

# CORDIN

## SCIENTIFIC IMAGING

### HIGH SPEED ROTATING MIRROR STREAK CAMERA

## Model 131-UHD (CMOS)

- **Very high spatial resolution**, 7920 pixels
- **Fast temporal resolution**, down to 650 ps
- **Software control** of exposure and timing parameters
- **Laser and pulsed flash illumination synchronization**
- **Long record length**, up to 66,000 pixels
- **Re-triggerable within seconds**
- **12 bit image depth**
- **Programmable time delay functions**
- **Dual fiducial pattern generator**
- **Electronic shuttering** prevents image overwrite



The **Cordin Model 131-UHD** camera is the ideal analytical tool for continuously measuring one dimension over time for a given event. The rotating mirror architecture provides long record length and recording rate flexibility. Combining rotating mirror and the latest CMOS sensor technology provides users with access to digital streak image information in seconds. This allows the researcher to record data ready for subject adjustment, analysis, or presentation. A unique opto-mechanical design provides a continuous digital streak record, without gaps, blemishes, and with negligible distortion.

The Model 131-UHD streak image is 7920 pixels in the spatial axis, and either 30,000 pixels (5 sensor version) or 66,000 pixels (11 sensor version) on the temporal axis.

The Model 131-UHD is offered with two alternative gas-driven rotating mirror turbines: the standard Model 1209 turbine operates to 5,000 RPS and the optional Model 1231 turbine operates to 7,500 RPS.

The turbines can reach 50% of full speed using compressed air or nitrogen. Helium is required to reach full speed. An optional high-speed electric mirror drive is also available as an alternative to the gas-driven turbine.

The writing rate is determined by the speed of the rotating mirror, which is software controlled. At top speed, using the 1209 turbine the recording rate is 5,456 pixels per microsecond. The 1231 turbine at top speed yields a recording rate of 8,184 pixels per microsecond.

Two fiducial inputs are provided for precise image synchronization. Two programmable delayed outputs are also provided. An intuitive PC-based user interface allows for easy setup, acquisition, alignment, analysis and saving of data.

#### OPTIONS

**Electric mirror drive (Model 1209e)**

**High speed gas turbine (Model 1231)**

**Rail-mount adjustable stand**

**Custom objective optics**

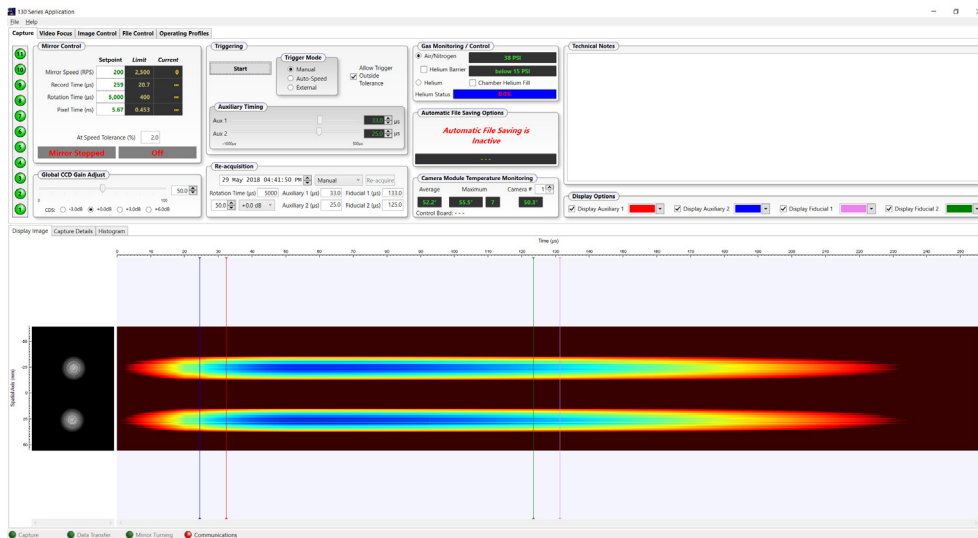
**Custom slit configurations**

**Laser camera calibration kit**

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Screen shot of the Model 131-UHD user interface



### SPECIFICATIONS

<b>Record Width</b>	7,920 pixels
<b>Record Length</b>	30,000 pixels standard
<b>Extended Track Length</b>	66,000 pixels <i>optional</i>
<b>Minimum Temporal Feature</b>	6 pixels at 25 micron slit width
<b>ADC Dynamic Range</b>	12 bit
<b>Radius of Image Arc</b>	400 mm
<b>Subtended Angle of Arc</b>	17 degrees standard, 37 degrees maximum
<b>Objective Lens</b>	Nikon F 28-300mm standard Other objective optics available
<b>Pixel Size</b>	4.6 x 4.6 microns
<b>Device Type</b>	47.5 MPixel full resolution (7920 x 6004) CMOS sensor Monochrome standard
<b>Data Interface</b>	Gigabit Ethernet

<b>Trigger Inputs</b>	+5V, +5V isolated, analog and optical with threshold
<b>Fiducial Inputs</b>	Two independent channels captured on common time base
<b>Delay Outputs</b>	Two programmable delay channels on common time base

	<b>Turbine</b>	<b>MODEL 1209</b>	<b>MODEL 1231</b>
<b>Max Mirror Rotation</b>		5000 rps	7500 rps
<b>Temporal Resolution</b>		1.0 ns	0.65 ns
<b>Record Length</b>			
<b>30,000 Pixel Configuration</b>		4.6 $\mu$ sec	3.2 $\mu$ sec
(55,650 pixels net of overlap)			
<b>66,000 Pixel Configuration</b>		10.2 $\mu$ sec	7.0 $\mu$ sec
(25,300 pixels net of overlap)			

