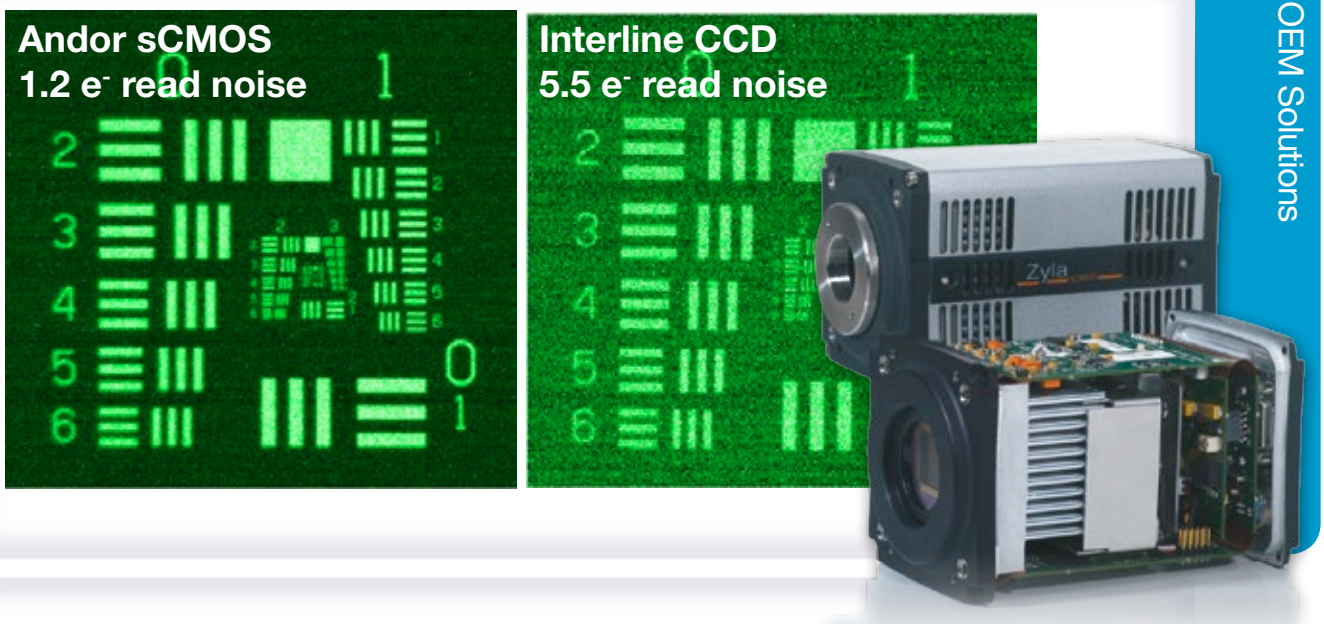
ANDOR™ TECHNOLOGY

Zyla sCMOS

5.5 Megapixel, 100 fps, 1.2 e⁻ Noise
Rolling and Global Shutter
Scientific CMOS



Features and Benefits

- **Compact and light**
  Ideal for integration into space restrictive set-ups
- **1.2 e⁻ read noise**
  Lower detection limit than any CCD
- **5.5 megapixel sensor format and 6.5 µm pixels**
  Extremely high resolution over a 22 mm field of view
- **TE cooling to 0°C in 35°C ambient**
  Ideal for OEM integration into enclosed systems
- **Rolling and Global shutter**
  Maximum flexibility across all applications
- **Rapid frame rates**
  100 fps full frame
- **Dual-Gain amplifiers**
  Extensive dynamic range of 25,000:1 @ 30 fps
- **ROI and pixel binning**
  User-defined ROI (1 pixel granularity) and hardware binning
- **Dynamic Baseline Clamp**
  Ensures quantitative stability
- **iCam**
  Fast exposure switching
- **Interface flexibility**
  Choice of Camera Link 3-tap or 10-tap
- **Choice of enclosed or board-level**
  OEM flexibility
- **3-year sensor enclosure integrity warranty**

Scientific CMOS with 1.2 e⁻ read noise for OEM applications

With their unique blend of low noise, large field of view and high speed, the Andor Zyla sCMOS platform is ideally suited to a wide range of low light and high speed imaging applications. Loaded with FPGA intelligence, the Zyla sCMOS drives optimal performance and superior image quality from this exciting and innovative new technology development. Remarkably compact and light, Zyla is available as an enclosed camera, board-level or private labelled component for flexible system integration.

Andor are an ideal partner as your OEM camera supplier, our quality systems, manufacturing environment and engineering team deliver the highest performance cameras to meet your business needs.

Specifications Summary

Model	C and V	X
Active pixels (W x H)	2560 x 2160 (5.5 Megapixel)	
Sensor size	16.6 x 14.0 mm (21.8 mm diagonal)	
Pixel size (W x H)	6.5 µm	
Pixel well depth (typical)	30,000 e⁻	
Readout speeds (MHz)	560, 200	
Read noise	1.2 e⁻	
Sensor operating temperature	0°C (up to +35°C ambient)	
Maximum frame rate	30 fps @ full frame	100 fps @ full frame
Interface options	Camera Link 3-tap	Camera Link 10-tap

Key Specifications For All Models[*1]

Sensor type	Front Illuminated Scientific CMOS	
Active pixels (W x H)	2560 x 2160 (5.5 Megapixel)	
Sensor size	16.6 x 14.0 mm 21.8 mm diagonal	
Pixel size (W x H)	6.5 µm	
Pixel readout rate (MHz)	560 (280 MHz x 2 sensor halves) 200 (100 MHz x 2 sensor halves)	
Read noise (e^-) [*2] **200 MHz** **560 MHz**	**Rolling Shutter** 1.2 1.45	**Global Shutter** 2.6 2.6
Maximum Quantum Efficiency	57%	
Sensor operating temperature [*3]	0°C (up to 35°C ambient)	
Dark current, e^-/pixel/sec @ min temp [*4]	0.2	
Readout modes	Rolling Shutter and Global Shutter (Snapshot)	
Pixel well depth (e^-)	30,000	
Maximum dynamic range	25,000:1	
Linearity (%, maximum) [*5]	Better than 99%	
MTF (Nyquist @ 555 nm)	45%	
Photon Response Non-Uniformity (PRNU)	< 0.5%	
Pixel binning	Hardware binning: 2 x 2, 3 x 3, 4 x 4, 8 x 8	
Pre-defined Region of Interest	2048 x 2048, 1920 x 1080, 1392 x 1040, 512 x 512, 128 x 128	
User defined ROI granularity	1 pixel *	
Triggering	External Trigger, Fire 1, Fire n, Fire All, Arm	
Anti-blooming factor	x 10,000	

* Minimum ROI height 12 rows

Model Specific Specifications

Model	**C**	**V**	**X**
Data range	11 bit	11 bit and 16 bit	11 bit and 16 bit
Interface options	Camera Link 3-tap		Camera Link 10-tap

Maximum Frame Rate Table[*6]

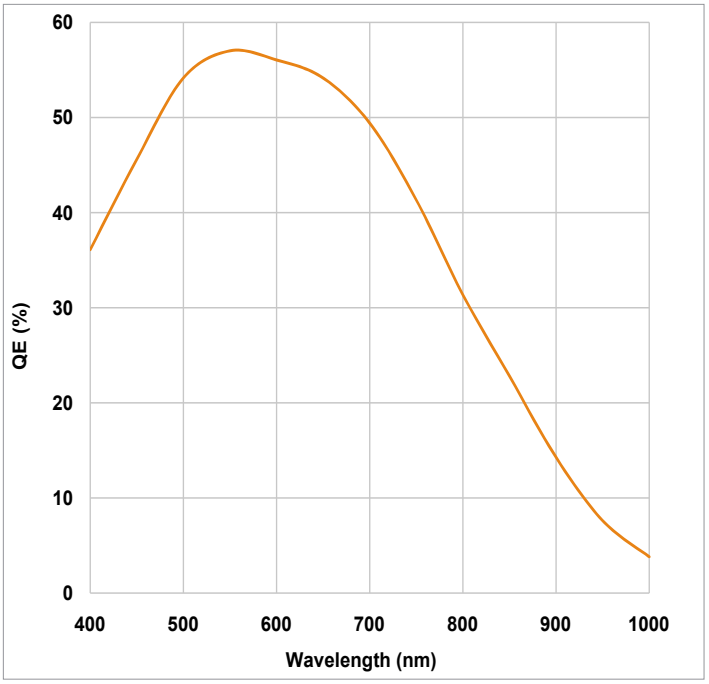
Array Size	C and V - 3 tap		X - 10 tap	
	Rolling Shutter	Global Shutter	Rolling Shutter	Global Shutter
2560 x 2160 (full frame)	**30**	**30**	**100**	**50**
2048 x 2048	**39**	**39**	**105**	**52**
1920 x 1080	**80**	**80**	**198**	**97**
512 x 512	**420**	**201**	**420**	**201**
128 x 128	**1,662**	**736**	**1,662**	**736**

Customizable and Flexible

As a truly dedicated OEM platform, the Zyla can offer various levels of customization, for example:

- Cable connection flexibility
- Optical mount configurations
- Chassis mounting options
- Custom window options
- Board level or private labelled enclosure
- Alternative form factors
- Custom pixel blemish compensation
- Custom FPGA processing
- Flexible pricing structure scalable with volume requirements
- Specific QC / testing

Quantum Efficiency (QE) Curve[*7]



Andor - An OEM Leader

An industry leader in OEM supply with a wide customer base and exemplary track record, Andor has over the last 5 years sold cameras and detectors into 10 of the top 20 global industry leaders in the areas of life sciences, spectroscopic instruments, surface science instruments and X-Ray imaging.

Whether you are creating a brand new analytical device or incorporating new functionality into an existing configuration, you can depend on Andor's expertise in custom camera design and unparalleled engineering and sales support to offer efficient program scoping, prototyping and quality manufacture. Andor offers custom hardware or software modification, custom form-factors, private labelled enclosures, and adaptability to cost-sensitive, high volume manufacturing.

First in Quality

Andor runs many quality improvement programmes, including a focus on manufacturing process and yield improvement. Operating a quality management system since 1998, the company fully complies with the requirements of BS EN ISO9001:2000.

Creating The Optimum Product for You

How to customize the Zyla :

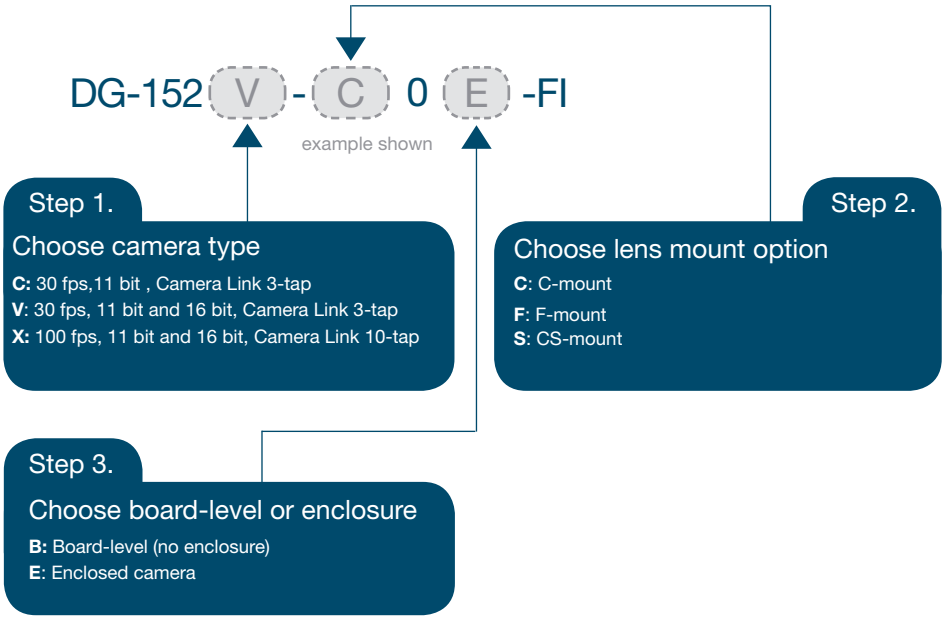
Step 1.
Quote the camera type.

Step 2.
Verify lens mount suitability.

Step 3.
Select either board-level or enclosed camera option.

Step 4.
Please indicate which controller card and software you require.

Step 5.
Please indicate which accessories are required.



Step 4.

The Zyla requires at least one of the following controller card, which must be matched to the 3-tap (C and V) or 10-tap (X) camera types as appropriate:

CCI-3TBF PCIe Camera Link 3-tap controller card, plus 1 connector cable (C and V)
CCI-10TBF PCIe Camera Link 10-tap controller card, plus 2 connector cables (X)

The Zyla also requires at least one of the following software options:

Andor SDK A software development kit that allows you to control the Andor range of cameras from your own application. Available as 32 and 64-bit libraries for Windows (XP, Vista and 7) and Linux. Compatible with C/C++, LabView and Matlab.

Andor Driver Licence (ANDOR-DRV-LIC) Individual driver licence for Andor detectors and spectrographs. Required for integration into OEM bespoke product lines.

Solis for Imaging A 32-bit application compatible with 32 and 64-bit Windows (XP, Vista and 7) and Linux offering rich functionality for data acquisition and processing. AndorBasic provides macro language control of data acquisition, processing, display and export.

Step 5.

The following accessories are available:
ACC-MEC-05609 CS-mount adapter
ACM-05574 F-mount adapter
ACC-MEC-05614 C-mount adapter
OA-ECMT Auto extension tubes (set of 3) for C-mount
OA-ENAF Auto extension tubes (set of 3) for Nikon AF
ACC-ACZ-05612 7-way Multi I/O timing cable, offering Fire, External Trigger, Shutter and Arm

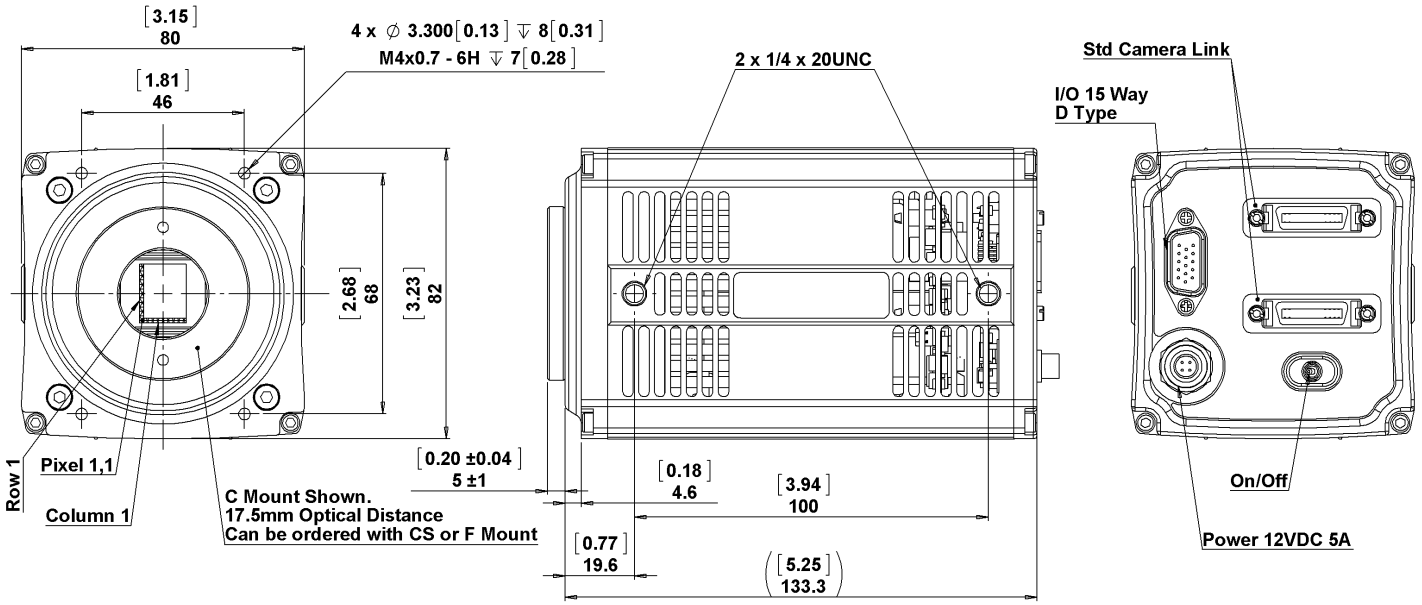
Have you found what you are looking for?

If you require adjustments to the mentioned mechanical, software or performance specifications please let our OEM sales team know, we can discuss the options for a bespoke product variant which suits your exact needs.

Product Drawings

Dimensions in mm [inches]

Third-angle projection



Target Weight:
1,000 g

Connecting to the Zyla

Camera Control
Connector type: Camera Link 3-tap or 10-tap connectors

TTL / Logic
Connector type: 15 way D Type with TTL I/Os for External Trigger, Frame Readout and Fire Pulse

Regulatory Compliance

RoHS compliant

Compliant with the requirements of the EU EMC and LV Directives through testing to EN 61326-1 and EN 61010-1
(Applicable to Enclosed 'E' camera)

Power: +12VDC ± 5% @ 5A

Ripple: 200 mV peak-peak 0 - 20 MHz

120 - 240 VAC 50/60 Hz external power supply PSE-approved available

15-way D-type pinouts

1	ARM	Output
2	FIRE ALL*	Output
3	FIRE row n	Output
4	FIRE row 1	Output
5	Spare Output	Output
6	Ground	GND
7	External Trigger	Input
8	Spare Input	Input
9	Reserved	N/A
10	Reserved	N/A
11	Reserved	N/A
12	Reserved	N/A
13	Reserved	N/A
14	Reserved	N/A
15	Reserved	N/A

* Fire output active only when all rows are exposing

Order Today

Need more information? At Andor we are committed to finding the correct solution for you. With a dedicated team of technical advisors, we are able to offer you one-to-one guidance and technical support on all Andor products. For a full listing of our regional sales offices, please see: andor.com/contact

Our regional headquarters are:

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Beijing
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Fax +86 (10) 6445 5401

Items shipped with your camera

1x Power supply with mains cable
1x Quick Start Guide
1x CD containing Andor user guides
1x Individual system performance sheet

Footnotes: Specifications are subject to change without notice

1. Figures are typical unless otherwise stated.
2. Readout noise is for the entire system and is taken as a median over the sensor area excluding any regions of blemishes. It is a combination of sensor readout noise and A/D noise.
3. Specified cooling temperature assumes ambient temperature of up to 35°C.
4. Dark current measurement is taken as a median over the sensor area excluding any regions of blemishes.
5. Linearity is measured from a plot of Signal vs. Exposure Time over the full dynamic range.
6. The maximum frames/s table for sCMOS indicate the maximum speed at which the device can acquire images at full frame and also a range of sub-array size, for both rolling and global shutter readout modes, 11-bit single amplifier. Note that the write speed of the PC hard drive can impose a further restriction to achieving sustained kinetic series acquisition.
7. Quantum efficiency of the sensor at 20°C as measured by the manufacturer.

Recommended Computer Requirements:

- 2.68 GHz Quad Core + 4 GB RAM
- Hard Drive:
  Minimum 250 MB/s continuous write for 'C' and 'V' models
  Minimum 850 MB/s continuous write for 'X' model
- PCI Express x4 or greater for 'C' and 'V' models
- PCI Express x8 or greater for 'X' model
- Windows (XP, Vista and 7)

Operating and Storage Conditions

Operating Temperature 0ºC to 35ºC ambient
Relative Humidity < 70% (non-condensing)
Storage Temperature -10ºC to 50ºC

Power Requirements

Please refer to page 5

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