

What are these black spots?

Prevent dust and foreign matter from adhering to the low-pass filter

D-SLR cameras are designed to be used with interchangeable lenses and foreign matter may enter the camera when lenses are changed. Once inside the camera, this foreign matter may adhere to the sensor, where it may appear in photographs taken under certain conditions. To prevent foreign matter from entering the camera

- do not change lenses in dusty environments
- point the camera down when changing lenses.

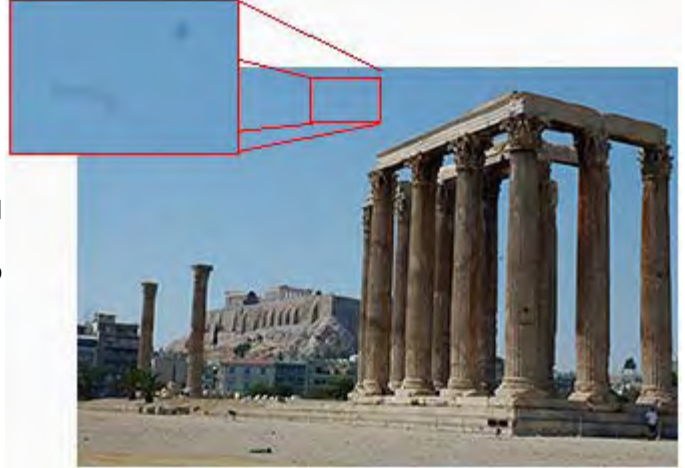
To protect the camera when no lens is in place be sure to thread on the body cap provided with the camera, being careful to first remove all dust and other foreign matter that may be adhering to the body cap.

Remove foreign matter from low-pass filter

1. Clean the low-pass filter covering the sensor as instructed in the camera manual or continue reading below.
2. Have the low-pass filter cleaned by authorized Nikon Authorized Service Center

Fix images with black spots

Photographs with dust or foreign matter on the low-pass filter can be retouched using the 'Image Dust Off' function available in Nikon Capture 4 or later (available separately) if the image was taken in the NEF format, for more information visit the article on 'How does Image Dust off' work.



Cleaning a D-SLR low-pass filter

The sensor is covered by a low-pass filter to help prevent moiré, it also prevents dirt from adhering directly to the sensor. The following methods are for checking whether the filter requires cleaning and includes the procedures that are required to be taken to perform this action.

1. To ensure that the shutter is not damaged, this procedure requires that the camera be powered by an AC adapter (available separately). Turn the camera off and connect to the correct AC adapter. An AC adapter is not required for cleaning the low-pass filter of the D200/D70/D70s or D50 it is recommended for prolonged inspection or cleaning.
2. Remove the lens and turn on the camera.
3. Consult the camera manual for the exact steps, but in general choose the camera's "Mirror Up" mode for cleaning from the Setup menu or custom settings:
 - D1 series - Custom Setting 8
 - D100 - "Setup menu" --> "Mirror Lock up"
 - D70 - "Setup menu" --> "Mirror Lock up"
 - D2 series - "Setup menu" --> "Mirror Lock up"
4. The mirror will be raised to the cleaning position and the shutter curtain will open, revealing the low-pass filter. Note, when cleaning the filter the camera's viewfinder and top LCD will display a row of dotted lines, this is normal.
5. Holding the camera so that light falls on the low-pass filter, it is possible to examine the filter for dirt and dust (Image 1). Should a foreign object be found on the filter, it should be cleaned as described below. If there is no dirt on the filter, turn the camera off, the mirror will return to the down position and the shutter curtain will close.

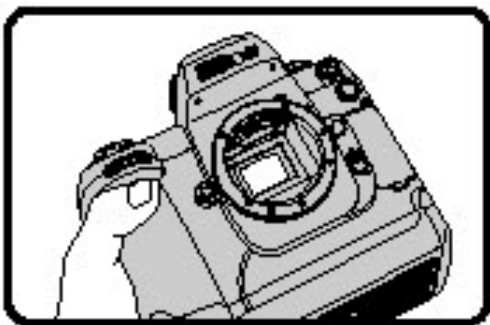


Image 1. Holding the camera for filter inspection.

Cleaning the Filter.

The low-pass filter is extremely delicate and easily damaged. It is recommended that the filter is cleaned by a Nikon-authorized service facility. The following steps have been provided if users ignore this warning.

1. Raise the mirror as described above. *Note: a Nikon AC adapter (available separately) is required for this operation; if no adapter is available, the camera will have to be cleaned by a Nikon-authorized service center.*
2. Remove dirt and dust from the filter with a blower (Image 2). The use of a blower-brush is not recommended as the bristles may damage the filter. Dirt that can not be removed with a blower can only be removed by a Nikon-authorized service center. Under no circumstances should the filter be touched or wiped. If attempting to use an compressed air please take great care to hold the can upright to prevent liquid propellant from falling on the CCD.
3. Turn the camera off and the mirror will return to the down position and the shutter curtain will close.
4. Replace the lens or body cover, then unplug the AC adapter.

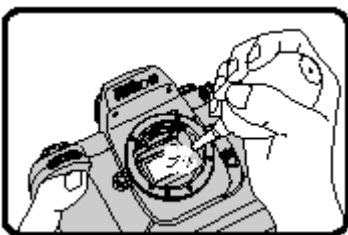


Image 2. Using a blower to remove dust.

Cleaning the Filter with cleaning liquid.

There are various types of imaging sensor cleaning products available that may include a liquid cleaner together with image sensor wipes. It is possible that these liquids can be used, but as stated above the low-pass filter is extremely delicate and easily damaged. Any damage that maybe caused by the use of these products, by the user, may result in a chargeable repair for replacement of the Filter/sensor unit. Nikon does not recommend cleaning the sensor with anything other than gentle air.