Colour temperature and gel cheat sheet

Mixed colour temperatures are the most common cause of a picture that looks wrong. Know the source, correct it with the right gel, and set the camera to match.

Tungsten light is about 3200K and daylight at noon is about 5500K, so a mix of the two needs correcting. A full CTB takes tungsten to daylight. A full CTO takes daylight to tungsten. Fluorescent needs its own correction, and LEDs must be checked on the fixture.

The numbers to know

Source	Typical colour temperature
Tungsten	About 3200K
Sun at sunrise or sunset	About 2000K
Sun at noon, clear summer day	About 5500K
HMI	About 6000K
Fluorescent	No single value. Correct with a fluorescent filter.
LED	Set by the fixture. Check the spec or the display on the fixture.

Correction filters (LEE)

Check the filter number before you cut. Similar numbers do different jobs.

Filter	Change	Use
201 Full CTB	3200K to 5700K	Tungsten to daylight
202 Half CTB	3200K to 4300K	Tungsten, partly to daylight
203 Quarter CTB	3200K to 3600K	Slight correction
204 Full CTO	6500K to 3200K	Daylight to tungsten
205 Half CTO	6500K to 3800K	Daylight, partly to tungsten
206 Quarter CTO	6500K to 4600K	Slight correction
241 Fluorescent 5700K	Tungsten to 5700K	Fluorescent, to daylight
242 Fluorescent 4300K	Tungsten to 4300K	Fluorescent, to warm white
243 Fluorescent 3600K	Tungsten to 3600K	Fluorescent, to a warm tone
219 Fluorescent Green	Tungsten to fluorescent	Fluorescent, when its colour temperature is unknown

Worked example

An interview lit by a tungsten lamp, with a window behind the subject. The window is daylight at about 5500K and the lamp is 3200K.

1. Correct the lamp with a full CTB, which takes it to about 5700K. The lamp and the window now match.
2. Set the camera white balance to daylight, or to the colour temperature you want on the picture.
3. Check the skin tones on the monitor. If the face looks blue, the correction is too strong, so use a half CTB.

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Checklist before the lights go up

- [ ] **Name every source on the set: lamps, practicals, windows and screens.**
- [ ] **Note the colour temperature from the fixture, the bulb or the spec.**
  Fixed LEDs have their own figure. Adjustable LEDs are set from the fixture.
- [ ] **Correct each source that does not match the look, with the filter from the table.**
  Check the filter number on the sheet before you cut.
- [ ] **Set the camera white balance to the look you want.**
- [ ] **Check the skin tones on the monitor with the real light.**
  If the face looks blue or orange, the correction is too strong or too weak.

Common mistakes

- Mixing a tungsten lamp with daylight and setting the camera to one of them. The other source then looks orange or blue.
- Correcting a fluorescent with a tungsten gel. The result is a green or magenta tint that no white balance will fix.
- Assuming every LED is 5600K. Fixed LEDs have their own figure, and adjustable LEDs are set by the operator.
- Using a half correction and expecting the full result. A half gel gives a partial correction.
- Setting the colour temperature on the camera without checking it against the light on set.

Checked 5 November 2026. Source: LEE Filters, colour temperature calculator, leefilters.com/lighting/colour-temperature-calculator. Filter numbers, kelvin figures and fluorescent filters are as listed on that page. Read the guides on three-point lighting and on tungsten and LED light for placement and source choice.

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