MULTI SPECTRUM / LOW LIGHT PHOTO- & VIDEOGRAPHY

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Canon

Target applications for our EOS R full spectrum and low light video


Coast guard


Port security

Sea traffic monitoring


Critical infrastructure

SEGMENT APPLICATIONS
Short/Medium/Long distance monitoring
Under challenging lighting
On place or remote controlled


Border control

Airport security


Run-way monitoring


Covert surveillance


Defence system

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FULL SPECTRUM PHOTOGRAPHY

EOS R6 / EOS R6 MKII

EOS R3

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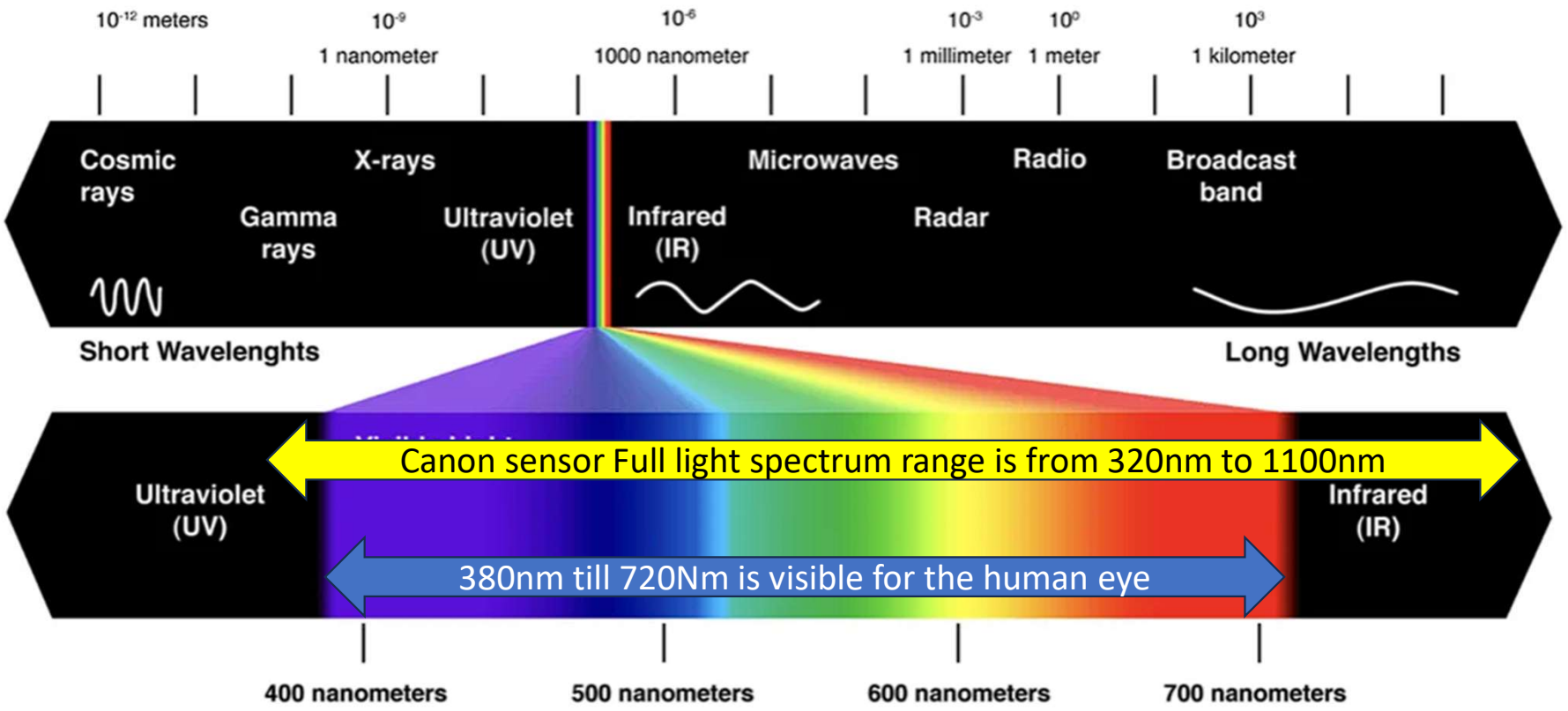
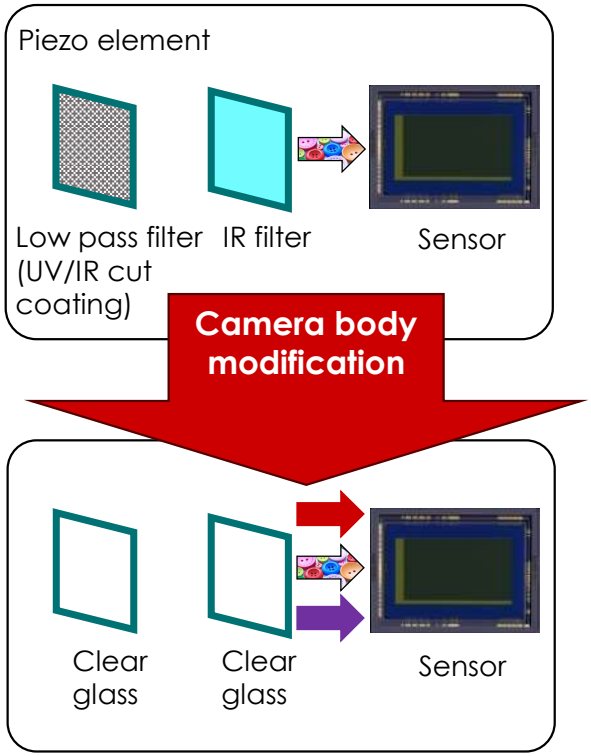
Definition full light spectrum)



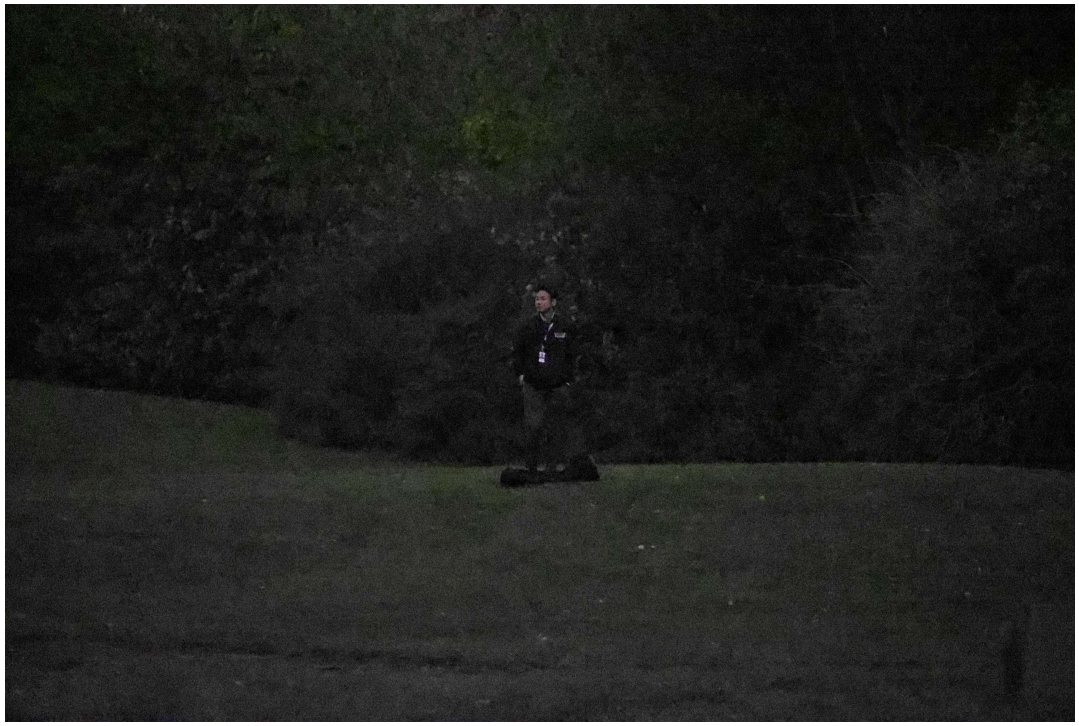
What changes on an EOS R6 & R3 full spectrum Camera



Filters for cut/pass/block specific light wave lengths

High ISO test at 0,15-0,2 LUX

Canon EOS R6 with RF 70-200/2,8 IS

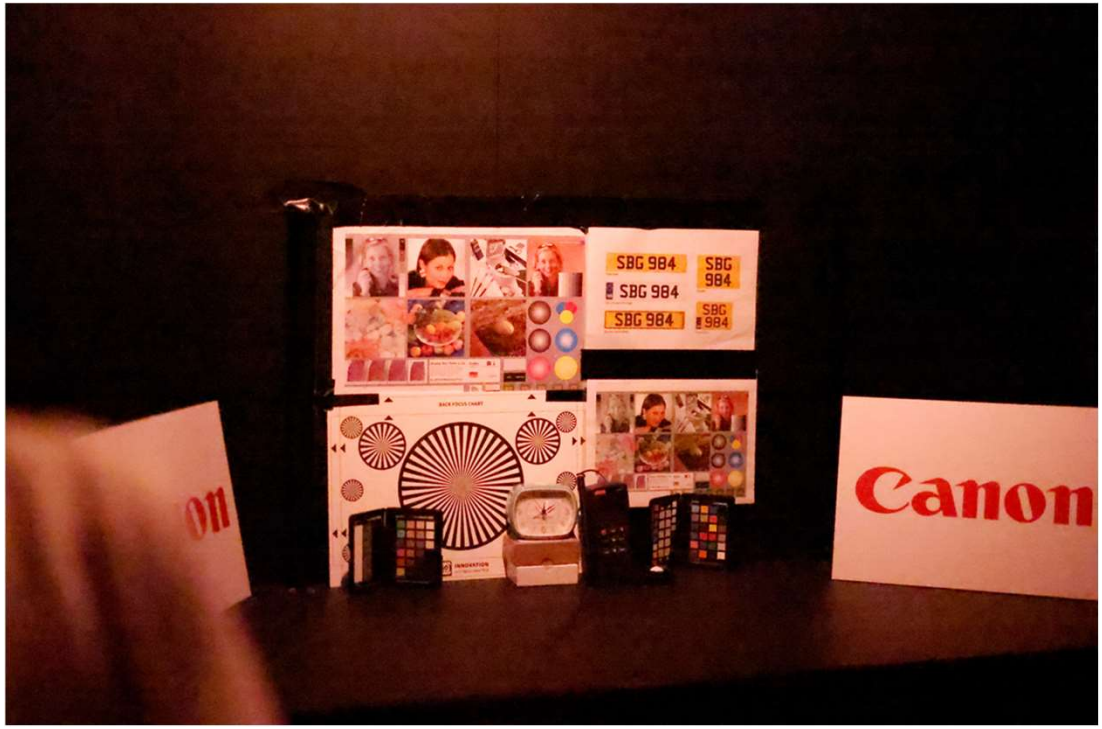


Canon EOS R6 FS with RF 70-200/2,8 IS
Camera was used without any filter or additional light source

CANON R3 FULL SPECTRUM TEST @ ENFORCETAC 2024

AVAILABLE LIGHT AT DEMONSTRATION AREA WAS 0.1LUX

EOS R3 FS & RF135/1,8 ISO 204.000, TV 1/50, F1,8	EOS R3 FS & RF50/1,2 ISO 204.000, M 1/60, F1,2



Room light OFF + 960nm IR light

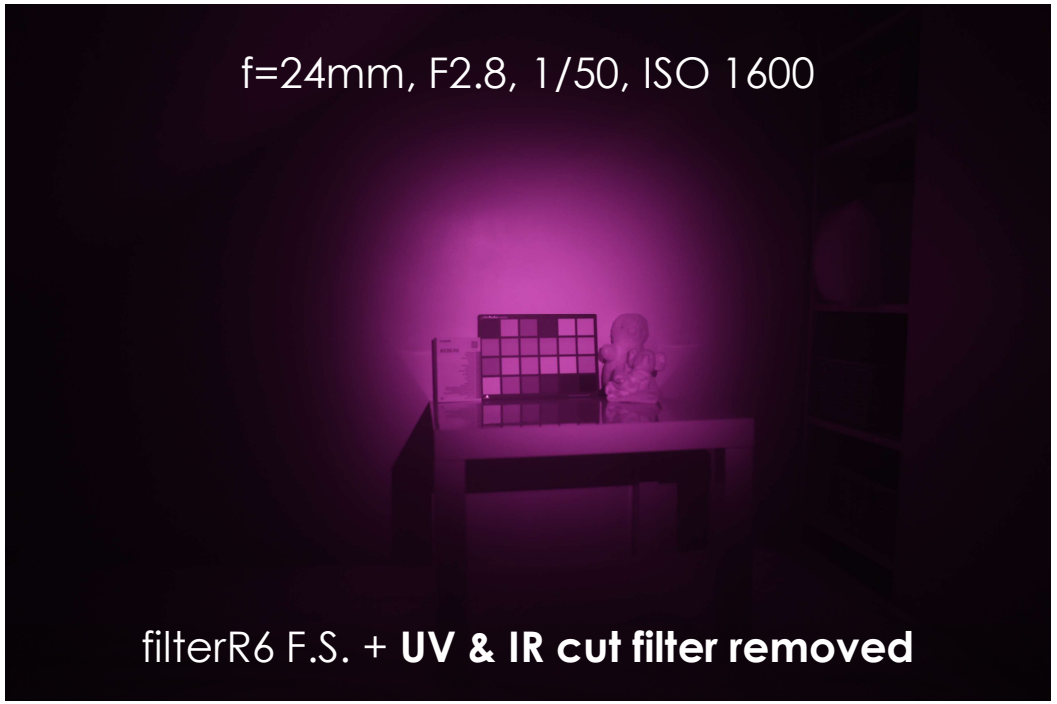
Full spectrum + Clear filter

- **Lens:** **EF24-70mm F2.8L II USM**
- **R6:** **UV & IR cut filter built-in**
- **R6 F.S.:** **Clear filter**

Full Spectrum has IR light sensitivity

f=24mm, F2.8, 1/50, ISO 1600

EOS R6 standard (with UV/IR cut filter)



filterR6 F.S. + **UV & IR cut filter removed**

Room light ON + 365nm UV light

Full spectrum + UV bandpass filter

- Lens: EF24-70mm F2.8L II USM
- R6: UV & IR cut filter built-in
- R6 F.S.: UV bandpass filter

UV bandpass filter cut visible light and pass through UV light which aimed at the color chart.

LOW LIGHT VIDEOGRAPHY (VISIBLE LIGHT & IR)

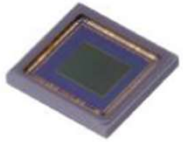
MS-500

ME20F-SH

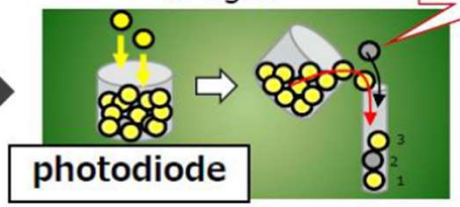
Sensor	1" SPAD sensor (Effective pixel 2.1M pixels)	35mm full frame CMOS sensor (Effective pixel 2.26M pixels)
Resolution	1920x1080 up to 4 million ISO	1920x1080 up to 4 million ISO
Lens mount	B4 mount	EF mount (Cinema lock)
IR cut filter	In/Out (manual / auto)	In/Out (manual)
Camera control terminal	Yes	Yes
Lens control terminal	Yes	Yes
Operation key (mini joystick)	Yes	Yes

CMOS sensor vs SPAD (Single Photon Avalanche Diode) **sensor**

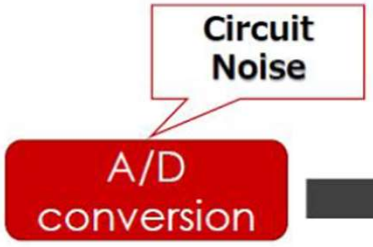
ME20F-SH Full frame CMOS sensor + EF

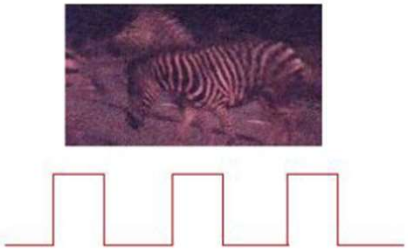


digital



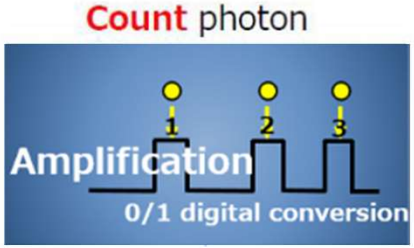
analog





MS-500
1'' SPAD sensor + B4

digital



digital

Low Noise picture!!

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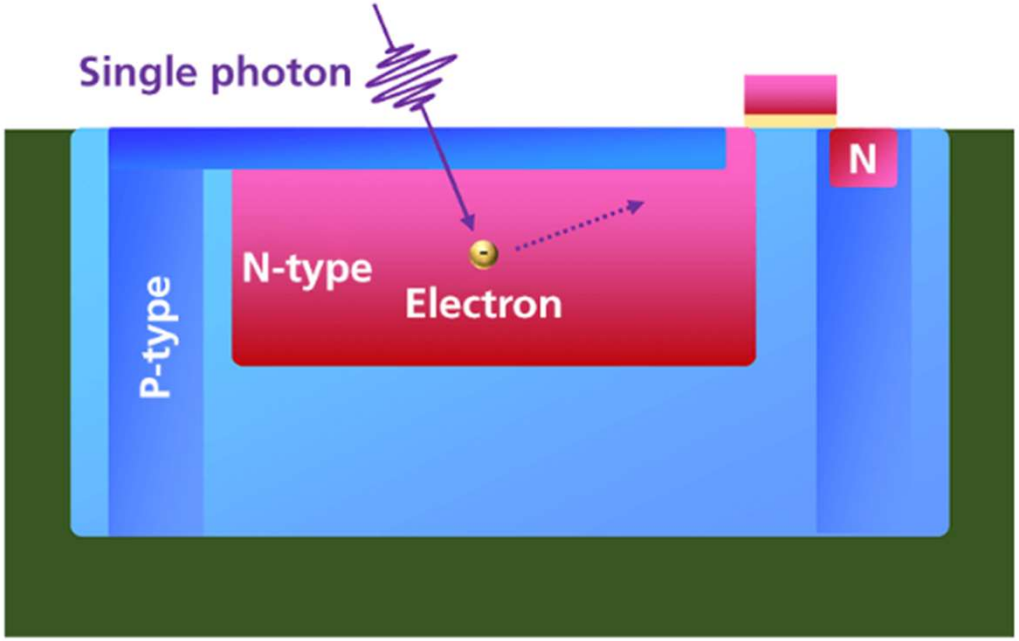
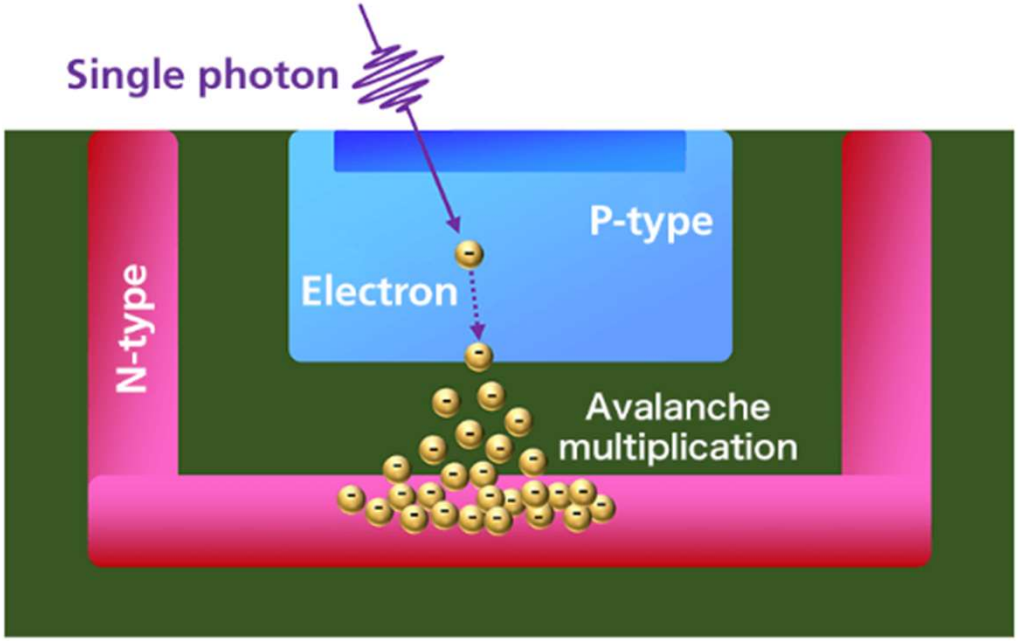
CMOS sensor vs SPAD sensor



approx. 1x multiplication

Possibility of noise causing inability to correctly detect photon entry, resulting in reduced accuracy.

CMOS sensor



approx. 1,000,000x multiplication

Correctly detects photon entry. More accurate information received per photon due to multiplication.

SPAD sensor

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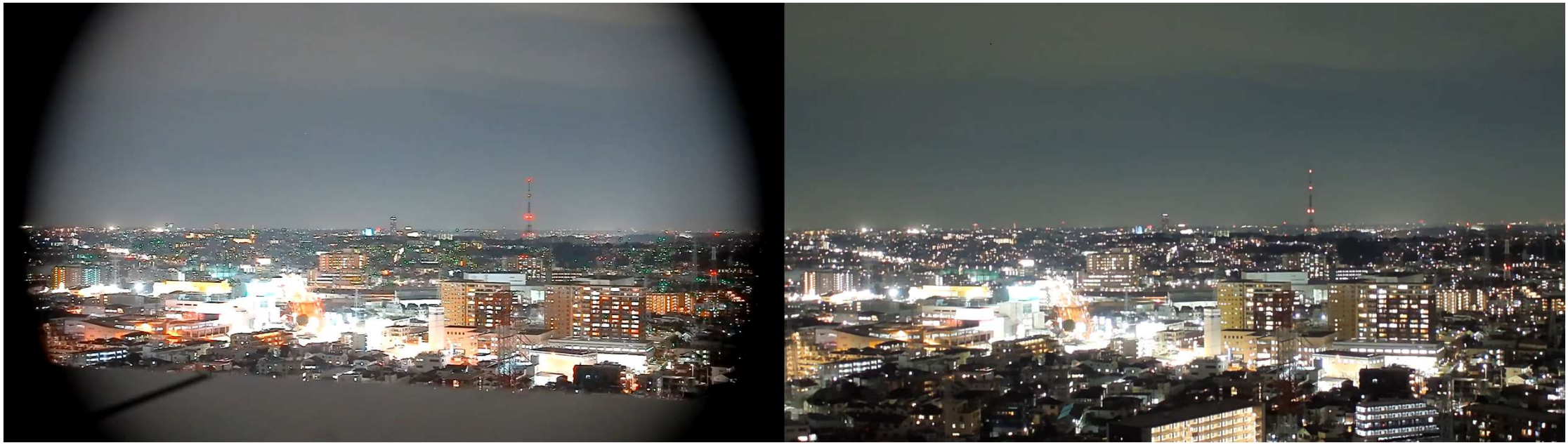
Video sample (Zoom wide->tele + optical extender)

Subject: Prince Hotel (Approx. 6.7km away)



ME20F-SH camera + CN20x50 lens

MS-500 camera + CJ45x13.6 lens
With x2 extender, movement of person in 6.7km distance building can be monitored.

MS500 and ME20 product positioning

ME20 + EF/Cinema Lens
for short/mid distance

MS-500 + Broadcast Lens
for long distance

Up to 600mm (35mm equivalent) focal length, ME20 + EF/Cinema lens would be suitable for low light application. For higher magnification, start to consider MS-500 + Broadcast lens


EF400mm
F2.8L IS III USM


EF600mm
F4.0L IS III USM


EF50mm
F1.2L USM


CN20×50
IAS H/E1


EF200mm
F2L IS USM


CJ18e×28B
IASE-S


HJ40e×10B
IASE-V H


DIGISUPER
95 TELE

(ext x1.5)
(ext x2.0)
(ext x2.0)
(ext x2.0)

50 200 400 600 1000 1500 1967 2203 3934 4406 4633 9266

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35mm equivalent focal length (mm)

EXAMPLE LOW LIGHT PERFORMANCE ME20F-SH

VIELEN DANK!

WIR FREUEN UNS IHRE FRAGEN AN UNSEREM STAND BEANTWORTEN ZU DÜRFEN

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