Canon

BCTV Zoom Lens

UHDxs LENSES

CJ15ex4.3B
CJ20ex5B
CJ20ex7.8B
CJ25ex7.6B

UHDGC LENSES

CJ14ex4.3B
CJ17ex6.2B
CJ18ex7.6B
CJ18ex28B
CJ24ex7.5B

HDGC LENSES

KJ10ex4.5B
KJ17ex7.7B II
KJ22ex7.6B II

OPERATION MANUAL " Lens "

Read this operation manual before using the product.

ENG

－ FOREWORD －

Thank you for purchasing the Canon BCTV zoom lens.
This product comes with the following documents for the models mentioned below:

- Operation Manual "Before Using The Product"（Included with the product）
- Operation Manual "Regulations"（Included with the product）
- Operation Manual "Lens"（Web）
- Operation Manual "Information display"（Web）
- Quick guide "Information display"（Web）

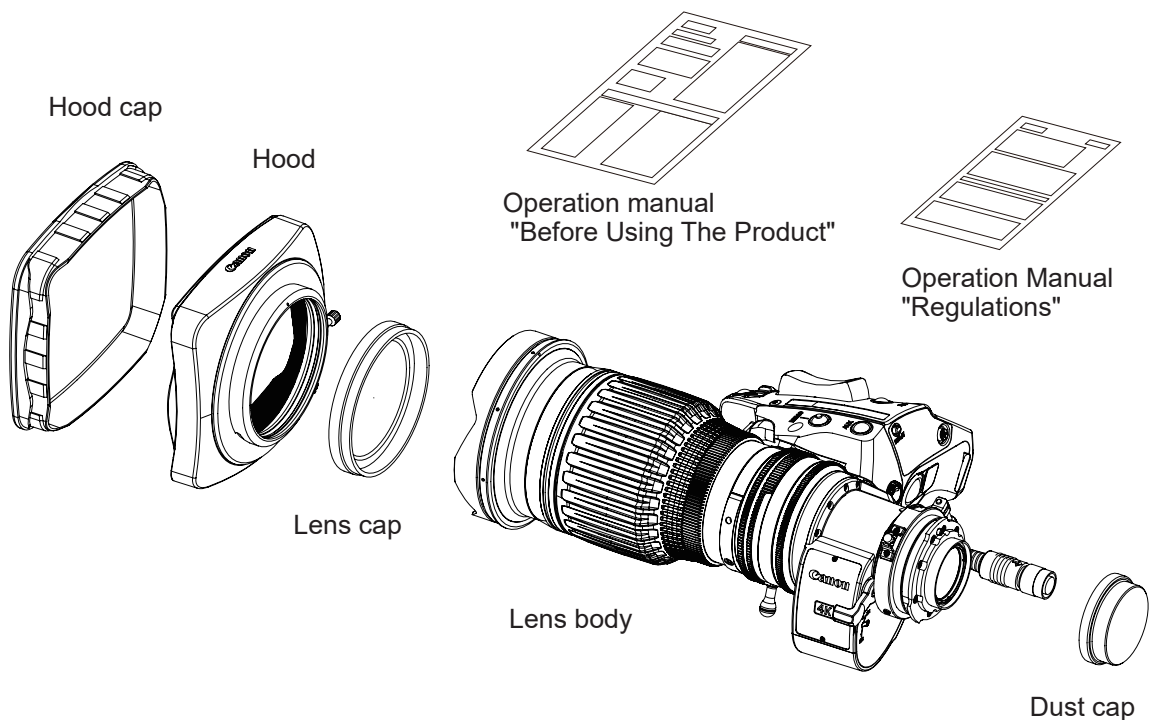|		IASE S	IRSE S	IASE-C S	IRSE-C S	IASE II S	IRSE II S	KASE S
UHDxs LENSES	CJ15ex4.3B	●	●	●	●			
	CJ20ex5B	●	●	●	●			
	CJ20ex7.8B	●		●				
	CJ25ex7.6B	●	●	●	●			
UHDGC LENSES	CJ14ex4.3B	●	●	●	●			
	CJ17ex6.2B	●	●	●	●			
	CJ18ex7.6B	●	●	●	●			●
	CJ18ex28B	●		●				
	CJ24ex7.5B	●	●	●	●			
HDGC LENSES	KJ10ex4.5B	●	●					
	KJ17ex7.7B					●	●	
	KJ22ex7.6B					●	●	

The illustrations in this manual are used as examples.

Actual forms may vary depending on models and specifications.

STANDARD PRODUCT LIST

Make sure all of the following items are included in the packing box. If you find any item missing, please contact your dealer or Canon Inc.

Hood cap

Hood

Operation manual "Before Using The Product"

Operation Manual "Regulations"

Lens cap

Lens body

Dust cap

Accessories other than those mentioned above may be required depending on the specifications of your unit.
For details, contact your dealer or Canon Inc.

GENERAL SAFETY INFORMATION

The safety warnings and cautions provided on the product or in this operation manual must be observed.
Failure to observe these warnings and cautions may result in injury or accident.
Read this operation manual carefully to familiarize yourself with its contents and ensure that you can operate the product properly.
Also, store this manual in a safe place where it can easily be referenced whenever necessary.

This operation manual uses the following symbols and terms to identify hazards in order to prevent accidents.

⚠ WARNING	This indicates a potentially hazardous situation which, if not heeded, may result in death or serious injury to you or others. Be sure to heed all warning notices to ensure safe operation at all times.
⚠ CAUTION	This indicates a potentially hazardous situation which, if not heeded, may result in a minor injury to you or others, or damage to property.
NOTE	This indicates cautions and recommendations for operation. It contains information which, if not heeded, may result in this product failing to function properly. These notices also contain useful information for operation.

HANDLING THE PRODUCT

⚠ WARNING

1. Do not get this product wet or allow liquid inside. If water gets inside, stop using the product immediately. Continuing to use the product under this condition may cause a fire or electric shocks.

2. Do not stare at the sun or other bright objects through the lens. It may injure your eyes.

3. Be sure to hold the connector when disconnecting the cable. Pulling on the cable may sever or damage it and pose a risk of a fire or electric shocks from a short circuit.

⚠ CAUTION

1. Be careful not to drop the product when carrying it. Dropping the product may cause injury.

2. Ensure that all mountings are securely tightened. If a mounting becomes loose, parts may fall off and cause injury.

3. Inspect mountings regularly (about every six months to one year) to ensure they are securely tightened. If a mounting becomes loose, parts may fall off and cause injury.

4. When this product is used under a blazing sun, the inside of the unit may be heated to high temperature. When it is expected that the unit is exposed to elevated temperature, take measures against heat as appropriate on the customer's side.

NOTE

1. Striking or dropping the lens may cause the malfunction of the product.

2. This product is not waterproof. Take measures to avoid direct contact with rain, snow, or moisture. Otherwise it may cause the malfuction of the product.

3. In dusty environments, cover the lens mount when using, attaching or removing the lens. If dust enters inside, it may cause the malfunction of the product.

4. Take measures to avoid sudden changes in temperature where the lens is used, which may prevent operation temporarily if condensation forms in the lens.

5. Before use in particular environments, such as places where chemical products are used, contact your Canon sales representative or dealer.

DEALING WITH ABNORMALITIES

⚠ **WARNING**

Should any of the abnormalities described below occur, immediately dismount the lens from the camera and contact your Canon sales representative or dealer.

• Smoke, fumes, or unusual noises
• Entry of foreign objects (such as liquid or metal objects) inside the product

MAINTENANCE AND INSPECTION

⚠ **WARNING**

Be sure to disconnect the cable and remove the lens from the camera before cleaning outside of the lens. Do not use benzene, thinner, or other flammable substances to clean the product. Otherwise it may cause a fire or electric shocks.

NOTE

1. Clean off any dust on the lens surface using a lens blower or a soft lens brush. In case of getting fingerprints or stains on the lens, use a clean cotton cloth moistened with commercial lens cleaning fluid, or use lens cleaning paper. Gently wipe in a spiral pattern from the center of the lens. Be careful not to rub dust across the lens, which may scratch the lens surface

2. Routine inspection about once a year is recommended, depending on the conditions and environment of use. Request overhaul, if needed.

STORAGE

⚠ **CAUTION**

Always attach the lens cap, hood cap, dust cap or covers before storage. Storing the lens without the caps or covers attached poses a risk of fire if the lens concentrate light in direct sunlight.

NOTE

1. Immediately wipe off any moisture on the lens from misty or foggy environments, using a dry cloth. Seal the lens in a plastic bag with a desiccant (preferably new) to prevent moisture inside. Otherwise it may cause the mold or the malfunction of the product.

2. Before using the product with the separately available carrying case, contact your Canon sales representative or dealer. Components such as adhesives used in the carrying case may have an adverse effect on the product.
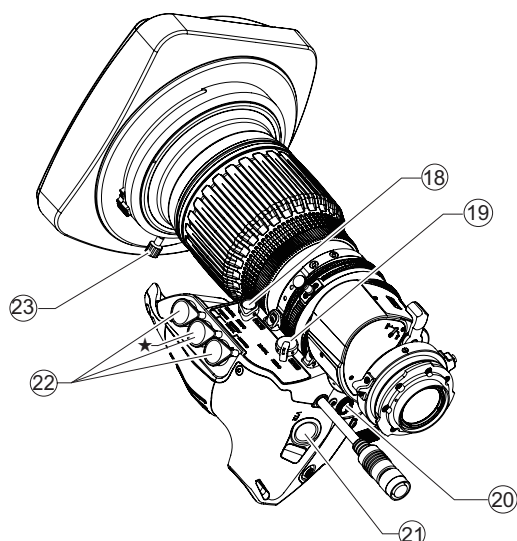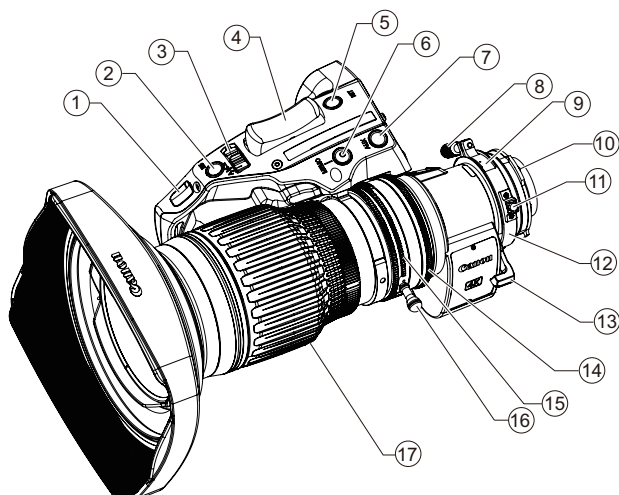
TO THE CUSTOMER

1. Canon shall bear no responsibility for damage resulting from improper operation of this product by the customer.

2. Canon shall make no guarantees about the product quality, functions, or operation manual and its marketability and suitability for the customer's purpose.
   Moreover, Canon shall bear no responsibility for any damage, direct or incidental, that results from usage for the customer's purpose.

3. The product specifications, configuration, and appearance are subject to change without prior notice.

4. For further information on repairs, maintenance, or adjustments not mentioned in this operation manual, contact your Canon sales representative or dealer.

5. Note that Canon may be unable to undertake servicing or repair of a product if it is modified without consulting Canon or your Canon sales representative.

1 NOMENCLATURE

① Iris Gain Adjusting Trimmer

② Instant Auto-Iris Switch

③ Iris Operation Mode Change-over Switch

④ Zoom Rocker Seesaw

⑤ RET Switch (Video Return Switch)

⑥ Memo Switch (Memory Switch)

⑦ AUX Swich

⑧ Flange Back Lock Screw

⑨ Flange Back Adjusting Ring

⑩ Locating Pin

⑪ Macro Button

⑫ Macro Ring

⑬ Extender Lever
    NOTE) Excluding KASE S type lens.

⑭ Iris Ring

⑮ Zoom Ring

⑯ Zoom Lever

⑰ Focus Ring

⑱ Focus Servo/Manual Change-over Knob
    NOTE) IASE S, IASE-C S and KASE S type lenses only.

⑲ Zoom Servo/Manual Change-over Knob

⑳ Max. Zoom Speed Adjusting Volume

㉑ VTR Switch

㉒ Remote Connectors (20-pin)
    NOTE) Virtual output port is Connector ★ only.
    Use these connectors to connect the control accessory (equipped with a 20 pin connector) for zooming or focusing. Connector ★ is also used to connect to the interface of such as virtual system. It can output each positioning signal of zoom, focus, and iris.

㉓ Hood Lock Knob

Information Display (Digital Drive Unit)
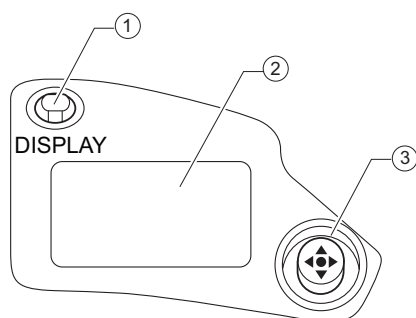
① Display Switch
    Used to turn the display ON/OFF.

② Display
    It turns off if left for 2 minutes without operation.

③ Control key
    Used to move the cursor up/down/left/right. Press the center to confirm.

For the operation of the digital drive unit, refer to Operation Manual "Information display".

2 HOW TO MOUNT

2-1. MOUNT THE LENS ON THE CAMERA

Before mounting the lens on the camera,make sure that the camera's power is turned off.
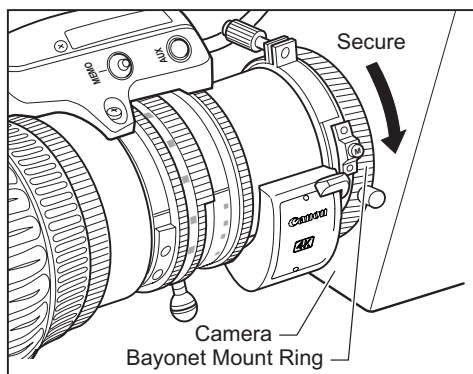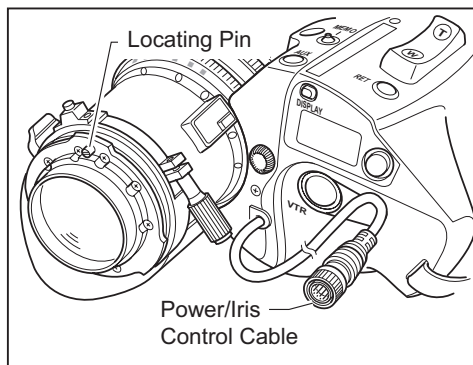
1 Remove the dust cap from the lens.

2 Align the lens locating pin to the groove on the camera mount to fit the lens to the camera mount.

3 Turn the bayonet mount ring on the camera to secure the lens.

4 Connect the power/iris control cable of the lens to the camera.

NOTE

1. Never hold the lens, drive unit and band portion to support the entire weight of the camera. Excessive force to the mount portion and drive unit of the lens may result in damage to the lens mechanism.
2. Rated voltage: 12 VDC
   Normal operation range: 10 to 17 VDC
   If a battery or adapter is used, the output voltage may be higher than the rated voltage depending on the manufacturers and therefore the above voltages must be observed strictly. If a voltage outside the normal operation range is used, the drive unit may be damaged. And the lens power input has the positive and negative polarities. Make sure to connect the power cable to the correct polarity when connecting the batteries or the adaptors. Connecting the cable to the incorrect polarity may cause the damage to the product.

2-2. MOUNT THE HOOD ON THE LENS

The lens cap is attached to the lens at the factory. Please remove the lens cap before mounting the hood.
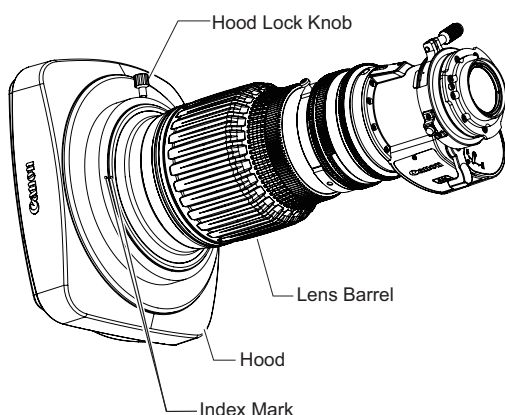
1 Fit the hood on the front of the lens barrel.

2 Align the index marks on the hood and lens barrel.

3 Tighten the hood lock knob.

2-3. TURN IT ON

Turn on the camera,and the power of the lens will be supplied.

E3

3 ADJUSTMENT

3-1. BACK FOCUS ADJUSTMENT

If the relationship between the image plane of the lens and the image plane of the television camera is incorrect, the object goes out of focus when the lens is zoomed. Follow the procedure below to adjust the back focus of the lens.

Extender Lever

Flange Back Adjusting Ring

Flange Back Lock Screw

Loosening
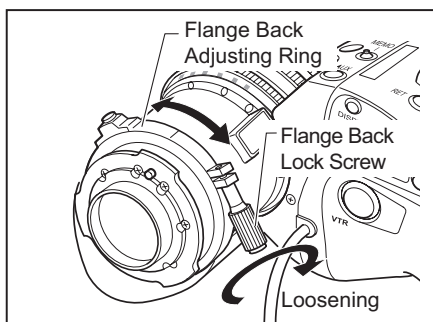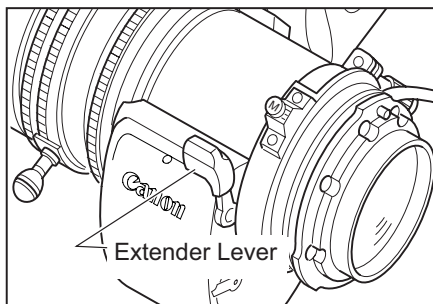
1 Select an object at an appropriate distance (CJ15ex/CJ14ex : approx. 1 to 3m, CJ20ex5B/CJ20ex7.8B/CJ25ex/CJ17ex/ CJ18ex7.6B/CJ24ex/KJ10ex/KJ17ex II/KJ22ex II : approx. 2 to 5m, CJ18ex28B : approx. 5 to 7m recommended). Use any object with sharp contrast to facilitate the adjustment work.

2 Set the extender lever to 1x. (Excluding KASE S type lens)

3 Set the iris fully open.

4 Set the lens to the telephoto angle by turning the zoom ring.

5 Bring the object into focus by turning the focus ring.

6 Set the lens to the widest angle by turning the zoom ring.

7 Loosen the flange back lock screw, and turn the flange back adjusting ring to bring the object into focus.

8 Repeat steps 4 to 7 a few times until the object is brought into focus both at the widest end and the telephoto end.

9 Tighten the flange back lock screw.

3-2. IRIS GAIN ADJUSTMENT

An iris gain adjusting trimmer is located on the front of the lens drive unit. The iris gain is set at middle of range at the factory. However, if you wish to change the iris gain, adjust the trimmer using a small screwdriver.

Iris Operation Mode Change-over Switch

Clockwise (to increase gain)

Iris Gain Adjusting Trimmer
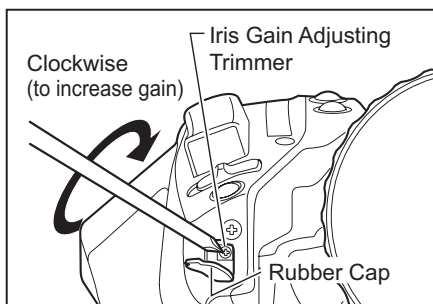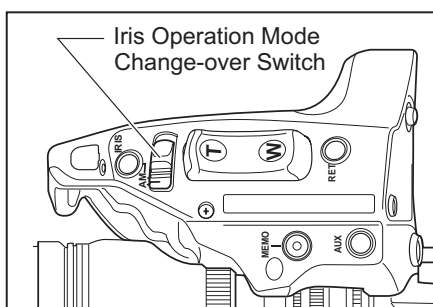
Rubber Cap

1 Set the iris operation mode change-over switch to the "A" (Auto) position.

2 Pull up the rubber cap on the iris gain adjusting trimmer.

3 Turn the iris gain adjusting trimmer, using a small screwdriver. As you look at the lens iris ring, set it to the position of maximum gain at which no iris hunting occurs.

4 Close the rubber cap after adjustment completes.

> The adjustment and the setting can also be made on the information display. Refer to Operation Manual "Information display".

4 MODE SETTING

4-1. OPERATION MODES

There are three operation modes below. One of the operation modes can be selected on the display screen of the information display of this lens according to usage and preference.

1. Basic mode   : Items that can be set and viewed are limited in this mode, and are recommended to users who do not require sophisticated settings. This product is factory-set to basic mode.

2. Full mode   : All items can be set and viewed in this mode.

3. Analog mode : This mode is selected when the digital functions are not used at all.

- Switches labeled VTR, RET, IRIS A/M, and IRIS INST control the respective functions. The rocker switch serves as a regular zoom switch.
- AUX and MEMO switches are disabled.
- To set auto iris gain adjustment, use either display or trimmer operations.
- Shuttle shot, framing preset, speed preset, and zoom tracking are not available.

This manual describes only the items that can be set on the Top screen in each mode.

> For details on how to set them, refer to Operation Manual "Information display".

4-2. SETTING ITEMS IN BASIC MODE

The following eight items can be set on the top screen in Basic Mode.

Initial Top screen in Basic Mode

MENU ⤷▸ IG: 50
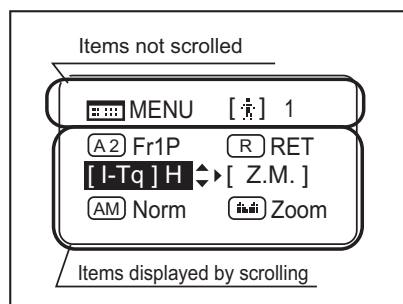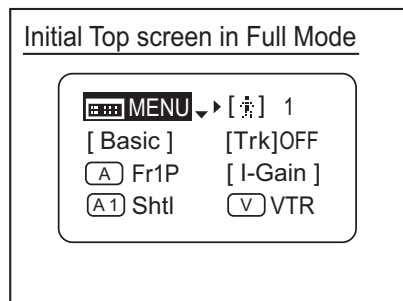(A) Fr1P   [Trk]OFF
(A1) Shtl   (A2) Fr1P
[I-Tq]H   [Z.M.]
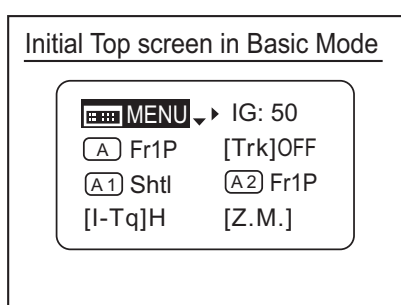
1. Go to MENU screen
2. Auto iris gain settings
3. AUX switch assignment
4. Zoom tracking ON/OFF
5. AUX1 switch assignment
6. AUX2 switch assignment
7. Iris torque settings
8. Zoom curve mode settings

> For details on how to set them, refer to Operation Manual "Information display".

4-3. SETTING ITEMS IN FULL MODE

The following 14 items can be set on the top screen in Full Mode.

Initial Top screen in Full Mode

▦ MENU ↴▸ [🚶] 1
[Basic]   [Trk]OFF
Ⓐ Fr1P   [I-Gain]
A1 Shtl   Ⓥ VTR

Items not scrolled

▦ MENU   [🚶] 1
A2 Fr1P   R RET
[I-Tq] H ↕▸ [Z.M.]
AM Norm   ▦ Zoom

Items displayed by scrolling

1. Go to MENU screen

2. Switch users

3. Switch to Basic Mode

4. Zoom tracking ON/OFF

5. AUX switch assignment

6. Iris gain settings

7. AUX1 switch assignment

8. VTR switch assignment

9. AUX2 switch assignment

10. RET switch assignment

11. Iris torque settings

12. Zoom curve mode settings

13. Iris A/M switch setting

14. Seasaw switch assignment

For details on how to set each setting item, refer to Operation Manual "Information display".

4-4. SETTING ITEMS IN ANALOG MODE

The following three items can be set on the top screen in Analog Mode.
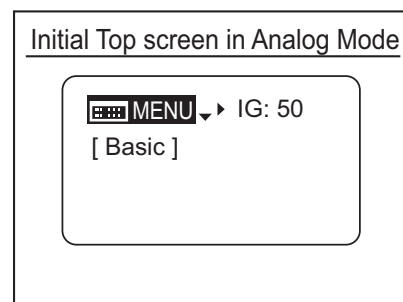
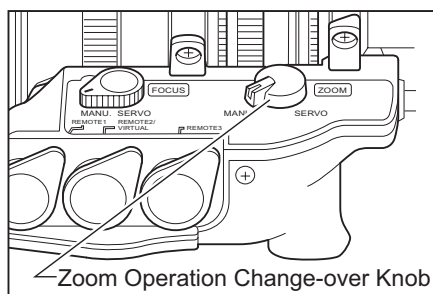Initial Top screen in Analog Mode

▦ MENU ↴▸ IG: 50
[Basic]

1. Go to MENU screen

2. Auto iris gain settings

3. Switch to Basic Mode

For details on how to set each setting item, refer to Operation Manual "Information display".

5 OPERATION

5-1. ZOOM OPERATION

5-1-1. Manual Zoom Operation

1 Set the zoom operation change-over knob at the bottom of the lens drive unit to MANU. position.

2 Turn the zoom ring (or zoom lever) to perform zoom operation.

NOTE
The zoom operation change-over knob must be set to the MANU. position before performing manual zoom operations.

The lens may be damaged if manual zoom operations are forcibly performed with the knob at the SERVO position.

Zoom Operation Change-over Knob

Toward Wide end
Toward Tele end
Zoom Ring
Zoom Lever
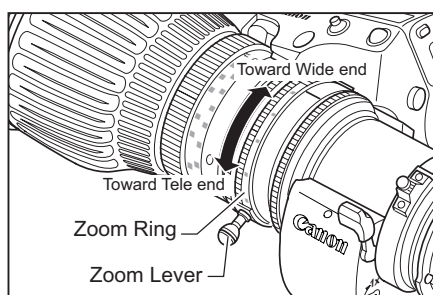
5-1-2. Servo Zoom Operation

Zoom operation can be performed by driving the built-in motor in the lens.
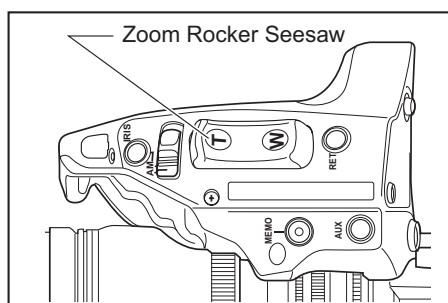
Zoom Rocker Seesaw

1 Set the zoom operation change-over knob to SERVO position.

2 Press the zoom rocker seesaw to perform zoom operation. Zoom speed changes by the depth of the switch being pressed. The deeper the switch is pressed the faster the zoom speed.

5-1-3. Maximum Zoom Speed Adjustment

The maximum speed of zoom when the zoom rocker seesaw is pressed can be adjusted with the max. zoom speed adjusting volume.
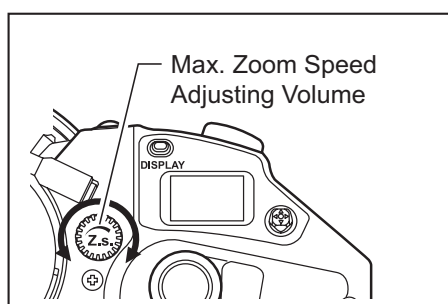
Max. Zoom Speed Adjusting Volume

The adjustment and the setting can also be made on the information display. Refer to Operation Manual "Information display".

5-1-4. Zoom Track Function (only for servo zoom)

The zoom control range (zoom track) position can be set as desired to set the virtual zoom limit in the telephoto end and the widest angle end. To use the zoom track function, the function should be enabled in advance.

A：Setting ON or OFF on the information display (In case of basic mode)

```
┌─────────────────────────┐
│ ▦MENU    IG:50          │
│ Ⓐ Fr1P ◄▲▼ [Trk]OFF     │
│ A1 Shtl    A2 Fr1P      │
│ [I-Tq]H    [Z.M.]       │
└─────────────────────────┘
```

1 Press the DISPLAY switch to turn on the display.

2 Select [Trk] using the control key, and then press the Set key. [Trk] and the previous setting now blink on the display.

3 Press the left or right key to select ON or OFF.

4 Press the Set key. This completes the setting.

> For details on how to set each setting item, refer to Operation Manual "Information display".
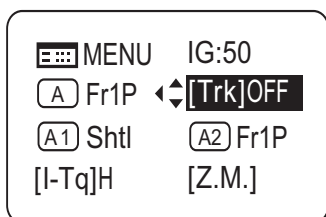
B: Setting ON or OFF by operating the switches

	Selection method	Operation	How to ascertain the selection
To set the function to "ON"	Hold down MEMO switch and Instant auto-iris switch simultaneously for at least 3 seconds.	The zoom control range is fixed to the zoom range set last. (If there is no previous setting, it is set to the mechanical end.)	Automatic zooming from current zoom position to the closer of the two set positions.
To set the function to "OFF"		The zoom range is set to the mechanical end.	Automatic zooming from current zoom position to the closer of the two mechanical ends.

Setting the Zoom Track Positions

Set the zoom track function to ON before setting the zoom track position.

Instant Auto-Iris Switch
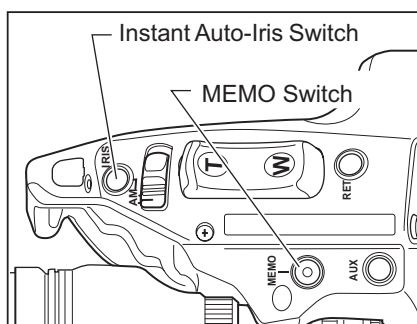
MEMO Switch

1 Zoom to the zoom track position to be set.

2 Keeping this zoom position, press the Instant Auto-Iris switch while holding down the MEMO switch. If the zoom position is at the telephoto end, the position is stored as the zoom track position for the telephoto limit. If position is at the widest angle end, it is stored as the widest end.

3 Repeat step 1 and 2 to set both the telephoto end and the widest end. It is possible to set only one end. To change the setting, perform step 1 to 3. (The position set last overwrites the setting in the memory.)

1. If the zoom track position is to be set again, the zoom position cannot move beyond the end point setting toward the mechanical end by performing servo zoom operations. To move the zoom, set the zoom track function to OFF, then take one of the steps below.
   ・Proceed with the zooming operation at the setting established by operating the zoom rocker seesaw.
   ・Perform the zooming operation manually.
2. Although up to two zoom track positions (the telephoto end and the widest angle end) can be set, two positions cannot be set that are on the same side of the center position of the zoom range of this lens. (In this case, the latest setting is stored as the zoom track position of this side.)

5-1-5. Shuttle-Shot Function

This function allows you to switch between the current zoom position and the preset zoom position at the maximum speed.

Current zoom position	The Shtl switch is held down. / Max speed	Shuttle memory position	The Shtl switch is released. / Max speed	Previous zoom position

Before using shuttle-shot function, the shuttle function must be assigned to the VTR, RET, or AUX switch of the drive unit, or the AUX1 or AUX2 switch on the zoom demand. This manual describes the Shtl function assigned to the VTR switch. For details, refer to "5-6 SWITCH OPERATIONS".

Setting the shuttle memory position

Zoom Rocker Seesaw
MEMO Switch
Shtl Switch
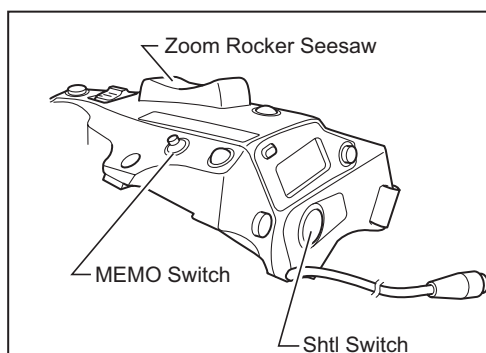
Zoom to the position to be set. Keeping this position, press the Shtl switch while holding down the MEMO switch.

1.The position you stored here is different from the one you set in "Framing Preset" mentioned later. The stored position set here is retained even after the power is turned off.

2.The operation with the Shtl switch is given the priority over that with the zoom rocker seesaw. The operation with the zoom rocker seesaw is disabled while the Shtl switch is pressed.

5-1-6. Speed Preset

This function allows you to call the preset zoom speed any time you zoom. Assign the Sped function to the VTR, RET, or AUX switch of the drive unit, or AUX1 or AUX2 switch on the zoom demand. This manual describes the Sped function assigned to the VTR switch.

1.   Storing the zoom speed and direction

Zoom Rocker Seesaw
MEMO Switch
Sped Switch
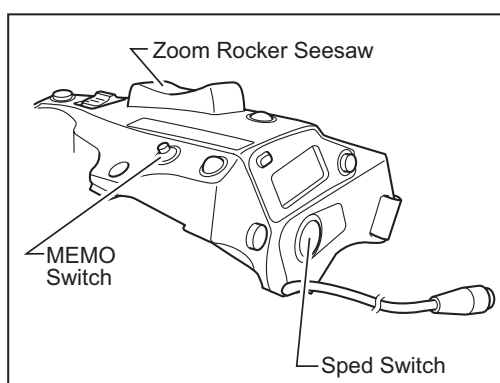
Operate the zoom rocker seesaw to determine the zoom speed and direction (toward the telephoto angle or the widest angle) which you want to store, and press the MEMO switch while holding this position.

The stored zoom speed is applied to the Framing Preset.

2. How to operate the speed preset function

    When the "Sped" switch is pressed, the zoom starts to move at the preset speed and to the determined direction (toward the telephoto angle or the widest angle) stored in section 1 and stops at the zoom end.

3. How to cancel movement in Speed Preset

    Movement in Speed Preset can be canceled by any of the following operations.

    1）Press the Sped switch again.→ Zooming stops.
    2）Performing zoom operation with the zoom rocker seasaw / Shtl switch / Fr1P switch / Fr2P switch / Fr1F switch / Fr2F switch.

5-1-7. Framing Preset

There are three framing preset types based on how the settings are combined.

［Zoom］

This enables a predetermined picture angle and movement speed (zoom speed) to be reproduced easily.

［Focus］ IASE S, IASE-C S and KASE S type lenses only

This enables a predetermined focus to be reproduced easily.

［Z+F］ IASE S, IASE-C S and KASE S type lenses only

This enables the movement speed (focus speed, zoom speed) to a predetermined focus and picture angle to be reproduced easily.

```
‡◂Preset   ▸  ▨ ▦ ▥
Frame1:   Zoom
Frame2:   Zoom
ZSpeed:   800
```
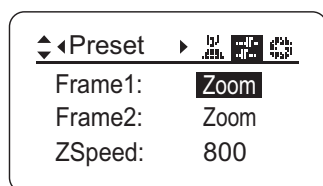
The framing preset setting is changed on the Preset screen on the information display. The Frame1 setting is changed to Zoom, Focus, or Z+F.

Up to two framing presets, Frame1 and Frame2, can be stored in the memory. Only Frame1 is described in the description given on the following pages. Frame1 is indicated as Fr1P.

How to set the zoom speed to the framing memory position

Movement speed to the framing position is selected by assigning the Fr1P or Fr1F switch.

Fr1P----------For the preset speed setting（preset speed）(Assigned to the AUX switch at the factory.)
Fr1F----------For the maximum speed setting（fast speed）

For details on how to assign the functions to the switches, refer to "5-6. SWITCH OPERATIONS".

Setting combinations

Frame preset control	Control content	Movement speed setting	
		Fr1P, Fr2P (speed settable)	Fr1F, Fr2F (maximum speed)
Zoom	Zoom operation control	The zoom moves at the preset speed.	The zoom moves at the maximum speed.
Focus	Focus operation control	The focus moves at maximum speed. *1	The focus moves at maximum speed.
Z+F	Zoom + focus operation control	The zoom and focus move at the preset speeds. *2	The zoom and focus move at the maximum speed.

*1 : Focus speed is fixed at maximum speed.
*2 : The zoom and focus are controlled in such a way that they start and stop simultaneously.

Framing Preset [Zoom] / [Focus] / [Z+F] Setting

The following figure below is shown as an example. Actual state of the switch may look different if the function is allocated to the different switch.

- Fr1P function--------Assigned to the AUX switch by factory default.

1. Setting the framing memory position
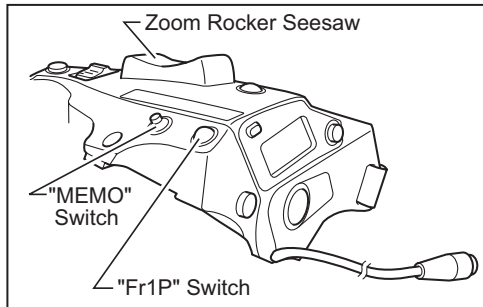
Zoom (and focus) to the position that you want to store, while holding this zoom (and zoom focus) position, press the Fr1P switch while holding down the MEMO switch.

This framing memory position is different from the shuttle memory position (Refer to "5-1-5. Shuttle-Shot Function"). The stored zoom position remains in the memory, even after the power is turned off.

2. Moving to the framing memory position

Once the Fr1P switch is pressed, the zoom starts to move toward the framing memory position at the preset speed and stops at the framing memory position. When the zoom reaches the framing memory position, it stops and stays there.

3. Canceling the movement to the framing memory position or switching to other zoom operation

During movement to the framing memory position, the movement can be canceled and/or switched to other zoom operation by any of the following operations.

[Zoom Framing Preset]	[Focus Framing Preset]
• Press the Fr1P switch again. • Perform zoom operation with the zoom rocker seesaw. • Perform zoom operation with the Shtl switch.	[Zoom, Focus Framing Preset] • Operate a connected focus demand. Movement to the memory position stops, and movement to the operating position of the focus demand takes place.

5-1-8 Clutchless Zoom（Only models with clutchless zoom mechanism）
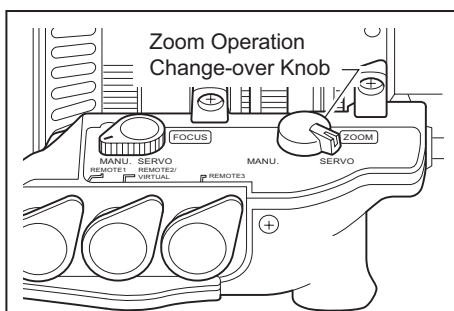
Set the zoom operation change-over knob to the SERVO position to activate the clutchless zoom mechanism.

NOTE

The lens may be damaged if manual zoom operation is performed during the servo zoom operation.

Zoom operation change-over knob	Clutchless zoom mechanism	Operation
SERVO	ON	Setting used when both servo and manual operations are needed Without operating a clutch, you can switch between the servo zoom and manual zoom.
MANU.	OFF	Set to MANU. when using only the manual zoom.

5-2. FOCUS OPERATION

5-2-1. Manual Focus Operation

Focus Operation Change-over Knob

1 When IASE S, IASE-C S or KASE S type lens is used, set the focus operation change-over knob to MANU. position.

> NOTE
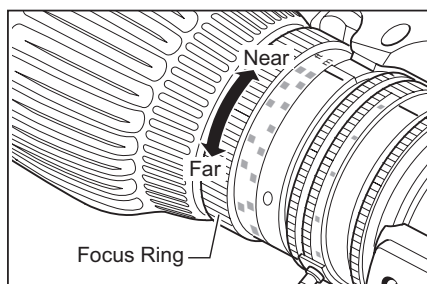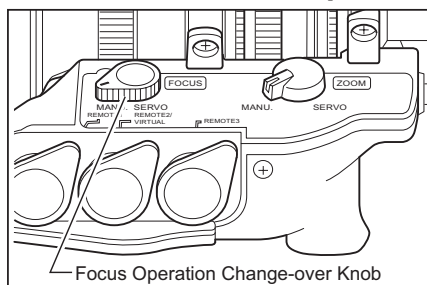> When using IASE S, IASE-C S or KASE S type lens, the camera may be damaged if excessive force is applied to turn the focus ring with the knob is at the SERVO position.

Near

Far

Focus Ring

2 Turn the focus ring to bring the near or far object into focus.

5-2-2. Servo Focus Operation
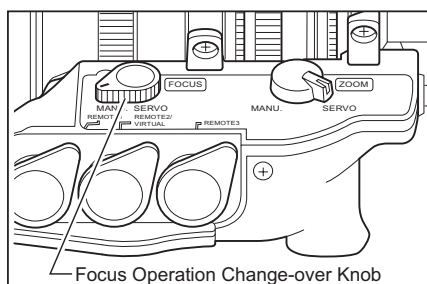
Focus Operation Change-over Knob

1 When IASE S, IASE-C S or KASE S type lens is used, set the focus operation change-over knob to SERVO position.

2 Mount the accessory such as focus demand. For the details, refer to the operation manual of accessories.

5-3. EXTENDER OPERATION (Excluding KASE S type lens)
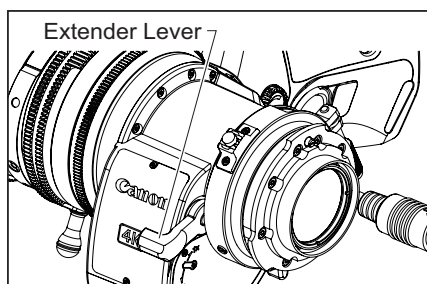
Extender Lever

The lens with built-in extender has the built-in 2x extender.

Use the extender lever to switch between 1x and 2x.

> When the extender is used, note that the light quantity may decrease by the zoom ratio depending on the iris correction setting.

5-4. IRIS OPERATION

The iris operation mode can be switched between auto and manual with the iris operation mode change-over switch.

5-4-1. Automatic Iris Operation

Iris Operation Mode Change-over Switch
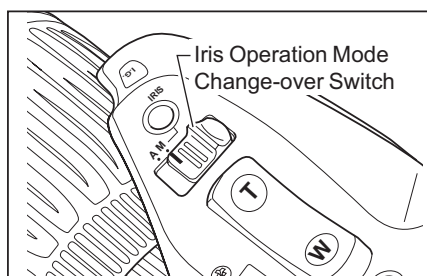
Slide the iris operation mode change-over switch to the "A" position.

The iris operation is performed automatically by the instruction from the camera, to keep the video signal level constant.

E12

5-4-2. Manual Iris Operation
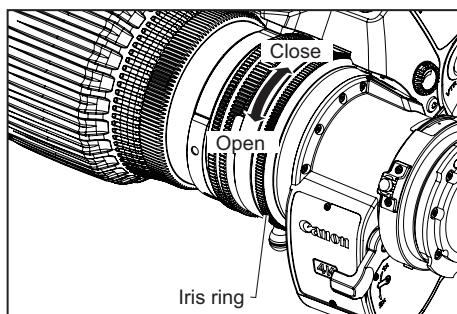
Slide the iris operation mode change-over switch to the "M" position. The iris operation is performed by turning the iris ring on the lens body.

> **NOTE**
>
> The iris operation mode change-over switch must be set to the M position before performing manual iris operations. The lens may be damaged if manual iris operations are forcibly performed with the knob at the A position.
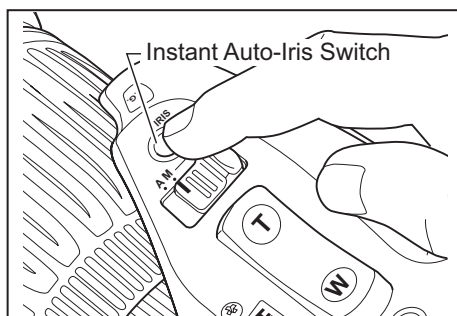
When the instant auto-iris switch is pressed during manual iris operation mode, the iris changes to automatic operation mode while the switch is held down.

The adjustment and the setting can also be made on the information display. Refer to Operation Manual "Information display".

5-5. MACRO OPERATION

In macro shooting, the object distance becomes shorter than the normal minimum object distance (M.O.D.). The minimum object distance by macro operation for this lens is 10mm at the widest angle.
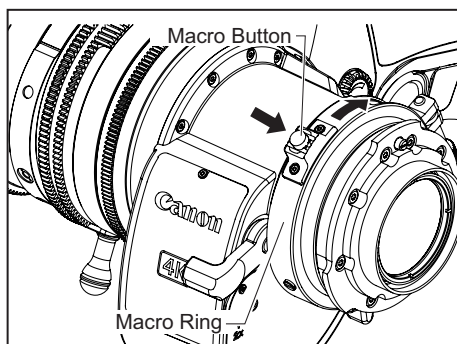
To operate the macro, press the macro button to unlock the macro ring. While holding it down, turn the macro ring at the rear of the lens clockwise as viewed from the camera side to allow macro shooting.

1 Set the lens to the widest angle by manual or servo zoom operation.

2 Bring the object into focus by turning the macro ring.

Macro operation is also possible at any zoom position other than the widest angle, but the object distance increases.

Multi-point Focus Shooting

In macro shooting, when zooming to change the focal length, the focal point varies.

The multi-point focus shooting technique uses this characteristic. The focal point is shifted by the zoom operation. Follow the steps bellow :

1 Zoom in to a far object, and bring it into focus by normal focus operation.

2 Zoom out to a near object and bring into focus by macro operation.

3 Zoom in to the far object again while not touching the macro button set by above step 2, and bring into focus again by normal focus operation.

5-6. SWITCH OPERATIONS

Functions can be assigned to the five switches: the VTR, RET, AUX switches, or AUX1 and AUX2 switches on the information display. VTR, RET, Shtl, and Fr1P functions are assigned respectively by default. The following steps explain how to assign the functions to the switches in basic mode.

For details, refer to Operation Manual "Information display".

```
::::: MENU    IG:50
 A  Fr1P      [Trk]OFF
A1  Shtl ↕ ▸ A2 Fr1P
[I-Tq]H       [Z.M.]
```
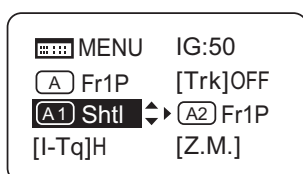
1 Press the DISPLAY switch to turn on the display.

2 After using the control key to select the name of the switch key to which the function is to be allocated, press the Set key. The name of the switch and the default or the previous setting now blink on the display.

3 Press the left or right key until the function to be changed to appears on the display.

4 Press the Set key. This completes the setting.

③ AUX switch A

② RET switch R

① VTR switch V
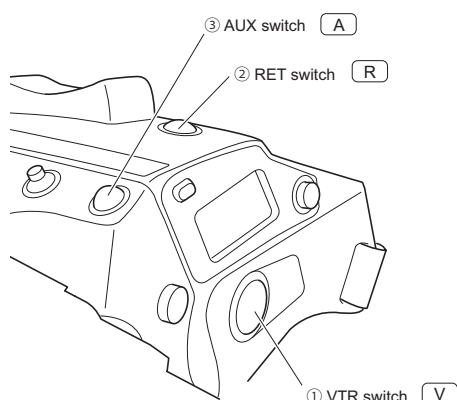
Switch	Default value	Functions								
		Fr1P	Fr1F	Fr2P	Fr2F	Sped	Shtl	NON	VTR	RET
① V	VTR	●	●	●	●	●	●		●	●
② R	RET	●	●	●	●	●	●		●	●
③ A	Fr1P	●	●	●	●	●	●	●	●	●
④ A1	Shtl	●	●	●	●	●	●	●	●	●
⑤ A2	Fr1P	●	●	●	●	●	●	●	●	●

"●" indicates a combination of an assignable function and a switch.
(4) and (5) are AUX1 and AUX2 switches on the zoom demand.

Switch name	Description
VTR	Start/stop VTR operation.
RET	Hold down to view the main-line video on the view finder.
Fr1P, Fr2P	Press to move to the stored zoom/focus position. One position can be stored/called for Fr1P and Fr1F, and another for Fr2P and Fr2F.
Fr1F, Fr2F	
Sped	Press to move in the stored zoom direction (toward the telephoto end or the widest angle end) at the stored zoom speed.
Shtl	Press to move to the stored zoom position at the maximum speed. Release to return to the previous zoom position at the maximum speed.
NON	No function

6 PRODUCT SPECIFICATIONS

UHDxs LENSES

Model Name			CJ15ex4.3B	CJ20ex5B
Focal Length		1×	4.3-65mm	5-100mm
		2×	8.6-130mm	10-200mm
Zoom Ratio			15 ×	20 ×
Maximum Relative Aperture		1×	1:1.8 (at 4.3-40mm) 1:2.9 (at 65mm)	1:1.8 (at 5-61mm) 1:2.95 (at 100mm)
		2×	1:3.6 (at 8.6-80mm) 1:5.8 (at 130mm)	1:3.6 (at 10-122mm) 1:5.9 (at 200mm)
Image Format			Dia. 11mm (9.6 × 5.4 mm)	
Angular Field of View	Wide	1×	96.3º×64.2º	87.7º × 56.7º
		2×	58.3º×34.9º	51.3º × 30.2º
	Tele	1×	8.4º×4.8º	5.5º × 3.1º
		2×	4.2º ×2.4º	2.7º × 1.5º
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)			0.3m	0.4m
Object Dimensions at M.O.D	Wide	1×	76.1 × 42.8cm	87.1 × 49.0cm
		2×	38.1 × 21.4cm	43.6 × 24.5cm
	Tele	1×	4.9 × 2.8cm	4.2 × 2.4cm
		2×	2.5 × 1.4cm	2.1 × 1.2cm
Flange Back			48mm（in air）	
Thread for Filters			127mm P0.75 (Hood Unit Thread Size)	
Zoom Speed for Full Range			Max. 0.5s ± 0.2s	
Focus Speed for Full Range			1.3s ± 0.3s	
Iris			Control from camera	
Mount			B4	
Power Source			DC12V（DC10 ～ 17V）	
Current Consumption	R type		Max 300mA	
	A type		Max 500mA	
Operating Temperature			Temperature：－ 20℃ ～ ＋ 45℃ Humidity：5% to 95%RH (no condensation)	
Mass without Hood	IRSE S		Approx. 2.11kg	Approx. 2.16kg
	IASE S		Approx. 2.19kg	Approx. 2.24kg

Model Name		CJ20ex7.8B	CJ25ex7.6B
Focal Length	1×	7.8-156mm	7.6-190mm
	2×	15.6-312mm	15.2-380mm
Zoom Ratio		20 ×	25 ×
Maximum Relative Aperture	1×	1:1.8 (at 7.8-108mm) 1:2.6 (at 156mm)	1:1.8 (at 7.6-118mm) 1:2.9 (at 190mm)
	2×	1:3.6 (at 15.6-216mm) 1:5.2 (at 312mm)	1:3.6 (at 15.2-236mm) 1:5.8 (at 380mm)
Image Format		Dia. 11mm (9.6 × 5.4 mm)	
Angular Field of View	Wide 1×	63.2°×38.2°	64.6°×39.1°
	Wide 2×	34.2°×19.6°	35.1°×20.1°
	Tele 1×	3.5°×2.0°	2.89°×1.63°
	Tele 2×	1.8° ×1.0°	1.45° ×0.81°
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)		0.8m	
Object Dimensions at M.O.D	Wide 1×	91.7 × 51.6cm	93.9 × 52.8cm
	Wide 2×	45.9 × 25.8cm	48.1 × 27.1cm
	Tele 1×	4.8 × 2.7cm	3.9 × 2.2cm
	Tele 2×	2.4 × 1.4cm	2.0 × 1.1cm
Flange Back		48mm（in air）	
Thread for Filters		94mm P1.0 (Lens Barrel Thread Size) or 105mm P1.0 (Hood Unit Thread Size)	
Zoom Speed for Full Range		Max. 0.5s ± 0.2s	
Focus Speed for Full Range		1.5s ± 0.3s	
Iris		Control from camera	
Mount		B4	
Power Source		DC12V（DC10 ～ 17V）	
Current Consumption	R type	-	Max 300mA
	A type	Max. 500mA	
Operating Temperature		Temperature : - 20˚C to + 45˚C Humidity : 5% to 95%RH (no condensation)	
Mass without Hood	IRSE S	-	Approx.1.91kg
	IASE S	Approx. 2.18kg	Approx.1.99kg

UHDɢc LENSES

Model Name		CJ14ex4.3B	CJ17ex6.2B
Focal Length	1×	4.3-60mm	6.2-106mm
	2×	8.6-120mm	12.4-212mm
Zoom Ratio		14 ×	17×
Maximum Relative Aperture	1×	1:1.8 (at 4.3-40mm) 1:2.7 (at 60mm)	1:1.8 (at 6.2-65.8mm) 1:2.9 (at 106mm)
	2×	1:3.6 (at 8.6-80mm) 1:5.4 (at 120mm)	1:3.6 (at 12.4-131.6mm) 1:5.8 (at 212mm)
Image Format		Dia. 11mm (9.6 × 5.4 mm)	
Angular Field of View	Wide 1×	96.3º×64.2º	75.5º×47.1º
	Wide 2×	58.3º×34.9º	42.3º×24.6º
	Tele 1×	9.1º×5.2º	5.2º×2.9º
	Tele 2×	4.6º ×2.6º	2.6º ×1.5º
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)		0.3m	0.4m
Object Dimensions at M.O.D	Wide 1×	76.4 ×43.0cm	73.3 ×41.2cm
	Wide 2×	38.2 ×21.5cm	36.7 ×20.6cm
	Tele 1×	5.2 ×2.9cm	4.1 ×2.3cm
	Tele 2×	2.6 ×1.5cm	2.1 ×1.2cm
Flange Back		48mm (in air)	
Thread for Filters		127mm P0.75 (Hood Unit Thread Size)	105mm P1.0 (Hood Unit Thread Size)
Zoom Speed for Full Range		Max. 0.5s ± 0.2s	
Focus Speed for Full Range		1.3s ± 0.3s	1.5s ± 0.3s
Iris		Control from camera	
Mount		B4	
Power Source		DC12V （DC10 ～ 17V)	
Current Consumption	R type	Max. 300mA	
	A type	Max. 500mA	
Operating Temperature		Temperature : - 20˚C to + 45˚C Humidity : 5% to 95%RH (no condensation)	
Mass without Hood	IRSE S	Approx. 2.11kg	Approx. 2.07kg
	IASE S	Approx. 2.19kg	Approx. 2.15kg

Model Name		CJ18ex7.6B*	CJ18ex28B	CJ24ex7.5B
Focal Length	1×	7.6-137mm	28-500mm	7.5-180mm
	2×	15.2-274mm	56-1000mm	15-360mm
Zoom Ratio		18×	18×	24×
Maximum Relative Aperture	1×	1:1.8 (at 7.6-103mm) 1:2.4 (at 137mm)	1:2.8 (at 28-286mm) 1:4.9 (at 500mm)	1:1.8 (at 7.5-120mm) 1:2.7 (at 180mm)
	2×	1:3.6 (at 15.2-206mm) 1:4.8 (at 274mm)	1:5.6 (at 56-572mm) 1:9.8 (at 1000mm)	1:3.6 (at 15-240mm) 1:5.4 (at 360mm)
Image Format		Dia. 11mm (9.6 × 5.4 mm)		
Angular Field of View	Wide 1×	64.6º×39.1º	19.5º×11.0º	65.2º×39.6º
	Wide 2×	35.1º×20.1º	9.8º×5.5º	35.5º×20.4º
	Tele 1×	4.0º×2.3º	1.10º×0.62º	3.1º×1.7º
	Tele 2×	2.0º ×1.1º	0.55º ×0.31º	1.5º×0.9º
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)		0.56m	2.2m	0.8m
Object Dimensions at M.O.D	Wide 1×	65.5 ×36.8cm	71.0×39.9cm	96.0 ×54.0cm
	Wide 2×	32.8 ×18.4cm	35.5×20.0cm	48.0 ×27.0cm
	Tele 1×	3.8 ×2.1cm	4.1×2.3cm	4.1 ×2.3cm
	Tele 2×	1.9 ×1.1cm	2.1×1.2cm	2.1 ×1.2cm
Flange Back		48mm (in air)		
Thread for Filters		82mm P0.75 (Lens Barrel Thread Size)	127mm P0.75 (Hood Unit Thread Size)	94mm P1.0 (Lens Barrel Thread Size) or 105mm P1.0 (Hood Unit Thread Size)
Zoom Speed for Full Range		Max. 0.5s ± 0.2s		
Focus Speed for Full Range		1.3s ± 0.3s	1.5s ± 0.3s	
Iris		Control from camera		
Mount		B4		
Power Source		DC12V（DC10 ～ 17V）		
Current Consumption	R type	Max. 300mA	-	Max. 300mA
	A type	Max. 500mA		
Operating Temperature		Temperature : - 20˚C to + 45˚C Humidity : 5% to 95%RH (no condensation)		
Mass without Hood	IRSE S	Approx. 1.65kg	-	Approx. 1.82kg
	IASE S	Approx. 1.73kg	Approx. 2.76kg	Approx. 1.90kg
	KASE S	Approx. 1.68kg	-	-

*CJ18ex7.6B KASE S : No built-in extender

HDGC LENSES

Model Name		KJ10ex4.5B	KJ17ex7.7B II
Focal Length	1×	4.5-45mm	7.7-131mm
	2×	9-90mm	15.4-262mm
Zoom Ratio		10×	17×
Maximum Relative Aperture	1×	1:1.8 (at 4.5-34.5mm) 1:2.35 (at 45mm)	1:1.8 (at 7.7-103mm) 1:2.3 (at 131mm)
	2×	1:3.6 (at 9-68.9mm) 1:4.7 (at 90mm)	1:3.6 (at 15.4-206mm) 1:4.6 (at 262mm)
Image Format		Dia. 11mm (9.6 × 5.4 mm)	
Angular Field of View	Wide 1×	93.7º×61.9º	63.9º×38.6º
	Wide 2×	56.1º×33.4º	34.6º×19.9º
	Tele 1×	12.2º×6.9º	4.2º×2.4º
	Tele 2×	6.1º ×3.4º	2.1º×1.2º
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)		0.3m	0.6m
Object Dimensions at M.O.D	Wide 1×	74.1 ×41.7cm	67.3×37.9cm
	Wide 2×	37.0 ×20.8cm	33.7×19.0cm
	Tele 1×	6.4 ×3.6cm	4.2×2.4cm
	Tele 2×	3.2 ×1.8cm	2.1×1.2cm
Flange Back		48mm (in air)	
Thread for Filters		127mm P0.75 (Hood Unit Thread Size)	82mm P0.75 (Lens Barrel Thread Size)
Zoom Speed for Full Range		Max. 0.5s ± 0.2s	
Focus Speed For Full Range		1.3s ± 0.3s	
Iris		Control from camera	
Mount		B4	
Power Source		DC12V（DC10 ～ 17V）	
Current Consumption	R type	Max. 300mA	
	A type	Max. 500mA	
Operating Temperature		Temperature : - 20˚C to + 45˚C Humidity : 5% to 95%RH (no condensation)	
Mass without Hood	IRSE S	Approx. 1.83kg	Approx. 1.65kg
	IASE S	Approx. 1.91kg	Approx. 1.73kg

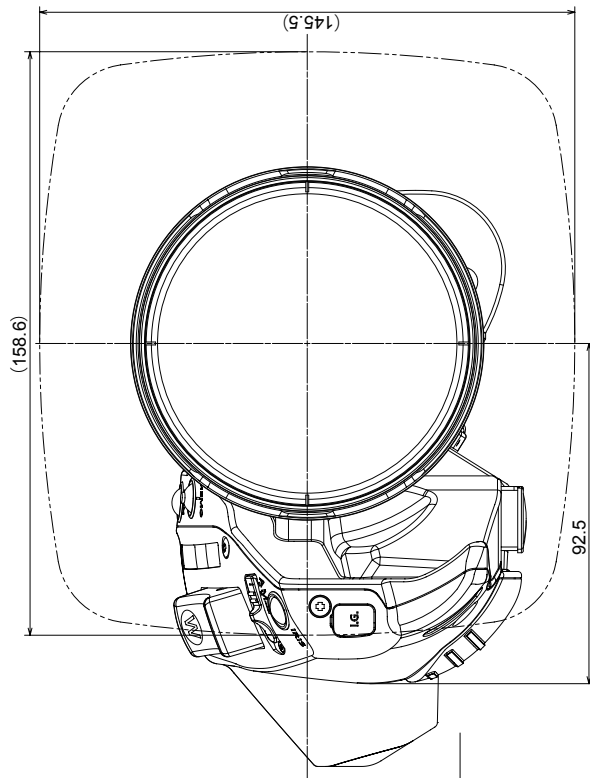| Model Name		KJ22ex7.6B II
Focal Length	1×	7.6-168mm
	2×	15.2- 336mm
Zoom Ratio		22×
Maximum Relative Aperture	1×	1:1.8 (at 7.6-120mm) 1:2.6 (at 168mm)
	2×	1:3.6 (at 15.2-240mm) 1:5.2 (at 336mm)
Image Format		Dia. 11mm (9.6 × 5.4 mm)
Angular Field of View	Wide	1×	64.6°×39.1°
		2×	35.1°×20.1°
	Tele	1×	3.27°×1.84°
		2×	1.64°×0.92°
Minimum Object Distance (M.O.D) (Macro: 10mm from the lens vertex)		0.8m
Object Dimensions at M.O.D	Wide	1×	94.7×53.3cm
		2×	47.4×26.7cm
	Tele	1×	4.4×2.5cm
		2×	2.2×1.3cm
Flange Back		48mm (in air)
Thread for Filters		94mm P1.0 (Lens Barrel Thread Size) or 105mm P1.0 (Hood Unit Thread Size)
Zoom Speed for Full Range		Max. 0.5s ± 0.2s
Focus Speed For Full Range		1.5s ± 0.3s
Iris		Control from camera
Mount		B4
Power Source		DC12V（DC10 ～ 17V）
Current Consumption	R type	Max. 300mA
	A type	Max. 500mA
Operating Temperature		Temperature : - 20°C to + 45°C Humidity : 5% to 95%RH (no condensation)
Mass without Hood	IRSE S	Approx. 1.82kg
	IASE S	Approx. 1.90kg

TECHNICAL INFORMATION

EXTERNAL VIEW

1. CJ15ex4.3B IASE S
2. CJ20ex5B IASE S
3. CJ20ex7.8B IASE S
4. CJ25ex7.6B IASE S
5. CJ14ex4.3B IASE S
6. CJ17ex6.2B IASE S
7. CJ18ex7.6B IASE S
8. CJ18ex28B IASE S
9. CJ24ex7.5B IASE S
10. KJ10ex4.5B IASE S
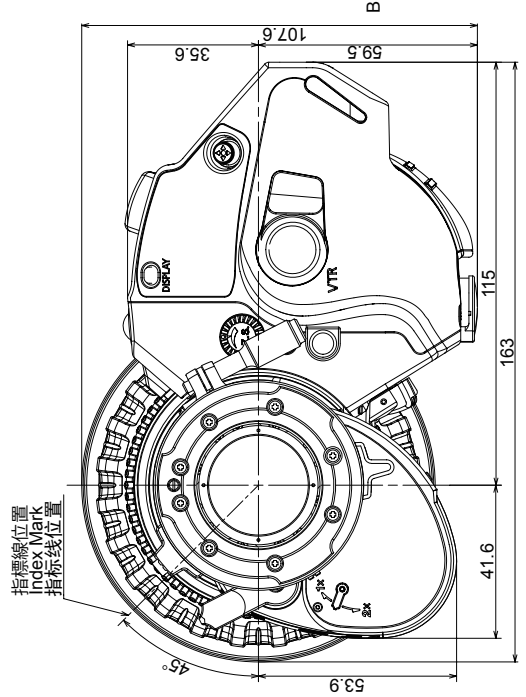11. KJ17ex7.7B IASE II S
12. KJ22ex7.6B IASE II S
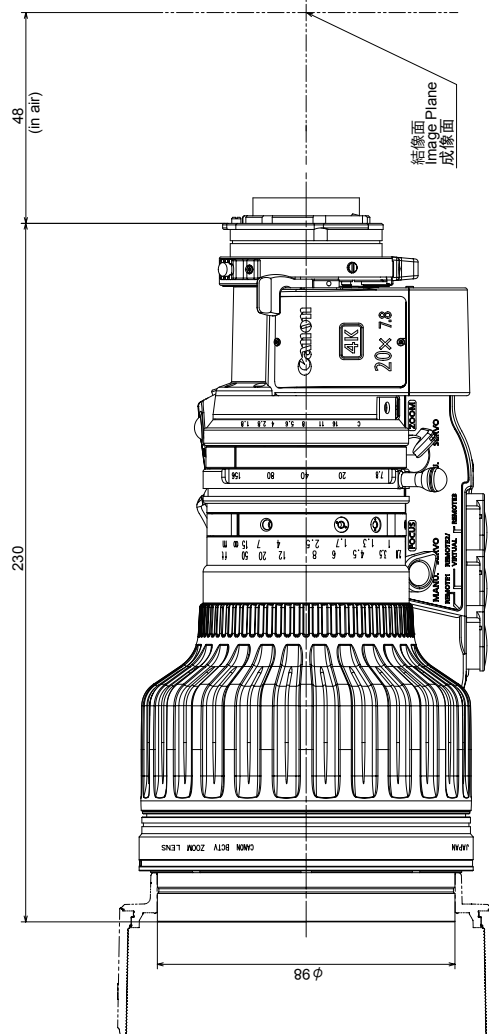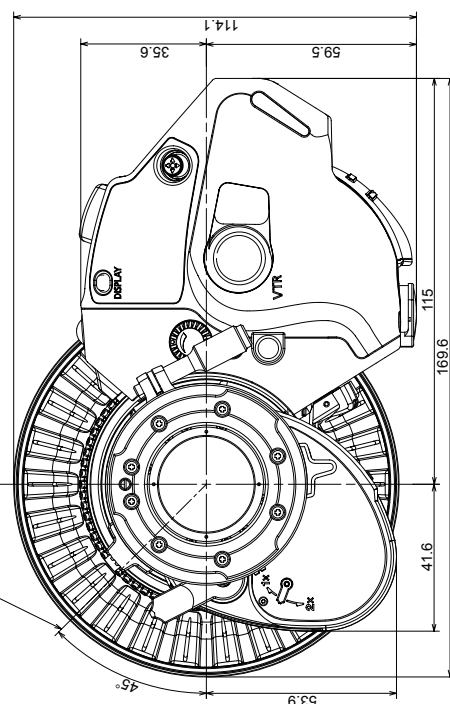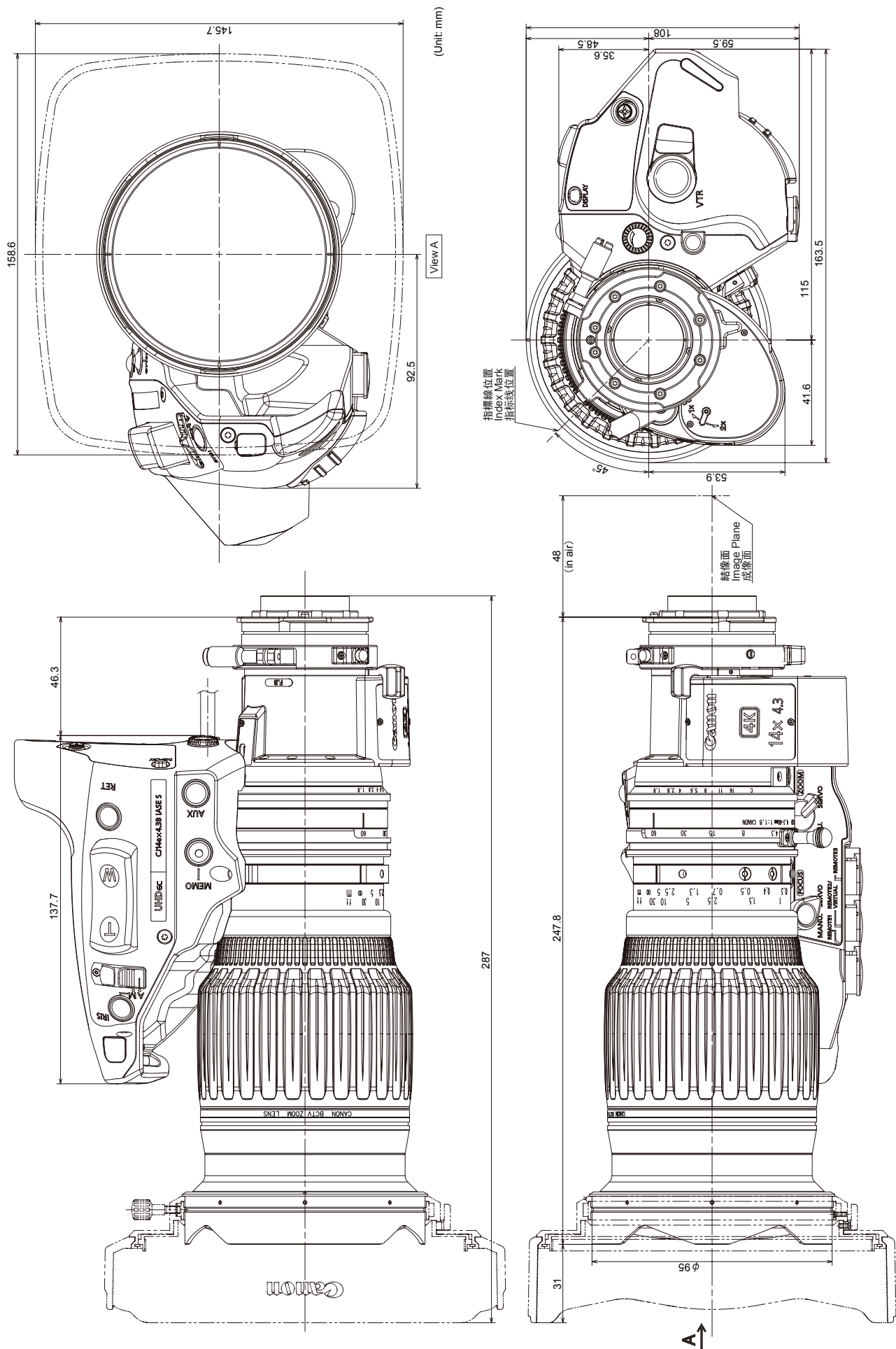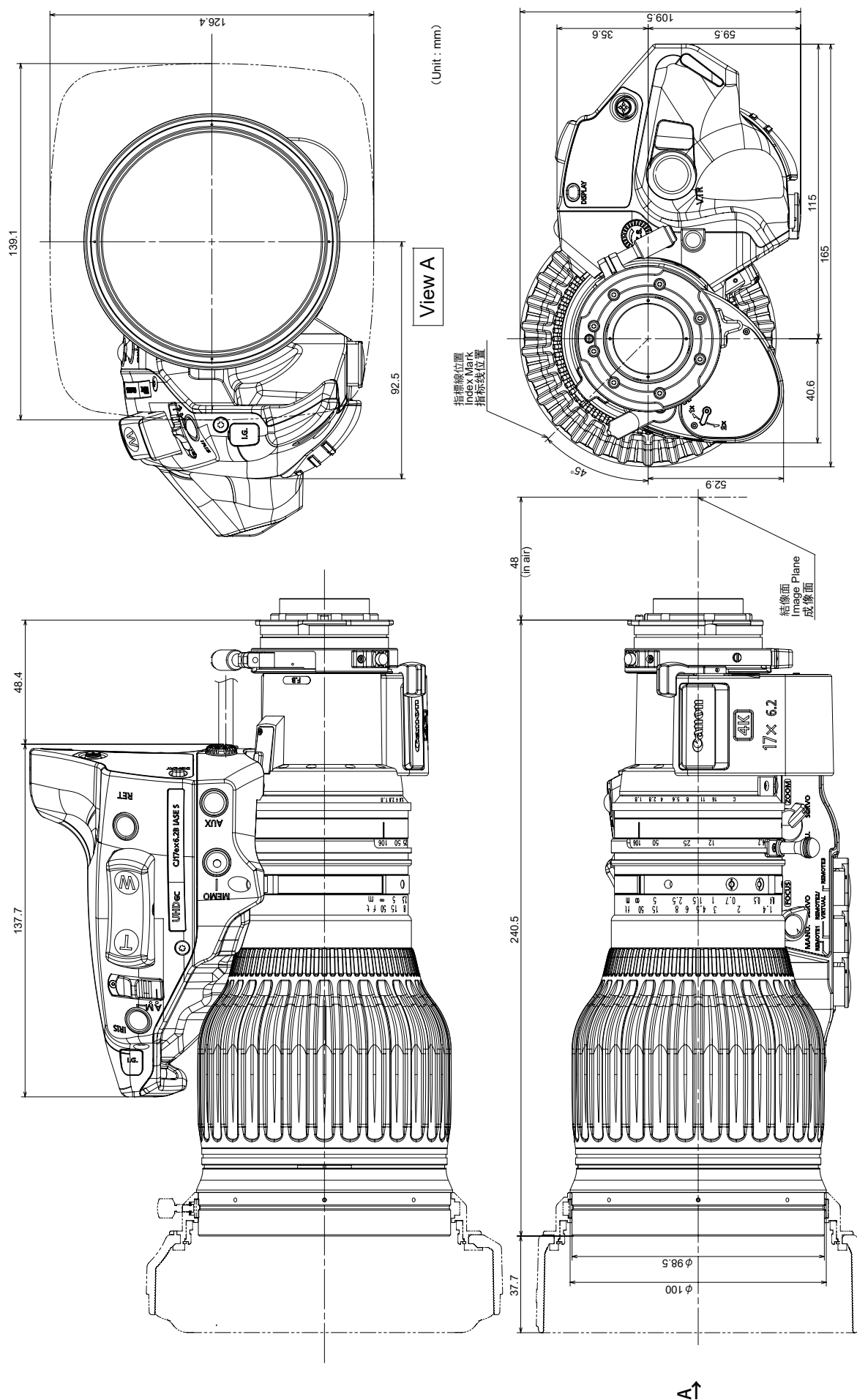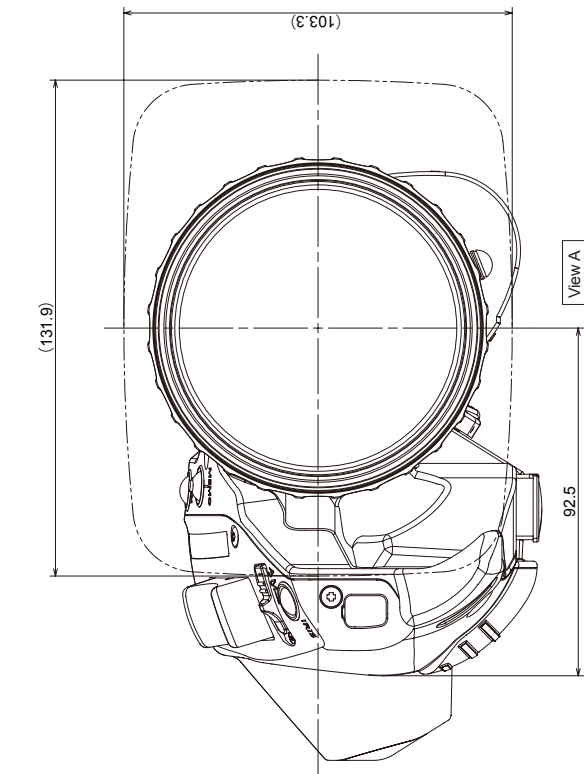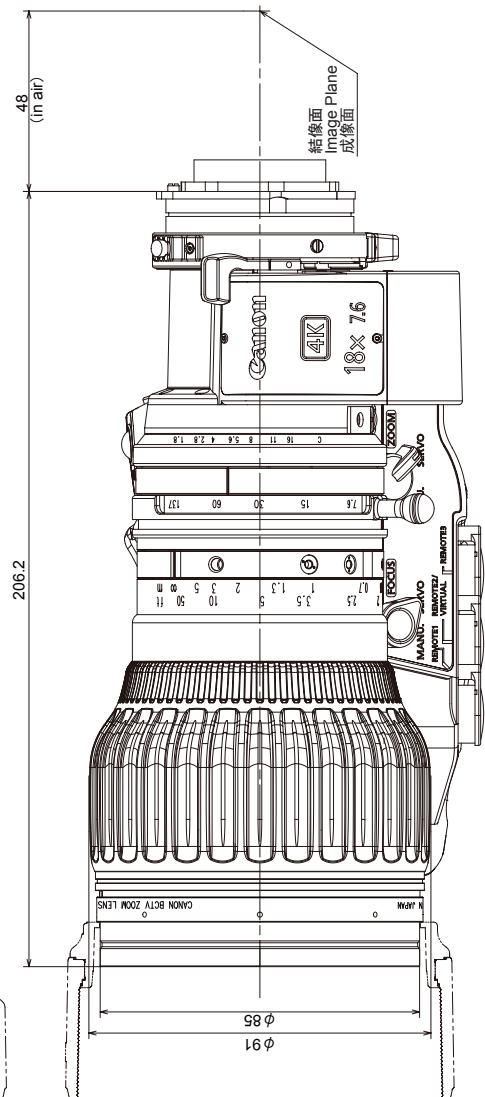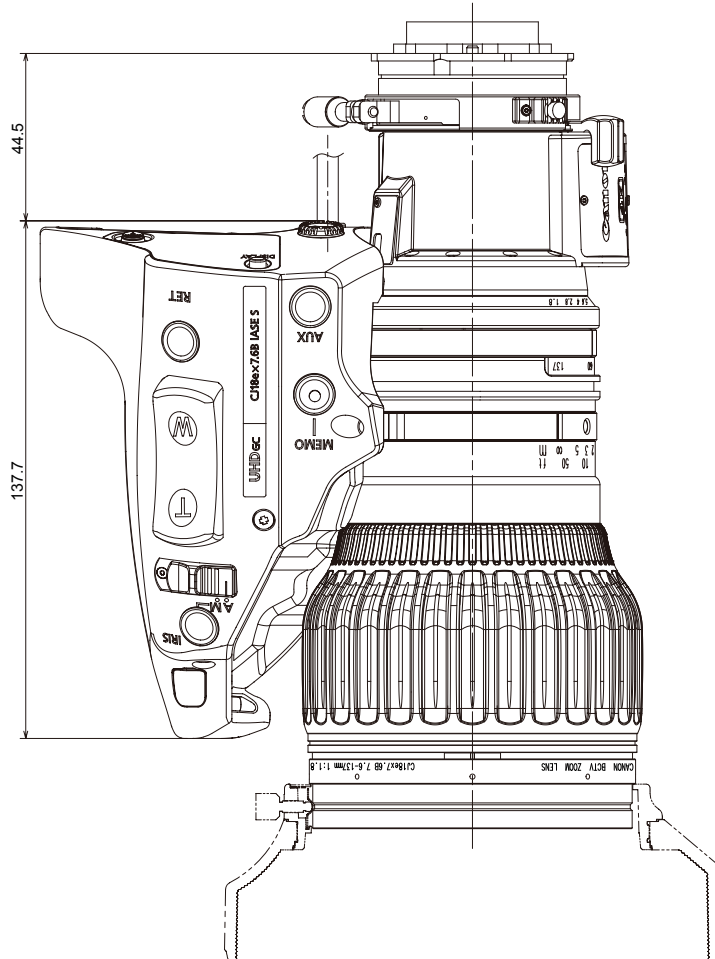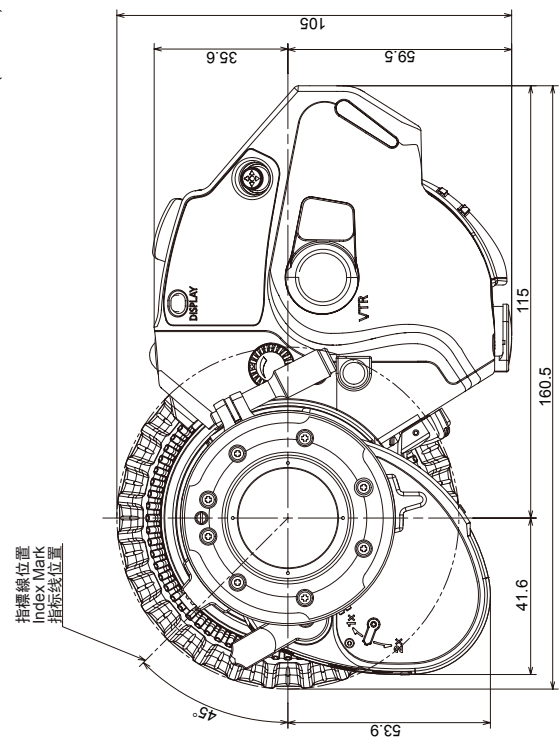
There are some differences in the external appearance of the IRSE S, KASE S type and clutchless type.
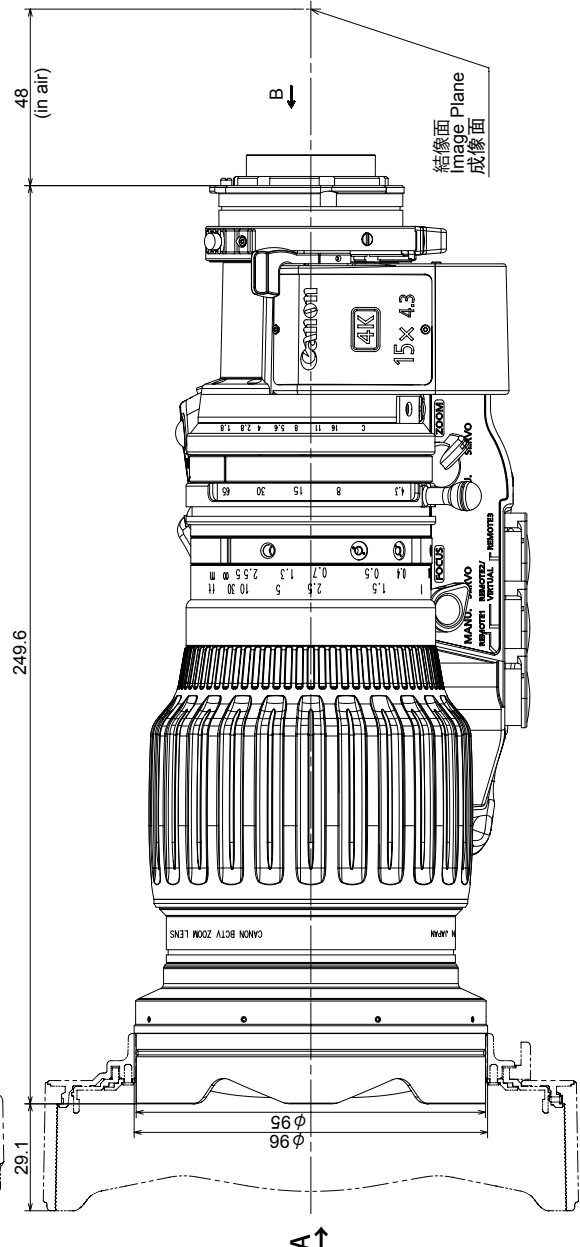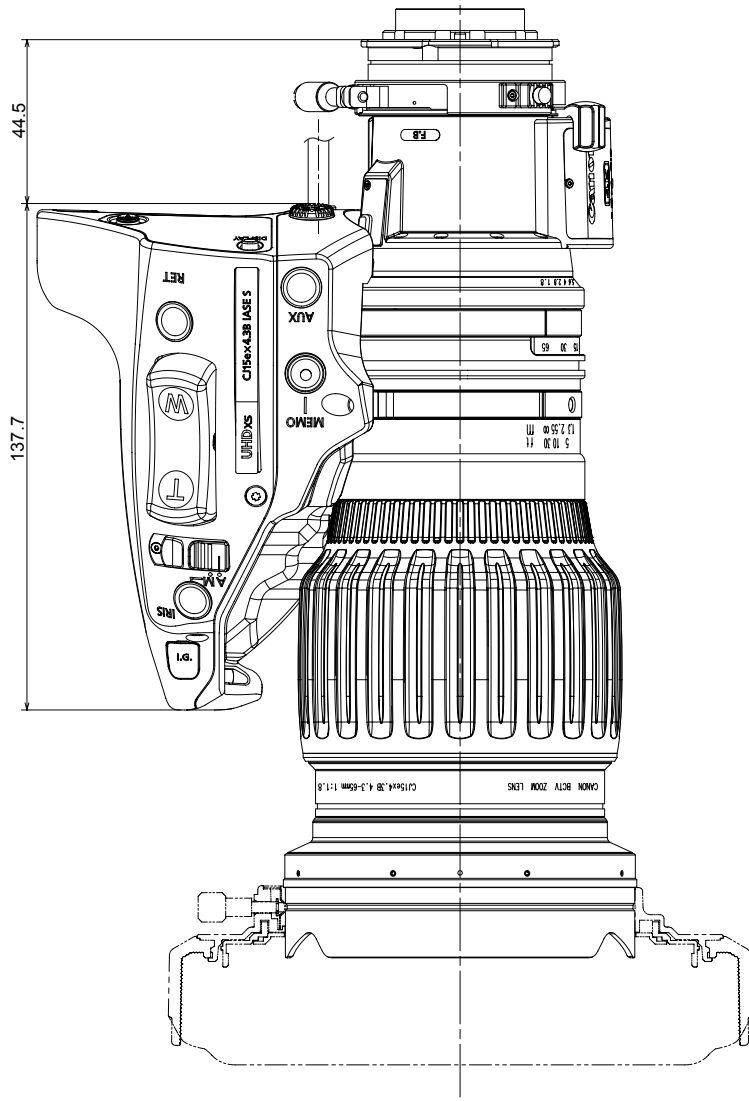
1. CJ15ex4.3B IASE S

(Unit : mm)

View A

View B
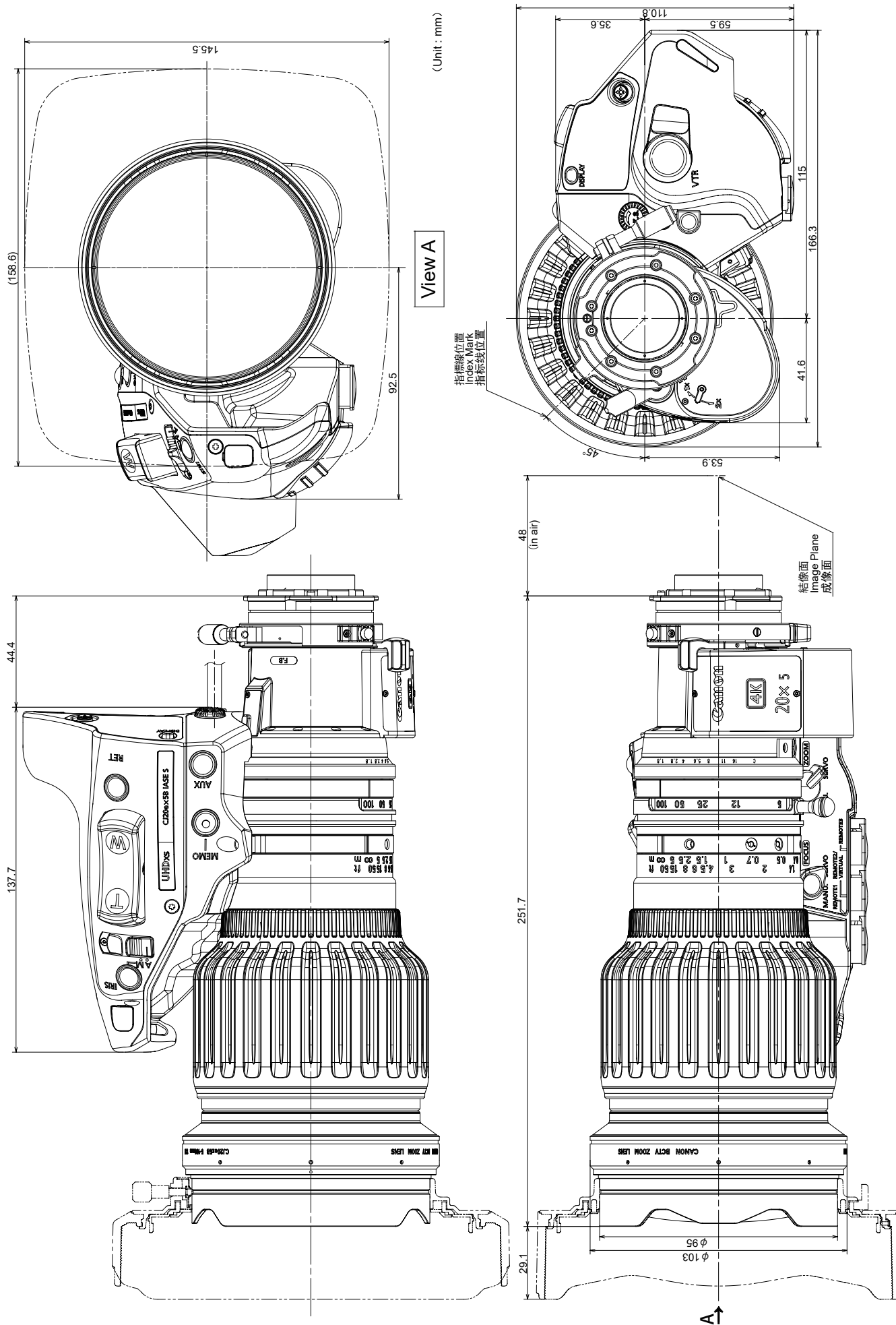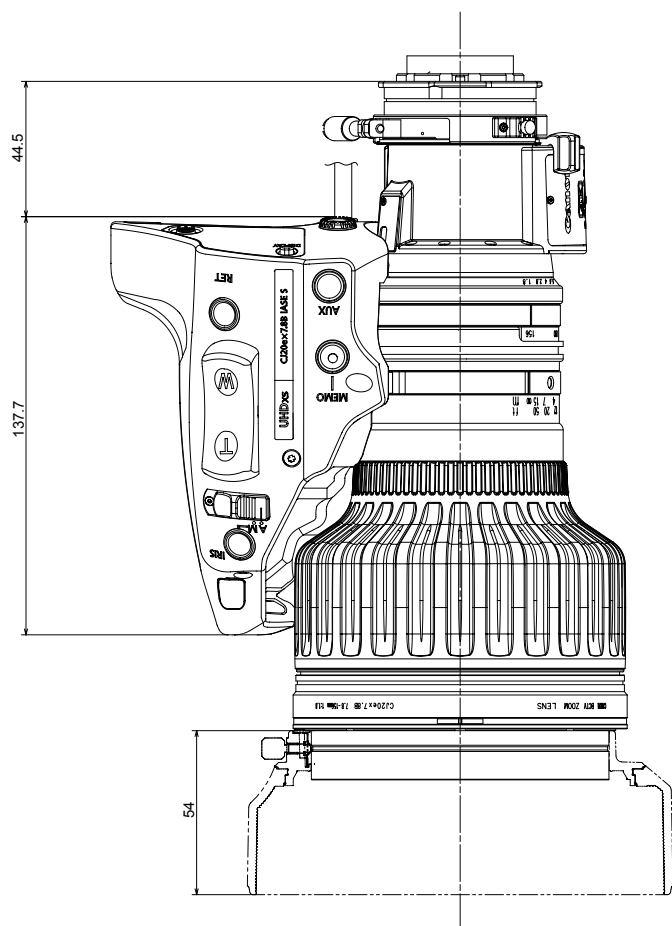
(145.5)

(158.6)

92.5

44.5

137.7

249.6

29.1

B

35.6

107.6

59.5

115

163

41.6

53.9

45°

指標線位置
Index Mark
指标线位置

48
(in air)

B

結像面
Image Plane
成像面

φ95
φ96

A

CJ15ex4.3B IASE S

UHD×S

RET

AUX

MEMO

4K

15 × 4.3

Canon

ZOOM

FOCUS

2. CJ20ex5B IASE S

(Unit : mm)

View A

145.5

(158.6)

92.5

指標線位置
Index Mark
指标线位置

110.8
35.6
59.5
115
166.3
41.6
53.9
45°

結像面
Image Plane
成像面

48
(in air)

44.4

137.7

CJ20ex5B IASE S

UHDXS

RET

AUX

MEMO

251.7

Canon

4K

20×5

φ95
φ103

29.1

A

3. CJ20ex7.8B IASE S
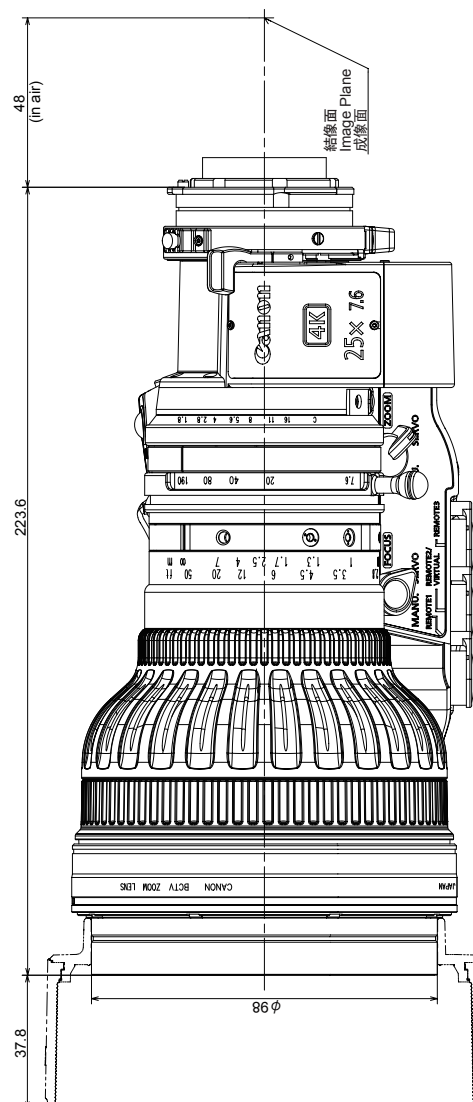
(Unit : mm)

View A

指標線位置
Index Mark

結像面
Image Plane
成像面

A↑

4. CJ25ex7.6B IASE S

(Unit : mm)

(124.1)

(142.6)

92.5

View A

指標線位置
Index Mark
指标线位置

45°

35.6

114.1

59.5

115

169.6

41.6

53.9

48
(in air)

結像面
Image Plane
成像面

223.6

44.8

137.7

RET

AUX

MEMO

UHD/XS   CJ25ex7.6B IASE S

IRIS

CJ25ex 7.6B 1/4-19mm 8t

CANON BCTV ZOOM LENS

Canon

16 11 8 5.6 4 2.8 2 1.8

190 80 60 40

50 40 30 20 15 10 8 ft

∞ 8 6 5 4 3 m

Canon

4K   25× 7.6

ZOOM   SERVO

FOCUS   SERVO MANUAL
REMOTE1   REMOTE2/ REMOTE3
VIRTUAL

16 11 8 5.6 4 2.8 2 1.8

7.6 20 40 80 190

50 20 12 7 4 2.5 1.7 1.5 ft
∞ 7 4.5 3.5 m

CANON BCTV ZOOM LENS

JAPAN

98 φ

54

37.8

A

5. CJ14ex4.3B IASE S

(Unit: mm)

View A

145.7

158.6

92.5

108

48.5

35.6

59.5

163.5

115

41.6

45°

53.9

指標線位置
Index Mark
指标线位置

48
(in air)

結像面
Image Plane
成像面

46.3

137.7

287

247.8

DISPLAY

VTR

RET

AUX

MEMO

UHD₅c

CJ14ex4.3B IASE S

Canon

4K

14× 4.3

ZOOM

SERVO

FOCUS

SERVO

MANU.

REMOTE1/
VIRTUAL

REMOTE2/
VIRTUAL

CANON BCTV ZOOM LENS

φ95

31

A

6. CJ17ex6.2B IASE S

(Unit : mm)

View A

126.4

139.1

92.5

109.5

35.6

59.5

115

165

40.6

45°

52.9

指標線位置
Index Mark
指标线位置

48.4

137.7

48
(In air)

240.5

37.7

結像面
Image Plane
成像面

RET

AUX

MEMO

UHD₆ᴄ

CJ17ex6.2B IASE S

Canon

4K

17× 6.2

ZOOM

FOCUS

φ98.5
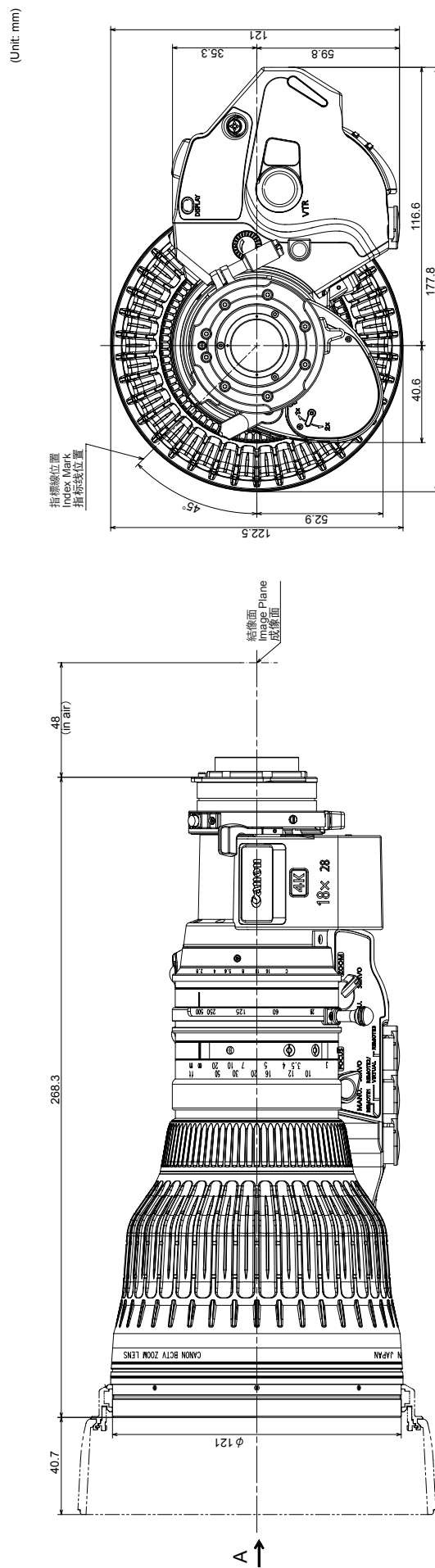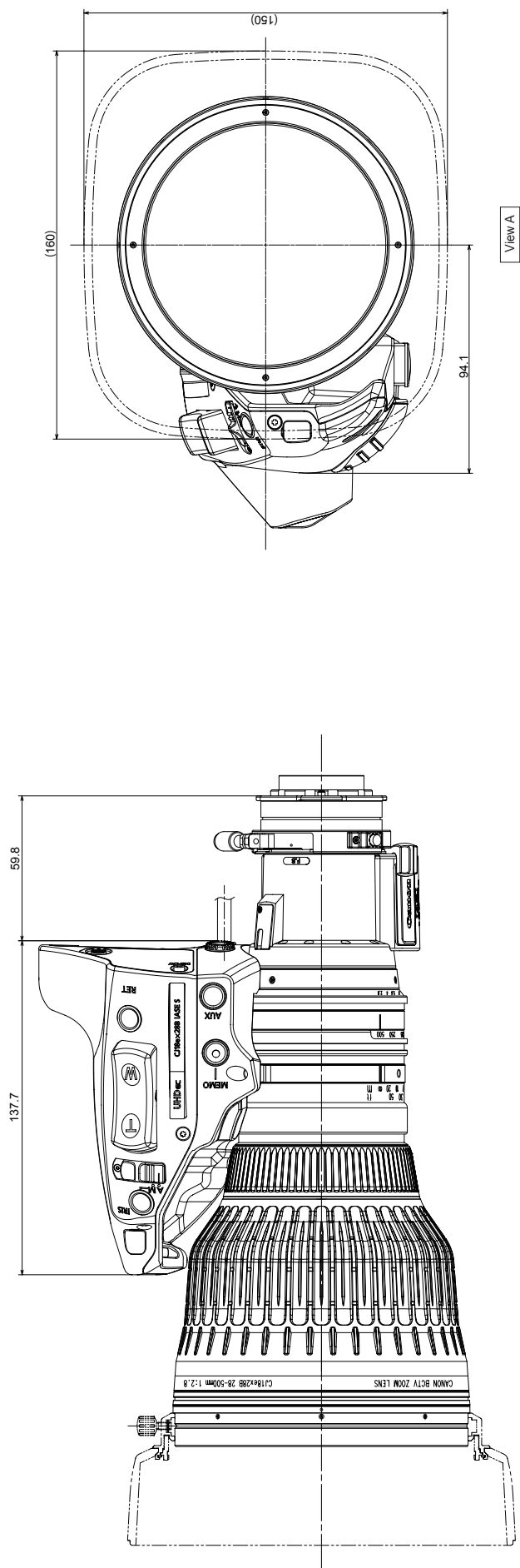
φ100

A↑

7. CJ18ex7.6B IASE S

(Unit: mm)

(103.3)

(131.9)

92.5

View A

105

35.6

59.5

115

160.5

41.6

53.9

45°

指標線位置
Index Mark
指标线位置

48
(in air)

結像面
Image Plane
成像面

44.5

137.7

RET

AUX

MEMO

UHD gc

CJ18ex7.6B IASE S

A/M

IRIS

Canon

CJ18ex7.6B 7.6-13mm 1:1.8

CANON BCTV ZOOM LENS

206.2

Canon

4K

18× 7.6

SERVO

ZOOM

FOCUS

MANUAL/SERVO

REMOTE1
REMOTE2/
VIRTUAL

REMOTE2/
VIRTUAL

REMOTE1

REMOTEB

φ85

φ91

CANON BCTV ZOOM LENS

IN JAPAN

A

8. CJ18ex28B IASE S

(Unit: mm)

(150)

(160)

94.1

View A

121

35.3

59.8

116.6

177.8

40.6

指標線位置
Index Mark
指标线位置

45°

52.9

122.5

結像面
Image Plane
成像面

48
(in air)

59.8

137.7

268.3

RET

CJ18ex28B IASE S

AUX

MEMO

UHDxc

CANON BCTV ZOOM LENS

CJ18ex28B 28-500mm 1:2.8

4K

18× 28

CANON BCTV ZOOM LENS

JAPAN

40.7

φ121

A

9. CJ24ex7.5B IASE S

(Unit: mm)

(124.1)

(136.1)

92.5

View A

109.1

35.6

59.5

115

164.6

41.6

53.9

45°

指標線位置
Index Mark
指标线位置

44.5

137.7

RET

AUX

MEMO

IRIS

CJ24ex7.5B IASE S

UHD 4K

CJ24ex7.5B 7.5-180mm 1:1.8

CANON BCTV ZOOM LENS

48
(in air)

結像面
Image Plane
成像面

221.4

Canon 4K 24× 7.5

ZOOM

FOCUS

CANON BCTV ZOOM LENS

MADE IN JAPAN

86 φ

A

10. KJ10ex4.5B IASE S

(Unit: mm)

指標線位置
Index Mark
指标线位置

結像面
Image Plane
成像面

VIEW A

11. KJ17ex7.7B IASE II S

(Unit: mm)

VIEW A

(103.3)

(131.9)

92.5

105

35.6

59.5

115

160.5

41.5

52.9

45°

指標線位置
Index Mark
指标线位置

44.5

137.7

KJ17ex7.7B IASE II S

17×

RET

AUX

MEMO

W

T

A.M.C

IRIS

48
(in air)

結像面
Image Plane
成像面

206.2

17× 7.7

HDGC

ZOOM

FOCUS

MANU. SERVO
REMOTE/
REMOTE1 VIRTUAL REMOTE3
SERVO

φ85

φ91

35.2

A

12. KJ22ex7.6B IASE II S

(Unit: mm)

View A

(124.1)

(136.1)

92.5

109.1

35.6

59.5

115

164.6

41.6

53.9

45°

指標線位置
Index Mark
指标线位置

44.5

137.7

RET

22×

AUX

MEMO

KJ22ex7.6B IASE II S

W

T

IRIS

I.G.

48
(in air)

結像面
Image Plane
成像面

221.4

Canon

22× 7.6

ZOOM

FOCUS

SERVO

MANU.

REMOTE1
VIRTUAL

REMOTE2/
REMOTE B

37.8

98 φ
99.1 φ

A

Canon