With the adoption of a new imaging system, we’ve developed a 2/3-inch sensor that makes it possible to shoot more brightly than ever before. Our 4K ultra slow-motion camera, fully compatible with a 2/3-inch B4 mount incorporates this new technology. With no compromise in depth-of-field zoom and focus speed, the camera is ideally for sports production. Image capture without the need for a PL-B4 lens converter makes it possible to capture approximately six times brighter (2.5 stops) images than PL mount super slow motion cameras.

The camera’s base station is a compact 2RU size, providing camera operation up to 2-km range on Hybrid Fiber cable (up to 20 km when camera head is powered locally). This ultra slow-motion camera combines a rich feature set in a cost-effective package.
A new imaging system with a dedicated imaging block (equipped with a 2/3-inch CMOS sensor/prism)

A revolutionary new technology (patented) was developed, with a two-plate imagering system capable of achieving higher sensitivity, at higher frame rates, and high density through 4K and a using 2/3-inch CMOS sensors to capture high resolution 4K images. The 4K ultra slow motion camera with 2/3-inch CMOS sensor has a compact form factor and produces the same image quality as a three-Imager model.

Directly attach 2/3-inch B4 mount lenses

Use your current broadcast lenses as-is

- Operate with the same 2/3-inch B4 mount lenses currently in use, with the full zoom and focus performance offered by the lens needed in sports production. Only FOR-A has achieved this in a 4K ultra slow-motion camera system
- Box-type super-telephoto zoom lenses can be used
- Because a PL-B4 lens converter isn’t required, there is no light attenuation

Brightness comparison

Color matching with cameras from other companies

Integrates easily into a production using standard speed cameras from other manufacturers, through pre-configured FOR-A color matching presets.

Shoots up to 1000 frames per second (fps) in 4K

- Shoots up to 1000 frames per second (fps) in 2/3-inch 4K UHD
- In motorsports, capture high-definition slow-motion of not just a car movements, but also the mechanical motions and events of individual parts
- In ball sports, capture a variety of slow-motion shots, not just of player movements but also close-ups of the ball
- Use for line call shots in tennis and other sports judgement calls
Optional flicker correction function (FT-ONE-SS4K-FC)

Corrects image flicker under artificial light conditions in real time. With FOR-A’s proprietary technology, correction is possible even with varying levels of lighting. Delivering cleaner images than normal cameras by suppressing more of the flicker characteristic seen in live broadcast replays, due to variable speed playback of the captured images.

Shoot, record, and output slow-motion video from the camera head’s internal memory

- While shooting live and recording slow-motion video, playback slow-motion replays of scenes captured in earlier, using the camera head’s internal memory
- Slow-motion playback without a separate slow-motion server
- Improved compatibility with existing slow-motion server systems

Storage partitioning
- The internal memory can be used as a single partition or divided into 2 to 16 partitions for simultaneous recording or playback.
- In continuous recording, material can be left intact before recording the next segment. Partitioning allows you to record new scenes while playing back scenes already stored in other partition.

<table>
<thead>
<tr>
<th>Storage partitioning</th>
<th>Unpartitioned (16.3 sec. recording in one partition*)</th>
<th>2 partitions (8.15 sec. recording in each partition*)</th>
<th>4 partitions (4.07 sec. recording in each partition*)</th>
<th>8 partitions (2.03 sec. recording in each partition*)</th>
<th>16 partitions (1.01 sec. recording in each partition*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start trigger</td>
<td>Segment recorded</td>
<td>Segment recorded</td>
<td>Segment recorded</td>
<td>Segment recorded</td>
<td>Segment recorded</td>
</tr>
<tr>
<td>Center trigger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End trigger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Versatile trigger support
- Pressing a trigger that can be set to record from the start, center or end of the event to be captured, starts recording to internal memory. Choose the optimal recording trigger depending on timing of event.
- With the pre-roll function, playback starts from the specified position, keeping playback focused on required segments.

Equipped with a high-speed global shutter system

Shoots distortion-free video using a high-speed global shutter system.

<table>
<thead>
<tr>
<th>Versatile trigger support</th>
<th>Start trigger</th>
<th>Center trigger</th>
<th>End trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment recorded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segment played back</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other features / Optional functions

<Other features>
- Independent live 4K output
- 12G-SDI/Quad link 3G-SDI outputs
- Supports HDR and WCG
- 24-axis color correction
- Improved portability thanks to a compact, lightweight design

<Option>
- Equip with monitor mount

*For recommendations on the optimal tripod base plate and viewfinder, please contact your local FOR-A office.
Configuration / Workflow

Base station / Remote control

**Base station**
- Compact 2RU size
- Camera head separates from the body, offering exceptional mobility with up to 20-km (2-km power supply included) range of the optical connection
- Equipped with intercom function (supports 4-wire, 2-wire, Clear-Com.)

**Remote control (optional)**

- **FT-1RCPA**
  - Remote panel required for real-time adjustment of color and image quality for the FT-ONE series
  - Intuitive control of iris, pedestal, gain and more via dedicated buttons and dials, equipped with a touch panel for fine adjustment functionality

- **FT-1RUB**
  - Equipped with dedicated buttons, a jog dial and a fader for recording and playback control, and intuitive touch panel for a wide range of settings
  - Easy camera setup and playback of recorded video

**Standard system diagram**

**Remote production (WAN/IP)**

Easily set up remote production over the internet (WAP/IP).
Sports production server integration

The camera’s remote control user interface is compatible with commonly used servers in sports production.
## FT-ONE-SS4K Datasheet

### 1. Specifications

#### Camera Head basic specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>0°C to 40°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>30% to 85% (no condensation)</td>
</tr>
<tr>
<td>Power</td>
<td>Supplied from the base station via optical camera cable or external power supply. If supplied via optical camera cable: 100 V to 240 V AC (Max. 1 km). DC IN: DC +10V to +17V. DC OUT: DC +10V to +17V (Max. 20 W).</td>
</tr>
<tr>
<td>Consumption</td>
<td>160 W (in isolated operation)</td>
</tr>
<tr>
<td></td>
<td>210 W (w/ viewfinder and lens)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>172 (W) x 275 (H) x 417 (D) mm (excluding projecting parts)</td>
</tr>
<tr>
<td>Weight</td>
<td>7.1 kg</td>
</tr>
<tr>
<td>Consumables (at 24-hour operation)</td>
<td>Cooling fan: Replace every 4 years (at normal temperature)</td>
</tr>
</tbody>
</table>

#### Technical specifications

<table>
<thead>
<tr>
<th>Image sensor, shutter, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image sensor</td>
</tr>
<tr>
<td>Reflex type</td>
</tr>
<tr>
<td>Effective resolution</td>
</tr>
<tr>
<td>Sensor size</td>
</tr>
<tr>
<td>Quantization</td>
</tr>
<tr>
<td>Shutter speed</td>
</tr>
<tr>
<td>Frame rate</td>
</tr>
<tr>
<td>Electrical characteristics</td>
</tr>
<tr>
<td>Sensitivity</td>
</tr>
<tr>
<td>Video S/N ratio</td>
</tr>
<tr>
<td>H resolution</td>
</tr>
<tr>
<td>Geometric distortion</td>
</tr>
<tr>
<td>Optical</td>
</tr>
<tr>
<td>Lens mount</td>
</tr>
<tr>
<td>Trigger signal input</td>
</tr>
<tr>
<td>Audio inputs</td>
</tr>
<tr>
<td>MIC IN</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Audio output
Embedded
Video output
2 channels (1 stereo pair), 48 kHz, synchronous
VF1
(1920 x 1080i / 1920 x 1080p) / 59.94, 50 75Ω BNC x 2
Down-converted camera image or RET1/RET2 input image
Intercom system
INCOM1
x 2
INCOM2
PRIV / LINE (producer line / engineer line)
External Interfaces
Iris control
x 1 Manual / Auto
VF
Dedicated connection to CANON EVF-V70
Optical camera cable port
Manufactured by Lemo
- Use FT-1RUA / RUB for trigger and slow operation.
- Use FT-1RUA / RUB or FT-RCPA for detailed video settings.

Base Station basic specifications
Temperature
0°C to 40°C
Humidity
30% to 85% (no condensation)
Power
AC IN: 100 V to 240 V AC
* Camera power supply is available using a camera optical cable (max: 1 km).
Consumption
Isolated operation: 222 W (at 100-120V)
218 W (at 220-240V)
If camera head is connected: 547 W (at 100-120V)
551 W (at 220-240V)
Dimensions
430 (W) x 88 (H) x 500 (D) mm (excluding projecting parts)
480 (W) (Including rack mount brackets)
Weight
15.4 kg
Consumables (at 24-hour operation)
Cooling fan (P-1546-2): Replace every 4 years (at normal temperature)
Button battery (for memory backup) CR2032: Replace every 5 years (at normal temperature)
Fuse: Slow blow 5.2x20 mm, 5.0 A / 250 V

Base Station Technical specifications
Video output (camera mode)
12G/3G-SDI OUT:
12G mode:
Quad 3G mode:
x 2 (3840 x 2160p) / 59.94, 50 (4:2:2) Single Link 12G-SDI
x 2 (3840 x 2160p) / 59.94, 50 (4:2:2) Quad Link 3G-SDI (Level-A/B, 2SI)
75Ω BNC x 8 Live or slow video
HD-SDI:
x 2 (1920 x 1080i / 1920 x 1080p); 1080i / 59.94, 50
75Ω BNC x 2 Live or slow video
Video input
HD-SDI:
(1920 x 1080i / 1920 x 1080p) / 59.94, 50 75Ω BNC x 2
Genlock input
BB: NTSC: 0.429 Vp-p, PAL: 0.45 Vp-p or, Tri-level Sync: 0.6 Vp-p
75Ω BNC x 1 (w/ loopthrough, 75-ohm auto termination)

Genlock mode
Internal sync or External sync (B.B. or Tri-level sync)

Memory partition
1 to 16 segments

<table>
<thead>
<tr>
<th>Frame rate (major)</th>
<th>Recording time</th>
<th>Image size</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 fps</td>
<td>680.9 sec.</td>
<td>3840×2160 pixel</td>
</tr>
<tr>
<td>60 fps</td>
<td>272.3 sec.</td>
<td></td>
</tr>
<tr>
<td>120 fps</td>
<td>136.1 sec.</td>
<td></td>
</tr>
<tr>
<td>180 fps</td>
<td>90.7 sec.</td>
<td></td>
</tr>
<tr>
<td>240 fps</td>
<td>68.0 sec.</td>
<td></td>
</tr>
<tr>
<td>300 fps</td>
<td>54.4 sec.</td>
<td></td>
</tr>
<tr>
<td>360 fps</td>
<td>45.3 sec.</td>
<td></td>
</tr>
<tr>
<td>420 fps</td>
<td>38.9 sec.</td>
<td></td>
</tr>
<tr>
<td>480 fps</td>
<td>34.0 sec.</td>
<td></td>
</tr>
<tr>
<td>540 fps</td>
<td>30.2 sec.</td>
<td></td>
</tr>
<tr>
<td>600 fps</td>
<td>27.2 sec.</td>
<td></td>
</tr>
<tr>
<td>720 fps</td>
<td>22.6 sec.</td>
<td></td>
</tr>
<tr>
<td>840 fps</td>
<td>19.4 sec.</td>
<td></td>
</tr>
<tr>
<td>960 fps</td>
<td>17.0 sec.</td>
<td></td>
</tr>
<tr>
<td>1,000 fps</td>
<td>16.3 sec.</td>
<td></td>
</tr>
</tbody>
</table>

* Audio are not recorded.

Intercom system
COMMUNICATION
25-pin D-sub (female) x 1
Intercom x 2 lines (ENG/PROD) if 4WIRE or 2WIRE selected.
PGM 2 lines
GPI 2 inputs (Default: R TALLY IN, G TALLY IN)

HEAD SET
4-pin XLR (male) x 1 (For intercom connection)

INTERCOM IN1, IN2
3-pin XLR (male) x 2 (when Clear-Com is selected)

Interface
LAN
100BASE-TX/1000BASE-T RJ-45 x 1
(For FT-1RUA/RUB and FT-1RCPA connection)

Optical camera connector
Manufactured by Lemo

Flicker correction (option)
Applicable to live and recorded footage in built-in memory, in real time. (Not applicable to VF-OUT and HD-SDI 1/2)
FT-1RUA/RUB required for flicker correction control.

Options
FT-ONE-SS4K-FC
Flicker correction

Tripod base plate
Equivalent to Sony VCT-U14

FT-1RUA
FT-1RUB
Remote Control Unit
(Including dedicated 16 VDC adapter)
FT-1RCPA  
Remote Control Panel  
(Including dedicated 16 VDC adapter)

Accessories  
AC Cord, EIA Rack Mount Brackets, Rubber feet, Operation Manual

2. External Dimensions  
Camera Head

(All dimensions in mm.)
Base Station

(All dimensions in mm.)