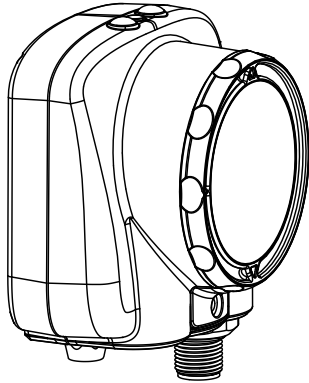


iVu Plus Bar Code Reader (BCR) Image Sensor

With Integrated Display



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
- 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 that is used to output barcode data to other applications
- High speed processing

The iVu Plus BCR reads the following barcode types:

- DataMatrix (ECC 200) barcodes
- QR Code (QR and Micro QR)
- Linear barcodes:
 - Code128
 - Code39
 - CODABAR
 - Interleaved 2 of 5
 - EAN13
 - EAN8
 - UPCE
 - Postnet
 - IMB
 - Pharmacode



WARNING: Not To Be Used for Personnel Protection

Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death. This product 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	IVUPTBX04	IVUPTPX06	IVUPTBX08	IVUPTBX12	IVUPTBX16	IVUPTBX25	IVUPTBXC
Red	IVUPTBR04	IVUPTBR06	IVUPTBR08	IVUPTBR12	IVUPTBR16	IVUPTBR25	N/A
Blue	IVUPTBB04	IVUPTBB06	IVUPTBB08	IVUPTBB12	IVUPTBB16	IVUPTBB25	N/A
Green	IVUPTBG04	IVUPTBG06	IVUPTBG08	IVUPTBG12	IVUPTBG16	IVUPTBG25	N/A
IR	IVUPTBI04	IVUPTBI06	IVUPTBI08	IVUPTBI12	IVUPTBI16	IVUPTBI25	N/A
White	IVUPTBW04	IVUPTBW06	IVUPTBW08	IVUPTBW12	IVUPTBW16	IVUPTBW25	N/A
UV 365 *	IVUPTB604	IVUPTB606	IVUPTB608	IVUPTB612	IVUPTB616	IVUPTB625	N/A
UV 395 *	IVUPTB904	IVUPTB906	IVUPTB908	IVUPTB912	IVUPTB916	IVUPTB925	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

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

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

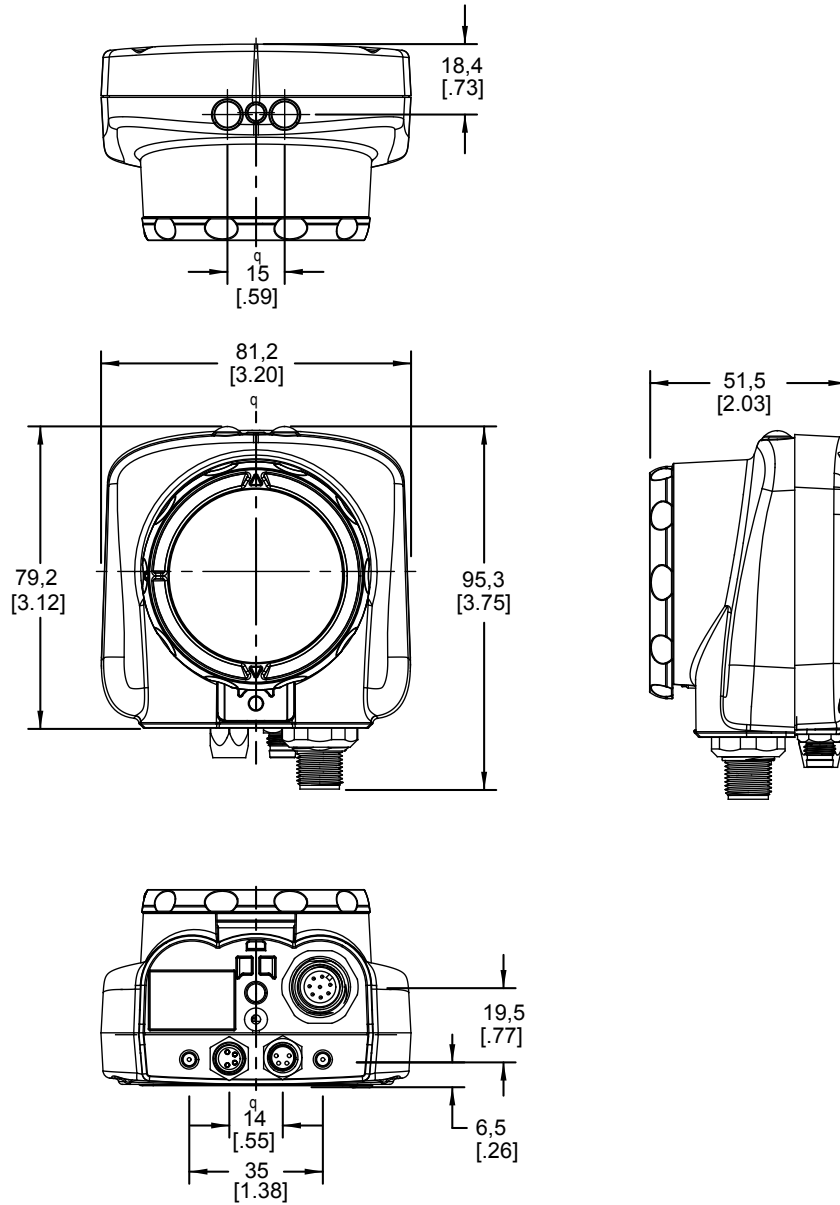
Stable Ambient Temperature: 0° to + 45° C (+32° to + 113° F)

Certifications

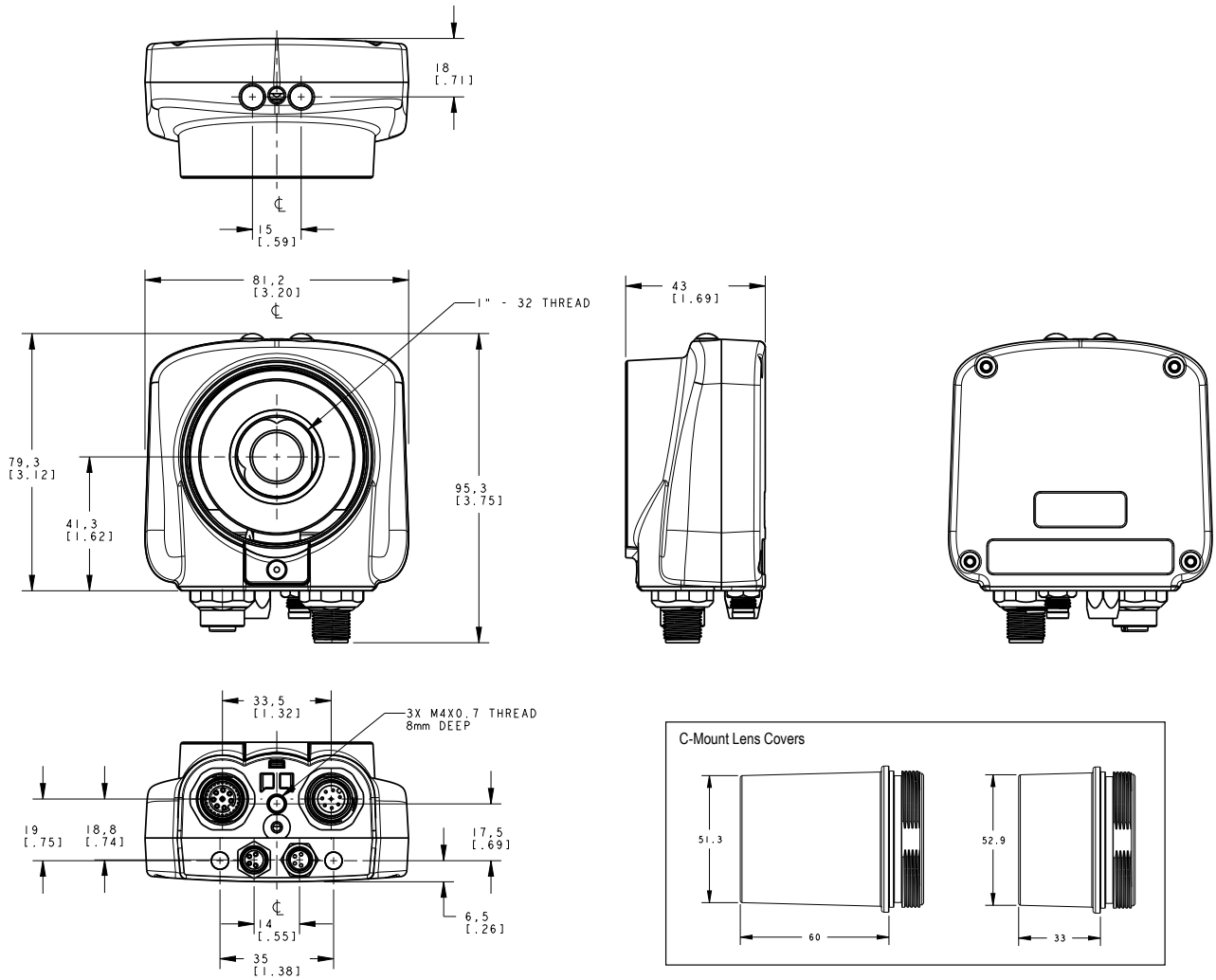


Dimensions

Micro Lens Dimensions

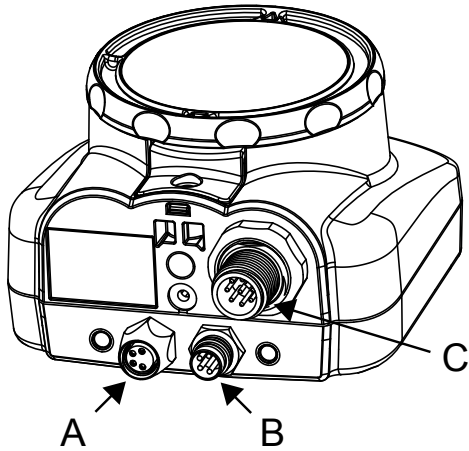


C-Mount Lens Dimensions



Cable Connections

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.

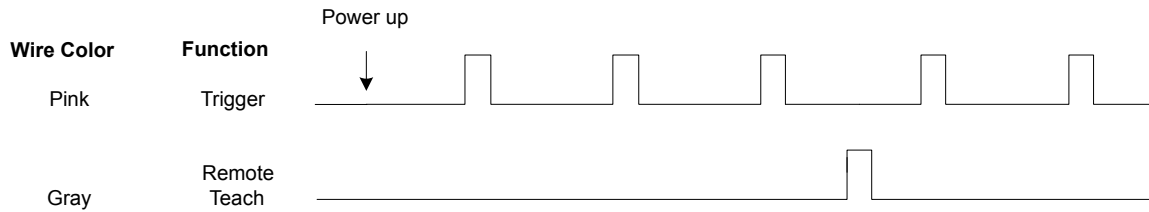
Power I/O Connections			
Pin #	Wire Color	Description	Direction
2	Brown	10-30V dc	Input
7	Blue	Common (Signal Ground)	Input
6	Pink	External Trigger	Input
5	Gray	Remote Teach	Input
1	White	Output 1	Output
8	Red	Ready	Output
4	Yellow	Strobe Out (5V dc only)	Output
3	Green	Output 2	Output
9	Orange	Output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

iVu Low-to-High Trigger and Remote Teach Input Waveforms

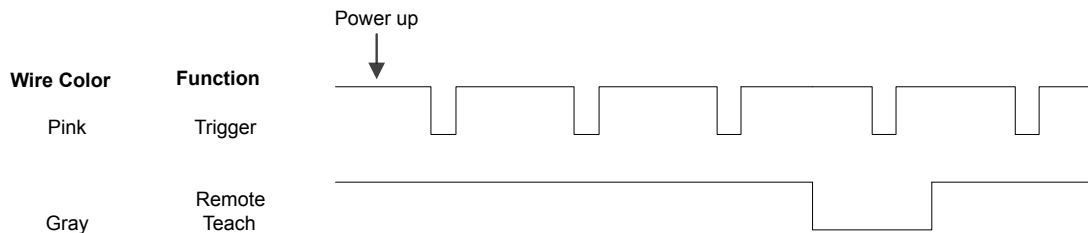
The iVu Trigger and Remote Teach input waveforms are shown below.



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

iVu High-to-Low Trigger and Remote Teach Input Waveforms

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

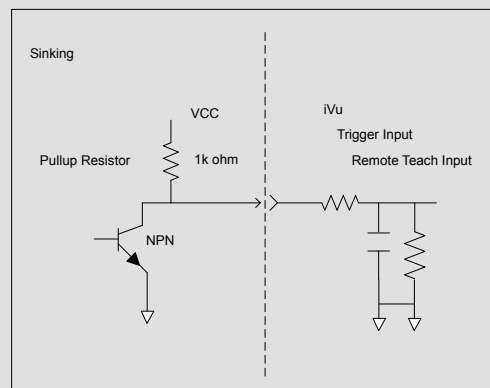


The sensor triggers from high to low, and Remote Teach behaves electrically like trigger.



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:

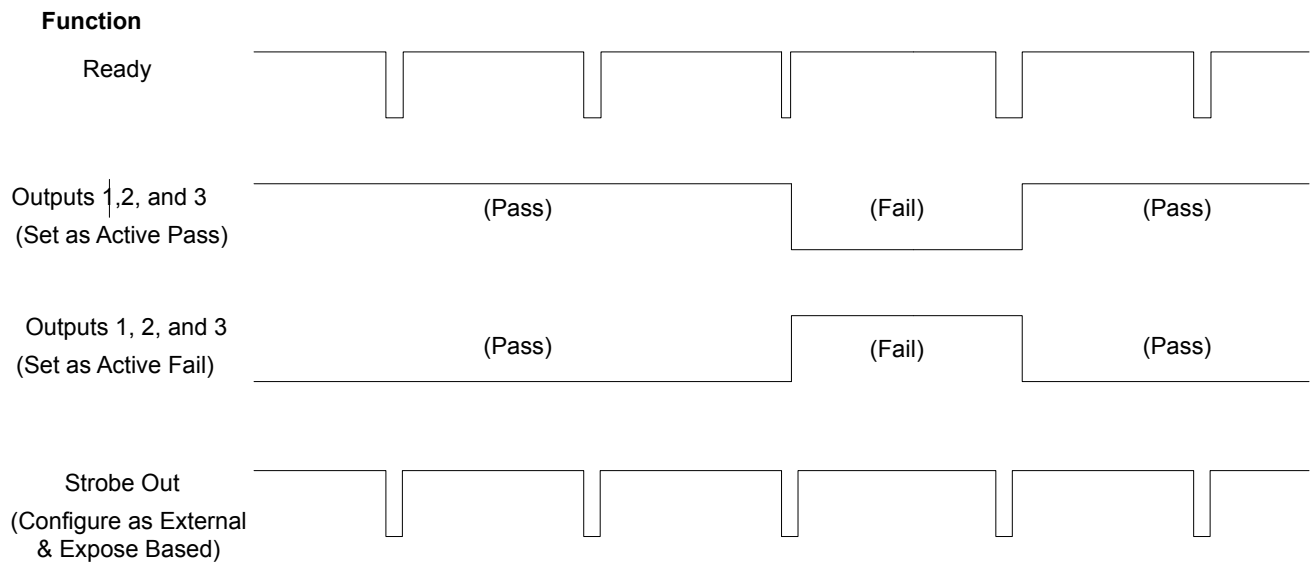
Option 1: Put a pull-up resistor, rated approximately 1k ohm, between the sensor's positive (+) voltage and the sensor's input as shown below.



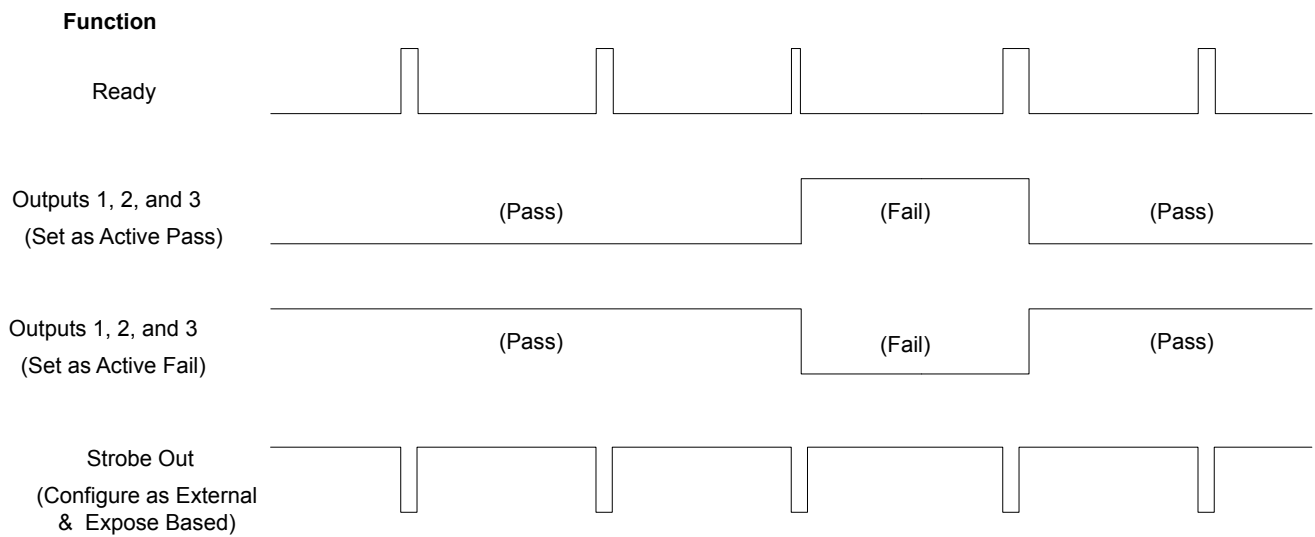
Option 2: Enable the Input Pullup in the iVu Plus BCR software (**Main Menu > System > Discrete I/O > Input Pullup**).

iVu Output Waveforms

PNP Outputs



NPN Outputs



Accessories

Power Cable — Required

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

Ethernet Cable Options

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






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  NOTE: Banner recommends that cables with right-angle connectors be used with this bracket kit.	



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

Model	Lens Description
LMF16	16 mm lens
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
FLTUV	UV 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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