

Canon

DIGISUPER 27AF

XJ27×6.5B AF 6.5-180mm 1:1.5



The flagship HD studio lens featuring highest possible HD image performance and reliable Auto Focus technology



INNOVATION
In TV Optics Since 1958

DIGISUPER 27AF

XJ27x6.5B AF 6.5-180mm 1:1.5

The continuing worldwide spread of HDTV, the newly heightened interest in content production by 1080/60P/50P, and the looming 4K and 8K image formats has elevated expectations for video image quality to ever higher levels. This in turn demands higher levels of performance in broadcast lenses, since they are the initial entry point for scene light and they predetermine excellence in image quality.

Even before HDTV became widely popular, Canon released XJ25x6.8B to the world market in 1999 as a top-of-the-line HDTV lens for high-definition studio production. This product quickly acquired a leading role in the HD studio production field and is to be found in major studios worldwide. A progressively increasing demand from the market for higher image quality led to the release in 2008 of the next-generation XJ27x6.5B, which exhibited the highest possible optical performance in the 2/3 inch format. The XJ27x6.5B AF is now Canon's flagship HD studio lens, featuring the outstanding optical performance of the XJ27x6.5B plus the addition of Canon's unique Auto Focus technology.



Highest possible image performance by Canon's optical technology since 1958

The unrelenting progress Canon has made over the last 50 years in the areas of optical design techniques typified by a large-aperture aspherical lens, optical materials, optical coatings and high-precision manufacturing processes has reached the peak of contemporary optical performance in the XJ27x6.5B AF. This is an HD studio lens intended to bring out the very best in HD video origination from the latest high-end 2/3-inch cameras from all major manufacturers.

Realization of an outstanding optical quality

By utilizing the Canon's total latest optical technologies, XJ27x6.5B AF provides excellent resolution at picture center and at image extremities, while maintaining extremely low levels of both longitudinal and lateral chromatic aberration across the entire focal range of the lens.

And, even at the widest angle, the lens manifests a tightly controlled barrel distortion that is subjectively not discernible. The low pincushion distortion across the majority of the focal range is virtually invisible.



Improved zoom ratio & exceptional wide angle

In terms of the lens specifications, by reducing the focal length at the wide-angle setting from 6.8 mm in its predecessor the XJ25x6.8B to 6.5 mm, we have widened the horizontal angle of view in the new lens by 3.5%. At the same time, the zoom ratio has been boosted from 25x to 27x, creating a more highly specified lens with more dynamic image creation capabilities.



New Generation Digital Servo System

Servo System meets Robotic Requirements

- High resolution zoom and focus servo 13-bit repeatability

10-bit Iris Compatibility

- High resolution iris control

Wide Dynamic Range of Zoom Servo Speed

- From ultra slow to high Max speed: Zoom 0.5sec



CAFS (Constant Angle Focusing System)

32-bit CPU calculates and controls the zoom when focusing to counteract "breathing" (phenomena where picture size/ angle of view changes when focusing) and has zero zoom effect

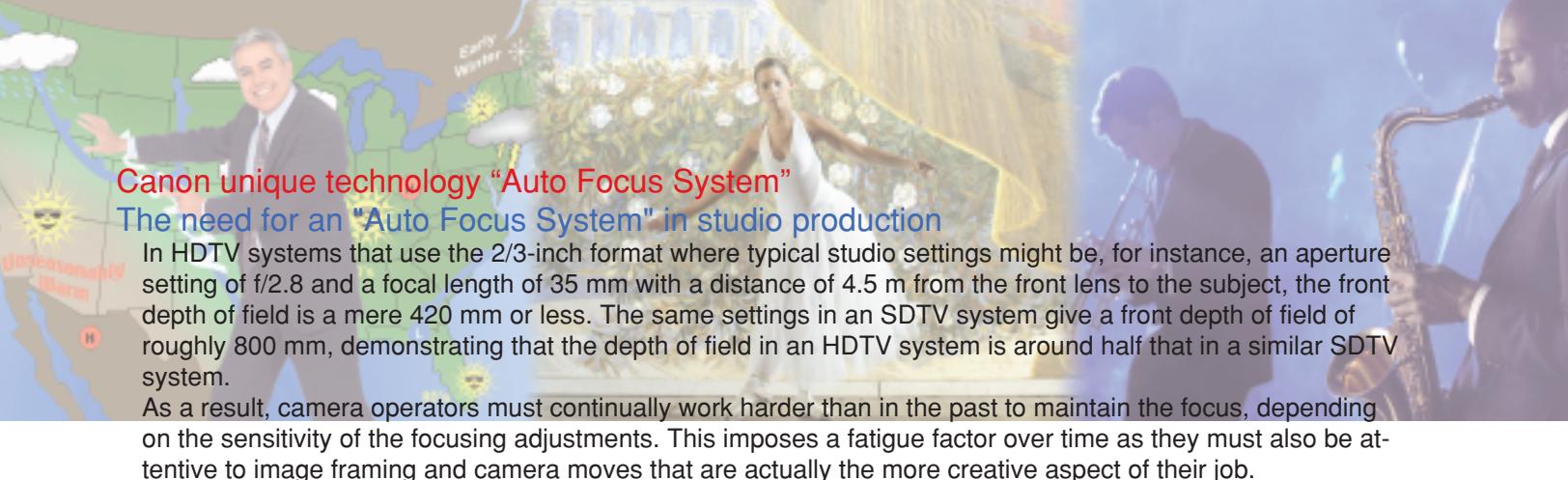
Compatible with the virtual studio system

The XJ27x6.5B AF is capable of supplying various types of positional signals to Virtual systems. The type of signals can be chosen from: an Encoder data signal, an Analog data signal or a Serial data signal, which are common in existing Virtual systems.

Compact lens barrel

Even a lens equipped with a convenient AF function can thwart the camera operator's creativity if the lens barrel is so long as to hinder free-moving camerawork.

The total length of compact lens barrel of the XJ27x6.5B AF is 567 mm (BTA MT).



Canon unique technology "Auto Focus System"

The need for an "Auto Focus System" in studio production

In HDTV systems that use the 2/3-inch format where typical studio settings might be, for instance, an aperture setting of f/2.8 and a focal length of 35 mm with a distance of 4.5 m from the front lens to the subject, the front depth of field is a mere 420 mm or less. The same settings in an SDTV system give a front depth of field of roughly 800 mm, demonstrating that the depth of field in an HDTV system is around half that in a similar SDTV system.

As a result, camera operators must continually work harder than in the past to maintain the focus, depending on the sensitivity of the focusing adjustments. This imposes a fatigue factor over time as they must also be attentive to image framing and camera moves that are actually the more creative aspect of their job.

Features of Canon's "Auto Focus System"

- 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
- Focusing speed can be varied to suit the scene
- Size and position of the AF frame (target area) in the camera VF 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 camera manufacturer of choice
- The AF system's two operation modes is the answer to a professional camera operator's various demands.



[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 Application	Sporting event etc. To follow a moving object.	Studio production etc. To confirm the best focus position.

[Changeable AF frame]

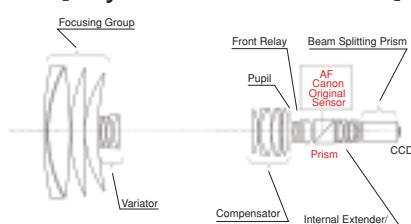


Canon's unique Auto Focus Technology you can trust

What professional broadcast crews require in an AF system is "reliability". Such AF systems must be capable of accurately capturing the images intended by the content producers.

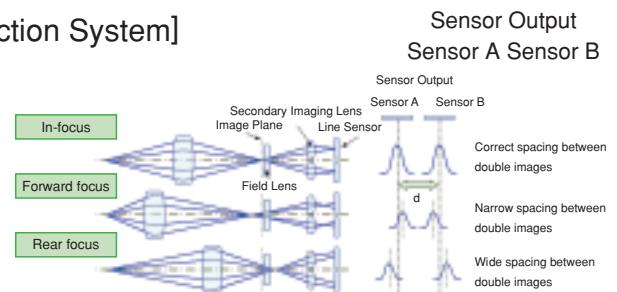
The XJ27x6.5B AF uses Canon's own "TTL-Secondary Image Registration Phase-detection System", which is a version of the reliable AF system used in Canon's single lens series reflex still cameras that has been customized for motion imaging with broadcast lenses. It is basically the same as the AF system first incorporated into Canon's long zoom field lens XJ100x9.3B AF in 2007, but uses optimized algorithms and control software to further enhance the precision available in studio production environments.

[Layout of the elements]

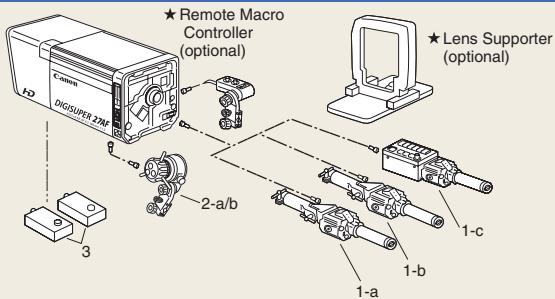


[TTL-Secondary Image Registration Phase-detection System]

The light transmitting through a pair of the secondary imaging lenses focuses on separate sensors. The following figure illustrates this state of focusing. The TTL-Secondary Image Registration Phase-detection System determines the positional relationship between the two images (Refer to "d" in figure) to detect the amount and direction of defocusing.



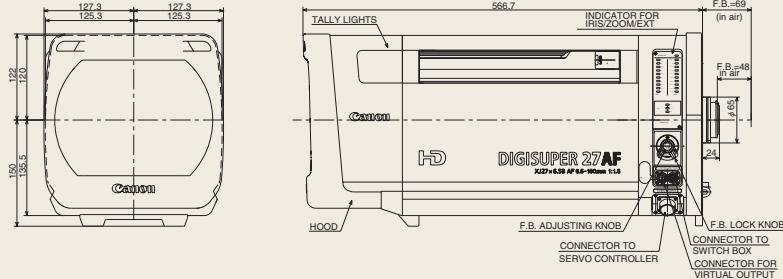
RECOMMENDED LENS SYSTEM



■ Compatibility of Accessories for DIGISUPER 27AF

No.	DESCRIPTION	
1-a	Digital Zoom Demand	ZDJ-P01
1-b	Digital Zoom Demand	ZDJ-D02
1-c	Digital Zoom Demand w/Pre-set Box	ZPJ-D02
	Digital Focus Demand for AF lens	
2-a	for Right hand operation	FDJ-P31
2-b	for Left hand operation	FDJ-P41
3	Digital Servo Module	SMJ-E01

DIMENSIONS



SPECIFICATIONS

	16:9		4:3	
Built-in Extender	1.0x	2.0x	1.0x	2.0x
Zoom Ratio	27x			
Range of Focal Length	6.5 - 180mm	13 - 360mm	6.5 - 180mm	13 - 360mm
Maximum Relative Aperture	1:1.5 at 6.5~123mm 1:2.2 at 180mm	1:3.0 at 13~246mm 1:4.4 at 360mm	1:1.5 at 6.5~123mm 1:2.2 at 180mm	1:3.0 at 13~246mm 1:4.4 at 360mm
Angular Field of View	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	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
Minimum Object Distance(M.O.D.)	0.6m from front lens vertex			
Object Dimensions at M.O.D.	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	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
Size	250.6(W) x 255.5(H) x 567(L) mm			
Mass	23.3kg (51.4lbs)			

North & South America

Canon U.S.A., Inc.
Broadcast and Communications Div. (Headquarters)
65 Challenger Road, Ridgefield Park, NJ 07660
Tel:(201)807-3300 / (800)321-4388
Fax:(201)807-3333
Email:bctv@cusa.canon.com
http://www.canonbroadcast.com/

Chicago

100 Park Blvd. Itasca, IL 60143
Tel:(630)250-6236 Fax:(630)250-0399

Atlanta

5625 Oakbrook Pkwy. Norcross, GA 30093
Tel:(770)849-7890 Fax:(770)849-7888

Los Angeles

15955 Alton Parkway Irvine, CA 92618
Tel:(949)753-4330 Fax:(949)753-4337

Dallas

3200 Regent Blvd. Irving, TX 75063
Tel:(972)409-8871 Fax:(972)409-8869

Latin America

Tel:(954)349-6975 Fax:(201)807-3333

Canada

Canon Canada, Inc.
Broadcast and Communications Div.
6390 Dixie Road
Mississauga, Ontario, L5T 1P7, Canada
Tel:(905)795-2012 Fax:(905)795-2140

Europe/Africa/Middle East

Canon Europa N.V.
Broadcast and Communications Div.
Bovenkerkerweg 59-61
1185 XB Amstelveen
Tel:+31(0)20-5458905 Fax:+31(0)20-5458203
Email:tvprod@canon-europe.com
http://www.canon-europe.com/tv-products

Australia

Canon Australia Pty. Ltd.
Optical Products Division
1 Thomas Holt Drive, North Ryde, NSW 2113, Australia
Tel:+61(0)2-9805-2000 Fax:+61(0)2-9805-2444

Asia/Japan

Canon Inc.(Broadcast Equipment Group)
23-10, Kiyohara-Kogyo-Danchi, Utsunomiya-shi,
Tochigi-ken, 321-3298, Japan
Tel:+81(0)28-667-8669 Fax:+81(0)28-667-8672
http://www.canon.com/bctv/