



**Newsletter for week ending 4th
December 2021**

Collage produced using Pixlr Smartphone App using iPhone Images

Welcome to this edition of the newsletter – 2021 Review

So another month passes as we speed towards the end of 2021. Another turbulent year with again many restrictions being imposed on our daily life presenting many more challenges for us photographers.

I must admit that I have found this year more difficult than last year even though our restrictions were not as stringent as in 2020.

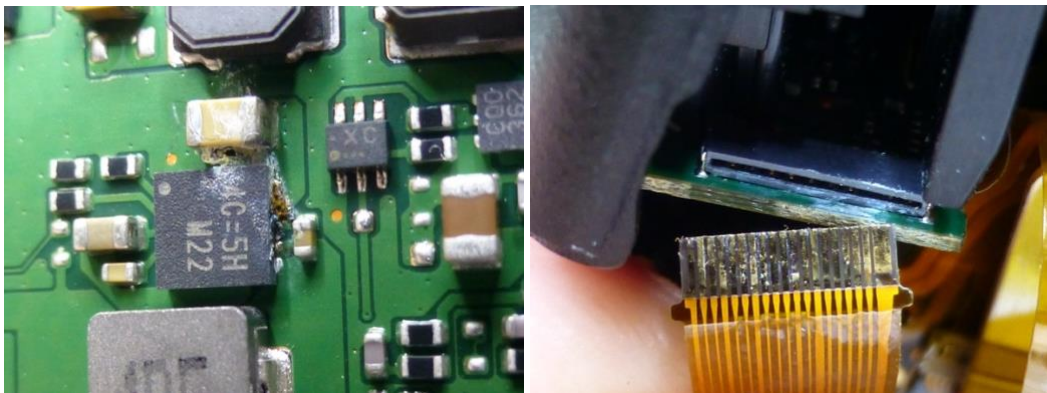
I have felt the need to “reboot” several times as I felt that I was losing my way and really struggling with enthusiasm to go out and practice my photography or even share my experiences with you.

Without my annual 2 trips to the isle of Arran, in Scotland, I really felt cheated. Usually these trips act as an opportunity to get out on the hills and enjoy the peace and solitude that they offer. The seals provide a welcome opportunity to try and get that perfect photograph of mother and pup and I have yet to be able to capture a useable image of the native red squirrels in the forests.



The north Fells on Arran

For several years now I have noticed that the weather in early June and late September (when I usually go there) has been very wet and high winds have always prevented me from flying my drone. You may remember my brand new FZ1000 mk2 was destroyed by condensation damage of the lens and main PCB's after a particularly wet and humid spell in July 2020 after restrictions were lifted and I could visit there.



The FZ1000 mk2 condensation damage



In September I built the 7ft x 7ft summer house, on the left, from a kit and then we ordered the second one, on the right, which I painted and assembled during the first week of November. Both have toughened glass windows to which I applied mirrored mylar foil so that you cannot see into them but you can see out.

This really helps to prevent looking at untidy interior (mine holds all the gardening equipment and my wife's shed houses all the outdoor rattan furniture over the winter). I have to admit that unless you were a competent DIY person that the "out of box" quality would present most people with unsurmountable problems in assembly of these units. Several areas of the window panel frames cladding were not cut out sufficiently leaving the holes too small to receive the windows.

Routing the window boards was necessary.

I suspect that these are mass produced and not checked that thoroughly. Still I do enjoy a challenge! All the panels, especially the flooring and roofing, received several coats of preservative paint – I suspect that they will outlive me now!

I was really fortunate during 2021 to be contacted by several large distributors like Viltrox, Feiyutech and YC Onion to showcase some of their products.

Providing an unbiased and honest review in return for being able to keep the product did allow me to add significantly to my ability to capture and produce YouTube productions.

I was also contacted by quite a few smaller sellers from Amazon however the majority of them did not fit with my criteria for reviews.

I will not accept product for review if the company have too many terms and conditions attached or want to provide sales and marketing material which must be included in the review.

The latest products that I have reviewed are currently on hold as the supply issues are preventing them being listed on Amazon. Hopefully they will be released before Christmas as they might make suitable presents.

Flexible Variable (Fv) mode on Canon Cameras

This new mode appeared around 2 years ago and presents an entirely novel way of selecting ISO, Aperture and Shutter speed (and optionally exposure compensation) from within one setting screen.

You are probably familiar with the usual set of exposure modes your camera offers. Many advanced amateurs and professionals use the Aperture Priority (Av), Shutter Priority (Tv), and Manual (M) modes as these offer the greatest degree of control depending on the situation at hand.

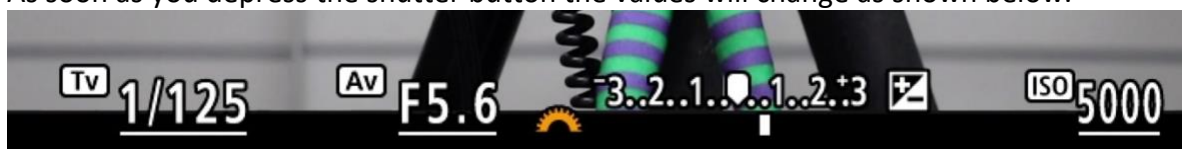
Program Auto (P), is preferred by some users as it allows them to concentrate only on exposure compensation, and let the camera choose the shutter speed, aperture, and ISO. The mode that you choose, in any given situation, will depend on what things you want to control, and what things you want the camera to control.

For example, if aperture is the most important to you to select your depth of field, you might choose Aperture Priority (Av) and pick then your aperture, letting the camera choose the shutter speed for the correct exposure. You may choose Shutter priority (TV) if you want to set the amount of subject motion blur in your image and allow the camera to set the aperture for the correct exposure.

Optionally, you can also enable Auto ISO for any of the modes, or pick an ISO value yourself.

When you first enter the Fv mode, as shown on the image above, all the values for the 4 controls are set in the AUTO mode. This is denoted also by the fact that they are underlined.

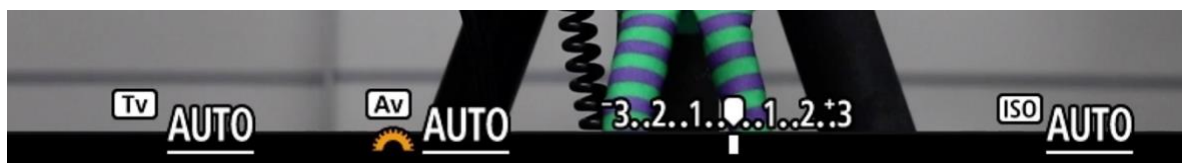
As soon as you depress the shutter button the values will change as shown below.



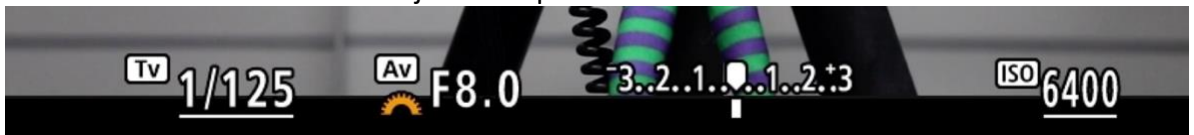
The values shown underlined are those selected by the camera. The orange wheel denotes that the EV control is able to adjusted by using the front control wheel.

So in effect the camera is using the Program auto mode (P) with the shutter speed, aperture and ISO all in the AUTO mode.

Now if you wanted to set the aperture to create a specific depth of field look then you can move the orange icon until it is at the AV position and then adjust the aperture value as shown below.



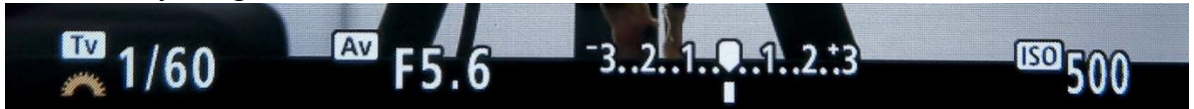
The front control wheel now adjust the aperture value.



With a value of F8 selected you can now see that the underline has gone from that control. This indicates that the control is manually set.

When you enable the metering by half depressing the shutter button the other values will reflect the settings chosen by the camera.

It is possible to set all the controls to manual by selecting the control with the orange icon and then adjusting that value as shown below.



At any time all the controls can be returned to the AUTO value by pressing the down button (trash can icon) (up button on the R series).

The values are retained when switching modes and also when the camera is powered off and on again.



The new Fv mode on the mode dial



[Link to YouTube Video](#)

Why the FZ80/82 Takes So Bad Video and Stills!



The Panasonic Lumix FZ80/82 is probably one of the best-selling of all Panasonic bridge cameras.

This is probably due to its relatively low price point and the very attractive 60x optical zoom.

It is also the camera that generates more questions from YouTube subscribers and through the contact page of my photoblog.

The questions invariably are to do with disappointment in image quality, especially when the images are compared to that gathered by a smartphone, and the user is looking for some answer as to how to improve picture quality in both stills and video.

So why is it that this camera, under certain conditions, produces very poor image quality?

Let's have a closer look at the FZ80/82 imaging system.

The FZ80/82 is a camera with 1/2.3" sensor and 18MP resolution, starting at ISO 80 and with F2.8 at the wide angle setting of 20mm EFL dropping to F5.9 at the long end of 1200mm EFL.

As a comparison, the 1/2.3" sensor FZ300 has the same sensor size but 12MP resolution, starting at ISO 100 and with F2.8 constant aperture throughout the entire zoom range of 24-600mm EFL.

If you now distribute ISO 100 brightness over 18MP area instead of 12MP area, for the same number of photons per pixel (resulting in the same photon noise level) you would need to set the camera to ISO 64. Even the FZ300 is not noise free at its base ISO level.

The FZ80/FZ82 with its 1/2.3" sensor has a crop factor of 5.6. Compared to even entry-level DSLRs and mirrorless cameras they have a crop factor of 1.5 - 1.6, and professionals using full frame cameras with crop factor 1. The amount of light collected is directly proportional to crop factor squared. So, your FZ80/FZ82 collects $5.6 * 5.6 = 32$ times less light than full frame cameras at any given sensor light level.

Is there an advantage using 18MP over 12MP in this camera then? Well the answer lies partly due to the optical compromises made in producing a lens which will zoom all the way from 20mm to 1200mm EFL. Distortions like barrel and pin cushion as the lens focal length change are difficult to cancel out so usually there is a decision made to fix one optically and then rely on image processing (in-camera) to reduce the other.

So this geometric compensation is better achieved if there is more detail to work with as the image may have to be expanded to make the adjustment. This compensation is "baked" into the RAW file from which the JPEG image is produced.

The resulting compensation (usually achieved through pixel interpolation) leads to a loss of image sharpness, particularly seen in the image corners at wide angle settings. Working with a higher resolution sensor then causes less loss of actual optical image data.

It might be worth mentioning here that a crop factor of 5.6 is very similar to what modern smartphones use however it is a fact that some smartphones have an almost four times faster lens (F1.2) and they actually process more aggressively and use techniques like multiple image noise reduction as well in low light.

Images from these phones tend to look great when viewed on their respective phone screen sizes and may fall apart if viewed on a computer monitor.

In terms of image processing, particularly the out of camera JPEGs, the camera can actually contribute significantly to the image degradation through some of the default settings employed with the camera.

Many of the features that can contribute to image degradation are actually employed if you chose to use the fully auto mode – something that most newcomers to using this camera might initially use!



These are i.Resolution, i.Dynamic and i.Zoom and should be avoided at all costs! As these are "hard wired" into the fully automatic modes for the newcomer I would suggest turning the dial to the P (program auto mode) which then allows access to these settings and turn them off if they have been previously set to enabled. They are Greyed out but active in fully Auto modes.

Image noise, even at this camera's base ISO of 80, is quite noticeable and in poor or low contrast lighting situations can result in some very grainy looking images.

So what can you do to improve the chances of getting better quality images when using this camera.

Light, light and more light is the key with small sensor cameras. Even when used at the widest aperture of f2.8 getting enough light to enable good quality images might necessitate the use of some additional lighting either natural light using reflectors, adding more electric lights or battery powered light or even using flash will result in better images.

Take a look at these comparison images which are extreme crops from the images.



The lower image is taken at 1/6 sec, ISO 80 and F3.2 whilst the upper one has 8 times more light at 1/50 sec, ISO 80 and F3.2. You should be able to see that the upper image with more light has less visible noise in the image.

If you are in a situation where it is not possible to supplement the ambient light then the only way to get decent exposures might need longer shutter speeds or by increasing the camera sensitivity by raising the ISO setting.

Raising ISO, as you should be aware, can result in increased image noise as shown in this comparison between ISO 80 and ISO 400.



In the lower image taken at ISO 400 you should notice that it is less sharp than the upper image captured at ISO 80

There is also an image quality hit when you choose small apertures due to a feature called diffraction. This causes image softening as the light curls around the edges of small aperture. In this example comparing F3.2 to F8



Again the lower image at F8 has less sharpness than the one taken at F3.2

There are other reasons why image quality may be poor. Shooting at very long focal lengths runs the risk of the camera showing atmospheric heat haze resulting in very poor images. It is more noticeable when images are shot over water, sand or snow.



There is also the possibility of fingerprints on the lens surface or a poor quality secondary filter has been fitted to the lens as a form of protection against damage.

Set your camera up on a stable surface or tripod and shoot a scene with and without the filter to see if there is any image quality loss with the filter attached.

If you fit a 55mm wide angle lens hood rather than a UV/Skylight filter you will afford the lens maximum protection but not compromise image quality.

YouTube video of this is here <https://youtu.be/B3XeuYOxmNQ>

Digital Asset Management Software (DAM)

I have to admit that I am particularly poor at cataloguing my images beyond creating a new folder with place and date. I have several attached storage devices which contain original images and also edited versions from the RAW files. Back up devices are also linked to these. Of course online storage on Amazon, Google, Flickr Adobe and Facebook can all be accessed and downloaded if needed.

I have never keyword tagged my images or set stars against an image so trying to retrieve a specific image can take time as I have now over 70,000 images.

If this sounds like you then you might want to take a trial of some new software from Germany called **EXCIRE FOTO**. It is available for both Windows™ and Mac computers.



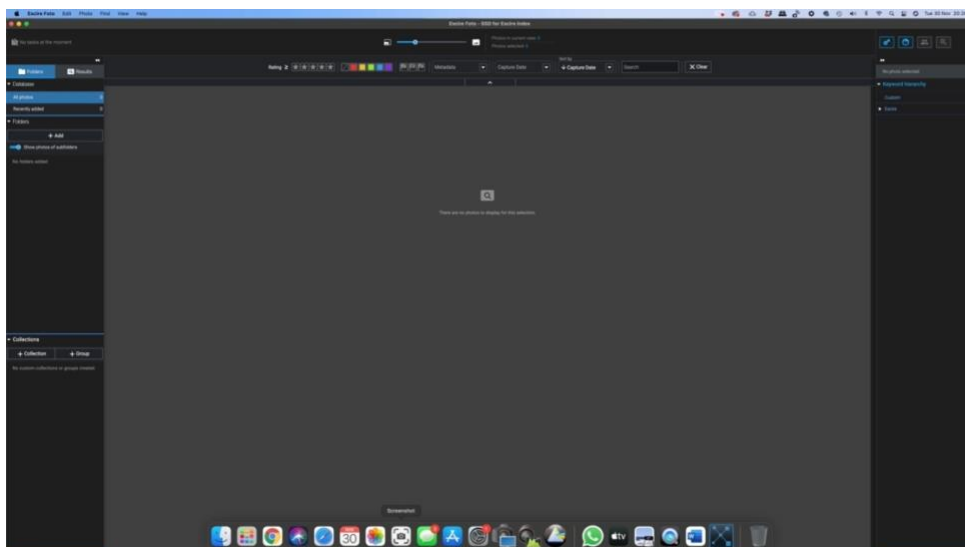
This one of the latest digital asset management programs which will scan your selected folders or drives for images and then using artificial intelligence will automatically tag each image with keywords that it has identified in that image. The thumbnails and keywords are stored in a separate database on your computer (or external device such as a SSD or Hard Disk). Additionally after capture you can add your own keywords to an image(s) so as to make retrieval faster.

The actual process of capturing the images for storage/retrieval is very simple and consists of 5 stages which are completed automatically.

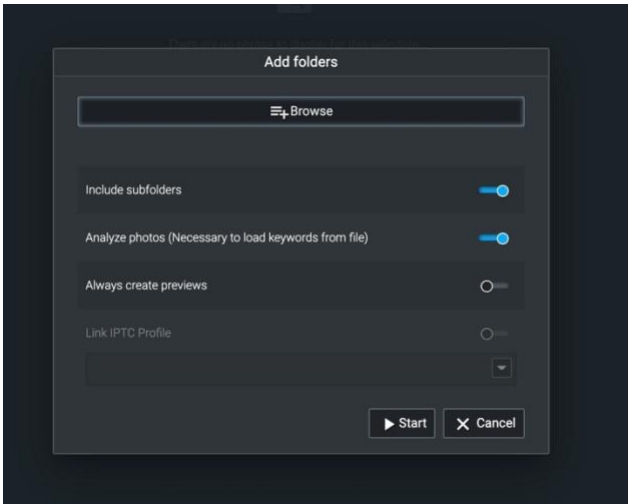
First you download and install the fully featured trial software from

<https://shop.excire.com/en/excire-foto/-trial-version>

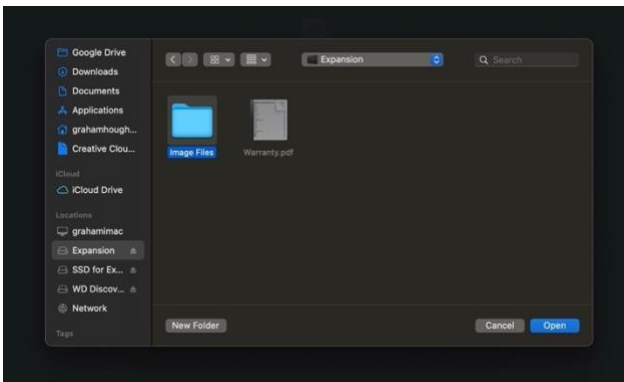
Now run the program and select the Drive or folder to catalogue.



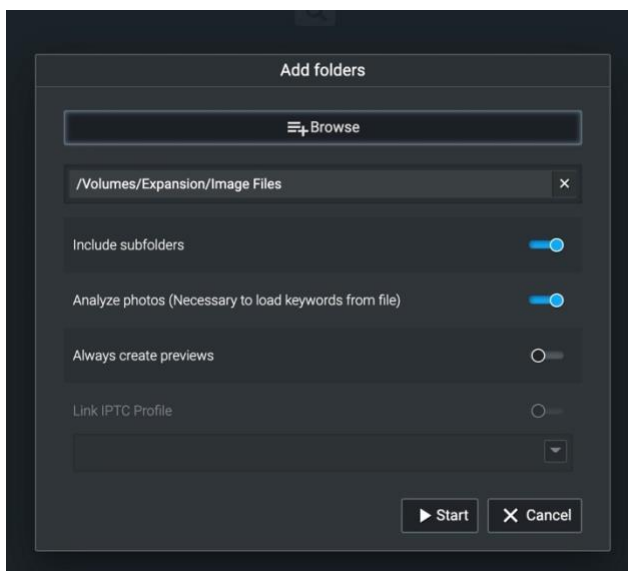
The main user interface for Excire



First stage is to browse for the folders (or drive) to catalogue. Default is to include sub directories (folders) and analyse photos – leave these selected

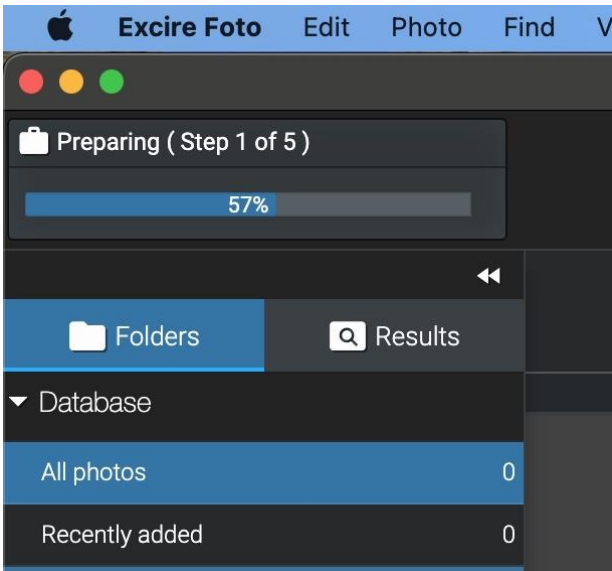


Here I have selected the Image File folder on an external 8TB drive called Expansion.



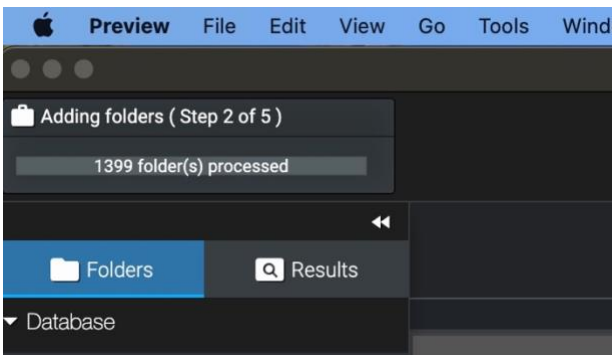
Now we are ready to start the program to begin to search for image files. These are as follows:
 3fr, .arw, .cr2, .cr3, .crw, .dcr, .dng, .erf, .gpr, .heic, .heif, .iiq, .kdc, .mef, .mos, .mrw, .nef, .nrw, .orf, .pef, .ppm, .raf, .raw, .rw2, .rwl, .sr2, .srf, .srw, .bmp, .jpg, .jpeg, .jpe, .jfif, .png, .pgm, .tif, .tiff

The program does not currently catalogue video files.

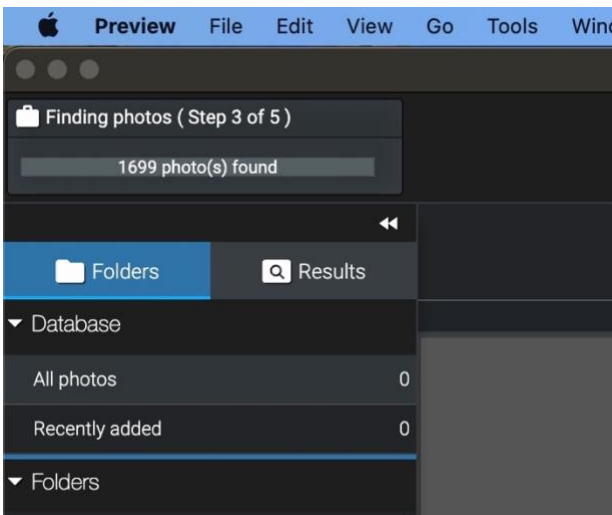


The first stage in the process the progress indicator will show Preparing (step 1 of 5)

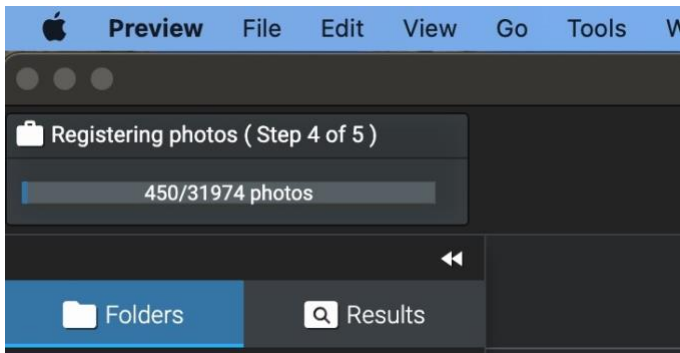
The time taken obviously depends upon the size of the selected drive/folder structure



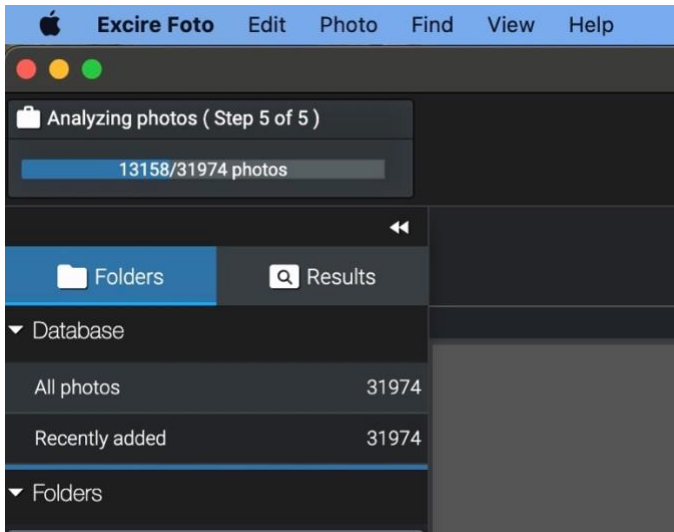
The next stage in the process is that the folders that are found are added (step 2 of 5)



In the next step (3 of 5) the photos found in the folders are added to the database

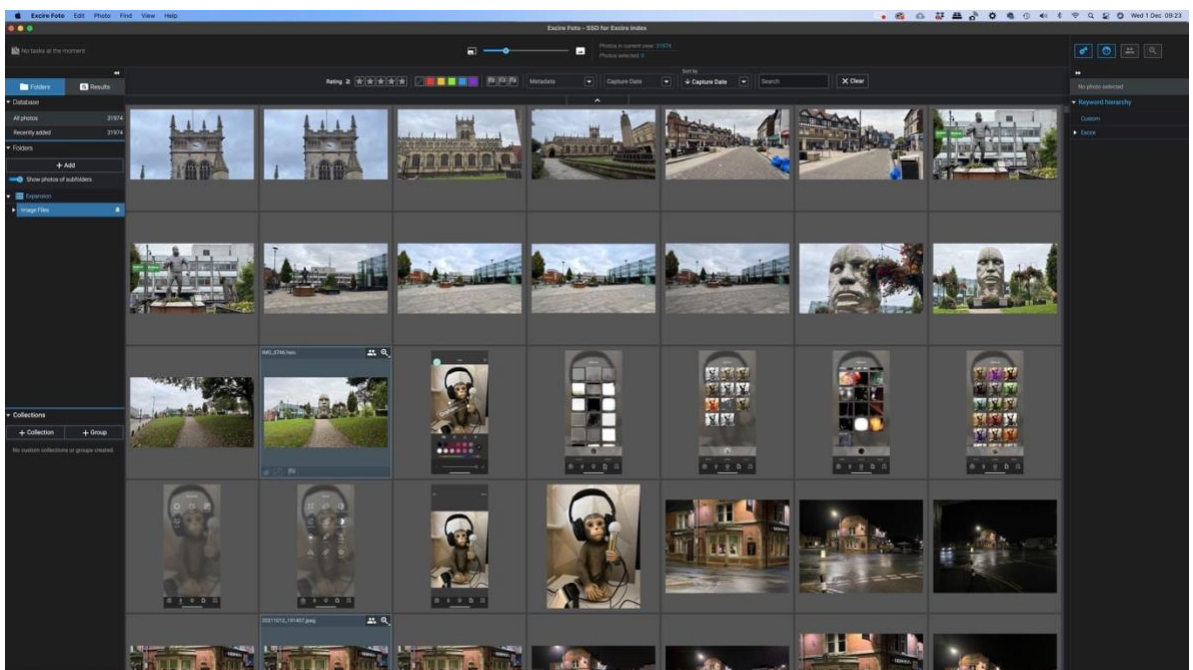


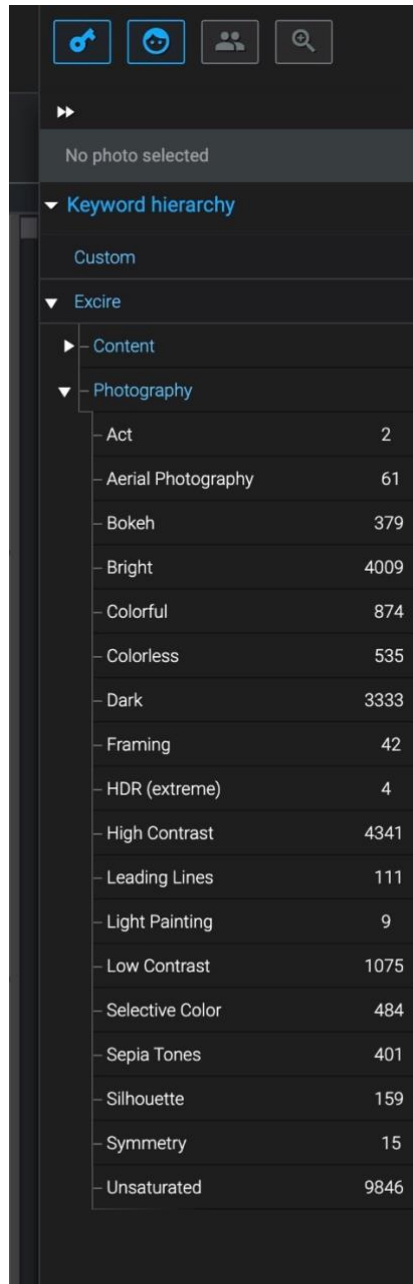
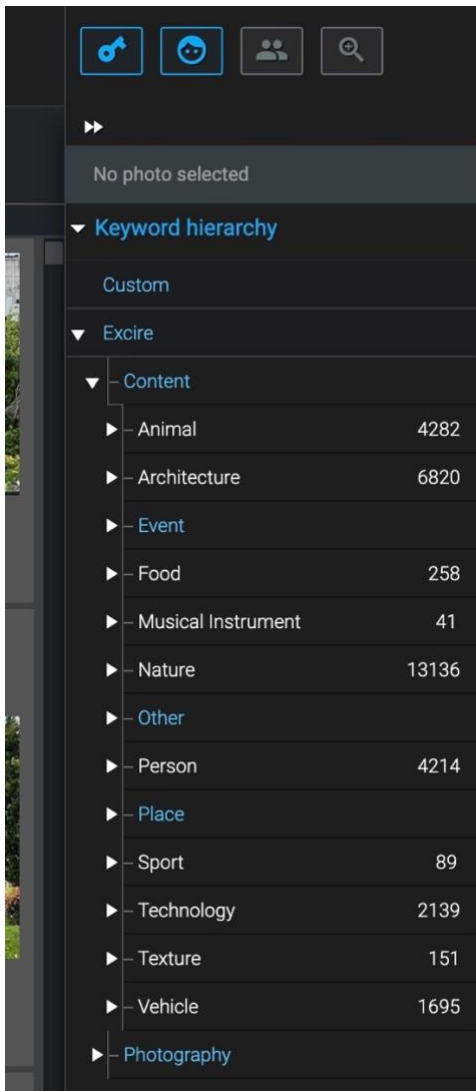
In step 4 the images are registered. Here you can see how many images were found on the selected drive/folder. In this case 31974 images were on this drive. You can add other drives or folders once the process is complete if you need to add extra locations.



After the images are registered the final step (5 of 5) is to analyse the images and tag the database with the keywords that the AI engine has found.

After the scan is complete you will see the images that were catalogued in this capture.



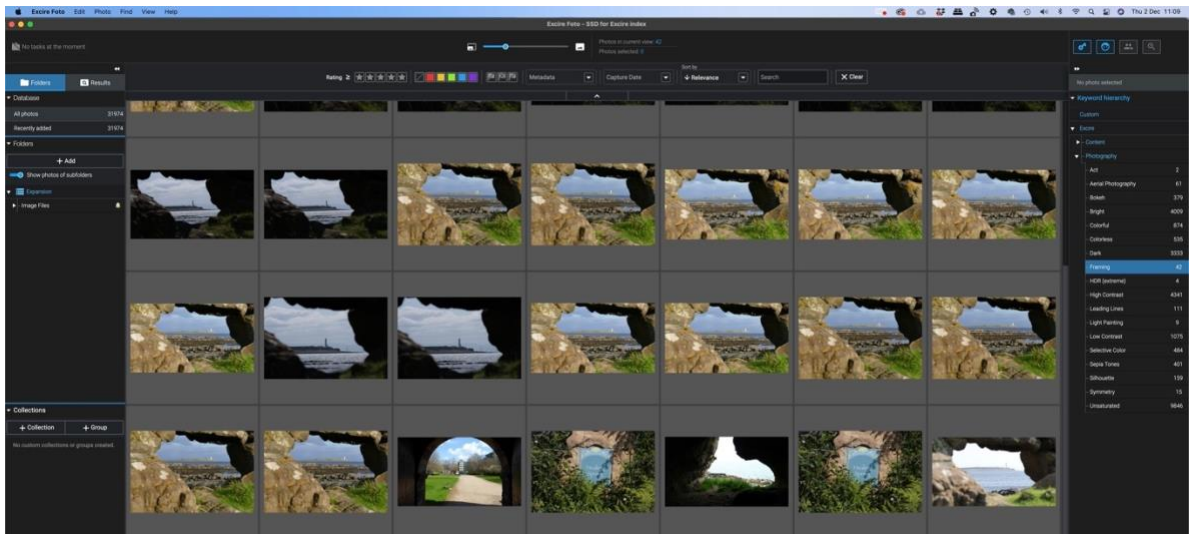


On the right hand side of the user interface screen you can see the keyword selection that the AI engine has discovered and it divides between identifying content within the image such as faces, places, vehicles, technology items etc and each category is subdivided into many types depending upon the category.

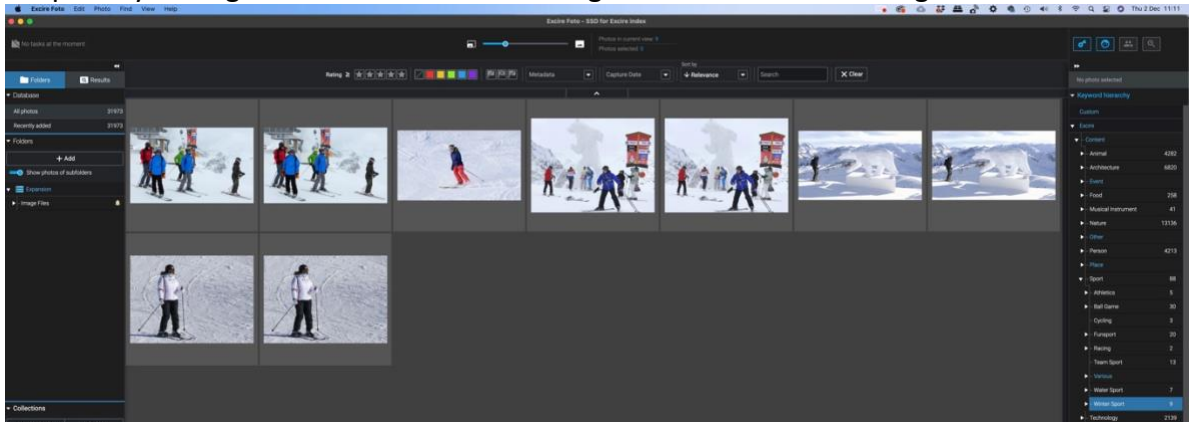
The other Excire content is based upon the photographic type of image and can be elements based on saturation, leading lines, Bokeh etc.

These Keywords are used to search for particular images within the catalogue that you have created.

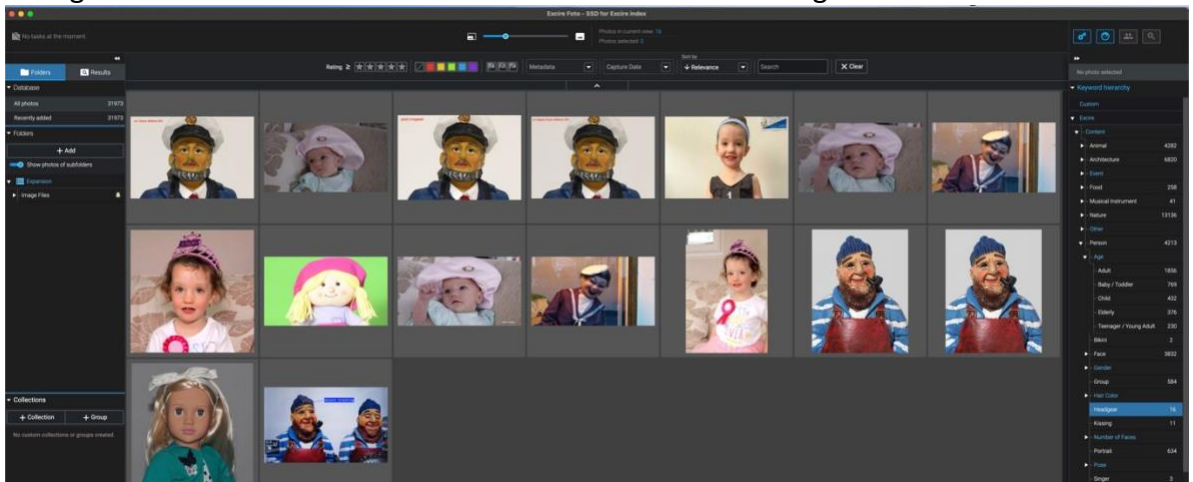
In the following example I queried the database of images for all photos which had a frame within its composition. It returned 42 images in the selection



For the next search I wanted to find some winter sports images – ones I had shot skiing a couple of years ago – it returned those 9 images with skiers in the image

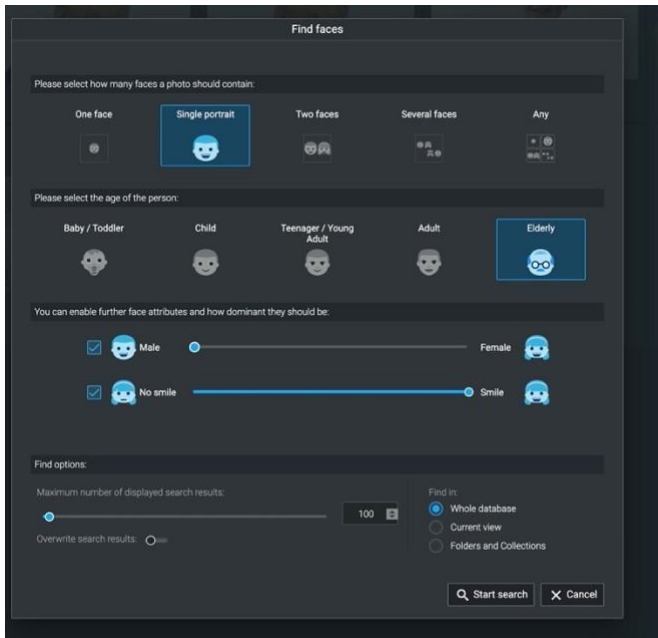


The next search was to find all the images where a person was wearing some type of headgear such as a hat or similar item – it returned me 16 images.

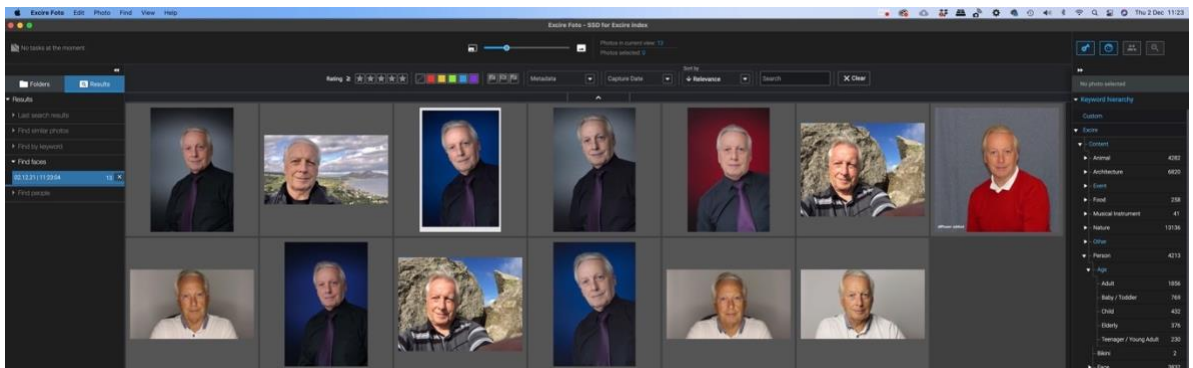


You can use the program to search for faces or ask the computer to find images that match one that you have selected – either from within your collection or from an external source.

By clicking the Face icon at the top right of the UI it brings up the selection dialogue box.



For my search I was looking for all male, elderly portraits where the subject was smiling.



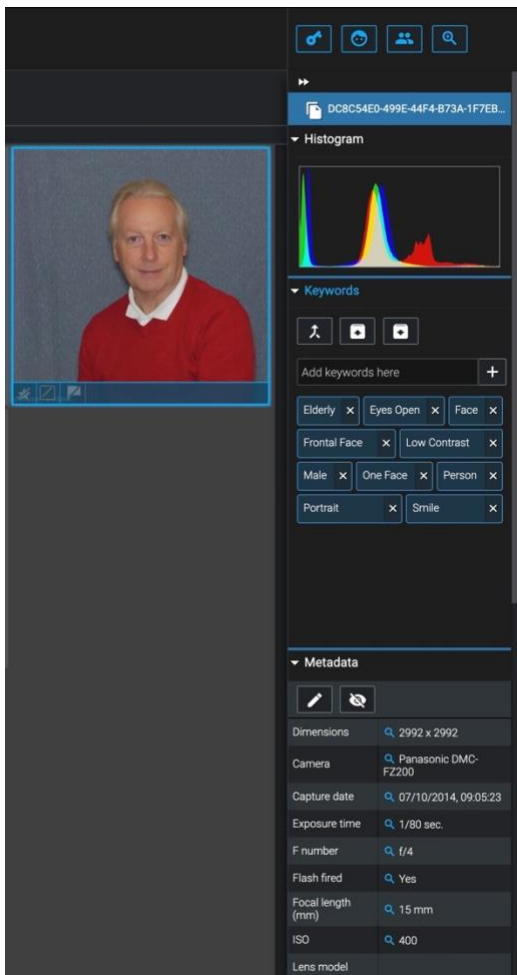
The program returned 13 images matching that criteria. It was useful to find duplicate images and be able to delete from the catalogue (or delete entirely from the source directory).

The size and JPEG compression level of the thumbnails stored in the catalogue can be specified in the Preferences section of the program.

When you double click on a selected image you will see it with this resolution.

Optionally you can create 1:1 previews of that image or download the image at its original resolution from the source database.

If the catalogue is stored on the same drive as the source folders then this can take up quite a bit of space so I have used a 500GB SSD drive attached to the computer just for that purpose of holding the catalogue and any 1:1 previews that I create.



With any selected photo you can see the keywords identified by the AI engine and also look at the image histogram and EXIF data.

If you see that one of the keywords is inaccurate then you can delete it to prevent future failures when selecting this image.

It is important to add new images to the database by using the “copy and add” menu option. In this way, even if you cull a lot of the images afterwards they have been registered, the keywords added and can be searched straight away. Images may be exported to locations on your computer or links to social media.

The current price is €69 here is the link to purchase the software (it’s an affiliate link and I will earn a small commission if you do purchase it – though it will not cost you any more)

<https://excireeu.pxf.io/c/1264971/1012583/13204>

There are so many exciting features within this program, too many to cover in this brief review, and I suggest you look at the user manual to see the whole range of options that are available.

Link to Excire manual [User Manual – Excire https://www.excire.com › manuals › ExcireFoto ...](https://www.excire.com › manuals › ExcireFoto ...)

Panasonic Lumix FZ300 Top Zoom Lever failure

You may have seen my mention that the top Zoom lever failure is becoming one of the number one potential faults with this camera.

The official repair involves replacing the whole camera top plate. The cost of the part (from Thailand as Panasonic UK will not sell it (apparently)) is £90.

I was going to attempt the repair but ran into problems removing the case, which is fitted quite tightly for weatherproofing, and so gave up on the idea for fear of not being able to get it opened or closed again without damage.



The lever operates a variable resistor (potentiometer) and the probable cause of the erratic operation or failure of the potentiometer is due to dirt on the carbon track and possible corrosion of the wiper assembly. On forums a few people have reported some success by operating the lever from wide to tele for about 100 times with the power off.

My thoughts are that this extensive wiping action clears the track of dirt and the slightly abrasive nature of the carbon track cleans the surface of the wiper if there is any corrosion there.

I tried this with by keeping the camera powered off and then (whilst watching a tv program to overcome the boredom!) just operated the lever from wide to telephoto at about 1 second intervals for about 10 minutes.

I was very surprised to find that when I turned the camera back on the zoom worked perfectly normally!

I have been checking daily and it does seem to be working consistently!

This is probably analogous the noisy volume controls on radios which often caused some crackling as you turned up the volume. Aerosol based cleaners were often used to clean these but obviously with our camera the camera is weather proofed and would be impossible to get cleaner into that area.

I would suspect that cameras used in more humid areas may suffer more contact wiper corrosion than drier areas of the world and that if this turns out to be a universal fix that this might need to be carried out at regular intervals to prevent the contacts becoming high resistance again.

If you have this problem with your camera and try this out and it works for you too, please let me know with this email link and I'll publish the results in the next newsletter.

[mailto:support@grahamhoughton.com?subject=FZ300 zoom lever failure success.](mailto:support@grahamhoughton.com?subject=FZ300%20zoom%20lever%20failure%20success)

Christmas and New Year's Greetings

Well as this is the last newsletter for 2021 I would just like to take this opportunity of thanking you for your subscription to this newsletter and to the many email responses to it.

If you celebrate Christmas have a very merry time but stay safe with the new Covid variants that seem to be emerging in various parts of the world.

I'm hoping Christmas won't be put on hold like last year and I'm looking forward to having all the family together to celebrate with us.

So Let's hope that 2022 is a better year for us all and that all your plans and aspirations materialise.

So until the next newsletter, early January

All the very best,

Graham