

DIY Solar Light Troubleshooting Checklist (Backyard / Wall-Mounted)

Use this 1-page checklist to diagnose common residential solar light failures quickly. If you are working on municipal/pole-mounted systems, use the project-grade guide instead.

30-Second Quick Checks (Do these first)

- ☐ Clean the panel (dust/bird droppings) and remove any shading (trees, roofs, cables).
- ☐ Look for an ON/OFF switch. If none, find a small pinhole RESET button (use a paperclip to press and hold 3-5 seconds), then power-cycle.
- ☐ Confirm the panel is facing the sun and not installed under an eave/overhang.
- ☐ Inspect connectors for looseness, corrosion, or water ingress (green/white powder).
- ☐ Replace the remote battery (if remote-controlled) and confirm sensor settings (motion/auto).

Decision Path (If still not working)

1. **A) Not charging / very short runtime** - panel dirty/shaded, bad connector, weak battery, or wrong mode (low power).
2. **B) Not turning on at night** - light sensor blocked, controller stuck, wiring/polarity issue, or LED driver fault.
3. **C) Flickering / unstable** - loose connector, water ingress, battery protection triggering, or driver overheating.

Basic Measurements (Optional but powerful)

If you have a multimeter, record these values. Compare across units to spot a bad battery or a charging path issue.

What to measure	How to measure	What it usually means
Panel voltage (midday, sunny)	Measure at panel output / connector	If very low: shading, dirty panel, broken cable, or bad connector
Battery voltage (resting)	Measure battery output with light OFF	If low: battery discharged, protection, or aging battery
Battery voltage (under load)	Turn light ON, measure again	If it collapses under load: battery weak or protection triggering

Common Symptoms - Fast Fixes

Symptom	Fast checks / fixes (most common)
No light at night	Clean panel; confirm sensor not covered; use pinhole reset or power-cycle; check connectors for corrosion; replace remote battery (if any).
Works 5-30 minutes then off	Battery weak or not charging: clean/shading; check panel cable; check battery under load; reduce brightness/mode if adjustable.
Flickering	Loose connector; water in housing; driver overheating; re-seal connectors; ensure ventilation; replace driver if persistent.
Always dim	Low battery; aggressive dimming mode; dirty panel; replace remote battery; check mode settings (auto/motion/timer).

Safety Notes

- ☐ Do not short the battery terminals. Use insulated tools.
- ☐ If the unit is wet inside, dry it fully before testing (water can cause false failures).
- ☐ If the battery is swollen, leaking, or hot, stop and replace it safely.
- ☐ **Battery types:** Replace with the exact same type (e.g., NiMH rechargeable or Li-ion 3.7V / 18650). Do not use regular alkaline batteries.

