



clearwater
LIGHTS™



Installation Manual

BMW F900R & F900XR

Darla LED Light Kit

Dimmable

Patent Pending



Made in USA

Parts List and Bike Preparation

Please be sure to read our instructions thoroughly before attempting installation.

- Check the parts list supplied with your kit to be sure all parts are handy.
- First, park the motorcycle on hard pavement or concrete to insure the bike will be stable during the installation. Use the center stand or if you can mount the bike on a stand with tie-down straps, this will help secure the motorcycle.
- Follow the manufacturers guidelines for disconnecting the battery. This is important to prevent damage to the electrical system.

Fender Mount Parts List

2 Light Assembly



B714 - CAN4 BAG

1 5' Long Data Cable



1 CAN-Opener



B764 - CANopener HARNESS BAG

1 Harness + Fuse + Fuse Holder



B805 - CONNECTION BAG

1 Ring Terminal



12 6" Zip Ties



2 12" Zip Ties



1 Zip Tie Pad



Last Updated: 8/6/21

B41 - HARDWARE BAG

2 611 - Fender Mount Bracket



2 Spacer #14 - Bottom



2 Spacer #18



4 M6 X 14 Hex head Bolt



2 M5 X 40 SHCS



2 M5 X 45 SHCS



4 M6 Flat Washers



4 M5 Washers



4 M5 Shoulder Washers



4 1/4" Plastic Washers

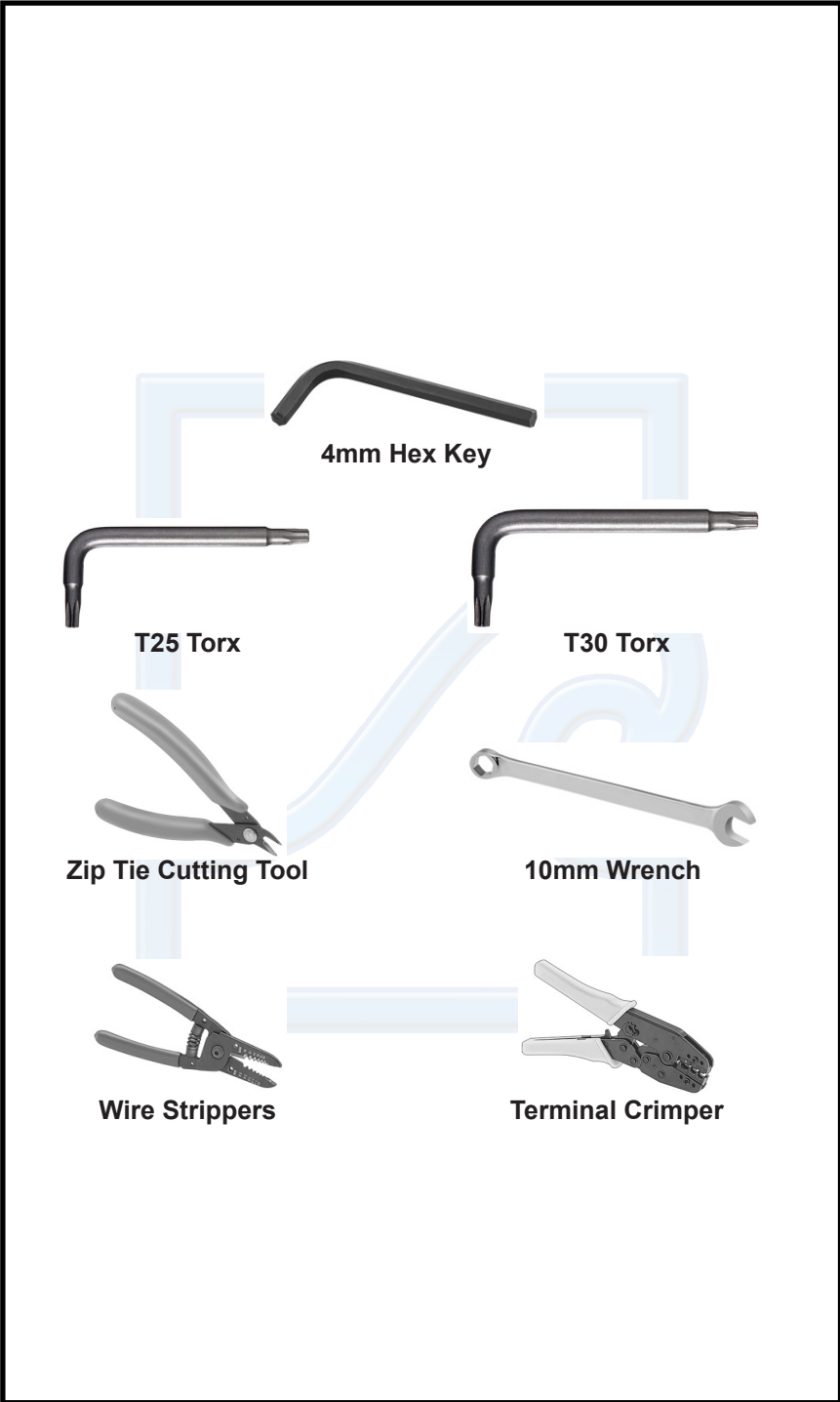


Note:

With the standard setup, your lights will stay on while the bike is on. You have the ability to turn the lights on/off as well as the ability to dim the lights via CANopener and WonderWheel. Please reference the CANopener manual for programming procedures.

Clearwater lights include a simple and high quality means of connecting to the motorcycle's electrical system. "Posi" devices made by Posi-Products are used to securely and safely make electrical connections on the bike. You can view instructions on the proper installation of the Posi-Products on the manuals page of our website or on Posi-Product's web site at <http://www.posi-lock.com>. They simply screw together and mate the wires.

Tools Needed For Installation



4mm Hex Key

T25 Torx

T30 Torx

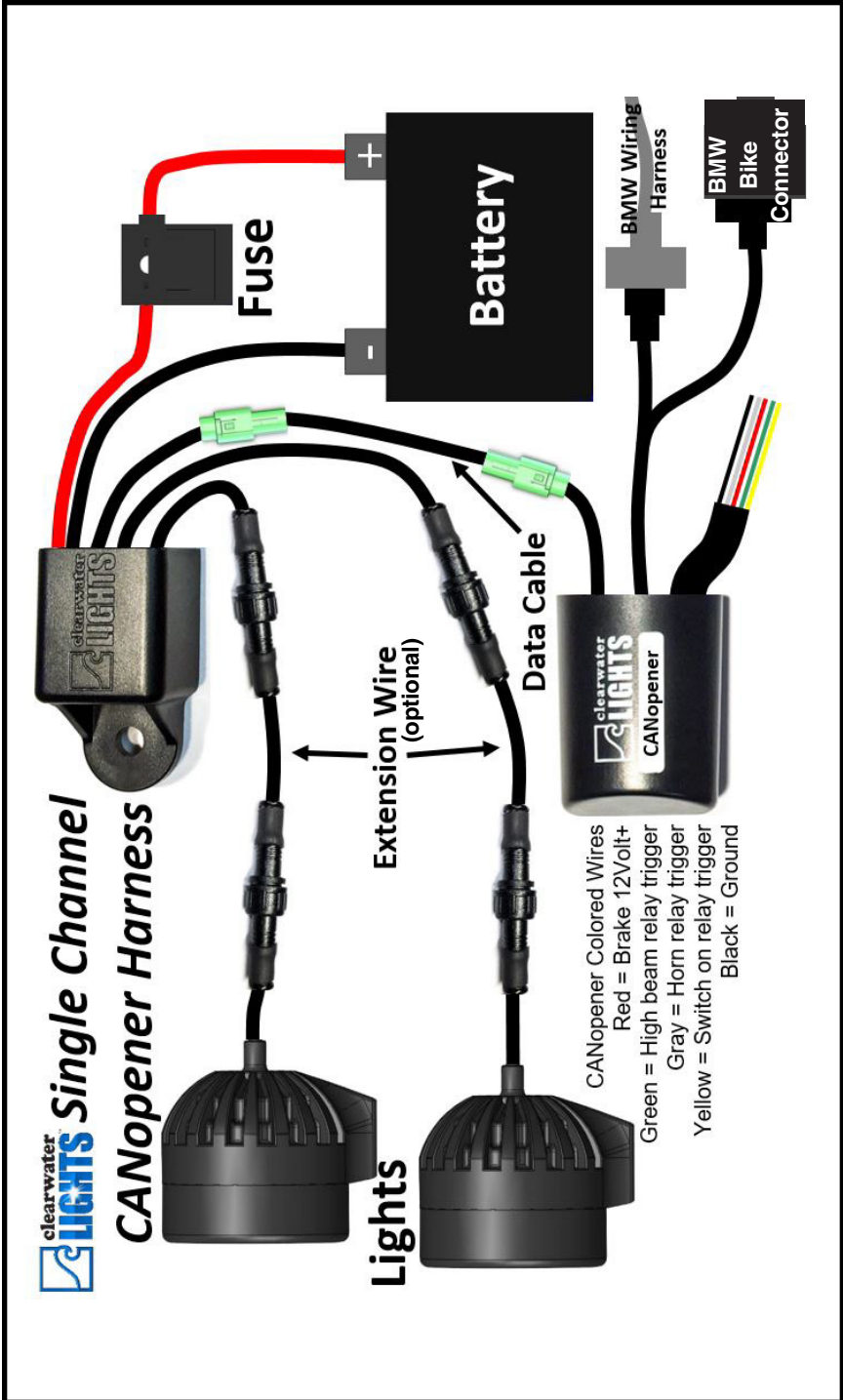
Zip Tie Cutting Tool

10mm Wrench

Wire Strippers

Terminal Crimper

Wiring Diagram



Mounting The Lights / Fender Mount

Note: *The engine needs to be running for lights to work*

Fender Mount Overview (For F900R/XR):

To mount the Darlas to the front fender of your F900R/XR, first remove the existing factory bolts from the fender using the T25 Torx. It may help to do one side at a time.

Reference the exploded diagram below for assembly. Note that the longer spacer and longer M5 bolt should be installed on the bottom of the assembly. Be sure to use the correct sequence of hardware starting from the shoulder washer, then the spacer, then bracket, M5 flat washer, and finally the M5 bolt.



Disassembly

Removal of the seat/seats and left side fairing is required for a clean install. Disconnect the battery from the bike to prevent damage to the electrical system. Follow the photos below as a guide to remove the left side fairing. The fasteners that need to be removed have been highlighted.



Tips: Fastener 4 denoted in the photo above utilizes a T30 Torx, otherwise all other OEM fasteners use a T25 Torx wrench. Fasteners 7 & 8 are slightly longer than all of the others. Fastener 1 is accessible from the inside.

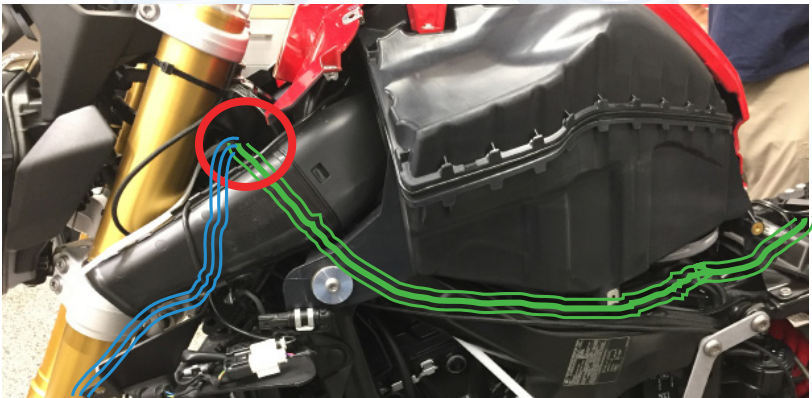
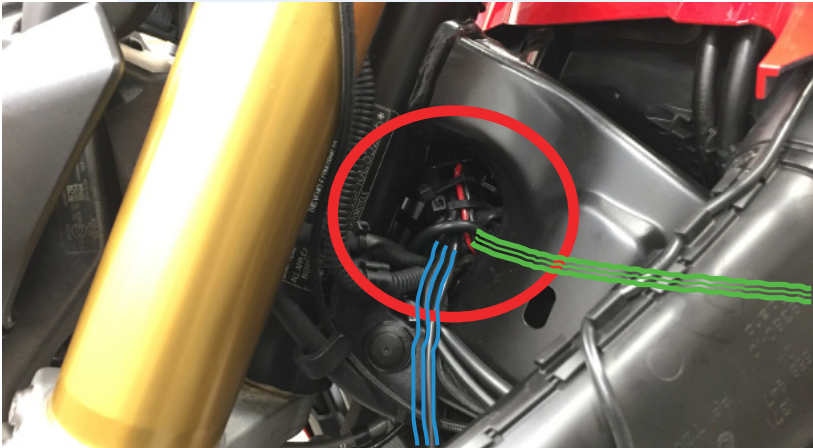
Once these fasteners have been removed, the left side fairing can be removed by lifting the bottom of the fairing up and out slowly. Be careful, the turn signal wire is connected to the fairing. Be sure to disconnect the turn signal wire (circled below) before walking away with the fairing.



Mounting the Harness

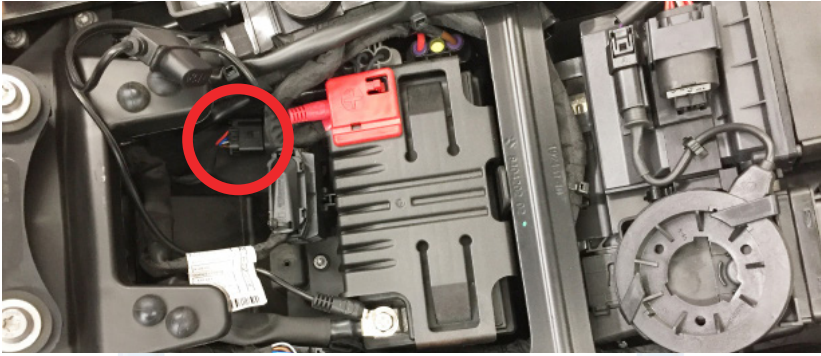
We recommend that the harness be mounted near the front of the bike, just behind the steering column (highlighted below with red circle). The data cable (cable with green connectors on both ends) and the power wires from the harness should be routed back from the harness through the bike's left side wiring trough to the area where the battery is located. Follow the green line for wire routing path. A pull tool may be helpful for routing through the frame.

The light wires should be routed toward the front wheel and dressed such that they avoid pinch points and suspension. The path for the light wires is highlighted in blue. It may be helpful to follow the factory brake cable path. Also, reference the wiring diagram for an overview of the system.

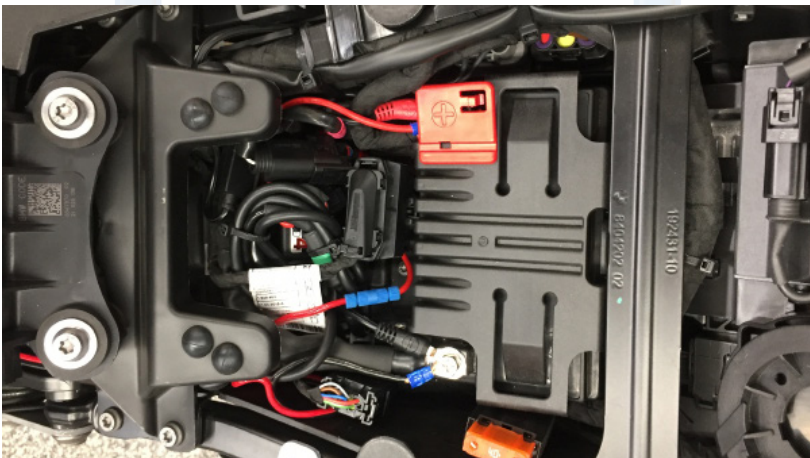


Installing the CANopener

The CANopener utilizes the bike's Lean Angle Sensor and its connector for a proper install. The Lean Angle Sensor is located just in front of the battery (highlighted with a red circle). Unplug the factory harness from the Lean Angle Sensor and plug in the CANopener. Then plug the BMW factory harness back into the CANopener such that the CANopener acts as a pass through.



Plug the data cable into the mating connector on the CANopener (green connector) and ensure it is plugged into the harness at the front of the bike as well. Neatly bundle any excess wires with a couple zip ties and mount the CANopener in the area in front of the battery with the attached velcro. Remove the the fuse from the fuse holder and attach it to the red wire from the harness. The power wires can be connected to the battery.



Finishing the Install

Note: Bike engine must be running for lights to work.

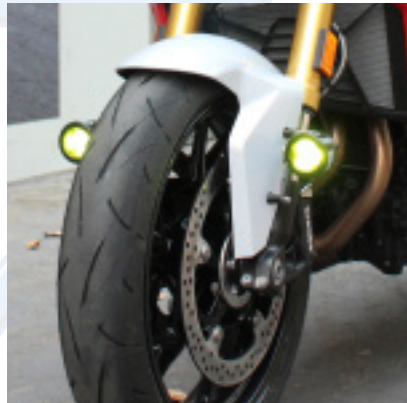
To finish the install of your Clearwater Lights, verify that all wires are routed away from pinch points, steering stops and direct contact with heat sources. Insert the fuse into the fuse holder and start the engine to activate the Clearwater Lights. Reference the CANopener manual for programmability and functionality of the lights. Make sure that all functions such as high beam, horn, and dimming modes work as expected.

Once the system is confirmed working, reassemble the bike including the fairings, turn signal connector and seat. You can now level the lights to minimize unnecessary glare to oncoming traffic.

Aligning the Lights:

Ask an assistant to help you with this procedure. Make sure the bike is on level ground and have an assistant sit on the bike. With a right angle board or object, position the board on the floor and slide it up to the light.

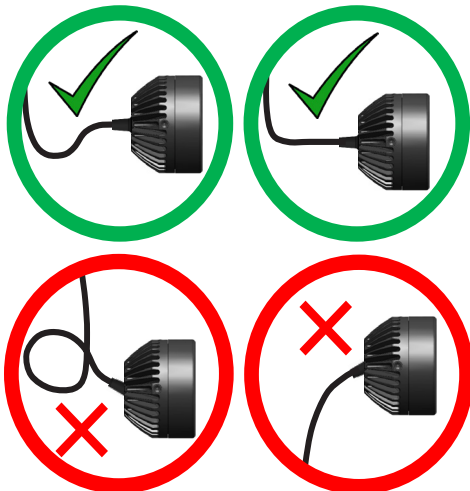
The goal is to adjust the lights so that the light is level with the ground.



Do Not Kink The Grommet

To maintain the integrity of the water sealling grommet, do not kink, deform or put pressure on the grommet when dressing the wires during install of Clearwater Lights.

Do Not Kink The Grommet



CANopener Controls & Functions



CANopener Features Reference Sheet (As of 12/27/2021) Current CANopener Version is 3.3

TSC = Turn Signal Cancel WW = Wonder Wheel (BMW multifunction controller)

TPM = Tire Pressure Monitor FTP = Flash To Pass OBL = Optional Brake Light

TS = Turn Signal

Default setting in RED

Function	Command	Modes
Darla Dimmer [Pg. 6]	Press and release TSC, then Hold Wonder Wheel Left for 2 seconds and rotate to adjust. Press TSC again to lock in.	Rotate Wonder Wheel to select 10 brightness levels (10% to 100%) To adjust brightness on High Beam Mode, turn on high beam first. Dimmer control will cancel after 2 seconds or by pressing TSC
Erica/Krista/Sevina Dimmer [Pg. 6]	Press and release TSC, then hold Wonder Wheel Right for 2 seconds and rotate to adjust. Press TSC again to lock in.	
Erica/Krista/Sevina On/Off	Hold TSC in for 2 seconds to toggle on/off	Mode 1 - On and dimmable (default) Mode 2 - Off
Darla On/Off (Version 2.3 and later)	Hold TS Left for 4 seconds to turn OFF Hold TS Right for 2 seconds to turn back ON	Mode 1 - On and dimmable (default) Mode 2 - Off
High Beam Mode [Pg. 8]	Press and release TSC, hold HAND brake lever and press & release FTP 5 times. Repeat to cycle through modes	Mode 1 - All lights on 100% with high beam or FTP, Krista/Erica/Sevina must be turned on Mode 2 - Same as Mode 1 except Krista/Erica/Sevina lights don't have to be turned on. (default) Mode 3 - Same as Mode 2 but lights will strobe for 2 seconds if FTP is pressed 3 times (Version 1.91 and later)
Horn Activation Mode [Pg. 7]	Press and release TSC, then hold HAND brake lever and press & release TSC 5 times. Repeat to cycle through modes	Mode 1 - Horn does not affect lights Mode 2 - Horn activates lights 100% (default) Mode 3 - Lights strobe with horn
Hazard Flasher Alert Mode [Pg. 8]	Press and release TSC, hold hazard switch then press & release HAND brake lever 5 times. Repeat to toggle on/off	Mode 1 - No flash (default) Mode 2 - Lights strobe while holding hazard switch (Version 1.90 and earlier). Lights strobe when hazards are toggled on (Version 1.91)
Turn Signal Dimming [Pg. 7] (Starting Version 1.91)	Press and release TSC, hold TS Right then press & release HAND brake lever 5 times. Repeat to toggle on/off	Mode 1 - Off (default) Mode 2 - Lights dim when turn signals are activated.
Clearwater Brake Light (optional) [Pg. 9]	While stationary, press & release TSC then casually press & release the HAND brake lever 5 times. Repeat to cycle through modes	Mode 1 - Off (default on Version 1.6 and older) Mode 2 - Functions identically to BMW brake light (default on Version 1.7 and later) Mode 3 - California legal strobe on brake activation (4Hz flash) Mode 4 - Speed sensitive (flashes faster and brighter with harder braking) can be adjusted.
Inertial Braking	Press & release TSC then press & release the FOOT brake lever 5 times. Repeat to cycle through modes	Mode 1 - Inertial braking disabled Mode 2 - Low sensitivity. Brake light activates when engine braking reaches .4G. Mode 3 - High sensitivity. Brake light activates when engine braking reaches .2G. (default)
Brake Dimming	See Billy Brake Light manual	See Billy Brake Light manual
Reset Default Settings [Pg. 9]	Press and release TSC, hold TS Left then press & release FTP 6 times	Reset all functions to the default settings above.

Notes



Thank you for purchasing your **Clearwater Lights**. We hope this product will help make you a safer rider. Please feel free to send us comments or suggestions at any time. We learn from you. Visit our website for more exciting products to help you see better at night.

Ride safe!

Sincerely,

Glenn and the team at Clearwater.



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