

GROTE HEATED HEADLIGHTS Q&A

Grote's heated headlights feature a heated lens for anti-icing capability. This Q&A provides relevant information for operating and troubleshooting these lamps.

Q. How does the heated feature work?

A. The heated feature turns on when the lamp (high or low beam) is on. The heated operation is monitored by an internal thermostat. The lens heats up to a cut-off temperature of around 55°C and re-activates when the internal temperature drops to 35°C. This heat cycle repeats if the internal temperature drops below the re-activate point.

Q. These are LED lights, why do they consume more power than my halogen light?

A. Additional power is required by the heating element (a resistive circuit on the lens). Typical power consumption at 12V is in the 3.0-4.8A range for the heated low beam and is in the 4.3-7.3A range for the heated high beam. The heating element power consumption is in the 3.0-4.2A range at 12v.

Q. One lamp works fine but then fails when I connect both, why?

A. Erratic operation (failing to light, flickering, blinking, flashing, or working intermittently) is a sign of low battery or a bad connection. These lamps are designed to operate above 12V (measured at the plug pigtail). If the voltage measured at the lamps is lower than 10.5v, the lamps may begin acting abnormally. The issue is more obvious during startup (due to an inrush of current) or when you connect both lamps instead of one lamp. A low battery may show a normal reading when there is no load, but the reading may drop substantially when trying to turn on the light, especially if both lamps are connected. A bad connection (small gauge wires or poor wiring) can also cause the voltage to drop across a long connection line, thus reducing voltage delivery to the lamps. If additional lamps (i.e. work lamps) or other electrical equipment is being powered, the above issues can be exasperated, especially if the equipment is on a shared circuit with the headlights.

Q. Troubleshooting to fix wiring issues and erratic operation.

- A. The key is to make sure that lamps receive above 12V at input (measured at the pigtail plug when the light is on). Follow the steps listed below to troubleshoot related issues:
1. Check the wiring to make sure connections are correct and secured. Use 16 AWG wire for wiring individual lamps and 14 AWG wire when wiring two lamps. There are two ground wires (white) at the plug, one or both can be used. Any unused wires should be capped to prevent shorting. Should you need to connect a ground to the vehicle chassis, we suggest cleaning the connecting surface and then connecting the ground wire(s) to the input connectors using a ring terminal and screw.
 2. Check the voltage at the pigtail plug. If the voltage is lower than 12v, fully charge the battery before trying again. If you do not have the lights installed and working, do not stop charging once you see voltage is above 12V; continue charging for as long as you are working on the lamps. After installation, do not run the lamps for extended periods on battery power alone (with the engine off); doing so will quickly drain the battery.
 3. If you still see erratic operation after the battery is fully charged, go back to check the voltage again. If the voltage is low, check the wiring again and ensure you see 12V at the plug. If the voltage is normal, make sure you are not in DRL mode (make sure the vehicle is in park for automatics and in neutral with the parking brake set for manuals and that DRL is not activated).
 4. DRL or energy saving headlight controls use a PWM signal (a pulse on/off signal) instead of steady DC voltage. This can cause LED lights to flicker. Many vehicles use either low or high beam for DRL purposes. DRL signals measured with a meter have a lower voltage range of 5-11v. In this case, low voltage is not caused by a low battery but by a DRL pulse. Grote LED headlamps are not designed to be used as a DRL lamp. Some customers use our LED lamps either by disabling the DRL function (may need to be done by dealer) or by using an anti-flicker module (available from various brick and mortar and online retailers).

