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WHEN MEASUREMENTS MATTER

# CCFC

Outdoor Observation and Surveillance Field Camera

# 18x Optical Zoom and Auto Focus

## Multiple lens positions available for each capture event

## Overview

The CCFC Field Camera is a high-quality, high-resolution zoom camera specifically designed for remote outdoor applications. It captures high-quality photos and video in wide-angle and zoom during the day and night.

## Benefits and Features

- 18x optical zoom lens
- Auto focus lens
- Up to 15 preset lens positions
- Infrared LEDs for night photos (captures images under almost any lighting conditions)
- Normalized difference vegetation index (NDVI) image capture capability
- Easy-to-use web interface
- Controlled by internal timer, motion detector, web page, or datalogger
- Window defroster
- Type 3 anodized camera body that allows use in corrosive environments
- Wide temperature range (-40° to +60°C)

## Technical Details

### *Wi-Fi Camera Access*

The camera's Wi-Fi access can be controlled using a smartphone from the safety of the ground. The CCFC features a web interface that makes setup and configuration easy. The interface works on any desktop or mobile browser and contains built-in tips. The camera capture and retrieval modes are highly configurable, enabling even the most advanced users complete control of settings.

### *High-Quality Still Images and Video*

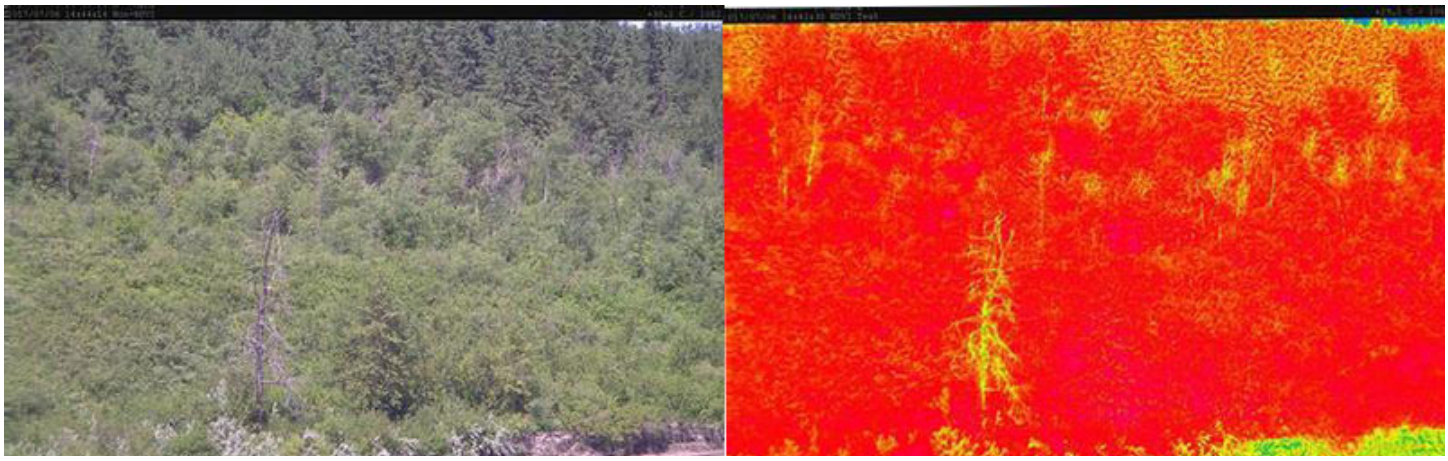
The camera can produce still images of up to 5 megapixels and video up to 720p. The camera's image and video capture trigger modes include two independent self timers, as well as external triggers, such as datalogger control, motion detection, and web page control. This flexibility makes the CCFC an ideal camera for a wide variety of outdoor observation and surveillance applications. The camera has a 16 GB outdoor-rated internal memory.

### *Camera Zoom and Auto Focus*

The CCFC comes with a high-quality 18x optical zoom lens and an upgraded image sensor (when compare to the CC5MPX camera model). Users can designate up to four preset lens positions to capture images or video from different zoom lengths for each capture event. The camera's auto focus features enables it to automatically re-focus at each zoom length so each trigger event captures a collection of clear photos and video.

### *Normalized Difference Vegetation Index (NDVI)*

NDVI uses visible and near-infrared light to show the health of vegetation. Healthy vegetation mostly absorbs visible light and reflects near-infrared light. While, unhealthy or sparse vegetation reflects more visual light and absorbs more infrared light. The following images show both a standard and an NDVI image of the same location.



In the photo on the left, it is easy to see lots of green trees but is hard to pick out where unhealthy or dead vegetation is present. The photo on the right shows mostly red indicating healthy vegetation; the sick, dead trees are yellow, which indicates unhealthy vegetation.

All NDVI photos have the following bar along the bottom of the image for reference. Colors on the far right (closer to +1.0) are heathier while colors on the left are unhealthy or not vegetation (closer to -1.0).

### *Getting Images and Video*

The camera can send images and video directly to a desktop or the images can be published to the web using various communications options. Images and video taken by the camera can be delivered to you from remote locations via cellular modem, Ethernet 10/100, RS-232, RS-485, satellite, and PakBus. The camera can be configured to act a webcam that publishes images and video directly to a website using various communications devices. The CCFC comes with 16 GB of internal memory to store captured media.

## Specifications

- Operating Temperature: -40° to +60°C
- Weight: 2.38 kg (5.25 lb)
- Length: 28.4 cm (11.2 in)
- Height: 13.0 cm (5.1 in)
- Width: 13.2 cm (5.2 in)
- Clock Accuracy: ±2 min/year (-40° to +60°C)
- Ingress Protected (IP) 67
- Operating Power: 9 to 30 Vdc
- View EU Declaration of Conformity documentation at: www.campbellsci.com/ccfc
- CCFC accessories: www.campbellsci.com/order/ccfc

### *Maximum Recommended Cable Length*

- Power and I/O Cable: 20 m (65 ft)
- Ethernet Cable: 70 m (230 ft)

### *Current Drain*

- Maximum (at 12 Vdc): 250 mA
- Quiescent: ≤1 mA (off power mode)

### *Lens*

- Focal Length: 4.70 to 64.6 mm
- Field of View: 4° to 67.3°
- Zoom ratio: 18x

### *Media Capture (photo and video)*

- Image or Video Capture Triggers: Two independent self timers; external trigger; motion detection; web page control
- Programmable Still Image Resolutions (JPEG): 2592 x 1944; 1280 x 960; 1280 x 720; 640 x 480; 640 x 352; 320 x 240; 320 x 176
- Video: Capable of up to 720P for 1280 x 720 (MPEG4), 640 x 480 (MJPEG), 320 x 240 (MPEG4)
- Video Frame Rate Options: 30, 15, and 7.5 frames per second
- Photo and Video Capture Time From Wake
  Partially On and Deep Sleep Modes: 10 s
  Off Mode: 90 s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