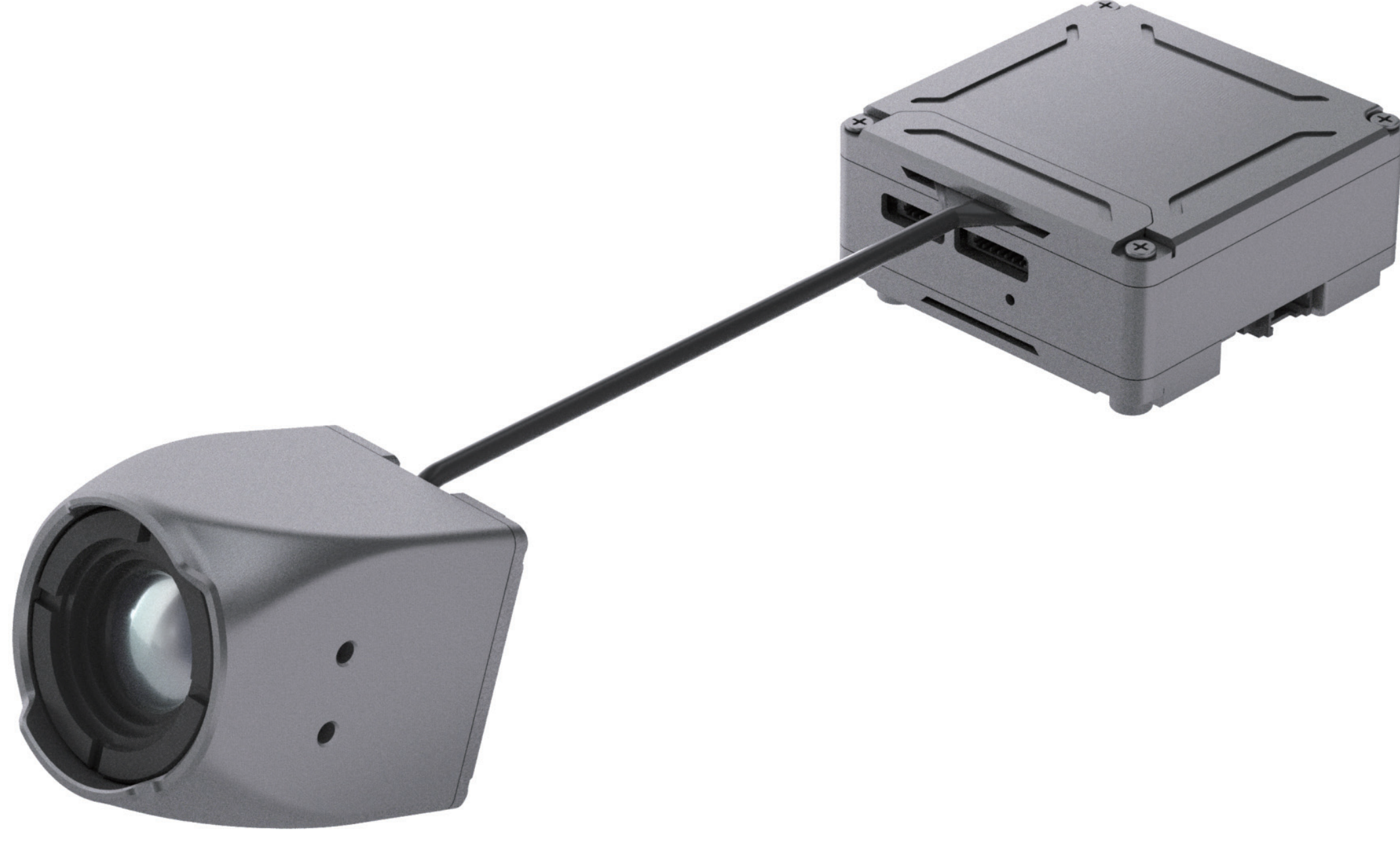


Eclipse 009SL

Quick Start Guide

V1.0



Product Introduction

- Using Pixelpump technology, the image quality is clearer and heat sources are more prominent.
- Supports Analog PAL interface output.
- Supports customer configuration via the menu board
- Supports UVC image output.

Third-generation Pixelpump Technology

The Eclipse 009SL is equipped with Pixelpump technology, delivering a remarkable boost in image resolution to capture every detail with stunning sharpness and unparalleled visual quality. Its advanced image processing system significantly enhances long-distance observation, ensuring you can see farther and clearer even in challenging environments. In addition, Pixelpump-Gen3 intelligently eliminates minor motion blur caused by drone vibrations, guaranteeing smooth and stable HD footage even during high-speed flights or when the aircraft is unsteady.



Figure 1: Image captured without Pixelpump-Gen3 technology

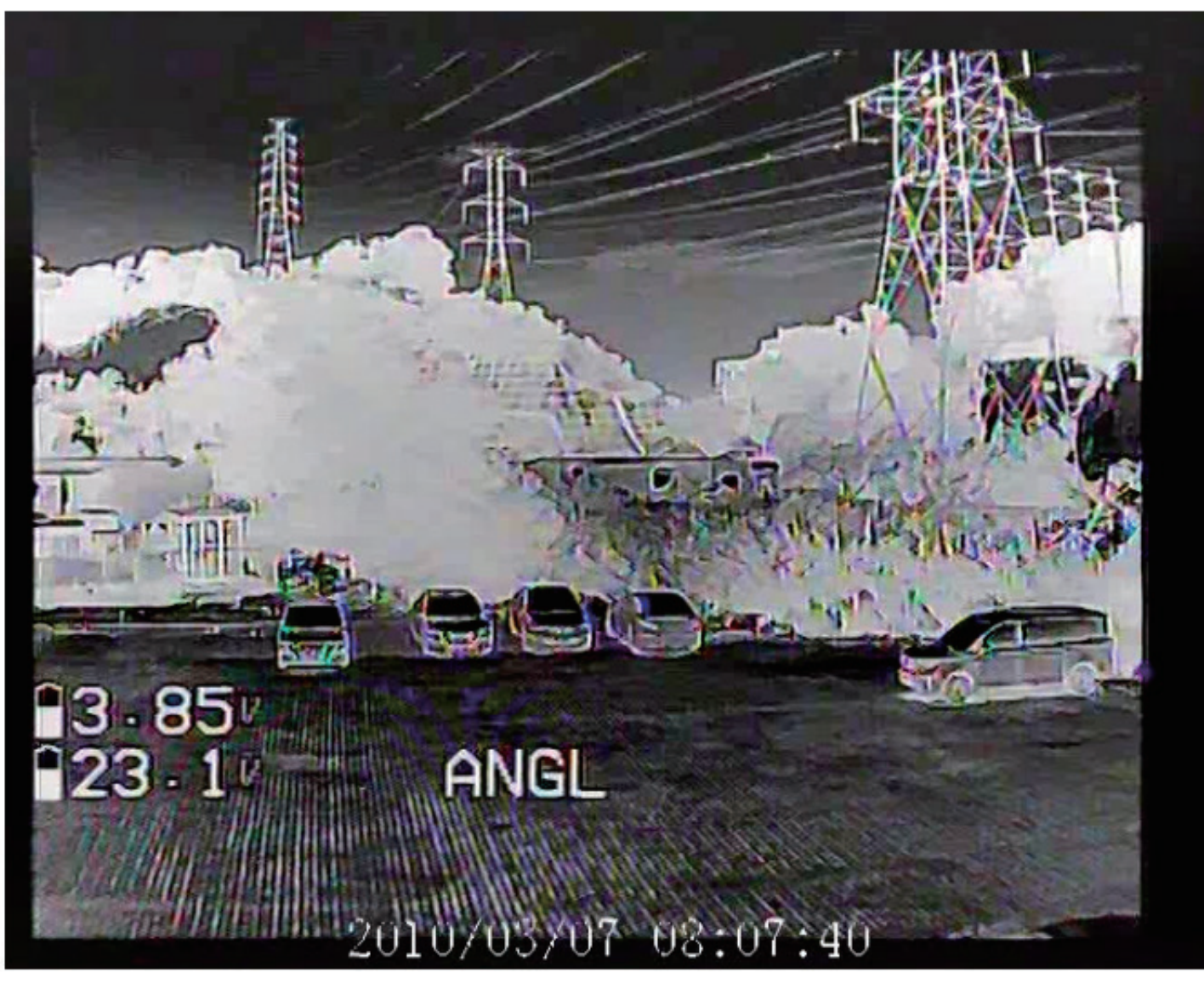
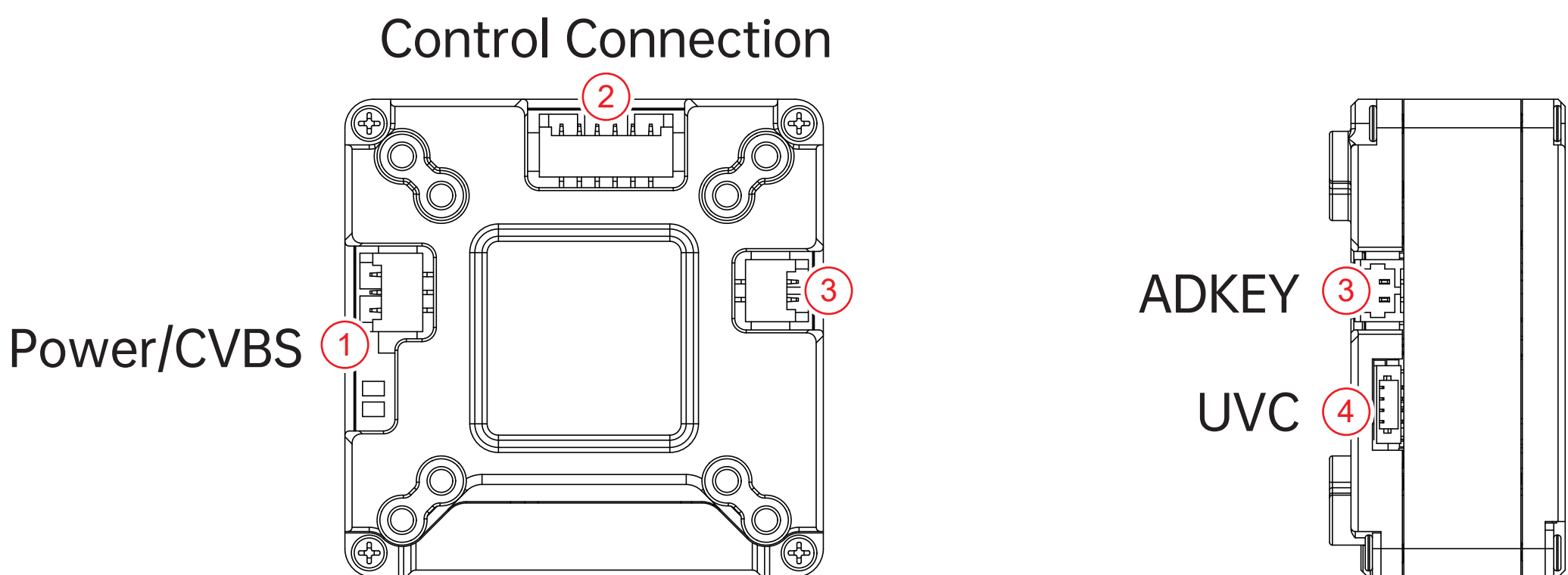


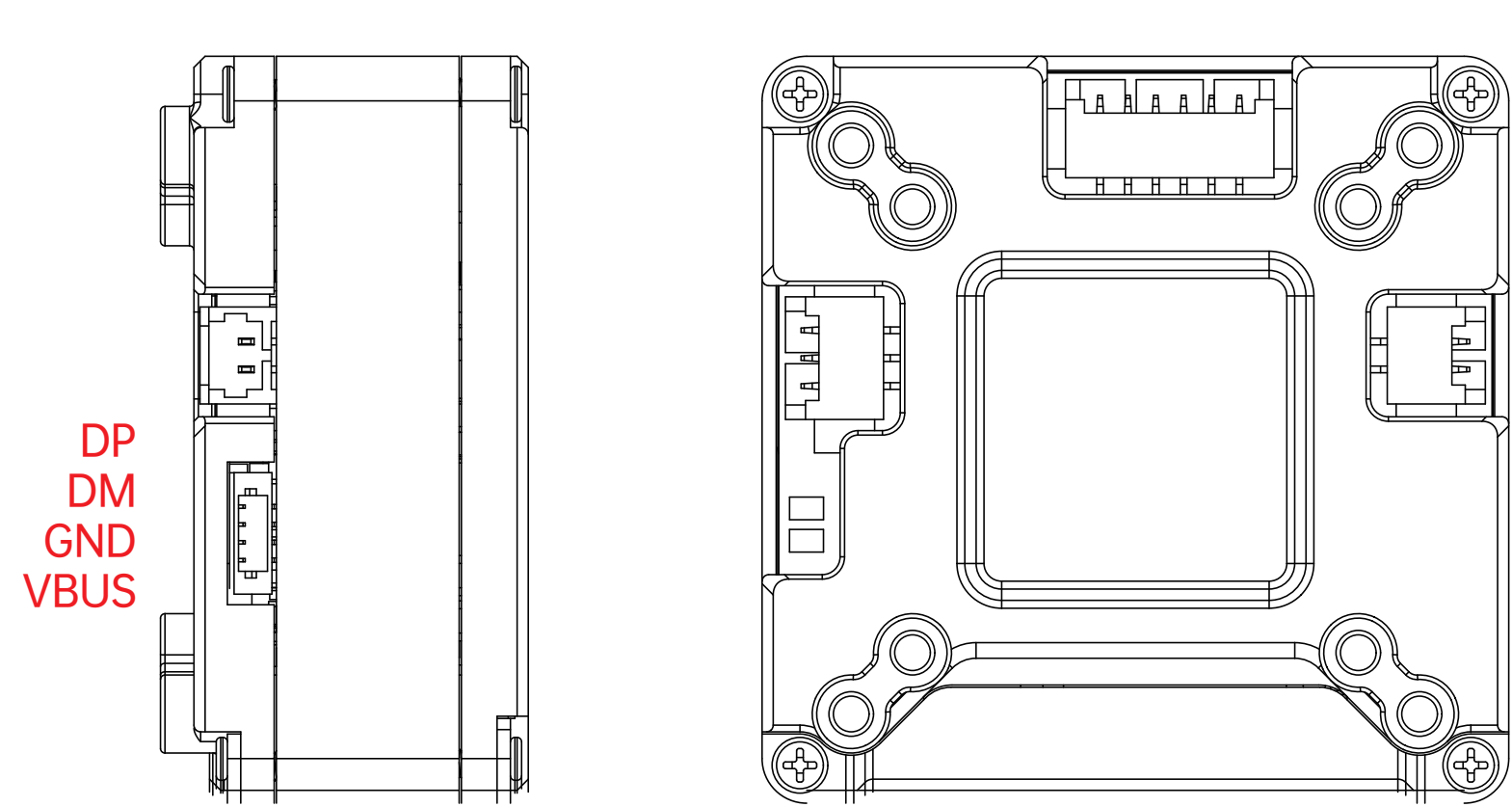
Figure 2: Image captured with Pixelpump-Gen3 technology

Interface Definition



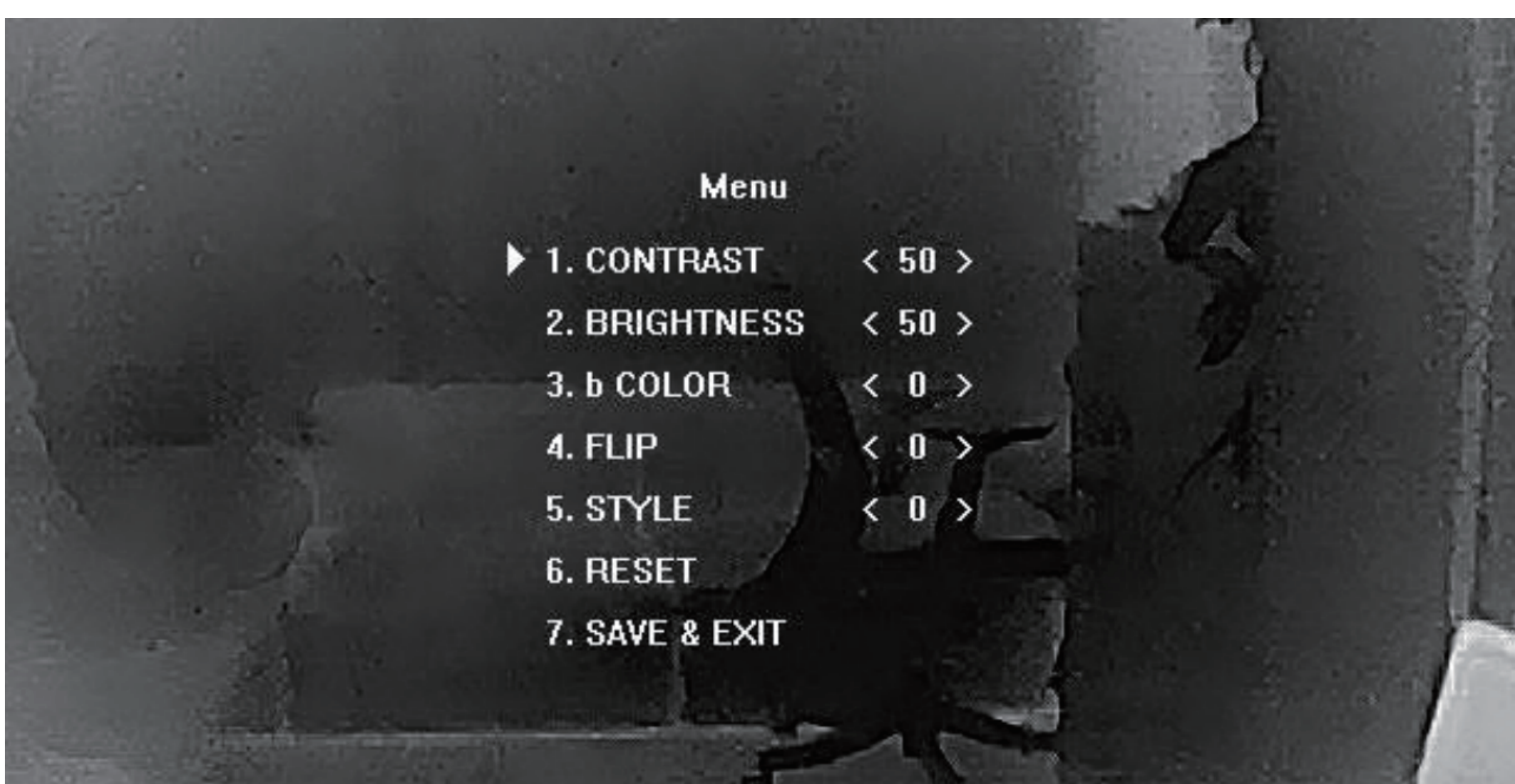
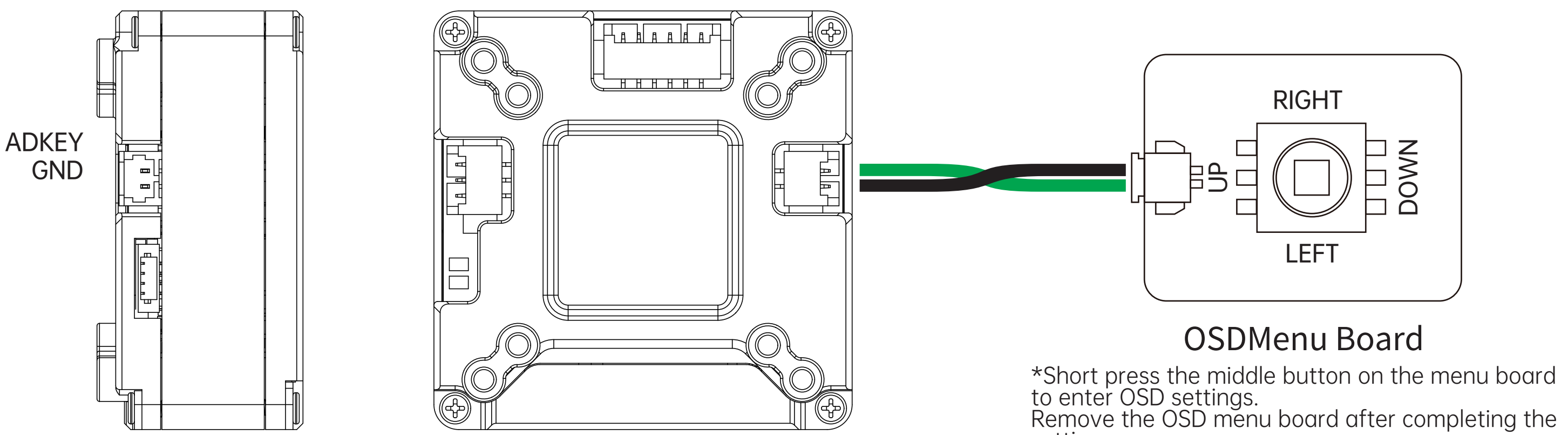
UVC Function

By connecting a UVC (USB Video Class) cable, UVC data output is supported in MJPEG format with a resolution of 640×512.



Dynamic adjustment is implemented through the Processing Unit (PU) control unit defined by the UVC protocol. The adjustment interfaces are as follows: UVC_PU_BRIGHTNESS_CONTROL for brightness, UVC_PU_CONTRAST_CONTROL for contrast, UVC_PU_HUE_CONTROL for pseudo color, UVC_CT_ROLL_ABSOLUTE_CONTROL for image mirroring, and UVC_CT_ZOOM_ABSOLUTE_CONTROL for image zooming.

Menu Board Functions



The menu board provides an intuitive user experience via the ADKEY interface: a short press enters the menu, the up/down keys select functions, and the left/right keys adjust parameter values. Adjustable parameters include contrast, brightness, pseudo color, image rotation, and image style, among other display settings.

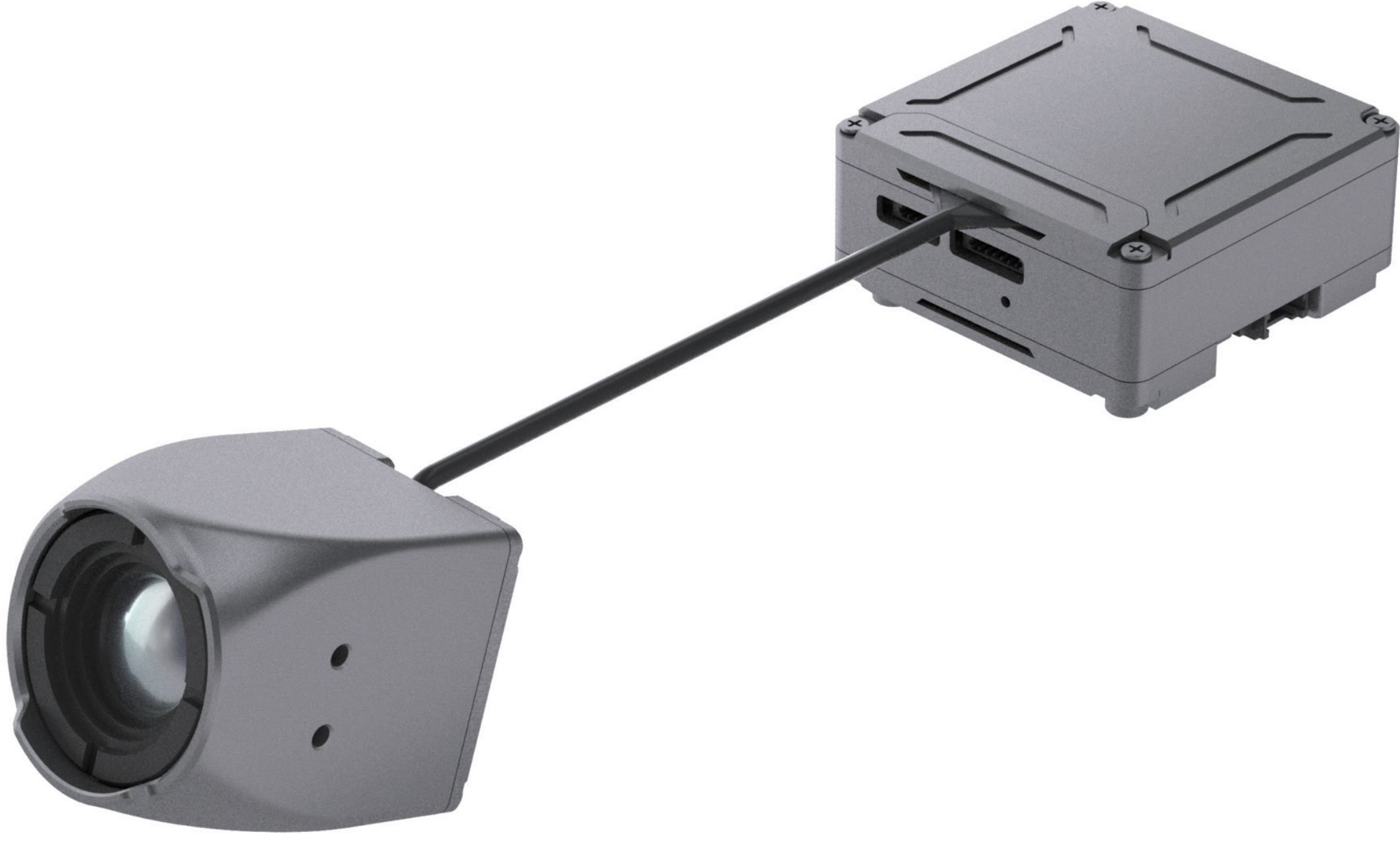
Specifications

Model	Eclipse 009SL
Resolution	960*768 (Pixelpump)
Frame Rate	50Hz
Video Interface	PAL + UVC (simultaneous analog and digital output)
Supply Voltage	4.5V~20V
Typical Power Consumption	<1.5W
Focal Length	9.1mm
F.NO	F1.0
FOV	48.3° (H) *38.6°(V)
Adjustment Method	UVC/ ADKEY
Luminance / Contrast	0-100 (optional)
Color Palette	0-4 (optional)
Digital Zoom	1.0~4.0× Stepless Zoom (controllable via UVC)
Image Flip	Horizontal / Vertical / Diagonal
Operating Temperature	-20℃~50℃
Dimensions	Camera: 22*22*28.43mm Box: 33.5*33.5*16.5mm

Eclipse 009SL

使用说明

V1.0



产品简介

- 使用 Pixelpump 技术，画质更加清晰，热源更加凸显
- 支持模拟PAL接口输出
- 支持客户使用菜单板进行配置
- 支持UVC图像输出

Pixelpump 技术

Eclipse 009SL 搭载 Pixelpump 技术，显著提升图像分辨率，以惊人的锐度捕捉每一处细节，呈现无与伦比的画质表现。其先进的影像处理系统大幅优化远距离观测能力，即使在复杂环境下，也能让您看得更远、更清晰。此外，Pixelpump-Gen3 还能智能消除无人机抖动导致的轻微动态模糊，确保高速飞行或机身不稳时仍能获取流畅稳定的高清画面。

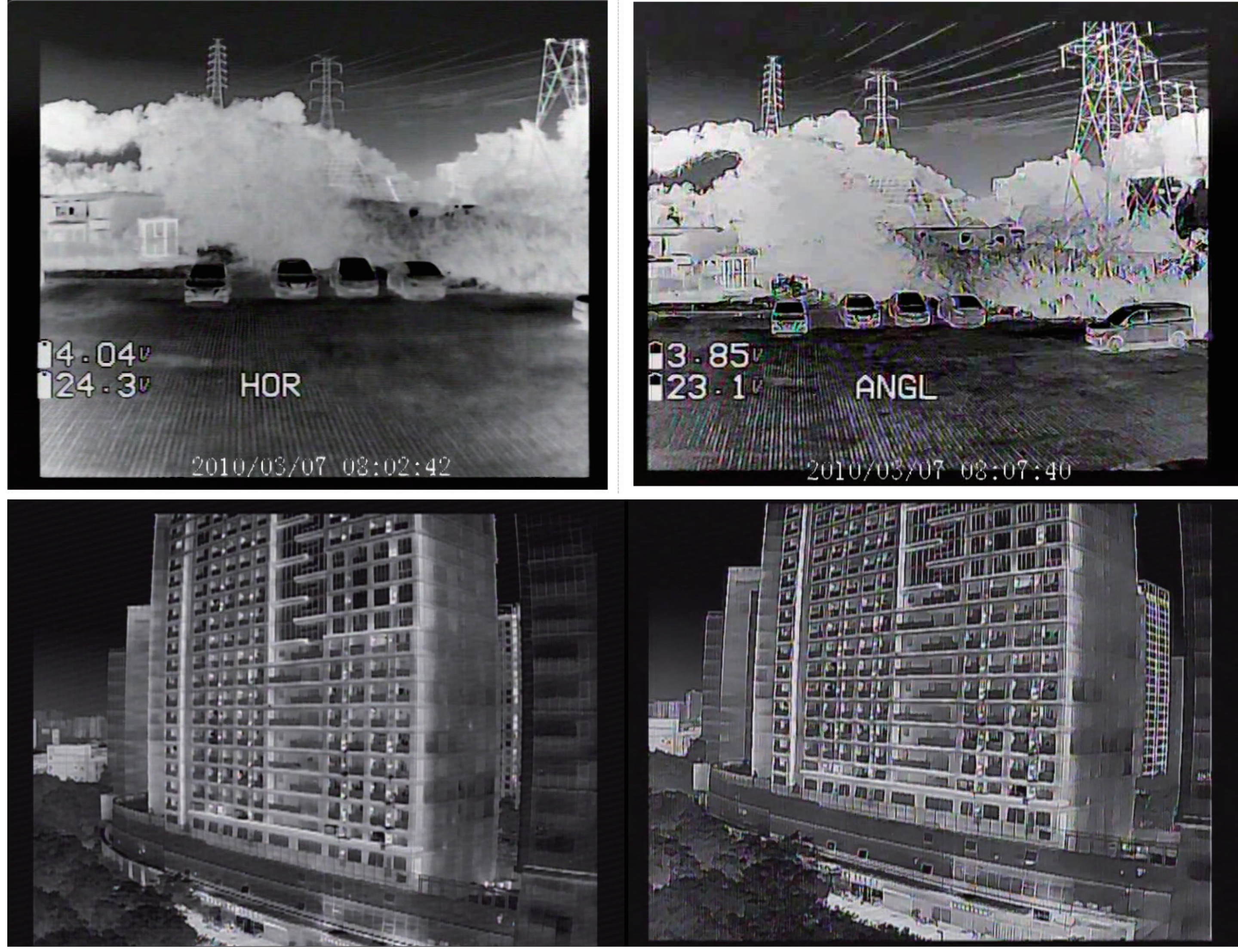
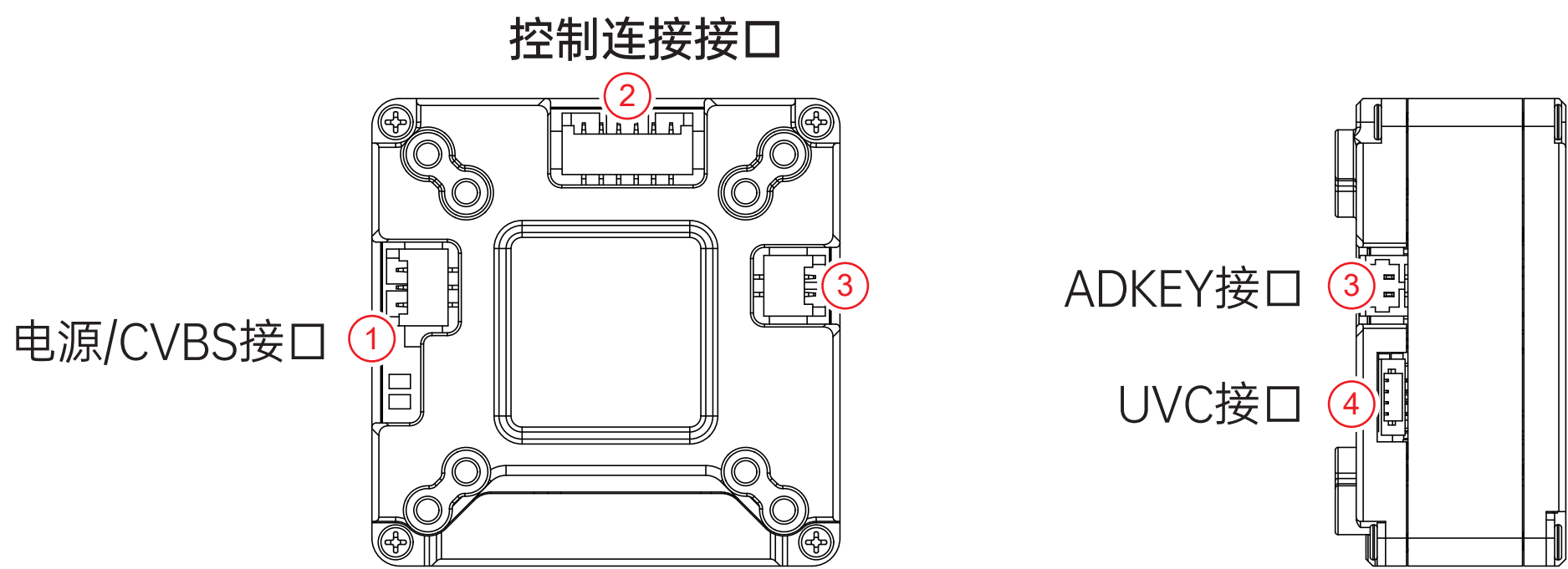


图1 未采用 Pixelpump-Gen3 技术的成像画面

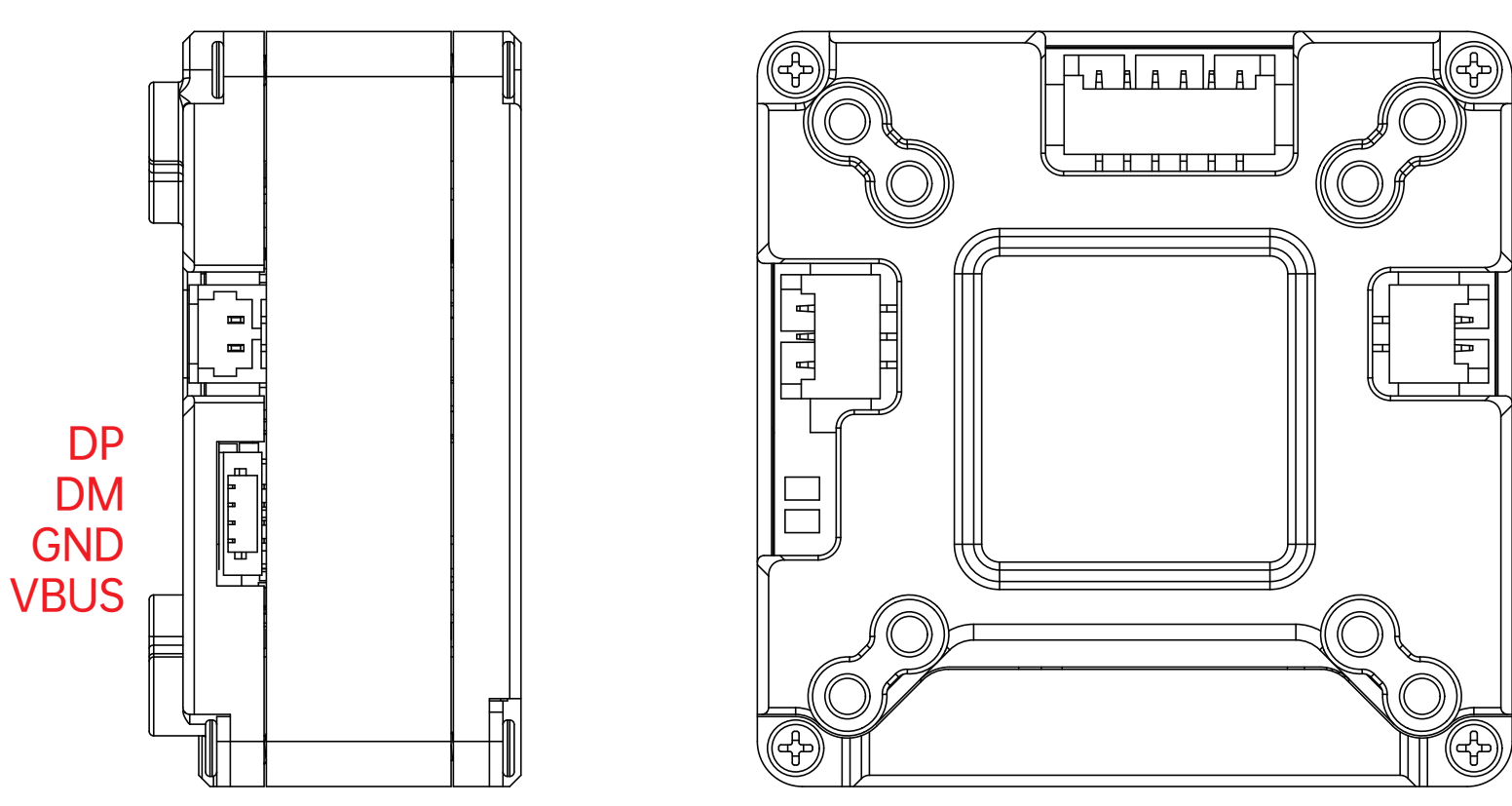
图2 采用 Pixelpump-Gen3 技术的成像画面

接口定义



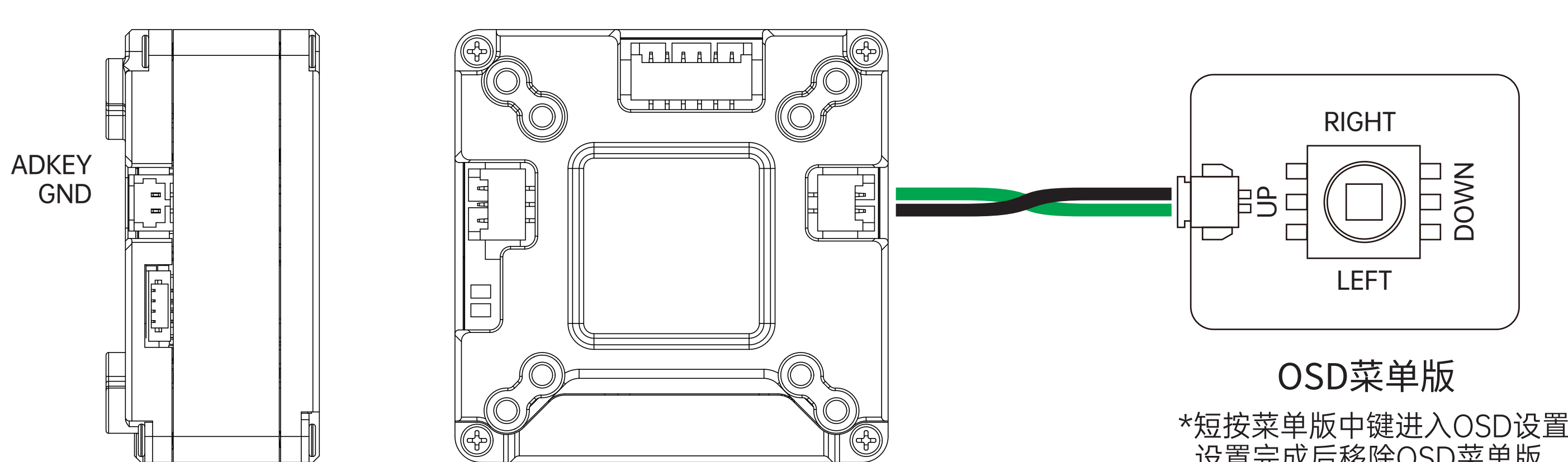
UVC功能

通过连接UVC（USB Video Class）线缆可支持UVC数据输出，格式为MJPEG，分辨率为640×512。



通过UVC协议定义的**Processing Unit (PU)**控制单元实现动态调节，其中亮度的调节接口为 **UVC_PU_BRIGHTNESS_CONTROL**，对比度的调节接口为**UVC_PU_CONTRAST_CONTROL**，伪彩色的调节接口为**UVC_PU_HUE_CONTROL**，图像镜像功能接口为**UVC_CT_ROLL_ABSOLUTE_CONTROL**，图像缩放功能接口为**UVC_CT_ZOOM_ABSOLUTE_CONTROL**。

菜单板功能



菜单板通过ADKEY接口提供直观的操作体验：短按进入菜单，上下键选择功能项，左右键调整参数值。可调节参数包括对比度、亮度、伪彩色、画面旋转及画质风格等多项显示设置。

产品规格

型号	Eclipse 009SL
分辨率	960*768 (Pixelpump)
输出帧频	50Hz
视频接口	PAL+UVC（模拟数字可同时输出）
供电范围	4.5V~20V
功耗	<1.5W
焦距	9.1mm
光圈	F1.0
视场角	48.3° (H) *38.6°(V)
调节方式	UVC/ ADKEY
亮度/对比度	0-100 可选
色板	0-4 可选
数字变倍	1.0-4.0 无级变倍（UVC可控制）
图像镜像	水平/垂直/斜角
工作温度	-20℃~50℃
尺寸	相机端：22*22*28.43mm 处理器端：33.5*33.5*16.5mm