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Canon Report

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Special Report

Canon EOS C300 Mark III

Canon CINE-SERVO 25-250



Cover Photo by Ron Batzdorff

Canon EOS C300 Mark III Super35 Camera

Canon has an exciting new Super35 4K camera: the EOS C300 Mark III.

You may be surprised to hear “exciting” and “Super35” in the same breath after all the huffing and puffing over Full Frame in FDTimes.

But now, Canon has come up with enough compelling new features and interesting innovations to catch the attention of even the most jaded cinematographers and rental houses who thought they’d seen, or had, everything:

- Records Cinema RAW Light and XF-AVC internally.
- 4K 120 fps Cinema RAW Light internal recording.
- Electronic image stabilization.
- Dual Gain Output Sensor with improved dynamic range.
- Dual Pixel Focus Guide eyepiece display shows whether you’re near focused or far and when you’re right on, it glows green.
- HDR support for both HLG and PQ.

To paraphrase Mark Twain, reports of Super35’s demise may have been exaggerated. As Panavision’s Jeff Allen said in FDTimes November 2016, “35mm as we currently know it in the movie industry will be used like the current 16mm format. And, Full Frame will become the standard for what formerly was shot in 35mm.” In other words, Full Frame is becoming the “new” 35mm, and 35mm may be the former 16mm.

Why is this?

There is a vast inventory of Super35 lenses. Sure, you can use them in windowed mode on Full Frame cameras or cropped in post. But what if you built a new Super35 camera that is similar in shape and weight to Canon’s popular C500 Mark II but made it to do more things?

- C300 Mark III has a Super35 4K sensor.
- C500 Mark II has a Full Frame 5.9K sensor.
- C300 Mark III records 4K RAW up to 120 fps.
- C500 Mark II records 5.9K RAW up to 60 fps.
- C300 Mark III shoots Super35 4K XF-AVC Intra to 120 fps.
- C500 Mark II can crop to Super35 and shoot 4K XF-AVC Intra up to 60 fps.

The C300 Mark III and C500 Mark II both have:

- Recording to internal CFexpress Cards.
- Electronic Image Stabilization.
- Diffraction Correction (sharpens images naturally).
- Enhanced Dual Pixel CMOS Autofocus
- Extended range of the alternative Focus Guide
- Feathered focus end stops.

This is the 10th Cinema EOS camera since Canon introduced the C300 in November 2011 at Paramount Studios, Hollywood.

Canon is also introducing the new CINE-SERVO 25-250 mm T2.95-3.95 Zoom. It may not be the official “kit” lens, but it certainly will be the must-have zoom for the C300 Mark III.



Canon EOS C300 Mark III with CINE-SERVO 25-250mm T2.95-3.95



Canon EOS C300 Mark III Super35 Camera

Canon's C300 Mark III Super35 4K cine camera has interchangeable lens mounts and internal ND filters in an extremely compact and incredibly lightweight body that weighs less than 3.9 lb (1.75 kg).

The camera records 12-bit or 10-bit Super35 4K Cinema RAW Light and XF-AVC internally from 12 to 120 fps. You don't need a piggybacked or external recorder.

It comes with a standard Canon EF mount that accepts more than 130 million EF lenses worldwide.

Remove four 3mm screws in front, and you can swap the EF Mount yourself for a PL Mount or EF Cinema Lock Mount in about 5 minutes. Canon offers these as accessories. A shim kit is included with these mounts so you can adjust flange focal depth.

The C300 Mark III has 2 sensor modes: Super35 and Super16. Cropping is done in-camera. This is nice because you can summon up an entire collection of contemporary and vintage lenses, from Canon or anyone else, in Super35 or Super16 format. These might include a vintage Canon Super16 documentary classic 8-64mm T2.4 Zoom, K-35 Primes, Canon Zooms, Cine-Servo Zooms, Compact Zooms or Compact-Servo Zooms. Of course, Canon's CN-E and Sumire Primes fit as well.

Various modules let you configure the C300 Mark III camera for handheld, shoulder resting, studio mode, crane, rig, aerial or gimbal mode—with EVF, handgrip, handle, expansion units and other accessories.

There are 3 viewing options.

The LCD Monitor LM-V2 LCD is included with the camera.

OLED Electronic Viewfinder EVF-V70 was introduced with C700 series and will work with C500 Mark II, C300 Mark II, C200, and now with the C300 Mark III.

EVF-V50 is a small, 0.46" OLED viewfinder that attaches to the back of the camera. It is removable.

Front - EF Mount



Front - PL Mount



Canon EOS C300 Mark III

The lens mount attaches with four 3mm hex screws. Users can swap it in the field for an optional PL Mount or optional EF Cinema Lock Mount. Mounts come with a set of shims. Remember: to tighten the PL mount, think “clock(wise) to lock.” For the Locking EF mount, it’s counter-intuitive: “Counter-clock(wise) to lock.”



The C300 Mark III comes with a standard Canon EF Mount. It has pogo pins for lens data and auto functions like AF and IS.



The Canon EF Cinema Lock Mount is a helpful upgrade to securely keep lenses from twisting and adds greater mechanical support.



The PL Mount has /i Technology pogo pins at the standard 12 o'clock position and transfers lens data directly to the camera.

VIDEO & Power for LM-V2 (included) or EVF-V70 (optional—same OLED Viewfinder released with C700)



Canon EOS C300 Mark III

EOS C300 Mark III Super35 Camera with Canon Sumire Prime CN-E50mm T1.3

Canon Sumire Prime Family:
Full Frame, PL Mount,
so use PL Mount on C300 Mark III

CN-E 14mm T3.1 FP X
CN-E 20mm T1.5 FP X
CN-E 24mm T1.5 FPX
CN-E 35mm T1.5 FP X
CN-E 50mm T1.3 FP X
CN-E 85mm T1.3 FP X
CN-E 135mm T2.2 FP X



C300 Mark III Super35 Cam- era with Canon Prime CN-E 85mm T1.3



Canon CN-E Cinema Prime Family:
Full Frame, EF Mount,
so use EF Mount on C300 Mark III

CN-E 14mm T3.1 L F
CN-E 20mm T1.5 L F
CN-E 24mm T1.5 L F
CN-E 35mm T1.5 L F
CN-E 50mm T1.3 L F
CN-E 85mm T1.3 L F
CN-E 135mm T2.2 L F

Canon EOS C300 Mark III

C300 Mark III Super35 Camera with Canon EF24-105mm F4 IS USM

LM-V2
LCD
Monitor

EVF-V50
is a small, removable, 0.46"
OLED viewfinder that attaches
to the back of the camera.

Onboard 14.4V DC BP
Series Battery Pack.
Camera accepts BP-30
and BP-A60.

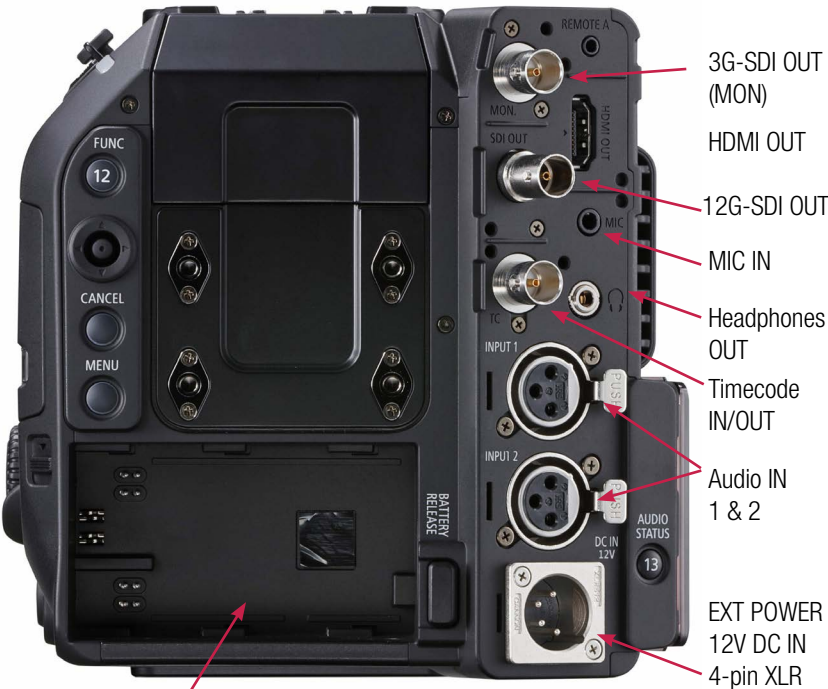
C300 Mark III Super35 Camera with Canon Compact-Servo CN-E70-200mm T4.4



Canon Compact-Servo Lens Family:
Super35, EF Mount,
so use EF Mount on C300 Mark III

CN-E18-80mm T4.4 L IS KAS S
CN-E70-200mm T4.4 L IS KAS S

Canon EOS C300 Mark III



Internal Compartment for Canon BP batteries

Rear



Rear with Connector Caps Attached



Bottom



Top

Canon EOS C300 Mark III

Shoulder Mode

Expansion Unit EU-V2

WiFi



Expansion Unit EU-V2

adds:

- V-Mount battery bracket
- 24V DC 2A Out
- D-Tap 12 V DC 50W Out
- Genlock / Sync
- Remote B
- Ethernet (LAN)
- Lens control
- Audio Channels 3 and 4
- and additional functions



Canon EOS C300 Mark III

Studio Mode



Canon Cine Zoom Family

Canon Zooms in PL (SP) and EF (S):
CN-E 14.5-60 mm T2.6 L
CN-E 30-300 mm T2.95-3.7 L

Canon Cine-Servo Zooms in PL and EF:
CINE-SERVO 17-120 mm T2.95-3.9
CINE-SERVO 25-250 mm T2.95-3.95
CINE-SERVO 50-1000 mm T5.0-8.9

Canon Compact Zooms in PL (SP) and EF (S):
CN-E 30-105 mm T2.8 L
CN-E 15.5-47 mm T2.8 L

Canon Compact-Servo Zooms in EF Mount:
COMPACT-SERVO 18-80 mm T4.4 L IS
COMPACT-SERVO 70-200 mm T4.4 L IS



Steve Holleran on Canon EOS C300 Mark III and CINE-SERVO 25-250 Zoom



Steve Holleran on Canon EOS C300 Mark III



Jon Fauer: I understand you were probably one of the first people to use both the new Canon C300 Mark III and the new 25-250 T2.95-3.95 zoom lens. How did this happen?

Steve Holleran: About a month and half ago, Tim Smith from Canon approached me about pitching a concept for a short film to showcase the aesthetics and visuals of a new camera Canon was developing. What I created was a concept called *Boneyard Ballet*. It's an art piece, an ode to flight, human and mechanical. It features a ballerina dancing through an abandoned 747 airliner in a Mojave Desert airplane boneyard. The idea was born out of trips I used to take to the desert with my dad, who's an airline pilot. He would point out the old planes in the Mojave Air and Space Port and refer to them as big metal birds. That sparked the idea of having a ballerina dance along the wing of a plane set to the music of Tchaikovsky's *Swan Lake*.

To communicate this visually, we open in the boneyard and push through the cabin of a retired 747 onto the cover of an old *Skyways* magazine where we see a picture of a ballerina. Then, the foot of a real ballerina is reincarnated. It's meant to be magical, lyrical and nostalgic—as if by coming alive off the page, so too is the plane. In fact, the cabin is the stage and our ballerina is dancing for a bygone audience. Ultimately, she leaps off the end of the wing in a huge stunt where she's airborne for a good 20 seconds and disappears like a mirage back into the boneyard. It is about the history of aviation, the memory of abandoned spaces, and the art of bringing new beauty to an old place.

We had certain goals in mind going into the shoot that we wanted to accomplish. We wanted to showcase the mobility of the camera and its build functionality. Examples include moving from hand-

held to a drone setup, or to a MoVi, or a Tero remote control car, or a studio set-up. We also wanted to test field-swapping EF and PL lenses, as that's a great feature of the EOS C300 Mark III. The shoot was designed to be run-and-gun, guerilla style, to utilize the camera in a variety of ways on a quick timeline.

Let's talk about the camera.

The Canon C300 Mark III camera is the cleanest Canon body that I've ever used. It has all the standard accoutrements on the outside in terms of buttons that you would expect from Canon. In that sense, you slip right into it. Short learning curve. It is extremely lightweight and well balanced. It's great for handheld.

It shoots 4K up to 120 frames per second in RAW, which is an exciting function. You don't have to sacrifice image quality at the higher frame rates as you normally do, which means you're not looking at bringing in a different camera body specifically for that shot. I love the way the camera handles details at 120 fps. You can watch the ballerina's dress blowing in the wind, seeing every nuanced detail in slow motion. I can't say enough about that feature. Slow motion at 4K is exciting for documentary, live sporting events, feature filmmaking, and as a specialty camera.

Two other exciting features include 10 stops of internal ND, adjustable with a plus and minus button on the side of the camera—and internal stabilization. The stabilization was extremely handy to have when I was operating inside the plane cockpit and down the aisles because there was so little space.

One new feature I'd never seen before was the C300 Mark III Dual Gain Output (DGO) sensor. Essentially DGO pushes the camera's sensitivity and you can gain a stop and a half of latitude. It takes

Steve Holleran on Canon EOS C300 Mark III

the sensor from 15 stop dynamic range to 16+ stops. There's no button to turn it on or off, so it's something that the sensor is doing full time at 24 fps. I rated the camera as having a 16+ stop dynamic range at regular speed 4K Cinema RAW Light (.CRM). That's exciting. We actually put the camera in a number of environments where we had that type of dynamic range: looking out of the cockpit behind the wing at sunset as our ballerina is jumping off the wing in the background.

You recorded RAW directly to an internal CF express card?

We recorded CRL directly to the CFexpress card and there's another recording slot that lets you record 2K XF-AVC proxies internally at the same time. This changes the workflow game on the post side. We've been editing in post straight off those proxies.

Your viewfinder does not normally come with the camera.

We used the viewfinder from the C700. I specifically asked for that viewfinder because we were outside in a bright desert situation. I knew I wouldn't see a proper picture using an onboard monitor, so I had the eyepiece there. It plugs right into the front of the body and we had it on almost the whole time. It's a great feature to be able to bring over accessories from other Canon bodies.

You were handheld with a 25-250 mm zoom. That is not a usual sight. Do you want to expand on that?

Towards the end of day 1, we were shooting the final crescendo of the ballet piece. Our ballerina dances down the 250-foot length of the 747 wing and then leaps off the end. I was on the wing as well, circling handheld around her and shooting closeups. I had the 25-250 because I wanted to move fast. We were running out of daylight and the zoom gave me the ability to change focal lengths, from wide to extremely tight, really quickly.

The rest of the crew was underneath the wing to be out of the shot, so there was no chance to swap lenses. Even Dennis Scully, our first AC, was pulling focus from the ground. It was just our ballerina Alison Stroming, the safety crew, and myself on the wing. I was racing around to get as many angles as I could in the limited time we had as magic hour approached.

It was also a way to test the qualities of the lens: how it flared, how it handled shadows in HDR with very strong backlight, what it felt like to operate.

How did the 25-250 look and handle?





I've never handheld a zoom lens with that long a range, from 25 to 250 mm. It's a massive range that offers you lots of flexibility. Another exciting thing about the lens is that it is lighter and smaller than almost any other zoom I've used—while still covering this much range.

Last year, when I shot *The Age of A.I.*, the YouTube documentary series with Robert Downey, Jr., we traveled around the world mostly handheld with heavy zooms that often doubled the weight of the camera. They looked great but it was just miserable operating with those heavy lenses in handheld situations.

The new Canon 25-250 is the first time I've ever seen a zoom that is small in length, width and weight while at the same time covering such a long range. It even has a helpful 1.5x extender built in and you can turn it on or off with the flip of a switch to punch in even tighter. Originally, I didn't know if I was going to be using the 25-250 that much on the shoot—but the funny thing is it stayed on the camera the rest of the day and part of the next day as well.

From a build perspective, having that zoom was excellent. If I were going to use a 250mm prime, I would have to reconfigure the camera for that big lens. And if I wanted to go back to a small 35mm prime, I'd have to reconfigure and rebalance the camera again. There wasn't enough time to do that on this shoot—which is often the case.

In terms of quality, the bokeh with the lens wide open at magic hour was pleasing and gentle. It recreated skin tones with an authentic quality. Flares were not overdone and they looked very smooth. It was a pretty image and it cut nicely with the Sumire Primes. It's a unicorn in terms of zoom lenses.

What other lenses did you have?

This was the first time I had access to the entire range of Canon glass from PL to EF. A nice feature about the C300 MKIII is the easily-changeable lens mount. With four screws you can quickly swap PL or EF mounts in the field.

For this shoot, I fielded PL zooms and primes, particularly the Canon 25-250, Canon Cinema Zooms, and the Canon Sumire Primes. I also had Canon EF tilt shifts for some specialty shots I did in the cockpit where I wanted to play with depth of field. I think the PL primes and zooms cut together perfectly. I cannot see much of a difference at all in the edit.

The nice part about staying within the Canon lens family is you're guaranteed a reliability across the optics both in quality and build. I thought the color rendition, skin tones, and bokeh all stayed consistent with our variety of lenses. I was pleased with how well they matched.

What onboard monitor did you use?

That was an Atomos Shogun 7. It accepts 4K from the camera and displays it in HDR on its 1920x1200 screen. We were shooting in an HDR world and we knew we were going to do both HDR and SDR passes in post.

Where was video village?

We had multiple video villages. We were sending a feed to Dennis pulling focus at his 13-inch SmallHD monitor. We were sending another feed to our DIT in his own tent where he was monitoring. We had two cameras out there, so he was viewing both and helping me maintain consistent exposure. He had two different monitors

Steve Holleran on *Boneyard Ballet*





Steve Holleran on *Boneyard Ballet*



getting a separate feed from each camera and an extra Canon monitor so he could look at them in HDR as well. We sent a third feed to client video village where there were two 4K monitors to be able to watch both cameras as well.

Canon monitors, of course. What about lighting?

Exteriors were all natural light, basically backlit or side top lit the entire time. We had consistent lighting conditions for the entire day along with morning and evening magic hours on either side that fit nicely into a 12-hour day. We often saw dappled skies with punchy sunlight coming through.

I did a lot of lighting in the interior of the plane's cabin. We had a Condor with two 4K HMIs angled about 30 degrees off from each other, punching through the coach cabin windows to give us strong shafts of light. We used smoke for atmosphere.

There was an eight tube Asterra set that I put in the recesses above the overhead bins to provide soft top fill. We had two 2x8 Light Tiles for soft key/fill as they fit nicely above the plane's seats, and we used a 1.8K HMI shooting down the left passageway for an edge.

How would you describe the look and style of the film?

The style and look is lyrical. It's meant to be magical and atmospheric—as if a memory. I designed a moody quality inside to lead into a dynamic and vibrant exterior world when we're looking at the ballerina. There was also a variety of slow motion and on-set stabilization because I wanted it to feel like you were taking flight with the ballerina.

Gods of Focus: Dennis Scully



Dennis Scully in front of camera, attaching Preston DM1x Motor

Jon Fauer: Tell us about your impressions of the C300 Mark III.

Dennis Scully: My history with Canon goes back to the prototype C700 on the demo film with Russell Carpenter, ASC and Tyler Stableford in Aspen. And many other jobs with Canon cameras and Steve Holleran since then. The C300 Mark III feels very much like the new generation of smaller form factor cameras. It's a good, solid, well-built, small module to which you can add components and has places to do it properly. The functionality and assignability of the switches make sense and meet our needs for speed changes and so on. Access to the media cards was good.

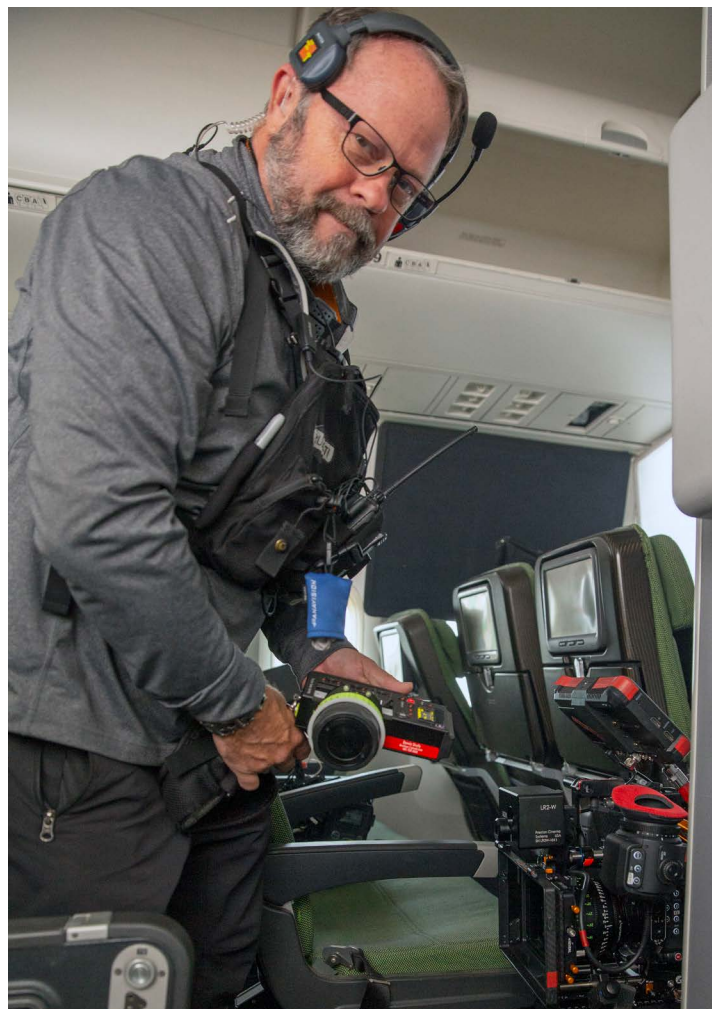
The images are beautiful. Canon has had their color science down to a science for a long time. The colors and the pleasing rendition of skin tones are all there on this camera as well. The RAW data retains great detail and holds a very wide dynamic range. That impressed us. Everything seems well thought out ergonomically and I was very happy with where things were located.

The menu is intuitive, especially if you're a Canon user. I would like to see the addition of a second high-resolution viewfinder port so we could have the small 4.3" Canon LM-V2 LCD Monitor on there for menus at the same time as we have the OLED EVF for the camera operator.

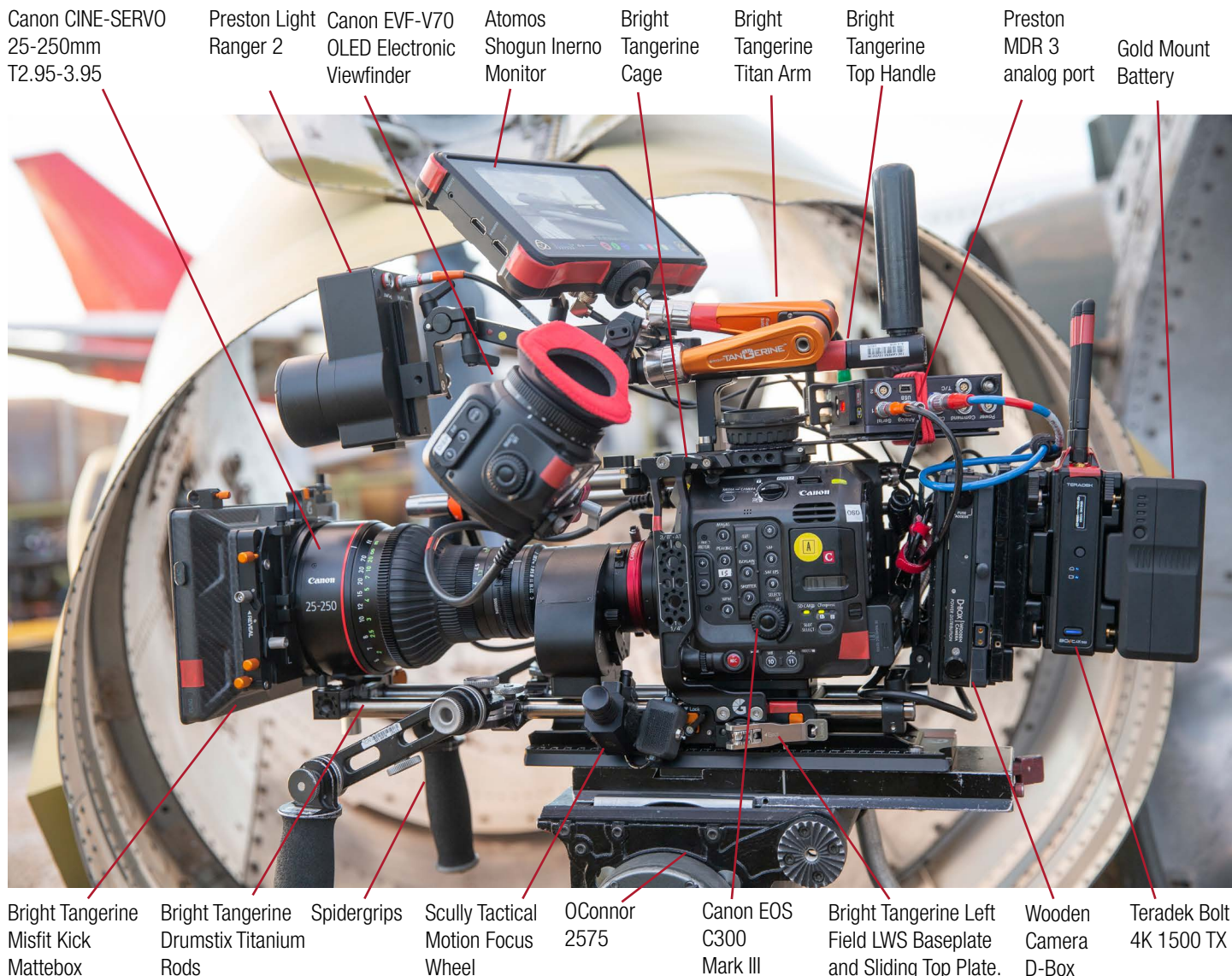
Tell us your impressions of Canon's new 25-250 zoom lens.

Especially if you're doing documentary style, it has great range and is a tremendous amount of lens for the weight and size. It has pretty bokeh in the out-of-focus background and highlights.

Starting from the front, tell us how you outfitted the camera.



Dennis Scully: What's on the Camera



Canon EOS C300 Mark III Boneyard Ballet Build-Out (Camera Left Side)

Up front is the Bright Tangerine Misfit Kick 2-stage Mattebox with Reveal Stage that expands to 3 stages without tools. It clips on to the front of the lens but also has a lens rod bracket.

We were also using the Bright Tangerine lightweight Drumstix titanium rods and titanium cage. I'm very impressed with the cage. We also had the Bright Tangerine Left Field 15mm LWS Baseplate and Sliding Top Plate. You loosen the lever to slide it. And there's an extra knob that lets you push the lever forward to have a side-ways quick release off of the baseplate.

There's a small dial attached to the left lens rod. This is for the camera operator to take over focus control from my FIZ hand unit.

On top, we have the Bright Tangerine orange Titan Arm holding an Atomos Shogun Inferno monitor. It's a 7-inch HDR 1920 x 1200 monitor that supported our LUTs and 4K input. We did not use it for recording. We used it because it's easy to view in daylight and for its accurate picture quality.

The top handle is from Bright Tangerine.

Above the lens, there's a Preston LR2 (Light Ranger 2).

The handgrips are Spidergrips from Camera Accessory Solutions.

At the back of the camera we have a Wooden Camera D-Box for power distribution to all our accessories. Next, towards the rear, is a new Teradek Bolt 4K 1500 TX video transmitter. We were very excited to have 4 K sent from the camera going to the Teradek 4K receiver connected to a Canon 4K HDR 17-inch DP-V1711 monitor with a single 12 G input cable. It was a game-changer being able to actually pull focus in 4K and in real time.

Teradek was nice enough to lend us two new Bolt 4K systems.

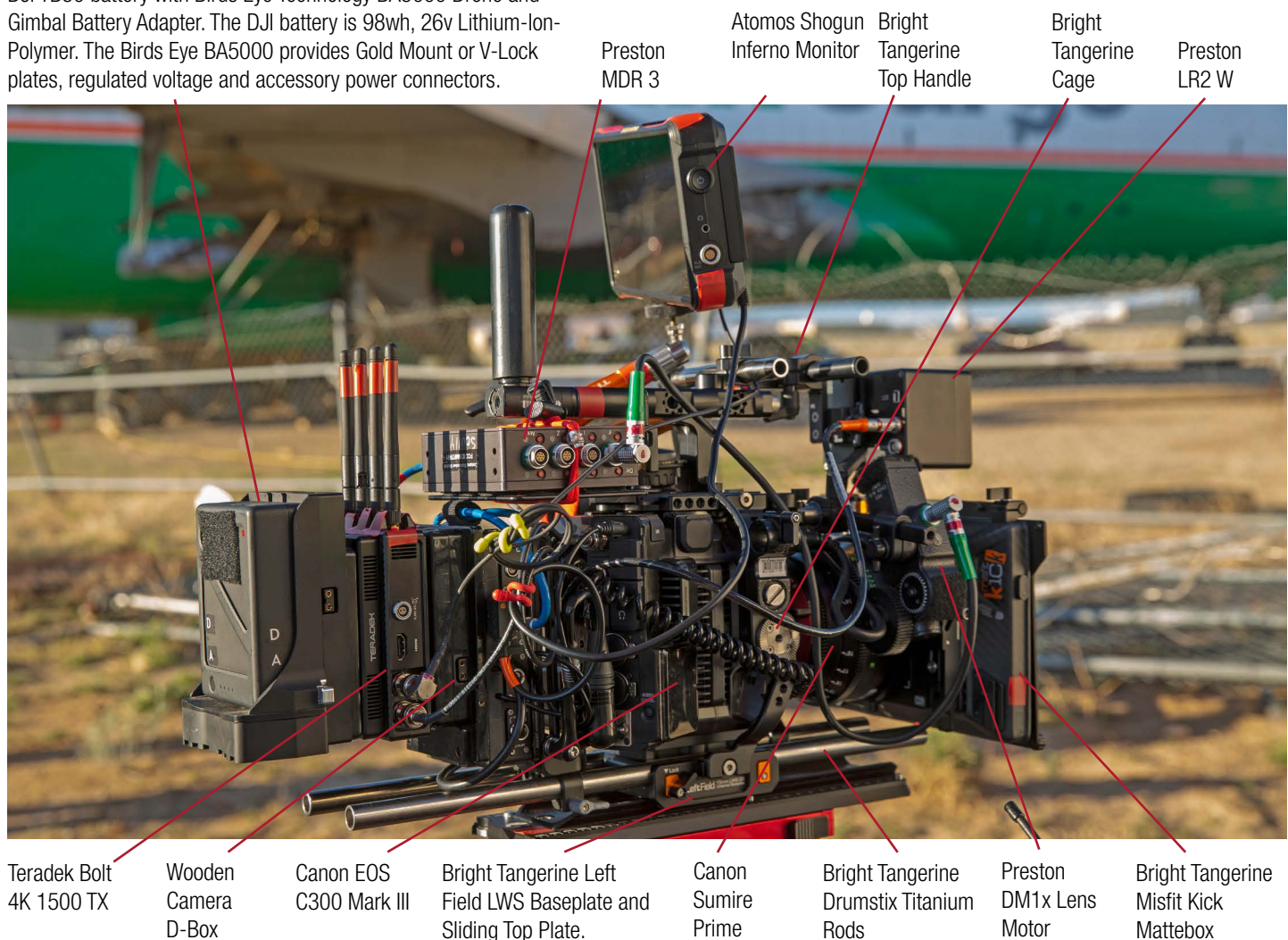
Preston LR2 W Light Ranger?

I just cannot speak more highly about the Light Ranger 2. I'm a year and a half into using it and I just can't see doing a job without it. Now, if the camera's moving, handheld, on a gimbal or anything that's moving, it is such an essential tool. The old ways of "using the force" are still important where you go off of marks, needing to understand the nonlinear nature of focus, and developing a rhythm. But rehearsal times where we can get marks are rarer.

The Light Ranger becomes very important when, for example, the camera moves in a direction that's not rehearsed—so we can react

Dennis Scully

DJI TB50 battery with Birds Eye Technology BA5000 Drone and Gimbal Battery Adapter. The DJI battery is 98wh, 26v Lithium-Ion-Polymer. The Birds Eye BA5000 provides Gold Mount or V-Lock plates, regulated voltage and accessory power connectors.



Canon C300 Mark III Boneyard Ballet Build-Out (Camera Right Side)

properly. Steve Holleran is famous for this and I've worked with him often on handheld and on features where he holds on an actor doing a long monolog. As the monolog is winding down, he starts an ever-so-subtle push in. If you aren't ready, you could buzz out of the actor's perfect 2-minute delivery. You wouldn't want to be that focus puller.

You mentioned, and Steve also talks about, something on the camera where the operator can take over focus even when your Preston system is engaged. How does that work?

A while ago, I was working with a DP who wanted to have focus temporarily for some sports action handheld shots. We had limited time with the athletes. He didn't necessarily want to rehearse a focus move. I had an original Preston single channel MDR with a little iris knob on it. I used that for focus. So I rigged it to hang from the rods up front about where the focus knob would be and he could actually activate it. When Preston fazed out the single channel MDR, they integrated an analog port in the new MDR.

The analog port allowed me to add what I call a Tactical Motion Focus Wheel. I'm now on a generation four of a small focus wheel with an inline switch that allows the operator at the camera to take

over focus temporarily with the motors still engaged. It is not an encoded device, so it jumps when you take over or hand it back. But, we've learned to work with that.

I first created the Tactical Motion Focus Wheel towards the end of 2016. It's a small, nondescript analog type of rheostat that I have hardwired into the MDR's analog port and that's mapped to the focus channel. It has an inline on/off switch.

Most operators or DPs who have seen it enjoy having that option for solo shooting or if I'm not at the focus station. Or, we're in the setup phase and maybe the DP and Director want to line up a shot. They can take over focus without disengaging my motor, or messing up any of the calibrations that already have been set. The motor stays engaged. You should map the lens in advance.

On the *Artificial Intelligence* show, we had a B camera shoulder rig camera with a Preston system on it and usually a macro lens with the Tactical Motion focus wheel on it. Steve could grab the camera and go shoot B roll tight shots while we were building the main setup and getting it lit. When he was ready for me to pull focus, I could just have my hand unit tuned to that channel and he would switch over for me to take over focus control. I was the only AC but

Dennis Scully

we had two cameras.

It didn't matter what camera Steve was on, I could be on that camera. I had two Teradek receivers piggybacked on my monitor and could just change from A camera to B camera whenever needed. So we always had Prestons engaged and ready to go without the bulk of a big studio follow focus.

Do you notice a difference between 2K and 4K monitors for focus? Even on smaller monitors?

Yes, 4K monitors are the way to go, especially with everybody wanting to shoot with lenses wide open and super shallow depth of field. It's not even a matter of choosing the right eye or left eye. It's whether you want the eyelashes or the eyeball to be sharp. It's crazy shallow. It looks amazing, but it is brutal. If you're on something like a 135mm at T1.3 on a tight choker, God help you. Unless you're viewing on a 4K monitor.

Do you think this marks the beginning of a return or come back for Super35?

I think the C300 Mark III is certainly positioned in the right place at the right time because a challenge with Large Format can be to find enough Large Format lenses. There are so many more Super35 lenses out there.

In closing?

So, in summary, the Canon C300 Mark III is a progression of the move to new, small form factor cameras. It's a documentary style design that can be used by many people, from the solo shooter all the way up to the highest level productions using lightweight cameras. We loved that it could go directly onto the gimbal and the drone and we did not have to use multiple cameras, with different form factors and different models to accomplish that. I'm really excited about it—the body is so light and so capable that it now allows us to fly some larger lenses on the gimbal and the drone.



Rain. What better way to test a new camera?



Why does the DP always want to put the prototype camera in a puddle?



Freefly TERO remote-controlled vehicle, C300 III, Sumire Prime 14mm.

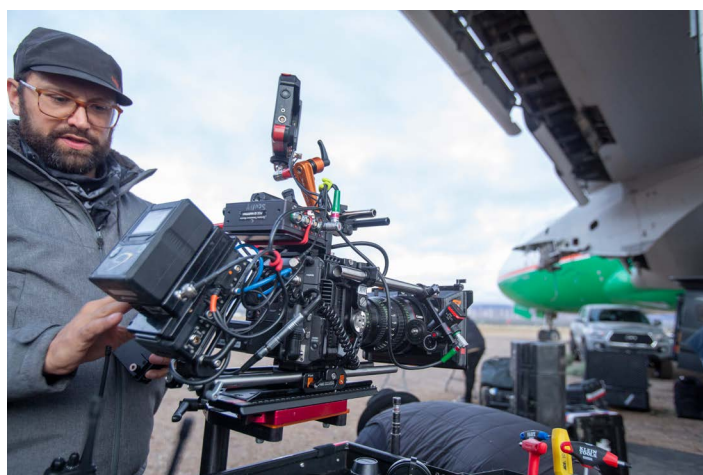


Freefly Alta 8 with C300 III, Sumire 35mm Prime. Pilot: Josh Lambeth.



Dennis Scully's Tactical Motion Focus Wheel
www.tacticalmotion.com

Canon EOS C300 Mark III



Adam Wheeler, DIT.





The Cinema EOS Dozen: Charles Zablan (Canon), Alex Sax (Canon), Dara Grombiniak (Canon), Crystal Marzigliano (Canon), Lisa Belli (Canon), Steve Tobenkin, Steve Holleran, Michael Bravin (Canon), Yotaro Sanjo (Canon), Yosuke Kamada (Canon), Keisuke Matsuno (Canon), Kengo Takasawa (Canon).



BONEYARD BALLET

An Ode to Flight

Boneyard Ballet Framegrabs from finished Apple ProRes 4444 1.9:1 Video courtesy of Canon. Shot on Canon EOS C300 Mark III Super35 Camera.









DIRECTED BY STEVEN HOLLERAN

BONEYARD BALLET

Shot entirely on the Canon EOS C300 Mark III camera and Canon lenses

producer
STEVE TOBENKIN
director of photography
STEVEN HOLLERAN
editor
ADAM MCCLAUGHRY
line producer
MIKE MACHIN
first assistant director
BENJAMIN CAIRD

featuring
ballet dancer **ALISON STROMING**
stunt double **CASSIE JO CRAIG**

CINEMA EOS

production coordinator
JEROME MARSHALL
art director
WADE MORRISON
wardrobe
AMANDA LIN
digital imaging technician
ADAM WHEELER
stunt coordinator
JOHN C. EPPERSON

Canon EOS C300 Mark III Specifications

Image Sensor

Effective Pixels:	4096 x 2160 - when 4096 x 2160 or 2048 x 1080 is selected (approx. 8.85 megapixels) 3840 x 2160 - when 3840 x 2160 or 1920 x 1080 is selected (approx. 8.29 megapixels)
Total Pixels:	4206 x 2280 (approx. 9.6 megapixels)
Sensor Size:	Super 35mm 4K: 26.2 x 13.8 mm (29.61 mm diagonal) UHD 4K: 24.6 x 13.8 mm (28.21 mm diagonal)
Sensor Modes:	Super 35mm, Super 16mm (cropped)
Pixel Pitch:	6.4 µm
Sensor:	CMOS with RGB Primary Color Filter (Bayer Array)
Processor:	DIGIC DV 7 Imaging Processor

Lens Mount

Lens Mount:	Comes standard with EF Mount
Optional Mounts:	EF-C locking Mount, PL Mount All mounts are interchangeable with 4 screws
ND Filter:	Mechanical ND filter system with clear, 2, 4, and 6 stops; 8 and 10 stops in extended mode
Correction:	Peripheral Illumination Correction Available

Exposure, Shutter, Iris, ISO

Manual:	Manual setting of shutter speed/angle, iris, ISO/gain, and ND filter
Auto:	Push Auto Iris Control, Auto Iris Control
Metering:	Standard, Spot and Backlit
ISO:	100 to 102,400 ISO
Exposure:	Exposure Compensation/AE Shift -2.0 to +2.0 in 0.25 point increments
Shutter Modes:	Shutter Speed; Angle; Slow Shutter; Clear Scan
Shutter Speeds:	1/12 to 1/2000 in 1/3 or 1/4 stop increments (at 59.94, 50, and 24 Hz.)
Shutter Angles:	360, 240, 180, 120, 90, 60, 45, 30, 22.5, 15, 11.25 (at 59.94, 50, and 24 Hz.)
Iris Settings:	1/2 stop, 1/3 stop or Fine increments with EF lenses. Push auto iris control Auto iris control in 1/2, 1/3 stop or fine increments (Compatible EF lens required)

Focus

Autofocus:	Dual Pixel CMOS AF System (only with lenses that support AF functions can be used in AF modes)
Focus Modes:	Manual, continuous AF, One-Shot AF, AF-Boosted MF, Face Detection AF

Dimensions

	Approx. width x height x depth
Body Only:	153 x 148 x 168 mm (6.0 x 5.8 x 6.6 in.)
Body and Grip:	183 x 148 x 189 mm (7.2 x 5.8 x 7.4 in.)
Camera System:	343 x 277 x 333 mm (13.5 x 10.9 x 13.1 in.) (includes Body, Grip, Handle, Mic Holder, LCD Monitor LM-V2 and Expansion Unit EU-V2)

Input/Output

SDI OutHD:	SMPTE 292
3G:	SMPTE 424, SMPTE 425
6G:	SMPTE ST 2081
12G:	SMPTE ST 2082
Audio:	SMPTE ST 299 BNC Connector output only
Monitor Out:	Available
Monitor:	2048x1080 / 1920x1080 Resolution 23.98p/24.00p/25.00p/29.97p/30p/59.94p/50p/60p
Time code:	BNC Connector (Input and Output)
Genlock:	Supported when optional expansion unit EU-V1 or EU-V2 attached
Sync Out:	Supported when optional expansion unit EU-V1 or EU-V2 attached (shares function with Genlock)
HDMI Output:	Type A 4096x2160/3840x2160/1920x1080/1280x720
Audio Input:	2x Balanced 3-pin XLR (Mic Level, Mic Level with Phantom Power and Line Level) 3.5mm Microphone terminal
Headphone:	3.5mm stereo mini-jack
Remotes:	Remote A (Standard – LANC Compatible or RC-V100) Remote B with expansion unit EU-V1 and EU-V2 Remote control through WFT-E9
CCU :	Optional RC-V100
USB:	Available

Power

Battery:	14.4V DC Battery — BP-A Series Battery Pack
DC IN:	12V connector or V-mount battery with EU-V2)
Ext. Power:	11.5V - 20V DC 12-20V
Power Adapter:	CA-CP200B Compact Power Adapter (for Battery Charger)

Weights (approx)

Camera body only	
with EF mount:	1.75 kg (3.9 lb)
with PL Mount:	2.030 kg (4.5 lb)
w/ EF Cinema lock:	1.860 kg (4.1 lb)
Camera Grip GR-V1:	260 g (9.2 oz)
LCD Monitor LM-V2:	204 g (7.2 oz)
Top Handle:	227 g (8.0 oz)
Battery Pack BP-A60	434 g (15.3 oz)
LCD LA-V2 Attachment Unit:	265 g (9.3 oz)

Onboard LCD Monitor

Type:	4.3-inch (10.9 cm diagonal) color LCD Approx. 2,760,000 dots (1280 x RGB x 720),
Aspect Ratio:	16:9
Field of View:	100%
Adjustments:	Brightness, Contrast, Color, Sharpness and Luminance

Audio

Recording Format:	Linear PCM; 4-Channel; 24-Bit; 48 kHz
Built-in Microphone:	Monoaural
External Audio Inputs:	2x XLR inputs (Auto and Manual level settings)
Phantom Power:	+48V
Speaker:	Built-in Speaker with Adjustable Volume

Recording (Internal)

Canon EOS C300 Mark III Specifications

Slots: CFexpress 2.0 (Type B) x 2 slots
SD Card (for Proxy Recording, JPEG Stills,
Custom Picture Data, Clip Metadata, Menu Settings)
SD/SDHC/SDXC Supported

File Formats: XF-AVC: MXF (OP-1a)
Cinema RAW Light: CRM

CFexpress: exFat File Format

SDHC card: FAT32 Format on SDXC card up to 32 GB
exFAT Format for more than 32 GB

File division: 4 GB for FAT32, none for exFAT

Clips: 999 clips maximum per media card

Resolutions

Mode	Resolution	Frame Rates
Cinema RAW Light	4096 x 2160	59.94p / 29.97p / 23.98p 50.00p / 25.00p / 24.00p
	2048x1080	59.94p / 29.97p / 23.98p / 50.00p / 25.00p / 24.00p
XF-AVC	4096x2160 / 3840x2160	59.94p / 29.97p / 23.98p / 50.00p / 25.00p / 24.00p
	2048x1080 / 1920x1080	59.94p / 29.97p / 23.98p / 50.00p / 25.00p / 24.00p/ 59.94i / 50i
	1280x720	59.94p / 50p
Codecs:	XF-AVC 10 bit 4:2:2 on CFexpress Cards or 8 bit 4:2:0 on SD card	
Color Gamuts:	Cinema RAW Light on CFexpress Cards Cinema Gamut, BT.709, BT.2020	
Gamma Curves:	BT.709, Wide DR, Canon Log 2, Canon Log 3, PQ, HLG	

Slow Motion and Undercranking (Slow and Fast Motion)

Sensor Mode	Recording Mode	Available Frame Rates
Super35	Cinema RAW Light	23.98P/24P: 12-120
		29.97P: 15-120
		25P/50P: 15-120
		59.94P: 15-120
Super16 (Crop)	Cinema RAW Light	23.98P/24P: 12-180
		29.97P: 15-180
		25P/50P: 15-180
		59.94P: 15-180
Super35	XF-AVC	23.98P/24P: 12-120
		29.97P: 15-120
		25P/50P: 15-120
		59.94P: 15-120
Super16 (Crop)	XF-AVC	23.98P/24P: 12-120
		29.97P: 15-180
		25P/50P: 15-180
		59.94P: 15-180

Selected Recording Times

CFexpress 512 GB Card recording Cinema RAW Light

1Gbps = 64 Mins 250 Mbps=256 Mins

CFexpress 512 GB Card recording IntraFrame
810Mbps=79 minutes 410 Mbps=156 Mins 310 Mbps= 207 Mins
160 Mbps=401Mins

CFexpress 512 GB Card recording Long GOP
260 Mbps= 246 Mins 160 Mbps= 401 Mins 50 Mbps=1284Mins

SD 512 GB Card recording Long GOP
35 Mbps= 1945 Mins 24 Mbps= 2840 Mins 17 Mbps= 4010 Mins

Other Functions

Photo Recording: Still Images captured to SD Card

Pre-Record: Yes, 3 seconds cache (Audio and Video)

Time code: Drop Frame (DF) and Non-Drop Frame (NDF)
Record Run, Free Run, Regen, External Source

Black Balance: Auto Black Balance

White Balance: Auto White Balance (AWB)

White Balance: 2,000K to 15,000K in 100K increments
-20CC to +20CC in 1 CC increments

Presets: Daylight (5,600K); Tungsten (3,200K), Custom A, B

Custom Picture: 20 Custom Picture settings—can be saved to SD—
Gamma, Black, Black Gamma, Low Key Saturation,
Knee, Sharpness, Noise Reduction, Skin Detail, Selec-
tive Noise Reduction, Color Matrix, White Balance,
Color Correction, Setup Level

Custom Display: Customized LCD panel and EVF information

Framelines: Marker options include center, horizontal, grid,
aspect ratio, safety zone, and user marker.

User Markers: Size and position markers in .yellow, blue, green,
red, black, gray, or white.

Assign Buttons: 18 total assignable button (15 assign buttons
on camera body, 1 on the grip and 2 buttons on the
monitor unit)

Relay & Double: Relay Recording* and Double-Slot Recording**
* Not available in Slow Motion recording
** Not with Slow & Fast recording or Relay Recording

Dynamic Range

Canon Log 2: 1600% / 16+ stops (ISO 800)

Canon Log 3: 1600% / 14 stops (ISO 800)

Accessories

Tripod Adapter: Canon TA-100

Wi-Fi Adapter: WFT-E9

Expansion Units: EU-V1
EU-V2

Viewfinders: EVF-V50
EVF-V70

Lens Mounts: PL Mount Kit PM-V1,
EF Cinema Lock Mount Kit CM-V1

B4 Adapters: MO-4E (EF to B4)
MO-4P (PL to B4)

Canon EOS C300 Mark III Formats, Rez, Bit Depth, Max FPS, Slow & Fast, etc.

Super35
4K RAW
and S16
2K RAW

Format	Resolution	Color Sampling	Data Rate	Bit Depth	Max Frame Rate (fps)	Recording Media CFexpress	Slow & Fast (No Audio)
						Recording Durations 512GB	
Cinema RAW Light S35 Sensor	4K 4096 x 2160	RGB Bayer RAW	1Gbps	10-bit 12-bit	59.94P / 50P 23.98P/24P/25P/29.97P	64min	12-120fps
Cinema RAW Light S16 Sensor (Cropped)	2K 2048 x 1080	RGB Bayer RAW	250Mbs	10-bit 12-bit	59.94P / 50P 23.98P/24P/25P/29.97P	256min	12-180fps

Charts courtesy of Canon. DGO sensor is effective below 60fps.

Super35
XF-AVC
Intra-Frame
and
Long-GOP
4:2:2 10-bit

Format	Resolution	Color Sampling & Bit Depth	Data Rate	Max Frame Rate (fps)	File Format	Recording Media CFexpress	Slow & Fast (No Audio)
						Recording Durations 512GB	
XF-AVC S35 Sensor Mode	4K (4096 x 2160) Or UHD (3840x2160)	4:2:2 10bit 4:2:2 10bit	810 410	59.94P / 50P 23.98P/24P/25P/29.97P	MXF	79min 156min	12-120fps 12-120fps
	2K (2048x1080) Or HD (1920x1080)	4:2:2 10bit 4:2:2 10bit	310 160	59.94P / 50P 23.98P/24P/25P/29.97P		207min 401min	12-120fps 12-120fps
XF-AVC S35 Sensor Mode	4K (4096 x 2160) Or UHD (3840x2160)	4:2:2 10bit 4:2:2 10bit	260 160	59.94P / 50P 23.98P/24P/25P/29.97P		246min 401min	12-120fps 12-120fps
	2K (2048x1080) Or HD (1920x1080)	4:2:2 10bit 4:2:2 10bit 4:2:2 10bit	50 50 50	59.94P / 50P 23.98P/24P/25P/29.97P 59.94i/50i		1284min 1284min 1284min	12-120fps 12-120fps -
Long-Gop	HD (1280x720)	4:2:2 10bit	24	59.94P / 50P		2675min	-

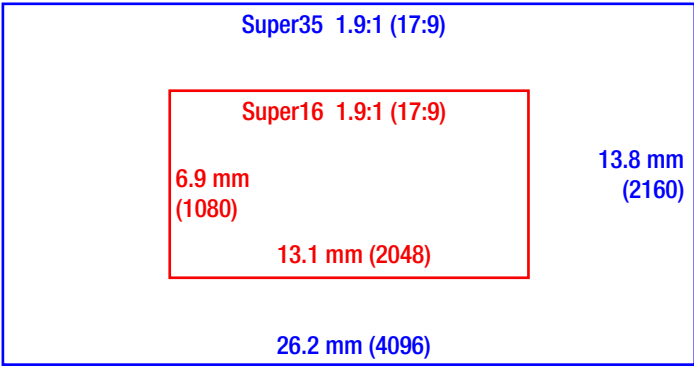
Super16
XF-AVC
Intra-Frame
and
Long-GOP
4:2:2 10-bit

Format	Resolution	Color Sampling & Bit Depth	Data Rate	Max Frame Rate (fps)	File Format	Recording Media CFexpress	Slow & Fast (No Audio)
						Recording Durations 512GB	
XF-AVC S16 Sensor Mode (Cropped)	2K (2048x1080) Or HD (1920x1080)	4:2:2 10bit 4:2:2 10bit	310 160	59.94P / 50P 23.98P/24P/25P/29.97P	MXF	207min 401min	12-180fps 12-180fps
	2K (2048x1080) Or HD (1920x1080)	4:2:2 10bit 4:2:2 10bit 4:2:2 10bit	50 50 50	59.94P / 50P 23.98P/24P/25P/29.97P/ 59.94i / 50i		1284min 1284min 1284min	12-180fps 12-180fps -
Long-Gop	HD (1280x720)	4:2:2 10bit	24	59.94P / 50P		2675min	-

Super35
XF-AVC
Long-GOP
and
Super16
Long-GOP
4:2:0 8-bit

Format	Resolution	Color Sampling & Bit Depth	Data Rate	Max Frame Rate (fps)	File Format	Recording Media SD Card		Slow & Fast (No Audio)
						Recording Durations 64GB	Recording Durations 128GB	
XF-AVC S35 Sensor Mode	2K (2048x1080) Or HD (1920x1080)	4:2:0 8bit 4:2:0 8bit	35 24	59.94P / 50P 23.98P/24P/25P/29.97P	MXF	240 min 350 min	485 min 705 min	12-180fps 12-180fps
	HD (1280x720)	4:2:0 8bit	17	59.94P / 50P		495 min	995 min	-
XF-AVC S16 Sensor Mode (Cropped)	2K (2048x1080) Or HD (1920x1080)	4:2:0 8bit 4:2:0 8bit	35 24	59.94P / 50P 23.98P/24P/25P/29.97P		240 min 350 min	485 min 705 min	12-180fps 12-180fps
	HD (1280x720)	4:2:0 8bit	17	59.94P / 50P		495 min	995 min	-

Canon EOS C300 Mark III Sensor Modes



Super35 = 26.2 x 13.8 mm
29.61 mm Ø

Super16 = 13.1 x 6.9 mm
14.81 mm Ø

Frame Rates

Sensor mode	Frame Rate	Shooting Frame Rate																						
Super 35	59.94p	15	30	44	48	52	56	60	90	120	Dual pixel CMOS AF support													
	29.97p	15	22	24	26	28	30	32	36	40	44	48	52	56	60	90	120							
	23.98p	12	16	18	20	22	24	26	28	30	32	36	40	44	48	52	56	60	72	96	120			
	24.00p	12	16	18	20	22	24	26	28	30	32	36	40	44	48	52	56	60	72	96	120			
	50.00p	15	25	34	38	42	46	50	54	58	60	75	100	120										
	25.00p	15	17	19	21	23	25	26	28	30	34	38	42	46	50	54	58	60	75	100	120			
Super 16	59.94p	15	30	44	48	52	56	60	90	120	150	180												
	29.97p	12	15	22	24	26	28	30	32	36	40	44	48	52	56	60	90	120	150	180				
	23.98p	12	16	18	20	22	24	26	28	30	32	36	40	44	48	52	56	60	72	96	120	144	168	180
	24.00p	12	16	18	20	22	24	26	28	30	32	36	40	44	48	52	56	60	72	96	120	144	168	180
	50.00p	15	25	34	38	42	46	50	54	58	60	75	100	120	150	175	180							
	25.00p	15	17	19	21	23	25	26	28	30	34	38	42	46	50	54	58	60	75	100	120	125	150	175

Recording Times

CFexpress Card 512 GB	Cinema RAW Light			
	1 Gbps	250 Mbps		
	64 Minutes	256 Minutes		
CFexpress Card 512 GB	IntraFrame			
	810 Mbps	410 Mbps	310 Mbps	160 Mbps
	79 Minutes	156 Minutes	207 Minutes	401 Minutes
CFexpress Card 512 GB	Long GOP			
	260 Mbps	160 Mbps	50 Mbps	24 Mbps
	246 Minutes	401 Minutes	1284 Minutes	2675 Minutes
SD Card 512 GB	Long GOP			
	35 Mbps	24 Mbps	17 Mbps	
	1945 Minutes	2840 Minutes	4010 Minutes	

Canon CINE-SERVO 25-250 mm T2.95-3.95 Zoom

Canon's new CINE-SERVO 25-250 mm T2.95-3.95 is an opto-mechanical marvel. It weighs a mere 6.7 lb and is about 11 inches long. It comes in PL or EF mount.

In M.O.D. Mode, shooting at the tight end with its built-in 1.5x Extender, this CINE-SERVO can fill the frame with an average credit card.

Usually you don't handhold a 10:1 zoom. This one you can. And, with the internal 1.5x range extender, you can increase your selection of focal lengths from 25 to 375 mm.

To borrow a famous film title, this Extremely Light and Incredibly Close lens covers a wide range of cameras and formats, not only

on Super35 cameras like the new Canon EOS C300 Mark III, but also Full Frame.

With the built-in 1.5x Extender engaged, it becomes a 37.5-375 mm T4.4-5.9 zoom lens with image coverage up to around 44.42mm Ø (as estimated by FDTimes—see explanation on page 35.) And so, you can use this CINE-SERVO Zoom in Full Frame/VV/Large Format/Ultra35 for most aspect ratios on ALEXA LF, Mini LF, Mini, Sony VENICE, RED MONSTRO 8K VV.



Canon CINE-SERVO 25-250 mm T2.95-3.95

The new CINE-SERVO 25-250 mm T2.95-3.95 Zoom joins a Canon family of remarkable Super35 format CINE-SERVO Zooms. The wide CINE-SERVO 17-120 mm is a documentary darling. The CINE-SERVO 50-1000 mm (75-1500 mm with built-in 1.5x extender) is amazingly small and light for something with such a long range.

The last time a 25-250 came close in weight and size was in 1962. The Angenieux 10x25B f/3.2 T3.7 zoom was 9.5 lb (4.3 kg). These days, most 10:1 zooms come in at 10 to 18 lb.

To keep size and weight down, the Canon CINE-SERVO 25-250 mm has a slight ramping of the aperture at the long end when wide open.



PL Mount is compatible with Cooke /i Technology lens metadata protocol.
EF Mount is compatible with Canon EF lens mount communication protocol.
EF Mount and PL Mount can be swapped at an authorized Canon service facility.



Canon CINE-SERVO 25-250 mm T2.95-3.95

Witness marks and scales are engraved on both sides of the lens.

Focus distance is indicated in both Imperial and Metric scales. You do not have to change lens rings.

Distance in Feet is marked in white. Distance in Meters is marked with green luminous paint that is visible in the dark.



Canon CINE-SERVO 25-250 mm T2.95-3.95

The Servo drive unit enables smooth zooming, with precise speeds from fast to slow, and minimum backlash. Iris control is responsive, also with minimum backlash.



Three 20-pin connectors for externally operated accessories for Zoom/Focus/Iris (FIZ controls with 20pin broadcast connections) and metadata output from 16-bit absolute encoder for virtual studio systems.



Canon CINE-SERVO 25-250mm T2.95-3.95 Specs

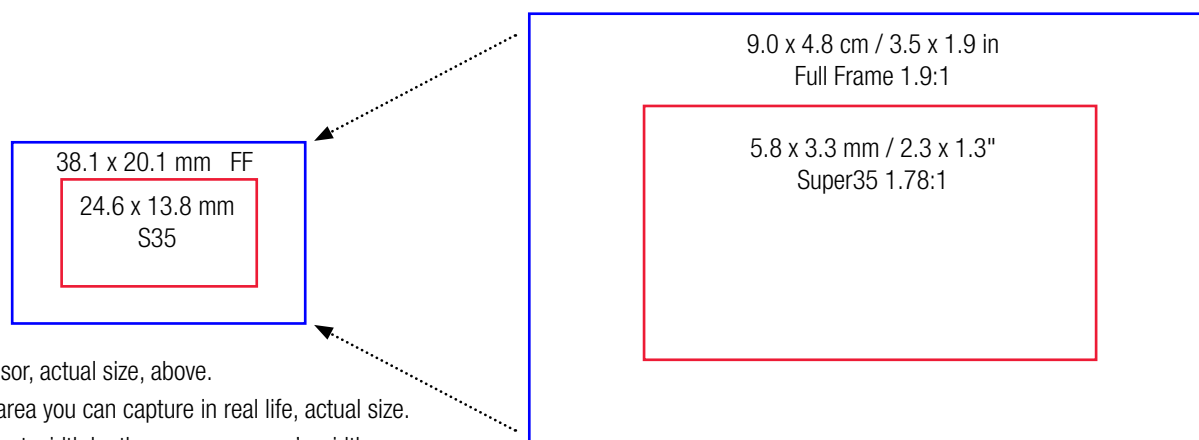
Lens name with EF mount	CN10x25 IAS S/E1
Lens name with PL mount	CN10x25 IAS S/P1
Zoom ratio	10x
Focal length	25 - 250 mm Super35 coverage 37.5 - 375 mm Super35 and Full Frame coverage when using built-in 1.5x Extender
Maximum aperture	T2.95 from 25 - 187 mm / T3.95 at 250 mm T4.4 from 37.5 - 281 mm / T5.9 at 375 mm when using built-in 1.5x Extender
Iris Blades	11 blades
MOD	1.2 m / 4.0' Minimum Object Distance
Weight	3.06 kg / 6.7 lb approx.
Front Diameter	114 mm
Front Filter Thread	112 mm (127 mm filter thread inside detachable lens hood)
Dimensions EF	186.7 x 131.7 x 282.1 mm / 7.6 x 5.2 x 11.1 in. approx (w x h x l)
Dimensions PL	186.7 x 131.7 x 274.1 mm / 7.6 x 5.2 x 10.8 in. approx. (w x h x l)

Minimum Object Distance and Minimum Object Size at 1.2m / 4.0'

Aspect Ratio	FF or S35	Image Area on Sensor	Actual Object Size at Wide End of Zoom	Actual Object Size at Tight End of Zoom
1.9:1	FF	38.1 x 20.1 mm	89.3 x 47.1 cm at 37.5 mm*	9.0 x 4.8 cm at 375 mm* 3.5 x 1.9 in
1.5:1	FF	36 x 24 mm	84.4 x 56.2 cm at 37.5 mm*	8.5 x 5.7 cm at 375 mm* 3.3 x 2.2 in
1.78:1	S35	24.6 x 13.8 mm	86.5 x 48.5 cm at 25 mm	8.7 x 4.9 cm at 250 mm 3.4 x 1.9 in
			57.7 x 32.3 cm at 37.5mm*	5.8 x 3.3 cm at 375 mm* 2.3 x 1.3 in
1.9:1	S35	26.2 x 13.8 mm	92.1 x 48.5 cm at 25 mm	9.3 x 4.9 cm at 250 mm 3.7 x 1.9 in
			61.4 x 32.3 cm at 37.5 mm*	6.2 x 3.3 cm at 375 mm* 2.4 x 1.3 in

* With built-in 1.5x Extender

Magnification Ratio = Minimum Object Size ÷ Sensor Size



1. This is a camera's sensor, actual size, above.
 2. At right, the smallest area you can capture in real life, actual size.
 3. Divide the real life object width by the camera sensor's width to calculate the Magnification Ratio of the lens.
- For example, in Full Frame, we have $90 \div 38.1 = 1:2.36$ ratio.

Actual size of an average credit card

Canon CINE-SERVO 25-250mm T2.95-3.95 Image Coverage

Although Canon does not publish lens image circles, FDTimes calculates that the Image Circle coverage of the CINE-SERVO 25-250mm T2.95-3.95 is approximately:

29.61 mm Ø for Super35
and
44.42 mm Ø for Full Frame / VV/ Large Format / Ultra35
with the 1.5x Extender engaged

How did we arrive at these numbers? This sounds like an SAT question.

Answer: Well, we could look at the Canon EOS C300 Mark III's Super35 sensor specs on page 26 or 29. Image area is 26.2 x 13.8 mm.

Or do the math: $c=\sqrt{a^2+b^2}$

Or go online to Google's Pythagorean Theorem Calculator. Enter 26.2 mm for one leg of the triangle. Enter 13.8 mm for the other leg. The hypotenuse (image diagonal) is calculated: 29.61 mm.

Therefore, because we have been told that the Canon CINE-SERVO 25-250mm T2.95-3.95 covers the full sensor of the EOS 300 Mark III, I think we can agree that the image circle diameter of the lens is at least as large as the sensor's.

To arrive at the image coverage for Full Frame / VV/ Large Format / Ultra35 and formats larger than Super35, let's calculate as follows.

Multiply the Super35 image diagonal of 29.61 mm by 1.5 (which is the ratio of the built-in 1.5x Extender) and we get 44.42 mm Ø.

Note, these are FDTimes numbers, not Canon's. Your "mileage" may vary. Image Circle Diagonal is an imprecise number. It is often mixed up with Image Illumination. You might love the focus fall off and shading around the edges of frame that would have the lens designers shaking their heads. Therefore, the best way to judge Image Circle is to look at the lens on a projector, shoot a test, and see the results.

Thanks to the Canon Optics Team for helping with the math and guiding the way.



Canon CINE-SERVO 25-250mm T2.95-3.95 Aperture Ramping Explained

There are common misconceptions about aperture ramping. Here are some things to remember:

1. Aperture ramping typically occurs wide open, when the iris is set to T2.95.
2. The aperture ramping is gradual.
3. As you stop the iris down from wide open, the T-Stop drop-off point shifts toward the telephoto end. If you stop the iris down past T3.95, then aperture ramping no longer occurs.
4. The same concept holds true when using the 1.5x Extender. Note that with the 1.5x Extender engaged, you will have to calculate the light loss (and resulting T-Stop) yourself.

CN10x25

	Iris Scale Setting	Focal Length		
		25mm	187mm	250mm
T Number	Wide Open (T2.95)	2.95	2.95	3.95
	T3.95	3.95	3.95	3.95







www.usa.canon.com/cinemaeos

www.usa.canon.com/cinematenses



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Canon Special Report

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