

Photo 101

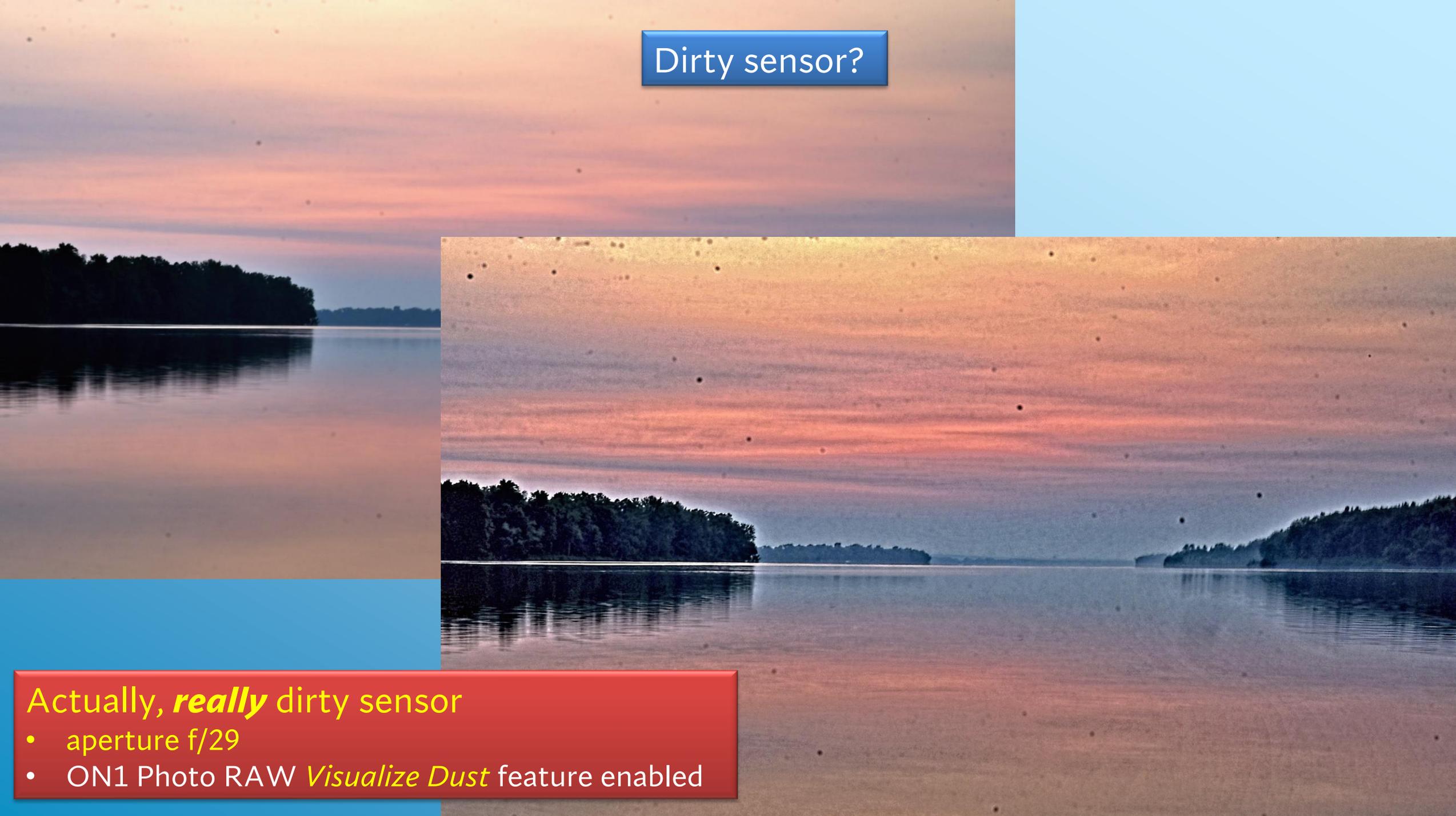
Sensor cleaning

Orleans Photo Club 2025-11-08



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Dirty sensor?



Actually, **really** dirty sensor

- aperture f/29
- ON1 Photo RAW *Visualize Dust* feature enabled

Clean sensor?

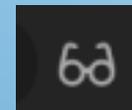


Not perfect

- ON1 Photo RAW *Visual Dust* feature enabled

Finding sensor spots

- Take photo of plain surface such as a wall
- Ensure surface detail completely blurred
 - manual focus with focus well away from surface
 - long exposure & move camera during exposure
- Small aperture
 - dust spots much more apparent at small apertures
- Examine photos
 - look for dust—will show up as dark spots
 - Adobe Lightroom
 - *Develop* module > *Spot Removal* tool > checkbox *Visualize Spots* (or press A)
 - ON1 Photo RAW
 - *Healing Brush*, *Perfect Eraser*, *Retouch Brush*, or *Clone Stamp* > *Visualize Dust*



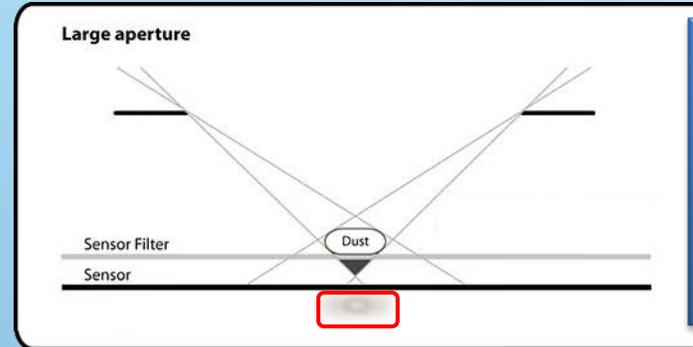
Aperture and sensor spots

Aperture should have no effect

- sensor is far behind lens & aperture

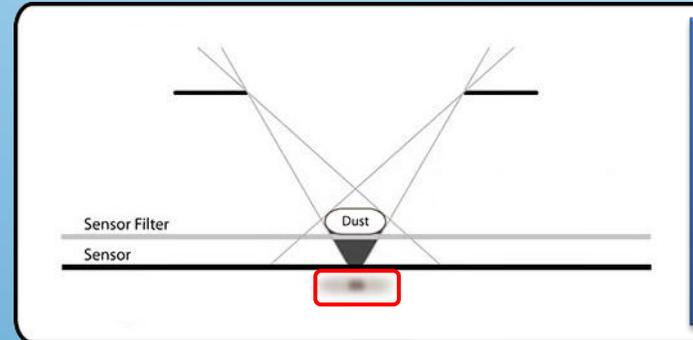
Would be true if dust was *on* the sensor

- but dust is on *sensor filter*
- in *front of sensor*



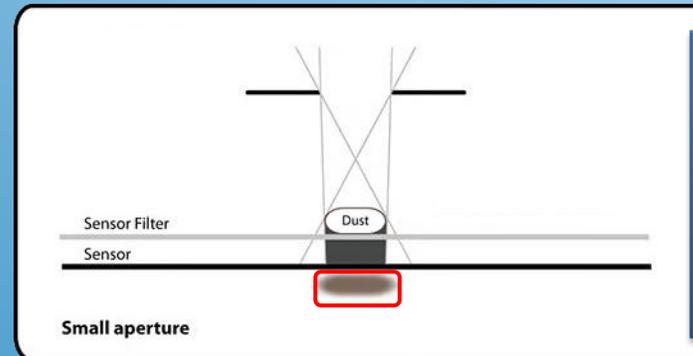
Large aperture

- light falling on dust is **very wide**
- casts a **ring shadow**



Medium aperture

- light falling on dust is **wide**
- casts a **soft shadow**



Small aperture

- light falling on dust is **narrow**
- casts a **hard shadow**

Avoiding sensor spots

- Don't change lenses in dusty environment
- Use camera's sensor shield (e.g. Nikon Z8, Z9)
 - Nikon Z8 and Z9 sensor shield disabled by default
 - Setup menu > Sensor shield behaviour at power off
- ...or configure mechanical shutter to close when camera powered off
- Aim opening downwards when changing lenses
 - dust more likely to fall down than up
- Use built-in camera sensor cleaner
 - vibrates sensor to shake off dust
- Clean your sensor

How do I keep my camera sensor clean when changing lenses outside?

<https://www.dpreview.com/learn/8769777886/how-do-i-keep-my-camera-sensor-clean-when-changing-lenses-outside>

Cleaning your sensor—options I have used

Cheap blower

- \$12 at Amazon Canada
- *maybe not recommended*
 - no filter on air intake
 - could blow dust *onto* sensor



Wet sensor swabs

- \$1-\$2 per swab at Amazon Canada
 - packs 6-40 swabs
 - buy with liquid 1st time
- get size that matches sensor (full-frame, APS-C, micro4/3)



VSGO blower

- \$28 at Amazon Canada
- filter on air intake
 - less likely to blow dust *onto* sensor



VSGO Electronic Air Blower

- \$130 at Amazon Canada

- **I accept no responsibility for negative outcome!**
- can be done professionally if concerned

Cleaning your sensor—options I have **not** tried

Canned air

- **don't use:** can leave residue



Sensor brush

- \$25-\$45 at Amazon Canada
- spinning brush creates static around bristles to attract dust



Sensor gel stick

- \$20-\$70 at Amazon Canada
- get kit that includes sticky papers
 - dust sticks to gel pad
 - paper stickier than gel pad
 - dust transferred to paper

- **I accept no responsibility for negative outcome!**
- can be done professionally if concerned

In case you didn't notice

- **I accept no responsibility for negative outcome!**
- can be done professionally if concerned

- Having said that...
- I have cleaned sensors dozens of times
 - first with blowers
 - followed by wet swabs if blower didn't clean everything
- I have not damaged a sensor
...so far
- Most cameras have a filter in front of sensor
 - reputedly pretty tough, certainly tougher than sensor itself
 - some cameras may not have a sensor filter
 - e.g. monochrome/scientific/modified cameras

This info also available in article by Lynda
<https://opcug.ca/Photography/CleaningCameraSensor.pdf>