

Canon's New HDgc Lenses for Sony's XDCAM HD



Canon's New HDgc Lenses Let You Maximize



KH10ex3.6 IRSE

- 10X zoom ratio, and a 2X extender
- Wide-angle version (3.6mm wide angle)
- Canon's eDrive and Shuttle Shot technology
- Dynamic zoom speed range:
0.5 seconds - 5 minutes



KH16ex5.7 IRSE

- 16X zoom ratio and a 2X extender
- Lightweight for both ENG and EFP applications
- Canon's eDrive and Shuttle Shot technology
- Dynamic zoom speed range:
0.5 seconds - 5 minutes



KH21ex5.7 IRSE

- 21X zoom ratio and a 2X extender
- Ideal for both ENG and EFP applications.
- Canon's eDrive and Shuttle Shot technology
- Dynamic zoom speed range:
0.5 seconds - 5 minutes

Whether you own or plan to buy any Sony 1/2-inch XDCAM HD Camcorder, you'll want to make sure it's outfitted with a Canon HDgc lens. HDgc lenses deliver HD optical quality and feature many of Canon's remarkable high-end advances. The HDgc line's lenses for 1/2-inch CCD cameras include: the KH21ex5.7 IRSE (telephoto lens), the KH10ex3.6 IRSE (wide-angle lens), and the KH16ex5.7 IRSE (standard lens). Canon's exclusive Digital "eDrive" is included in all three of these lenses, and is a principal difference (along with zoom speed range and a built-in 2X extender) between these models and the more economical 1/2-inch KH20x6.4 KRS, KH13x4.5 KRS and KH19x6.7 KAS lenses.

All HDgc lenses feature:

Canon's innovative technology enhancing optical performance and user benefits.

Well-Controlled MTF (Modulation Transfer Function) plus excellent contrast performance over their entire image planes, and minimized chromatic aberrations.

Compact design lightweight in direct response to the equally compact new tapeless HD camcorders.

Minimizing environmental impact Canon manufactures all of its lenses, including the new HDgc models, without lead, cadmium, mercury, and other toxins to minimize the impact on the environment—a company policy.

The KH10ex3.6 IRSE, KH16ex5.7 IRSE and KH21ex5.7 IRSE lenses feature:

Canon's exclusive eDrive provides nine user-definable function profiles; a choice of manual, digitally assisted, or fully programmed control; and instant "Shuttle Shot" to zoom to the longest focal length for quick check of focus and back focus. Digitally assisted shooting techniques offered by Canon's eDrive include graceful "padded" zoom start/stops so

that zooms begin and end softly and without jerkiness. Canon's eDrive provides for memorized focus and zoom positions, repeatable focus with no mechanical play or gear backlash, steady and slow zoom creeps, and one-button on/off.



Specifications

Lens	KH10ex3.6 IRSE	KH16ex5.7 IRSE
Zoom Ratio/Format	10x	16x
Range of Focal Length (with Extender)	3.6 - 36mm (7.2 - 72mm)	5.7 - 92mm (11.4-184mm)
Maximum Relative Aperture (with Extender)	1:1.45 at 3.6 - 27mm 1:1.90 at 36mm (1:2.9 at 7.2 - 55mm) (1:3.8 at 72mm)	1 : 1.4 at 5.7 - 71.6mm 1 : 1.8 at 92mm (1 : 2.8 at 11.4 - 143.2mm) (1:3.6 at 184mm)
Angular Field of View ^o (with Extender)	88.1° x 57.1° 11.1° x 6.2° (51.7° x 30.5°) (5.5° x 3.1°)	62.9° x 38.0° 4.3° x 2.4° (34.0° x 19.5°) (2.1° x 1.2°)
M.O.D.	0.3m (10mm with Macro)	0.6m (10mm with Macro)
Size (WxHxL)	168.2 x 110.6 x 240.8mm	163.9 x 106.3 x 196.7mm
Weight (approx.)	4.1lbs (1.87kg)	3.24lbs (1.47kg)
Built-in Extender	2.0x	2.0x

Maximize The Potential of Your Sony XDCAM HD

The KH13x4.5 KRS, KH20x6.4 KRS and KH19x6.7 KAS lenses offer unique features:



Canon's exclusive **Shuttle Shot function** (available on the KH20x6.4 KRS and new wide-angle KH13x4.5 KRS), an advanced servo system that facilitates zooming back and forth between any two focal length positions and brings an entirely new range of value-added creativity to hand-held acquisition systems. The KH19x6.7 KAS lens is compatible with Sony's Auto-Focus system.

A new **ergonomic drive unit** a new, smaller drive unit that not only comfortably fits into the palm of the user's hand, but

also improves the feeling of unity between the drive unit and your hand. These drive units, featuring a grip support and ribbed surface, are tilted at an ideal angle in order to achieve a better balance and to provide more comfort and reduce operator fatigue.



KH13x4.5 KRS

- 13X zoom ratio
- Wide angle of 4.5mm for a focal length of 4.5 - 59mm
- Canon's Shuttle Shot technology
- Dynamic zoom speed range: 1.2 seconds - 1 minute



KH20x6.4 KRS

- 20X zoom ratio
- Wide angle of 6.4mm for a focal length of 6.4-128mm
- Canon's Shuttle Shot technology
- Dynamic zoom speed range: 1.2 seconds - 1 minute



KH19x6.7 KAS

- 19X zoom ratio
- Wide angle of 6.7mm for a focal length of 6.7-127mm
- Compatible with Sony's auto-focus system
- Dynamic zoom speed range: 1.2 seconds - 1 minute

HDGC

KH21ex5.7 IRSE	KH13x4.5 KRS	KH20x6.4 KRS	KH19x6.7 KAS (Auto Focus Feature)
21x	13x	20x	19x
5.7 - 120mm (11.4 - 240mm)	4.5 - 59mm	6.4 - 128mm	6.7 - 127mm
1:1.4 at 5.7 - 86mm 1:1.95 at 120mm (1:2.8 at 11.4 - 172mm) (1:3.9 at 240mm)	1 : 1.5 at 4.5 - 44mm 1 : 2.0 at 59mm	1:1.4 at 6.4 - 89.6mm 1:2.0 at 128mm	1:1.6 at 6.7 - 96.8mm 1:2.1 at 127mm
62.9° x 38.0° 3.3° x 1.9° (34.0° x 19.5°) (1.7° x 0.9°)	75.7° x 46.9° 6.8° x 3.8°	57.1° x 34.1° 3.1° x 1.8°	55.0° x 32.6° 3.14° x 1.77°
0.8m (10mm with Macro)	0.4m (10mm with Macro)	0.9m (10mm with Macro)	0.9m (50mm with Macro)
169.4 x 111.9 x 217.5mm	165.4 x 105.1 x 215.3mm	163.3 x 103 x 182.5mm	112 x 88 x 171.8mm
3.9lbs (1.79kg)	3.50lbs (1.59kg)	2.8lbs (1.27kg)	2.8lbs (1.27kg)
2.0x			

The Canon LO-32BMT



The **Canon LO-32BMT** adapter allows you to mount a 2/3" B4 bayonet lens onto any Sony 1/2" proprietary mount camera such as the new XDCAM HD series, PDW-F330/F350 while not affecting the optical quality of the lens. It is important to consider the following information when using a 2/3" lens with a LO-32BMT adapter mounted to a 1/2" camera.

1. The images produced will appear visually more telephoto by a factor of 1.38x.
2. The actual F-Number of a lens does not change when mounted on a different format size camera. If the lens is F1.9 in the 2/3" format, the lens is also F1.9 in the 1/2" format.
3. The Focal Length and F-Stop markings on the 2/3" lens are correct in either format.
4. It is highly recommended that HDTV lenses always be employed on HDTV cameras.

Focal Length

When using a 2/3" lens with a LO-32BMT adapter mounted to a 1/2" camera, the actual focal length of the lens does not change. However, the angle of view associated with that focal length changes. In this case, the lens will visually be more telephoto, by a factor of 1.38x. As an example, the 2/3" KJ20x8.5B HDTV lens (58.9° angle of view at 8.5mm when mounted on a 2/3" camera) will visually appear to have a 44.6° angle of view, that equates to an equivalent focal length of 11.7mm (8.5mm x 1.38 = 11.7mm)

2/3" HD Lens KJ20x8.5B Focal Length at Wide Angle	2/3" HD Camera Angle of View	1/2" HD Camera Angle of View with LO-32BMT	Visual Equivalent Angle of View in 2/3"
8.5MM	58.9°	44.6°	11.7MM



2/3" HD Camera Angle of View
58.9°



1/2" HD Camera Angle of View
with LO-32BMT
44.6°

F-Number

The actual F-Number of a lens does not change when mounted on a different format size camera. Using the 2/3" KJ20x8.5B HDTV lens as an example, its maximum aperture is F1.8. When that lens is mounted on the 1/2" camera with the LO-32BMT adapter, the focal length and effective aperture of the lens do not change.

The formula for deriving the F-Number of any lens is as follows:

$$\text{F-Number} = f / D \quad f = \text{Focal Length} \quad D = \text{Effective Aperture}$$

Since neither the focal length nor the effective aperture has changed, the F-number remains the same, F1.8. Thus, there is no optical sensitivity "loss" involved when using a 2/3" native lens with the LO-32BMT on a 1/2" camera. As a comparison, if instead of using the 2/3" KJ20x8.5B lens and LO-32BMT adapter, you were to substitute a 1/2" KH20x6.4 HDTV lens, the adapter would no longer be necessary. By applying the same formula, F-Number = f/D, to the 1/2" KH20x6.4 lens, the lens will have a faster F-Number, F1.4, compared to the 2/3" lens and LO-32BMT combination.

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Specifications subject to change without notice. Errors and omissions excepted.
Weight and dimensions are approximate.
CNB3000-xxxx-xx

2/3" HD Lens KJ20x8.5B with LO-32BMT Zoom Ratio: 20x Wide Focal Length: 8.5mm F-Stop: F1.8
1/2" HD Lens KH20x6.4 Zoom Ratio: 20x Wide Focal Length: 6.4mm F-Stop: F1.4

The 2/3" KJ20x8.5B lens with LO-32BMT as compared to the 1/2" KH20x6.4 lens.

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