A

Panasonic FZ-200 and FZ-300 Evaluation

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I have really liked the Panasonic (prosumer type) cameras and have used several of their models over the years. They have some great advantages for nature photography. These advantages include a Leica lens (good quality photos at the lower ISO's), ability to take remote triggering devices, will flash sync at any shutter speed, good movable LCD screen, and ease of attaching Raynox close-up and telephoto lenses.

Like most prosumer cameras they are light weight and have a much greater depth-of-field than DSLR cameras. In addition they have a quiet shutter which is a great advantage when the camera is close to animals.

The biggest drawback with these types of cameras is they are generally slow to focus. This makes them very difficult to use for capturing action in nature. Also they do not do well at the higher ISOs (usually above ISO 800).

This has now been mostly solved by the latest Panasonic Lumix model-the FZ-200. This camera has a 25 mm to 600 mm f 2.8 lens which focuses very fast. It also has an intelligent zoom which takes it up to 1200 mm with less loss in quality than normal digital zoom. It accepts an external microphone and can do video, which can be turned off and on with a remote triggering device.

I have tested the camera under most conditions that one might encounter in nature. Basically what I have found is this camera, with some attachments, can zoom from 25 mm to 2640 mm and stay at f 2.8. It can full frame subjects as small as 2 millimeters from about 4 inches away.

In others words the FZ-200 can cover about anything you might want to photograph in nature. This can be done with a lightweight, relatively small, and not too expensive package of accessories. Here is a list of accessories and their approximate price and weight.

FZ-200 Camera, $598.00, 1.18 lb

DMW-LA7 Conversion Lens Adapter $39.95, 2 0z

Raynox DCR-250 2.5x Super Macro Lens $78.95, 3-4 oz

Raynox DCR-2025PRO 2.2x Telephoto Lens $234.80, 9.7 oz

Vello freewave remote triggering device $70.15, 2-3 oz

Professional Interval Timer Remote Control Shutter for PANASONIC Lumix $27.99, 2 oz

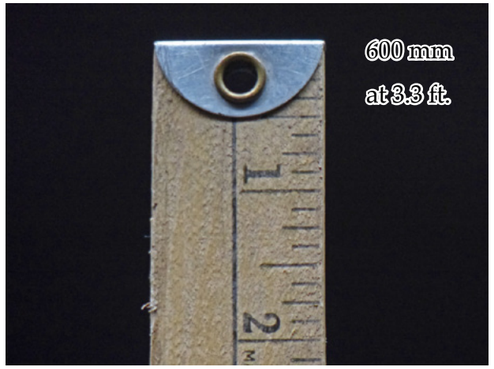
When the Raynox telephoto is attached to the camera, that brings it to a 2,640 mm lens at f 2.8, the total weight of the set-up is 2.2 lbs. The cost of this set-up is about $900.

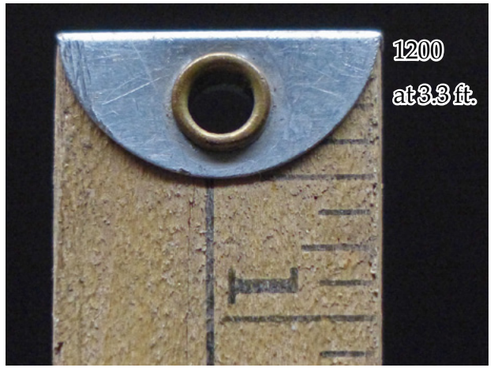
I have evaluated the camera and the various attachments using examples in nature that one might encounter. These experiments were done during the last few windy rainy days. Or under normal conditions!

In the following pages I have evaluated the results and give examples.

How close will the lens focus at full telephoto? This is useful for photographing large bugs i.e. butterflies, dragonflies at a distance without disturbing them.

At both 600 mm and 1200 mm the camera will focus at 3.3 feet.



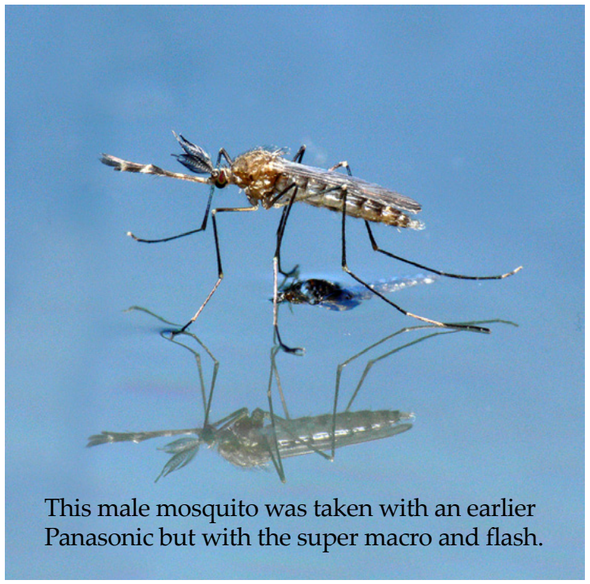


Conclusion: Should be very useful for photographing large insects from dragonflies to bumblebees without disturbing them.

What size insect can I expect to photograph with the Raynox DCR-250 attached?

You should be able to full frame about any insect from a bumblebee to a tiny springtail or mite from about 4 inches away.


These springtails are only about 2 mm long (no flash).


This male mosquito was taken with an earlier Panasonic but with the super macro and flash.

Conclusion: In my opinion the Panasonic Lumix cameras are the best camera for taking close photos of insects. The high depth of field and ability to flash sync at any shutter speed help.

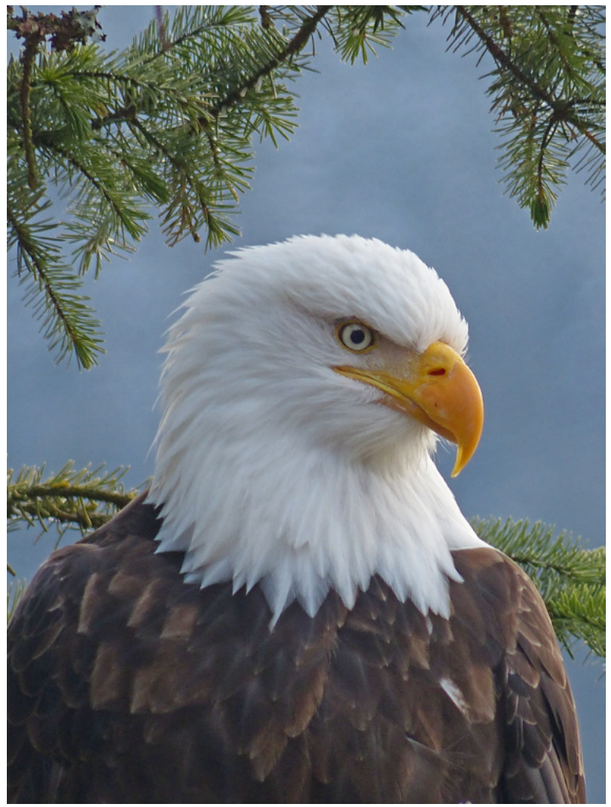
Does the camera focus fast enough to capture small birds flitting about the brush or birds in flight? I have experimented with tree sparrows and common redpolls flitting about in the brush. In addition I have practiced on flying birds.

Tree Sparrow at 600 mm, f 2.8, 1/125 second, ISO-200, hand held.

Both of these photos were taken at 600 mm, f 2.8, 1/1000 sec, ISO-100, hand held.

Conclusion: The camera focused fast enough to capture small birds in brush and birds in flight. I would not hesitate using it for action photographs. In addition it has burst speeds up to 40 frames per second. It has a mechanical shutter.

What kind of results can I expect with the Intelligent Zoom setting? The intelligent zoom pushes the lens up to a 1,200 mm equivalent in the digital mode.



The photo on the left is taken at 600 mm and the one on the right at the Intelligent Zoom setting of 1,200 mm. Both photos are full frame hand held.

Conclusion: At the maximum optical zoom of 600 mm the results are good. At the maximum Intelligent digital zoom the images start to deteriorate but can be acceptable. I did notice better results at lower mm settings in the Intelligent Zoom setting. Seemed like up to about 1,000 mm was ok.

What are the results when the Raynox DCR-2025PRO 2.2x Telephoto is attached? At the optical 600 mm setting this gives a 1,320 mm equivalent. At the Intelligent Zoom maximum this gives a 2,640 mm equivalent. There is no loss in light when using the Raynox and all extensions can be used at f 2.8.

This photo was taken with the Raynox attached at the 600 mm maximum optical zoom which gives a 1,320 mm equivalent. I have noticed no loss in photo quality as long as the lens is kept in the optical zoom range.

Both of these photos are presented full frame with no cropping.

This photo was taken with the Raynox attached at the 1,200 mm maximum Intelligent digital mode. This gives a 2,640 mm lens equivalent. I do notice a loss in quality at the high end of the mm equivalent. It seems much better at 2,000 mm and less.

Conclusion: Using the Raynox lens gives excellent results as long as you stay in the optical zoom range. This gives a maximum zoom of a 1,320 equivalent.

When going into the Intelligent zoom range the results can be variable. It definitely has possibilities below a 2,000 mm equivalent.

What can one really expect at a 2,640 mm equivalent? This is a huge mm size that even exceeds most digiscoping. I see some real advantages for capturing certain action photos at a great distance and for behavior documentation and species identification.

Both of these photos were taken with the Raynox at the 2,640 mm equivalent. The top photo was hand held and the bottom photo was taken from the car in the pouring rain. The photo of the merganser with a blenny captures behavior. The lower photo are of resting gadwalls, an uncommon to rare duck in the Juneau area, so nice to document their presence and to not disturb them.

What are some of the other advantages of the Panasonic Lumix FZ-200? All of the controls that you would normally use in the field are accessed without having to go into the menu. The manual video mode works great. This gives you complete control over the video settings and best of all it can be activated and turned off from a considerable distance with a wireless remote control. A small lightweight interval timer can be attached to the camera. This means you can set the camera up, perhaps at a birds nest, and walk away and it will take photos at whatever interval you set.

Even if you don't attach a telephoto to the camera the **DMW-LA7 Conversion Lens Adapter** is good to have. This protects the zoom lens from rain and in a sense the zoom then operates internally. Also rain hoods attach firmly to this adapter and allow for photography under rainy conditions. The entire Raynox telephoto set-up has no moving parts so rain cannot penetrate any part of the lens. It also has a long lens hood which gives it further protection. (Note the Raynox telephoto lens is very light, about 1 lb, and does not seem to put a strain on the camera).

How does it work in the video mode? There are two video modes, automatic and manual. In the manual mode you control all of the settings and best of all it can be turned on and off remotely by using the **Vello freewave remote triggering device.** With a 64 GB card the video will run over two hours continuously and the battery will last for about 3 hours of continuous use. I have often set up the camera near a marmot den, sapsucker tree, or bird's nest and turned the video on and left the area. Most creatures accept the camera within minutes and seem to return to normal behavior. The quality of the video seems quite good and it is easy to capture unusual behavior.

Here are a couple of grab frames from a video taken at a sapsucker tree. I set the camera on a tripod, about 10 feet away, turned the video on and left the area. The left photo shows a young squirrel interacting with its mother and the right photo shows an adult red-breasted sapsucker that pecked at its youngster to drive it away from the tree.

The lower photo shows the camera set up near a marmots den. By turning the video on and leaving the area you can usually capture interesting behavior.

With the Super Macro lens attached how does the built in flash work? Great, which really surprised me. This allows for hand-held photos of insects in nature. Best of all you take the photos from 4-5 inches away so you usually do not disturb them. By setting the camera at ISO 100, F-8, flash turned on, automatic focus and exposure you can get good photos. Here are a couple of examples -- most are nearly full frame.

Aphid with youngster.

Left-Moth Fly (very tiny only a few mm)

Right-Bruce spanworm moths mating.

The female does not have wings. A photo I have always wanted. Hand-held supermacro using built in flash. Focused well at night with just a headlamp illuminating the moths.

Conclusion: I am really impressed with the ability to take quality photos of insects in nature -- no tripod -- no special flash set-up -- all hand-held -- and I have old-man's hand shake. I have ordered a couple of attachements that turn the camera into a microscope -- stay tuned.

How does the Raynox MSN-505 Super Micro Lens work on the Panasonic FZ-200? At 600 mm it will full frame an object 2 mm wide. Moving the zoom into the intelligent zoom range you can full frame an object about 1 mm wide. Many creatures such as tardigrades, rotifers, and mites can be photographed. For example a tardigrade is about .5 mm in length or about the size of a sharp pencil dot. Because of a very shallow depth of field the results are variable. Immobile creatures can be stacked to get a better depth of field. What really pleased me, though, was taking videos of tiny creatures which, in my opinion, was very good. I used the manual video setting on the camera at ISO-100, F/11, 1/40 second. Illumination was with two Neewer CN-160 LED VIDEO Lights ($28.95 each new from Amazon). For still subjects a Nikon Speedlight SB-30 mounted in the hotshoe of the camera worked fine. Some sort of macro stand with fine adjustments really helps. The LM Makrostativ3 from Micro-Tech-Lab in Austria works well but it is fairly expensive ($1,134).

Left - nematode

Right - springtails

Below - mite, with some stacking

Below right - tardigrade (grab frame from video)

Below lower right - tardigrade still with flash.

How does the Cactus Laser Trigger LV5 work with the Panasonic FZ-200 camera? It works fine. The advantages of the camera include ability to flash sync at any shutter speed, silent shutter, and great depth of field. The advantages of the Cactus Laser Trigger are fairly low cost (about $90), very light, seems well built, and lots of possibilities for capturing things in nature that would be difficult by conventional means. In conjuction with the Laser Trigger I would recommend the Cactus Wireless Flash Transceiver V5 Duo. This transceiver allows you to use the camera with the Laser Trigger in a wireless mode. The cost of the V5 Duo is about $60.

It was fun to set up the equipment at a bird feeder, focus the camera where the laser beam crosses and use the zoom lens at about a 25 mm equivalent. You can use a separate electronic flash or I found the built in flash on the camera worked fine. Setting the shutter speed of the camera fairly high i.e. 1/1000 sec or more avoided double imaging with natural light. The ability of this camera to flash sync at these high shutter speeds really helps.

And best of all you can go into the house, drink a cup of coffee and let the equipment do the work.

Overall conclusion: This is the best camera I have tested for overall versatility in photographing nature in Alaska. If your goal is to cover a wide variety of subjects and situations with a minimum of weight and cost then this camera would be a good choice.

1,316 mm, iso 100, 1/80 sec, f 2.8 with Raynox

2,145 mm, iso 100, 1/80 sec f 2.8 with Raynox

How about the new Panasonic FZ-300? It seems to do everything that the FZ-200 does and more. All attachments work well on the 300 although the mike plugin is larger (see below). In general it focuses faster and seems to do better at the higher ISO's. It has a coating that makes it more dust proof and splash proof so it is a little heavier (1.52 lb with battery).

Of special interest to me is **the ability to do 4K video**. So far I am very impressed with the video quality at 4K. While using 4K for many applications, such as vimeo and power point, does not work at its full resolution. However, when downsizing for these applications (seems to be automatic) the videos look better than if they had been taken at 1080.

In a 4K video you can import it into Photoshop Elements and use grab frame to obtain a particular image. These images turn out to be at full frame 12.8 inches by 7.2 inches at 300 dpi. This means you can capture a special moment in a video and still use a still image for other applications.

On the next page is a grab frame taken from a 4K video without any cropping.

You can look at the video by going to http://naturebob.com/i-your-pole the larger size is at 1,200 mm digital zoom the smaller images are at 600 mm optical zoom

The FZ-300 has a built in ability to take time lapse photos. The FZ-200 required the use of an external Interval Timer Remote Shutter.

You can use the external Panasonic Microphone for the FZ-200 on the FZ-300 by purchasing a Hosa 2.5 mm femaleTRS to 3.5 mm male TRS. B & H photo sells this adapter for $2.40.

The FZ-300 also has the ability to hook up to WiFi and a touch screen which the FZ-200 did not have.