

# Digital Camera for Harsh Environments

## Model CC640

The CC640 Digital Camera, manufactured by Campbell Scientific Canada, works in harsh, remote locations. It operates at temperatures as low as  $-40^{\circ}\text{C}$ , while using minimal power. Three communications ports (RS-232, RS-485, CS I/O) facilitate transfer of images to a datalogger.

Our dataloggers trigger image acquisitions by applying a 5 to 12 V signal. The CC640 also has a stand-alone mode that allows the camera to store images on a CompactFlash<sup>®</sup> card—without the use of a datalogger. In this mode, image acquisitions are triggered by the camera's precision real-time clock.

The CC640 can store JPEG images on a CompactFlash card or in the datalogger's memory. To send images to the datalogger's memory, the datalogger must have the PAKBUS<sup>®</sup> communication protocol and at least 2 Mbytes of memory. Compatible dataloggers include our CR510-2M-PB, CR10X-2M-PB, CR800, CR1000, and CR3000.

### Datalogger Connection

If the distance between the camera and datalogger is less than 25 ft, the CC640 typically connects to the datalogger via the COMCBL1 or COMCBL2 cable. When Campbell Scientific's MD485 Multidrop Interface is used, the camera and datalogger can be at a distance of up to 4000 ft. Our MD485 interface connects to the camera via a three-twisted pair, shielded cable, such as the CABLE-9721.



*The CC640 operated in extreme temperatures to provide this photograph of a mountain pass in Alaska. For this application, photographs allow pilots to view real-time weather—helping them avoid dangerous flying conditions.*



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## Ordering Information

CC640	Digital Camera
18543	Enclosure that houses and protects the CC640; a window in the enclosure allows the CC640 to take photographs while the camera is housed inside the enclosure
18554	120 V defrost kit for the enclosure's window
18549	Mounting kit for attaching the enclosure to a tripod or tower crossarm
COMCBL1-L	RS-232 cable that terminates in pigtailed for connection to the COM ports on a CR800, CR1000 or CR3000 datalogger. Enter lead length, in feet, after the L.
COMCBL2-L	RS-232 cable that terminates in a 9-pin connector for connection to the datalogger's RS-232 port. Enter lead length, in feet, after the L.
MD485	RS-485 Multidrop Interface
CABLE-9721	Three-twisted pair, shielded cable that connects the MD485 to the CC640

## Specifications

### Lens Description:

F1.4 3.5 to 8 mm Varifocal Lens with Electronic Iris

### Image Type: JPEG

### Resolution:

640 x 480 (307,200 pixels);  
604 x 504 (with time stamp)

### Current Drain:

Operating: 250 mA maximum  
Quiescent: 250  $\mu$ A typical

### Communication Ports:

RS-232, CS I/O, RS-485 (labeled external I/O),

### Maximum Baud Rate:

230 kbps (RS-232, RS-485),  
76.8 kbps (CS I/O)

### CS I/O CSDC Addresses: 7 or 8

### Power: 9 to 15 Vdc

### Video Output: NTSC, PAL

### Operating Temperature: -40° to +70°C

### External Input Signal:

Logic Low Level: 0 to 0.7 Vdc  
(-12 Vdc absolute minimum)  
Logic High Level: 4 to 15 Vdc  
(15 Vdc absolute maximum)

### Memory Card:

Type: CompactFlash  
File System: FAT16  
Storage: 512 Mbytes or less

### Clock Accuracy: $\pm$ 1 minute/year (0° to 40°C); $\pm$ 4 minute/year (-40° to 70°C)

### Dimensions: 8.5" x 2.6" x 4.3" (21.5 x 6.5 x 11.0 cm)

### Weight: 1.1 lbs (500 g)



*The communication ports, video output, CompactFlash card slot, and power switch are located on the back of the camera. The video output connector provides an analog video signal for the purpose of focusing and targeting the camera.*



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