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Getting Started
You can use the Varia HL (headlight) and Varia TL (taillight) alone, with the optional wireless remote, or with your compatible Edge® device. This list provides an overview of the installation and setup tasks.

- Charge the device (Charging the Device, page 1).
- Install the headlight using the out-front mount (Installing the Out-Front Mount, page 1).
- Install the taillight using one of the included mounts:
  - Install the seat-post mount (Installing the Seat-Post Mount, page 1).
  - Install the multi-location mount (Installing the Multi-Location Mount, page 2).
  - TIP: If you are using two taillights as turn signals, you can install two multi-location mounts on the seat stays of your bike.
  - NOTE: The turn signal feature is available on the Varia TL 300 only.
- If you are using the wireless remote, pair the devices (Pairing the Remote with Your Varia Device, page 4).
- If you are using the wireless remote, install it on your bike stem or handlebar (Using the Mounts, page 4).
- If you are using a compatible Edge device, pair the devices (Pairing Varia Bike Lights with Your Edge 1000, page 3).
- If you are using a compatible Edge device, customize the bike light settings (Customizing Varia Device Settings with Your Edge 1000, page 3).

Charging the Device
To prevent corrosion, thoroughly dry the USB port, the weather cap, and the surrounding area before charging or connecting to a computer.

The device is powered by a built-in lithium-ion battery that you can charge using a standard wall outlet or a USB port on your computer.

- NOTE: The device does not charge when outside the approved temperature range (Specifications, page 5).
1 Pull up the weather cap from the USB port.
2 Plug the small end of the USB cable into the USB port on the device.
3 Plug the large end of the USB cable into an AC adapter or a computer USB port.
4 Plug the AC adapter into a standard wall outlet.
5 Charge the device completely.
The status LED flashes green while charging. The status LED is solid green when charging is complete.

Installing the Out-Front Mount
You can use the out-front mount to install both an Edge device and a headlight.
1 Select a secure location to mount the Edge device and headlight where they do not interfere with the safe operation of your bike.

Tips for Installing the Taillight
- Select a secure location to mount the taillight where it does not interfere with the safe operation of your bike.
- Select a mount that best fits your bike.
- Mount the device as high on the seat post as possible for optimal light visibility. Verify there is clear space (no obstructions) behind the device.
- If you are using two taillights as turn signals, mount the devices at the same height and as far apart as possible on the seat stays of your bike.

NOTE: The turn signal feature is available on the Varia TL 300 only.

Installing the Seat-Post Mount
1 Use the hex key to remove the screw 1 from the seat-post connector 2.
2. Place a rubber pad around the seat post, if necessary:
   - If the seat post diameter is from 27 to 28.6 mm, use the thicker pad.
   - If the seat post diameter is from 30.4 to 31 mm, use the thinner pad.
   - If the seat post diameter is from 31 to 31.8 mm, do not use a rubber pad.
3. Place the seat-post connector around the rubber pad.
   NOTE: You should align the contours on the rubber pad with the grooves on the inside of the seat-post connector.
4. Replace and tighten the screw.
   NOTE: Tighten the seat-post clamp until the mount does not slide on the seat post, or to a maximum torque specification of 3 lbf-in. (0.3 N-m). You should check the tightness of the screw periodically.
5. Align the tabs on the back of the device with the seat-post mount notches 3.
6. Press down slightly and turn the device clockwise until it locks into place.

Installing the Multi-Location Mount
You can use the multi-location mount to install the device on your seat post, helmet, backpack, or other location. Garmin recommends that you enable the deceleration indicator only when mounting the device vertically on your seat post.
1. If necessary, select the correct rubber pad 1 for your seat post shape.
2. Place the mount on the seat post or other mounting location.
3. Attach the mount securely using one or two bands 2.
   NOTE: You can use the hooks on the center of the mount 3 when using only one band.
4. Align the tabs on the back of the device with the mount notches 4.
5. Press down slightly and turn the device clockwise until it locks into place.

Turning On the Device
1. Hold the device key for 1 second.
   The first time you turn on the device, it enters smart mode. The status LED flashes blue. The device can be controlled by a paired wireless remote or Edge device.
2. Hold the device key for 2 seconds to turn off the device.
   The next time you turn on the device, it enters the last-used operating mode.

Operating Modes
<table>
<thead>
<tr>
<th>Model</th>
<th>Operating Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varia HL 500</td>
<td>Smart mode (pairing)</td>
</tr>
<tr>
<td></td>
<td>Overdrive, high, medium, low, and flash</td>
</tr>
<tr>
<td>Varia HL 501</td>
<td>Smart mode (pairing)</td>
</tr>
<tr>
<td></td>
<td>High, medium, and low</td>
</tr>
<tr>
<td>Varia TL 300</td>
<td>Smart mode (pairing)</td>
</tr>
<tr>
<td></td>
<td>High, medium, low, and flash</td>
</tr>
<tr>
<td>Varia TL 301</td>
<td>Smart mode (pairing)</td>
</tr>
<tr>
<td></td>
<td>High and low</td>
</tr>
</tbody>
</table>

Bike Light Status LEDs

<table>
<thead>
<tr>
<th>LED Activity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid red</td>
<td>An error occurred while charging. The device shut down to prevent overheating.</td>
</tr>
<tr>
<td>Alternating blue and green</td>
<td>The device is uploading settings from Garmin Express™.</td>
</tr>
<tr>
<td>Alternating blue and red</td>
<td>An error occurred while uploading settings from Garmin Express.</td>
</tr>
<tr>
<td>Flashing green</td>
<td>The battery is charging.</td>
</tr>
<tr>
<td>Solid green</td>
<td>Charging is complete.</td>
</tr>
</tbody>
</table>
Device Settings

You can remotely control your Varia devices and customize settings using your compatible Edge device. This section contains instructions for the Edge 1000 device. Other compatible Edge devices use similar settings.

Pairing Varia Bike Lights with Your Edge 1000

Before you can pair the devices, you must update the Edge software.

1. Bring the Edge device within range (3 m) of the sensor.
   NOTE: Stay 10 m away from other ANT+ bike lights while pairing.
2. Turn on the Edge device.
3. From the home screen, select 🗝️ > Sensors > Add Sensor > Search All.
4. Turn on the Varia device.
5. Select the Varia device key to enter smart mode. The status LED flashes blue.
6. Select your sensor.

When the sensor is paired with your Edge device, the status icon appears solid on the connections page.

Customizing Varia Device Settings with Your Edge 1000

Before you can customize Varia device settings with your Edge device, you must pair the devices (Pairing Varia Bike Lights with Your Edge 1000, page 3).

1. From your Edge device, select 🗝️ > Sensors > Lights.
2. Select an option:
   • Select Enable to enable the light network.
   • Select Network Options > Light Mode to set the light intensity mode for all lights in your network (Light Mode Settings, page 3).
   • Select Network Options > Test Lights to check that each light in your network is set up correctly (Testing the Light Network, page 4).
   • Select Network Options > Beam Angle to adjust the headlight beam angle automatically based on the rate of speed. Higher beam angles are used at high speeds, and lower beam angles are used at low speeds.
     NOTE: This setting appears when a headlight is paired with the device.
   • Select Network Options > Turn Signal Setup to configure turn signals when using two taillights (Turn Signal Settings, page 3).
     NOTE: This setting appears when two taillights are paired with the device. The turn signal feature is available on the Varia TL 300 only.
   • Select a light to view device information and customize each light in your network (Light Network Settings, page 4).

Light Mode Settings

From your Edge device, select 🗝️ > Sensors > Lights > Network Options > Light Mode.

Auto: Automatically adjusts the light intensity based on the ambient light or time of day.

High Visibility: For Varia HL 500 and Varia TL 300, sets the light intensity to flash mode. For Varia HL 501 and Varia TL 301, sets the light intensity to the brightest setting available.

Individual: Allows you to customize the light intensity and pattern mode for each light in your network (Light Network Settings, page 4).

Adjusting the Beam Angle During a Ride

Before you can adjust the beam angle during a ride, you must disable the automatic beam angle setting (Customizing Varia Device Settings with Your Edge 1000, page 3).

1. Go for a ride.
2. Swipe the screen to view the bike lights data screen.
3. Select 🟢 or 🟠 to adjust the headlight beam angle.

Turn Signal Settings

From your Edge device, select 🗝️ > Sensors > Lights > Network Options > Turn Signal Setup.

NOTE: The turn signal feature is available on the Varia TL 300 only.

Enable: Allows the paired Edge device to assign and control turn signals.

Auto Cancel: Automatically cancels the turn signal after making a 90-degree turn.

NOTE: Your paired Edge device must have GPS turned on in order to use the Auto Cancel setting.

Right: Assigns the right turn signal.

Left: Assigns the left turn signal.

Assigning Turn Signals

When using two taillights, you must indicate which light is the left turn signal and which light is the right turn signal.

1. Pair two taillights with your Edge device (Pairing Varia Bike Lights with Your Edge 1000, page 3).
2. From your Edge device, select 🗝️ > Sensors > Lights > Network Options > Turn Signal Setup.
3. Select Right, and select a taillight to assign it as the right turn signal.

When two taillights are paired, the Edge device assigns the second taillight as the left turn signal automatically.

4. If necessary, select Left, and select the second taillight to assign it as the left turn signal.

Signaling a Turn with Your Edge 1000

⚠️ WARNING

The Varia device is not a substitute for other bike safety measures, such as hand signals, deferring to posted signs and conditions, and using good judgement.

Before you can signal a turn with your Edge device, you must install two taillights (Installing the Multi-Location Mount, page 2) and assign turn signals to them (Assigning Turn Signals, page 3).

1. Go for a ride.
2. Tap the screen to view the timer overlay.
Select the left or right turn signal.

NOTE: You can select the same turn signal again to cancel the turn signal.

**Light Network Settings**
From your Edge device, select ✖️ > Sensors > Lights, and select a paired light.

**Enable**: Turns on the light and allows you to control the light remotely with your Edge device. You can disable a light to disconnect it from the light network.

**Motion Activated**: Automatically turns on the light when the Edge device is in motion.

**Auto Deceleration**: Automatically adjusts the taillight intensity and pattern when decelerating sharply.

**NOTE**: This setting appears when a taillight is paired with the device.

**NOTE**: Taillight medium and flash modes are available on the Varia TL 300 device only.

**Light Mode**: Sets the light intensity and pattern mode, or turns off the light.

**NOTE**: This setting is available when the Individual light mode setting is selected (Light Mode Settings, page 3).

**About**: Displays device, software, and battery information.

**Remove**: Allows you to delete a paired light from the network.

**Checking the Battery Level**
From your Edge device, select ✖️ > Sensors > Lights.

The battery level for all paired lights appears.

**Testing the Light Network**
1. From your Edge device, select ✖️ > Sensors > Lights > Network Options > Test Lights.
2. Select a light to test.

The light blinks when it is connected.

---

### Wireless Remote Control

**Device Overview**

1. Taillight key. Select to signal a left turn when using two taillights.
   
   **NOTE**: The turn signal feature is available on the Varia TL 300 only.
   
   Hold to change the taillight operating modes.

2. Headlight key. Select to switch between low beam and high beam.

   Hold to change the headlight operating modes.

3. Taillight key and power key. Select to signal a right turn when using two taillights.

   Hold to turn all lights on and off.

4. Status LED.

### Status LED

<table>
<thead>
<tr>
<th>LED Activity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing green</td>
<td>Searching for a paired device.</td>
</tr>
<tr>
<td>Alternating red and green</td>
<td>Attempting to pair with a device.</td>
</tr>
<tr>
<td>12 rapid green flashes</td>
<td>Successfully paired with a device.</td>
</tr>
<tr>
<td>Solid red</td>
<td>Pairing failed or the connection was lost.</td>
</tr>
<tr>
<td>Flashing red</td>
<td>One or more of the paired devices has a low battery.</td>
</tr>
</tbody>
</table>

**Pairing the Remote with Your Varia Device**
The first time you connect the Varia remote to your Varia device, you must pair the remote with your device.

1. Bring the remote within 1 m (3 ft.) of the device.

   **NOTE**: You must stay 10 m (33 ft.) away from other ANT+ sensors while pairing.

2. On the Varia device, hold the device key for 1 second to turn it on.

3. Select the Varia device key to enter smart mode.

   The status LED starts flashing blue.

4. On the Varia remote, hold two keys simultaneously until the status LED starts alternating green and red, and release the keys.

   The remote searches for your Varia device. After the remote pairs successfully, the status LED flashes green 12 times. After the remote is paired, it connects to your device whenever the device is in range and turned on in smart mode. You may need to wake the remote by selecting any key.

**Using the Mounts**
Several mounts are available for your remote, either included with the product or as an optional accessory. The mounts allow you to attach the remote to your body, your bike, or other objects.

- Align two of the notches (1) with the sides of the mount, and press the remote into the mount until it clicks.

- Press gently on the release tab (2), and lift the remote from the mount.

**Replacing the Battery**

⚠️ **WARNING**

Do not use a sharp object to remove batteries.

Keep the battery away from children.
Never put batteries in mouth. If swallowed, contact your physician or local poison control center.

Replaceable coin cell batteries may contain perchlorate material. Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

**CAUTION**
Contact your local waste disposal department to properly recycle the batteries.

Before you can replace the battery, you must have a small Phillips screwdriver, a small flat screwdriver, and a CR2032 lithium coin-cell battery.

1. Using a Phillips screwdriver, remove the three screws from the back plate ①.

2. Remove the back plate from the remote.

3. Wrap the end of a small flat screwdriver with tape.
   The tape protects the battery, battery compartment, and contacts from damage.

4. Carefully pry the battery from the back plate.

5. Install the new battery into the back plate with the positive side facing down.

6. Verify the gasket ③ is fully seated in the groove.

7. Replace the backplate, aligning the post ③ with the gap in the circuit board ④.

8. Replace and tighten the three screws.
   **NOTE:** Do not overtighten.

---

### Device Information

#### Specifications

**Headlight Specifications**

<table>
<thead>
<tr>
<th>Battery type</th>
<th>Rechargeable, built-in lithium-ion battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery life</td>
<td>Up to 2.5 hr. in high mode</td>
</tr>
<tr>
<td></td>
<td>Up to 5 hr. in flash mode</td>
</tr>
<tr>
<td></td>
<td>Flash mode is available on the Varia HL 500 only</td>
</tr>
</tbody>
</table>

| Charging temperature range | From 0º to 40ºC (from 32º to 104ºF) |

| Radio frequency/protocol | 2.4 GHz ANT+ wireless communications protocol |

| Water rating | IEC 60529 IPX7¹ |

#### Headlight Light Intensity Modes

<table>
<thead>
<tr>
<th>Intensity Mode</th>
<th>Varia HL 500 Illuminance and Luminous Flux</th>
<th>Varia HL 501 Illuminance and Luminous Flux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overdrive</td>
<td>600 lm 95 lx</td>
<td>Not applicable</td>
</tr>
<tr>
<td>High</td>
<td>400 lm 70 lx</td>
<td>300 lm 65 lx</td>
</tr>
<tr>
<td>Medium</td>
<td>250 lm 50 lx</td>
<td>200 lm 50 lx</td>
</tr>
<tr>
<td>Low</td>
<td>150 lm 30 lx</td>
<td>150 lm 35 lx</td>
</tr>
<tr>
<td>Flashing</td>
<td>600 lm 95 lx</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### Taillight Specifications

<table>
<thead>
<tr>
<th>Battery type</th>
<th>Rechargeable, built-in lithium-ion battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery life</td>
<td>Up to 4 hr. in high mode</td>
</tr>
<tr>
<td></td>
<td>Up to 14 hr. in flash mode</td>
</tr>
<tr>
<td></td>
<td>Flash mode is available on the Varia TL 300 only</td>
</tr>
</tbody>
</table>

| Charging temperature range | From 0º to 40ºC (from 32º to 104ºF) |

| Radio frequency/protocol | 2.4 GHz ANT+ wireless communications protocol |

| Water rating | IEC 60529 IPX7¹ |

#### Taillight Light Intensity Modes

<table>
<thead>
<tr>
<th>Intensity Mode</th>
<th>Varia TL 300 Luminous Flux</th>
<th>Varia TL 301 Luminous Flux</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>22 lm</td>
<td>22 lm</td>
</tr>
<tr>
<td>Medium</td>
<td>14 lm</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Low</td>
<td>7 lm</td>
<td>14 lm</td>
</tr>
<tr>
<td>Flashing</td>
<td>28 lm</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Braking</td>
<td>35 lm</td>
<td>35 lm</td>
</tr>
</tbody>
</table>

#### Remote Specifications

<table>
<thead>
<tr>
<th>Battery type</th>
<th>User-replaceable CR2032, 3 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery life</td>
<td>Up to 1.5 yr. at 1 hr./day</td>
</tr>
</tbody>
</table>

| Operating temperature range | From -15° to 50°C (from 5° to 122°F) |

| Radio frequency/protocol | 2.4 GHz ANT+ wireless communications protocol |

| Water rating | 5 ATM² |

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¹ The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to www.garmin.com/waterrating.

² The device withstands pressure equivalent to a depth of 50 m. For more information, go to www.garmin.com/waterrating.
Device Care

**NOTICE**

- Do not store the device where prolonged exposure to extreme temperatures can occur, because it can cause permanent damage.
- Avoid chemical cleaners, solvents, and insect repellents that can damage plastic components and finishes.
- Secure the weather cap tightly to prevent damage to the USB port.

**Cleaning the Device**

1. Wipe the device using a cloth dampened with a mild detergent solution.
2. Wipe it dry.

**Troubleshooting**

**Resetting the Device**

You can reset the device if it stops responding.

- Hold the device key for 8 seconds until all LEDs turn off.

**Thermal Safety Shutdown**

To prevent overheating, the Varia device may turn off when operated at a high intensity in warm, stagnant air. The status LED is red until the device cools down. You should use the device outdoors.

**Replacement O-rings**

Replacement bands (O-rings) are available for the mounts.

**NOTE:** Use Ethylene Propylene Diene Monomer (EPDM) replacement bands only. Go to http://buy.garmin.com, or contact your Garmin dealer.

**Support and Updates**

Garmin Express (www.garmin.com/express) provides easy access to these services for Garmin devices.

- Product registration
- Product manuals
- Software updates

**Updating the Software**

Before you can update your device software, you must have a Garmin Connect™ account, and you must download the Garmin Express application.

1. Connect the device to your computer using the USB cable.
   - When new software is available, Garmin Express sends it to your device.
2. Follow the on-screen instructions.
3. Do not disconnect your device from the computer during the update process.

**Getting More Information**

- Go to www.garmin.com/intosports.
- Go to www.garmin.com/learningcenter.
- Go to http://buy.garmin.com, or contact your Garmin dealer for information about optional accessories and replacement parts.

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Appendix

**Software License Agreement**

BY USING THE DEVICE, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

Garmin Ltd. and its subsidiaries (“Garmin”) grant you a limited license to use the software embedded in this device (the “Software”) in binary executable form in the normal operation of the product. Title, ownership rights, and intellectual property rights in and to the Software remain in Garmin and/or its third-party providers.

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