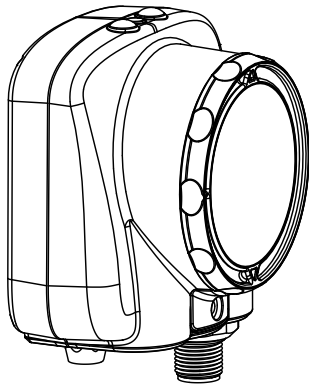


iVu Plus TG Image Sensor



With Integrated Display



The iVu image sensor is used to monitor parts for type, size, orientation, shape, and location. The iVu Plus BCR package consists of lighting, sensor, and lens, and display. This version of the iVu Plus has an integrated display to set up and monitor inspections. Appropriate cables and mounting brackets can be ordered for each application. Additionally, other lenses, brackets, filters and external lights are available. Installation, setup, and configuration can be done quickly without requiring a PC to configure the sensor.

Features

- No external PC required to configure the sensor
- Image processing expertise is not required
- Multiple inspections that facilitate storing and controlling up to 30 inspections for fast product turnover
- Four sensor types in one package—a match sensor that determines whether a pattern on a label or part matches some reference pattern; a sort sensor that can recognize and sort up to ten different patterns within the same inspection; an area sensor that detects whether a particular feature (or features) is present or not; and a blemish sensor that detects flaws on parts
- USB 2.0 compliant host provided for easy updating and diagnostics
- Integrated color touch screen display
- Ethernet communications that provides for enhanced control of, and communications with, the sensor
- An RS232 serial communications port
- High speed processing



WARNING: Not To Be Used for Personnel Protection

Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

Models

Ring Light Options	Micro-Lens Options						C-Mount Lens Options
	4.3 mm	6 mm	8 mm	12 mm	16 mm	25 mm	
None	IVUPTGX04	IVUPTGX06	IVUPTGX08	IVUPTGX12	IVUPTGX16	IVUPTGX25	IVUPTGXC
Red	IVUPTGR04	IVUPTGR06	IVUPTGR08	IVUPTGR12	IVUPTGR16	IVUPTGR25	N/A
Blue	IVUPTGB04	IVUPTGB06	IVUPTGB08	IVUPTGB12	IVUPTGB16	IVUPTGB25	N/A
Green	IVUPTGG04	IVUPTGG06	IVUPTGG08	IVUPTGG12	IVUPTGG16	IVUPTGG25	N/A
IR	IVUPTGI04	IVUPTGI06	IVUPTGI08	IVUPTGI12	IVUPTGI16	IVUPTGI25	N/A
White	IVUPTGW04	IVUPTGW06	IVUPTGW08	IVUPTGW12	IVUPTGW16	IVUPTGW25	N/A
UV 365 *	IVUPTG604	IVUPTG606	IVUPTG608	IVUPTG612	IVUPTG616	IVUPTG625	N/A
UV 395 *	IVUPTG904	IVUPTG906	IVUPTG908	IVUPTG912	IVUPTG916	IVUPTG925	N/A

* Blue Filter Kit (FLTB) included with UV models.



NOTE: UV emitted from this product. Exempt Risk Group (RG 0) product. No optical hazard is considered reasonably foreseeable, even for continuous, unrestricted use. (-IEC 62471)

Specifications

Power Connection

12 -pin Euro-style (M12) male connector; accessory cable required for operation

USB 2.0 Host

4-pin Pico (M8) female connector; optional USB cable required for operation of USB Thumb Drive

Ethernet Connection

4-pin Pico (M8) male connector

Power Requirements

Voltage: 10-30V dc

Current: 1A maximum (exclusive of I/O load)

Output Configuration

NPN or PNP, software selectable

Tools

Multi-inspection sensor with Area, Blemish, Match, and Sort tools

Demo Mode

Full tool functionality on canned images

Sensor Lock

Optional password protection

Integrated Ring Light

Models with Red, IR, Green, Blue, White or no integrated ring light

External Strobe Output

+ 5V dc

Output Rating

150 mA

Acquisition

100 fps (frames per second) max.

Exposure Time

0.1 ms to 1.049 s

Imager

1/3 inch CMOS 752 X 480 pixels; adjustable Field of View (FOV)

Lens Mount

Micro-Lens Models: M12 X 1 mm thread; micro video lens 4.3, 6, 8, 12, 16, 25 mm

C-Mount Models: Standard C-mount (1 inch-32 UN)

Construction

Black Valox™ sensor housing; acrylic window

Environmental Rating

IP67

Operating Conditions

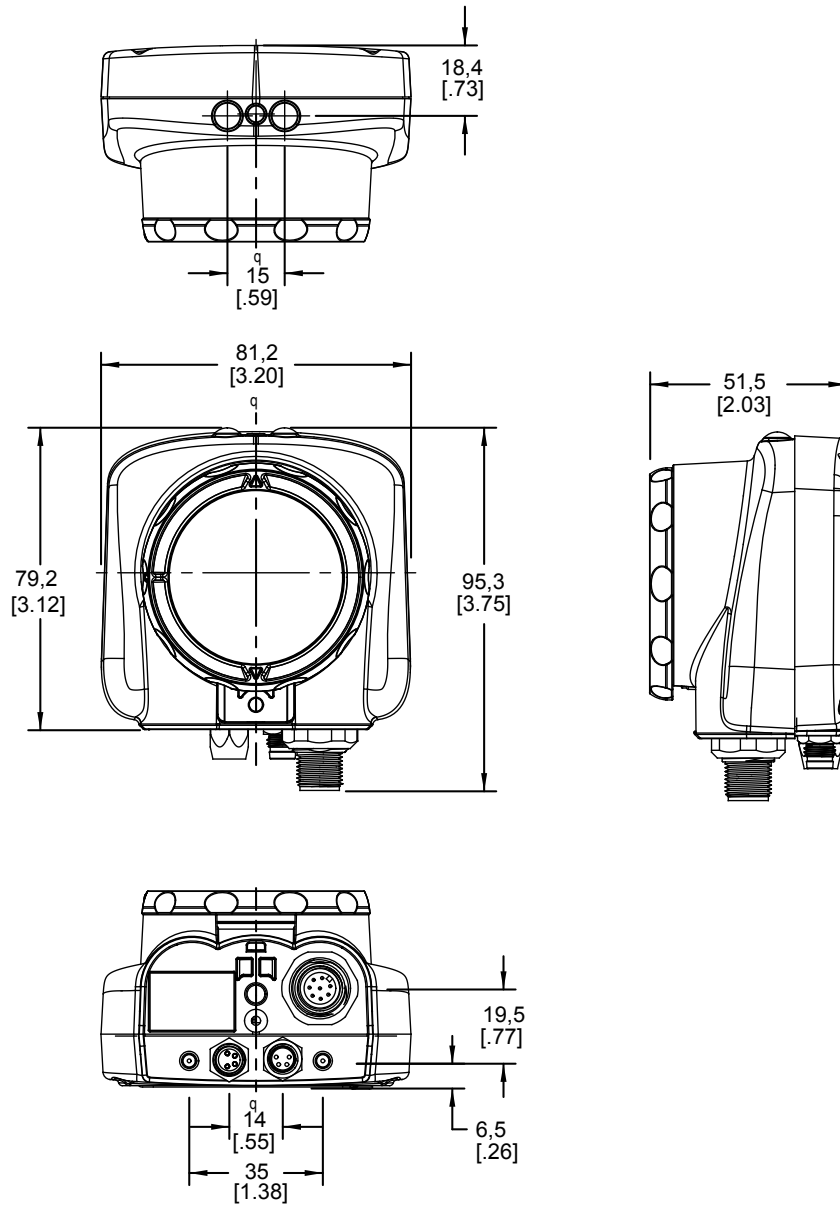
Stable Ambient Temperature: 0° to + 45° C (+32° to + 113° F)

Certifications

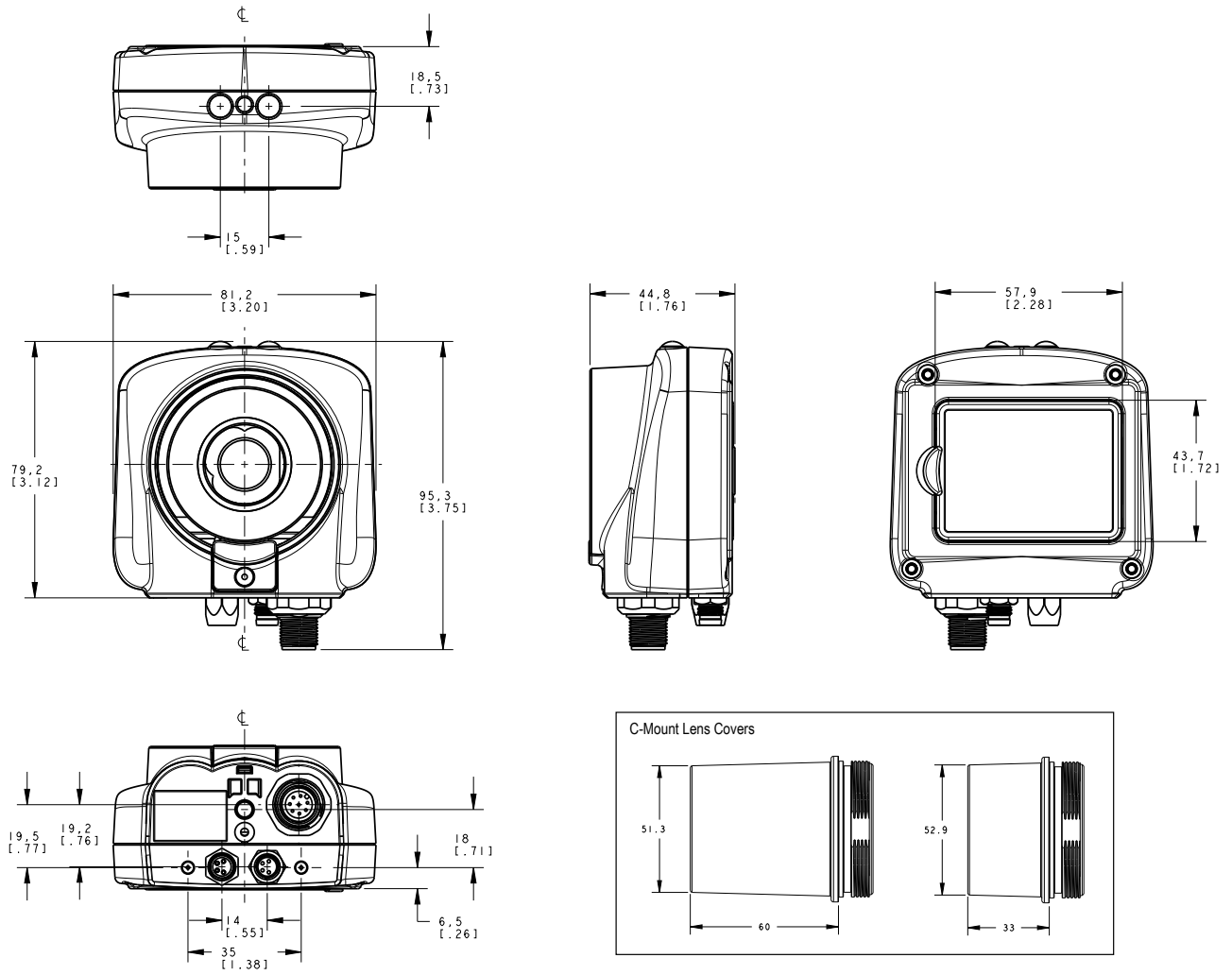


Dimensions

Micro Lens Dimensions



C-Mount Lens Dimensions



Cable Connections for Integrated Display

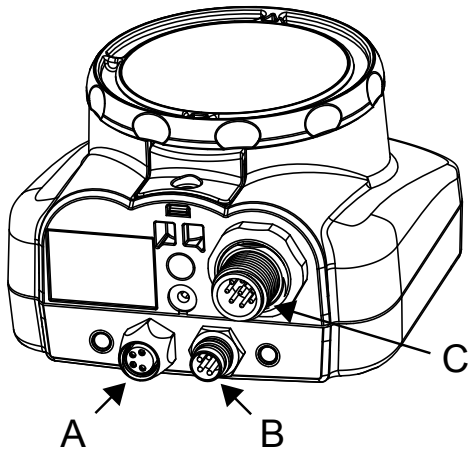
The cable connections on the iVu Plus with integrated display are shown below, and power I/O connections (C) are defined in the **Power I/O Connections** table below.



A	USB Connector
B	Power I/O Connector

NOTE: Microlens model shown, C-Mount model connections are identical.

The cable connections on the iVu Plus with integrated display are shown below, and power I/O connections (C) are defined in the **Power I/O Connections** table below.



A	USB Connector
B	Ethernet Connector
C	Power I/O Connector

NOTE: Microlens model shown, C-Mount model connections are identical.

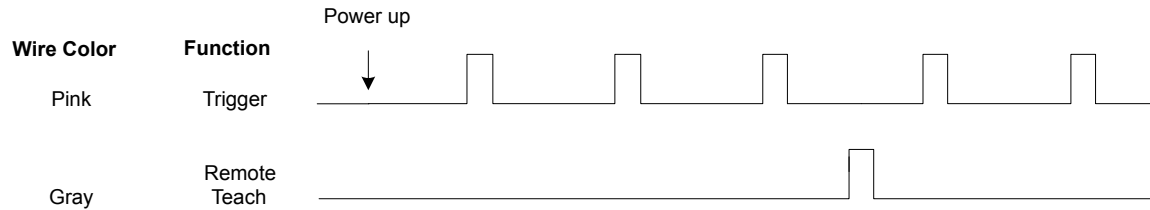
Power I/O Connections			
Pin #	Wire Color	Description	Direction
2	Brown	10-30V dc	Input
7	Blue	Common (Signal Ground)	Input
6	Pink	External Trigger	Input
5	Gray	Remote Teach	Input
1	White	Output 1	Output
8	Red	Ready	Output
4	Yellow	Strobe Out (5V dc only)	Output
3	Green	Output 2	Output
9	Orange	Output 3	Output
10	Light Blue	RS-232 TX	Output
11	Black	RS-232 Signal Ground	Output
12	Violet	RS-232 Rx	Input

iVu Trigger, Remote Teach, and I/O Waveforms

The iVu has two input signals—Trigger and Remote Teach. The default setting is to detect the Trigger or Remote Teach input on the low to high transition. This setting can be changed in the **Main Menu > System > Discrete I/O > Input Polarity** screen on the sensor.

PNP (Low-to-High) Trigger and Remote Teach Input Waveforms

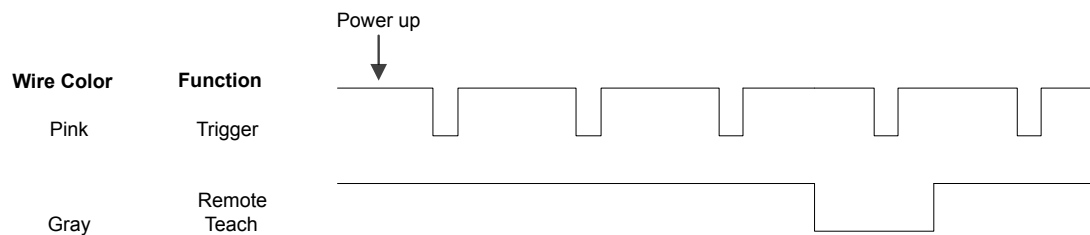
The iVu Trigger and Remote Teach input waveforms are shown below.



The sensor triggers from low to high, and Remote Teach behaves electrically like trigger (see above).

NPN (High-to-Low) Trigger and Remote Teach Input Waveforms

The iVu High-to-Low Trigger and Remote Teach input waveforms are shown below.

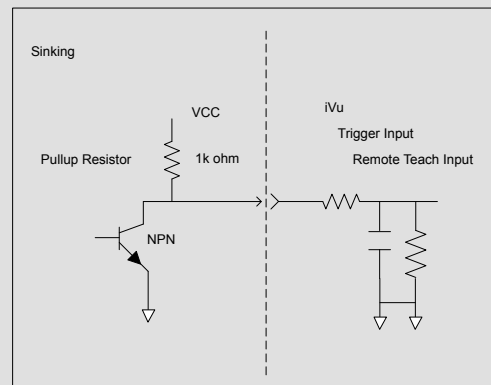


The sensor triggers from high to low, and Remote Teach behaves electrically like trigger.



NOTE: If the device used to trigger or remote teach the iVu Plus BCR is a sinking device (that is, NPN), then there are two options regarding the use of a pull-up resistor:

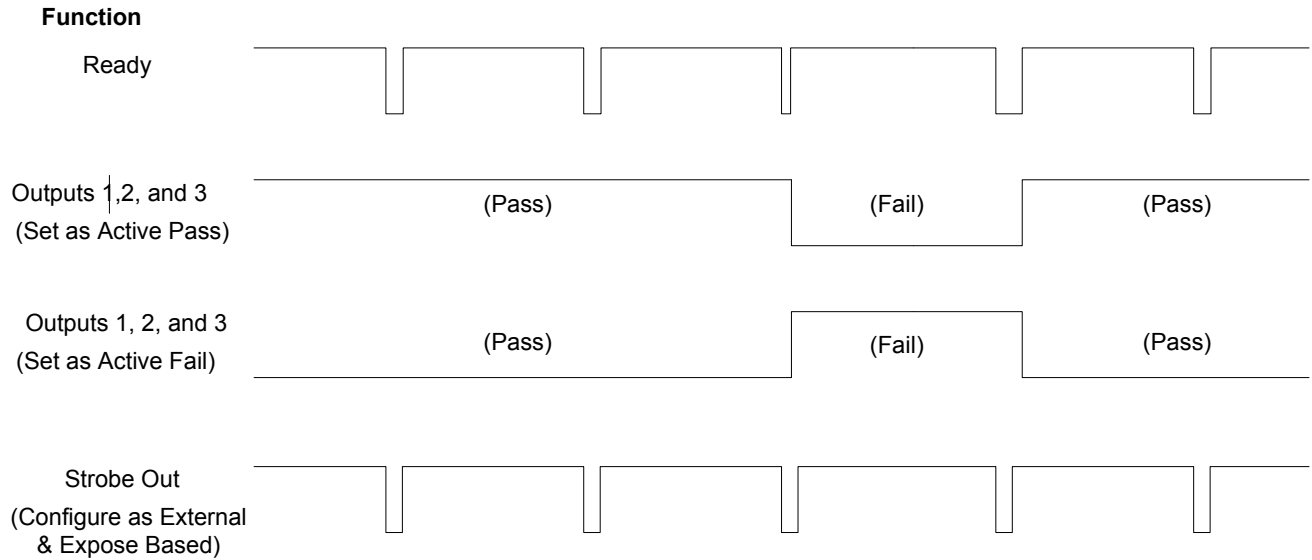
Option 1: Put a pull-up resistor, rated approximately 1k ohm, between the sensor's positive (+) voltage and the sensor's input as shown below.



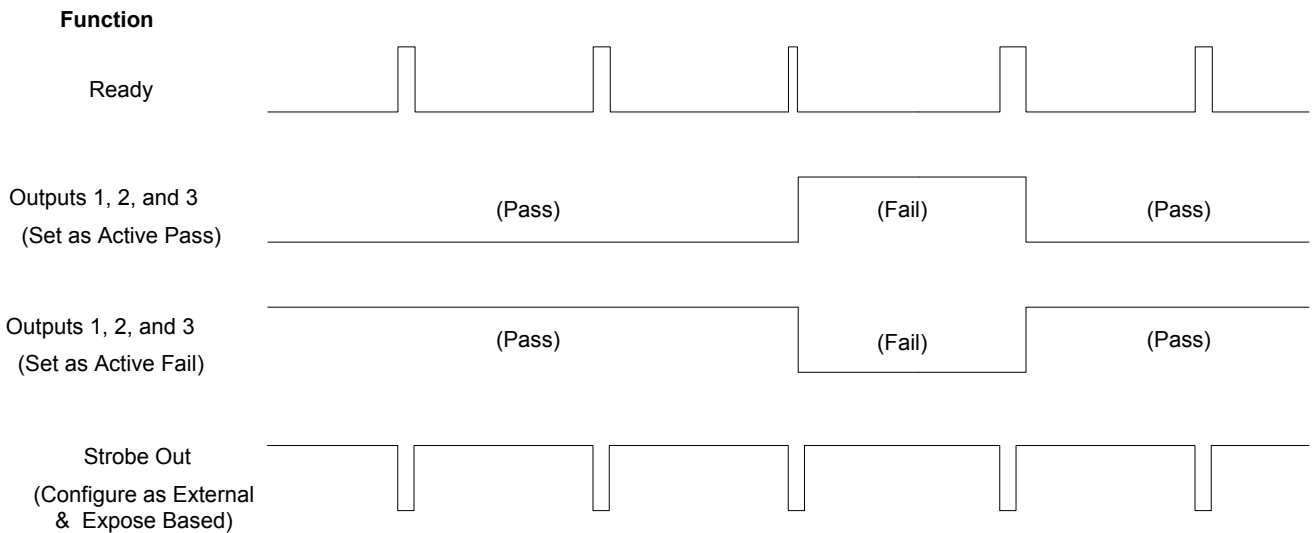
Option 2: Enable the Input Pullup in the iVu Plus BCR software (**Main Menu > System > Discrete I/O > Input Pullup**).

iVu Output Waveforms

PNP Outputs



NPN Outputs



Accessories

Power Cable — Required

Model	Length	Description
IVUC-1206	2 m (6 ft)	12-pin cable, straight
IVUC-1215	5 m (15 ft)	
IVUC-1230	9 m (30 ft)	

Model	Length	Description
IVUC-1250	16 m (50 ft)	12-pin cable, right angle
IVUC-1275	23 m (75 ft)	
IVUC-1206RA	2 m (6 ft)	
IVUC-1215RA	5 m (15 ft)	
IVUC-1230RA	9 m (30 ft)	
IVUC-1250RA	16 m (50 ft)	
IVUC-1275RA	23 m (75 ft)	

Ethernet Cable Options

Model	Length	Description
IVUC-E-406	2 m (6 ft)	4-pin Pico to RJ45 Ethernet cordset
IVUC-E- 415	5 m (15 ft)	
IVUC-E- 430	9 m (30 ft)	
IVUC-E- 450	16 m (50 ft)	
IVUC-E- 475	23 m (75 ft)	






USB Cable — Optional

Model	Length	Description
MQDEC-8005-USB	.15 m (6")	USB cable, straight
MQDEC-801-USB	.30 m (1')	
MQDEC-803-USB	.90 m (3')	
MQDEC-810-USB	3 m (10')	
MQDEC-8005RA-USB	.15 m (6")	USB cable, right angle
MQDEC-801RA-USB	.30 m (1')	
MQDEC-803RA-USB	.90 m (3')	
MQDEC-810RA-USB	3 m (10')	

USB Memory — Optional

Model	Description
IVU-USBFD2	USB Flash Drive 2 GB

Bracket Choices

Model	Description	Mounting Bracket
SMBIVURAL	Right angle, left mounting bracket	
SMBIVURAR	Right angle, right mounting bracket	
SMBIVUB	Bottom mounting bracket kit	
SMBIVUU	U-shape mounting bracket kit  <div style="border: 1px solid gray; padding: 5px; display: inline-block; margin-left: 10px;"> <p>NOTE: Banner recommends that cables with right-angle connectors be used with this bracket kit.</p> </div>	



NOTE: Micro Lens models shown

Micro Lens Accessories

Micro Lens Choices

Model	Lens Description
LMF04	4.3 mm lens
LMF06	6 mm lens
LMF08	8 mm lens
LMF12	12 mm lens
LMF16	16 mm lens

Model	Lens Description
LMF25	25 mm lens

Micro Lens Filter Choices — Optional

Model	Description
FLTMR	Red filter kit
FLTMB	Blue filter kit
FLTMG	Green filter kit
FLTMI	IR filter kit

C-Mount Lens Accessories

C-Mount Lens Choices

Model	Lens Description
LCF04	4 mm Lens - no threads for filter
LCF08	8 mm Lens - no threads for filter
LCF12	12 mm Lens - no threads for filter
LCF16	16 mm Lens, aperture lock - no threads for filter
LCF25R	25mm lens
LCF25LR	25mm lens with focus locking
LCF50L1R	50mm lens with focus locking, plastic
LCF50L2R	50mm lens with focus locking, metal (will not fit ring)
LCF75LR	75mm lens with focus locking, metal (will not fit ring)

C-Mount Lens Enclosure Choices

Model	Description
IVUSLC50-P	Sealed C-mount lens enclosure
IVUSLC75-P	

C-Mount Lens Filters - Optional

Model	Description
FLTR	Red filter kit
FLTB	Blue filter kit
FLTG	Green filter kit
FLTI	IR Filter kit

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