

doric

CamLoop Behavior Camera

User Manual

Version 1.0.0

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Overview

1.1 System Overview

CamLoop is a new behavior camera from Doric Lenses for real-time animal position tracking and closed-loop stimulation. The camera is comprised of the camera itself, the objective lens, and a Trig cable. The image (Fig. 1.1) displays a very simple setup consisting of Doric Neuroscience Studio and a console to run both Camloop and an LED driver for closed-loop light stimulation.

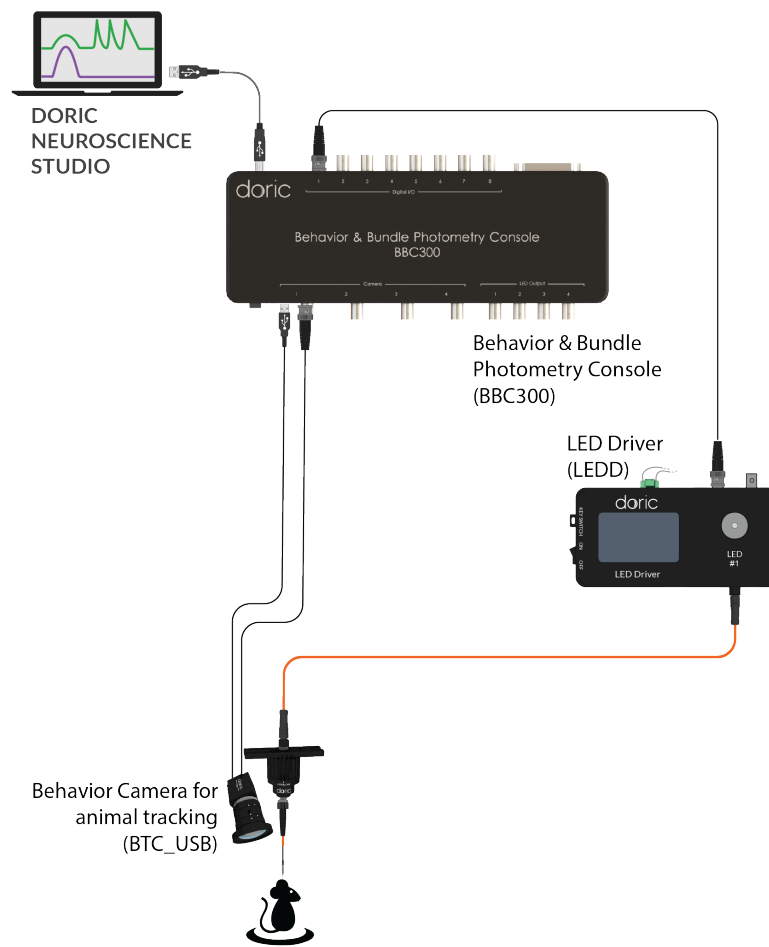


Figure 1.1: *CamLoop, Real-Time Animal Tracking and Closed-Loop Stimulation Camera*

1.1.1 CamLoop Behavior Camera

The camera has the following elements:

- One **USB 3.0 Micro-B** port (Fig. 1.2b).
- One **12-pin Hirose** port (Fig. 1.2b).
- One **Assembly Base** with 2 M6 screw-holes and one 1/4-20 screw-hole (Fig. 1.2c). These can be used to secure the camera on a tripod, or inside an optical setup.
- One **Objective**, with a **Focus Adjustment Ring** and **Iris Adjustment Ring** (Fig 1.2a).
- The **CLCS Mount** connects the **Camera** and the **Objective Lens**.



Figure 1.2: CamLoop Behavior Camera

1.1.2 Trig Cable

The *Trig Cable* assembly allows the use of external triggers. The cable connects to the **12-pin Hirose output** of the camera. On the opposite side of the cable there is a **BNC Input** which allows digital signals to be sent to the camera.

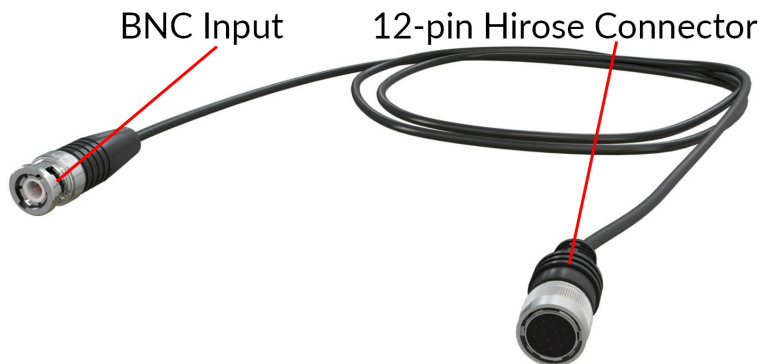


Figure 1.3: *Trig Cable*

Operations Guide

2.1 Getting Started

The USB key contains 2 pieces of software: 1) the Doric Neuroscience Studio (*DNS*) to control Doric hardware, and 2) the Cam33U setup software. Instructions to install and maintain the *Doric Neuroscience Studio* can be found in the appropriate manual.

2.2 Installing the camera driver

- Select the **Cam33U_setup_4.2.0.1262.exe** file. This will open the **Installation Wizard**.

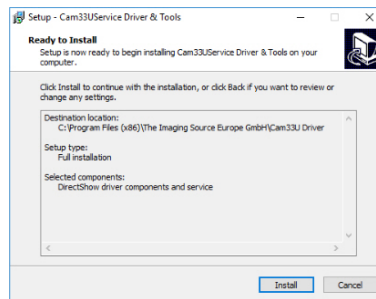


Figure 2.1: *Installation Wizard, Installation Window*

- In the **Installation Wizard**, select **Install**. Once complete, select **Finish**.

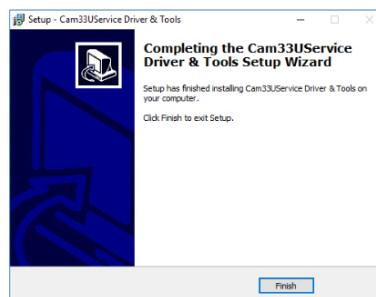


Figure 2.2: *Installation Wizard, Installation End Window*

- Connect the USB-A/USB Micro-B cable to the computer and camera. The camera **MUST BE CONNECTED TO A USB 3.0 PORT**.
- When connected, open the *Doric Neuroscience Studio*. The camera should be detected immediately, and the **Camera Tabs** will open.

Specifications

3.1 Specifications

Table 3.1: *CamLoop Behavior Camera Specifications*

SPECIFICATION	VALUE
Sensor	Sony IMX273
Sensor format	1 / 2.9
Shutter type	Global
Field of view	53.8 x 40.8 deg (98 x 74 cm at 1 m distance)
Dynamic range	12 bit
Video formats	B&W 1920 x 1080 Y16 Color 1440 x 1080 RGB32
Frame rate @ full resolution	60 fps
Resolution	H: 1440, V: 1080 px (1.6 MP)
Pixel size	3.45 μm x 3.45 μm
Lens mount	C/CS
Interface	USB 3.0
Supply voltage	4.75 VDC to 5.25 VDC
Exposure	20 μs to 30 s
Gain	0 to 48 dB
Dimension	H: 29 mm, W: 29 mm, L: 57 mm
Mass (camera)	68 g
Mass (objective lens)	106 g

Table 3.2: *CamLoop Behavior Camera Specifications*

Focal Length (mm)	Aperture (F)	MOD ¹ (m)	FOV @ 1 m
5	1.4 - 16C ²	0.10	98 x 74 cm

¹Minimum object distance

²Circular Iris

Table 3.3: *Environmental Specifications*

DESCRIPTION	OPERATION	STORAGE
Use	Indoor	-
Temperature	-5-50 ° C	-20-80 ° C
Humidity	20-80% RH, non condensing	20-95% RH, non condensing

Support

4.1 Maintenance

The product does not require any maintenance. Do not open the enclosure. Contact Doric Lenses for return instructions if the unit does not work properly and needs to be repaired.

4.2 Warranty

This product is under warranty for a period of 12 months. Contact Doric Lenses for return instructions. This warranty will not be applicable if the unit is damaged or needs to be repaired as a result of improper use or operation outside the conditions stated in this manual. For more information, see our [Website](#).

4.3 Disposition



Figure 4.1: WEEE directive logo

According with the directive 2012/19/EU of the European Parliament and the Council of the European Union regarding Waste Electrical and Electronic Equipment (WEEE), when the product will reach its end-of-life phase, it must not be disposed with regular waste. Make sure to dispose it with regards of your local regulations. For more information about how and where to dispose of the product, please contact Doric Lenses.

4.4 Contact us

For any questions or comments, do not hesitate to contact us by:

Phone 1-418-877-5600

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