)
- **Background:** to whiten the background (to the left) or to recover white parts (to the right)
- **Subject:** to darken the product (to the left) or lighten it (to the right)
- **Color:** to decrease saturation (to the left) or increase it (to the right)
- **Temperatures:** to change the light tone: warmer (to the left), cooler (to the right).

From the central menu, there are the following functions of:

- **Open:** to open a previously taken photo (if the photo was taken with a camera that is not compatible with the software or not calibrated or if the photo does not include the information to calculate the real sizes, it is needed to follow the steps explained on page 18) .
- **Import:** to import a photo opened on Affinity Photo, the advanced editing software that we provide with the photographic system together with Easy4Pro. To use this feature you must have Affinity Photo installed, open and with an image open in the program.
- **Frame:** to crop the photo based on the real size of the product (it is better to use also the Grid function to have the product well centered before proceeding with saving with Save or Multisave).
- **Grid:** for centering the product with a grid of which the rows and columns can be increased by clicking on the + symbol to have greater precision in centering the product.
- **Pixel:** for discovering the RGB color values in a photo zone by a simple click
- **Zoom:** to enlarge the photo by clicking on the magnifying glass icon with + and then clicking on the part of the product you want to see in more detail, to return to less magnification do the same procedure by selecting the magnifying glass with the symbol – .
- **Eraser:** allows you to erase dirt from the background by applying a white circle of variable dimensions by clicking on the + or – symbols and removing the application of the eraser with the back arrow symbol. While using this function and clicking with the right mouse button, the function is reversed and instead of erasing it recovers the parts of the object deleted with the Eraser.
- **Mirror:** to apply the mirrored product to the side (this function is used for earrings and shoes) and choose the height of the mirror by moving the circle to the center of the dotted line. This function is activated or deactivated by clicking on the icon relating to the function and choosing ON-OFF.
- **Reflect:** to apply the shaded reflection under the product by choosing the intensity of the reflection by moving the circle in the center of the upper dotted line (clearer reflection going to the right + and more delicate reflection going to the left -) and choosing with the lower cursor the end height of the reflection. This function can be activated/deactivated by clicking on the function icon and choosing ON-OFF.
- **Watermark:** to insert an image as a Watermark which can be applied above the photo (OVER) or below the photo (BACK) with also the possibility to choose the transparency degree and the size of the Watermark by dragging the edges of the inserted image
- **Export:** to export a photo to Affinity Photo, for example, if you want to apply more sophisticated and complex editing and photo retouching effects not included in Easy4Pro.
- **Save:** to save the images in the simplest and fastest way (not recommended).
- **Multisave:** to save multiple copies of the same image with one click by choosing different formats and pixel dimensions of the photo and different saving folders.



HOW TO SAVE THE PHOTO

Once you have modified the photo as you wish (if needed also using Affinity Photo with the automatic export and import functions from Easy4Pro: Import-Export), before proceeding with saving you decide the size of the photo, which can be:

- the original uncalibrated one
- proportioned to the Ghost Image mask (if it has been used)
- cropped to standard sizes using the photo crop function Frame .

For the simple saving process, click on “Save” and choose the folder, the format, and the name of the file.

We usually recommend saving with the “Multisave” function, which allows you to save the picture in different formats with just one click.

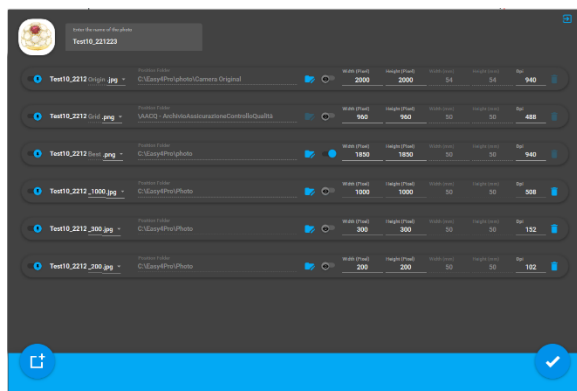
Some formats are available by default in the multi-save window:

- “Origin” to keep the original photo
- “Best” to save the edited photo in maximum resolution
- “Grid” to place on the photo a measurement grid (read point 4.5).

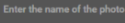
These three saving forms are always available; therefore they cannot be deleted, but they can be disabled if you do not want to save in those formats. In the same window, it is possible to create new saving formats with certain pixel dimensions by clicking on .

When using multi-save, it is a good idea to crop the photo to standard sizes by clicking on the icon to open the section for the cropping areas choice, to the right of the photo. The cropping areas show the measurements  in millimeters and are calibrated when using the zooms we recommend . Arrows appear at the top and bottom of the cropping areas, so that you can scroll and find other cropping areas, but if the desired cropping area is not present, you can create it by clicking on the button .

Once you have chosen the cropping area, you can proceed with saving the photo by clicking on .



This will automatically open the advanced or multi-save tab, where you can:

1. edit the name of the photo 
2. switch on or off each saving mode 
3. choose the saving folder and if open the file 
4. proceed with saving 

It is also possible to:

- create a new saving mode  in which you should indicate the sizes in pixels (width/height)
- delete one of the saving modes row with 

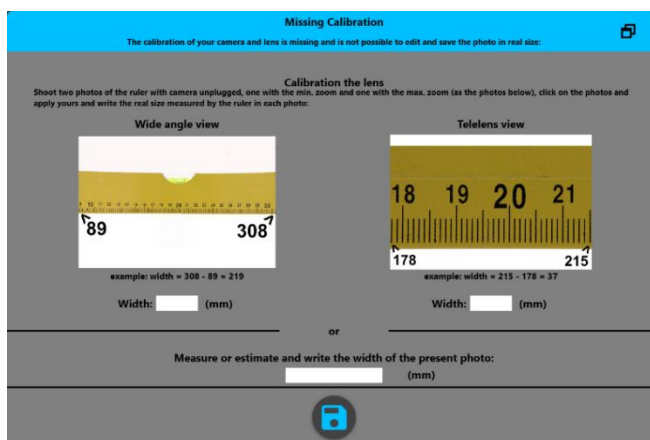
*CALIBRATION TO HAVE MANUAL 1:1 SCALE

When you take a photo with a camera not controlled by the software, an uncalibrated lens or import a photo that does not include exif information (essential for calculating the actual size of the photo) one of the two messages shown on this page will appear.

PHOTOS WITH CAMERAS NOT CONTROLLED BY THE SOFTWARE AND UNCALIBRATED LENSES

When you receive this message you can proceed with the calibration in two ways:

1. RECOMMENDED: insert a ruler in the lightbox in the same direction as the camera, take a photo with the minimum zoom and a photo with the maximum zoom, import the photos from the camera to the PC, choose the photos by clicking on the images of the rulers shown as example from the message and write the dimensions below by calculating the millimeters shown in the two photos
2. Write the width (measured or estimated) of the photo you just imported.



If you choose to write the measurement of the newly imported photo, this operation will have to be done again for each photo taken with the same camera/lens, while the first process that requires taking and importing the ruler photos and calculating the measurement shown in the photo is a longer process which, however, allows the software to have all the information to create the calibration of the camera and lens and therefore the same process does not have to be repeated for each photo, because the software will then be able to calculate the real dimensions.

If you proceed with the first process you can refine the camera calibration by adding any other measurement via the Settings – Studio – Calibration function, inserting the image by clicking on the photo of the example ruler and then adding the width visible from the photographed ruler, while the focal distance information is automatically calculated by the software and once the width of the photo has been indicated, click on the + symbol at the bottom to add this measurement to the calibration.

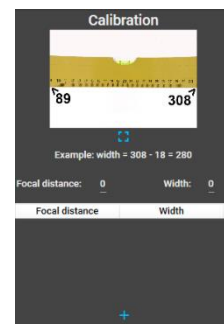
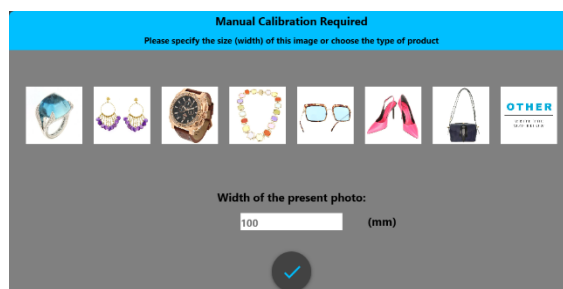


PHOTO WITHOUT EXIF INFORMATION

If you import photos that do not include the information necessary for calculating the 1:1 scale, this other message will appear with which you can click on the subject in the photo or write the width from the photo in actual size at the bottom to have the 1 scale :1.

This operation must be repeated for all photos that are opened on Easy4Pro without exif information.



4.5 COORDINATE MEASUREMENT SYSTEM

Based on the principle of perpendicular photography to the subject at a known distance, it is possible to perform optical coordinate measurements, with the simultaneous use of:

- 1) a remotely controllable image sensor with calibrated optics, i.e., a Canon EOSxxxD camera, controlled by Easy4Pro, with zoom or fixed macro lens (correct or suitable for focusing at that distance) of which the focal-measurement calibration table has been made;
- 2) a Studio4 structure with a rotating arm to have a predetermined subject-objective distance;
- 3) the Easy4Pro software, which will take photos by calculating the number of pixels per mm captured.



PHOTO WITH MEASURE



PHOTO WITH GRID

Measurements can be made immediately or after, taking the photo of the product with the Studio4 and adding the measurement grid using the Easy4Pro software, or by measuring the distances between two points selected directly on the photo in the "Coordinate Measurement System" section of the software.

The photos taken with the Studio4, a controllable Canon and Easy4Pro can, be saved as:

- normal photos that include the mm / Pixel proportionality coefficient as hidden information and allow you to have unaltered images, measurable with Easy4Pro;
- photos with grid, measurable by anyone, on any kind of support (monitor or print on paper).

To measure the photo, click on the fourth icon on the left bar to open the section dedicated to measurements. Within this part of the software, it is possible to activate and deactivate:

- MEASURE: distance between two points
- GRID OVER: a grid that overlaps the photo
- FRAME SIZE: size of the photographed area.

The grid (GRID OVER) and the measurements of the photographed area (FRAME SIZE) can be activated or deactivated by simply clicking on the button on the side. To calculate the distance between two points it is necessary to select the two points on the right image and the indication of the measurement will appear automatically through a dimension line that indicates the distance between the two points (the hypotenuse of the triangle) and the measurements in coordinates X and Y (legs of the triangle). In case measurements are affected by faults in perspective or angle, these can be corrected by editing the value. To remove this information from the image, you can disable the MEASURE feature.

IMPORTANT: to measure a distance and the relative x, y coordinates in mm, the image can be taken immediately or uploaded from the archive later by the Open icon located at the bottom left, as long as it is taken with our photographic system, a camera compatible with a calibrated lens and with the Easy4Pro program.

It is finally possible to save the pictures with the dimension lines and/or the measurement grid through "Save".

4.6 VIDEO RECORDING FOR 3D ANIMATION - ROBOTIC MOVEMENT AND CAMERA CONTROL

To record videos from which you can extract animations, it is important to set the camera to "video" mode and insert an SD card of suitable write speed (for 4K type U3, FHD use U1 or U3).

3D animations of the products can be created:

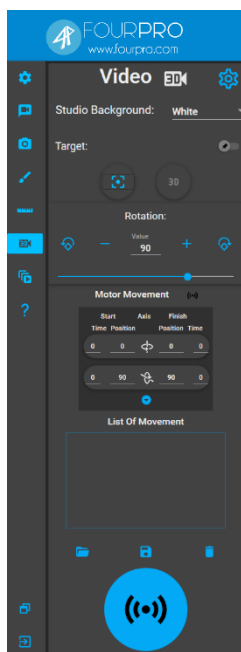
- **MANUALLY:** If you have a software-controllable camera or you have not purchased the Robotic Kit included in the Pro 3D version. In this case, you have to start video recording from the camera, move slowly the rotating arm with your hand to rotate around the product, and finish video recording from the camera.

- **AUTOMATICALLY:** If you have a software-controllable camera or you have purchased the Robotic Kit included in the Pro 3D version. In this case, you can use this section of the program to set up the movements and start recording the video to create the 3D animation.

IMPORTANT: If the video is created manually, it is not possible and necessary to use the section of the program explained in this paragraph dedicated to robotic control and camera movements; you can skip to the next paragraph (paragraph 4.7).

Whether creating the 3D animation manually or automatically, to obtain a good quality video with the subject in the center of the frame during rotations, the subject must be centered on the rotation axes and in the frame therefore:

- 1) for rotating table movements, place the product centered on the "X" in the middle of the rotating disk
- 2) for rotating arm movements, check that the product centered on the "X" is also aligned with the arm rotation knobs, both by looking at it from above (you can slide the lightbox on the structure to do this centering) and by looking at the subject in front (by raising or lowering the knobs along the fixed arm)
- 3) Center the frame: from above, the "X" placed on the rotating table should match the viewfinder visible in the software preview when the "Target" option is on; if it is not centered, do not move the lightbox, but force slightly the camera to move into its rubber joint of the arm.

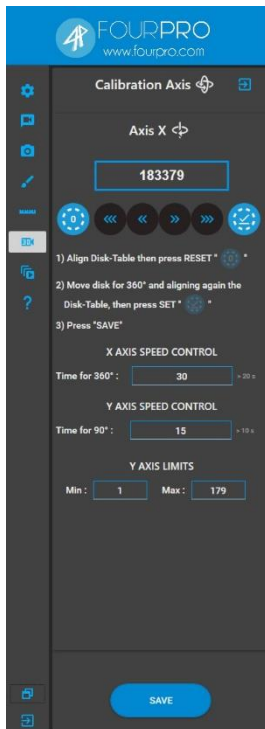


The Video section, available by clicking on the fourth icon in the side control panel, can be used only if you have a camera that can be controlled by the program and if you have the Robotic Kit included with the Studio Pro 3D.

In this section of the program, you can:

1. set up and calibrate the robotic system
2. program the sequence of movements
3. execute the sequence of movements resulting in the automatic transfer of the video into the PC, followed by the automatic boot of the next section: VIDEO AND 3D ANIMATION-EDITING.

1. SETTING UP AND CALIBRATING THE ROBOTIC SYSTEM



The first time you use the Robotic Kit (and about every month) you should calibrate and recheck the calibration of the robotic system. This is done by clicking on the icon  next to "Video".

AXIS X

As indicated by the instructions written under the X-axis calibration panel, shown here on the right, to calibrate the rotating table it is necessary to:

1. place a product on top of the rotating table
2. click the RESET symbol 
3. make the rotating table rotate by using the forward-backward arrows faster or slower
4. once rotated the turn table 360° and returned to the starting point, click the icon to  save.



After following all the points above, the value written in the rectangle under "Axis X," which indicates the no. of steps to make the rotating table turn 360°, will be automatically updated.

X AXIS SPEED CONTROL: minimum time in seconds for a 360° rotation (i.e., X maximum speed),

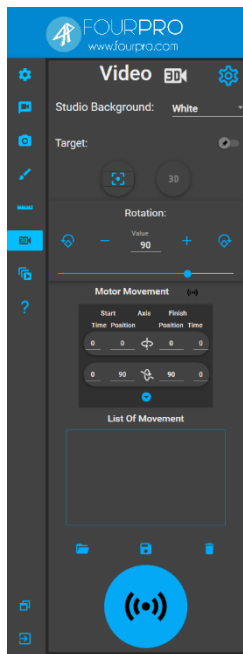
Y-AXIS SPEED CONTROL: minimum time to go up or down of 90° (i.e., Y maximum speed)

Y AXIS LIMITS: front limit positions 0° - 15° and rear limit positions 165°-180° (the zoom must not touch the surface)

To change the settings, press SAVE and then  EXIT

To check the settings without changing them only  EXIT

2. PROGRAMMING THE SEQUENCE OF MOVEMENTS



The features available in the "Video" section are: the functions to preview:

- **Studio Background:** White / Gray / Black
- **Target:** OFF / ON allows you to view the viewfinder
- **Way to create the video:** writing the motor movement above or with a click on the camera preview from the software by the 3D feature
- **Rotation:** allows you to pre-rotate the shot displayed on the monitor
- the functions to control motor movements: **Motor Movement**

Easy4Pro allows a video shot to be set up as a sequence of multiple movements (even X and Y arm simultaneously), performed starting and ending at known positions at precise instants chosen by the user.

You can choose movements for both the X-axis rotating table and the Y-axis rotating arm.

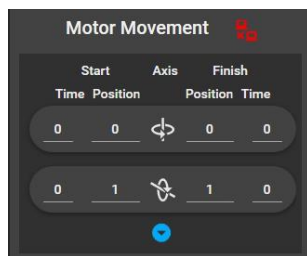
First, you need to check that the Robotic Kit is connected and detected by Easy4Pro, to do this just look at the icon next to Motor Movement:



→ properly connected



→ not connected.



Once you have verified that the motors are connected you can move on to set them up.

Under "Start" you can choose when and from where you want to start the movement by entering the time of the start (in seconds) under "Time" and the degrees of the start under "Position," while under "Finish" you can choose where and when you want to stop the movement by entering the final degrees under "Position" and the time of the stop (in seconds) under "Time."

If no information is written in the line corresponding to an axis, it means that you want to leave it in the last position, while writing the same value (e.g., 45°) for Start and Finish corresponds to bringing the arm to that position and not letting it move.

IMPORTANT: The Y rotating arm must start from a predetermined 90° vertical position (as shown in the image above) and cannot go into positions outside the limits set in calibration, to prevent the lens from touching the bottom of the lightbox. Likewise, too abrupt position changes that exceed the maximum speeds set in calibration will not be accepted as well.

Examples of simple movements (one movement X and one movement Y):

START		AXYS	FINISH	
TIME	POS		POS	TIME

0s	0°	X	360°	30s	<i>FREE HEIGHT ROUNDABOUT</i> the table rotates 360° in 30s leaving the arm stationary where it was: leave the arm where you like, exception where not necessary 90° initial
		Y			

0s	0°	X	360°	25s	<i>HEIGHT SET ROUNDABOUT</i> pre-positioning (Y=45° at T=0): the arm goes from initial 90° to 45° before recording, then the table rotates 360° in 25s with stationary arm
0s	45°	Y	45°	25s	

ONLY ARM, STATIONARY PRODUCT

		X				
0s	30°	Y	120°	18s		<i>pre-positioning (Y=30° at T=0): the arm goes from initial 90° to 30° before recording, then it moves up to 120° in 18s with stationary table</i>

ONLY ARM, PRE-ROTATED PRODUCT

0s	-90°	X	-90°	25s		<i>pre-positioning (Y=40° and X=-90° at T=0): arm goes from 90° to 40° and the table goes to -90° before recording, then the table remains still at -90° while the arm moves from 40° up to 135° in 25s</i>
0s	40°	Y	135°	25s		

DOUBLE X AND Y MOVEMENT IN SEQUENCE

20s	-90°	X	270°	45s		<i>pre-positioning (Y=110°, X=-90° at T=0): arm goes from 90° to 110° and table to -90° before recording, then the arm moves to 25° at 20s when it stops and the table starts from -90° going to 270° (1 turn) at 45s</i>
0s	110°	Y	25°	20s		

DOUBLE SYNCHRONOUS MOVEMENT

0s	-90°	X	360°	45s		<i>pre-positioning (Y=40°, X=-90° at T=0): arm goes from 90° to 40° and the table goes to -90° before recording, then simultaneously the table rotates for 450° (1,25 turns) in 45s, while the arm moves from 40° up to 135°</i>
0s	40°	Y	135°	45s		

DOUBLE ASYNCHRONOUS MOVEMENT

15s	-90°	X	270°	45s		<i>pre-positioning (Y=40°, X=-90° at T=0): arm goes from 90° to 40° and the table goes to -90° before recording, at 0s the arm moves from 40° to 135° (in which to stop at 60s), at 15s the table moves from -90° and stops at 270° at 45s, while the arm continues to 135° at 60s</i>
0s	40°	Y	135°	60s		

Once you have selected the times and degrees, click on the icon  to enter the settings in the “**List of Movement**” window and at that point you can decide whether to start recording immediately (REC), save the list and start recording later by clicking REC, or add more movements. In the latter case, the values in the "Motor Movement" will already be set to start at the end of the previous movement.

For example, after introducing the "DOUBLE X AND Y MOVEMENT IN SEQUENCE" above, you will already find the following:

START TIME	POS	AXYS	FINISH POS	TIME	
45s	270°	X			<i>after the previous movement, the table is in position 270° from the 45s</i>
20s	25°	Y			<i>and the arm at 25° from 20s, the next movement can start only after that</i>

and if you want to add another movement, e.g., to get the arm back to 110° at the same speed (in the 20s, starting from 45s of the completion of movement X) just edit (here indicated in red) and add:

START TIME	POS	AXYS	FINISH POS	TIME	
45s	270°	X			<i>from 45s the table is left stationary</i>
45s	25°	Y	110°	65s	<i>while the arm will move from 25° at 45s to 110° at 65s</i>

Then add to the movement list by clicking 

The "List of Movement" can be archived for later reuse through the "Save List" and you will be able to:

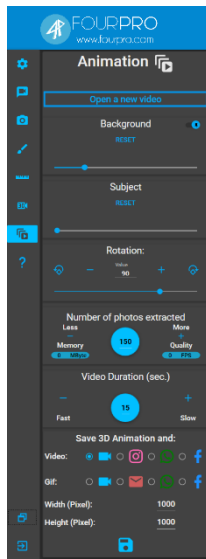


1. Open a previously saved "List of Movement"
2. Save list
3. Delete wrong or useless lists

To start recording, it is necessary to click on "REC".

Once the movement is completed, the camera recording will stop and the video saving in the SD card will start (indicated by the blinking orange LED on the camera). At the end of this process, the saved file will be transferred to the PC and the Animation section for the video editing will be automatically launched. ATTENTION: this process might take several seconds of waiting.

4.7 VIDEO AND 3D ANIMATION- EDITOR

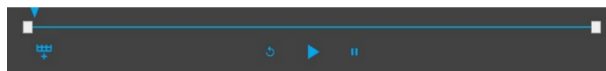


The “Animation” section allows you to upload videos from your camera or PC to create 3D animations and convert them into MP4 videos. It opens automatically once you have finished recording the video through the previous section (see paragraph 4.6 VIDEO RECORDING FOR 3D ANIMATION - ROBOTIC MOVEMENT AND CAMERA CONTROL).

3D animations can also be made with cameras not controlled by the program or with the Studio4 in Pro version. In this case, the animations must be made manually with only the axis of rotation of the rotating arm (about 180°). To do this you need to:

1. disconnect the camera from the software
2. place the product in the center of the lightbox
3. start video recording through the camera by manually moving the rotating arm
4. end video recording via the camera
5. import the video to your computer and open it by clicking “Open a new video”

The buttons below the preview allow you to play the video (middle button), review it from the beginning (left button), and pause it (right button). The two white squares on both sides are used to cut the video,



choosing when to make it start and when to make it end.

On the preview there is a square that you can tighten or widen on the image to choose the best framing. You can also use a rectangular framing by changing the values in Width (Pixel) and Height (Pixel) at the bottom of the left menu. If the photographic subject should move or even move out of the framing you have chosen, you can pause the video, move the selection for that particular frame only and save the position using the the button “Add a New Reference View” . Every time a new position is created, it will appear in the square on the right of the preview called “Reference View”.

From the "Animation" section you can select:

- **Open a new video:** allows to open a video recorded and saved before
- **Background:** when this is enabled (as by default) the video is automatically whitened even if this adjustment is not visible in the preview. To see the result, you can use the function “Preview”
- **Subject:** to adjust the product colors
- **Rotation:** allows you to rotate the video, either in fixed degrees or via the cursor, so that the subject appears to be suspended or, in the case of jewels, as if it were worn
- **Number of photos extracted:** an animation is composed of images extracted from the video. The greater the number of images extracted, the higher the animation quality and weight. You can check these values by consulting the information written under “Memory” and “Quality”
- **Video Duration (sec.):** the duration in seconds of the animation can be set in this section
- **Save 3D Animation and:** it allows you to choose the video and animation format, which can be saved through the button “Save”. All formats can be defined according to the standards of the various social networks. Moreover, you can choose between the horizontal (Width) and vertical (Height) resolution of the animation, which will be applied also to the videos and GIF, according to your selection. These are:
 - VIDEO:
 - Camera icon: last values used with Animation
 - Instagram icon: 1080x1920 pixel
 - WhatsApp icon: 400x800 pixels

- Facebook icon: 1280x720 pixels
- GIF:
 - Camera icon: last values used with Animation
 - E-mail icon: 720x720 pixels
 - WhatsApp icon: 720x720 pixels
 - Facebook icon: 1280x720 pixels

All the pixel values above are adjustable through Width and Height.

Once all the parameters have been chosen, the 3D animation will be created by clicking on the Save icon. Then, type the path and the name of the destination folder where the animation and other videos or GIFs will be saved.

In the folder there is the subfolder “Frames” with all the single frames extracted from the video (rotated, whitened, and cut as per setting). These are Jpeg files that must be provided to the web designer to create interactive 3D animations to be published on your website through the most suitable plug-in.

Within the same folder (with the name of the indicated project), there are two more subfolders (Images, js) and the VR.html file. They reproduce the animation in your browser with a double click on the VR.html file. Finally, in the same folder will be video files:

- ProjectName.mp4 : video as the final 3D animation;
- ProjectName_Origin.mp4 : original video as recorded by the camera, useful to create new 3D animations.

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