

4K

# BROADCAST TELEVISION LENSES 2019/2020



**Canon**

Live for the story\_



# PIONEERING EXCELLENCE IN BROADCAST LENSES

Canon is a pioneer in the design of broadcast lenses. It was more than 60 years ago that we introduced the first BCTV lens – the “Field Zoom IF-1” with a 6.7x zoom range, which was the highest in the industry at the time. Since then we have energetically advanced the art of high-end optical design on many fronts – working in close collaboration with international broadcasters and producers to develop innovative products and enhance customer satisfaction. Today we offer an exciting range of innovative high-end imaging products that stimulate creativity and deliver superb quality results, as we continue our pioneering pursuit of excellence into the 21st century.

## Emmy Award

The National Academy of Television Arts and Sciences awarded Canon an EMMY® in 2005 in recognition of our engineering creativity in Lens Technology Developments for Solid State Imager Cameras in High Definition Formats. We also received an EMMY® in 1996 for “Implementation In Lens Technology to Achieve Compatibility with CCD Sensors”.

## Customer Satisfaction

Canon is committed to total Customer Satisfaction. To meet this commitment we aim to support users by developing new lens technologies, high-quality technical service systems and other sales support.

## Canon’s Worldwide Support Network



Well trained sales people and/or service technicians are ready to support you at these locations.

# BROADCAST TELEVISION LENSES



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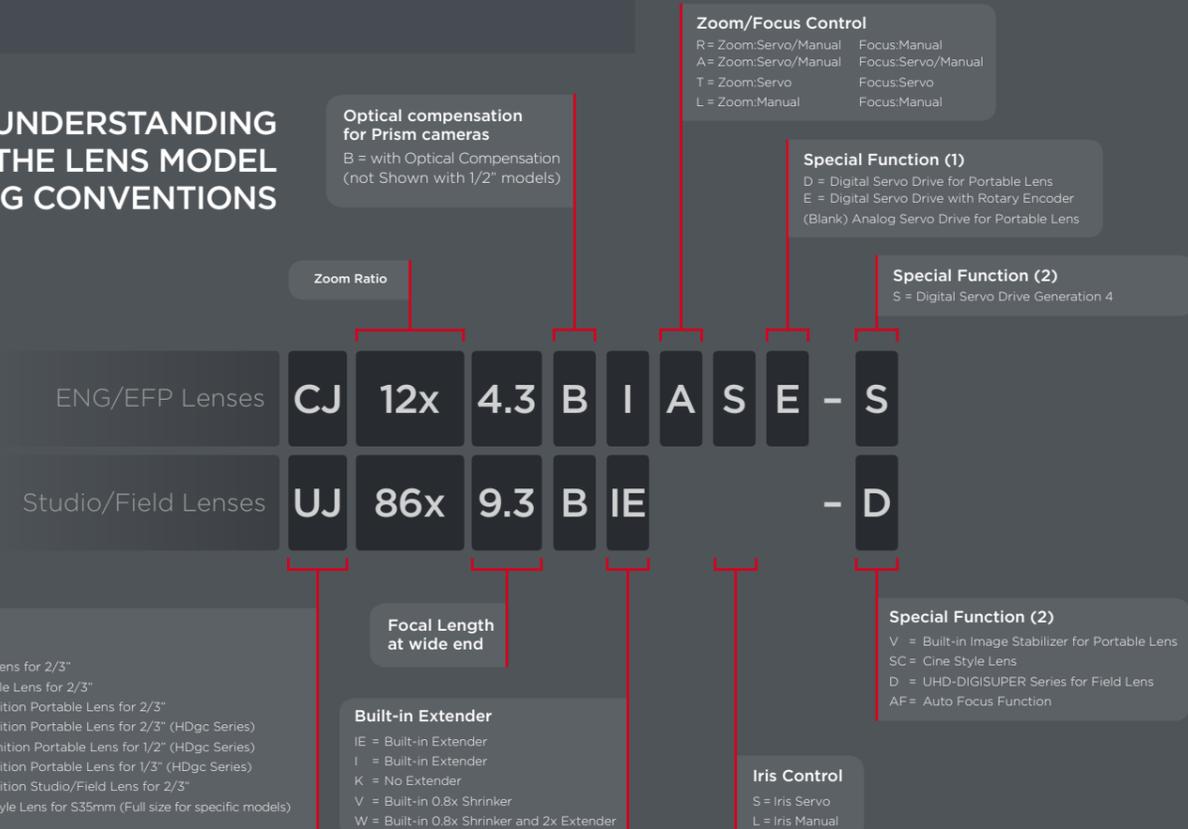
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## UNDERSTANDING THE LENS MODEL NAMING CONVENTIONS



**INNOVATION**  
In TV Optics Since 1958

Toward 100 years anniversary

Since the introduction of our first BCTV lens more than 60 years ago, Canon has been developing its know-how and technologies – so that today we offer an extensive range of high end lenses with the flexibility to suit various shooting situations and meet the exacting demands of today's creative professionals.

# CANON'S EPOCH-MAKING TECHNOLOGY

## UHD/HDTV LENSES

Canon began developing lenses for the "HDTV System" more than 20 years ago and continues to lead the broadcast industry into the 21st century "DTV" era - most recently with the next generation of HDTV lenses and our pioneering Cinema EOS 4K lenses. The series are:

<b>UHDxs 4K</b> <b>4K 2/3" Lens Series</b> Shown on Page 10-12.	4K 2/3" Premium Field Lens	4K 2/3" Studio Lens	4K 2/3" ENG/EFP Lens
<b>HDxs</b> <b>HDxs Series</b> Shown on Page 14-18	Studio/Field Lenses	Compact Studio Lens	EFP Lenses
<b>HDxs</b> <b>Portable HDxs Series</b> Shown on Page 24-28.	ENG/EFP Lenses	Built-in Optical Image Stabilizer Lens	
<b>HDgc</b> <b>HDgc Series</b> Shown on Page 34-38.	ENG Lenses for 2/3" Cameras	ENG Lenses for 1/2" Cameras	ENG Lenses for 1/3" Cameras
<b>4K</b> <b>EF Cinema Lens Series</b> Shown on Page 40-45.	Zoom Lenses	Prime Lenses	Cine Servo Lenses

### 4K 2/3" Lens Series

New BCTV lenses designed to accelerate the pace of 4K UHD content creation

As 4K continues its steady integration into mainstream television dramas, documentaries and movies, Canon has been at the technological forefront with our innovative Cinema EOS series and development of 4K Optics.

The needs of broadcast television producers to achieve the high image quality of 4K UHD and more powerful ways of expression are now spreading to live telecasts of sports, concerts, and

events. The imperative for 4K lenses that can offer the long focal ranges that are central to contemporary sports coverage while maintaining the usability and ease of operation that the broadcast industry favours, is increasing at a rapid pace.

In response to these new marketplace needs, Canon is offering lenses whose performance neatly dovetails with the various new 2/3" small-format 4K UHD cameras as part of our onward drive to support this new movement. By offering lenses that fit in with the applications and

objectives of users, Canon is taking steps to actively open up new dimensions of potential in video performance. 4K images can convey such a sense of presence and an almost 3-dimensional feeling that viewers sense they are actually involved in the action; through such images, these lenses can impart new values to user content and allow viewers to experience videos in new and fresh ways.



## AUTO FOCUS TECHNOLOGY

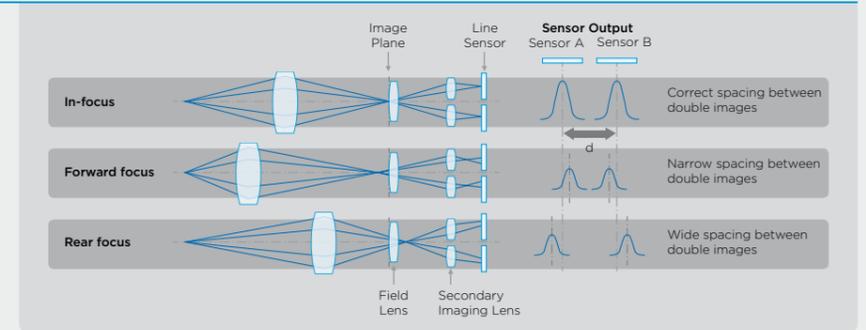
To meet the increasing demand in broadcast HDTV production for highly accurate focusing, Canon has introduced a revolutionary HDTV Auto Focus System. This pioneering technology automatically keeps images in focus, allowing professional camera operators to concentrate on capturing action and beauty shots.

Canon's advanced Auto Focusing for DIGISUPER HDTV Zoom Lenses employs the TTL-Secondary Image Registration Phase-detection system originally developed for single-lens reflex still cameras, to deliver both high accuracy and a high tracking capability for broadcast HDTV.



### TTL-Secondary Image Registration Phase-detection System

The light transmitted through a pair of secondary imaging lenses focuses on separate sensors (as illustrated). The TTL-Secondary Image Registration Phase-detection System determines the positional relationship between the two images (See "d" in diagram right) to detect the amount and direction of defocusing.



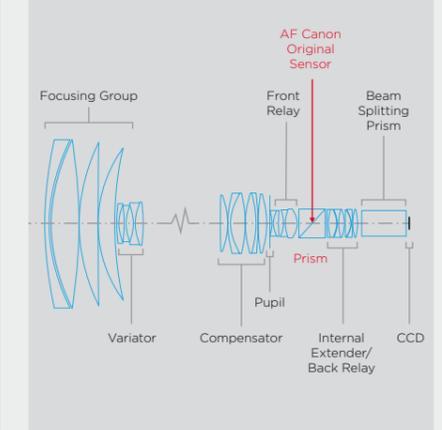
### Features

- Extremely high focusing accuracy in full HDTV specifications
- Ability to focus from a completely de-focused status without hunting
- Ability to focus on a high speed moving object
- Size and position of the AF frame (target area) in the camera viewfinder can be changed from the Focus Demand FDJ-P31/P41. (The size of the AF Frame can be changed in 3 steps). Please confirm the AF camera-lens interface with your chosen camera manufacturer
- Two operation modes - full time AF and Part Time AF - to meet needs of professional camera operators

### Changeable AF frame



### Layout of the elements



### 2 kinds of AF Operation modes with ACTIVE/HOLD switch

Mode	FULL TIME AF	PART TIME AF
How AF works	Usually activated. Focus position is locked while the SW is pushed.	Usually off. Activated while the SW is pushed.
Recommended Applications	Sporting event etc. To follow a moving object.	Studio production etc. To confirm the best focus position.

This article refers to Auto Focus Technology for the DIGISUPER HDTV Zoom Lenses listed below. For full lens specifications see Page 16,17 and 18

# CANON'S EPOCH-MAKING TECHNOLOGY

## **oIFxs**, **HDXS** and **HDGC** Technology

In 2004, Canon introduced a new broadcast lens technology **oIFxs**, with the launch of the HJ22ex7.6B. Two aspects of the new technology are represented by the letter "e". One is "ecological design", as these lenses are harmless to the environment, the other "enhanced digital" technology, which improves the performance of the digital drive unit. These improvements are now also incorporated in the **HDGC** (IRSE S / IASE S model) and the **HDXS** lenses.



### Enhanced Digital Drive

The **oIFxs**, **HDXS** and the **HDGC** (IRSE S / IASE S model) series are equipped with an information display and digital function selector, an X-Y axis switch, so that users can customise and optimise the enhanced digital functions much more easily and precisely.

- User settings are simple and easy to operate including: speed preset, frame presets (2 memory positions), shuttle shot, zoom track and new focus preset with IASD/IASE S lens
- Follow signal display for iris, zoom and focus (IASD/IASE S only) for virtual reality, robotic control and other uses
- User settings for zoom and focus curve mode offer precise control based upon user requirements
- AUX 1 and AUX 2 switches can be assigned to basic functions for enhanced memory capability

- A precise movement mode can be memorised for the zoom seesaw control, zoom demand control and preset control
- The drive unit can memorise 9 patterns of user-customised settings and also transmit the data between different drive units
- The self-diagnostic mode provides error messages
- The HDxs/e-IFxs/HDgc (IRSE S / IASE S model) Ergonomic Drive Unit is tilted at an ideal angle of 12.5° for good balance and comfort. An information display offers easy, precise and full customisation of enhanced digital functions, which are easily accessed and set via the Digital Function Selector, an X-Y axis switch located next to the display.



### Rotary Encoder

Canon offers a series of **oIFxs** / **HDXS** / **HDGC** (IRSE S / IASE S model) lenses, which are equipped with an enhanced digital drive unit. 16-bit resolution Rotary Encoder Devices are built into the unit, so the lenses can simply be integrated into a virtual digital studio system without any additions. The encoders also enable superior precise control.

The zoom servo provides a dynamic range from 0.5 sec. to over a 5 min. super slow zoom. Repeatability in focus and iris control are also much more precise. Canon's unique technology has enabled the surprisingly small Encoder Device to be installed in the existing drive unit without any changes in size or weight.



### Ecological Design

Sustainability is at the heart of Canon's Kyosei philosophy - living and working together for the common good - and we are always looking to further reduce our environmental impact.

The **oIFxs** / **HDXS** / **HDGC** series avoid using any materials or substances that are harmful to the environment. For example optical parts feature lead free glass, while mechanical parts are virtually free of all harmful products, such as cadmium, PBBS (Poly Bromo Bi Phenyls), PBDPE (Poly Bromo Di Phenyl Ethers) or mercury.



## CANON 3D SOLUTION

Recognising the continuing requirement for 3D program origination, Canon has prioritised adoption of most of the standard HD lens series for 3D production systems. Originally this entailed using our original 16bit resolution encoders, while allowing off sets of zoom, focus and iris positions to compensate for the tracking of each position. However we now have a new solution for a simpler, low cost 3D production system with increased interoperability.

### 3D Lens Lineups

Canon's ergonomic Digital Drive Unit incorporates Canon-developed, ultra-compact rotary encoders capable of 0.1µm position detection, which produces 16-bit resolution of the positions of zoom, iris, and focus controls. This unique device allows for one zoom controller and one focus controller to simultaneously operate both lenses, while providing even higher interoperability and precision in the synchronisation of zoom, focus and iris positions of the lens pairs.



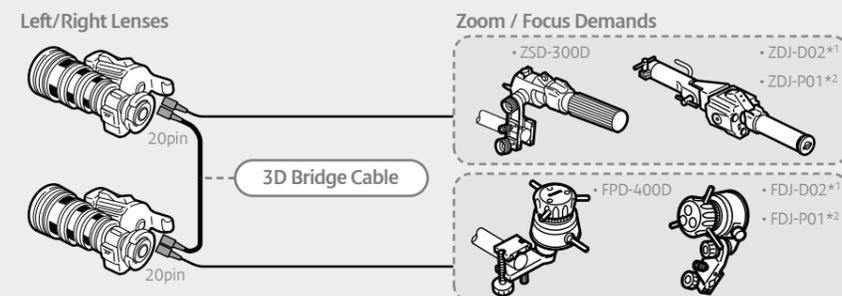
### Lens Refinements for 3D

The "3D Lens Adjustment Software" makes stereoscopic tracking of the zoom, focus and iris even more precise. It allows appropriate offsets to be easily made using the Digital Drive Unit's display, to compensate for minor zoom and focus tracking differences between any two lens pairs. Using the software, Canon's synchronous lens control system doesn't

require special controllers. All the servo controllers for digital servo lenses, as shown below, will be compatible by simply connecting the two lenses with a 3D Bridge Cable (BC-100), saving additional costs when implementing 3D production 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).

# CANON'S EPOCH-MAKING TECHNOLOGY

## OPTICAL IMAGE STABILIZER

### VARI-ANGLE PRISM IMAGE STABILIZER (VAP-IS)

Canon's portable HD production lens, the HJ15ex8.5B KRSE-V, incorporates an innovative built-in optical image stabilization system - the patented Vari-Angle Prism Image Stabilizer (VAP-IS) - that's designed to significantly enhance HD motion imaging on location shoots.

It delivers highly stable HD imagery - counteracting a wide range of disturbance frequencies that the lens-camera system may be subjected to in a variety of shooting environments. These can range from the very low frequencies encountered during handheld or

shoulder-mount shooting by a walking or running camera operator, to the higher vibration frequencies associated with shooting from motorbikes, moving vehicles, and helicopters. Various stabilisation modes can be selected to address diverse shooting operations.

### OPTICAL SHIFT IMAGE STABILIZER (SHIFT-IS)

Canon, renowned for its Optical Image Stabilization technologies, developed a built-in Optical Shift Image Stabilizer (Shift-IS) for broadcast field lenses to overcome image shaking at telephoto focal lengths. First introduced in the super telephoto DIGISUPER 86 xs zoom lens, Shift-IS is now used in the DIGISUPER 100, DIGISUPER 100AF, DIGISUPER 95, DIGISUPER 86AF, DIGISUPER 80, HJ40x10B IASD-V and HJ40x14B IASD-V.



### HOW THE OPTICAL SHIFT IMAGE STABILIZER (SHIFT-IS) WORKS

When the lens moves, the light rays from the subject are deflected, relative to the optical axis, resulting in an unsteady image. 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. The actuator then moves the IS lens group

horizontally and vertically to counteract the image shake and maintain a stable picture. The Shift-IS component is located within the lens group, without increasing the overall size and weight of the master lens, and is most effective for lower frequency movements caused by platform vibration or wind effect.

The products with Optical Image Stabilizer technologies are shown with this legend on pages 12, 13, 22 and 24.

**IMAGE STABILIZER**



P.28



P.17



P.24

**HJ15ex8.5B KRSE-V**  
**UHD DIGISUPER 86**  
**UHD DIGISUPER 90**  
**DIGISUPER 100AF**  
**DIGISUPER 100**  
**DIGISUPER 95**

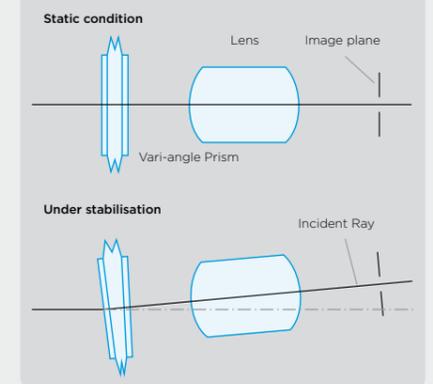
**DIGISUPER 86AF**  
**DIGISUPER 80**

**HJ40x10B IASD-V**  
**HJ40x14B IASD-V**

### HOW THE VAP-IS (VARI-ANGLE-PRISM IMAGE STABILIZER) WORKS

Under perfect shooting conditions, light rays from a scene pass through the lens optical system in a tightly prescribed manner. Any vibration or jolt to the lens-camera system will deflect those light rays and produce unsteady images. The VAP-IS technology is incorporated within the lens optical system to intercept and correct such light ray deviations in real-time. The technology is based upon a flexible optical bellows that comprises two flat glass elements separated by a special liquid, forming

a sealed mini-optical grouping within the overall lens element groupings. The bellows expands and contracts when the lens is physically disturbed - and the very high refractive index of the liquid bends the disturbed light rays in the opposite direction. This gives a high degree of real-time correction to the angle of the light rays, ensuring their smooth arrival at the image plane.



## HDgc SERIES



The details of the HDgc Series Lenses are shown on page 36

### CONCEPT OF THE HDgc SERIES

The HDgc series supports the emergence of a new generation of cost-effective HD acquisition systems. Using Canon's unique technology, the new HDgc lenses exhibit high Modulation Transfer Function (MTF), high resolution and high contrast from the centre of the image to its extreme edges, while maintaining compact size and weight.

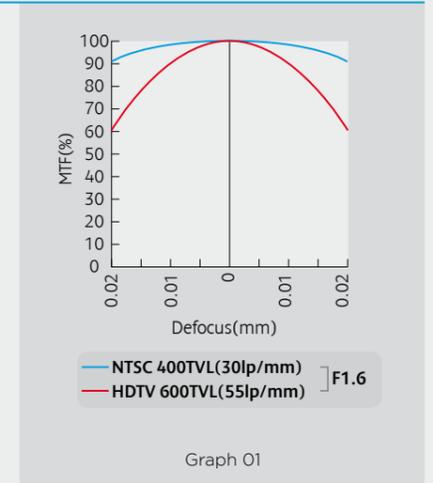
### QUALITY OF THE HDgc SERIES

The HDgc Series lenses are based upon Canon's latest design concepts, which support the new generation of cost-effective HD acquisition systems. They are designed to meet the specific bandwidth frequency (or the number of scanning lines) of HD camera systems and at the same time offer an excellent performance-cost ratio.

### COMPARISON OF THE HDgc SERIES WITH SDTV LENSES

In the HDTV system the pixel size is about half, so the spread of a point image caused by a spherical aberration, coma etc. will be diminished to about half. The MTF varies as the focus is slightly out of focus, the MTF is greatly influenced as shown in Graph 01.

HDgc Lenses are specially designed with optical elements - such as "Hi UD Glass", "Aspherical Elements" and other special elements - that effectively minimise chromatic aberrations, while maintaining high MTF throughout the image.



	SD		HDgc
Test frequency of Broadcast camera	320 TV lines / 4MHz	up to 640 TV lines / 8MHz	Up to 800 TV lines
Test frequency of Broadcast Lens	24 lines / mm	Up to 48 lines / mm	Up to 74 lines / mm
Actual Canon resolution of Broadcast lens	Up to 75 lines / mm		Up to 100 lines / mm

# 2/3" 4K LENS SERIES

## UHD DIGISUPER Series for 4K System

Step up to 4K broadcasting with fully-featured high-quality 2/3" 4K field and studio zoom lenses.



See page 14

## UHDxs series 4K UHD lenses for portable cameras

Easily make the move to 4K ENG and studio applications with high quality 2/3" 4K wide and standard zoom lenses



See page 15

Focal Length (mm)		6.5	8.2	8.3	9	9.5	108	600	800	810	925	1000	
Field Lens	UJ27x6.5B	Premium 4K field lens for 2/3"											
	UJ66x9B	A versatile 9-600mm 2/3" 4K field lens with image stabilisation											
	UJ86x9.3B	Premium 4K field lens for 2/3"											
	UJ90x9B	4K field lens for 2/3"											
	UJ111x8.3B	A 4K Premium field lens with an 111x, 8.3-925mm zoom											
	UJ122x8.2B	A 4K Premium field lens with an 122x, 8.2-1000mm zoom											

Focal Length (mm)		4.3	7.5	7.6	7.8	8.5	9.7	13.6	15	28	52	60	128	137	158	180	190	437	500	612	
ENG/EFP Lens	CJ12ex4.3B	ENG/EFP 4K lens for 2/3"																			
	CJ14ex4.3B	A versatile 18x broadcast zoom lens with 4K optical quality																			
	CJ15ex8.5B	Stunning stabilisation and lightweight versatility																			
	CJ18ex7.6B	A wide-angle 14x broadcast zoom lens with 4K optical quality																			
	CJ18ex28B	Lightweight and versatile with incredible telephoto power																			
	CJ20ex7.8B	Standard 4K ENG lightweight lens																			
	CJ24ex7.5B	A class-leading 24x broadcast zoom lens with 4K optical quality																			
	CJ25ex7.6B	A top class UHDxs 25x zoom with built-in 2x extender for 4K broadcast																			
	CJ45ex9.7B	Superb optomechanical quality build 4K lens																			
	CJ45ex13.6B	Ultra-telephoto 4K lens with advanced multi-group zoom system																			

# UHD 4K 2/3" LENSES



	UHD DigiSuper 122	UHD DigiSuper 111	UHD DIGISUPER 86	UHD DIGISUPER 27	UHD DIGISUPER 90	UHD DIGISUPER 66
<b>Model Number</b>	UJ122x8.2B IESD	UJ111x8.3B IESD	UJ86x9.3B IESD	UJ27x6.5B IESD	UJ90x9B IESD	UJ66x9B IESD
<b>Zoom Ratio</b>	122x	111x	86x	27x	90x	66x
<b>Built-in Extender</b>	2.0x	2.0x	2.0x	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	8.2 - 1000 mm 16.4 - 2000 mm	8.3-925mm 16.6-1850mm	9.3-800mm 18.6-1600mm	6.5-180mm 13-360mm	9-810mm 18-1620mm	9-600mm 18-1200mm
<b>Maximum Relative Aperture (with Extender)</b>	1:1.7 (8.2 - 340 mm) 1:5.0 (1000 mm) 1:3.4 (16.4 - 680mm) 1:10.0 (2000 mm)	1:1.7(8.3-340 mm) 1:4.65 (925 mm) 1:3.4 (16.6-680 mm) 1:9.3 (1850 mm)	1:1.7 at 9.3-340mm 1:4.0 at 800mm 1:3.4 at 18.6-680mm 1:8.0 at 1600mm	1:1.5 at 6.5-123mm 1:2.2 at 180mm 1:3.0 at 13-246mm 1:4.4 at 360mm	1:2.4 at 9-486mm 1:4.0 at 810mm 1:4.8 at 18-972mm 1:8.0 at 1620mm	1:1.7 at 9.3-340mm 1:3.0 at 600mm 1:3.4 at 18-680mm 1:6.0 at 1200mm
<b>Angular Field of View (with Extender)</b> 16:9 Aspect Ratio (9.6 x 5.4 mm)	60.7° x 36.5° (8.2mm) 0.55° x 0.31° (1000mm) 32.6° x 18.7° (16.4mm) 0.28° x 0.15° (2000mm)	60.1° x 36.0° (8.3mm) 0.59° x 0.33° (925mm) 32.3° x 18.5° (16.6mm) 0.30° x 0.17° (1850mm)	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	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	56.1° x 33.4° at 9mm 0.68° x 0.38° at 810mm 29.9° x 17.1° at 18mm 0.34° x 0.19° at 1620mm	56.1° x 33.4° at 9mm 0.92° x 0.52° at 600mm 29.9° x 17.1° at 18mm 0.46° x 0.26° at 1200mm
<b>M.O.D. from Lens Front</b>	3.0 m*	3.0 m*	3.0m	0.6m	3.0m	3.0m
<b>Object Dimensions at M.O.D. (with Extender)</b> 16:9 Aspect Ratio (9.6 x 5.4mm)	314.8x177.1 cm* (8.2 mm) 2.7x1.5 cm (1000 mm) 157.4x88.6 cm* (16.4 mm) 1.4x0.8 cm (2000 mm)	311.6x175.3cm* (8.3 mm) 2.9x1.6cm (925 mm) 155.8x87.7cm* (16.6 mm) 1.5x0.8cm (1850 mm)	271.9 x 152.9cm at 9.3mm 3.3 x 1.9cm at 800mm 136.0 x 76.5cm at 18.6mm 1.7 x 1.0cm at 1600mm	106.1x59.7cm at 6.5mm 5.8x2.1cm at 180mm 53.1x29.9cm at 13mm 1.9x1.1cm at 360mm	287.9 x 161.9cm at 9mm 3.3 x 1.9cm at 810mm 144.0 x 81.0cm at 18mm 1.7 x 1.0cm at 1620mm	287.9 x 161.9cm at 9mm 4.4 x 2.5cm at 600mm 144.0 x 81.0cm at 18mm 2.2 x 1.3cm at 1200mm
<b>Approx. Size (WxHxL)</b>	250.6 x 255.5 x 637.4 mm	250.6 x 255.5 x 637.4 mm	250.6 x 255.5 x 637.4mm	250.6 x 255.5 x 550mm	250.6 x 255.5 x 610mm	250.6 x 255.5 x 610mm
<b>Approx. Mass</b>	26.6kg	26.6 kg	27.0kg	21.5kg	23.2kg	23.2kg
<b>Protection Filter</b>	Optional	Optional	✓	Optional	Optional	✓
<b>Built-in Optical Image Stabilizer</b>	✓	✓	✓	--	✓	✓
<b>Auto Focus System</b>	--	--	--	--	--	--

\*When using macro, the minimum shooting distance and the shooting distance at time of closest proximity will differ. Please see the manual for details.



CJ12x4.3B	CJ20ex7.8B	CJ25ex7.6B	CJ45ex9.7B	CJ45ex13.6B
CJ12ex4.3B IASE S	CJ20ex 7.8 IASE S	CJ25ex7.6B IASE S	CJ45ex9.7B IASE-V H	CJ45ex13.6B IASE-V H
12x	20x	25x	45x	45x
2.0x	2.0x	2.0x	2.0x	2.0x
4.3-52mm 8.6-104mm	7.8-156mm 15.6-312mm	7.8-156mm 15.6-312mm	9.7 - 437 mm 19.4 - 874 mm	13.6 - 612 mm 27.2 - 1224 mm
1:1.8 at 4.3-40mm 1:2.4 at 52mm 1:3.6 at 8.6-80mm 1:4.8 at 104mm	1:1.8 at 7.8-108mm 1:2.6 at 156mm 1:3.6 at 15.6-216mm 1:5.2 at 312mm	1:0.2.0 (7.6-118 mm) 1:0.2.9 (190 mm) 1:0.4.0 (15.2-236 mm) 1:0.5.8 (380 mm)	1:2.0 at 9.7-224 mm 1:3.9 at 437mm 1:4.0 at 19.4-448mm 1:7.8 at 874mm	1:2.8 at 13.6-312 mm 1:5.5 at 612 mm 1:5.6 at 27.2-624 mm 1:11.0 at 1224 mm
96.3° x 64.2° at 4.3mm 10.5° x 5.9° at 51.6mm 58.3° x 34.9° at 8.6mm 5.3° x 3.0° at 103.2mm	63.2° x 38.2° at 7.8mm 3.5° x 2.0° at 156mm 34.2° x 19.6° at 15.6mm 1.8° x 1.0° at 312mm	64.6° x 39.1° (7.6 mm) 2.89° x 1.63° (190 mm) 1:0.4.0 (15.2-236 mm) 35.1° x 20.1° (15.2 mm) 1.45° x 0.81° (380 mm)	52.7° x 31.1° at 9.7mm 1.26° x 0.71° at 437mm 27.8° x 15.8° at 19.4mm 0.63° x 0.35° at 874mm	38.9° x 22.5° at 13.6 mm 0.90° x 0.51° at 612 mm 20.0° x 11.3° at 27.2 mm 0.45° x 0.25° at 1224 mm
0.30m	0.80m	0.80 m	2.80m	2.80m
76.4 x 43.0cm at 4.3mm 6.0 x 3.4cm at 52mm 38.2 x 21.5cm at 8.6mm 3.0 x 1.7cm at 104mm	91.7 x 51.6cm at 7.8mm 4.8 x 2.7cm at 156mm 45.9 x 25.8cm at 15.6mm 2.4 x 1.4cm at 312mm	93.9 x 52.8 cm (7.6 mm) 3.9 x 2.2 cm (190 mm) 48.1 x 27.1 cm (15.2 mm) 2.0 x 1.1 cm (380 mm)	254.3 x 143.0 cm at 9.7mm 5.8 x 3.3 cm at 437mm 127.2 x 71.5 cm at 19.4mm 2.9 x 1.7 cm at 874mm	182.9 x 102.9 cm at 13.6 mm 4.2 x 2.4 cm at 612 mm 91.5 x 51.5 cm at 27.2 mm 2.1 x 1.2 cm at 1224 mm
163.5 x 108 x 247.8 mm	169.9 x 114.4 x 230.0 mm	169.5 x 114.1 x 223.3 mm	173.2 x 147.5 x 337.0 mm	173.2 x 147.5 x 355.0 mm
2.1kg	2.18kg	1.99 kg	5.60 kg	5.64 kg
Optional	Optional	Optional	Optional	Optional
--	--	--	✓	✓
--	--	--	--	--

✓ Standard — Not Applicable

- Please refer to page 10, regarding the difference between HDTV and SDTV lenses. Please note that HDTV lenses also perform excellently when they are adopted to SDTV cameras.
- M.O.D. = Minimum Object Distance
- Black colour cover lenses are also available as an alternative to the white colour lenses.

# UHD 4K 2/3" LENSES



	CJ14ex4.3B	CJ15ex8.5B	CJ18ex7.6B	CJ18ex28B	CJ24ex7.5B
<b>Model Number</b>	CJ14ex4.3B IRSE S/ IASE S	CJ15ex8.5B KRSE-V	CJ18ex7.6B IRSE S/ IASE S	CJ18ex28B IRSE S/ IASE S	CJ24ex7.5B IRSE S/ IASE S
<b>Zoom Ratio</b>	14x	15x	18x	18x	24x
<b>Built-in Extender</b>	2.0x	--	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	4.3-60mm 8.6-120 mm	8.5-128 mm	7.6-137 mm 15.2-274 mm	28 - 500 mm 56 - 1000 mm	7.5-180mm 15.0-360mm
<b>Maximum Relative Aperture (with Extender)</b>	1:1.8 (4.3-40 mm) 1:2.7 (60mm) 1:3.6 (8.6-30mm) 1:5.4 (120mm)	1:2.5 (8.5 - 68 mm) 1:4.7 (128 mm)	1:1.8 (7.6-103mm) 1:2.4 (137mm) 1:3.6 (15.2-206mm) 1:4.8 (274mm)	1:2.8 (28 - 286 mm) 1:4.9 (500 mm) 1:5.6 (56 - 572 mm) 1:9.8 (1000 mm)	1:1.8 (7.5-120mm) 1:2.7 (180mm) 1:3.6 (15-240mm) 1:5.4 (360mm)
<b>Angular Field of View (with Extender)</b> 16:9 Aspect Ratio (9.6 x 5.4 mm)	96.3° x 64.2° (4.3mm) 91° x 5.2° (60mm) 58.3° x 34.9° (8.6mm) 4.6° x 2.6° (120mm)	58.9° x 35.2° (8.5 mm) 4.3° x 2.4° (128 mm)	64.6° x 39.1° (7.6mm) 4.0° x 2.3° (137mm) 35.1° x 20.1° (15.2mm) 2.0° x 1.1° (274mm)	19.5° x 11.0° (28 mm) 110° x 0.62° (500 mm) 9.8° x 5.5° (56 mm) 0.55° x 0.31° (1000 mm)	65.2° x 39.6° (7.5mm) 31° x 1.7° (180mm) 33.5° x 20.4° (15mm) 1.5° x 0.9° (360mm)
<b>M.O.D. from Lens Front</b>	0.30m	0.80m	0.56m	2.2m	0.80m
<b>Object Dimensions at M.O.D. (with Extender)</b> 16:9 Aspect Ratio (9.6 x 5.4mm)	76.4 x 43.0 cm at 4.3mm 5.2 x 2.9 cm at 60 mm 33.2 x 21.5 cm at 8.6mm 2.6 x 1.5 cm at 120mm	95.8 x 53.9 cm (8.5 mm) 6.4 x 3.6 cm (128 mm)	65.5 x 36.8 cm at 7.6mm 3.8 x 2.1 cm at 137mm 32.8 x 18.4 cm at 15.2mm 1.9 x 1.1 cm at 274m	71.0 x 39.9 cm (28 mm) 4.1 x 2.3 cm (500 mm) 35.5 x 20.0 cm (56 mm) 2.1 x 1.2 cm (1000 mm)	96.0 x 54.0 cm at 7.5mm 3.1 x 1.7 cm at 180mm 48.0 x 27.0 cm at 15mm 2.1 x 1.2 cm at 360mm
<b>Approx. Size (WxHxL)</b>	163.5 x 108.0 x 247.8 mm	170.2 x 116.2 x 239.5 mm	160.5 x 105.0 x 206.2 mm	177.8 x 122.5 x 268.3 mm	164.6 x 109.1 x 221.4 mm
<b>Approx. Mass</b>	2.11 kg	2.03 kg	1.65 kg	2.76 kg	1.82 kg
<b>Protection Filter</b>	Optional	Optional	Optional	Optional	Optional
<b>Built-in Optical Image Stabilizer</b>	--	Yes	--	--	--
<b>Auto Focus System</b>	--	--	--	--	--

# UHD DIGISUPER 122

UHD DIGISUPER 122 - our 4K Premium flagship broadcast lens. As our most refined lens designed to support 4K UHD broadcast systems, it boasts extremely high optical performance that surpasses even 4K criteria and, at the same time, embodies the ease of operation that are ideally suited for use in broadcast television production.

**High zoom ratio and long focal length**  
While displaying performance that surpasses 4K, the lens has the high zoom ratio (86x) and long focal length (800 mm) desired by many in television production.

**Optical performance that goes beyond 4K**  
This lens has outstanding performance that goes beyond 4K resolution, all the way from screen centre to the edges. Picture sharpness is maintained over the focal range of the lens and with changes in subject distance from the lens.

**Remotely operable macro function as standard**  
When the focal length is changed with the zoom while shooting in macro, the focus position also changes. This feature can be utilized to support special techniques in which the focus position can be shifted within the same shot just by using the zoom.

**Optical performance that goes beyond 4K even when using the built-in 2x extender and image stabiliser (function that counters lens-camera inadvertent movements and vibrations).**  
Thanks to the precision of its high-grade components and assembly, the lens achieves optical performance that goes beyond 4K even when the built-in 2x extender has been engaged. Also featured is an optical shift-type image stabilising mechanism of Canon's highest grade, helping to achieve image stabilising performance commensurate with 4K.

**Applicability and ease of operation ideally suited to 4K shooting**  
Since the lens achieves the zoom ratio, long focal length and size as well as the servo speed and stability required for the telecasting of live sports events and other applications, it ensures the applicability and ease of operation ideally suited to 4K shooting.

**Compatibility with HD lens systems**  
The lens enables the use of the same Canon standard controllers for zoom and focus as well as servo modules currently used by HD equipment. It comes with a 20-pin connector compatible with virtual units and that enables high-accuracy position information of the zoom, focus and iris to be read out.

# UHDgc

UHDgc - combines 2/3" 4K camera optical performance with the same practicality and operability found in HD lenses (high specifications, compact size, light weight). And for customers considering a shift to 4K system in the future, this 4K lens series is the popular class at an affordable price that users can truly consider a good up-front investment.

**Minimizes axial and magnification chromatic aberration**  
Optimum arrangement of fluorite and UD glass delivers exceptional color reproduction to every corner of the image.

**Optical performance to support 4K cameras**  
Our exclusive optical design technology ensures optical performance to support 4K cameras.

**Virtual Systems**  
The high-resolution 16-bit encoder makes detailed representation of images possible. The accurate position information detection makes calibration easy during CG synthesis.

**Operability**  
Three Canon-made 20-pin connectors are provided. This ensures integration with virtual terminals even with a full servo setup with focus and zoom controllers connected.

**Quick power-on**  
With its absolute value encoder, it can power on without initialization. Camera-side aberration correction function, position detection, and viewfinder position display are possible at time of start-up.

**Built in 2x extender**  
Delivers 4K camera optical performance even when using 2K.

Control Accessories for Studio/Field Lenses  
Please refer to page 26

# STUDIO/FIELD LENSES

## DIGISUPER Series for HDTV / SDTV System

The DIGISUPER series lenses are controlled by Canon's ground breaking Digital Servo System.



See page 20 & 21

## DIGISUPER 22 xs for Portable Camera

The DIGISUPER 22 xs is a studio lens based on a new concept to be used with portable cameras.



See page 22



Horizontal Field of View (16:9)	72.9°	66.7°	58.3°	56.1°	54.6°	3.4°	1.02°	0.69°	0.67°	0.59°
Focal Length (mm)	6.5	7.3	8.6	9	9.3	161	540	800	820	930

Studio Lens	XJ22x7.3B	Compact Studio Lens
	XJ27x6.5B	Wide Angle Studio Lens
	XJ27x6.5B AF	Wide Angle Studio Lens with Advanced Auto Focus Function
Field Lens	XJ60x9B	Affordable Field Lens
	XJ76x9B	Standard Field Lens with Superb Quality and Performance
	XJ80x8.8B	Premium Field Lens with Superb Quality and Advanced Image Stabilizer
	XJ86x9.3B AF	Telephoto Field Lens with Auto Focus and Image Stabilizer
	XJ95x8.6B	Telephoto Field Lens with Advanced Image Stabilizer
	XJ100x9.3B	Flagship Field Lens with Image Stabilizer
	XJ100x9.3B AF	Flagship Field Lens with Auto Focus and Image Stabilizer

# STUDIO/FIELD LENSES: HDTV



	DIGISUPER 100AF	DIGISUPER 100	DIGISUPER 95
<b>Model Number</b>	XJ100x9.3B AF	XJ100x9.3B	XJ95x8.6B
<b>Zoom Ratio</b>	100x	100x	95x
<b>Built-in Extender</b>	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	9.3-930mm 18.6-1860mm	9.3-930mm 18.6-1860mm (2.0x)	8.6-820mm 17.2-1640mm (2.0x)
<b>Maximum Relative Aperture (with Extender)</b>	1:1.7 at 9.3-296mm 1:4.7 at 930mm 1:3.4 at 18.6-592mm (2.0x) 1:9.4 at 1860mm	1:1.7 at 9.3-296mm 1:4.7 at 930mm 1:3.4 at 18.6-592mm (2.0x) 1:9.4 at 1860mm (2.0x)	1:1.7 at 8.6-340mm 1:4.1 at 820mm 1:3.4 at 17.2-680mm (2.0x) 1:8.2 at 1640mm (2.0x)
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	50.6° x 39.1° at 9.3mm 0.54° x 0.41° at 930mm 26.6° x 20.1° at 18.6mm (2.0x) 0.27° x 0.20° at 1860mm	50.6° x 39.1° at 9.3mm 0.54° x 0.41° at 930mm 26.6° x 20.1° at 18.6mm (2.0x) 0.27° x 0.20° at 1860mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	54.6° x 32.4° at 9.3mm 0.59° x 0.33° at 930mm 28.9° x 16.5° at 18.6mm (2.0x) 0.30° x 0.17° at 1860mm	54.6° x 32.4° at 9.3mm 0.59° x 0.33° at 930mm 28.9° x 16.5° at 18.6mm (2.0x) 0.30° x 0.17° at 1860mm (2.0x)
<b>M.O.D. from Lens Front</b>	3.0m	3.0m	3.0m
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	253.9 x 190.4cm at 9.3mm 2.54 x 1.90cm at 930mm 127.0 x 95.2cm at 18.6mm (2.0x) 1.27 x 0.95cm at 1860mm	253.9 x 190.4cm at 9.3mm 2.54 x 1.90cm at 930mm 127.0 x 95.2cm at 18.6mm (2.0x) 1.27 x 0.95cm at 1860mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	276.4x155.5cm at 9.3mm 2.76x1.56cm at 930mm 138.2 x 77.8cm at 18.6mm (2.0x) 1.38 x 0.78cm at 1860mm	276.4x155.5cm at 9.3mm 2.76x1.56cm at 930mm 138.2 x 77.8cm at 18.6mm (2.0x) 1.38 x 0.78cm at 1860mm (2.0x)
<b>Approx. Size (WxHxL)</b>	250.6 x 255.5 x 661.5mm	250.6 x 255.5 x 610mm	250.6 x 255.5 x 610mm
<b>Approx. Mass</b>	26.8kg (59.3lbs)	23.5kg (51.8lbs)	23.2kg (51.1lbs)
<b>Macro</b>	--	--	--
<b>Protection Filter</b>	✓	✓	Optional
<b>Built-in Optical Image Stabilizer</b>	✓	✓	✓
<b>Crossover Type</b>	--	--	--
<b>Auto Focus System</b>	✓	--	--

	DIGISUPER 86AF	DIGISUPER 80	DIGISUPER 76	DIGISUPER 60 xs
<b>Model Number</b>	XJ86x9.3B AF	XJ80x8.8B	XJ76x9B	XJ60x9B IE-D
<b>Zoom Ratio</b>	86x	80x	76x	60x
<b>Built-in Extender</b>	2.0x	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	9.3-800mm 18.6-1600mm (2.0x)	8.8-710mm 17.6-1420mm (2.0x)	9-690mm 18-1380mm (2.0x)	9-540mm 18-1080mm (2.0x)
<b>Maximum Relative Aperture (with Extender)</b>	1:1.7 at 9.3-340mm 1:4.0 at 800mm 1:3.4 at 18.6-680mm (2.0x) 1:8.0 at 1600mm	1:1.7 at 8.8-340mm 1:3.55 at 710mm 1:3.4 at 17.6-680mm (2.0x) 1:7.1 at 1420mm	1:1.7 at 9-340mm 1:3.45 at 690mm 1:3.4 at 18-680mm (2.0x) 1:6.9 at 1380mm	1:1.7 at 9-306mm 1:3.0 at 540mm 1:3.4 at 18-612mm (2.0x) 1:6.0 at 1080mm
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	50.6° x 39.1° at 9.3mm 0.63° x 0.47° at 800mm 26.6° x 20.1° at 18.6mm (2.0x) 0.32° x 0.24° at 1600mm	53.1° x 41.1° at 8.8mm 0.71° x 0.53° at 710mm 28.1° x 21.2° at 17.6mm (2.0x) 0.36° x 0.27° at 1420mm	52.1° x 40.3° at 9mm 0.73° x 0.55° at 690mm 27.5° x 20.8° at 18mm (2.0x) 0.37° x 0.27° at 1380mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	54.6° x 32.4° at 9.3mm 0.69° x 0.39° at 800mm 28.9° x 16.5° at 18.6mm (2.0x) 0.34° x 0.19° at 1600mm	57.2° x 34.1° at 8.8mm 0.77° x 0.44° at 710mm 30.5° x 17.4° at 17.6mm (2.0x) 0.39° x 0.22° at 1420mm	56.1° x 33.4° at 9mm 0.80° x 0.45° at 690mm 29.9° x 17.1° at 18mm (2.0x) 0.40° x 0.22° at 1380mm
<b>M.O.D. from Lens Front</b>	3.0m	3.0m	3.0m	2.8m
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	253.9 x 190.4cm at 9.3mm 2.8 x 2.1cm at 800mm 127.0 x 95.2cm at 18.6mm (2.0x) 3.2 x 1.8cm at 800mm	266.8 x 200.1cm at 8.8mm 3.4 x 2.6cm at 710mm 133.4 x 100.1cm at 17.6mm (2.0x) 1.7 x 1.3cm at 1420mm	259.9 x 194.9cm at 9mm 3.5 x 2.6cm at 690mm 130.0 x 97.5cm at 18mm (2.0x) 1.8 x 1.3cm at 1380mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	276.4 x 155.5cm at 9.3mm 3.2 x 1.8cm at 800mm 138.2 x 77.8cm at 18.6mm (2.0x) 1.6 x 0.9cm at 1600mm	290.0 x 163.1cm at 8.8mm 3.7 x 2.1cm at 710mm 145.0 x 81.6cm at 17.6mm (2.0x) 1.9 x 1.1cm at 1420mm	282.4 x 158.9cm at 9mm 3.8 x 2.1cm at 690mm 141.2 x 79.5cm at 18mm (2.0x) 1.9 x 1.1cm at 1380mm
<b>Approx. Size (WxHxL)</b>	250.6 x 255.5 x 661.5mm	250.6 x 255.5 x 610mm	250.6 x 255.5 x 610mm	250.6 x 255.5 x 547.8mm
<b>Approx. Mass</b>	26.8kg (59.3lbs)	23.2kg (51.1lbs)	23.0kg (50.6lbs)	19.9kg (43.8lbs)
<b>Macro</b>	--	--	--	--
<b>Protection Filter</b>	✓	Optional	Optional	Optional
<b>Built-in Optical Image Stabilizer</b>	✓	✓	--	--
<b>Crossover Type</b>	--	--	--	Optional
<b>Auto Focus System</b>	✓	--	--	--

✓ Standard — Not Applicable

Please refer to page 10, regarding the difference between HDTV and SDTV lenses. Please note that HDTV lenses also perform excellently when they are adopted to SDTV cameras.

M.O.D. = Minimum Object Distance

Black colour cover lenses are also available as an alternative to the white colour lenses.

## STUDIO/FIELD LENSES: HDTV



**HDXS** DIGISUPER



**HDXS** DIGISUPER

## COMPACT STUDIO LENS



**HDXS** DIGISUPER

	DIGISUPER 27AF	DIGISUPER 27	DIGISUPER 22 xs
<b>Model Number</b>	XJ27x6.5B AF	XJ27x6.5B	XJ22x7.3B IE-D
<b>Zoom Ratio</b>	27x	27x	22x
<b>Built-in Extender</b>	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	6.5-180mm 13-360mm (2.0x)	6.5-180mm 13-360mm (2.0x)	7.3-161mm 14.6-322mm (2.0x)
<b>Maximum Relative Aperture (with Extender)</b>	1:1.5 at 6.5-123mm 1:2.2 at 180mm 1:3.0 at 13-246mm (2.0x) 1:4.4 at 360mm	1:1.5 at 6.5-123mm 1:2.2 at 180mm 1:3.0 at 13-246mm (2.0x) 1:4.4 at 360mm	1:1.8 at 7.3-111.5mm 1:2.6 at 161mm 1:3.6 at 14.6-223mm (2.0x) 1:5.2 at 322mm
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	68.2° x 53.8° at 6.5mm 2.8° x 2.1° at 180mm 37.4° x 28.5° at 13mm 1.4° x 1.1° at 360mm (2.0x)	68.2° x 53.8° at 6.5mm 2.8° x 2.1° at 180mm 37.4° x 28.5° at 13mm 1.4° x 1.1° at 360mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	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 (2.0x)	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 (2.0x)
<b>M.O.D. from Lens Front</b>	0.6m (10mm with Macro)	0.6m (10mm with Macro)	0.8m (10mm with Macro)
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	97.0 x 72.8cm at 6.5mm 3.5 x 2.6cm at 180mm 48.5 x 36.4cm at 13mm 1.8 x 1.3cm at 360mm (2.0x)	97.0 x 72.8cm at 6.5mm 3.5 x 2.6cm at 180mm 48.5 x 36.4cm at 13mm 1.8 x 1.3cm at 360mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	106.1 x 59.7cm at 6.5mm 3.8 x 2.1cm at 180mm 53.1 x 29.9cm at 13mm 1.9 x 1.1cm at 360mm (2.0x)	106.1 x 59.7cm at 6.5mm 3.8 x 2.1cm at 180mm 53.1 x 29.9cm at 13mm 1.9 x 1.1cm at 360mm (2.0x)
<b>Approx. Size (WxHxL)</b>	250.6 x 255.5 x 567mm	250.6 x 255.5 x 550mm	165 x 175 x 336mm
<b>Approx. Mass</b>	23.3kg (51.4lbs)	21.9kg (48.3lbs)	6.1kg (13.42lbs)
<b>Macro</b>	Optional (Remote)	Optional (Remote)	Standard (Manual)
<b>Protection Filter</b>	Optional	Optional	--
<b>Built-in Optical Image Stabilizer</b>	--	--	--
<b>Crossover Type</b>	--	Optional	Optional
<b>Auto Focus System</b>	✓	--	--

✓ Standard — Not Applicable

- Please refer to page 10, regarding the difference between HDTV and SDTV lenses. Please note that HDTV lenses also perform excellently when they are adopted to SDTV cameras.
- M.O.D. = Minimum Object Distance
- Black colour cover lenses are also available as an alternative to the white colour lenses.

## COMPACT STUDIO LENS: DIGISUPER 22 XS

The DIGISUPER 22 xs is a “Compact HD Studio lens” specifically designed to be used with a portable camera. Incorporating Canon’s pioneering technologies it offers superior optical performance and ease of operation, compared with both HD portable lenses and SD Studio Box Type Lenses.



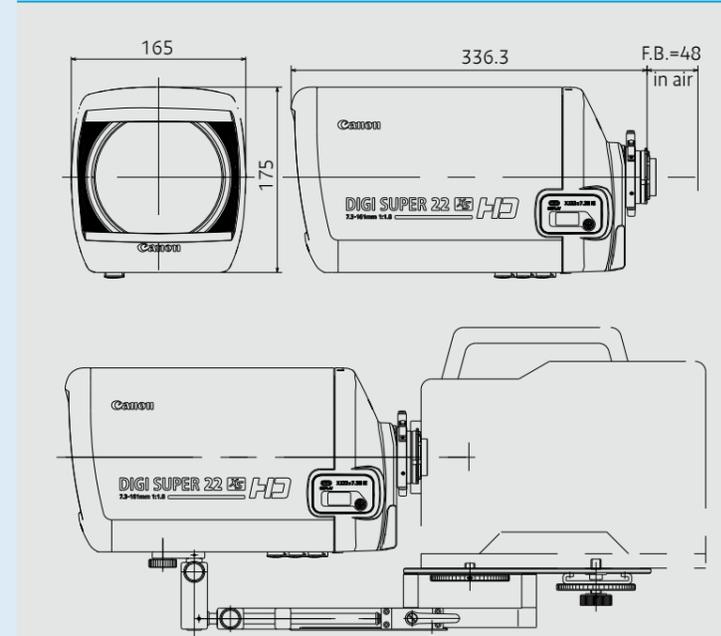
### High Optical Performance

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

### Small In Size, Light In Weight

In order to realize the best capabilities from the camera / lens combination, the lens was specifically designed to be as small and light as possible.

### Dimensions



The SUP-400 supporter for the DIGISUPER 22 xs is included as a standard component with the lens.

### Advanced Operation

Incorporating an “Encoder Device”, it has the capability to zoom from a very fast 0.5 sec. to a very slow 5 min. while improving the precision and repeatability of zoom, focus and iris control. The encoder device also enables the lens to be easily integrated into virtual studio applications.

### Diverse Functions

The DIGISUPER 22 xs is equipped with an information display, which enables diverse digital functions to be used easily and precisely.



## MAIN FUNCTIONS/ZOOM DEMAND

ZDJ-G01	FDJ-G01
ZDJ-S01	FDJ-S01



- 1 The unit pictured is the ZDJ-G01
- 2 Not available on the ZDJ-S01.
- 3 This is a framing preset switch on the ZDJ-S01

## Main features

### Frame Preset/Shuttle Shot/Speed Preset

ZDJ-G01  
ZDJ-S01<sup>4</sup>

This function moves to a prerecorded zoom position with the push of a switch. Frame preset and shuttle shot moves each at maximum speed, while speed preset moves at a prerecorded speed. Let go of the switch in shuttle shot to return to the original position. Moving speed with framing preset can be set with the ZDJ-G01.

- 4 Supports framing preset only.



### Zoom Track

ZDJ-G01  
ZDJ-S01

Zoom control range can be set for both the wide angle and telephoto sides, to control zoom range required for actual shooting.

### Other Functions

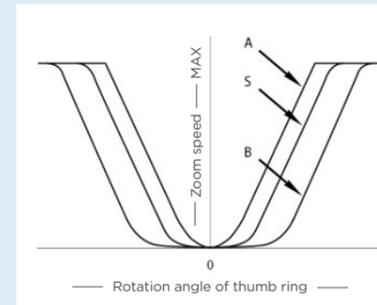
ZDJ-G01

User settings can be registered and functions can be assigned to switches from the display screen. Preset speeds can also be set, and curves can be selected. Users can also check connection status and see whether various functions are on or off. (See p. 9 for more details.)

## ZOOM CURVE

With zoom demand, the zoom curve (zoom speed curve characteristics according to thumb ring rotation angle) can be selected from provided patterns. The ZDJ-S01 features three types of zoom curves in total, while the ZDJ-G01 offers a total of 19 types; from these, three types of curves can be assigned to the selector switch so users can set the optimum zoom curve for the shooting setting, such as studio recording or live sports.

### Available Zoom Curves

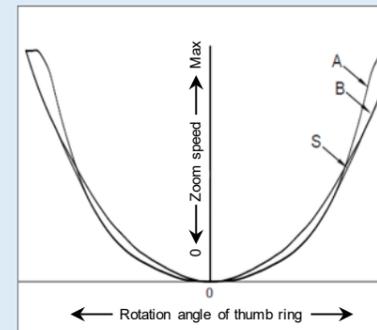


#### Output Curve 00\*

This is the standard zoom curve available in the ZDJ-G01/S01. Curve A offers a faster zoom speed with smaller thumb ring rotation angle, making it ideal for high-speed zoom operation. Curve B is the opposite of Curve A, making it useful for operation at lower zoom speeds. Curve S is midway between A and B.

ZDJ-G01

ZDJ-S01



#### Output Curve 09

This is an example of the selectable zoom curves available with the ZDJ-G01. This zoom curve is ideal for fine zoom operation at medium speed. Curve A gives more priority to fine zoom operation, while Curve B places greater emphasis on trackability. Curve S is similar to A in low speed ranges, and similar to Curve B in high speed ranges.

ZDJ-G01

ZDJ-S01

### Curve Selection and Settings



#### Display makes curve settings simple and clear

This is the standard zoom curve available in the ZDJ-G01/S01. Curve A offers a faster zoom speed with smaller thumb ring rotation angle, making it ideal for high-speed zoom operation. Curve B is the opposite of Curve A, making it useful for operation at lower zoom speeds. Curve S is midway between A and B.

ZDJ-G01

ZDJ-S01

Select using switch on side of main unit



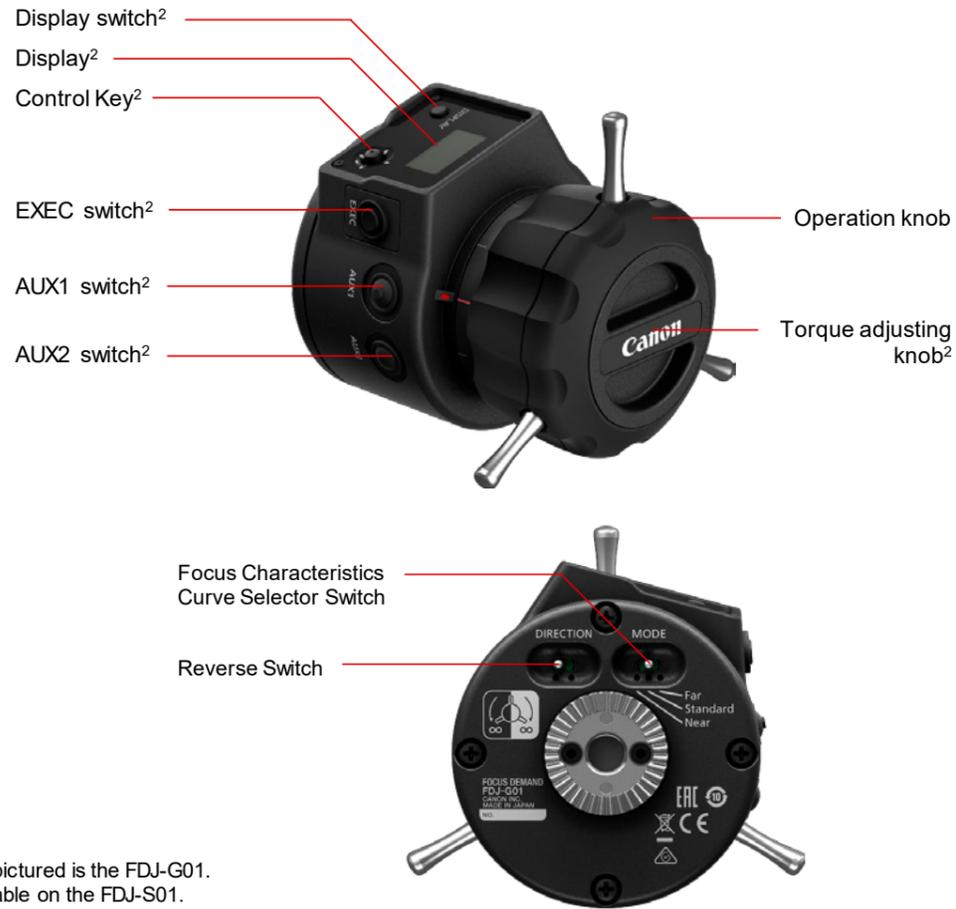
#### Switch curves directly with switch on side of unit

Switch from among three zoom curves including the assigned output curves according to the situation.

ZDJ-G01

ZDJ-S01

ZDJ-G01	FDJ-G01
ZDJ-S01	FDJ-S01



1 | The unit pictured is the FDJ-G01.  
2 | Not available on the FDJ-S01.

Main features

FDJ-G01

Focus Range Limit

Focusing within the required range is made possible by limiting the focus range (subject distance). This is effective for situations such as stage performances, where focus range is fixed to some extent.



Focus Preset

This feature lets users move from the current position to a predetermined focus position with the push of a switch. When released, focus returns to the position shown on the operation knob.



Fine Focus Mode 1/2

This function adjusts precision of focusing. Setting 1 sets a range and enables fine focusing within that range. Setting 2 enables fine focusing from the current focus position.



Other Features

User settings can be registered and functions can be assigned to switches from the display screen. Preset speeds can also be set, and curves can be selected. Users can also check connection status and see whether various functions are on or off. (See p. 10 for more details.)

ZDJ-G01	FDJ-G01
ZDJ-S01	FDJ-S01

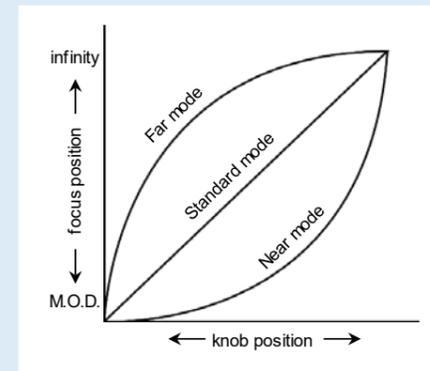
With the focus demand, the focus curve (focus position in relation to knob position) can be selected from provided patterns. The FDJ-S01 features three types of focus curves in total, while the FDJ-G01 offers a total of 19 types; users can switch between 9 types in Far mode and Near mode to choose the optimum focus curve for the shooting situation.

Available Focus Curves

FDJ-G01

FDJ-S01

Focusing within the required range is made possible by limiting the focus range (subject distance). This is effective for situations such as stage performances, where focus range is fixed to some extent.



Far mode

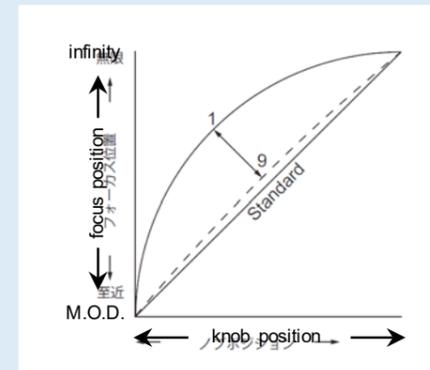
This is the curve in which the focus position changes less the more the knob is turned toward the infinity side. This makes fine adjustments easy on the infinity side.

Standard mode

This is the standard mode where focus position change is in direct relation to knob operation.

Near mode

This is the opposite of Far mode, in which focus position changes less the more the knob is turned toward the close side. This makes fine adjustments easy on the close side.



FDJ-G01

FDJ-S01

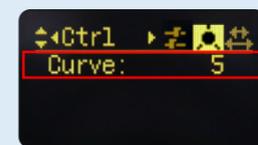
With the ZDJ-G01, users can select from nine types of curves<sup>1</sup>, numbered 1 through 9, in both Far mode and Near mode. The higher the number, the closer the curve is to a straight line. This enables fine curve adjustments for each shooting situation.

<sup>3</sup> Far and Near modes cannot be selected independently. The same curve number will be set.

Curve Selection and Settings

FDJ-G01

FDJ-S01



Display makes curve settings simple and clear

The nine types<sup>2</sup> of focus curves in Far and Near modes can be assigned to the curve selector switch easily using the display.

FDJ-G01

FDJ-S01



Select using switch on side of main unit

Switch on side of unit makes selecting faster

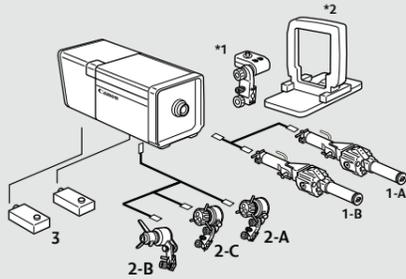
Users can switch between three assigned focus curves depending on usage situation.

# CONTROL ACCESSORIES FOR STUDIO/FIELD LENSES

## DIGITAL DIGISUPER SERIES

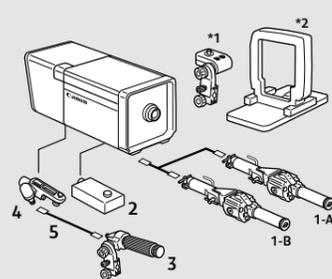
For :  
UHD DIGISUPER and DIGISUPER series

### FULL SERVO SYSTEM



1-A.	Zoom Demand ZDJ-G01	-
1-B.	Zoom Demand ZDJ-S01	-
2-A.	Focus Demand FDJ-G01	-
2-B.	Focus Demand FDJ-G11	-
2-C.	Focus Demand FDJ-S01	-
3.	Servo Module SMJ-E01 ( ` 2pcs)	-
*1	Switch Box	
*2	Supporter	

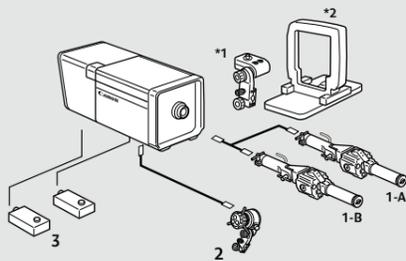
### SEMI-SERVO SYSTEM



1-A.	Zoom Demand ZDJ-G01	-
1-B.	Zoom Demand ZDJ-S01	-
2.	Servo Module SMJ-E01	-
3.	Flexible Focus Controller FFP-T61	-
4.	Flexible Module FMJ-702	-
5.	Flexible Cable 36"	-
*1	Switch Box	
*2	Supporter	

For :  
DIGISUPER 100AF / DIGISUPER 86AF / DIGISUPER 27AF

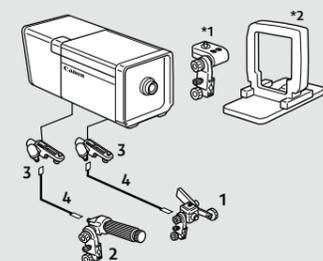
### FULL SERVO SYSTEM



1-A.	Zoom Demand ZDJ-G01	-
1-B.	Zoom Demand ZDJ-S01	-
2.	Focus Demand FDJ-G01	-
3.	Servo Module SMJ-E01 ( ` 2pcs)	-
*1	Switch Box	
*2	Supporter	

For :  
UHD DIGISUPER and DIGISUPER series

### FULL MANUAL SYSTEM



1.	Flexible Zoom Controller FZP-T61	1822A005
2.	Flexible Focus Controller FFP-T61	1822A007
3.	Flexible Module FMJ-702 ( ` 2pcs)	1822A072
4.	Flexible Cable 36" ( ` 2pcs)	-

\*A20P-12P demand cable (BDC-21) is required for use with XJ22x/portable lenses.

\*1 Switch Box is optionally available. The equivalent switches are integrated into Zoom Demands. It is recommended to have the Switch Box with Full Manual System.

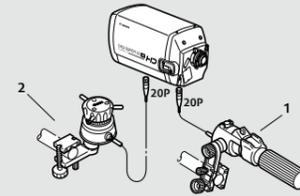
\*2 Lens Supporter is necessary for portable camera mounting. Some cameras need separate power supply for zoom and focus servo operation.

\*3 For DIGISUPER 100AF, DIGISUPER 86AF and DIGISUPER 27AF, FDJ-P31 is necessary to control the AF function. FDJ-P41 is also available for left hand users.

- Zoom Demand and Focus Demand with Pre-set Box is also available.
- For detail information, please contact a Canon Sales Office.

For :  
DIGISUPER 22 xs

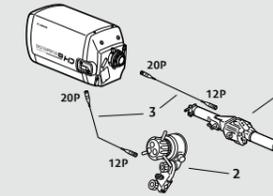
With Current ENG Demand



Kit Detail

No.	DESCRIPTION	
1	Digital Zoom Demand	ZSD-300D
2	Digital Focus Demand	FPD-400D

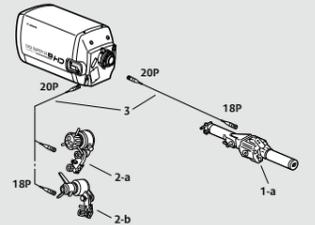
With Compact Field/Studio



Kit Detail

No.	DESCRIPTION	
1	Digital Zoom Demand	ZDJ-P01
2	Digital Focus Demand	FDJ-P01
3	Conversion Cable	BDC-20

With Current Field/Studio



Kit Detail

No.	DESCRIPTION	
1-a	Digital Zoom Demand	ZDJ-D02
2-a	Digital Focus Demand	FDJ-D02
2-b	Digital Focus Demand Propeller Type	FDJ-D12
3	Conversion Cable	BDC-10

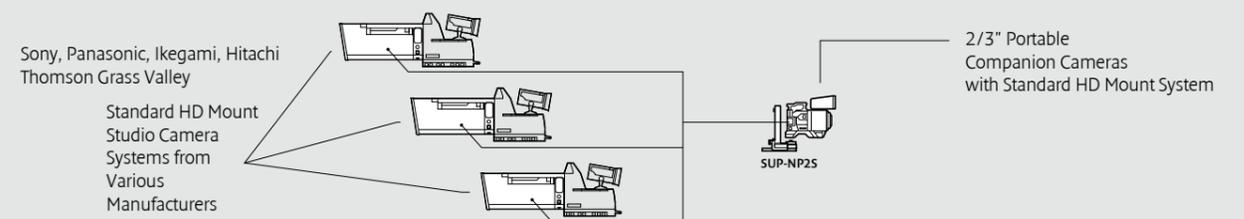
The DIGISUPER 22 xs can be used with our current Studio/Field lens controllers as well as those for our ENG lenses. At the same time, the lens also offers compatibility with our Compact Field/Studio demands by use of a conversion cable. \* The SUP-400 SUPPORTER is included as a standard component with the lens.

## STUDIO/FIELD LENSES MOUNT COMPATIBILITY

### TO USE CAMERA MANUFACTURER'S ORIGINAL MOUNT LENS

Studio/Field lenses are made with unique mounts corresponding to each manufacturer's Studio/Field cameras. To make the lenses compatible with Portable Studio/Field Companion cameras, the correct lens Support System must be chosen from the following.

Standard HD Mount (BTA)



# BROADCAST ENG/EFP LENSES

## ENG/EFP lens for HDTV / SDTV System

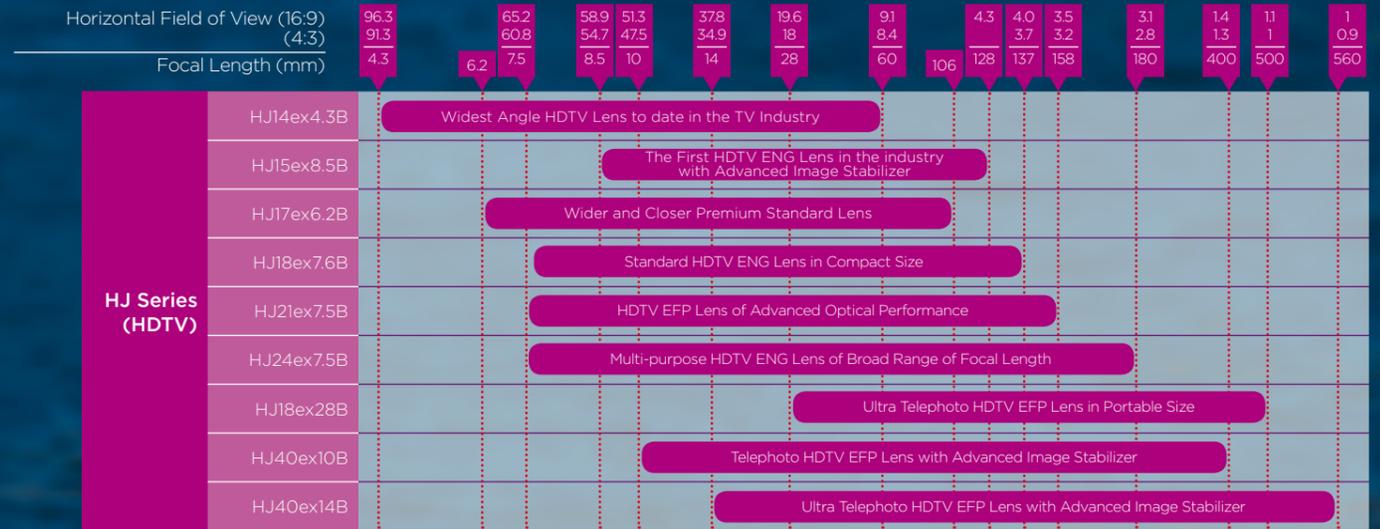
Canon offers a variety of Broadcast ENG/EFP lenses, including both HDTV and SDTV versions. Please refer to page 10 regarding the difference between HDTV and SDTV lenses.



See page 32

Please note that the HDTV lenses perform excellently when they are used on SDTV cameras. Please refer to page 7, 9 regarding HDxs and HDgc series lenses. All Broadcast ENG/EFP lenses are equipped with Canon's "xs" technology as well as our enhanced "Digital Drive" which is explained on page 34 & 35.

The DIGISUPER 22 xs is a box type lens developed to be used with a portable camera. The lens provides higher optical performance compared with the HD portable lenses and higher versatility as opposed to the large box type lenses. Please refer to page 17 for the details.



# 2/3" ENG/EFP LENSES: HDTV



	HJ40x14B IASD-V	HJ40x10B IASD-V	HJ18ex28B IASE S	
<b>Zoom Ratio</b>	40x	40x	18x	
<b>Image Size</b>	2/3"	2/3"	2/3"	
<b>Built-in Extender</b>	2.0x	2.0x	2.0x	
<b>Range of Focal Length (with Extender)</b>	14-560mm 28-1120mm (2.0x)	10-400mm 20-800mm (2.0x)	28-500mm 56-1000mm (2.0x)	
<b>Maximum Relative Aperture (with Extender)</b>	1:2.8 at 14-307mm 1:5.1 at 560mm 1:5.6 at 28-614mm 1:10.2 at 1120mm (2.0x)	1:2.0 at 10-220mm 1:3.65 at 400mm 1:4.0 at 20-440mm 1:7.3 at 800mm (2.0x)	1:2.8 at 28-286mm 1:4.9 at 500mm 1:5.6 at 56-572mm 1:9.8 at 1000mm (2.0x)	
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	34.9° x 26.5° at 14mm 0.9° x 0.7° at 560mm 17.9° x 13.4° at 28mm 0.5° x 0.3° at 1120mm (2.0x)	47.5° x 36.5° at 10mm 1.3° x 0.9° at 400mm 24.8° x 18.7° at 20mm 0.6° x 0.5° at 800mm (2.0x)	18.0° x 13.5° at 28mm 1.0° x 0.8° at 500mm 9.0° x 6.8° at 56mm 0.5° x 0.4° at 1000mm (2.0x)
		<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	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 (2.0x)	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 (2.0x)
<b>M.O.D. from Lens Front</b>	2.8m (10mm with Macro)	2.8m (10mm with Macro)	2.2m (10mm with Macro)	
<b>M.O.D. from Image Plane</b>	3.20m	3.18m	2.52m	
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	162.3 x 121.7cm at 14mm 4.1 x 3.1cm at 560mm 81.2 x 60.9cm at 28mm 2.1 x 1.6cm at 1120mm (2.0x)	227.7 x 170.8cm at 10mm 5.7 x 4.3cm at 400mm 113.9 x 85.4cm at 20mm 2.9 x 2.2cm at 800mm (2.0x)	65.4 x 49.1cm at 28mm 3.8 x 2.9cm at 500mm 32.7 x 24.6cm at 56mm 1.9 x 1.5cm at 1000mm (2.0x)
		<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	177.1 x 99.5cm at 14mm 4.5 x 2.5cm at 560mm 88.6 x 49.8cm at 28mm 2.3 x 1.3cm at 1120mm (2.0x)	248.4 x 139.7cm at 10mm 6.2 x 3.5cm at 400mm 124.2 x 69.9cm at 20mm 3.1 x 1.8cm at 800mm (2.0x)
<b>Approx. Size (WxHxL)</b>	174.1 x 133 x 355.5mm	174.1 x 133 x 335.4mm	176.2 x 120.8 x 268.3mm	
<b>Approx. Mass (IRSE/IASE)</b>	5.45kg (12.02lbs)	5.40kg (11.90lbs)	2.56kg (5.65lbs)	
<b>Filter Thread Size (Hood/Lens Barrel)</b>	— /127mm P0.75	— /127mm P0.75	127mm P0.75/ —	
<b>Built-in Optical Image Stabilizer</b>	✓	✓	—	
<b>Information Display</b>	—	—	✓	

	HJ24ex7.5B IRSE S/IASE S	HJ21ex7.5B IASE S	HJ18ex7.6B IRSE S/IASE S	HJ17ex6.2B IRSE S/IASE S	
<b>Zoom Ratio</b>	24x	21x	18x	17x	
<b>Image Size</b>	2/3"	2/3"	2/3"	2/3"	
<b>Built-in Extender</b>	2.0x	2.0x	2.0x	2.0x	
<b>Range of Focal Length (with Extender)</b>	7.5-180mm 15.0-360mm (2.0x)	7.5-158mm 15-316mm (2.0x)	7.6-137mm 15.2-274mm (2.0x)	6.2-106mm 12.4-212mm (2.0x)	
<b>Maximum Relative Aperture (with Extender)</b>	1:1.8 at 7.5-120mm 1:2.7 at 180mm 1:3.6 at 15.0-240mm 1:5.4 at 360mm (2.0x)	1:1.9 at 7.5-116mm 1:2.6 at 158mm 1:3.8 at 15-232mm 1:5.2 at 316mm (2.0x)	1:1.8 at 7.6-103mm 1:2.4 at 137mm 1:3.6 at 15.2-206mm 1:4.8 at 274mm (2.0x)	1:1.8 at 6.2-65.8mm 1:2.9 at 106mm 1:3.6 at 12.4-131.6mm 1:5.8 at 212mm (2.0x)	
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	60.8° x 47.5° at 7.5mm 2.8° x 2.1° at 180mm 32.7° x 24.8° at 7.5mm 1.4° x 1.1° at 180mm (2.0x)	60.8° x 47.5° at 7.5mm 3.2° x 2.4° at 158mm 32.7° x 24.8° at 15mm 1.6° x 1.2° at 316mm (2.0x)	60.1° x 46.9° at 7.6mm 3.7° x 2.8° at 137mm 35.1° x 20.1° at 15.2mm 1.8° x 1.4° at 274mm (2.0x)	70.7° x 56.0° at 6.2mm 4.8° x 3.6° at 106mm 39.1° x 29.8° at 12.4mm 2.4° x 1.8° at 212mm (2.0x)
		<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	65.2° x 39.6° at 7.5mm 3.1° x 1.7° at 180mm 35.5° x 20.4° at 7.5mm 1.5° x 0.9° at 180mm (2.0x)	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 (2.0x)	64.6° x 39.1° at 7.6mm 4.0° x 2.3° at 137mm 35.1° x 20.1° at 15.2mm 2.0° x 1.1° at 274mm (2.0x)
<b>M.O.D. from Lens Front</b>	0.85mm (10mm with macro)	0.85mm (10mm with Macro)	0.56m (10mm with Macro)	0.4m (10mm with Macro)	
<b>M.O.D. from Image Plane</b>	1.16m	1.16m	0.81m	0.69m	
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	88.3 x 66.2cm at 7.5mm 3.8 x 2.9cm at 180mm 44.2 x 33.1cm at 15.0mm 1.9 x 1.4cm at 360mm (2.0x)	110.1 x 82.6cm at 7.5mm 5.1 x 3.8cm at 158mm 55.1 x 41.3cm at 15mm 2.6 x 1.9cm at 316mm (2.0x)	55.9 x 44.9cm at 7.6mm 3.3 x 2.5cm at 137mm 30.0 x 22.5cm at 15.2mm 1.7 x 1.3cm at 274mm (2.0x)	66.9 x 50.2cm at 6.2mm 3.8 x 2.9cm at 106mm 33.5 x 25.1cm at 12.4mm 1.9 x 1.5cm at 212mm (2.0x)
		<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	96.0 x 54.0cm at 7.5mm 4.1 x 2.3cm at 180mm 48.0 x 27.0cm at 15.0mm 2.1 x 1.2cm at 360mm (2.0x)	120.4 x 67.7cm at 7.5mm 5.6 x 3.2cm at 158mm 60.2 x 33.9cm at 15mm 2.8 x 1.6cm at 316mm (2.0x)	65.5 x 36.8cm at 7.6mm 3.8 x 2.1cm at 137mm 32.8 x 18.4cm at 15.2mm 1.9 x 1.1cm at 274mm (2.0x)
<b>Approx. Size (WxHxL)</b>	164.6 x 109.1 x 221.4mm	175.2 x 119.8 x 260.1mm	160.5 x 105 x 206.2mm	165.0 x 109.5 x 240.5mm	
<b>Approx. Mass (IRSE/IASE)</b>	1.78kg (3.92lbs) / 1.86kg (4.10lbs)	— /2.69kg (5.94lbs)	1.58kg (3.48lbs)/1.66kg (3.65lbs)	1.97kg (4.34lbs)/2.05kg (4.52lbs)	
<b>Filter Thread Size (Hood/Lens Barrel)</b>	105mm P1/94mm P1	127mm P0.75/ —	— /82mm P0.75	105mm P1/ —	
<b>Built-in Optical Image Stabilizer</b>	—	—	—	—	
<b>Information Display</b>	✓	✓	✓	✓	

✓ Standard — Not Applicable

- Please refer to page 10, regarding the difference between HDTV and SDTV lenses. Please note that HDTV lenses also perform excellently when they are adopted to SDTV cameras.
- M.O.D. = Minimum Object Distance
- Black colour cover lenses are also available as an alternative to the white colour lenses.

# 2/3" ENG/EFP LENSES: HDTV



	HJ14ex4.3B IRSE S/IASE S	HJ15ex8.5B KRSE-V
Zoom Ratio	14x	15x
Image Size	2/3"	2/3"
Built-in Extender	2.0x	—
Range of Focal Length (with Extender)	4.3-60mm 8.6-120mm (2.0x)	8.5-128mm
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 (2.0x)	1:2.5 at 8.5-68mm 1:4.7 at 128mm
Angular Field of View (with Extender)	4:3 Aspect Ratio (8.8 x 6.6mm)	54.7° x 42.4° at 8.5mm 3.9° x 3.0° at 128mm
	16:9 Aspect Ratio (9.6 x 5.4mm)	58.9° x 35.2° at 8.5mm 4.3° x 2.4° at 128mm
M.O.D. from Lens Front	0.3m (10mm with Macro)	0.8m (10mm with Macro)
M.O.D. from Image Plane	0.59m	—
Object Dimensions at M.O.D. (with Extender)	4:3 Aspect Ratio (8.8 x 6.6mm)	87.4 x 65.6cm at 8.5mm 5.8 x 4.4cm at 128mm
	16:9 Aspect Ratio (9.6 x 5.4mm)	95.8 x 53.9cm at 8.5mm 6.4 x 3.6cm at 128mm
Approx. Size (WxHxL)	163.5 x 108.0 x 247.8mm	170.2 x 116.2 x 239.1mm
Approx. Mass (IRSE/IASE)	1.99kg (4.39lbs)/2.07kg (4.56lbs)	1.99kg (4.37lbs)
Filter Thread Size (Hood/Lens Barrel)	127mm P0.75/ —	— /82mm P0.75
Built-in Optical Image Stabilizer	—	✓
Information Display	✓	✓

✓ Standard — Not Applicable

- Please refer to page 10, regarding the difference between HDTV and SDTV lenses. Please note that HDTV lenses also perform excellently when they are adopted to SDTV cameras.
- M.O.D. = Minimum Object Distance
- Black colour cover lenses are also available as an alternative to the white colour lenses.

# WORLD'S FIRST HDTV PORTABLE LENS WITH BUILT-IN IMAGE STABILIZER

The HJ15ex8.5B KRSE-V is the world's first portable HD lens with built-in Optical Image Stabilization. Compact and lightweight the lens offers a high zoom ratio and wide angle of view and incorporates Canon's patented VAP-IS technology to ensure stable HD imagery in shooting environments that cause vibration and physical disturbances to the lens-camera system.

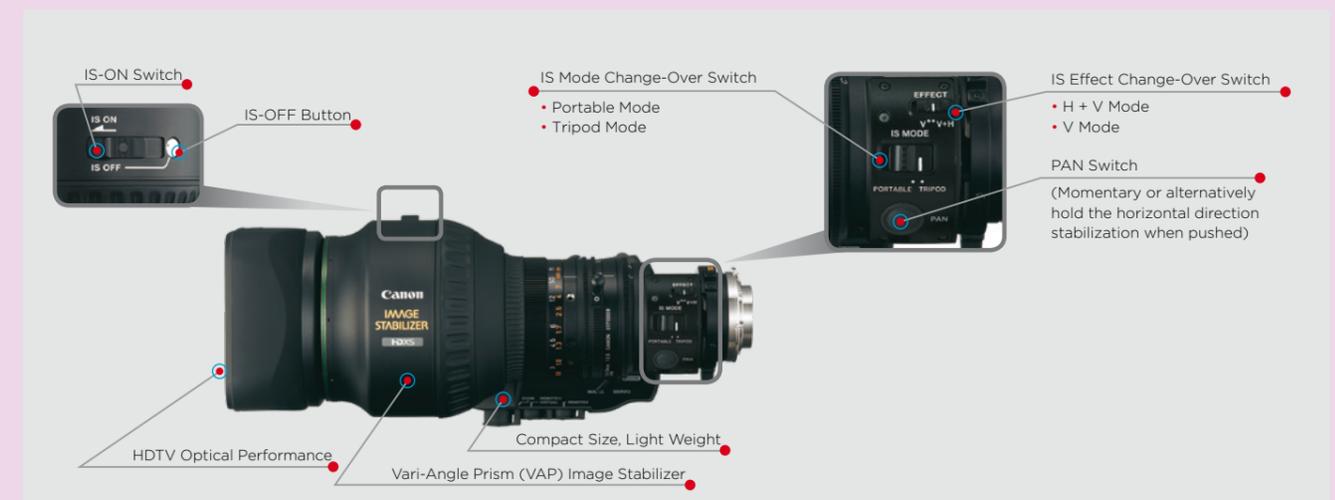
The Vari-angle Prism Image Stabilizer technology overcomes a wide range of disturbance frequencies throughout the entire zoom range, while maintaining a high optical performance, to ensure a high level of HD Image Stabilization. (See page 9 for the specification)



## MAIN FEATURES

- Full HDTV Optical Performance
- Powerful Image Stabilization throughout the entire zoom range
- Real-time compensation for a wide range of disturbance frequencies encountered by a camera operator who is shooting handheld while walking, running, or operating from a motorcycle pillion, within a moving vehicle, boat, or helicopter etc.
- **Various Stabilising Modes:** combination of two modes from two categories is available and each mode is simply set by changing the switches on the lens.

Select According to the Shooting Situation	Portable mode	Compensates for motion-related disturbances while shooting shoulder mounted or handheld
	Tripod mode	Effectively compensates for disturbances caused by unsteady platform or wind
Select According to the Direction of Disturbance	H+V mode	Optimises stabilisation when disturbance frequencies are both horizontal and vertical
	V mode	Effectively counters vertical disturbances while panning the lens-camera



# DIGITAL DRIVE ENG/EFP LENSES: FEATURES

HDgc (IRSE / IASE model) lenses incorporate an enhanced “Digital Drive” that delivers a wide range of features for improved ease of operation.

## 1. THREE PRESET FUNCTIONS

Canon’s Digital Drive provides the following “three preset functions”:

### Shuttle Shot

By memorising any two focal lengths, the Digital Drive can automatically “shuttle” between the two points, moving in either direction.



### Frame Preset

An angle of view can be preset in either of two memories (DD: one memory) and the lens will zoom to that position by simply pushing a button. During a performance, frame preset will reproduce the zoom position decided upon in rehearsal as often as you like either at maximum speed or a preset zoom speed.



### Speed Preset

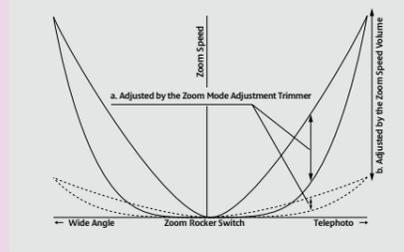
A specific zoom speed can be preset in memory and repeated as often as you like by simply pushing a button.



## 2. ZOOM MODE SELECT



One of several operational curves can be chosen, which will allow different zoom movement characteristics when operating the seesaw switch. This is accomplished as a linear adjustment as opposed to an adjustment done in steps.



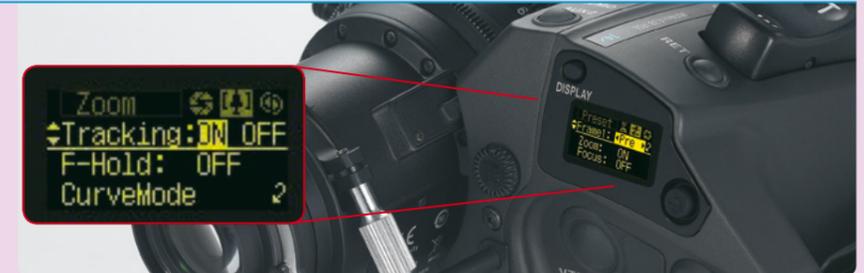
## 3. USER-CUSTOMISED SETTING



The drive unit can memorize 9 patterns of user-customised settings and also transmit the data between different drive units.

## 4. ZOOM TRACK

“Zoom Track” allows the camera operator to adjust the electronic focal length to their desired range by memorising zoom positions at both the tele and the wide side of the zoom.



## 5. IMPROVED MAXIMUM ZOOM AND FOCUS SERVO SPEED

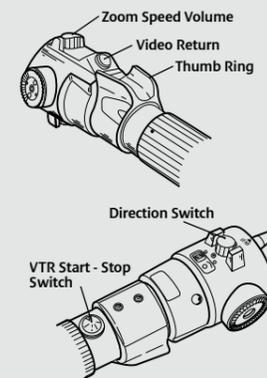
Zoom: 0.5 sec., Focus: 1.5 sec.



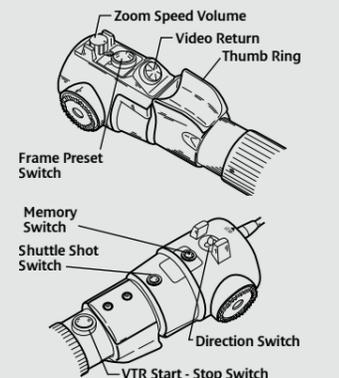
## 6. DEMAND SERIES TO SUPPORT DIGITAL FUNCTION

Canon offers a series of servo controllers for Digital Drive lenses. The ZSD-300D (zoom demand), FPD-400D (focus demand) and FPM-420D (focus servo module) are designed to support the Digital Drive’s unique functions. They are quickly and easily connected to the “Digital Drive” via a 20-pin one-touch type connector. With the FPD-400D, focus servo operational curve can also be selected, unlike a conventional focus demand. Except for the unique digital functions, the digital series of demands is fully compatible with conventional demands although a conversion cable may be required. (Please refer to Page 37.)

ZSD-300A/M (for Analog Drive Lens)



ZSD-300D (for Digital Drive Lens)



## 7. COMPATIBILITY WITH VIRTUAL STUDIO SYSTEM

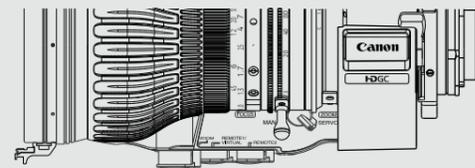
Canon has a series of HDxs/e-IFxs/HDgc (IRSE / IASE model) lenses, which are equipped with an enhanced digital drive unit. 16-bit resolution Rotary Encoder Devices are built into the enhanced digital drive unit, so the lens can be simply integrated into a virtual digital studio system without any additions. The encoders also enable superior precise control.

The zoom servo provides a dynamic range of 0.5 sec. quick zooms to over a 5 min. super slow zoom. Repeatability in focus and iris control is also much more precise. Canon’s unique technology allows the surprisingly small Encoder Device to be installed in the existing drive unit without changes in size or weight.

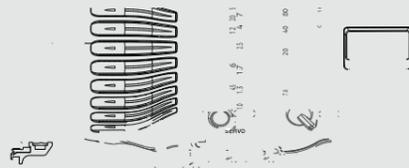


# CONTROL ACCESSORIES OF DIGITAL DRIVE ENG/EFP LENSES

IRSE TYPE



IASE (IASD) TYPE



# HDgc SERIES ENG LENSES

## HDgc Series ENG Lenses

The HDgc lens series is designed for the new generation of cost-effective HD acquisition systems and comprises a variety of HDTV ENG Lenses for 2/3", 1/2" and 1/3" image size cameras



See page 42



	Horizontal Field of View (16:9)	93.7	77.3	75.7	64.6	63.9	60.7	57.1	55.2	122	7	6.8	4.2	3.4	3.3	3.1	3
	Focal Length (mm) (2/3)	4.5	6	4.5	7.6	7.7	8.2	6.4	5	45	78	59	131	164	168	128	100
	(1/2)																
	(1/3)																
2/3"	KJ10ex4.5B	2/3" Wide Angle HDTV Lens															
	KJ17ex7.7B	2/3" Standard HDTV ENG Lens															
	KJ22ex7.6B	2/3" Multi-purpose HDTV ENG Lens															
	KJ13x6B	2/3" Wide Angle HDTV Lens without Extender															
	KJ20x8.2B	2/3" Multi-purpose HDTV ENG Lens with Extender															
1/2"	KH13ex4.5	1/2" Wide Angle HDTV Lens without Extender															
	KH20ex6.4	1/2" Multi-purpose HDTV ENG Lens without Extender															
1/3"	KT20x5B	1/3" Multi-purpose HDTV ENG Lens without Extender															

# HDgc SERIES LENSES: HDTV



HDGC 2/3"



HDGC 2/3"



HDGC 2/3"



HDGC 2/3"



HDGC 2/3"



HDGC 2/3"

	KJ22ex7.6B IRSE S/IASE S	KJ17ex7.7B IRSE S/IASE S	KJ10ex4.5B IRSE S/IASE S
<b>Zoom Ratio</b>	22x	17x	10x
<b>Image Size</b>	2/3"	2/3"	2/3"
<b>Built-in Extender</b>	2.0x	2.0x	2.0x
<b>Range of Focal Length (with Extender)</b>	7.6-168mm 15.2-336mm (2.0x)	7.7-131mm 15.4-262mm (2.0x)	4.5-45mm 9-90mm (2.0x)
<b>Maximum Relative Aperture (with Extender)</b>	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 (2.0x)	1:1.8 at 7.7-102.5mm 1:2.3 at 131mm 1:3.6 at 15.4-205mm 1:4.6 at 262mm (2.0x)	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 (2.0x)
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	60.1° x 46.9° at 7.6mm 3.0° x 2.3° at 168mm 32.3° x 24.5° at 15.2mm 1.5° x 1.1° at 336mm (2.0x)	59.5° x 46.4° at 7.7mm 3.85° x 2.89° at 131mm 31.9° x 24.2° at 15.4mm 1.92° x 1.44° at 262mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	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 (2.0x)	63.9° x 38.6° at 7.7mm 4.2° x 2.36° at 131mm 34.6° x 19.9° at 15.4mm 2.1° x 1.18° at 262mm (2.0x)
<b>M.O.D. from Lens Front</b>	0.8m (10mm with Macro)	0.6m (10mm with Macro)	0.3m (10mm with Macro)
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	87.4 x 65.6cm at 7.6mm 4.0 x 3.0cm at 168mm 43.7 x 32.8cm at 15.2mm 2.0 x 1.5cm at 336mm (2.0x)	63.1 x 47.3cm at 7.7mm 3.8 x 2.9cm at 131mm 31.6 x 23.7cm at 15.4mm 1.9 x 1.5cm at 262mm (2.0x)
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	95.0 x 53.4cm at 7.6mm 4.4 x 2.5cm at 168mm 47.5 x 26.7cm at 15.2mm 2.2 x 1.3cm at 336mm (2.0x)	68.5 x 38.5cm at 7.7mm 4.2 x 2.4cm at 131mm 34.3 x 19.3cm at 15.4mm 2.1 x 1.2cm at 262mm (2.0x)
<b>Approx. Size (WxHxL)</b>	164.7 x 112.1 x 218.6mm	159.3 x 106.6 x 197.8mm	168.2 x 110.6 x 237.7mm
<b>Approx. Mass (IRSE/IASE)</b>	1.82kg (4.0lbs)/1.90kg (4.19lbs)	1.48kg (3.26lbs)/1.56kg (3.44lbs)	1.83kg (4.04lbs)/1.91kg (4.22lbs)
<b>Information Display</b>	✓	✓	✓
<b>Filter Thread Size (Hood/Lens Barrel)</b>	105mm P1/94mm P1	— /82mm P0.75	127mm P0.75/ —

	KJ20x8.2B IRSD	KJ20x8.2B KRSD	KJ13x6B KRSD	
<b>Zoom Ratio</b>	20x	20x	13x	
<b>Image Size</b>	2/3"	2/3"	2/3"	
<b>Built-in Extender</b>	2.0x	—	—	
<b>Range of Focal Length (with Extender)</b>	8.2-164mm 16.4-328mm (2.0x)	8.2-164mm	6-78mm	
<b>Maximum Relative Aperture (with Extender)</b>	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 (2.0x)	1:1.9 at 8.2-115.4mm 1:2.7 at 164mm	1:2.0 at 6-58mm 1:2.7 at 78mm	
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	56.4° x 43.8° at 8.2mm 3.1° x 2.3° at 164mm 30.0° x 22.8° at 16.4mm 1.5° x 1.2° at 328mm (2.0x)	56.4° x 43.8° at 8.2mm 3.1° x 2.3° at 164mm	72.5° x 57.6° at 6mm 6.5° x 4.8° at 78mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	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 (2.0x)	60.7° x 36.5° at 8.2mm 3.4° x 1.9° at 164mm	77.3° x 48.5° at 6mm 7.0° x 4.0° at 78mm
<b>M.O.D. from Lens Front</b>	0.9m (10mm with Macro)	0.9m (10mm with Macro)	0.4m (10mm with Macro)	
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	90.1 x 67.6cm at 8.2mm 4.6 x 3.5cm at 164mm 45.1 x 33.8cm at 16.4mm 2.3 x 1.8cm at 328mm (2.0x)	90.1 x 67.6cm at 8.2mm 4.6 x 3.5cm at 164mm	67.8 x 50.9cm at 6mm 5.0 x 3.8cm at 78mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	98.2 x 55.2cm at 8.2mm 5.0 x 2.8cm at 164mm 49.1 x 27.6cm at 16.4mm 2.5 x 1.4cm at 328mm (2.0x)	98.2 x 55.2cm at 8.2mm 5.0 x 2.8cm at 164mm	74.3 x 41.8cm at 6mm 5.4 x 3.0cm at 78mm
<b>Approx. Size (WxHxL)</b>	163.3 x 103.0 x 208.0mm	163.3 x 103.0 x 181.8mm	165.4 x 105.1 x 211.7mm	
<b>Approx. Mass (IRSE/IASE)</b>	1.42kg (3.13lbs)/ —	1.25kg (2.76lbs)	1.59kg (3.51lbs)	
<b>Information Display</b>	—	—	—	
<b>Filter Thread Size (Hood/Lens Barrel)</b>	— /82mm P0.75	— /82mm P0.75	105mm P1/ —	

✓ Standard — Not Applicable

- For control accessories, please refer to page 36 and 37.
- Please refer to page 36 for explanation about IRSE models.
- For KT17ex Digital Drive Unit come equipped with Zoom, Iris and Focus Encoders. For KH21ex/KH16ex/KH10ex Digital Drive Units come equipped with Zoom and Iris Encoders only. A Focus Encoder is available as an option in these units.
- The above specification for each lenses are based on the following image size formats. 1/2":Ø8mm, 1/3":Ø6mm.

# HDgc SERIES LENSES: HDTV



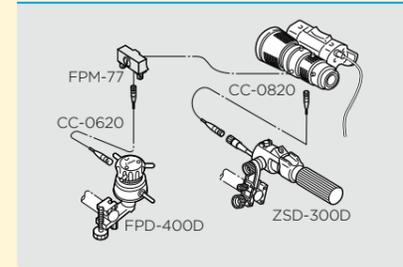
	KH13x4.5 KRSD SY14	KT20x5B KRSD A
<b>Zoom Ratio</b>	13x	20x
<b>Image Size</b>	1/2"	1/3"
<b>Built-in Extender</b>	—	—
<b>Range of Focal Length (with Extender)</b>	4.5-59mm	5-100mm
<b>Maximum Relative Aperture (with Extender)</b>	1:1.5 at 4.5-44mm 1:2.0 at 59mm	1:1.4 at 5.0-90.3mm 1:1.55 at 100mm
<b>Angular Field of View (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	70.8° x 56.1° at 4.5mm 6.2° x 4.7° at 59mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	75.7° x 46.9° at 4.5mm 6.8° x 3.8° at 59mm
<b>M.O.D. from Lens Front</b>	0.4m (10mm with Macro)	0.9m (10mm with Macro)
<b>Object Dimensions at M.O.D. (with Extender)</b>	<b>4:3 Aspect Ratio (8.8 x 6.6mm)</b>	66.7 x 50.0cm at 4.5mm 4.9 x 3.7cm at 59mm
	<b>16:9 Aspect Ratio (9.6 x 5.4mm)</b>	73.4 x 41.3cm at 4.5mm 5.4 x 3.0cm at 59mm
<b>Approx. Size (WxHxL)</b>	165.4 x 105.1 x 215.3mm	163.3 x 103 x 171.2mm
<b>Approx. Mass (IRSE/IASE)</b>	1.59kg (3.51lbs)	1.19kg (2.62lbs)
<b>Information Display</b>	—	—
<b>Filter Thread Size (Hood/Lens Barrel)</b>	105mm P1/ —	— /82mm P0.75

✓ Standard — Not Applicable • For control accessories, please refer to page 36-37.  
 • M.O.D. = Minimum Object Distance.  
 • The above specification for each lenses are based on the following image size formats. 2/3":Ø11mm.

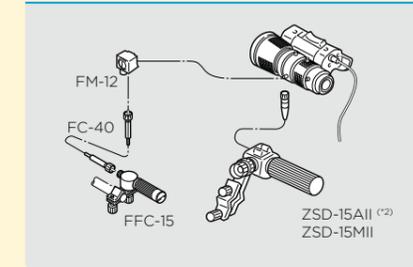
## Control Accessories for Pro-video ENG Lenses\*1 Lenses

### RECOMMENDED KIT CONFIGURATION (FOR ALL PRO-VIDEO ENG LENSES)

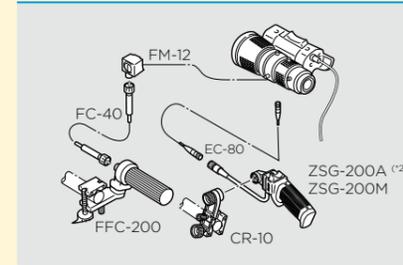
#### FULL-SERVO SET



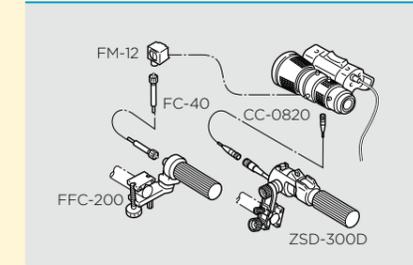
#### MS-15 SEMI-SERVO KIT



#### MS-22 SEMI-SERVO KIT

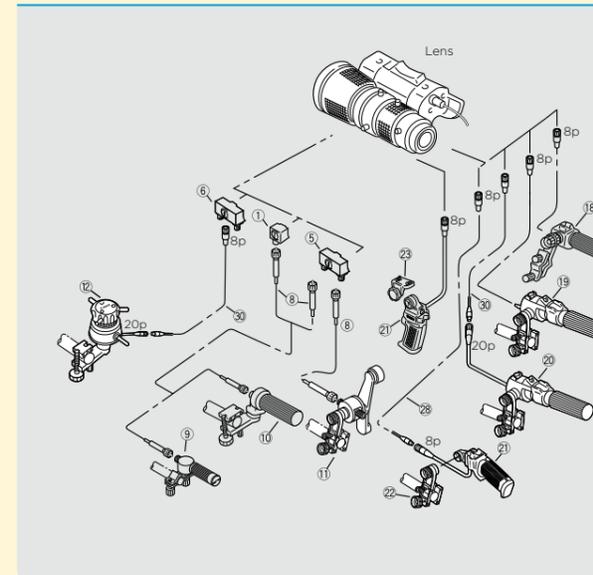


#### MS-21D SEMI-SERVO KIT



(\*1) HDgc Lenses of page 32 and 33.  
 (\*2) A or M types, depends on applicable camera.

### Applicable Component Detail



#	Unit	Description	Code
①	FM-12	Flex Focus Module	1824A012
⑤	FM-70	Flex Dual Module	0002T071
⑥	FPM-77	Focus Servo Module	1824A020AF
⑧	FC-40	Flex Cable	1824A010
⑨	FFC-15	Flex Focus Controller	1824A024
⑩	FFC-200	Flex Focus Controller	1824A014
⑪	FZC-100	Flex Focus Controller	1824A021
⑫	FPD-400D	Focus Positioning Demand	1824A124AF
⑬	ZSD-15A II / M II	Zoom Demand (*3)	A 1824A070 M 1824A071
⑰	ZSD-300A/M	Zoom Demand (*3)	A 1824A066 M 1824A067
⑳	ZSD-300D	Zoom Demand	1824A123
㉑	ZSG-200A/M	Zoom Servo Grip (*3)	A 1824A068 M 1824A069
㉒	CR-10	Clamper	1824A007
㉓	GA-70	Grip Adapter	0018T531
㉔	EC-80	Zoom Extension Cable (8P)	1824A009
㉕	CC-0620	Conv. Cable (6pM-20pF)	1824A128AC

(\*3) ZSD-15A, ZSD-300A/M and ZSG-200A are not available from Canon stock.

### Applicable Kit Detail

Kit Name	Zoom		Focus	
	System	Component	System	Component
Zoom Servo Only	—	ZSD-15	⑬*	—
	—	ZR-1	⑰	—
	—	ZR-2(A)	⑳ ㉒ ㉔	—
	—	ZR-2(B)	㉑ ㉓	—
Semi-Servo	MS-15	ZSD-15	⑬*	FRC-15 ① ⑧ ⑨*
	MS-21	ZR-1	⑰	FR-2 ① ⑧ ⑩
	MS-22	ZR-2(A)	⑳ ㉒ ㉔	FR-2 ① ⑧ ⑩
Full Manual	FZC-1	FZC-1	⑤ ⑧ ⑪	FR-2(w/o ①) ⑧ ⑩

\* ⑤ & ㉓ are not applicable to YH14x7.3 and YH16x7.

\*\* In USA, ⑬ & ⑨ are available only as MS-15 kit configuration and not as individual product.

■ Recommended kit configuration for the listed lenses. (See previous page)

# CINEMA EOS LENSES

## Cinema EOS Lenses

Canon offers a full line up of zoom and prime lenses which are designed and engineered to meet or exceed the exacting standards of cinematographers, supporting 4K resolution and beyond. Zoom lenses are available in both PL or EF mount and are compatible with Super 35mm sensors, while EF Cine Primes (EF mount only) and Sumire Primes (interchangeable PL mount) can be used with both 35mm Full Frame and Super 35mm sensor cameras.

Refer to the following pages for more details.



See page 50



# DIGITAL CINEMA LENSES



Canon's range of Cinema lenses is exclusively designed to stimulate creative expression and offer outstanding optical performance in movie, video and broadcast production. Reliable and robust, they include a host of advanced features, ensuring unsurpassed image quality and exceptional usability in every shooting situation.

Our current line up of Cinema lenses encompasses compact and lightweight, wide-angle and telephoto zoom lenses plus single-focal-length Cine Prime lenses for EF and PL mounts. It also includes Cine Servo lenses such as the CN7x17 KAS S E1/P1 – an EF or PL mount zoom lens with a servo drive unit designed for use with large sensor cameras in broadcast or handheld applications.

## MAIN FEATURES

### Superb 4K optical performance for exceptional results

The Digital Cinema lens series with 4K quality, offers unrivalled optical performance in professional shooting environments. Large aspherical lens elements ensure sharp, consistent images in virtually every shooting situation. An innovative glass construction counteracts barrel expansion and contraction to avoid temperature-induced marking discrepancies.

### Uncompromising operability for working professionals

Industry standard manual control rings are engineered to maintain the proper amount of resistance with consistent operating torque. Focus, zoom, and iris markings are provided on angled surfaces on both sides of the barrel, making it easy to read settings from behind or either side of the camera.

### Versatile range of focal lengths

Together these lenses support versatile shooting at many focal lengths and cover the range most commonly used in cinema shooting. These include wide angle, telephoto zooms and prime lenses.



## HIGHLIGHTS

### Specially designed 'cinematic look'

A unique optical design offers a nuanced look at the lens' wider aperture settings, subtly modifying textural renderings for pleasing bokeh with superb expressiveness.

### Fine focusing with filter and gear consistency

With carefully developed focus resistance, delicate focus adjustments can be made over a 300-degree rotation angle. All lenses accept 105mm screw-on filters, have a 114mm diameter lens front and have consistently positioned gears for ease of use.

## Sumire Prime



Personalise your craft with a range of Full-Frame cinema prime lenses named Sumire, with a specially designed 'cinematic look' and interchangeable PL mount.

A range of seven fast aperture Full-Frame prime lenses designed for cinematographers seeking beautifully delicate detail for a more creative, personal and expressive feel.

Designed to offer delicate and subtle rendering of a subject, these seven prime lenses offer fast apertures and precise manual control with a crafted focus bokeh aimed at careful creative expression.

# DIGITAL CINEMA LENSES

## TOP-END ZOOM LENS SERIES



Cine Zoom Lens	CN-E14.5-60mm T2.6 L S/SP		CN-E30-300mm T2.95-3.7 L S/SP	
Mount	EF	PL	EF	PL
Focal Length	14.5-60mm		30-300mm	
Zoom Ratio	4.1x		10x	
Max. Relative Aperture (T-Number)	1:2.6 at 14.5-60mm		1:2.95 at 30-240mm/1:3.7 at 300mm	
Iris Blades	11		11	
Angle of View 1.9:1 26.2 x 13.8mm	84.2° x 50.9° at 14.5mm 24.6° x 13.1° at 60mm		47.2° x 25.9° at 30mm 5.0° x 2.6° at 300mm	
M.O.D. (from image sensor)	0.70m/2'4"		1.5m/5'	
Object Dimensions at M.O.D. 1.9:1 26.2 x 13.8mm	71.2 x 37.5cm at 14.5mm 16.4 x 8.6cm at 60mm		107.9 x 56.8cm at 30mm 10.5 x 5.6cm at 300mm	
Front Diameter	ø136mm		ø136mm	
Approx. Size (W×H×L)	136.0 x 163.1 x 326.0mm 5.35 x 6.42 x 12.83in.	136.0 x 163.1 x 318.0mm 5.35 x 6.42 x 12.52in.	144.0 x 167.1 x 350.1mm 5.67 x 6.58 x 13.78in.	144.0 x 167.1 x 342.1mm 5.67 x 6.58 x 13.47in.
Approx. Mass	4.5kg (9.9lbs)		5.8kg (12.79lbs)	
Pitch of Follow Focus Gear	0.8		0.8	

## COMPACT ZOOM LENS SERIES



Compact Zoom Lens	CN-E15.5-47mm T2.8 L S/SP		CN-E30-105mm T2.8 L S/SP	
Mount	EF	PL	EF	PL
Focal Length	15.5-47mm		30-105mm	
Zoom Ratio	3x		3.5x	
Max. Relative Aperture (T-Number)	1:2.8 at 15.5-47mm		1:2.8 at 30-105mm	
Iris Blades	11		11	
Angle of View 1.9:1 26.2 x 13.8mm	80.4° x 48.0° at 15.5mm 31.1° x 16.7° at 47mm		47.2° x 25.9° at 30mm 14.2° x 7.5° at 105mm	
M.O.D. (from image sensor)	0.5m/1'8"		0.6m/2'	
Object Dimensions at M.O.D. 1.9:1 26.2 x 13.8mm	47.6 x 25.1cm at 15.5mm 15.4 x 8.1cm at 47mm		35.3 x 18.6cm at 30mm 10.2 x 5.4cm at 105mm	
Front Diameter	ø114mm		ø114mm	
Approx. Size (W×H×L)	114.0 x 125.0 x 222.0mm 4.49 x 4.92 x 8.74in.	114.0 x 125.0 x 214.0mm 4.49 x 4.92 x 8.43in.	114.0 x 125.0 x 217.9mm 4.49 x 4.92 x 8.58in.	114.0 x 125.0 x 209.9mm 4.49 x 4.92 x 8.26in.
Approx. Mass	2.2kg (4.85lbs)		2.2kg (4.85lbs)	
Pitch of Follow Focus Gear	0.8		0.8	

## COMPACT CINE SERVO SERIES



Cine Servo Lens	CN-E18-80mm T4.4 L IS KAS S	CN-E70-200mm T4.4 L IS KAS S
Mount	EF	EF
Focal Length	18-80mm	70-200mm (up to 400mm with EF 2x extender)*
Zoom Ratio	4.4x	2.85x
Max. Relative Aperture (T-Number) (with Extender)	(T No.) 1:4.4 at 18.80mm	(T No.) 1:4.4 at 70-200mm
Iris Blades	9	9
Angle of View 1.9:1 26.2 x 13.8mm (with Extender)	68.7° x 41.9° at 18mm 17.5° x 9.9° at 80mm	19.9° x 11.3° at 70mm 7.0° x 4.0° at 200mm
M.O.D. (from image sensor)	0.5m	1.2m
Object Dimensions at M.O.D. 1.9:1 26.2 x 13.8mm (with Extender)	43.4 x 24.3cm [at 18mm] 9.5 x 5.3cm [at 80mm]	31.3x17.5cm [at 70mm] 11.5x6.4cm [at 200mm]
Front Diameter	ø77mm	ø77mm
Approx. Size (W x H x L)	93.4 x 107.2 x 182.3mm	93.4 x 107.2 x 182.3mm
Approx. Mass	1.2kg (2.64lbs) (incl. servo unit)	1.25kg (2.75lbs) (incl. servo unit)
Pitch of Follow Focus Gear	0.8	0.8

\* This lens is compatible with EF 1.4x and 2x extenders

## CINE SERVO SERIES



Cine Servo Lens	CN7x17 KAS S E1 / P1	CN20x50 IAS H E1 / P1
Mount	EF / PL	EF / PL
Focal Length	17mm-120mm	50-1000mm (75-1500mm with 1.5x Extender)
Zoom Ratio	7x	20x
Max. Relative Aperture (T-Number) (with Extender)	1:2.95 at 17-91mm / 1:3.9 at 120mm	1:5.0 at 50-560mm / 1:8.9 at 1000mm 1:7.5 at 75-840mm 1:13.35 at 1500mm
Iris Blades	11	11
Angle of View 1.9:1 26.2 x 13.8mm (with Extender)	75.2° x 44.2° at 17mm 12.5° x 6.6° at 120mm	29.4°x15.7° at 50mm 1.5°x0.8° at 1000mm 19.8°x10.5° at 75mm 1.0°x0.5° at 1500mm
M.O.D. (from image sensor)	0.85m/2.8" 0.1m from lens front with macro	3.5m/ 11.5" 1.54m from lens front with macro
Object Dimensions at M.O.D. 1.9:1 26.2 x 13.8mm (with Extender)	92.1° x 48.5° at 17mm 12.7° x 6.7° at 120mm	148.3x78.1cm at 50mm 7.8x4.1cm at 1000mm 98.9x52.1cm at 75mm 5.2x2.7cm at 1500mm
Front Diameter	ø114mm	ø136mm
Approx. Size (W x H x L)	174.2 x 125.0 x 262.9mm / 174.2 x 125.0 x 254.9mm 6.86 x 4.92 x 10.35 / 6.86 x 4.92 x 10.04in	175 x 170.6 x 413.2mm / 68.9 x 67.1 x 162.6 in (EF mount) 175x170.6x405.2mm / 68.9 x 67.1 x 159.5 in (PL Mount)
Approx. Mass	2.9kg (6.39lbs)	6.6kg (14.55lbs)
Pitch of Follow Focus Gear	0.8	0.5 or 0.8

## EF CINE PRIME LENS SERIES



Cine Prime Lens	CN-E14mm T3.1 L F	CN-E20mm T1.5 L F	CN-E24mm T1.5 L F	CN-E 35mm T1.5 L F
Mount	EF	EF	EF	EF
Focal Length	14mm	20mm	24mm	35mm
Zoom Ratio	—	—	—	—
Max. Relative Aperture (T-Number)	T 3.1	T 1.5	T 1.5	T 1.5
Iris Blades	11	11	11	11
Angle of View	1.5:1 36.0 x 24.0mm	104.3° x 81.2°	84.0° x 61.9°	73.7° x 53.1°
	1.78:1 24.6 x 13.8mm	82.6° x 52.5°	63.2° x 38.1°	54.3° x 32.1°
M.O.D. (from image sensor)	0.2m/8"	0.3 m/12"	0.3m/12"	0.3m/12"
Object Dimensions at M.O.D.	1.5:1 36.0 x 24.0mm	25.2 x 16.8 cm	33.8 x 22.5 cm	28.8 x 19.2cm
	1.78:1 24.6 x 13.8mm	17.2 x 9.7 cm	23.1 x 13.0cm	19.7 x 11.0cm
Front Diameter	ø114mm	ø114mm	ø114mm	ø114mm
Approx. Size (W x H x L)	118.4 x 118.4 x 94.0mm	118.4 x 118.4 x 101.5 mm	118.4 x 118.4 x 101.5mm	118.4 x 118.4 x 101.5mm
Approx. Mass	1.2kg (2.65lbs)	1.2kg (2.65lbs)	1.2kg (2.65lbs)	1.1kg (2.43lbs)
Pitch of Follow Focus Gear	0.8	0.8	0.8	0.8

• M.O.D. = Minimum Object Distance



Cine Prime Lens	CN-E50mm T1.3 L F	CN-E85mm T1.3 L F	CN-E135mm T2.2 L F
Mount	EF	EF	EF
Focal Length	50mm	85mm	135mm
Zoom Ratio	—	—	—
Max. Relative Aperture (T-Number)	T 1.3	T 1.3	T 2.2
Iris Blades	11	11	11
Angle of View	39.6° x 27.0°	23.9° x 16.1°	15.2° x 10.2°
	27.6° x 15.7°	16.5° x 9.3°	10.4° x 5.9°
M.O.D. (from image sensor)	0.45m/18"	0.95m/3'2"	1.0m/3'3"
Object Dimensions at M.O.D.	25.0 x 16.7 cm	34.4 x 22.9cm	21.1 x 14.1cm
	17.1 x 9.6 cm	23.5 x 13.2 cm	14.4 x 8.1cm
Front Diameter	ø114mm	ø114mm	ø114mm
Approx. Size (W x H x L)	118.4 x 118.4 x 101.5mm	118.4 x 118.4 x 101.5mm	118.4 x 118.4 x 115.6mm
Approx. Mass	1.1kg (2.43lbs)	1.3kg (2.87lbs)	1.4kg (3.09lbs)
Pitch of Follow Focus Gear	0.8	0.8	0.8

## SUMIRE PRIME LENS SERIES



Cine Prime Lens	CN-E14mm T3.1 FP X	CN-E20mm T1.5 FP X	CN-E24mm T1.5 FP X	CN-E35mm T1.5 FP X
Mount	Interchangeable PL**	Interchangeable PL**	Interchangeable PL**	Interchangeable PL**
Focal Length	14mm	20mm	24mm	35mm
Zoom Ratio	—	—	—	—
Max. Relative Aperture (T-Number)	T 3.1	T 1.5	T 1.5	T 1.5
Iris Blades	11	11	11	11
Angle of View	1.5:1 36.0 x 24.0mm	104.3° x 81.2°	84.0° x 61.9°	73.7° x 53.1°
	1.78:1 24.6 x 13.8mm	82.6° x 52.5°	63.2° x 38.1°	54.3° x 32.1°
M.O.D. (from image sensor)	0.20 m/8"	0.3 m/12"	0.3m/12"	0.3m/12"
Object Dimensions at M.O.D.	1.5:1 36.0 x 24.0mm	25.2 x 16.8 cm	33.8 x 22.5 cm	28.8 x 19.2 cm
	1.78:1 24.6 x 13.8mm	17.2 x 9.7 cm	23.1 x 13.0 cm	19.7 x 11.0 cm
Front Diameter	ø114mm	ø114mm	ø114mm	ø114mm
Approx. Size (W x H x L)	118.4 x 118.4 x 86.0 mm	118.4 x 118.4 x 93.5 mm	118.4 x 118.4 x 93.5 mm	118.4 x 118.4 x 93.5 mm
Approx. Mass	1.2kg (2.65lbs)	1.2kg (2.65lbs)	1.2kg (2.65lbs)	1.1kg (2.43lbs)
Pitch of Follow Focus Gear	0.8	0.8	0.8	0.8

• M.O.D. = Minimum Object Distance

\*\* PL mount is changeable to EF and back again via an authorized service facility

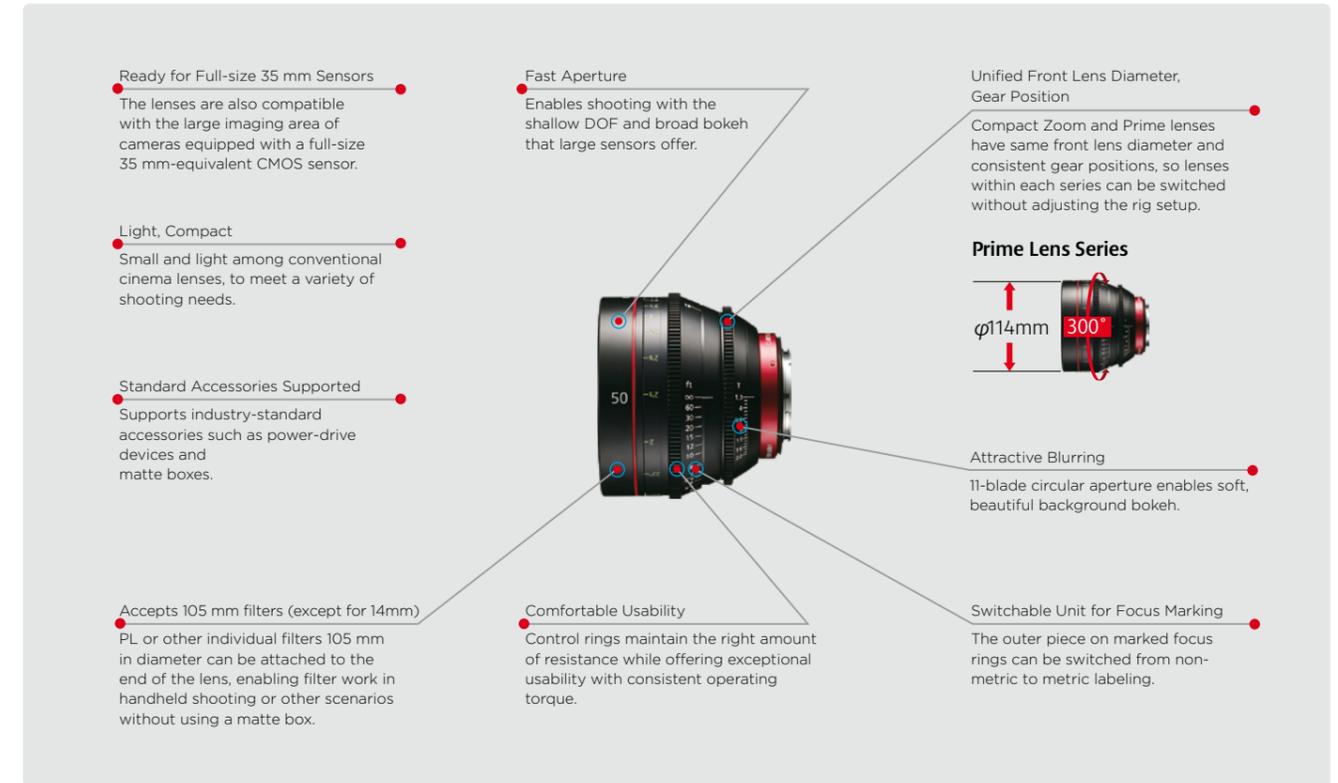


Cine Prime Lens	CN-E50mm T1.3 FP X	CN-E85mm T1.3 FP X	CN-E135mm T2.2 FP X
Mount	Interchangeable PL**	Interchangeable PL**	Interchangeable PL**
Focal Length	50mm	85mm	135mm
Zoom Ratio	—	—	—
Max. Relative Aperture (T-Number)	T 1.3	T 1.3	T 2.2
Iris Blades	11	11	11
Angle of View	39.6° x 27.0°	23.9° x 16.1°	15.2° x 10.2°
	27.6° x 15.7°	16.5° x 9.3°	10.4° x 5.9°
M.O.D. (from image sensor)	0.45m/18"	0.95m/3'2"	1.0 m /3'3"
Object Dimensions at M.O.D.	25.0 x 16.7 cm	34.4 x 22.9 cm	21.1 x 14.1 cm
	17.1 x 9.6 cm	23.5 x 13.2 cm	14.4 x 8.1 cm
Front Diameter	ø114mm	ø114mm	ø114mm
Approx. Size (W x H x L)	118.4 x 118.4 x 93.5 mm	118.4 x 118.4 x 93.5 mm	118.4 x 118.4 x 107.6mm
Approx. Mass	1.1kg (2.43lbs)	1.3kg (2.87lbs)	1.4kg (3.09lbs)
Pitch of Follow Focus Gear	0.8	0.8	0.8

## CN7X17 KAS S E1 / P1: FEATURES FOR BROADCAST USE



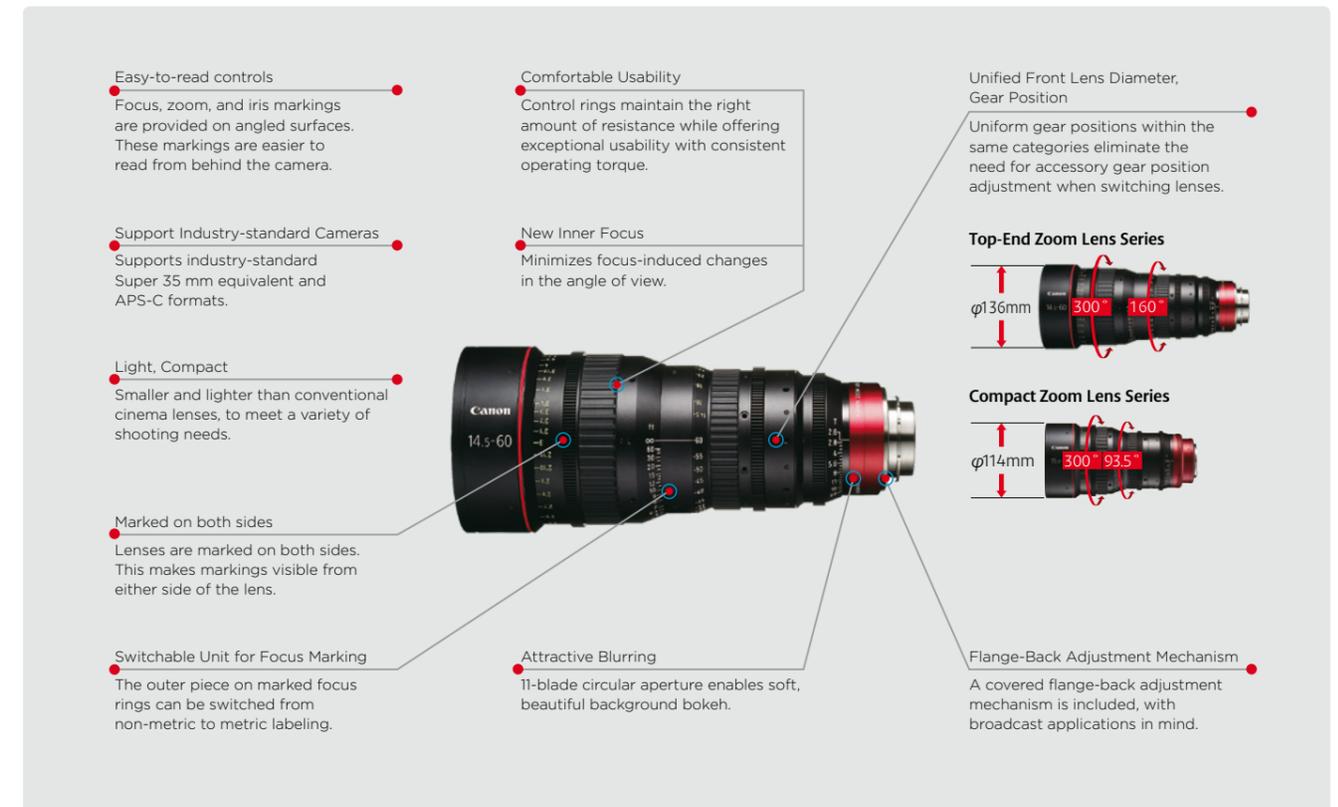
## PRIME LENSES: HIGHLIGHTS



## CN7X17 KAS S E1 / P1: FEATURES FOR CINEMA USE



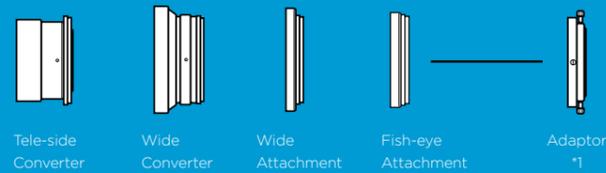
## TOP-END/COMPACT ZOOM LENSES: HIGHLIGHTS



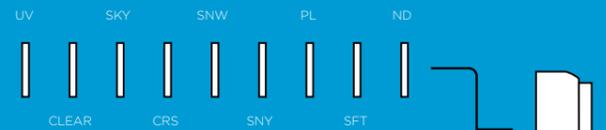
# OPTICAL ACCESSORIES FOR SDTV AND HDTV ENG/EPF LENSES

## SYSTEM

### 1. CONVERTERS/ATTACHMENTS



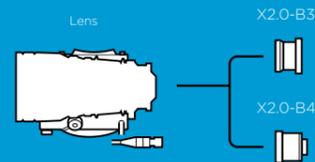
### 2. FILTERS



### 3. CLOSE-UP LENSES



### 4. EXTENDERS



\*1: Most Canon Converters and Attachments use a separate adaptor ring as shown in the table on page 53, which allow compatibility between several lens models. The W80Y-85 is special Wide Converter and is exclusive to certain lens models as shown in the table on page 53.

\*2: Some lens models allow for the filter to be attached to the threaded lens barrel, in other models, the filter is attached to the threaded hood unit. For lens model filter size compatibility, please refer to page 55.

## APPLICATIONS OF SDTV AND HDTV ADAPTOR TYPE CONVERTERS / ATTACHMENTS

CONVERTER/ ATTACHMENT TYPE	MODEL NAME	CODE	APPLICABLE LENSES					
			YJ20x8.5B KJ20x8.2B <sup>*1</sup> KH20x6.4 <sup>*1</sup> KT20x5 <sup>*1</sup>	KJ17ex7.7B <sup>*1</sup> KJ20x8.2B <sup>*1</sup> KH16ex5.7 <sup>*1</sup> KH20x6.4 <sup>*1</sup> KT17ex4.3B <sup>*1</sup> KT20x5 <sup>*1</sup> YJ20x8.5B	HJ18ex7.6B KJ17ex7.7B KH16ex5.7 KH20x6.4 KT17ex4.3B KT20x5	KH21ex5.7 <sup>*1</sup> KJ22ex7.6B <sup>*1</sup>	HJ24ex7.5B KH21ex5.7 KJ22ex7.6B	
			Front Lens Diameter		φ 85mm		φ 98mm	
TELE-SIDE CONVERTER	T15 - II	1823A005		●			●	
	T-15HG - II	0025T799						●
	Adaptor85 III	1824A002		●			●	●
WIDE CONVERTER	Adaptor98 II	1824A004					●	●
	W80Y-85	1823A009	●					
	W80-B - III	1823A006		●			●	●
WIDE ATTACHMENT	W-80HG	1823A094					●	●
	Adaptor85 III	1824A002		●			●	●
	Adaptor98 II	1824A004					●	●
FISH-EYE ATTACHMENT	WA75 - II	1823A008		●			●	●
	WA-75HG	1823A095					●	●
	Adaptor85 III	1824A002		●			●	●
FISH-EYE ATTACHMENT	Adaptor98 II	1824A004					●	●
	FEA-B - II	1823A011		●			●	●
	FEA-HG	1823A099					●	●
FISH-EYE ATTACHMENT	Adaptor85 III	1824A002		●			●	●
	Adaptor98 II	1824A004					●	●

\*1 The HD quality accessories offer higher optical performance.

\*2 The drawing is an image of the W80-B III

When purchasing, please specify model name of both Body and Adaptor.

It is possible to use Body and Adaptor in different combinations.

But it is impossible to use in combinations not shown in above table.

## 1. CONVERTERS/ATTACHMENTS



### TELE-SIDE CONVERTER

- 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.

	M.O.D	Eclipse Point
HJ22ex7.6B	1.9m	f:85mm
KJ17ex7.7B	1.35m	f:60mm
YJ20x8.5B	2.00m	f:80mm



### WIDE CONVERTER

- Focal length becomes wider by a factor of 0.8x that of the original lens with the W80/W80Y-85.
- F No. of the original lens is not affected.
- The minimal object distance becomes 0.64 times with the W80/W80Y-85.

	Master Lens	With Wide Con.
HJ22ex7.6B	7.6-168mm	6.1-134mm
KJ17ex7.7B	7.7-131mm	6.2-104.8mm
YJ20x8.5B	8.5-170mm	6.8-136mm



### WIDE ATTACHMENT

- 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.

	Master Lens	With Wide Attach.
HJ22ex7.6B	7.6-168mm	5.7mm
KJ17ex7.7B	7.7-131mm	5.8mm
YJ20x8.5B	8.5-170mm	6.4mm



### FISH-EYE ATTACHMENT

- The zoom lens becomes a fish-eye fixed focal length lens (distorted image) with the fish-eye attachment.
- The focal length is widened by a factor of 0.6x that of the original lens.
- Focus is adjusted by use of the macro lever.

	Master Lens	With Fish-Eye
HJ22ex7.6B	7.6-168mm	4.6mm
KJ17ex7.7B	7.7-131mm	4.6mm
YJ20x8.5B	8.5-170mm	5.1mm

## 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.



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



LCV-41E  
LCV-20E

Converter	Image Size Conversion			Electronic Conversion
	Lens <sup>3</sup>	Camera	Shift Ratio to Telephoto Side	
LO-32BMT	2/3" B4 Mount	1/2" Sony <sup>4</sup>	approx. 1.4x	-
LCV-40B	2/3" B4 Mount	1/2" Standard Mount <sup>5</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 (12 pin) → EX3 Hot Shoe (14 pin)
LCV-20E	1/2" <sup>6</sup>	SONY PMW-EX3	-	Lens Cable (12 pin) → EX3 Hot Shoe (14 pin)

<sup>3</sup> The converters are to be used with lenses weighing less than 2.0kg (4.4lbs)

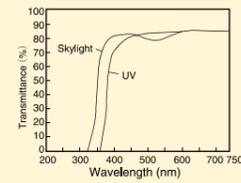
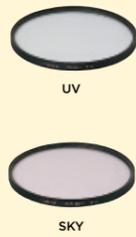
<sup>4</sup> SONY's Hot Shoes mount camera, excluding PMW-EX3

<sup>5</sup> 1/2" Camera of standard type mount (Panasonic, JVC, Grass Valley)

<sup>6</sup> Only applicable to KH10ex/KH16ex/KH21ex. The other 1/2" mount lenses are not available.

## 2. FILTERS

### UV/CLEAR/SKY LIGHT FILTER



- A UV (ultraviolet) filter is nearly colourless. It absorbs short wavelength ultraviolet rays that the naked eye cannot see.
- A skylight Filter has a light pinkish colour. Used when shooting on clear days, it removes ultraviolet, and prevents natural light from giving a bluish-green cast to shaded foliage etc.
- These filters are also advisable to protect the front lens surface.

### POLARIZED LIGHT FILTER



- A polarizer is used to intercept light reflected from the surface of water or glass.
- A polarizer is screwed into the threads of the hood, turned, and stopped in the position in which the reflected light is removed.

### SOFTON FILTER



- A Soft-focus Filter has a met-like surface that imparts a soft, misty effect to the entire picture.
- Soft-focus Filterx are frequently used for lyric scenery shots.

### CROSS/SNOW CROSS/SUNNY CROSS FILTER



- A cross Filter creates a cross or star of light by scattering rays from a strong light source in the subject in a radial pattern. The brighter and more point like the subject is, the better the effect is. Cross filters are often used to enhance night scenery or stage show broadcasts.

#### TYPES OF CROSS FILTER

- Cross Filter**  
Scatters light in a four-pointed cross.
- Snow Cross Filter**  
Scatters light in a six-pointed star.
- Sunny Cross Filter**  
Scatters light in an eight-pointed star.

### ND4/ND8 FILTER



- An ND (neutral density) Filter uniformly reduces light of all wavelengths which enters a lens.
- It is used when the subject is too bright for the light to be adjusted by the diaphragm alone.
- An ND Filter is also effective to create a shallow depth of field.

ND filter type	Transmittance	Density
ND4	25%	0.6
ND8	12.5	0.9

FILTER TYPE	MODEL NAME	CODE	APPLICABLE LENSES						
			CJ45ex13.6B CJ45ex9.7B CJ18ex28B CJ14ex4.3B CJ12ex4.3B HJ21ex7.5B HJ18ex28B HJ14ex4.3B KJ10ex4.5B KH10ex3.6	HJ40x14B HJ40x10B	HJ17ex6.2B KJ13x6B KH13x4.5 YJ13x6B	CJ25ex7.6B CJ20ex7.8B CJ24ex7.5B HJ24ex7.5B KJ22ex7.6B KH21ex5.7	CJ18ex7.6B CJ15ex8.5B HJ18ex7.6B HJ15ex8.5B KJ17ex7.7B KH16ex5.7 KJ20x8.2B KH20x6.4	CN7x17 KAS S E1/P1	CN20x50 IAS H E1/P1
HOOD UNIT THREAD SIZE			127mm P0.75	-	105mm P1	105mm P1	-	127mm P0.75	-
LENS BARREL THREAD SIZE			-	127mm P0.75	-	94mm P1	82mm P0.75	112mm P0.75	127mm H
UV	UV/127P0.75	1823A083	●	●				●	
	UV/105P1	1823A022			●	●			
	UV/94P1	1823A021				●			
	UV/82P0.75	1823A030					●		
CLEAR	CL/127	1823A093	●	●				●	
	CL/112	1823A103						●	
	CL/127H	0117T881							●
SKY LIGHT	SKY/105P1	1823A023			●	●			
	SKY/82P0.75	1823A031					●		
SNOW CROSS	SNW/127P0.75	1823A087	●	●				●	
	SNW/105P1	1823A047			●	●			
	SNW/82P0.75	1823A034					●		
SUNNY CROSS	SNY/127P0.75	1823A088	●	●				●	
	SNY/105P1	1823A025			●	●			
	SNY/82P0.75	1823A033					●		
POLARIZED LIGHT	PL/127P0.75	1823A090	●	●				●	
	PL/105P1	1823A028			●	●			
	PL/82P0.75	1823A038					●		
SOFTON	SFT/127P0.75	1823A089	●	●				●	
	SFT/105P1	1823A027			●	●			
	SFT/82P0.75	1823A037					●		
ND	ND8/127P0.75	1823A086	●	●				●	
	ND4/82P0.75	1823A035					●		
	ND8/105P1	1823A026			●	●			
	ND8/82P0.75	1823A036					●		

## 3. CLOSE-UP LENSES



- A close-up lens is used to shorten the M.O.D. of the master lens for close-up shooting.
- The maximum object distance becomes the focal length of the close-up lens.
- The minimum object distance is calculated by the following formula.

New minimum object distance =  $fc \times S / (fc + S)$   
 $fc$  = Focal length of the close-up lens  
 $S$  = M.O.D. of the master lens

Model	Code	Applicable Lenses
82CL-UP800H	1823A041	YJ20x8.5B, KJ17ex7.7B, KJ20x8.2B, KH16ex5.7, KH20x6.4, KT17ex4.3B, KT20x5
82CL-UP1300H	1823A042	YJ20x8.5B, KJ17ex7.7B, KJ20x8.2B, KH16ex5.7, KH20x6.4, KT17ex4.3B, KT20x5
105CL-UP900H	1823A043	KH21ex5.7*, KJ22ex7.6B*
105CL-UP800HD	1823A096	HJ22ex7.6B, KH21ex5.7, KJ22ex7.6B*

\* The HD quality accessories offer higher optical performance

	82CL-UP800H				82CL-UP300H			
	KJ17ex7.7B (16:9)		YJ20ex8.5B (4:3)		Tele end: 131mm		Wide end: 8.5mm	
Focusing Scale (mm)	∞	0.6	∞	0.6	∞	0.6	∞	0.6
Object Distance (mm)	800	343	800	343	1300	411	1300	411
Object Dimensions (mm)	58 x 33	24 x 14	989 x 556	376 x 212	95 x 53	29 x 16	1634 x 919	455 x 256
Focusing Scale (mm)	∞	0.9	∞	0.9	∞	0.9	∞	0.9
Object Distance (mm)	800	420	800	420	1300	530	1300	530
Object Dimensions (mm)	41 x 31	20 x 15	816 x 609	390 x 293	67 x 50	26 x 20	1341 x 1006	494 x 371

## 4. EXTENDERS



- An extender X2.0-B4 is mounted between the camera and the lens to enlarge the image of the subject.
- It doubles the focal length of the master lens, making it into a more telephoto lens.
- The 2.0x Extender also doubles the F-number.

YJ20X8.5B		Master lens		With Extender	
		Focal length	F-number	Focal length	F-number
		8.5 ~170mm	1.8 ~2.7	17 ~340mm	3.6 ~5.4

\* Only for 2/3 lenses

Model	Code	Applicable Lenses
X2.0-B3	1823A041	Applicable to all B3 type mount Canon 2/3" lenses
X2.0-B4	1823A042	Applicable to all B4 type mount Canon 2/3" lenses

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