

EHD IMAGING GMBH



# Apogee Aspen cooled CCD Cameras

Scientific Grade

Thermoelectrically cooled



Made in Europe  
by Andor

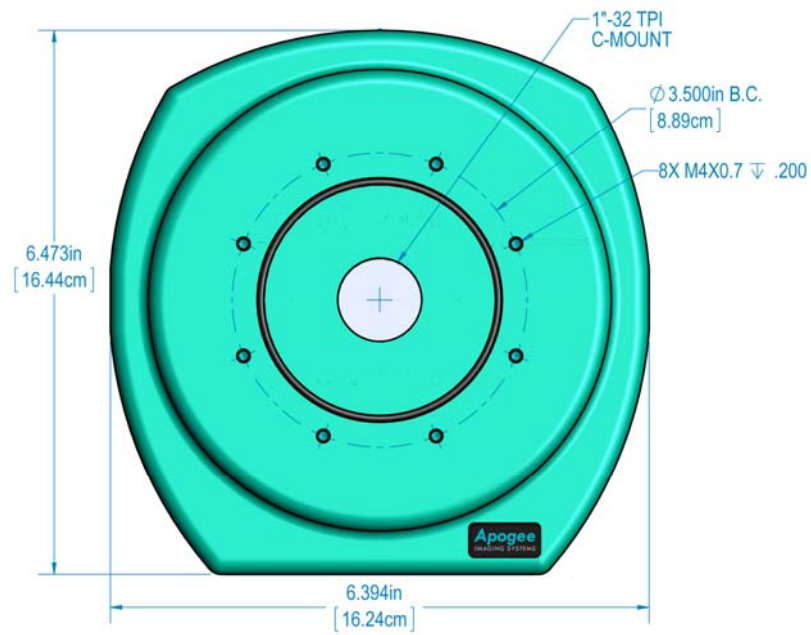
EHD imaging GmbH, Zum Rennplatz 15, 49401 Damme  
Phone: +49 5491 2090 Fax: +49 5491 2098  
E-Mail: [info@ehdimaging.de](mailto:info@ehdimaging.de); URL: [www.ehd.de](http://www.ehd.de)

## Apogee Aspen CCD Cameras

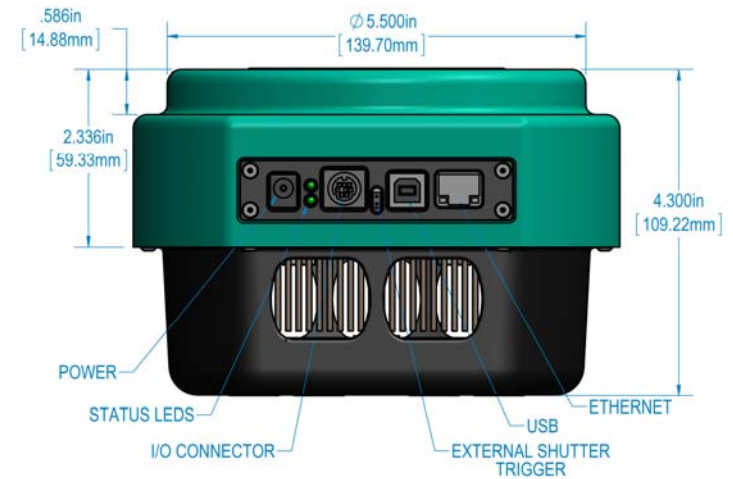
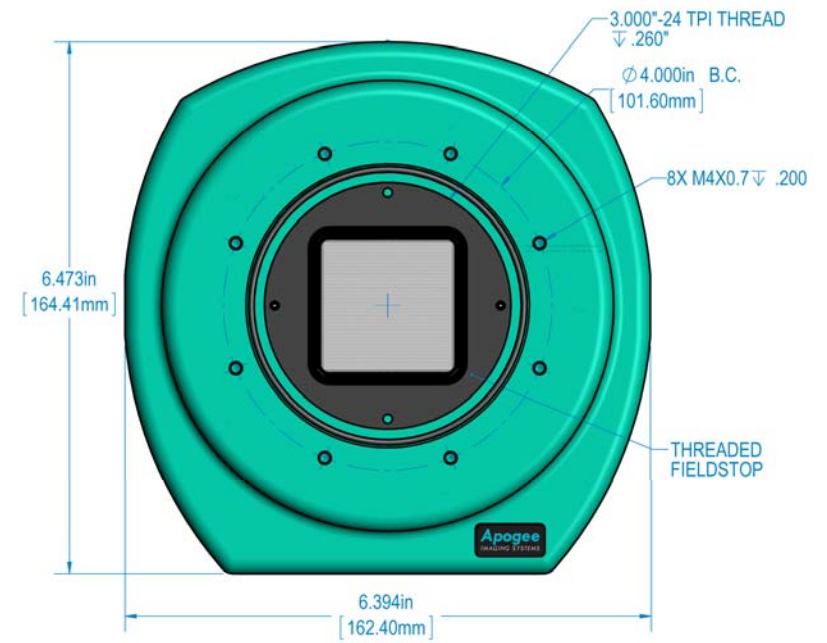
Apogee Aspen is the newest design innovation in the Apogee CCD range, ideal for demanding physical science and astronomy usage. Apogee Aspen increases cooling performance, improves stray light baffling, adds a network interface with a built-in web server, and sets a new standard in shutter longevity. The Aspen's cooling performance down to 60 °C below ambient offers low darkcurrent contribution, ensuring optimal signal to noise for long exposure applications such as astronomy.



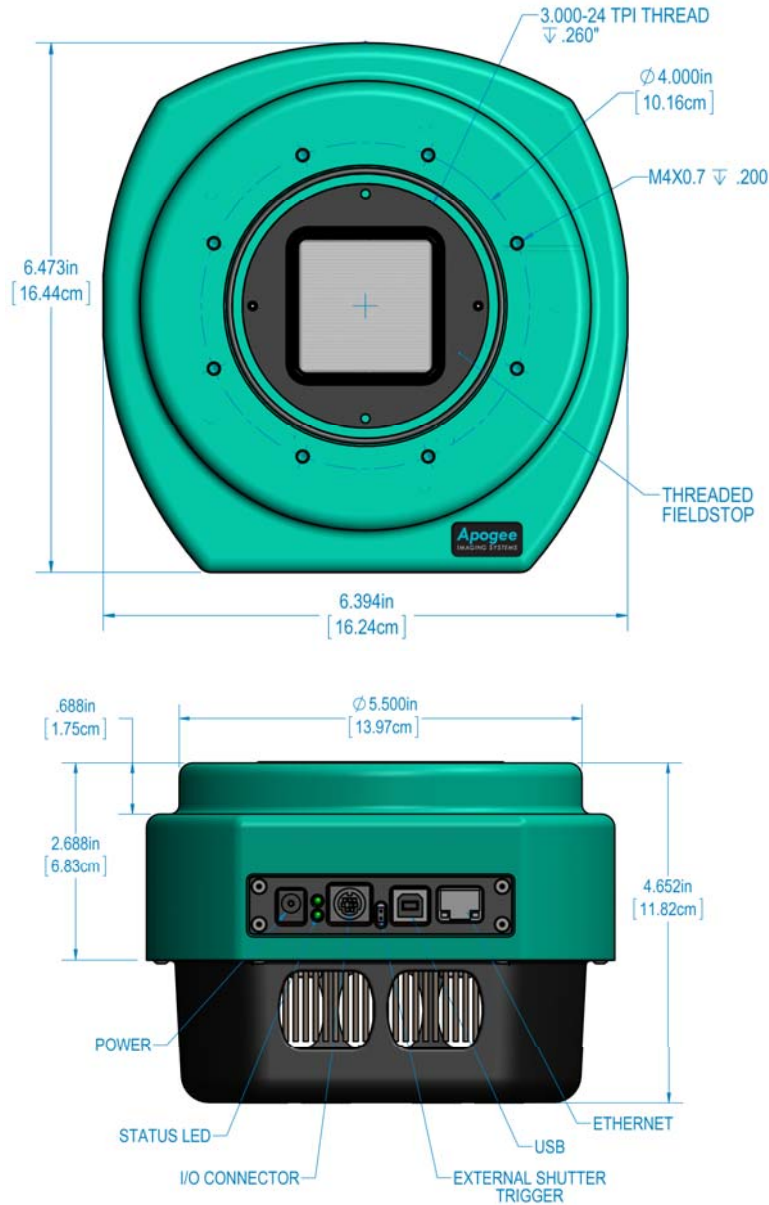
## Aspen G01 35mm Shutter Housing



## Aspen G07 58mm Shutter Housing



# Aspen G09 58mm Shutter Housing



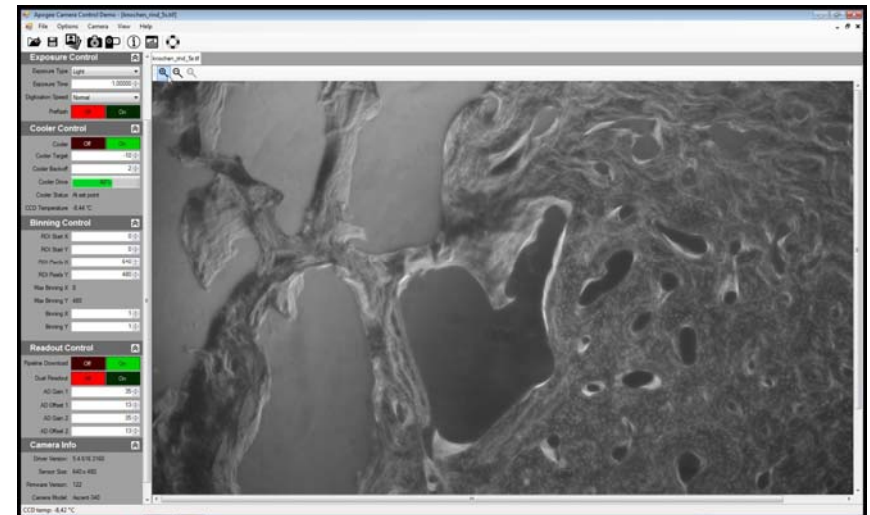
## Apogee Aspen CCD Camera Matrix

Model	Sensor Type	CCD	Array Size (Pixel)	Pixel Size (µm)	Sensor Diag. (mm)	Full Well	Read Noise (e <sup>-</sup> )	Dark Current (e/pix/s)	Dynamic (dB)
CG16M	FF,FI	KAF-16803	4096 x 4096	9	52,1	94000	9,5	0,019	79,9
CG230	FF,BI	CCD230-42	2048 x 2048	15	43,4	183000	20,8	0,329	78,9
CG42	FF,BI	CCD42-40	2048 x 2048	13,5	39,1	84000	16,3	0,079	74,2
CG47	FF,BI	CCD4710	1024 x 1024	13	18,8	85000	16,9	0,207	74
CG6	FF,FI	KAF-1001	1024 x 1024	24	34,8	203000	9,3	0,03	86,8
CG9000	FF,FI	KAF-09000	3056 x 3056	12	51,9	90000	9,4	0,012	79,6
CG8050	IL,FI	KAI-8050	3298 x 2472	5,5	22,7	18000	10,8	0,006	64,4
CG16070	IL,FI	KAI-16070	4894 x 3232	5,5	43,2	41000	9,8	0,008	72,4

## Apogee Aspen System Features:

- High Resolution sensors available
- Andor OEM Optimisation
- Front- and Backilluminated sensors
- Interline sensors
- Programmable TE cooling to 60°C below ambient ( depends on sensor typ)
- High longevity mechanical shutters
- USB2.0 Interface
- Ethernet Interface w/ built-in Web Server
- 16 Bit digitization
- Programmable I/O Port
- Remote Triggering
- Focusing Mode
- Precision locking filterwheels optional

## Apogee Camera Control Demo



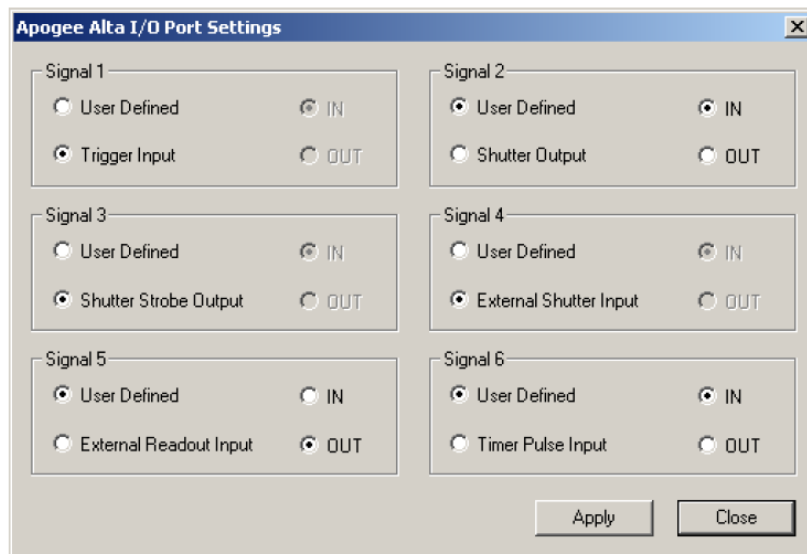
Note: Basic, unsupported acquisition application, recommended ONLY for use when testing and demonstrating Apogee cameras. Not compatible with Apogee filter wheels.

## Apogee ActiveX/COM API

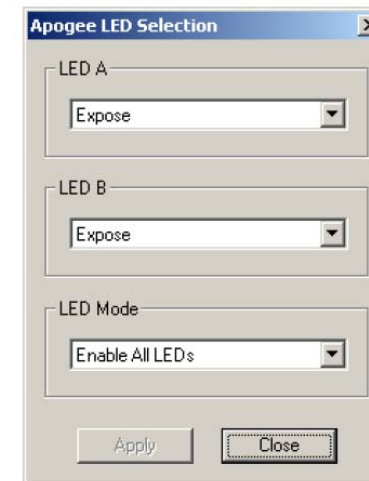
The Apogee camera drivers provide access to all functions through a straightforward ActiveX/COM API

**Following are a few samples of camera control settings with the ActiveX/COM API**

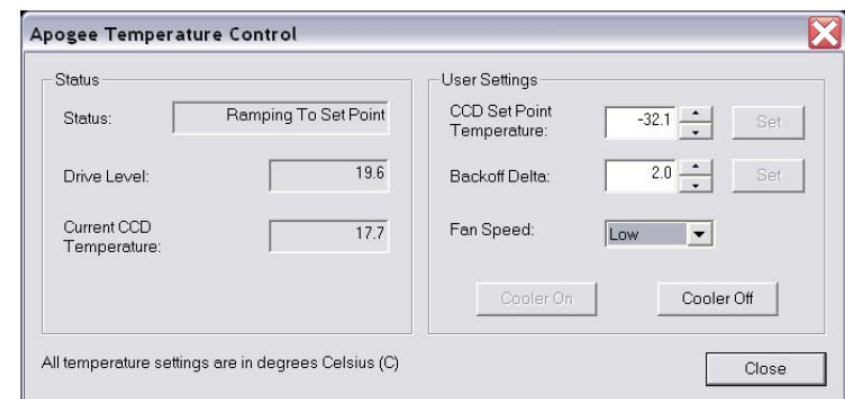
The following graphic shows the I/O selection dialog; *ShowIODialog*



The following graphic shows the ILED selection dialog; *ShowLedDialog*

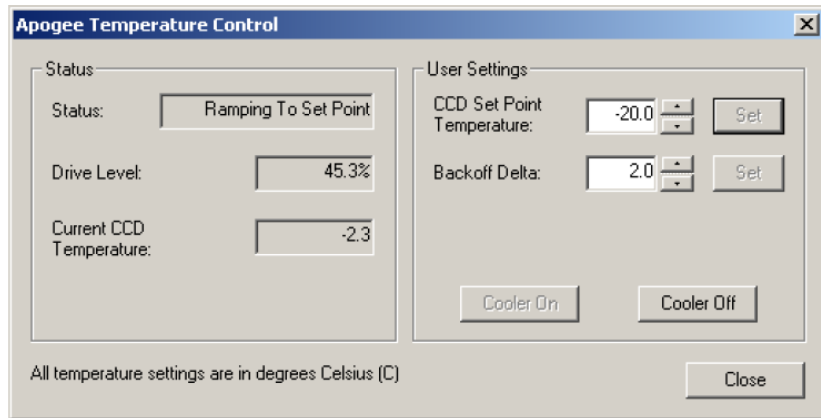


The following graphic shows the Temp control selection dialog; *ShowTempDialog*





The following graphic shows the Temp control selection dialog;  
**ShowTempDialog** for Ascent cameras



## Apogee ActiveX/COM API within LABVIEW

The Apogee ActiveX/COM DLL can be used within LabVIEW, a graphical programming environment from National Instruments. LabVIEW allows the user to control the camera system through the DLL. At this time, Apogee does not provide an instrument driver for LabVIEW beyond the Apogee ActiveX/COM DLL.

The easiest way to invoke the ActiveX/COM capabilities within LabVIEW is to use LabVIEW as an Automation Client. In this mode, LabVIEW acts as a client, and requests information from the Apogee DLL, which is the automation server.

In order to use the Apogee DLL from within LabVIEW, refer to your LabVIEW documentation to create an Automation Open Reference.

## Accessories

### Filter Wheels



- Apogee range compatible
- Multi-position options
- USB 2.0

### Filters

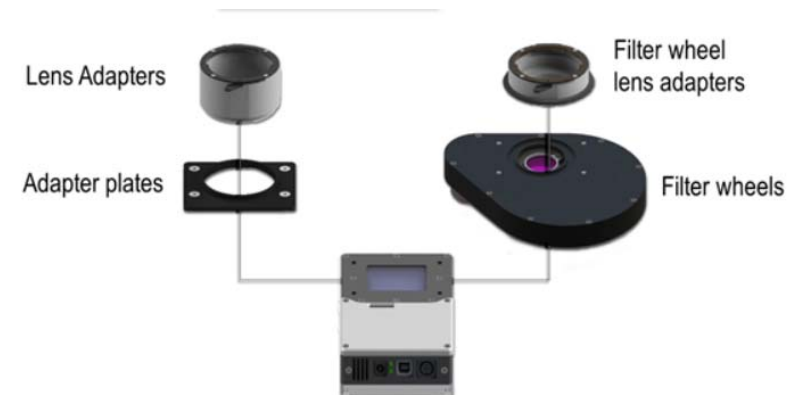


- Range of Astrodon filters
- Square or round
- 50mm or 31mm

### Adapters



- Couple to Apogee CCDs
- Couple to filter wheels
- Lens, telescope & face plate



## Filterwheels

	AFW50-9R	AFW50-7S	AFW50-10S	AFW31-17R	CFW31-8R
Compatible Cameras	Alta, Aspen, Ascent (A16000 and A29050)	Alta, Aspen, Ascent (A16000 and A29050)	Alta, Aspen, Ascent (A16000 and A29050)	Alta, Aspen, Ascent (A16000 and A29050)	Ascent (except A16000 and A29050)
Filter positions	9	7	10	17	8
Filter Shape	Round	Square	Square	Round	Round
Filter size	50mm	50mm	50mm	31mm	31mm
Interface	USB 2.0	USB 2.0	USB 2.0	USB 2.0	Ascent Peripheral Interface

## Filters and/or lens Adapters

A wide range of Astrodon filters and filter sets as well as camera lens adapters are available, compatible with Apogee filterwheels and cameras.

Please call for Specifications and price  
Phone: +40-5491-2090

