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How to Upgrade Your Driving Lights

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This tech paper will discuss how to upgrade your early C4 driving lights. Later C4's already have this upgrade from the factory.

Overview & Procedure

Have you ever been a bit disappointed in the power of your C4 driving lights ("fog lamps")? Fact is, if you're running with the headlights on, turning the driving lights on makes virtually no difference in the lighting quality in front of your car. In actual fog conditions, running with only the driving lights on produces such lousy lighting that it's nearly unsafe.

The stock driving lights on a C4 are halogen bulbs rated at only 34 watts. This is less than the wattage of your low beam headlights, making the driving lights nothing more than a cosmetic, nonfunctional decoration. The problem is with the way we tend to drive here in the U.S.: In Europe, driving lights are bright, high-wattage lights used on the open road or under special conditions (like real fog). Here, every guy with an SUV with driving lights keeps the driving lights on at all times, just to show them off. For this reason, the automakers keep the wattage of these lights low: so you can have your driving lights on in city traffic, look cool, and not blind other traffic. But it makes them pretty useless, really. Here's how to fix that:

The stock bulbs in your driving lights are part number 880. This is a 34-watt bulb. This part is interchangeable with part number 885. This is a 50-watt bulb, or roughly one-and-a-half times as bright. The problem is, the 50-watt bulb will increase the amp draw on the circuit, and we must first verify that the system can handle this.

The driving lights are fused on the tail lamp circuit with a 10 amp fuse. Fuses are normally set to blow at about 10% above the rated load of the circuit (which has nothing to do with how much current the circuit wiring can safely handle), so a 10-amp fuse would be installed in a circuit drawing max about 8 amps. The purpose of the fuse is to protect components, switches and wiring in the circuit in the case of an overload condition. The components, switches, and wiring are normally designed with a 2:1 factor of safety to where the fuse is set to blow. In other words, a circuit with a 10 amp fuse can normally reliably handle up to 20 amps without damage to components.

Now, back to high school physics where we learned that wattage is equal to volts times amps. In our 12-volt system, we see that our stock 34-watt bulbs (2 of them equals 68 watts) are drawing a total of 5.6 amps. If we change over to the 50-watt bulbs (100 watts total), we will be drawing 8.3 amps. This is 2.7 amps more than stock. If the stock circuit is designed within 10% of the stock fuse (about 8 amps on the stock 10 amp fuse) we see that we will blow the fuse by installing the 50 watt bulbs. But, by adding 2.7 amps to the stock 8-amp circuit, are we within design limitations of the components? Yes, clearly we are, since we'll actually be below a total circuit amperage of 11 amps (and the circuit can handle up to 20). So pop out the 10-amp fuse, and put a 15-amp in its place. This will provide adequate circuit protection, and will allow use of the 50-watt bulbs.

I've been running 50-watt 885 driving lights in my '85, along with a 15-amp fuse in the tail lamp slot, for over four years now. The driving lights are brighter than the headlights, and provide outstanding lighting under all conditions. If you do this mod, just remember to show some driving courtesy with the bright lamps: I don't run with mine on against oncoming traffic at night or around town at night. But they do work significantly better than stock in the fog, snow, and on the open road: they actually become usable for their intended purpose!

NOTE:

Research on the driving light subject indicates that some C4's have their driving lights grounded directly to chassis ground. This setup is ideal for the above modification. Other C4's have their driving lights grounded through the headlight high beam filament. What this does is that it will automatically shut the driving lights off when the high beams are turned on. However, if your driving lights are grounded through your high beam filament, you will not get any noticeable improvement in lighting quality by going to the higher wattage driving light bulbs. In fact, the higher wattage bulbs will cause your high beams to glow dimly when the driving lights are turned on. To correct this, you must cut your driving light ground wire and ground it directly to chassis ground if you wish to perform this upgrade.

SOURCES:

If you have trouble finding sources for bulbs and lighting products, try:

zzz.autooptiks.com

They have #885 halogen replacements for the front driving/fog lights. They are 50w, but available in different flavors... an ultrawhite version #885UH that produces light at 3800 kelvin which is closer to a pure white than a stock bulb and best for using as a 'driving light' and a Gold Dichronic version #885G that produces light at 2700 kelvin which is better for bad weather conditions and best for using as a 'fog light'. Both put out 1104 lumens. They also have a high output clear halogen #885H that puts out 1202 lumens, but they also say that it has a shorter lifespan because of the higher output.

They also have things like replacement bulbs for the #2057 tail lights, except they're halogen bulbs rated at 50/15 - big difference compared to the 32/2 stock units. These work really well if you have shaded/tinted/blacked out tail light lenses.

Questions, Comments & Technical Assistance

If you have questions or comments regarding this article, or if you notice any errors that need to be corrected, please feel free to drop me an e-mail. Also, if you need any technical assistance or advice regarding this process, or other maintenance issues, feel free to contact me:

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