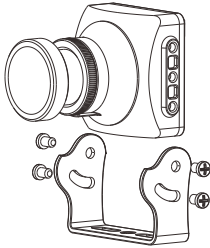# FOXEER

700TVL 0.0001Lux Starlight Camera
Instruction Manual

WARNING: Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.
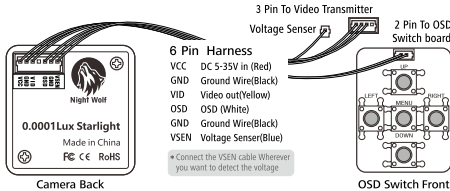
⚠️ *Age Recommendation: Not for children under 14 years. This is not a toy.*

NOTICE: This product is only intended for use with unmanned, hobby-grade, remote-controlled vehicles and aircraft. FOXEER disclaims all liability outside of the intended purpose and will not provide warranty service related thereto.

SUPPORT: Visit www.foxeer.com to get more information.

CAMERA-OSD SWITCH CONNECTION

3 Pin To Video Transmitter
Voltage Senser — 2 Pin To OSD Switch board

6 Pin Harness
VCC	DC 5-35V in (Red)
GND	Ground Wire(Black)
VID	Video out(Yellow)
OSD	OSD (White)
GND	Ground Wire(Black)
VSEN	Voltage Senser(Blue)

Night Wolf

0.0001Lux Starlight
Made in China
FC CE RoHS

• Connect the VSEN cable Wherever you want to detect the voltage

Camera Back

UP
LEFT — MENU — RIGHT
DOWN

OSD Switch Front

CAUTION: If you are using ESC's with active braking, we recommend powering the camera system through a BEC or voltage regulator.

CAMERA-VIDEO TRANSMITTER CONNECTION

To connect the camera directly to the video transmitter, plug the 4 pin wiring harness from the video transmitter into the camera leaving the OSD pin open.

OSD MENU

MENU: Push MENU (center button) to go to the main menu.
UP/DOWN: Move up and down through the menu.
Left/Right: Modify the menu parameters.

FPV OSD Setup

1. Long press left button, user name info will flicker, you can move user name position now, after setup, press center button to save, user name stop flicker

2. Long press right button, time flicker, you can move time position, after setup, press center button to save, time stop flicker

3. Long press top button, you can setup user name, besides, OSD info enable or disable separately, press EXIT to save.

4. Long press bottom button, voltage flicker, you can move voltage position, after setup, press center button, you can adjust voltage if the OSD voltage is not same as real power, after setup, press center button, voltage stop flicker

```
           FOXEER
0 1 2 3 4 5 6 7 8 9
A B C D E F G H I J K
L M N O P Q R S T U V
W X Y Z ( ) : . < > /
FONT        :          S2
NAME        :          ON
TIME        :          ON
POWER       :          ON
DEFAULT
EXIT
```

1. Lens

This function is used to adjust the brightness of the screen.

1. MANUAL: For use with a manual iris lens.
2. DC: For use with a DC drive auto iris lens.
3. VIDEO: For use with a video drive auto iris lens.

```
              SETUP
► LENS              MANUAL
  EXPOSURE            ┘
  WHITE BAL.         ATW1
  BACKLIGHT          OFF
  DAY&NIGHT         AUTO┘
  DPC                 ┘
  SPECIAL             ┘
  RESET               ┘
  EXIT
```

2. EXPOSURE

1. SHUTTER- Condition and speed control
   • **Auto:** Shutter speed is controlled automatically according to the brightness of the scene.
   • **FIXED:** Select shutter speeds from 1/50 to 1/100000.
   • **FLK:** Select when flickering occurs due to imbalance between illumination and frequency. PAL Mode: 1/100, NTSC Mode: 1/120.
2. BRIGHTNESS- Adjust brightness from 0-255
3. AGC- Depending on lightness of surroundings select HIGH, MID, LOW or OFF.
4. DWDR- Depending on lightness of surroundings turn OFF or ON (Adjust brightness from 0-63).

```
              SETUP
  LENS              MANUAL
► EXPOSURE            ┘
  WHITE BAL.         ATW1
  BACKLIGHT          OFF
  DAY&NIGHT         AUTO┘
  DPC                 ┘
  SPECIAL             ┘
  RESET               ┘
  EXIT
```

```
            EXPOSURE
► SHUTTER            AUTO
  BRIGHTNESS          050
  AGC                ----
  DWDR               OFF
  RETURN            RET┘
```

3 WHITE BAL (WHITE BALANCE)

1. ATW (Auto Tracking White Balance) - Ideal for color temps from 1800°K ~10500°K (fluorescent light, outdoor, sodium vapor lamp, etc.)
2. MANUAL- Select ATW and change to Manual mode.
   • Red 0~255
   • Blue 0~255
   Select RETURN when finished.

```
              SETUP
  LENS              MANUAL
  EXPOSURE            ┘
► WHITE BAL.         ATW1
  BACKLIGHT          OFF
  DAY&NIGHT         AUTO┘
  DPC                 ┘
  SPECIAL             ┘
  RESET               ┘
  EXIT
```

4. BACKLIGHT

1. BLC (Backlight Compensation)

Use when there is a strong backlight behind the object, clear images of the background as well as the object can still be obtained.

2. HLC

Adjust level from 0~255. There are two options: night only, all day.

```
             SETUP
LENS              MANUAL
EXPOSURE
WHITE  BAL.       ATW1
▶ BACKLIGHT       OFF
DAY&NIGHT         AUTO ⏎
DPC
SPECIAL           ⏎
RESET
EXIT
```

5.Day & Night

Day & Night switch is specially designed for different occasions. There are four kinds of modes.

- Auto mode
- B/W mode
- Color mode
- External switch

1. Color to B/W

When in External Control this can't be adjusted. This is color to B/W accumulated light intensity, when it reach "alternating light" state, camera could be damaged by frequent switch. It might cause to not correct judgment of image and reduction of span life of the device.

2. B/W TO COLOR

When in External Control this can't be adjusted. This is B/W to color accumulated light intensity, when it reach "alternating light" state, camera could be damaged by frequent switch. It might cause to not correct judgment of image and reduction of span life of the device.

```
             SETUP
LENS              MANUAL
EXPOSURE          ⏎
WHITE  BAL.       ATW1
BACKLIGHT         OFF
▶ DAY&NIGHT       AUTO ⏎
DPC
SPECIAL           ⏎
RESET
EXIT
```

3. DELAY TIME

Delay before color state begins to alternate.

6. DPC

Set the black point and white point as auto-completion-point numbers.

```
             SETUP
LENS              MANUAL
EXPOSURE          ⏎
WHITE  BAL.       ATW1
BACKLIGHT         OFF
DAY&NIGHT         AUTO ⏎
▶ DPC             ⏎
SPECIAL           ⏎
RESET
EXIT
```

7. SPECIAL

1. CAM Title - Set the title background

2. MOITON - Motion detection

Choose the area and press ENTER to confirm. The color of the chosen area will change. Repeat to choose other areas. After 1 second of inactivity it will move to the next menu item.

```
             SETUP
LENS              MANUAL
EXPOSURE          ⏎
WHITE  BAL.       ATW1
BACKLIGHT         OFF
DAY&NIGHT         AUTO ⏎
DPC
▶ SPECIAL         ⏎
RESET             ⏎
EXIT
```

3. PRIVACY - Conceal the areas(OFF/ON)

Conceal the areas where you don't wish to appear on the screen.

(1) AREA SEL: Set 4 privacy areas.

(2) AREA STATE: Select AREA STATE ON to conceal AREA selected. OFF to disable Privacy.

(3) LEFT/RIGHT/TOP/BOTTOM: Set the dimension of each privacy area by slider.

(4) COLOR: Select the color of each privacy area by slider.

(5) RETRUN: Return to previous menu.

4. PARK LINE - OFF/ON

5. IMAGE ADJ

(1) Lens sharp: OFF/ON, adjust from 0~255

(2) 2DNR: OFF/ON

(3) Mirror: switch

(4) FONT COLOR: Adjusted from 0 to 51

(5) CONTRASR: Adjusted from 0 to 255

(6) SHARPNESS: Adjusted from 0 to 255

(7) DISPLAY CRT/LCD

(8) NEG IMAGE: OFF/ON

```
           IMAGE ADJ
▶ LENS SHAD        ON ◀
 2NDR              ON
 MIRROR            OFF
 FONT COLOR
 CONTRAST   ——     160
 SHARPNESS         024
 DISPLAY           CRT ⏎
 NEG. IMAGE        OFF
 RETURN            RET ⏎
```

6. COMM ADJ

(1) CAM ID: Set camera ID from 0~255

(2) BAUD RATE: Set camera communication speed from 2400 to 38400

(3) PROTOCOL

(4) DISPLAY ID: OFF/ON

(5) ID POS

```
           COMM ADJ
▶ CAM ID           001
 BAUD RATE         4800
 PROTOCOL          PELCO-D
 DISPLAY ID        OFF
 ID POS
 RETURN            RET ⏎
```

7. LANGUAGE: ENGLISH/CHINESE

8. VERSION

8. RESET

1. FACTORY

Return to camera's initial setting.

2. RETURN

```
             SETUP
LENS              MANUAL
EXPOSURE          ⏎
WHITE  BAL.       ATW1
BACKLIGHT         OFF
DAY&NIGHT         AUTO ⏎
DPC
SPECIAL           ⏎
▶ RESET           ⏎
EXIT
```

9. EXIT

Saves all settings and exits to Main Menu.

```
             SETUP
LENS              MANUAL
EXPOSURE          ⏎
WHITE  BAL.       ATW1
BACKLIGHT         OFF
DAY&NIGHT         AUTO ⏎
DPC
SPECIAL           ⏎
RESET             ⏎
▶ EXIT
```

FC CE RoHS