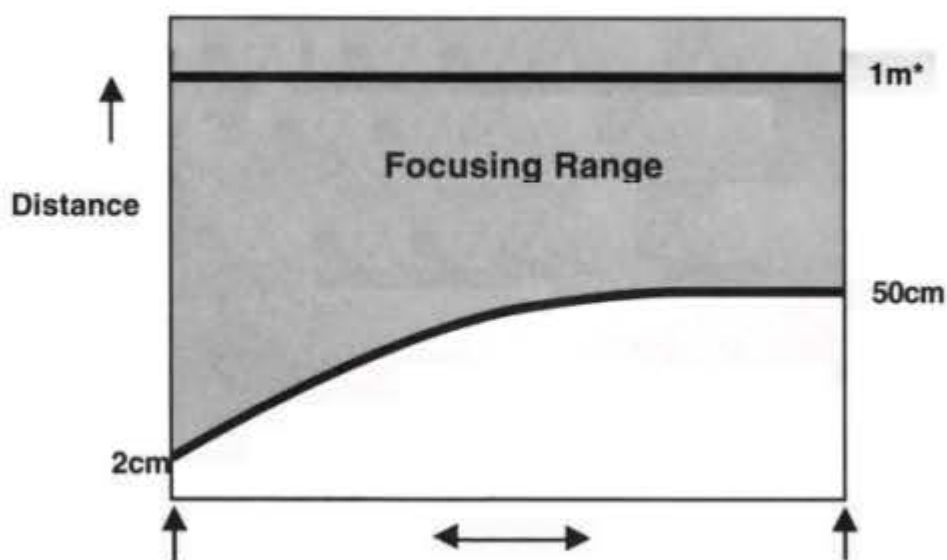


**Changes in video camcorder approach distance (using optical zoom)**



Zoom set to W (Wide-angle)

Zoom Setting

Zoom set to T (Telephoto)

**The minimum distance to the subject varies depending on the zoom setting.**

\* Minimal focusing distance with the Focus Selector set to AF and the Mode Selector set to 1 m - ∞.

The minimal distance varies depending on the subject and the f-stop.

## XL 3.4-20.4 mm L

Thank you for purchasing this Canon HD 6× L Lens. This high quality wide zoom lens has an XL Mount, and can be used with HD camcorders compatible with the XL Mount System.

Before mounting this lens, make sure that your camcorder is compatible with the XL Mount System (indicated by the **XL** mark on the camcorder).

In order to use this lens with some XL H1s, you may need to upgrade the firmware. For more details, refer to "Make sure to upgrade the XL H1's firmware". Note that the iris ring on the lens cannot be operated when using the lens with an XL2, XL1s or XL1. With these models, use instead the IRIS dial on the camcorder.

### Nomenclature

- ① Lens Hood
- ② Manual Focus Ring
- ③ Zoom Ring
- ④ Iris Ring
- ⑤ ND Filter Unlock Button
- ⑥ ND Filter Operating Ring
- ⑦ Mode Selector
- ⑧ XL Mount
- ⑨ Electronic Contacts
- ⑩ Red Dot (Mount Positioning Point)
- ⑪ Focus Selector
- ⑫ POSITION PRESET ON/SET Switch/▶AF Switch
- ⑬ POSITION PRESET Switch
- ⑭ Lens Hood Locking Screw

### Instructions for Use

Refer also to the instruction manual of your camcorder.

#### Caution:

**Be sure to turn off the camcorder before removing the lens.**

### 1. Mounting and Removing the Lens

#### [Mounting the Lens]

- 1) Turn the rear dust cap anticlockwise until it stops, and remove it from the lens (A).
- 2) Align the mark on the camcorder body and the red dot on the lens, then rotate the lens clockwise until it clicks into position (B).
- 3) Remove the front lens cap (C).

#### [Removing the Lens]

Slide and hold the lens release switch on the camcorder, and rotate the lens anticlockwise until it stops. Then remove the lens (D).

- For more details, refer to the instruction manual of the camcorder.

### 2. Attaching the Lens Hood

Attach the lens hood to shade the lens from stray light and to protect the lens.

- 1) Align the hood with the lens lengthways, and the Canon logo facing to the left (E).
  - 2) Twist it clockwise, 90° into position, so that the Canon logo faces up. Finally, tighten the locking screw (F).
- To remove, reverse the above procedure.

### 3. Using the Manual Focus Ring

Turn the ring rapidly for fast focus adjustments and slowly for fine adjustments.

- You can adjust the focus, without turning off the autofocus, by turning the focusing ring. Autofocus resumes as soon as you release the focusing ring.

### 4. Using the Zoom Ring

Turn the ring to the right to zoom out to the wide-angle end, and to the left to zoom in to the telephoto end.

- Turn the ring rapidly for fast zoom adjustments and slowly for fine adjustments.

#### Note:

When you record subjects against the sky at dusk with the camcorder set to Av mode and a low F-number, a "ring light effect" may occur. This is a rare phenomenon that occurs with high-speed zooming and is not a malfunction. You can avoid the "ring light effect" by zooming more slowly.

### 5. About the Iris Ring

Turn the ring to the right to close, and to the left to open the iris. The iris ring can be used when the power dial is set to M (Manual) or Av mode. You can also use it in [A] (Auto) and Tv modes after pressing the EXP. LOCK button to enter the exposure lock.

## 6. Using Other Lens Functions

### Focus Selector

To set the focus to manual, slide the focus selector to the M position. To set the focus to Auto, slide the focus selector to the AF position.

### ▶AF Switch

Press the ▶AF Switch during manual focusing (with the focus selector set to M and the FOCUS PRESET ON/SET switch set to OFF) to quickly adjust the focus automatically. The camcorder will continue to focus automatically as long as you hold the switch. Release the switch to return to manual focus.

### ND Filter

This zoom lens is equipped with two ND filters (1/6 and 1/32) for different lighting conditions.

Press the ND filter unlock button and turn the ND filter operating ring (Ⓞ).

Make sure to correctly set the ND filter operating ring to one of the positions OFF, 1/6 or 1/32.

### Mode Selector

Change the position of the switch to select the minimal distance from the subject when using the autofocus.

MACRO – ∞ Full wide-angle: 2 cm; Entire zoom range: 50 cm

1 m – ∞ Entire zoom range: 1 m

- The minimal distance to the subject when focusing manually is the same as with the MACRO position.

### Focus Preset

A focus setting can be memorized allowing you to return to the focus setting instantly.

#### [Presetting the Focus]

- 1) Set the focus selector to M.
- 2) Set the POSITION PRESET switch to FOCUS.
- 3) Adjust the focus with the focus ring.
- 4) Move the POSITION PRESET ON/SET switch to SET.

#### [Returning to the Preset Focus Setting]

Move the POSITION PRESET ON/SET switch to ON.

The camcorder returns to the preset focus setting.

### Zoom Preset

A zoom position can be memorized allowing you to return to the zoom position instantly.

#### [Presetting the Zoom]

- 1) Move the POSITION PRESET switch to ZOOM.
- 2) Move the POSITION PRESET ON/SET switch to SET.

#### [Returning to the Preset Zoom Position]

Move the POSITION PRESET ON/SET switch to ON.

The camcorder returns to the preset zoom position.

#### Note:

The preset setting is canceled when you attach the optional Extender XL 1.6x or mount a lens with different magnification.

### Caution:

#### • Pay attention to dirt and debris on the lens.

This is a wide 6× zoom lens (35 mm equivalent: 24.5–147 mm). Consequently, the depth of field when using this lens is much deeper than with regular lenses. When you are shooting using a dirty lens or if fine debris has accumulated on the lens (especially when using small apertures), the dust or dirt may be noticeable on the shot. To avoid this, try the following:

- 1) Set the Mode Selector to 1 m – ∞.
- 2) Adjust your shooting mode so as not to use small apertures.
- 3) Use the ND filter to shoot bright scenes following the indications of the camcorder.
- 4) After using a blower or similar tool to clean dust and other particles from the surface of the lens, gently wipe the lens with the supplied lens cleaning cloth being very careful to avoid scratching the lens.

#### • When storing the lens:

- Be sure to replace the front lens cap and rear dust cap.
- This lens is of the highest quality, compatible with high definition (HD) video. Do not store the zoom lens in hot places such as in direct sunlight, near a heater or radiator, in a hot car, etc. This may cause the zoom lens not to be able to focus properly or to become deformed or discolored.

- Be sure to keep the electronic contacts clean, to ensure proper connection.
- Be sure to keep the lens clean so that the autofocus can operate correctly.
- Protect the lens from strong vibrations or shocks.
- Do not try to disassemble or modify this zoom lens.
- Problems with the operation of this lens may be due to faults of not only the lens, but of the camcorder itself. In the event of problems, contact a dealer or service center familiar with your camcorder, as well as a Canon authorized service center.

## Notes:

- When you are shooting in bright conditions, such as outdoors on a fine day, some blurring can occur due to the small aperture used. This blurring is more noticeable at the wide-angle setting than the telephoto setting since the subject is smaller.  
Use the ND filter as directed by the camcorder warning display.  
Refer to the camcorder's instruction manual for details.
- When you are shooting in low-light conditions (indoors, etc.), the depth of focus is extremely limited because a wide aperture is used. As a result, some parts of the image may appear blurred, particularly where the subject recedes into the distance.
- If you are focusing manually and using the zoom, set the focus with the zoom set to T and then zoom back to the W setting. If you set the focus at the W setting and then zoom in, the image may be out of focus at the T setting.  
When you want to zoom in on the subject from a wide-angle shot, you should use the Autofocus function.
- If you focus manually then leave the camcorder with the power turned on, you may lose focus on your subject. This possible slight shift in focus is due to a rise in temperature in the camcorder interior and lens. Check the focus before resuming shooting.
- This is a wide lens. If you want to use the optical properties of the wide lens to their fullest extent, we cannot recommend attaching the optional Extender XL 1.6x.

### Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio interference Regulations of the Canadian Department of Communications.

This Class B digital apparatus complies with Canadian ICES-003.

## Specifications

|                  | Focal Length | Maximum Magnification | Effective Image Size                            | Angle of View               | Closest Focusing Distance (Normal) |
|------------------|--------------|-----------------------|---|-----------------------------|------------------------------------|
| XL 3.4-20.4 mm L | 3.4-20.4 mm  | 6x                    | (16 : 9)<br>Image size (16 : 9)<br>5.22×2.94 mm | Wide Angle<br>75°01'×46°48' | Wide Angle<br>20 mm                |
|                  |              |                       |   | Telephoto<br>14°35'×8°15'   | Entire Zoom Range<br>50 cm         |

| Field Size at Closest Focusing Distance (Normal)** | Filter Diameter | Dimensions (Ø×L)                    | Weight            |
|--|-----------------|-------------------------------------|-------------------|
| Wide Angle   | Ø 82 mm         | 約 Ø 107×165 mm<br>(Ø 4.2 × 6.5 in.) | 約 1240 g (2.7 lb) |
| Telephoto  |                 |                                     |                   |
| 86.4×47.5 mm                                       | 149.9×84.6 mm   |                                     |                   |

- Weight and dimensions are for the lens only, and do not include the lens cap and lens hood.

Weight and dimensions are approximate. Subject to change without notice.

Errors and omissions excepted.

- Compatible extender: Extender bearing the **XL** mark.

- The angle of view and field size at closest focusing distance values given are for the lens when mounted on an XL H1 (HD, SD 16:9 modes).

\*\* When the Mode Selector is set to 1 m - ∞, the minimal distance is 1 m through the entire zoom range. The field size at the minimal distance will be 164.2×90.5 cm with the zoom at Wide Angle, and 27.9×15.8 cm at Telephoto.