

New Technology in Enforcement: Low-Light Cameras

Using the Sony α 7S II Camera
and Sony SEL50F14Z Lens

John Stagnaro, Air Quality Inspector
San Joaquin Valley Air Pollution Control District

CAPCOA Enforcement Symposium
October 4, 2019

Introduction

- During fireplace season, many residential wood-burning devices are used at night
 - Cameras used to document smoking chimney violations during the daytime are not effective at clearly documenting the presence of smoke after dark
- To overcome this challenge, the SJVPACD invested in low-light imaging technology, compatible with single-lens reflex cameras, to assist with documenting smoking chimney violations during night-time fireplace surveillance
- This presentation will review the new cameras and their basic functions

Low-Light Lens Technology



Low Light Lens Technology Cont'd



Low Light Lens Technology Cont'd



Low Light Lens Technology Cont'd



Full-Frame Mirrorless Interchangeable-Lens Camera



Expected Results

(Picture taken at night, no smoke)



Expected Results

(Picture taken at night, smoke is present)



Expected Results

(Picture taken at night, no smoke)



Expected Results

(Picture taken at night, backyard demonstration)

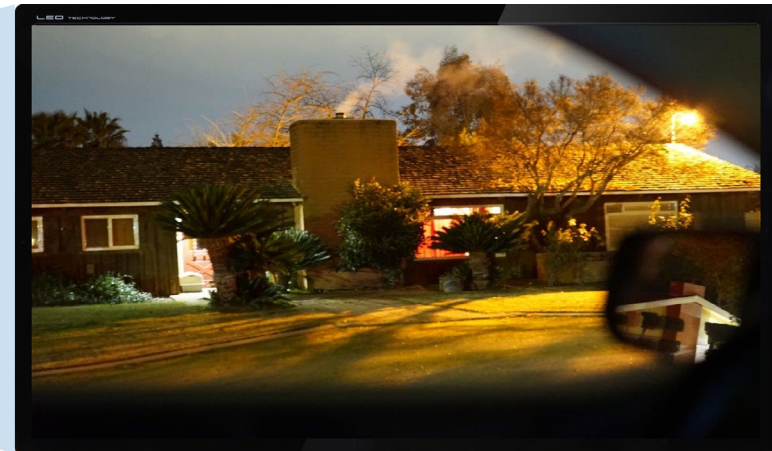


Potential Limitations

- Even with the power of the new camera and lens, night-time surveillance teams are limited in how quickly they can survey an area
 - Surveying a roofline for smoke (day) covers more ground than pointing the camera at each chimney (night)
 - Depending on wind direction, teams can offset this limitation by using sense of smell to detect smoke, and then using the camera to isolate the source
- Compared to smartphone cameras (used during daytime surveillance) with built-in email, an additional step is needed to download pictures from the camera for violation processing

Addressing Camera Limitations

- District staff is researching cost-effective methods to use a larger, external viewfinder for the camera (portable monitor, camera dongle with software, etc.)
 - An external viewfinder would increase the field of view, making it possible to survey entire rooflines from a distance



Addressing Camera Limitations (cont'd)

- This camera has built-in Wi-Fi connectivity, which can be used to transfer pictures and video files to a smartphone in range
 - Files may be e-mailed from smartphone
 - Using the Wi-Fi feature and a free Sony app, District staff is researching the possibility to e-mail files directly from the camera
 - This would eliminate the extra step needed to transfer files

Questions

John Stagnaro, Air Quality Inspector
San Joaquin Valley Air Pollution Control District
(559) 230-5972
john.stagnaro@valleyair.org