

# REDWOOD™

## 12MP CAMERAS



CoaxPress

*Video Cameras with AMS CMV12000 Sensors*

### APPLICATIONS

**Automated Optical Inspection**

**Wide Area Observation**

**Virtual Reality and Special Effects**

**Scientific Research**



### FEATURES INCLUDE:

- Monochrome and Color Models
- High Resolution with High Speed Output
- Advanced Global Shutter CMOS Sensor
- Fast CoaxPress 2.0 Video Output with Coaxial or Fiber Optic Cabling Options
- Selectable 8/10/12-bit Data Formats
- Multiple Lens Mount Options
- Multi-ROI with up to 16 Separate Windows
- Flexible Image Adjustment and Enhancement

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# SPECIFICATIONS

<b>Camera Model</b>	<b>Redwood 12MP</b>
<b>Sensor Size (H x V)</b>	4096 x 3072 (12.6 MP)
<b>Frame rate (full resolution)</b>	335 fps ( 8-bit), 299 fps (10-bit), 132 fps (12-bit)
<b>Optical Format</b>	APS-C (28.1 mm diagonal)
<b>Sensor Type</b>	CMOS w. global electronic shutter
<b>Sensor Options</b>	Monochrome or color (Bayer)
<b>Pixel Size</b>	5.5 x 5.5 $\mu$ m
<b>Dynamic Range</b>	59.5 dB; optional Piecewise HDR or Interleaved HDR
<b>Output Configurations</b>	1/2/4 links at 3.125 / 5.0 / 6.25 / 10.0 / 12.5 Gbps via coaxial or fiber cabling (QSFP+)
<b>Multiple ROI / Binning</b>	Up to 16 windows with optional 2x2 binning, or with full-size window 1/2 subsampling can be used
<b>Pixel Bit Depth</b>	8/10/12-bit output
<b>Exposure Control</b>	Programmable or level-controlled exposure, triggered double exposure (PIV), or auto exposure
<b>Image Correction</b>	Black level, FPN/PRNU, bad pixel replacement, FFC, denoise filter, detail enhancement filter
<b>Color Processing</b>	White balance (Auto one-shot, tracking, or manual), Gamma LUTs
<b>Camera Configuration</b>	GenICam or Redwood Control software
<b>Mechanical/Electrical</b>	
<b>Dimensions</b>	62.0 mm x 62.0 mm x 154.7 mm (WxHxD, with F-mount)
<b>Lens Mount</b>	F-mount, M52 x 0.75 or Active Canon EF-mount
<b>Weight</b>	715 g (with F-mount, no lens)
<b>Power Requirements</b>	Approx. 12W @ 12V DC via Hirose 6-pin, CX models support PoCXP (min. 2 links required)
<b>Additional I/O</b>	TTL-level trigger input/output
<b>Operating Temperature</b>	-10°C to 50°C, 20-85% humidity (non-condensing)
<b>Storage Temperature</b>	-40°C to 85°C, 10-90% humidity (non-condensing)

## FRAME RATE CHART

Example Output Resolution:	CXP Connection*:	ADC Mode:		
		8-bit	10-bit	12-bit
Maximum (4096 x 3072)	4x CXP-12	335	299	132
	2x CXP-12 / 4x CXP-6	188	150	125
	1x CXP-12 / 2x CXP-6 / 4x CXP-3	94	75	62
4K UHD (3840 x 2160)	4x CXP-12	475	424	187
	2x CXP-12 / 4x CXP-6	266	213	177
	1x CXP-12 / 2x CXP-6 / 4x CXP-3	133	107	89
HD 1080p (1920 x 1080)	4x CXP-12	936	838	371
	2x CXP-12 / 4x CXP-6	936	838	371
	1x CXP-12 / 2x CXP-6 / 4x CXP-3	528	424	352

\*both Coaxial and CoaXPRESS-over-Fiber models support configurations up to 4x CXP-12

## ORDERING

Example: 120C335CCX-F

Camera  
120C335

Lens Type  
F - F-mount

M - M52 x 0.75

A - Active EF-mount

AO - Active EF-mount w. OLPF/IR-Cut Filter

Sensor Type

M - Monochrome

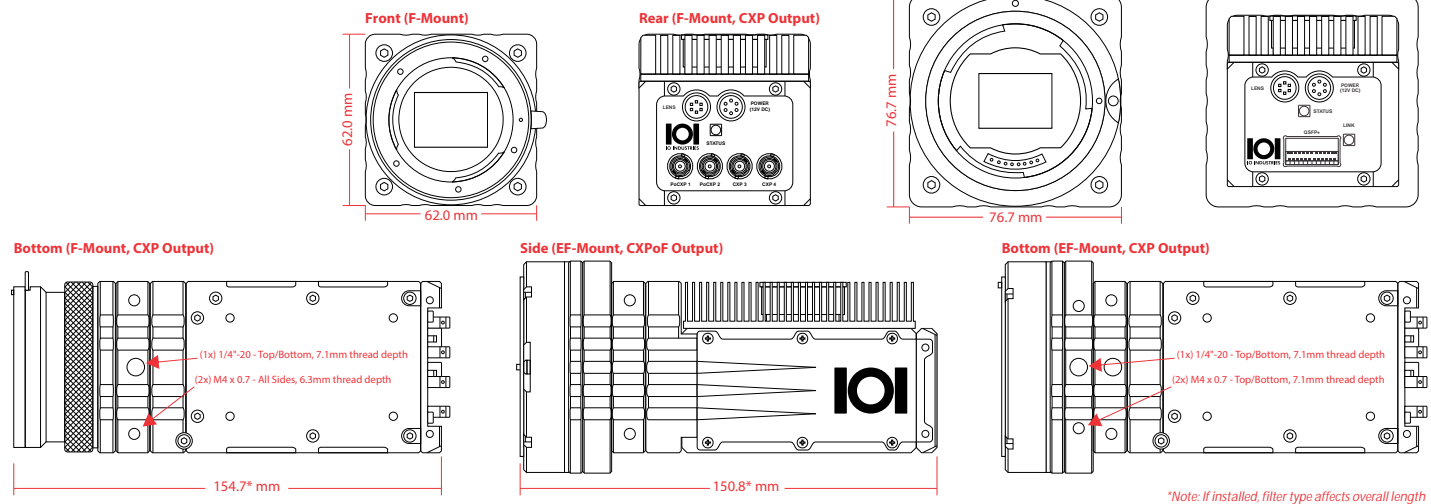
C - Color (with IR-Cut filter)

Interface

CX - CoaXPRESS (Coaxial)

CQ - CoaXPRESS-over-Fiber (QSFP+)

## MECHANICAL DIAGRAMS



Visit us at: [www.ioindustries.com](http://www.ioindustries.com)  
 15940 Robin's Hill Road  
 London, Ontario, Canada, N5V 0A4  
 Tel: +1 519 663 9570  
 Email: [sales@ioindustries.com](mailto:sales@ioindustries.com)

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# REDWOOD™

## 45MP CAMERAS



CoaxPress

*Video Cameras with ON Semiconductor XGS 45000 Sensors*

### APPLICATIONS

**Automated Optical Inspection**

**Wide Area Observation**

**Virtual Reality and Special Effects**

**Scientific Research**



### FEATURES INCLUDE:

- Monochrome and Color Models
- High Resolution with High Speed Output
- Advanced Global Shutter CMOS Sensor
- Fast CoaxPress 2.0 Video Output with Coaxial or Fiber Optic Cabling Options
- Selectable 8/10/12-bit Data Formats
- Multiple Lens Mount Options
- Multi-ROI with up to 16 Separate Windows
- Flexible Image Adjustment and Enhancement

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# SPECIFICATIONS

<b>Camera Model</b>	<b>Redwood 45MP</b>
<b>Sensor Size (H x V)</b>	8192 x 5468 (44.7 MP)
<b>Frame rate (full resolution)</b>	52 fps (8-bit), 52 fps (10-bit), 47 fps (12-bit)
<b>Optical Format</b>	Super 35 (31.5 mm diagonal)
<b>Sensor Type</b>	CMOS w. global electronic shutter
<b>Sensor Options</b>	Monochrome or color (Bayer)
<b>Pixel Size</b>	3.2 x 3.2 $\mu\text{m}$
<b>Dynamic Range</b>	67.5 dB (up to 73dB with Dual ADC Gain HDR)
<b>Output Configurations</b>	1/2/4 links at 3.125 / 5.0 / 6.25 / 10.0 / 12.5 Gbps via coaxial or fiber cabling (QSFP+)
<b>Multiple ROI / Binning</b>	Up to 16 windows with optional 2x2 binning, or with full-size window 1/2 subsampling can be used
<b>Pixel Bit Depth</b>	8/10/12-bit output
<b>Exposure Control</b>	Programmable or level-controlled exposure, triggered double exposure (PIV), or auto exposure
<b>Image Correction</b>	Black level, FPN, bad pixel replacement, FFC, denoise filter, detail enhancement filter
<b>Color Processing</b>	White balance (Auto one-shot, tracking, or manual), Gamma LUTs
<b>Camera Configuration</b>	GenICam or Redwood Control software
<b>Mechanical/Electrical</b>	
<b>Dimensions</b>	62.0 mm x 62.0 mm x 154.7 mm (WxHxD, with F-mount)
<b>Lens Mount</b>	F-mount, M52 x 0.75 or Active Canon EF-mount
<b>Weight</b>	715 g (with F-mount, no lens)
<b>Power Requirements</b>	Approx. 12W @ 12V DC via Hirose 6-pin, CX models support PoCXP (min. 2 links required)
<b>Additional I/O</b>	TTL-level trigger input/output
<b>Operating Temperature</b>	-10°C to 50°C, 20-85% humidity (non-condensing)
<b>Storage Temperature</b>	-40°C to 85°C, 10-90% humidity (non-condensing)

## FRAME RATE CHART

Example Output Resolution:	ADC Mode: CXP Connection*:	Output:	10-bit		12-bit		
			8-bit	10-bit	8-bit	10-bit	12-bit
Maximum (8192 x 5468)	4x CXP-12		52	52	47	47	47
	2x CXP-12 / 4x CXP-6		52	41	47	41	34
	2x CXP-10 / 4x CXP-5		38	30	38	30	25
8K UHD TV2 (7680 x 4320)	1x CXP-12 / 2x CXP-6 / 4x CXP-3		26	20	26	20	17
	4x CXP-12		65	65	60	60	60
	2x CXP-12 / 4x CXP-6		65	56	60	56	46
	2x CXP-10 / 4x CXP-5		35	28	35	28	23
	1x CXP-12 / 2x CXP-6 / 4x CXP-3		51	41	51	41	34

\*both Coaxial and CoaXPress-over-Fiber models support configurations up to 4x CXP-12

## ORDERING

Example: 447X52MCX-F

Camera  
447X52

Lens Type  
F - F-mount

M - M52 x 0.75

A - Active EF-mount

AO - Active EF-mount w. OLPF/IR-Cut Filter

Sensor Type

M - Monochrome

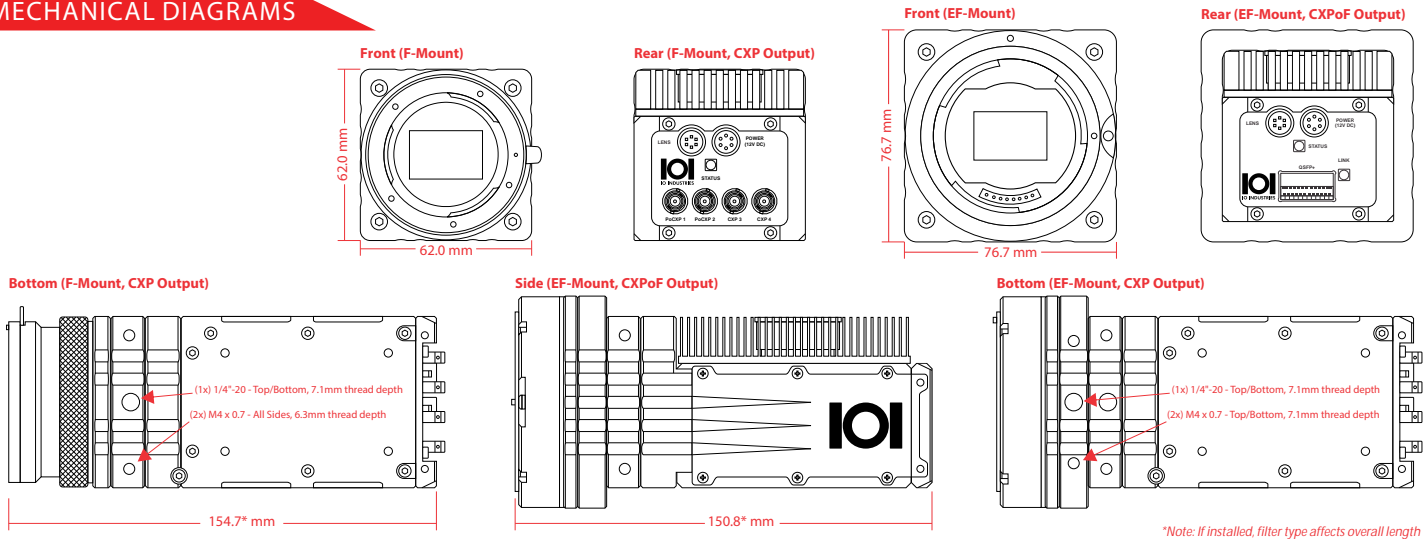
C - Color (with IR-Cut filter)

Interface

CX - CoaXPress (Coaxial)

CQ - CoaXPress-over-Fiber (QSFP+)

## MECHANICAL DIAGRAMS



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# REDWOOD™

## 65MP CAMERAS



CoaXPress

*Video Cameras with Gpixel GMAX3265 Sensors*

### APPLICATIONS

**Automated Optical Inspection**

**Wide Area Observation**

**Virtual Reality and Special Effects**

**Scientific Research**



### FEATURES INCLUDE:

- Monochrome and Color Models
- High Resolution with High Speed Output
- Charge-Domain Global Shutter CMOS Sensor
- Fast CoaXPress 2.0 Video Output with Coaxial or Fiber Optic Cabling Options
- Selectable 8/10/12-bit Data Formats
- Multiple Lens Mount Options
- Multi-ROI with up to 16 Separate Windows
- Flexible Image Adjustment and Enhancement

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# SPECIFICATIONS

<b>Camera Model</b>	<b>Redwood 65MP</b>
<b>Sensor Size (H x V)</b>	9344 x 7000 (65.4 MP)
<b>Frame rate (full resolution)</b>	71 fps (8-bit), 57 fps (10-bit), 31 fps (12-bit)
<b>Optical Format</b>	35mm Full Frame (37.4 mm diagonal)
<b>Sensor Type</b>	CMOS w. global electronic shutter
<b>Sensor Options</b>	Monochrome or color (Bayer)
<b>Pixel Size</b>	3.2 x 3.2 $\mu\text{m}$
<b>Dynamic Range</b>	66 dB (12-bit ADC mode), 62.3dB (10-bit ADC mode); optional Interleaved HDR
<b>Output Configurations</b>	1/2/4 links at 3.125 / 5.0 / 6.25 / 10.0 / 12.5 Gbps via coaxial or fiber cabling (QSFP+)
<b>Multiple ROI / Binning</b>	Up to 16 windows with optional 2x2 binning, or with full-size window 1/2 subsampling can be used
<b>Pixel Bit Depth</b>	Selectable 8/10/12-bit output from 10-bit (high-speed) or 12-bit (high dynamic range) ADC modes
<b>Exposure Control</b>	Programmable or level-controlled exposure, triggered double exposure (PIV), or auto exposure
<b>Image Correction</b>	Black level, FPN/PRNU, bad pixel replacement, FFC, denoise filter, detail enhancement filter
<b>Color Processing</b>	White balance (Auto one-shot, tracking, or manual), Black balance (auto or manual), Gamma LUTs
<b>Camera Configuration</b>	GenICam or Redwood Control software
<b>Mechanical/Electrical</b>	
<b>Dimensions</b>	62.0 mm x 62.0 mm x 154.7 mm (WxHxD, with F-mount)
<b>Lens Mount</b>	F-mount, M52 x 0.75 or Active Canon EF-mount
<b>Weight</b>	715 g (with F-mount, no lens)
<b>Power Requirements</b>	Approx. 12W @ 12V DC via Hirose 6-pin, CX models support PoCXP (min. 2 links required)
<b>Additional I/O</b>	TTL-level trigger input/output
<b>Operating Temperature</b>	-10°C to 50°C, 20-85% humidity (non-condensing)
<b>Storage Temperature</b>	-40°C to 85°C, 10-90% humidity (non-condensing)

## FRAME RATE CHART

Example Output Resolution:	ADC Mode: CXP Connection*:	Output:	10-bit		12-bit		
			8-bit	10-bit	8-bit	10-bit	12-bit
Maximum (9344 x 7000)	4x CXP-12		71	57	31	31	31
	2x CXP-12 / 4x CXP-6		35	28	31	28	23
	2x CXP-10 / 4x CXP-5		26	20	25	20	17
8K UHD TV2 (7680 x 4320)	1x CXP-12 / 2x CXP-6 / 4x CXP-3		17	14	17	14	11
	4x CXP-12		114	112	51	51	51
	2x CXP-12 / 4x CXP-6		69	56	51	51	46
	2x CXP-10 / 4x CXP-5		51	41	51	41	34
	1x CXP-12 / 2x CXP-6 / 4x CXP-3		35	28	34	28	23

\*both Coaxial and CoaXPress-over-Fiber models support configurations up to 4x CXP-12

## ORDERING

Example: 654G71CCQ-A

Camera  
654G71

Lens Type

F - F-mount

M - M52 x 0.75

A - Active EF-mount

AO - Active EF-mount w. OLPF/IR-Cut Filter

Sensor Type

M - Monochrome

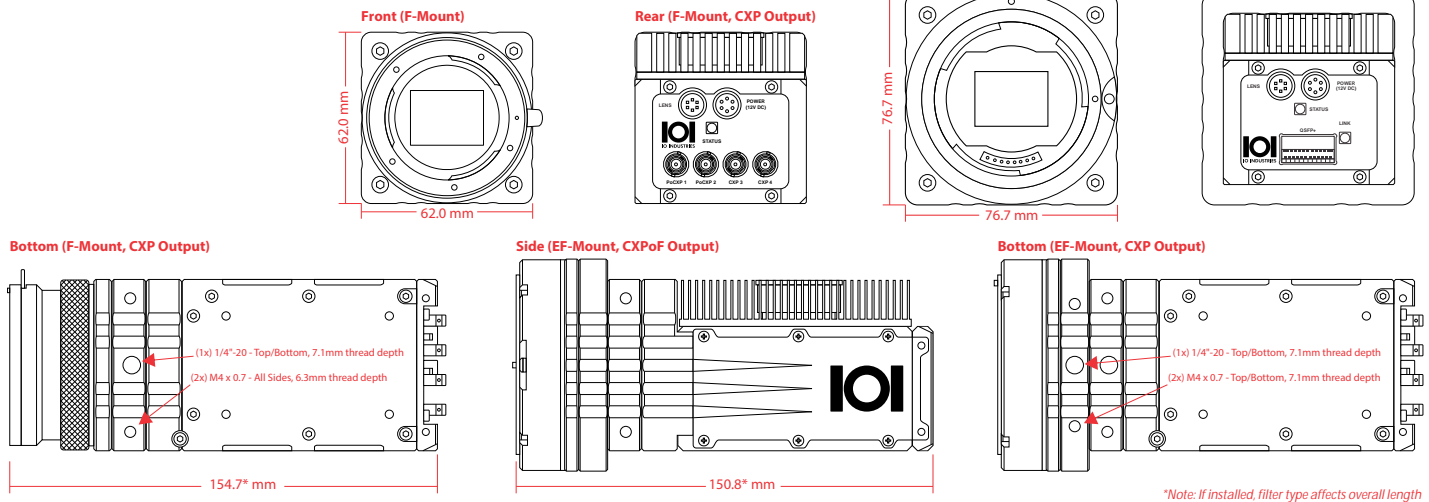
C - Color (with IR-Cut filter)

Interface

CX - CoaXPress (Coaxial)

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## MECHANICAL DIAGRAMS



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