

**NEW** in 2011

FK14.5-60



FK30-300



KJ20x8.2B IRSD



# Pocket GUIDE

2011

[www.usa.canon.com/cusa/broadcast](http://www.usa.canon.com/cusa/broadcast)

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BEYOND  
**(50)**  
YEARS  
**INNOVATION**  
In TV Optics Since 1958

**Canon**  
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# Canon High Resolution Lenses

## PL Mount Lenses

### • ADVANCED OPTICAL PLATFORM

- ▶ 4K and 2K and HD

For Large-Format Single-Sensor Cine and Motion Picture Film Cameras

## HD Lens Category

## Image Format Size

2/3-INCH 1/2-INCH 1/3-INCH

### • PRODUCTION PLATFORM 1

Highest Optical Performance Possible With Contemporary Optical Technologies

- ▶ Most Advanced Optical Technologies
- ▶ Rugged Magnesium Optomechanics
- ▶ With 2x Extender
- ▶ Precision Digital Servos for Zoom, Iris, and Focus

**HDXS**

**HDXS**

**HDXS**

### • PRODUCTION PLATFORM 2

Lowest Cost Possible With Credible HD Performance

- ▶ Cost-Effective Optics
- ▶ Rugged Magnesium Optomechanics
- ▶ With 2x Extender
- ▶ Precision Digital Servos for Zoom, Iris, and Focus

**HDGC**

**HDGC**

**HDGC**

### • PRODUCTION PLATFORM 3

Significant Cost Reduction

- ▶ Cost-Effective Optics
- ▶ Lower-cost Optomechanics (Aluminum and Plastic)
- ▶ Analog Servos for Zoom, Iris, and Focus

**HDGC**

**HDGC**

**HDGC**

**HDGC**

**HDGC**

**HDGC**

## Nomenclature of Canon Broadcast Lenses

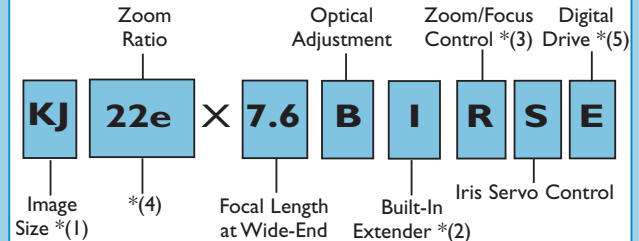


Image Size	H.D.T.V.		S.D.T.V.		
*(1)	Studio/Field	Portable Type	Studio/Field	Portable Type (ENG/EFP)	Portable Type (Pro-Video)
1 inch	HV UV	HV FV	PV	PV	—
2/3 inch	XJ UJ	HJ EJ FJ KJ	J PJ	J	YJ
1/2 inch	—	KH	PH	H	YH
1/3 inch	—	KT	—	—	—

\*(2) Built-in Extender

**IE**... Built-in Extender for Studio/Field Lenses  
**I**... Built-in Extender for Portable Lenses  
**K**... No Extender for Portable Lenses  
**V**... Built-In 0.8x Crossover Unit  
**W**... Built-In 0.8x Crossover Unit and 2.0 Extender

\*(3) Zoom/Focus Control

**R**... Zoom:Servo  
 Focus:Manual  
 (Standard ENG Drive Unit)  
**T**... Zoom:Servo  
 Focus:Servo  
 (Remote-Control/Videoconference lens.)  
**A**... Zoom:Servo  
 Focus:Servo/Manual  
 (ENG Drive Unit with Built-In Focus Servo Motor.)

\*(4) Enhanced digital features for Portable lenses. (Please see page 15.)

\*(5) **D**... Digital features for portable lenses. (Please see page 15.)

\*(5) **E**... Latest Enhanced digital features for portable lenses. (Please see page 15.)

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# PL Mount Lenses

## A Revolution in Digital Cinematography

**NEW**

Canon is proud to debut two advanced-design 4K PL-Mount lenses specifically developed to support high-end digital motion imaging. These precision matched lenses ensure the very highest performance in contemporary 2K and HD digital 35mm motion imaging, while definitively future proofing the transition to 4K production.



In seeking the highest 4K image performance, the new lens design platform had to simultaneously optimize those parameters that enhance the imaging attributes, while also minimizing the various optical aberrations and distortions that might degrade the image. New optical materials, new optical coatings, and new design techniques were all mobilized to develop an important advance in overall optical performance. Highly advanced computer simulation, that could cope with the hundreds of thousands of design variables, allowed an unprecedented degree of optimization of all contributing imaging parameters. This sophisticated new optical platform ensured the closest performance matching between the two lenses, minimized alterations to that performance with changes in scene object distances, and physically produced more compact and lightweight products than contemporary PL mount lenses. In addition, a totally new focus system design has virtually eliminated focus breathing.

### Feature Film Origination

In the wide lens, the T2.6 maximum aperture stays totally constant over the entire focal range, and combined with the virtual absence of focus breathing, will be a boon to cinematographers.

The superb contrast and overall picture sharpness will maximize the video creation capabilities of the current top-of-the-line digital single-sensor cameras. The telephoto lens will complement the wide in larger studios while also creating a flexible range of outdoor shots with exceptional imagery.

### Television Drama and Television Commercial Production

The focal ranges offered by the combination of these two lenses will flexibly address most of the needs of contemporary high-end television production. Television drama, music videos, and television commercial production - all will achieve enhancements to their storytelling as a consequence of short depth of field, high sensitivity, superb contrast ratio, and excellent picture sharpness.

# Canon Embraces 3D High Definition

Anticipating the boom in popularity of 3D, Canon has been actively engaged with HD camera manufacturers, 3D rig specialists, and enterprising content creators presently exploring 3D program origination in moviemaking, as well as television coverage of sports, concerts, and special events. Recognizing the importance of 3D program origination, Canon gave priority to adoption of most of the standard HD lens series for 3D production systems.

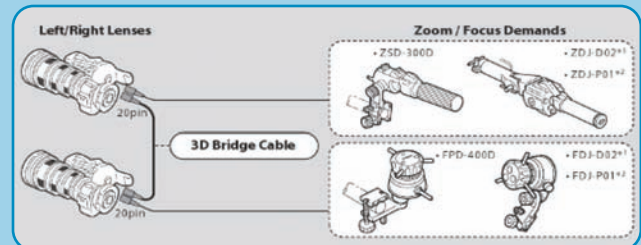
### 3D Lens Solutions

A pioneer in the development of precision Digital Drive Units for its portable lenses, Canon's 3D control systems for lens-camera pairs capitalize on the ability to synchronize the servo control systems within the pair, and to then use the associated menu system to enter correction data that ensures precision tracking for their respective zoom, iris, and focus operations. A simple 20pin - 20pin 3D bridge cable interconnects the stereoscopic lens pair, and special 3D software loaded into the two Digital drive Units performs the requisite synchronization. A single Zoom controller connected to one lens will then simultaneously control the zoom action of both lenses. Similarly, a single Focus controller connected to the other lens will simultaneously control the focus operation of both lenses. The 3D software can be installed into most standard Canon lenses at Canon service centers.

### 3D Lens Controllers

A special attraction of Canon's synchronous lens control system is the use of standard rather than specialized controllers. When the 3D software is installed in the lens drive units, all standard servo controllers for zoom and focus will be fully compatible with Canon's stereoscopic lens-pair, thus facilitating a significant cost-saving when deploying standard lenses for 3D acquisition systems.

### System Configuration



\*1 BDC-10 conversion cable is necessary to connect between ZDJ-D02 or FDJ-D02 (18pin) and Digital Drive Lens (20pin).

\*2 BDC-20 conversion cable is necessary to connect between ZDJ-P01 or FDJ-P01 (12pin) and Digital Drive Lens (20pin).

# BU-46H

## Outdoor HD Pan-Tilt-Zoom Camera System



The Canon BU-46H outdoor remote-control HD PTZ camera features a weatherproof housing that meets the IP-45 specifications for dust- and waterproof-efficiency. The camera also features a remote-control ND (neutral density) filter; its housing includes a “windshield-wiper” type blade to keep its lens port clear. The BU-46H can pan through  $\pm 340$  degrees and tilt + 30 degrees ~ -50 degrees in highly precise and smoothly

choreographed movements specifically designed to address multiple applications. The BU-46H is designed for exterior POV applications such as sports stadiums, horse-racing tracks, broadcast television “skycams,” and many others.

### Ideal For:



- Outdoor Event Broadcast



- Weather POV



- Traffic POV



- Tourism Promotion

# BU-51H

## Indoor HD Pan-Tilt-Zoom Camera System



Canon's BU-51H indoor remote-control HD PTZ camera features a built-in microphone with adjustable settings. Designed for environments where quiet operation is essential - including recital halls, lecture rooms, and auditoriums - the BU-51H features a maximum noise level of NC30. The BU-51H is also equipped with pan-tilt-zoom focus position information output for integration with virtual-studio systems and other specialized applications.

### Ideal For:



- House of Worship



- Education



- Indoor Event/IMAG



- Newsroom/Studio

### Common Features of the Canon BU-46H and BU-51H Remote-Control HD PTZ Cameras

#### **High Quality HDTV/SDTV Video Images**

The BU-46H and BU-51H employ a 1/3 inch 3-CCD Canon HD camera with 1,670,000 pixels per CCD. Both offer exceptional video quality for broadcasting, event coverage, and high quality surveillance, among other uses.

#### **Non-Proprietary Protocol**

Because the control protocol for these HD PTZ cameras is non-proprietary and open to the public, a user or system integrator can provide their own control system or contract with a third-party provider.

#### **High Optical Performance and Image Stabilization**

The 3-CCD HD camera in the Canon BU-46H and BU-51H combines a 20X Optical Zoom HD lens (4.5- 90mm, 9-180mm with 2X Digital Extender) with Auto Focus and Image Stabilization, providing exceptional HD video images with enhanced operational flexibilities.

#### **Night Mode**

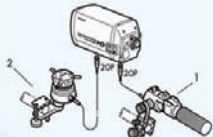
The BU-46H and BU-51H also feature “Night Mode.” The shutter speed is slowed down to a minimum of 1/4 (60i, 30F) or 1/3 (50i, 25F, 24F), allowing frame accumulation that elevates camera sensitivity.

# DIGISUPER 22xs HD Compact Studio Lens



About  $\frac{1}{3}$  the Weight of Standard Studio Lenses.

#### With Current ENG Demand (Standard)

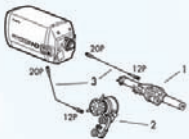


Responding to increasing use of portable HD cameras in studios, Canon invented the entirely new product category of the HD Compact Studio Lens with the introduction of the DIGISUPER 22xs (model XJ22x7.3B IE-D).

#### Scaled for Portable HD Cameras

The perfect complement to portable HD cameras configured for studio use, the DIGISUPER 22xs is engineered to be compact and lightweight.

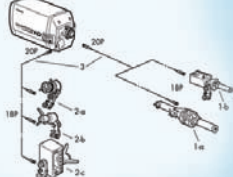
#### With New Digital Demand



#### Superb HD Optical Performance

The DIGISUPER 22xs offers higher contrast and resolution compared with portable HD lenses, but at the same time reduces Focus Breathing to a zero level.

#### With Current Field/Studio Demand



#### Studio Operation

By adopting an "Encoder Servo System," the maximum servo speed has been improved to Zoom: 0.5 sec., Focus: 1.5 sec. Also, the DIGISUPER 22xs HD Compact Studio Lens' new encoder system enables it to be easily integrated into virtual studio applications.

#### Status at a Glance

The DIGISUPER 22xs is equipped with an informational display, which enables the easy and precise use of diverse digital functions.

#### Controllability

The DIGISUPER 22xs can be used with Canon's current Studio/Field lens controllers as well as those for Canon ENG lenses. The DIGISUPER 22xs HD Compact Studio Lens also offers compatibility with our new digital demands by use of a conversion cable.

# DIGISUPER 27AF and DIGISUPER 27 Auto-Focus Option



The DIGISUPER 27 and DIGISUPER 27AF

HD studio lenses (models XJ27x6.5B and XJ27x6.5B AF, respectively) deliver unprecedented performance for HD studio production applications. Both provide the widest angle of any lenses available, a focal length (zoom ratio) of 6.5mm to 180mm, and newly developed multi-layer optical coatings that dramatically reduce ghosting and flaring. Both also offer Canon's optional BWA-271 0.9x Wide Attachment, the industry's first wide-angle attachment for an HD studio lens. This "zoom-through" Wide Attachment enables users to begin with a wide shot and go telephoto without compromising light transmission. This feature alters the range of the zoom on wide settings by ten percent toward the wide side, making a new zoom range of 5.85mm to 162mm.

Other innovations in the DIGISUPER 27 and DIGISUPER 27AF HD studio lenses include a servo-zoom speed of 0.5 seconds and a new optional remote-controllable macro-focus feature that allows the camera operator to perform macro focusing from the pan bar (a helpful tool for focusing on jewelry and other small objects).

#### Auto Focus Optimized for the HD Studio

The DIGISUPER 27AF HD studio lens delivers the benefits of Canon's Auto Focus technology to the HD studio environment. Utilizing sophisticated Auto Focus capabilities based on a proprietary HD implementation of Through-the-Lens Secondary Image Registration Phase Detection Method technology, the DIGISUPER 27AF HD lens is optimized for studio use. The tremendous picture detail contained in HDTV makes anything in less-than-perfect focus immediately obvious. The DIGISUPER 27AF HD studio lens assists camera operators in ensuring that sharpest focus on a chosen scene subject is achieved each and every time.

# HJ14EX4.3B IRSE/IASE

## 2/3" Wide Angle HD Lens



After nearly a decade of advances in its world-renowned optical R&D - and ongoing dialogue with hands-on users worldwide - Canon has introduced the evolutionary next-step in high definition imaging: the HJ14ex4.3B IRSE/IASE wide-angle portable HDTV lens. Totally new and unique in its design, the HJ14 is the product of Canon's very latest optical design tools, newly developed glass elements, and highly advanced optical coatings. In addition, the HJ14's newly developed Digital Drive unit provides improved operability and ergonomic advances for user comfort and convenient control of lens functions.

### Wide, Advanced Optical Performance

Canon's HJ14 wide-angle portable HDTV lens features a minimum focal length of 4.3mm and an angular field of view of 96.3° at the wide end of the 16:9 HDTV aspect ratio. This optical performance is combined with a 14x zoom range reaching to 60mm (120mm with extender), which greatly expands creative options for the acquisition of crystal-clear, and virtually distortion-free HDTV video images.

### Improved Operability, Digital Drive, and Lighter Weight

Employing free-form curves based on the shape of human hands, Canon mechanically redesigned its new Digital Drive unit to be more ergonomically friendly, making it narrower and shorter, and opening more space for manual focusing. It also features newly developed coatings and a new rubber grip support for a better tactile interface. The overall result is the enhancement of user interface and the reduction of stress and fatigue, especially during prolonged shooting. The HJ14ex4.3B also employs a smaller hood, which helps the camera operator view more of the actual scene.

# HJ15EX8.5B KRSE-V

## Image Stabilized EFP HDTV Lens



Canon's HJ15ex8.5B is the world's first HDTV portable 2/3-inch zoom lens with a built-in Optical Image Stabilizer. Designed to maintain stable images even when the lens-camera is subject to jolts and vibrations, the HJ15ex8.5B KRSE-V uses Canon's patented Vari-Angle Prism image-stabilizer (VAP-IS) technology. Its high degree of compensation is sustained all the way from telephoto to wide-angle settings. This is of particular importance considering the extreme image detail associated with HD acquisition. This unique technology greatly extends flexibilities in EFP shooting on location - all within a compact high-performance lens to weigh in at only 4.4 lbs.

Canon's Vari-Angle Prism technology entails a novel optical group made up of two flat glass elements and a sealed bellows containing a high refractive index liquid, selectively placed within the lens overall optical system. Physical perturbations to the lens, in the form of jolts or vibrations, flex the bellows proportional to the amplitude of these disturbances. The associated distortion of the liquid instantaneously alters the direction of the transmitted light rays in a manner designed to counter the incoming light ray displacements created by these disturbances. The system has been optimized to introduce a high-degree of real-time compensation for image instabilities arising from all forms of lens-camera operational unsteadiness.

The HJ15ex8.5 B KRSE-V is ideally suited for diverse challenging outdoor shooting situations because it can stabilize a broad range of vibration frequencies. Examples range from the low-frequency vibrations encountered on a camera operator's shoulder in a crowd situation, to tripod-mounted operation on shaky platforms, to the higher-frequency vibration that cameras are subject to when operated on vehicles, motorbikes, boats, or helicopters. Four selectable stabilization modes are available to facilitate optimization of the degree of correction under diverse, and sometimes unique, shooting conditions.

The effectiveness of the image stabilization system was highlighted in the coverage by a major European production company of the Tour de France, whose camera operator was shooting hand-held from a motorbike pillion, and consistently delivered rock-steady close-ups of the cyclists even on very uneven roads.

# HJ18EX28B IASE A

## Super Telephoto Portable Lens

# HDGC

## HDXS



The HJ18ex28B IASE A Super Telephoto HDxs portable HD lens provides an unprecedented focal-length range of 28mm to 500mm (1000mm with built-in 2X extender), weighs less than six pounds (less than half the weight of comparable lenses), and requires no supporter for maximum mobility. Ideal for sports, stabilized helicopter mounts, documentaries, special events, or live reality programming, this compact, lightweight Super Telephoto HD lens enables broadcasters and other content producers to capture those “really long-distance” shots with ease.

In addition to the standard version, a special remote controllable version of this lens is also available: the HJ18ex28B ITS-RE/ME lens. In place of its standard ENG drive unit, a Remote Control drive unit is attached to the lens, making it highly effective for POV (point of view) type camera operations, robotic cameras, and any application requiring remote control over zoom, focus, and iris. The lens is available in two versions; the “ME” version, with a built-in manual 2X extender; and the “RE” version, with a servo-controlled extender.

## HDgc Lenses Support The Expanding 2/3", 1/2" and 1/3" HD Acquisition Applications

**NEW**



**2/3"**  
KJ20x8.2B IRSD



**1/2"**  
KH21ex5.7 IRSE A



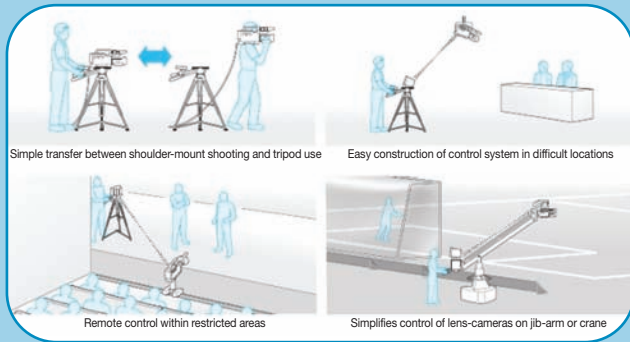
**1/3"**  
KT17ex4.3B IRSE

Canon engineered its HDgc line of cost-effective HD zoom lenses to support the new generation of economical portable HD camcorders and HD POV cameras from all of the major professional camera manufacturers. Whether a camera uses a 2/3, 1/2, or 1/3-inch imager, there's a Canon HDgc portable lens that's just right for it. Canon's HDgc lens line offers a dozen models, some including Canon's exclusive eDrive feature enabling users to automate control of iris, zoom, focus, and position memory settings.

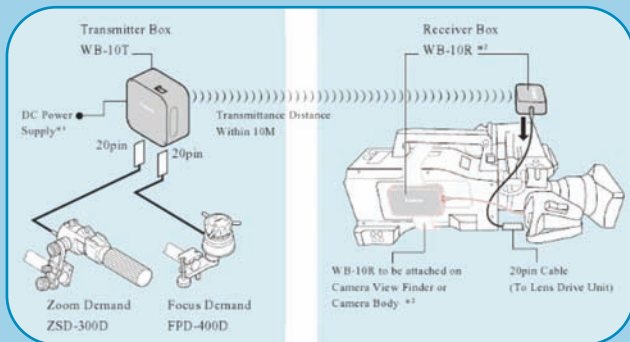
# Wireless Lens Control System

Canon offers a new wireless control system as an alternative to the cumbersome control cabling that is often required between the lens controllers and the lens-camera system. This consists of a Transmitter Box (WB-10T) that is connected to the lens controllers, and a Receiver Box (WB-10R) that is mounted close to the lens. These two boxes can be separated by up to ten meters, and the wireless connection between them provides precisely the same degree and quality of controllability as afforded by the cabling system they replace.

## Application Examples



## System Configuration



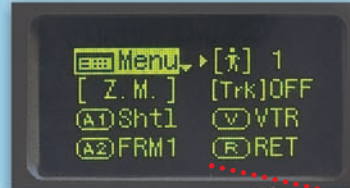
\*1 DC power supply for the WB-10T to be prepared by User. Size AA battery (x2pcs) is also available.  
 \*2 The Clamper and the Belt for the attachment are included as a standard component in the WB-10R.

# Canon eDrive: Enhancing Digital Servo Control of Zoom Lenses

HXS

HDGC

## Sharp, Bright Electro-Luminescent User Interface



Along with continually innovating optical performance, Canon strives to enhance the production experience, as evidenced with our latest digital drive unit. Refined by long-term market research and worldwide experience, Canon mobilized the latest in 3D CAD-CAM design to significantly improve the human tactile interface to the control of zoom, iris, and focus. As a result, the digital drive unit features:

## Optimized Ergonomic Design

The size and curvature size have been optimized to more comfortably fit in the palm of the operator's hand. Newly developed coatings improve the tactile interface between the user and the drive unit together with the new Rubber Grip Support.

## Reduced Physical Stress

By reducing the width of the drive unit, the palm of the camera operator's hand is positioned closer to the optical axis, thus reducing the degree of arm bend which in turn lessens physical stress during prolonged shooting.

## Improved Ease of Operation

The spacing between the focus ring and drive unit has been changed to avoid accidental interference with the drive unit while manipulating the focus control.



## PL Mount Cine Zoom Lenses

Canon is proud to debut two advanced-design 4K PL-Mount lenses specifically developed to support high-end digital motion imaging. These precision matched lenses inherently ensure the very highest performance in contemporary 2K and HD digital 35mm motion imaging, while definitively future proofing the transition to 4K production.

FK14.5-60

Lens	FK14.5-60
Range of Focal Length	14.5-60mm
Zoom Ratio	4.1x
Maximum Relative Aperture	T2.6 at 14.5-60mm
Angular Field of View for 16:9 format	79.2°x 49.9° (wide) 22.6°x 12.8° (tele)
M.O.D. (from image sensor)	0.70m/2'4"
Focus Rotation Angle	300°
Zoom Rotation Angle	160°
Iris Blade	11
Front Diameter	ø136.0
Weight (approx.)	9.9lbs (4.5kg)



FK30-300

Lens	FK30-300
Range of Focal Length	30-300mm
Zoom Ratio	10x
Maximum Relative Aperture	T2.95 at 30-240mm T3.7 at 300mm
Angular Field of View for 16:9 format	43.6°x 25.4° (wide) 4.6°x 2.6° (tele)
M.O.D. (from image sensor)	1.5m/5'
Focus Rotation Angle	300°
Zoom Rotation Angle	160°
Iris Blade	11
Front Diameter	ø136.0
Weight (approx.)	12.8lbs (5.8kg)



## Production Platform 1\*

### 2/3-inch Cine Zoom Lenses

#### Variable Focal Length Lenses

Canon offers a family of two variable focal length lenses:

- 4.7 – 52mm T2.1 • 7.5 – 158mm T2.1

Their high performance is a coordinated optimization of MTF, image brightness, and contrast across the image plane that collectively contributes to outstanding picture sharpness. These lenses include dual large luminous scales for zoom, iris, and focus and a generous 270-degree rotation of the focus control.

HJ11x4.7B KLL-SC

**HJEC**

Lens	HJ11x4.7B KLL-SC
Range of Focal Length	4.7mm - 52mm
T-Stop	T2.1
T-Stop Range	T2.1 - 16
Angular Field of View 16:9	91.2° x 59.8° at 4.7mm 10.5° x 5.9° at 52mm
M.O.D.	1'11"
Size (W x L)	ø95 x 242mm
Weight (approx.)	4.4lbs (2.0kg)
Focus Rotation Angle	270°



HJ21x7.5B KLL-SC

**HJEC**

Lens	HJ21x7.5B KLL-SC
Range of Focal Length	7.5mm - 158mm
T-Stop	T2.1
T-Stop Range	T2.1 - 16
Angular Field of view 16:9	65.2° x 39.6° at 7.5mm 3.5° x 2.0° at 158mm
M.O.D.	3'10"
Size (W x L)	ø130 x 260mm
Weight (approx.)	5.94lbs (2.7kg)
Focus Rotation Angle	270°



## 2/3" ENG/EFP Zoom Lenses



**EFP HXS**

Lens	HJ14ex4.3B IRSE/AISE
Zoom Ratio/Format	14X
Range of Focal Length (with Extender)	4.3-60mm (8.6-120mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 4.3-40mm 1:2.7 at 60mm (1:3.6 at 8.6-80mm) (1:5.4 at 120mm)
Angular Field of View 16:9 (with Extender)	96.3° x 64.2° at 4.3mm 9.1° x 5.2° at 60mm (58.3° x 34.9° at 8.6mm) (4.6° x 2.6° at 120mm)
M.O.D.	0.30m (10mm w/Macro)
Size (W x H x L)	163.5 x 110.8 x 247.8mm
Weight (approx.)	4.387lbs (1.99kg)
Built-in Extender	2.0X

**IMAGE STABILIZER**



**EFP HXS**

Lens	HJ15ex8.5B KRSE-V
Zoom Ratio/Format	15X
Range of Focal Length	8.5-128mm
Maximum Relative Aperture	1:2.5 at 8.5-68mm 1:4.7 at 128mm
Angular Field of View 16:9	58.9° x 35.2° at 8.5mm 4.3° x 2.4° at 128mm
M.O.D.	0.8m (10mm w/ Macro)
Size (W x H x L)	170.2 x 119.1 x 239.1mm
Weight (approx.)	4.37lbs (1.99kg)



**ENG HXS**

Lens	HJ17ex7.6B IRSE A/AISE A
Zoom Ratio/Format	17x
Range of Focal Length (with Extender)	7.6-130mm (15.2-260mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 7.6 - 97.5mm 1:2.4 at 130mm (1:3.6 at 15.2 - 195mm) (1:4.8 at 260mm)
Angular Field of View 16:9 (with Extender)	64.6° x 39.1° at 7.6mm 4.2° x 2.4° at 130mm (35.1° x 20.1° at 15.2mm) (2.1° x 1.2° at 260mm)
M.O.D.	0.56m (10mm w/Macro)
Size (W x H x L)	159.3 x 106.6 x 206.4mm
Weight (approx.)	3.53lbs (1.6kg)
Built-in Extender	2.0x



**SUPER TELE**

**EFP HXS**

Lens	HJ18ex28B IASE A
Zoom Ratio/Format	18x
Range of Focal Length (with Extender)	28-500mm (56-1000mm)
Maximum Relative Aperture (with Extender)	1:2.8 at 28-286mm 1:4.9 at 500mm (1:5.6 at 56-572mm) (1:9.8 at 1000mm)
Angular Field of View 16:9 (with Extender)	19.6° x 11.1° at 28mm 1.1° x 0.6° at 500mm (9.9° x 5.6° at 56mm) (0.6° x 0.3° at 1000mm)
M.O.D.	2.2m (10mm w/Macro)
Size (W x H x L)	176.2x123.6x268.3mm
Weight (approx.)	5.65lbs (2.563kg)
Built-in Extender	2.0x



**EFP HXS**

Lens	HJ21ex7.5B IASE A
Zoom Ratio/Format	21X
Range of Focal Length (with Extender)	7.5-158mm (15-316mm)
Maximum Relative Aperture (with Extender)	1:1.9 at 7.5-116mm 1:2.6 at 158mm (1:3.8 at 15-232mm) (1:5.2 at 316mm)
Angular Field of View 16:9 (with Extender)	65.2° x 39.6° at 7.5mm 3.5° x 2.0° at 158mm (35.5° x 20.4° at 15mm) (1.7° x 1.0° at 316mm)
M.O.D.	0.85m (10mm w/Macro)
Size (W x H x L)	175.2 x 122.5 x 260.1mm
Weight (approx.)	5.94lbs (2.69kg)
Built-in Extender	2.0X



**ENG HXS**

Lens	HJ22ex7.6B IRSE A/AISE A
Zoom Ratio/Format	22x
Range of Focal Length (with Extender)	7.6-168mm (15.2-336mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 7.6-114.1mm 1: 2.65 at 168mm (1:3.6 at 15.2-228.2mm) (1:5.3 at 336mm)
Angular Field of View 16:9 (with Extender)	64.6° x 39.1° at 7.6mm 3.27° x 1.84° at 168mm (35.1° x 20.1° at 15.2mm) (1.64° x 0.92° at 336mm)
M.O.D.	0.85m (10mm w/Macro)
Size (W x H x L)	164.7 x 112.1 x 221.5mm
Weight (approx.)	4.0lbs (1.81kg)
Built-in Extender	2.0X

## HDTV Field Lenses

IMAGE  
STABILIZER **EFP**



DIGITAL DRIVE  
**DD HDxs**

Lens	HJ40x10B IASD-V
Zoom Ratio/Format	40X
Range of Focal Length (with Extender)	10-400mm (20-800mm)
Maximum Relative Aperture (with Extender)	1:2.0 at 10-220mm 1:3.65 at 400mm (1:4.0 at 20-440mm) (1:7.3 at 800mm)
Angular Field of View 16:9 (with Extender)	51.3° x 30.2° at 10mm 1.4° x 0.8° at 400mm (27.0° x 15.4° at 20mm) (0.7° x 0.4° at 800mm)
M.O.D.	2.8m (10mm w/Macro)
Size (W x H x L)	174.1 x 133 x 335.4mm
Weight (approx.)	11.90lbs (5.40kg)
Built-in Extender	2.0X

**DIGISUPER 100AF**



**HDxs**  
IMAGE  
STABILIZER

Lens	XJ100x9.3B AF
Zoom Ratio/Format	100x
Range of Focal Length (with Extender)	9.3-930mm (18.6-1860mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9.3-296mm 1:4.7 at 930mm (1:3.4 at 18.6-592mm) (1:9.4 at 1860mm)
Angular Field of View 16:9 (with Extender)	54.6° x 32.4° at 9.3mm 0.59° x 0.33° at 930mm (28.9° x 16.5° at 18.6mm) (0.30° x 0.17° at 1860mm)
M.O.D.	3.0m
Size (W x H x L)	250.6 x 255.5 x 661.5mm
Weight (approx.)	59.1lbs (26.8kg)
Built-In Extender	2.0X

IMAGE  
STABILIZER **EFP**



DIGITAL DRIVE  
**DD HDxs**

Lens	HJ40x14B IASD-V TELE
Zoom Ratio/Format	40X
Range of Focal Length (with Extender)	14-560mm (28-1120mm)
Maximum Relative Aperture (with Extender)	1:2.8 at 14-307mm 1:5.1 at 560mm (1:5.6 at 28-614mm) (1:10.2 at 1120mm)
Angular Field of View 16:9 (with Extender)	37.8° x 21.8° at 14mm 1.0° x 0.6° at 560mm (19.4° x 11.0° at 28mm) (0.5° x 0.3° at 1120mm)
M.O.D.	2.8m (10mm w/Macro)
Size (W x H x L)	174.1 x 133 x 355.5mm
Weight (approx.)	12.0lbs (5.45kg)
Built-in Extender	2.0X

**DIGISUPER 86AF**



**HDxs**  
IMAGE  
STABILIZER

Lens	XJ86x9.3B AF
Zoom Ratio/Format	86x
Range of Focal Length (with Extender)	9.3-800mm (18.6-1600mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9.3-340mm 1:4.0 at 800mm (1:3.4 at 18.6-680mm) (1:8.0 at 1600mm)
Angular Field of View 16:9 (with Extender)	54.6° x 32.4° at 9.3mm 0.69° x 0.39° at 800mm (28.9° x 16.5° at 18.6mm) (0.34° x 0.19° at 1600mm)
M.O.D.	3.0m
Size (W x H x L)	250.6 x 255.5 x 661.5mm
Weight (approx.)	59.1lbs (26.8kg)
Built-In Extender	2.0X

## DIGISUPER 100xs



**HDxs**  
IMAGE  
STABILIZER

Lens	XJ100x9.3B IE-D
Zoom Ratio/Format	100x
Range of Focal Length (with Extender)	9.3-930mm (18.6-1860mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9.3-296mm (1:3.4 at 18.6-592mm) (1:9.4 at 1860mm)
Angular Field of View 16:9 (with Extender)	54.6° x 32.4° at 9.3mm 0.59° x 0.33° at 930mm (28.9° x 16.5° at 18.6mm) (0.30° x 0.17° at 1860mm)
M.O.D.	3.0m
Size (W x H x L)	250.6 x 255.5 x 591.5mm
Weight (approx.)	51.8lbs (23.5kg)
Built-In Extender	2.0X

## DIGISUPER 86 II TELExs DIGISUPER 86 IIxs



**HDxs**  
IMAGE  
STABILIZER

Lens	XJ86x13.5B IE II-D TELE	XJ86x9.3B IE II-D
Zoom Ratio/Format	86x	86x
Range of Focal Length (with Extender)	13.5-1161mm (27-2322mm)	9.3-800mm (18.6-1600mm)
Maximum Relative Aperture (with Extender)	1:2.4 at 13.5-480mm (1:4.8 at 27-960mm) (1:11.6 at 2322mm)	1:1.7 at 9.3-340mm (1:3.4 at 18.6-680mm) (1:8.0 at 1600mm)
Angular Field of View 16:9 (with Extender)	39.1° x 22.6° at 13.5mm 0.47° x 0.27° at 1161mm (20.2° x 11.4° at 27mm) (0.24° x 0.13° at 2322mm)	54.6° x 32.4° at 9.3mm 0.69° x 0.39° at 800mm (28.9° x 16.5° at 18.6mm) (0.34° x 0.19° at 1600mm)
M.O.D.	3.0m	3.0m
Size (W x H x L)	250.6 x 255.5 x 618.4mm	250.6 x 255.5 x 591.5mm
Weight (approx.)	53.6lbs (24.3kg)	51.8lbs (23.5kg)
Built-In Extender	2.0X	2.0X

## DIGISUPER 75xs



**HDxs**  
IMAGE  
STABILIZER

Lens	XJ75x9.3B IE-D
Zoom Ratio/Format	75x
Range of Focal Length (with Extender)	9.3-700mm (18.6-1400mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9.3-331mm (1:3.6 at 700mm) (1:3.4 at 18.6-662mm) (1:7.2 at 1400mm)
Angular Field of View 16:9 (with Extender)	54.6° x 32.4° at 9.3mm 0.79° x 0.44° at 700mm (28.9° x 16.5° at 18.6mm) (0.39° x 0.22° at 1400mm)
M.O.D.	2.8m
Size (W x H x L)	250.6 x 255.5 x 591.5mm
Weight (approx.)	48.5lbs (22.0kg)
Built-In Extender	2.0X

• Please see page 39 for explanation of Shift-IS image stabilizer.

## DIGISUPER 72xs



**HDxs**

Lens	XJ72x9.3B IE-D
Zoom Ratio/Format	72x
Range of Focal Length (with Extender)	9.3—675mm (18.6—1350mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9.3-333mm (1:3.45 at 675mm) (1:3.4 at 18.6-666mm) (1:6.9 at 1350mm)
Angular Field of View 16:9 (with Extender)	54.6° x 32.4° at 9.3mm 0.81° x 0.46° at 675mm (28.9° x 16.5° at 18.6mm) (0.41° x 0.23° at 1350mm)
M.O.D.	2.8m
Size (W x H x L)	250.6 x 255.5 x 591.5mm
Weight (approx.)	48.1lbs (21.8kg)
Built-In Extender	2.0x

## DIGISUPER 60xs



**HDxs**

Lens	XJ60x9B IE-D
Zoom Ratio/Format	60x
Range of Focal Length (with Extender)	9-540mm (18-1080mm)
Maximum Relative Aperture (with Extender)	1:1.7 at 9 - 306mm (1:3.0 at 540mm) (1:3.4 at 18 - 612mm) (1:6.0 at 1080mm)
Angular Field of View 16:9 (with Extender)	56.1° x 33.4° at 9mm 1.02° x 0.57° at 540mm (29.9° x 17.1° at 18mm) (0.51° x 0.29° at 1080mm)
M.O.D.	2.8m
Size (W x H x L)	250.6 x 255.5 x 547.8mm
Weight (approx.)	43.8lbs (19.9kg)
Built-In Extender	2.0x

## HDTV Studio Lenses

## DIGISUPER 27AF



**HDxs**

Lens	XJ27x6.5B AF
Zoom Ratio/Format	27X
Range of Focal Length (with Extender)	6.5-180mm (13-360mm)
Maximum Relative Aperture (with Extender)	1:1.5 at 6.5-123mm (1:2.2 at 180mm) (1:3.0 at 13-246mm) (1:4.4 at 360mm)
Angular Field of View 16:9 (with Extender)	72.9° x 45.1° at 6.5mm 3.1° x 1.7° at 180mm (40.5° x 23.5° at 13mm) (1.5° x 0.9° at 360mm)
M.O.D.	0.6m (10mm w/Macro)
Size (W x H x L)	250.6 x 255 x 567mm
Weight (approx.)	51.4lbs (23.3kg)
Built-In Extender	2.0X

## DIGISUPER 27



### HD XS

Lens	XJ27x6.5B
Zoom Ratio/Format	27X
Range of Focal Length (with Extender)	6.5-180mm (13-360mm)
Maximum Relative Aperture (with Extender)	1:1.5 at 6.5-123mm (1:2.2 at 180mm (1:3.0 at 13-246mm) (1:4.4 at 360mm))
Angular Field of View 16:9 (with Extender)	72.9° x 45.1° at 6.5mm (3.1° x 1.7° at 180mm (40.5° x 23.5° at 13mm) (1.5° x 0.9° at 360mm))
M.O.D.	0.6m ( 10mm w/Macro)
Size (W x H x L)	250.6 x 255.5 x 550mm
Weight (approx.)	48.3lbs (21.9kg)
Built-In Extender	2.0X

## DIGISUPER 23xs



### HD XS

Lens	XJ23x7B IE-D
Zoom Ratio/Format	23X
Range of Focal Length (with Extender)	7-161mm (14-322mm)
Maximum Relative Aperture (with Extender)	1:1.6 at 7-132mm (1:1.95 at 161mm (1:3.2 at 14-223mm) (1:3.9 at 322mm))
Angular Field of View 16:9 (with Extender)	68.8° x 42.1° at 7mm (3.4° x 1.9° at 161mm (37.8° x 21.8° at 14mm) (1.7° x 1.0° at 322mm))
M.O.D.	0.6m ( 10mm w/Macro)
Size (W x H x L)	250.6 x 255.5 x 525mm
Weight (approx.)	42.5lbs (19.5kg)
Built-In Extender	2.0X

## \*"COMPACT" DIGISUPER 22xs



### HD XS

Lens	XJ22x7.3B IE-D
Zoom Ratio/Format	22X
Range of Focal Length (with Extender)	7.3-161mm (14.6-322mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 7.3-111.5mm (1:2.6 at 161mm (1:3.6 at 14.6-223mm) (1:5.2 at 322mm))
Angular Field of View 16:9 (with Extender)	66.7° x 40.6° at 7.3mm (3.4° x 1.9° at 161mm (36.4° x 21.0° at 14.6mm) (1.7° x 1.0° at 322mm))
M.O.D.	0.8m ( 10mm w/Macro)
Size (W x H x L)	165 x 175 x 336mm
Weight (approx.)	13.4lbs (6.1kg)
Built-In Extender	2.0X

# Production Platform 2\*

## HDgc 2/3" ENG/EFP Zoom Lenses



### ENG HDGC

Lens	KJ22ex7.6B IRSE/IASE
Zoom Ratio/Format	22x
Range of Focal Length (with Extender)	7.6-168mm (15.2-336mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 7.6-116.3mm (1:2.6 at 168mm (1:3.6 at 15.2-232.6mm) (1:5.2 at 336mm))
Angular Field of View 16:9 (with Extender)	64.6° x 39.1° at 7.6mm (3.3° x 1.8° at 168mm (35.1° x 20.1° at 15.2mm) (1.6° x 0.9° at 336mm))
M.O.D.	0.8m ( 10mm w/Macro)
Size (W x H x L)	164.7 x 112.1 x 218.6mm
Weight (approx.)	4.0lbs(1.82kg )/4.19lbs(1.90kg)
Built-in Extender	2.0X



### ENG HDGC

Lens	KJ17ex7.7B IRSE/IASE
Zoom Ratio/Format	17x
Range of Focal Length (with Extender)	7.7 - 131mm (15.4 -262mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 7.7 - 102.5mm (1:2.3 at 131mm (1:3.6 at 15.4 - 205.0mm) (1:4.6 at 262mm))
Angular Field of View 16:9 (with Extender)	63.9°x 38.6° at 7.7mm (4.20°x 2.36° at 131mm (34.6°x 19.9° at 15.4mm) (2.10°x 1.18° at 262mm))
M.O.D.	0.6m ( 10mm w/Macro)
Size (W x H x L)	159.3 x 106.6 x 197.8 mm
Weight (approx.)	3.26lbs(1.48kg)/3.44lbs(1.56kg)
Built-in Extender	2.0X



### ENG HDGC

Lens	KJ10ex4.5B IRSE
Zoom Ratio/Format	10x
Range of Focal Length (with Extender)	4.5 - 45mm (9 - 90mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 4.5 - 34.5mm (1:2.35 at 45mm (1:3.6 at 9 - 68.9mm) (1:4.7 at 90mm))
Angular Field of View 16:9 (with Extender)	93.7°x 61.9° at 4.5mm (12.2°x 6.9° at 45mm (56.1°x 33.4° at 9mm) (6.1°x 3.4° at 90mm))
M.O.D.	0.3m ( 10mm w/Macro)
Size (W x H x L)	168.2 x 110.6 x 237.7 mm
Weight (approx.)	4.04lbs (1.83kg)
Built-in Extender	2.0X

## HDgc 1/2" ENG/EFP Zoom Lenses



Lens	KH21ex5.7 IRSE A
Zoom Ratio/Format	21x
Range of Focal Length (with Extender)	5.7 – 120mm (11.4 - 240mm)
Maximum Relative Aperture (with Extender)	1:1.4 at 5.7 – 86mm 1:1.95 at 120mm (1:2.8 at 11.4 - 172mm) (1:3.9 at 240mm)
Angular Field of View 16:9 (with Extender)	62.9° x 38.0° at 5.7mm 3.3° x 1.9° at 120mm (34.0° x 19.5° at 11.4mm) (1.7° x 0.9° at 240mm)
M.O.D.	0.8m (10mm w/Macro)
Size (W x H x L)	169.4 x 111.9 x 217.5 mm
Weight (approx.)	3.95lbs (1.79kg)
Built-in Extender	2.0X



Lens	KH16ex5.7 IRSE A
Zoom Ratio/Format	16x
Range of Focal Length (with Extender)	5.7 - 92mm (11.4-184mm)
Maximum Relative Aperture (with Extender)	1 : 1.4 at 5.7 - 71.6mm 1 : 1.8 at 92mm (1 : 2.8 at 11.4 - 143.1mm) (1:3.6 at 184mm)
Angular Field of View 16:9 (with Extender)	62.9° x 38.0° at 5.7mm 4.3° x 2.4° at 92mm (34.0° x 19.5° at 11.4mm) (2.1° x 1.2° at 184mm)
M.O.D.	0.6m (10mm w/Macro)
Size (W x H x L)	163.9 x 106.3 x 196.7 mm
Weight (approx.)	3.24lbs (1.47kg)
Built-in Extender	2.0X



Lens	KH10ex3.6 IRSE A
Zoom Ratio/Format	10x
Range of Focal Length (with Extender)	3.6 - 36mm (7.2 - 72mm)
Maximum Relative Aperture (with Extender)	1:1.45 at 3.6 - 27mm 1:1.90 at 36mm (1:2.9 at 7.2 - 55mm) (1:3.8 at 72mm)
Angular Field of View 16:9 (with Extender)	88.1°x 57.1° at 3.6mm 11.1°x 6.2° at 36mm (51.7°x 30.5° at 7.2mm) (5.5°x 3.1° at 72mm)
M.O.D.	0.3m ( 10mm w/Macro)
Size (W x H x L)	168.2 x 110.6 x 240.8 mm
Weight (approx.)	4.04lbs (1.83kg)
Built-in Extender	2.0X

## HDgc 1/3" ENG/EFP Zoom Lenses



Lens	KT17ex4.3B IRSE
Zoom Ratio/Format	17x
Range of Focal Length (with Extender)	4.3-73mm (8.6-146mm)
Maximum Relative Aperture (with Extender)	1:1.4 at 4.3-73mm (1:2.8 at 8.6-146mm)
Angular Field of View 16:9 (with Extender)	62.6° x 37.7° at 4.3mm 4.1° x 2.3° at 73mm (33.8° x 19.4° at 8.6mm) (2.1° x 1.2° at 146mm)
M.O.D.	0.6m (10mm w/Macro)
Size (W x H x L)	159.3 x 106.6 x 197.3mm
Weight (approx.)	3.26lbs (1.48kg)
Built-in Extender	2.0X

## Production Platform 3\*

## HDgc 2/3" ENG/EFP Zoom Lenses



Lens	KJ20x8.2B IRSD
Zoom Ratio/Format	20X
Range of Focal Length (with Extender)	8.2-164mm (16.4-328mm)
Maximum Relative Aperture (with Extender)	1:1.9 at 8.2-115.4mm 1:2.7 at 164mm (1:3.8 at 16.4-230.8mm) (1:5.4 at 328mm)
Angular Field of View 16:9 (with Extender)	60.7° x 36.5° at 8.2mm 3.4° x 1.9° at 164mm (32.6° x 18.7° at 16.4mm) (1.7° x 0.9° at 328mm)
M.O.D.	0.9m (10mm w/Macro)
Size (W x H x L)	163.3 x 103.0 x 208.0mm
Weight (approx.)	3.131lbs (1.42kg)



Lens	KJ20x8.5B KRSD A
Zoom Ratio/Format	20X
Range of Focal Length	8.5 – 170mm
Maximum Relative Aperture	1:1.8 at 8.5 – 113.3mm 1:2.7 at 170mm
Angular Field of View 16:9	58.9° x 35.2° at 8.5mm 3.2° x 1.8° at 170mm
M.O.D.	0.9m (10mm w/Macro)
Size (W x H x L)	163.3 x 103 x 170.4 mm
Weight (approx.)	2.8lbs (1.27kg)

**ENG HDGC**

Lens	KJ13x6B KRSD
Zoom Ratio/Format	13X
Range of Focal Length	6 – 78mm
Maximum Relative Aperture	1:2.0 at 6 – 58mm 1:2.7 at 78mm
Angular Field of View 16:9	77.3° x 48.5° at 6mm 7.0° x 4.0° at 78mm
M.O.D.	0.4m (10mm w/Macro)
Size (W x H x L)	165.4 x 105.1 x 211.7 mm
Weight (approx.)	3.5lbs (1.59kg)

**FEATURING AF  
TECHNOLOGY****ENG HDGC**

Lens	KH19x6.7 KAS
Zoom Ratio/Format	19x
Range of Focal Length	6.7 - 127mm
Maximum Relative Aperture	1:1.6 at 6.7mm-96.8mm 1:2.1 at 127mm
Angular Field of View 16:9	55.0° x 32.6° at 6.7mm 3.14° x 1.77° at 127mm
M.O.D.	0.9m ( 50mm w/Macro )
Size (W x H x L)	112 x 88 x 171.8mm
Weight (approx.)	2.78lbs (1.26kg)

**HDgc 1/2" ENG/EFP Zoom Lenses****ENG HDGC**

Lens	KH20x6.4 KRSD
Zoom Ratio/Format	20X
Range of Focal Length	6.4 – 128mm
Maximum Relative Aperture	1:1.4 at 6.4 – 89.6mm 1:2.0 at 128mm
Angular Field of View 16:9	57.1° x 34.1° at 6.4mm 3.1° x 1.8° at 128mm
M.O.D.	0.9m (10mm w/Macro)
Size (W x H x L)	163.3 x 103 x 182.5 mm
Weight (approx.)	2.8lbs (1.27kg)

**HDgc 1/3" ENG/EFP Zoom Lenses****ENG HDGC**

Lens	KT20x5B KRSD A
Zoom Ratio/Format	20X
Range of Focal Length	5-100mm
Maximum Relative Aperture	1:1.4 at 5.0-90.3mm 1:1.55 at 100mm
Angular Field of View 16:9	55.2°x 32.8°at 5mm 3.0°x 1.7° at 100mm
M.O.D.	0.9m (10mm w/Macro)
Size (W x H x L)	163.3 x 103 x 171.2 mm
Weight (approx.)	2.62lbs (1.19kg)

**ENG HDGC**

Lens	KH13x4.5 KRSD
Zoom Ratio/Format	13X
Range of Focal Length	4.5 – 59mm
Maximum Relative Aperture	1:1.5 at 4.5 – 44mm 1:2.0 at 59mm
Angular Field of View 16:9	75.7° x 46.9° at 4.5mm 6.8° x 3.8° at 59mm
M.O.D.	0.4m (10mm w/Macro)
Size (W x H x L)	165.4 x 105.1 x 215.3 mm
Weight (approx.)	3.50lbs (1.59kg)

# HDTV Optical Accessories

## Tele-Side Converter



T15 HD

- Focal length is shifted to the telephoto side by a factor of 1.5x
- F No. of the original lens is not affected
- Only the telephoto side of the lens can be used, the picture corners are eclipsed at wide angle
- The minimum object distance becomes 2.25 times that of the original lens.



Adapter 85 II 98 II

## Wide Converter



W80 HD

- Focal length becomes wider by a factor of 0.8X that of the original lens with W80 HD



Adapter 85 II 98 II

- F No. of the original lens is not affected

## Wide Attachment



WA75 HD

- The zoom lens becomes a wider fixed focal length lens with the wide attachment
- The focal length is widened by a factor of 0.75x that of the original lens
- Focus is adjusted by use of the macro lever



Adapter 85 II 98 II

## Fish-Eye Attachment



FEA HD

Example: HJ17ex7.6B with fish-eye attachment

Focal Length	4.6mm, fixed focal length
Zooming	Not possible
Focus adjustment	By Macro mechanism



Adapter 85 II 98 II

# SDTV Optical Accessories

## Tele-Side Converter



T15-II

Combination	M.O.D.	Eclipse Point
J17ex7.7B + T15-II/85II	1.35m	f : 60mm
J22ex7.6B + T15-II/98II	1.8m	f : 60mm
YJ20x8.5B + T15-II/85II	2.00m	f : 80mm



Adapter 85 II 98 II

## Wide Converter



W80-III B  
\*W80Y-85

Combination	Master Lens	With Wide Converter Attached
J17ex7.7B + W80-III B/85II	7.7 to 131mm	6.2 to 104.8mm
J22ex7.6B + W80-III B/98II	7.6 to 168mm	6.0 to 132mm
YJ20x8.5B + W80Y-85	9 to 171mm	7.2 to 136.8mm



Adapter 85 II 98 II

Focal Length	0.8X
Minimum Object Distance	(Magnification) <sup>2</sup> X (Minimum object distance of master lens)
Zooming	Usual operation
F-number	Same as usual

\*W80Y-85 is exclusively for 20X and 19X series and does not require an adapter.

## Wide Attachment



WA75-II



Adapter 85 II 98 II

	Changes caused by attachment	Example: when used w/ J17ex7.7B lens
Focal Lens	Fixed Focal Length (magnification) X (wide angle focal length)	Fixed focal length Approx. 5.8mm
Close-Up distance	Close-Up distance of Macro feature	30mm
Zooming	Not possible	Not Possible
Focus adjustment	By Macro mechanism F.B. adjustment	By Macro mechanism

## Fish-Eye Attachment



FEA-III B



Adapter 85 II 98 II


Example: J17ex7.7B with fish-eye attachment	
Focal Length	4.6mm, fixed focal length
Zooming	Not possible
Focus adjustment	By Macro mechanism



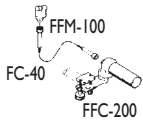
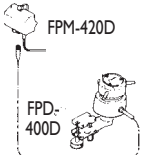
# ENG Zoom And Focus Accessories



## For Digital and Analog ENG/EFP Lenses

	Description	Model Name
 ZSD-300D	Digital Zoom Servo Demand	ZSD-300D

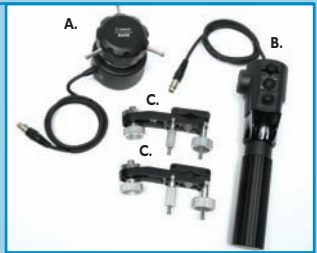
## For Digital and Analog ENG/EFP Lenses

	Description	Model Name
 FFM-100 FC-40 FFC-200	Flexible Focus Module	FFM-100
	Flexible Cable 32"	FC-40
	Focus Manual Controller	FFC-200
 FPM-420D FPD-400D	Focus Positional Servo Module	FPM-420D
	Focus Positional Servo Demand	FPD-400D

• For a complete list of all accessories, please contact a CANON sales office.

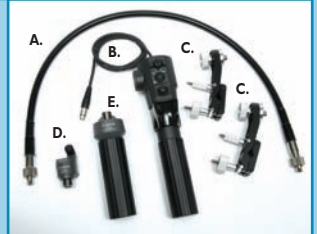
### SS-41-IASD for use with Compact Studio Kit or ENG lens

- A. FPD-400D – Focus Demand
- B. ZSD-300D – Zoom Demand
- C. CR-10 – Clamper (Included with A and B)



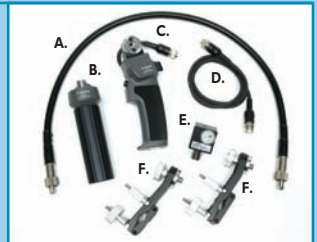
### MS-210D

- A. FC-40 – Flexible Cable 32
- B. ZSD-300D – Zoom Demand
- C. CR-10 – Clamper (Included with B and E)
- D. FFM-100 – Flex Focus Module
- E. FFC-200 – Flex Focus Controller



### MS-22M

- A. FC-40 – Flexible Cable 32
- B. FFC-200 – Flex Focus Controller
- C. ZSG-200M – Zoom Grip
- D. EC-80 – Extension Cable
- E. FM-12 – Flexible Focus Module
- F. CR-10 – Clamper (Included with E)



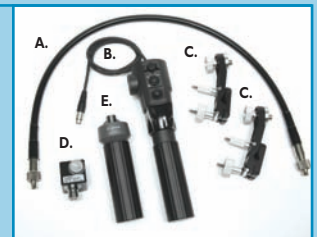
### MS-15M

- A. FC-40 – Flexible Cable 32
- B. ZSD-15M II – Zoom Demand
- C. FFC-15 – Flex Focus Controller
- D. CR-10 – Clamper (Included with B)
- E. FM-12 – Flexible Focus Module



### MS-21D

- A. FC-40 – Flexible Cable 32
  - B. ZSD-300D – Zoom Demand
  - C. CR-10 – Clamper (Included with B and E)
  - D. FM-12 – Flexible Focus Module
  - E. FFC-200 – Flex Focus Controller
- CC-0820 Conversion Cable not pictured



### FPM-420D



Focus Positional Servo Module for use with IRSE lenses

### FFM-100

Flex Focus Module for use with Semi Servo controls.



# Studio/Field Zoom And Focus Accessories



- A. Servo Cable
- B. Servo Cable
- C. CR-30 – Clamper
- D. SMJ-D02 – Servo Module
- E. SMJ-E01 – Servo Module
- F. Manual Zoom/FocusCable
- G. FMJ-702 – Manual Outlet
- H. CR-10 – Clamper
- I. ZSD-300D – Zoom Demand
- J. FPD-400D – Focus Demand
- K. ZDJ-D01 – Zoom Demand
- L. ZDJ-P01 – Zoom Demand
- M. FDJ-P01 – Focus Demand
- N. CR-30 – Clamper
- O. FDJ-P41/P31 – Focus Demand AF (Left/Right)
- P. FDJ-D02 – Focus Demand
- Q. FZP-T61 – Zoom Controller
- R. FFP-T61 – Focus Controller
- S. SBJ-I01 – IE SW Box
- T. IE SW Box Cable
- U. ZDJ-P21 – Zoom Servo Controller
- V. Zoom Demand Sleeve



## SMJ-D02 Servo Module

Digi Servo Module for Zoom and Focus. For use with XJ72x, 75x, 8611x, 8611x TELE, 100x lens



## SMJ-E01 Servo Module

For use with XJ23x, 27x, 27xAF 60x, 86xAF, 100xAF lens



## SUP-NS3 Supporter

For use with box style lens and ENG camera

## Servo Zoom Control with Manual Style Handle

- Servo Cable
- ZDJ-P21 – Zoom Servo Controller
- CR-30 – Clamper



## AF Servo Focus

- CR-30 – Clamper
- FDJ-P41 – Focus Demand AF
- Servo Cable



## DIGI Focus Control

An innovative servo focus demand with the precise movement of a manual control

- CR-30 – Clamper
- FDJ-D22 – Focus Demand
- Servo Cable



## Battery Adapter Plate

For Use With SUP-NS3. Recommended to use when a box lens is mounted on a supporter



## DIGI Zoom Demand

ZDJ-D01 – Zoom Demand

Servo Cable



## Focus Demand

- FDJ-P01 – Focus Demand
- CR-30 – Clamper
- Servo Cable



## DIGI P01 Zoom Demand

ZDJ-P01 – Zoom Demand

Servo Cable

# HD<sub>XS</sub> and HD<sub>GC</sub> Remote Control Systems

## Remote Control Lens Series

The Canon Remote Control Series offers a wide variety of lenses and accessories that have been designed for various applications such as broadcasting, teleconference, distance learning and other remote control purposes. The lenses provide quiet and fast servo control of Zoom, Focus and Iris.

## HD<sub>Xs</sub> Lens Series



HJ18ex28B ITS-RE/ME



HJ17ex7.6B ITS-RE/ME



HJ22ex7.6B ITS-RE/ME



HJ14ex4.3B ITS-RE/ME

## HD<sub>Gc</sub> Lens Series



KJ20x8.5B KTS (2/3")



KH19x6.7 KTS (1/2")



KH20x6.4 KTS (1/2")



KJ13x6B KTS (2/3")



KT20x5B KTS (1/3")



KH13x4.5 KTS (1/2")

# IF<sub>pro</sub> Remote Control Systems

Canon proudly offers several IF<sub>pro</sub> remote control lenses designed to offer remote zoom, focus and iris control. The YJ20x8.5B KTS and YJ13x6B KTS models are both for 2/3" SDTV cameras. In addition, also for 2/3" cameras, there is the YJ20x8.5 ITS-RE with built-in motorized 2X extender. A full line of remote control accessories are also available.

For 2/3" Cameras

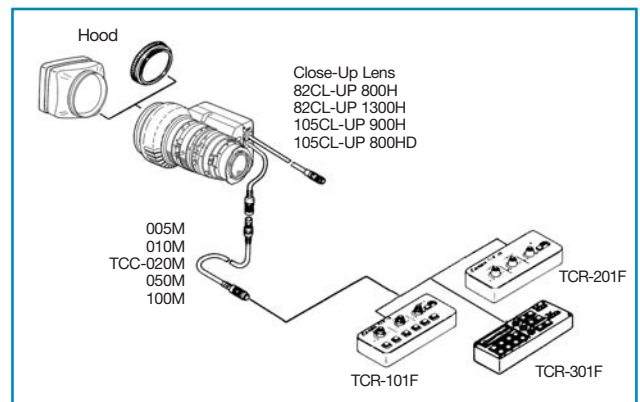


YJ20x8.5 KTS



YJ13x6B KTS

# HD<sub>XS</sub>, HD<sub>GC</sub>, IF<sub>XS</sub> and IF<sub>pro</sub> Remote Control Systems



## External Extender Control Unit

**RE:** motorized 2X extender **ME:** manual 2X extender

## Remote Control Accessories

(not available for HJ18ex / HJ14ex)

Four types (82CL-UP800H / 82CL-UP1300H / 105CL-UP900H / 105CL-UP800HD) are available.

## Remote Controller

Several models are available.

\*The controllers are also applicable to remote control pro-video lenses.

## Connecting Cable

5m, 10m, 20m, 50m and 100m cables are available.

Maximum cable length is 150m by connection of these cables.

## Mount Converters for Different Image Format Size Cameras

Canon offers a variety of Mount Converters to be used between a lens and a camera of different image format sizes. Each converter will extend the effective angular field of view of the associated lens according to the Shift Ratio listed below

CONVERTER	IMAGE SIZE CONVERSION		SHIFT RATIO TO TELEPHOTO SIDE	ELECTRONIC CONVERSION
	LENS	CAMERA		
LO-32BMT	2/3" B4 MOUNT	1/2" SONY <sup>*1</sup>	APPROX. 1.4X	—
LCV-40B	2/3" B4 MOUNT	1/2" STANDARD MOUNT <sup>*2</sup>	APPROX. 1.4X	—
LCV-42T	2/3" B4 MOUNT	1/3" STANDARD MOUNT	APPROX. 1.8X	—
LCV-41E	2/3" B4 MOUNT	SONY PMW-EX3	APPROX. 1.4X	LENS CABLE (12PIN)→EX3 HOT SHOE(14PIN)
LCV-20E	1/2" <sup>*3</sup>	SONY PMW-EX3	—	LENS CABLE (12PIN)→EX3 HOT SHOE(14PIN)

\*1 SONY's Hot Shoe mount camera, excluding PMW-EX3

\*2 1/2" Camera of standard type mount (Panasonic, JVC, Ikegami)

\*3 Only applicable to KH10ex/KH16ex/KH21ex  
The other 1/2" mount lenses are not available

Note: The converters are to be used with lenses weighing less than 2.0kg (4.4lbs)



**LO-32BMT**  
**LCV-40B**  
**LCV-42T**



**LCV-41E**  
**LCV-20E**

IMAGE  
STABILIZER

## Optical Shift Image Stabilizer (Shift-IS) Technology

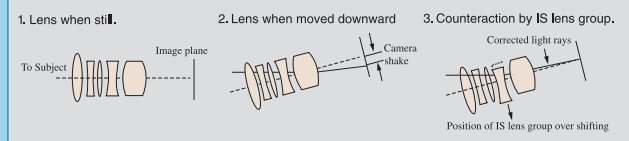
The history of field lenses is a history of zoom ratio/focal length extension. It came to a point where the industry thought it would be impossible to push the envelope any further. The telephoto focal length of the lens became so long that even the slightest amount of wind or operator movement would cause image shake and viewing the picture became intolerable. This was before Canon announced the incredible magnification of the DIGISUPER 86xs zoom lens. Canon, renowned for its optical image stabilization technologies, developed another new stabilization solution for the broadcast field lens, a built-in Optical Shift Image Stabilizer (Shift-IS) to overcome image shaking at telephoto focal lengths. Now, the Shift-IS is employed in the following lenses:

**DIGISUPER 100AF**  
**DIGISUPER 100xs**  
**DIGISUPER 86AF**  
**DIGISUPER 86IIxs**  
**DIGISUPER 86II TELExs**  
**DIGISUPER 75xs**  
**HJ40x Series**



### How the Optical Image Stabilizer (Shift-IS) Works.

When the lens moves, the light rays from the subject are bent relative to the optical axis, resulting in an unsteady image because the light rays are deflected. By shifting the IS lens group on a plane perpendicular to the optical axis to counter the degree of image shake, the light rays reaching the image plane can be steadied. Since image shake occurs in both horizontal and vertical directions, two shake-detecting sensors for yaw and pitch, detect the angle and speed of movement and send this information to a high-speed 32-bit microcomputer, (which converts the information into drive signals for the IS lens group). Then, the actuator moves the IS lens group horizontally and vertically, thus counteracting the image shake and maintaining a stable picture. The Shift-IS component is located within the lens groups and is most effective for lower frequency movements caused by platform vibration or wind effect without increasing the overall size and weight of the master lens.



## For 2/3" Pro-Video



**SHUTTLES** HOT **IF** pro

Lens	YJ20x8.5B KRS	YJ20x8.5B IRS
Zoom Ratio/Format	20x	20x
Range of Focal Length (with Extender)	8.5-170mm	8.5-170mm (17-340mm)
Maximum Relative Aperture (with Extender)	1:1.8 at 8.5-113.3mm 1:2.7 at 170mm	1:1.8 at 8.5-113.3mm 1:2.7 at 170mm (1:3.6 at 17-226.7mm) (1:5.4 at 340mm)
Angular Field of View 16:9 (with Extender)	58.8°x35.2° at 8.5mm 3.2°x1.8° at 170mm	58.8°x35.2° at 8.5mm 3.2°x1.8° at 170mm (31.5°x18.0° at 17mm) (1.6°x0.9° at 340mm)
M.O.D.	0.9m(10mm w/Macro)	0.9m(10mm w/Macro)
Size (W x H x L)	163.3x103x170.4mm	163.3x103.0x195.4mm
Weight (approx.)	2.58lbs (1.17kg)	3.06lbs (1.39kg)
Built-In Extender	—	2.0X

## Wide Angle Quality For 2/3" Pro-Video



**SHUTTLES** HOT **IF** pro

Lens	YJ13x6B KRS	YJ13x6B IRS
Zoom Ratio/Format	13X	13X
Range of Focal Length (with Extender)	6-78mm	6-78mm (12-156mm)
Maximum Relative Aperture (with Extender)	1:2.0 at 6-58mm 1:2.7 at 78mm	1:2.0 at 6-58mm 1:2.7 at 78mm (1:4.0 at 12-116mm) (1:5.4 at 156mm)
Angular Field of View 16:9 (with Extender)	77.2° x 48.4° at 6mm 7.0° x 4.0° at 78mm	77.2° x 48.4° at 6mm 7.0° x 4.0° at 78mm (43.6° x 25.3° at 12mm) (3.5° x 2.0° at 156mm)
M.O.D.	0.4m(10mm w/Macro)	0.4m(10mm w/Macro)
Size (W x H x L)	165.4x105.1x211.7mm	165.4x105.1x234.8mm
Weight (approx.)	3.39lbs (1.54kg)	3.83lbs (1.74kg)
Built-In Extender	—	2.0X

# CANOBEAM DT-150 HD

## Free Space Optics Wireless Transmission



# CANOBEAM HD

The Canobeam DT-150 HD provides reliable uncompressed two-way, high-bandwidth (HD-SDI and SD-SDI) digital video transmission for situations where fiber-optic cables or microwave links are impractical or impossible. The Canobeam DT-150 HD operates at 1.5 Gbps and transmits digital HD/SD video, audio, and control signals bi-directionally without delay via line-of-sight Free Space Optics at a distance of up to 1 kilometer.

- The Canobeam DT-150 HD can relay HD-SDI and SD-SDI video, along with embedded return video and audio to the camera operator, as well as camera-control signals, and robotic camera-control data.
- Canon's exclusive Auto Tracking feature—standard on all Canobeam systems—maintains precise beam alignment despite vibrations due to wind, heavy vehicle traffic, or unsteady camera platforms.
- Small Form Pluggable fiber interface. (Connector: LC)
- Can interface with either simple media converters for one-way/two-way video transmission or SMPTE hybrid cable emulation boxes.
- Housing designed for outdoor or indoor installations.
- Offers management capability via SNMP.
- The Canobeam DT-150 HD's Free Space Optics technology uses a beam of infrared light, which doesn't require RF licenses or coordination, and is virtually free from interception.
- The Canobeam DT-150 HD's sets up quickly and is simple to operate.

## Broadcast and Communications Sales Consultants

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