

EHD IMAGING GMBH



# Apogee Alta cooled CCD Cameras

**Scientific Grade**

**Thermoelectrically cooled**



Made in Europe  
by Andor

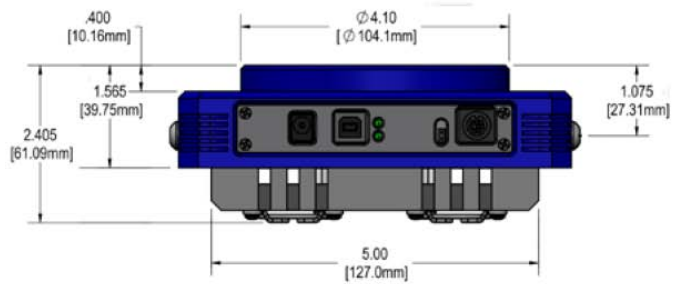
EHD imaging GmbH, Zum Rennplatz 15, 49401 Damme  
Phone: +49 5491 2090 Fax: +49 5491 2098  
E-Mail: [info@ehdimaging.de](mailto:info@ehdimaging.de); URL: [www.ehd.de](http://www.ehd.de)

## Apogee Alta F CCD Cameras

The Apogee Alta family has been a mainstream of high performance imaging for many years, offering a wide range of full frame and interline CCDs up to 16.8 Megapixel, ideally suited to both OEM and research markets. Cooling performance down to 50 °C below ambient offers low darkcurrent contribution, ensuring optimal signal to noise for long exposure applications such as astronomy or chemiluminescence detection. USB 2.0 interface offers the convenience of simple, robust connection to PC.



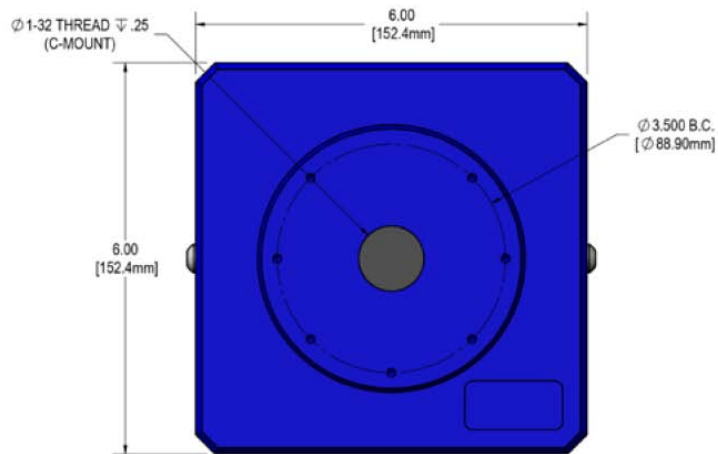
Standard: D01



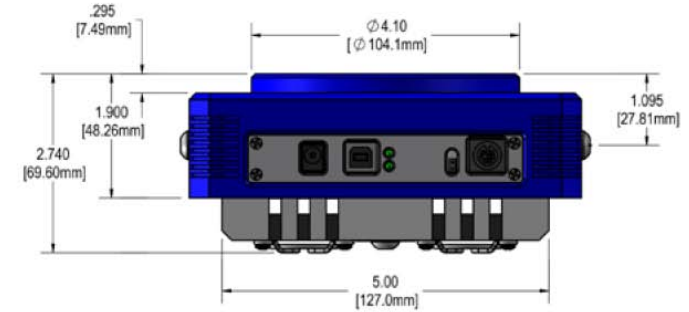
1" Aperture  
C-Mount  
1-32 UN-2B

.69" Flange Focal Distance  
(optical)

25mm shutter on front- and back-illuminated  
CCDS.  
No shutter on Interline CCDs.



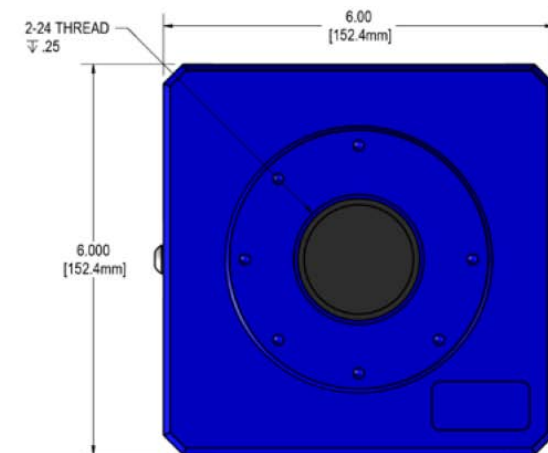
Standard: D02



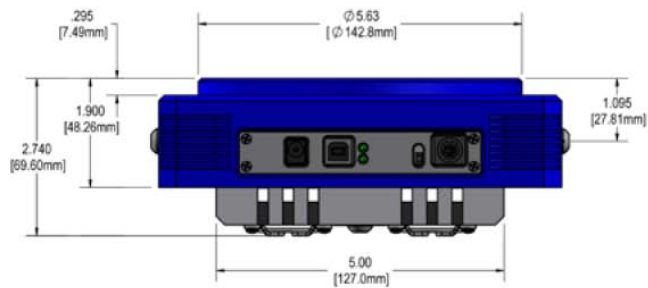
2" Aperture  
2-24 Thread Option

1.02" Flange Focal Distance  
(optical)

48mm shutter on front- and back-illuminated  
CCDS.  
No shutter on Interline CCDs.



### Standard: D07

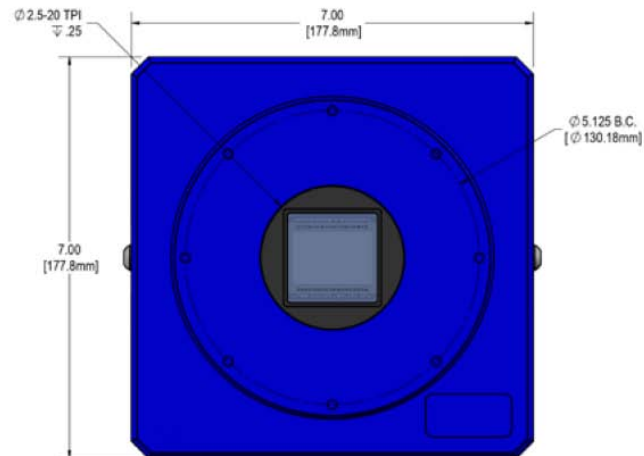


2.5" Aperture  
2.5-20 Thread Option

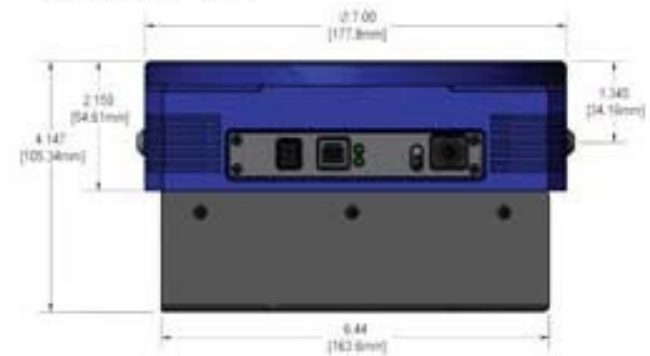
1" Flange Focal Distance  
(optical)

63mm shutter on front- and back-illuminated  
CCDs.

No shutter on Interline CCDs.



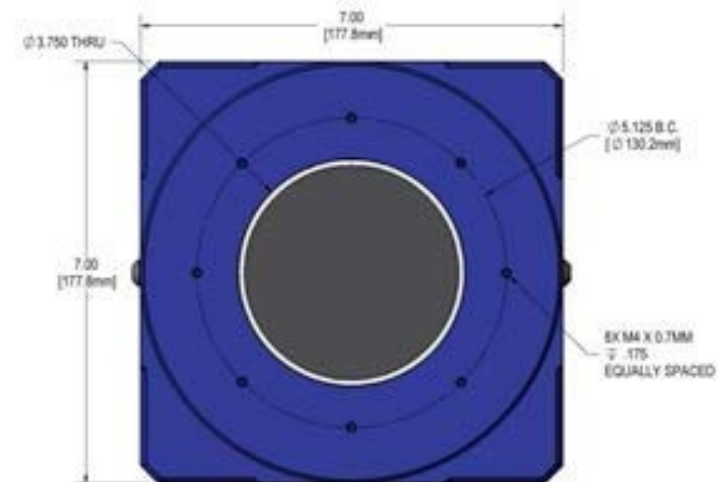
### Standard: D10



3.75" Aperture

1.19" Flange Focal Distance  
(optical)

90mm shutter.



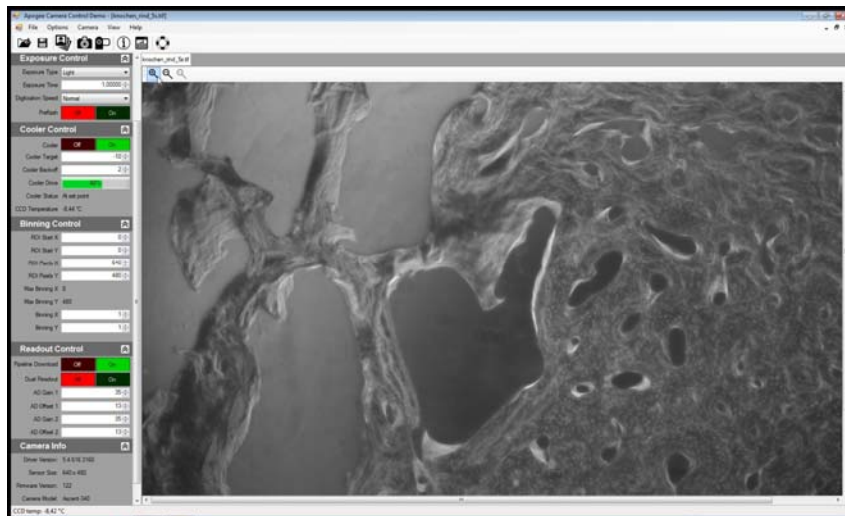
## Apogee Alta F CCD Camera Matrix

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)
F42	FF,BI	CCD4240	2048 x 2048	13,5	39,1	77000	8	0,1125	79,7
F47	FF,BI	CCD4710	1024 x 1024	13	18,8	95000	10	0,527	79,2
F16	FF,FI	KAF-16801	4096 x 4096	9	52,1	94000	7,4	0,007	82,1
F16M	FF,FI	KAF-16803	4096 x 4096	9	52,1	95000	22,1	0,02	72,6
F9000	FF,FI	KAF-09000	3056 x 3056	12	51,9	94000	16,1	0,0704	75,3
F8300	FF,FI	KAF-8300	3326 x 2504	5,4	23,2	40000	9,9	0,016	72,1
F32	FF,FI	KAF-3200	2184 x 1472	6,8	18,1	55000	6,6	0,008	78,4
F2	FF,FI	KAF-1603	1536 x 1024	9	16,6	107000	8,5	0,016	82
F6LN	FF,FI	KAF-1001	1024 x 1024	24	34,8	100000	10,9	0,11	79,4
F6HD	FF,FI	KAF-1001	1024 x 1024	24	34,8	530000	14,4	0,11	91,3
F260LN	FF,FI	KAF-0260	512 x 512	20	14,5	200000	15	<1	83
F260HD	FF,FI	KAF-0260	512 x 512	20	14,5	500000	15	<1	83

## Apogee Alta System Features:

- High Resolution sensors available
- Andor OEM Optimisation
- Front- and Backilluminated sensors
- Interline sensors
- Programmable TE cooling to 55°C below ambient ( depends on sensor typ)
- High longevity mechanical shutters
- USB2.0 Interface
- 16 Bit digitization
- Programmable I/O Port
- Remote Triggering
- Focusing Mode
- Precision locking filterwheels optional

## Apogee Camera Control Demo



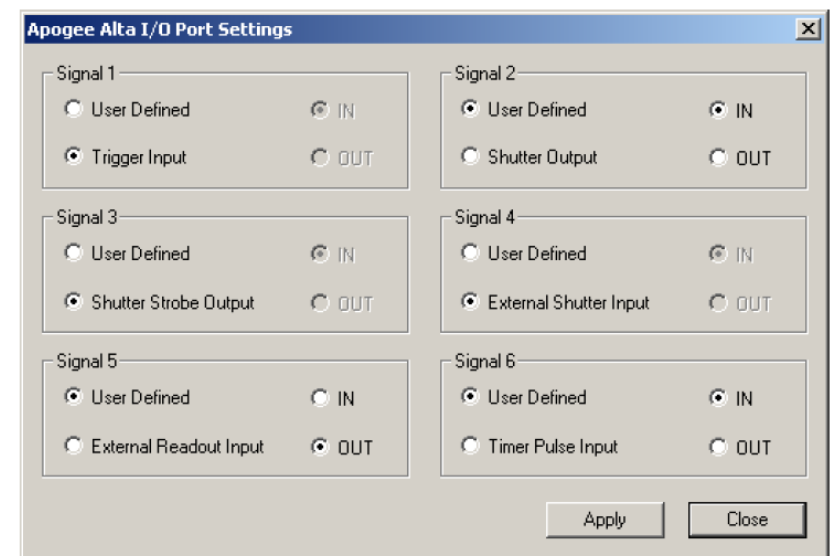
Note: Basic, unsupported acquisition application, recommended ONLY for use when testing and demonstrating Apogee cameras. Not compatible with Apogee filter wheels.

## Apogee ActiveX/COM API

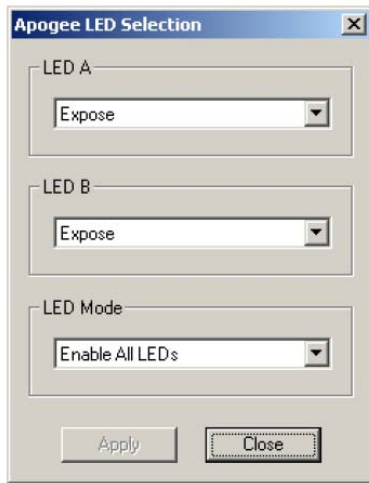
The Apogee camera drivers provide access to all functions through a straightforward ActiveX/COM API

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

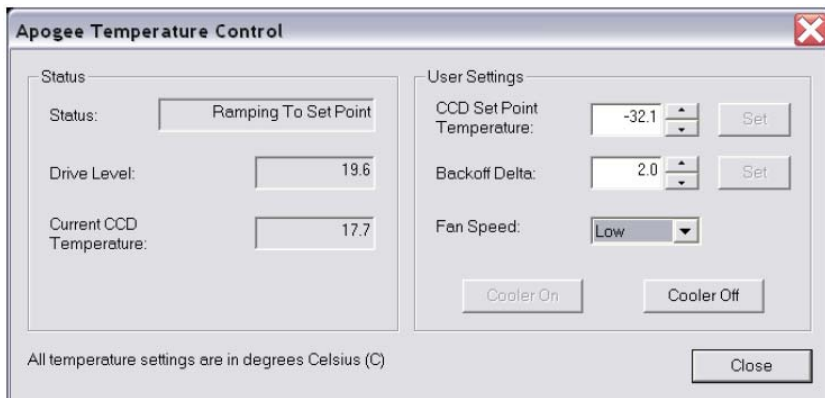
The following graphic shows the I/O selection dialog; *ShowIODialog*



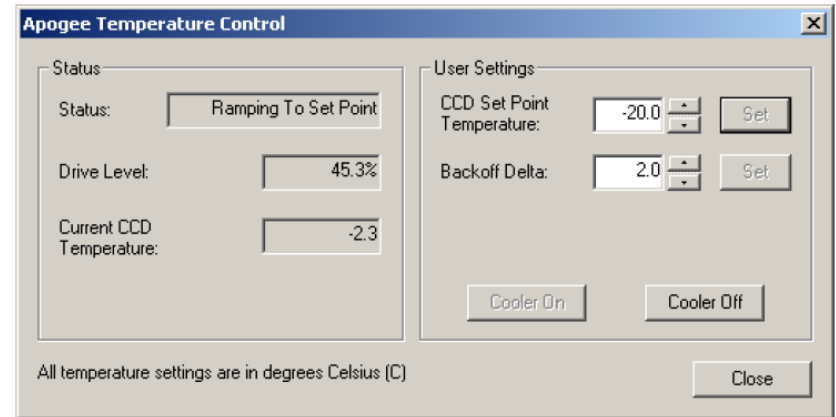
The following graphic shows the ILED selection dialog; **ShowLedDialog**



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

