Lens and sensor crop cheat sheet

How the sensor changes the field of view of a lens, with the arithmetic and the checks to make before the shoot.

A lens does not change when you put it on a different camera, but the picture does. The sensor decides how much of the lens's view it records. Multiply the focal length by the crop factor to get the full-frame equivalent.

The crop factor at a glance

Format	Crop factor	Note
Full frame	1.0	Reference format, 36 x 24 mm. The diagonal is 43.3 mm.
Super 35	1.46 to 1.53	Canon gives 1.460x to 1.534x, depending on the aspect ratio. Sensor size varies by camera.
APS-C (Canon)	1.6	Canon's figure for APS-C stills sensors.

The arithmetic

- Full-frame equivalent = focal length x crop factor. A 35 mm lens on Super 35 at about 1.5 gives roughly 52 mm on full frame.
- Canon's example: a 50 mm lens on Super 35 gives a field of view similar to 75 mm on a full-frame camera.
- Canon's example: a 50 mm lens on APS-C at 1.6 becomes 80 mm (50 x 1.6).
- The crop changes the framing, not the aperture. To compare depth of field, use the equivalent focal length and the aperture together.

Checklist before the shoot

- [ ] **Find the sensor size or the crop in the camera's specification for the recording mode you will use.**
- [ ] **Write the crop factor beside each lens on the sheet.**
- [ ] **For each focal length on the shot list, multiply by the crop factor.**
- [ ] **Check the framing on the monitor with the real lens, not only on the sheet.**
- [ ] **Check the recording mode.**
  Some cameras crop the sensor at higher resolutions or frame rates. Confirm it on the camera rather than assuming it.
- [ ] **Note the crop and the recording mode on the camera report.**

Worked example

A medium close-up planned on a full-frame camera with a 75 mm lens can be matched on a Super 35 camera with a 50 mm lens, because 50 mm on Super 35 gives a view similar to 75 mm on full frame. The shot list should show the lens that was used, not only the one planned.

Lens table

Lens	Focal length (mm)	Format or mode	Crop factor	Full-frame equivalent (mm)
Example: 50 mm	*50*	*Super 35*	*1.5*	*75 (as Canon's example)*

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Common mistakes

- Using a stills crop factor for video, or the reverse.
- Quoting a sensor size from a product page instead of the recording mode in use.
- Forgetting the crop when mixing lenses from different formats on the same day.
- Assuming a 4K crop mode uses the whole sensor.
- Writing the focal length without the crop, so the camera report cannot be read later.

Checked 5 November 2026. Sources: Canon Europe, Full-frame vs Super 35mm: which sensor size should filmmakers choose? (canon-europe.com/pro/stories/full-frame-vs-super-35-sensors/), for the Super 35 range, the APS-C figure and the 50 mm examples. Full-frame reference size and diagonal: Wikipedia, Crop factor (en.wikipedia.org/wiki/Crop_factor).

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