Pupil Invisible glasses

Pupil Labs

Learn more about the features of your Pupil Invisible glasses.

1. **Scene camera**: Can be easily attached/detached via magnetic connector.
2. **Eye cameras**
3. **Lenses**: Ships with clear plano lenses in the glasses frame. You can easily turn your glasses into shades. See changing lenses for more info.
4. **USB-C port**: Plug in USB-C cable here to connect to the Companion Device
5. **Serial number**: 5 character serial number inset into the left arm.

Care Instructions

Pupil Invisible Glasses contain cameras and sensitive electronic components, do not rinse or wet-clean.

- Glasses lenses can be cleaned with the provided microfiber cloth.
- Scene camera and eye camera lenses can be carefully cleaned with the provided microfiber cloth if dust is visible.
- The nose pads can be cleaned with an alcohol based disinfectant applied on a damp cloth

Disinfecting Frames

All Pupil Invisible eye tracking glasses are cleaned with disinfectant prior to shipping. You may want to disinfect the frames between uses.

The disinfectant we use is made from 22.0g Ethanol, 21.0g 2-Propanol, 8.0g 1-Propanol per 100 grams of solution. One such brand name that we use is "Vibasept". We use the wetted towlettes (wipes). Similar products should be available globally under different brand names.

Pupil Invisible is not water resistant. When cleaning, be careful around the eye cameras, world camera, and USB connection. Liquid from disinfectant might damage sensitive electronics inside the frame.

1. **Pupil Invisible glasses**
2. **Connector Cable**: USB-C to USB-C cable to connect your Pupil Invisible glasses to your Companion Device
3. **Lenses**: Clear plano lenses installed in Pupil Invisible glasses. Additional shaded lenses in the case.
4. **Companion Device**
5. **Charging Cable and Socket Adapter**: Use to charge your Companion Device. Note: EU compatible socket adapter is provided.
6. **Microfiber Cleaning Cloth**

The gaze estimation pipeline $\mathcal{G}$ employed by Pupil Invisible glasses consists of two steps: (i) estimating the gaze direction d_{ideal} in a *device-independent* coordinate system, and (ii) mapping the gaze-direction estimate d_{ideal} to *device-specific* scene camera pixel space, resulting in a final 2D estimated gaze point p_{dev}. We will deal with these two steps in turn.

appearance of current head-mounted eye trackers. Recently, Pupil Labs released Pupil Invisible glasses, a head-mounted eye tracker engineered to tackle these limitations. Here, we present an extensive evaluation of its gaze-estimation capabilities. To this end, we designed a data-collection protocol and evaluation scheme geared towards providing a faithful portrayal of the real-world usage of Pupil Invisible glasses. In particular, we develop a geometric framework for gauging gaze-estimation accuracy that goes beyond reporting mean angular accuracy. We demonstrate that Pupil Invisible glasses, without the need of a calibration, provide gaze estimates which are robust to perturbations, including outdoor lighting conditions and slippage of the headset.