



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 outdoor zoom video and still image camera specifically designed for remote outdoor observation applications. The camera captures high-quality photos and video in wide-angle, and with 18x optical zoom, under various lighting conditions. Our Field Camera consumes low power, making it ideal for outdoor observation in remote locations using a solar-power battery. The camera can also operate with ac power where ac is available. It has a high-quality, very rugged anodized aluminum environmental case that enables its outdoor use in extremes of temperature. The Field Camera is compatible with Campbell Scientific data loggers, as well as other data logger brands.

Featuring New NDVI Capability!

With OS version 2.5 or above, the CCFC Field Camera is able to function as a [normalized difference vegetation index \(NDVI\)](#) sensor. This feature uses infrared data to produce a visualization of live green vegetation in the image. This allows the user to determine at-a-glance areas of healthy growth and areas where growth is less abundant. Applications for NDVI include vegetation dynamics, biomass production, grazing management, changes in rangeland condition, soil moisture, and CO₂ flux.

For more information about the CCFC, read the [blog article](#).

Benefits and Features

- › Auto-focus lens
- › Easy-to-use web interface
- › New NDVI capabilities
- › Configure up to 15 preset lens positions
- › Type 3 anodization for improved performance in corrosive environments
- › IR LEDs for night photos; quality images under almost any lighting condition
- › 16 GB of built-in memory
- › 18x optical zoom lens
- › Can be controlled by internal timer or by external controls: motion detector, web page, data logger
- › Window defroster
- › High-quality; designed for outdoor observation in remote locations
- › Designed to work in harsh environments, this camera operates at temperatures as low as -40°C and as high as 60°C

Technical Description

Wi-Fi Camera Access

This outdoor camera, which includes Wi-Fi access, can be controlled using a smartphone from the safety of the ground. The CCFC features an all-web interface that makes setup and configuration easy. The interface works on any desktop or mobile browser, and it contains built-in tips to ensure you are getting the most out of your outdoor camera. The camera capture and retrieval modes are highly configurable, enabling even the most advanced users complete control of settings.

Camera Zoom and Auto Focus

The CCFC comes with a high-quality 18x optical zoom lens and an upgraded image sensor (when compared to the [CC5MPX camera](#) model). Users can designate up to 15 preset lens positions to capture photos or video from different zoom lengths for each capture event. The camera's auto-focus feature enables it to automatically re-focus at each zoom length so each trigger event captures a collection of clear photos and video.

High-Quality Photos and Video

The camera can produce photos of up to 5 megapixels and video up to 720p. The camera's photo and video capture trigger modes include two independent timed captures, as well as external triggers, such as data logger control, motion detection, and web interface control. These capture modes make the CCFC an ideal camera for a wide variety of outdoor observation and surveillance applications. The camera comes with 16 GB of internal memory to store captured media.

Getting Photos and Video

The camera can send photos and video directly to a desktop or publish them to the web via various communications options. Photos 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 as a webcam that publishes photos and video directly to a website using various communications devices. The CCFC comes with 16 GB of outdoor-rated internal memory.

Night Mode

The CCFC Field Camera is equipped with two IR LEDs and configurable Night Mode settings, so images can be captured under almost any lighting condition.

Applications

Two mounting options add versatility to the camera's applications. The camera can be used worldwide and is suitable for the following outdoor observation and surveillance applications:

- › Weather stations
- › Water movement and level
- › Weather forecasting and cloud monitoring
- › Dam safety
- › Construction sites and empty buildings
- › Asset monitoring
- › Flood forecasting
- › Winter resort snow conditions
- › Energy generation and distribution network
- › Infrastructure
- › Iceberg and glacier monitoring
- › Avalanche monitoring
- › Point of interest and learning centers (such as national parks, historic sites, etc.)
- › Forest canopy monitoring
- › Public places and special events
- › Solar and wind farms
- › Air quality
- › Forest fire detection
- › Seismic and vibration monitoring
- › Snow monitoring
- › Vegetation monitoring
- › Animal observation

Specifications

Operating Power	9 to 30 Vdc	Maximum Baud Rate	115.2 kbps (for RS-232 and RS-485 only)
Operating Temperature Range	-40° to +60°C	Window Defroster	Yes
Clock Accuracy	±2 minutes per year (-40° to +60°C)	Wi-Fi Capable	Yes
Communication Interfaces	RS-232 port, RS-485 port, Ethernet 10/100	Signal Type/Output	Wi-Fi, PakBus, FTP, email, web page
Communications Protocols	PakBus, FTP, email, web page interface via web browser	Low-Light Capability	› Configurable night-mode settings › 2 IR LEDs

NDVI Capability	Yes (The normalized difference vegetation index (NDVI) image capture capability requires CCFC OS version 2.5 or higher.)
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Image Storage	16 GB internal storage (Can send images to a data logger or computer for storage.)
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Diameter	9.3 cm (3.7 in.)
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Dimensions	28.4 x 13.2 x 13.0 cm (11.2 x 5.2 x 5.1 in.)
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Weight	2.38 kg (5.25 lb)
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Communication Switched Power Output

Maximum Output Current	750 mA
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Current Drain

Average	250 mA (excludes defroster and IR LEDs)
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Maximum Momentary Peak	400 mA
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Defroster on	1.5 A
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IR LEDs on	700 mA
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Quiescent Off power mode	< 1 mA
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Deep Sleep power mode	< 6 mA
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Lens

Mount	C-type
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IRIS	DC compatible
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Focal Length	4.70 to 64.6 mm
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Field of View (FOV)	4° to 67.3°
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Zoom Ratio	18x
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External Input Signal

Logic Low Level	0.65 Vdc (-20 Vdc absolute minimum)
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Logic High Level	> 2.0 Vdc (+20 Vdc absolute maximum)
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Minimum Pulse Width	10 ms
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Media Capture (photo and video)

Photo or Video Capture Triggers	Two independent self timers, external trigger, motion detection, web page control
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Programmable Still Image Resolutions	<ul style="list-style-type: none"> › 1280 x 720 (JPEG) › 640 x 480 (JPEG) › 320 x 240 (JPEG) › 320 x 176 (JPEG) › 640 x 352 (JPEG) › 2592 x 1944 (JPEG) › 1280 x 960 (JPEG)
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Video	Capable of up to 720P for the following: <ul style="list-style-type: none"> › 1280 x 720 (MPEG4) › 640 x 480 (MJPEG) › 320 x 240 (MPEG4)
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Video Frame Rate Options	30, 15, and 7.5 FPS (Frames Per Second)
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Photo Capture Time

-NOTE-	<i>Capture time is from wake-up to start of capture.</i>
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Fully On	< 1 s (5 MP images take longer.)
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Partially On	10 s
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Deep Sleep	15 s
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Off State	90 s
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Maximum Recommended Cable Length

Power & I/O Cable	20 m (65 ft)
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Ethernet Cable	70 m (230 ft)
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For comprehensive details, visit: www.campbellsci.eu/ccfc 



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