CORDIN
SCIENTIFIC IMAGING

HIGH SPEED ROTATING MIRROR CMOS CAMERA

Model 580

- **Very high resolution:** 12 megapixel (4.1K x 3.0K) at all capture speeds

- **High dynamic range:** 12 bit ADC

- **Very high framing rate:** Up to 4 million fps

- **Maximum sensitivity:** 2x2 pixel "binning" feature allows quadrupling of light sensitivity at reduced resolution in low-light conditions

- **Software control:** easy control of exposure and timing parameters for each channel through user-friendly software

- **Image alignment software:** post processing software for precise alignment of images for animation and analysis

The **Cordin Model 580** high-speed rotating mirror framing camera achieves the highest combination of speed, resolution, and frame count of any imaging technology available. The system uses a rotating mirror optical system, which does not require reading out sub-arrays of the image to achieve higher framing rates. Newly redesigned for 2020, the Model 580 has been updated with the latest CMOS sensor devices available, and features a new front-end optical system with a larger aperture which together bring an overall improvement in light sensitivity, dynamic range, and reduced vignetting.

The ADC dynamic range for this camera system is a 12 bits and images are captured at the full frame size of 4.1K x 3.0K at all speed ranges. The camera is available in a 20, 40, 78, or 80 frame configuration. Systems purchased with fewer frames can be upgraded to more frames at a later date.

The Model 580 camera can be triggered by the event being photographed, and can accept triggers in advance or for some time after the event of interest. It can also provide the trigger to initiate the event.

The standard high speed mirror-drive is driven by compressed air or nitrogen at lower to medium speeds, and with helium at higher speeds. The camera can also be configured with a brushless electric driven mirror operating at slower speeds, for more convenient operation when high framing rates are not required.

The system comes complete with a host PC and camera control software. Post processing image alignment software that provides precise alignment of images for animation and analysis is also included. Data may be saved in a wide variety of 8 bit file formats. Full 12 bit images are saved in 16 bit tiff file format.

OPTIONS

Customized front optics

Micro or Macro lens options

C- Mount Adapter

Color vs. Monochrome

Cordin 20X and 50X Microscopic Lenses

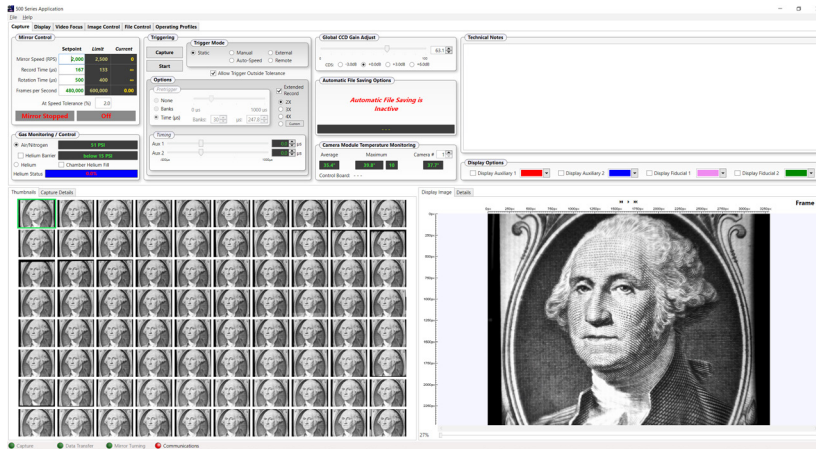Illumination Sources: Models 605, 606, 607

Mobile camera stand

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Screen shot of the Model 580 user interface

SPECIFICATIONS

Number of Frames	20, 40, 78, or 80	**Pixel size**	3.45 x 3.45 µm
Maximum Framing Rate	4 million fps (78 frames)		6.9 x 6.9 µm (2x2 binning)
Front Optics	Single objective lens system (no parallax)	**ADC Dynamic Range**	12 Bit
Objective Lens	Nikon F-mount	**Device Type**	Full resolution progressive scan Monochrome standard
Resolution	4,112 x 3,008 pixels, 2.0K x 1.5K pix with binning		Color optional (no binning)
		Interface	Gigabit Ethernet for camera

CONFIGURATIONS

Number of Frames	20	40	78*	80**
Gas Turbine Drive Configuration				
Maximum Framing Rate (fps)	1,000,000	2,000,000	4,000,000	2,500,000
Minimum Interframe time	1 µs	500 ns	250 ns	400 ns
Minimum Exposure Time	220 ns	220 ns	220 ns	220 ns
Electric Drive Configuration				
Maximum Framing Rate (fps)	500,000	1,000,000	2,000,000	1,000,000
Minimum Interframe time	2 µs	1 µs	500 ns	1 µs
Minimum Exposure Time	400 ns	400 ns	400 ns	400 ns

*: 78-frame version has two missing frames in record

**: 80-frame version has an off-axis optical system with larger rotating mirror and vertically mounted objective lens