APPLICATION STORY–
Incheon International Airport

Improve Reliability

Reduce Costs

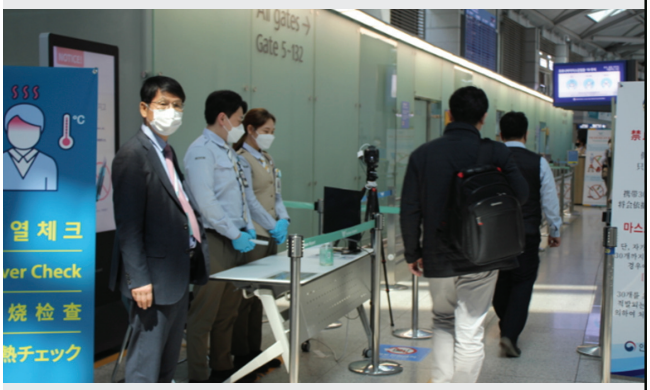
Increase Credibility

Incheon International Airport chooses FLIR thermal imaging cameras in response to the COVID-19 pandemic

On March 3, 2020, Incheon International Airport activated a three-step screening protocol to identify airport users with elevated skin temperature on all outbound flights. Today, all airport users are required to go through a total of three elevated skin temperature screening tests: at the departure level entrance, the immigration desk, and the boarding gate. Here, the departure level entrance (primary screening site) and immigration desk (secondary screening site) both feature thermal imaging cameras from FLIR. The Incheon International Airport Corporation chose FLIR thermal imaging cameras because of the efficiency and safety of non-contact skin temperature screening and the convenience of setting audible and visual (color-coded) alarms to warn camera operators whenever a camera detects a person whose skin temperature exceeds a pre-configured temperature threshold.

In March, the Incheon International Airport Corporation (IIAC) installed thermal imaging cameras on the departure level to screen all airport users for elevated skin temperature. Previously, thermal imaging cameras were installed on the arrival level only. The decision to broaden the scope of skin temperature screening was made to prevent other countries from refusing the entry of passengers departing from Korea in the light of the spread of COVID-19 in Korea.

"When the number of confirmed COVID-19 cases in Korea started to skyrocket in late-February, some countries instituted a ban on passen-gers departing from Korea. IIAC introduced a three-step skin temperature screening protocol as a preemptive measure to prevent entrepreneurs, company personnel, or international students from be-ing denied entry into a country because of the simple fact that they were traveling from Korea," said Jae-Kon Lee, Executive Director of the Safety Innovation Group at IIAC.



As part of its countermeasures against COVID-19, Incheon International Airport Corporation expanded the coverage of its elevated skin temperature screening protocol to the departure levels at Terminals 1 and 2. Departure level at Incheon International Airport Terminal 1 prior to the COVID-19 pandemic (top), and departure level with thermal imaging cameras installed for skin temperature screening (bottom)

Three-step elevated skin temperature screening on the departure level

Incheon International Airport screens each airport user for elevated skin temperature with thermal imaging cameras and thermometers three times: once at the doors leading into the departure level of the terminal (eight locations), once at the departure lounge (five locations), and once at each boarding gate. Thermal imaging cameras are installed at the entrance of the terminal and gates to the departure lounge. The skin temperature screening system is configured to activate an audible alarm and visual alarm (color-coded) on monitors connected to the cameras whenever the system detects an individual with a skin surface temperature of 37.5°C or higher. If primary and secondary screening results from thermal imaging cameras suggest the individual may have elevated skin temperature, airport personnel take his/her temperature using a thermometer. If the thermometer confirms a body temperature of 37.5°C or higher, the traveler's airline is notified. Airport users are screened for the final time by airline staff using thermometers at each individual boarding gate.

Upon inspecting the Incheon International Airport, United States Ambassadors to Korea praised airport managers' thorough quarantine process. Ambassador Harry Harris visited Incheon International Airport on March 11 to observe the quarantine procedures in place for passengers traveling to the United States. He said, "I appreciate the hard work that (airport staff are) doing for all of us, really, not just

Incheon International Airport is using a total of 40 FLIR thermal imaging cameras, including the FLIR T530 and FLIR E75, for skin temperature screening.

FLIR

Americans, but everyone, as Korea works to limit the spread of COVID worldwide. The Korean model is held up as the exemplar around the world."

Trust in FLIR thermal imaging cameras

Incheon International Airport currently has more than 40 thermal imaging cameras in action, with the FLIR T530 and FLIR E75 serving as primary options. It has an outsourcing contract with an equipment maintenance service provider specializing in managing FLIR thermal imaging cameras. The maintenance service provider ensures the measuring accuracy and quality of IIAC's thermal imaging cameras while also boosting the operational efficiency of related equipment.

"During shift changes, airport staff passed along simple tips on how to use cameras more effectively or other noteworthy issues. Inevitably, the quality of results produced by each camera started to vary between different users," said Kwang-Ho Lee, Director of Emergency Management Team at IIAC.

Lee added, "Outsourcing camera maintenance to a company that specializes in dealing with thermal imaging cameras has reduced the workload on airport staff, and it has helped us utilize our equipment more effectively. Now, we have more flexibility in terms of setting temperature thresholds and taking the cameras away once a month for calibration has kept them more accurate."

Despite its success in screening for elevated skin temperature, IIAC says it needs more thermal imaging cameras. The COVID-19 pandemic has no end in sight, which means the equipment IIAC currently owns needs to be deployed for the foreseeable future. Also, with more instances of respiratory diseases or viral infections with global ramifications, like MERS and COVID-19, forecasted moving forward, IIAC believes it will require additional thermal camera units. In fact, FLIR has been developing this elevated skin temperature technology for more than 40 years.

"FLIR has offered infrared cameras for elevated skin temperature screening since the outbreak of SARS in year 2003," explained Lars Lidman, FLIR VP of Sales for Asia Pacific "In 2009, our thermal cameras were used for elevated skin temperature during the time we experienced the H1N1 virus. With our experience from past years we have further enhanced and optimized our products and technology to fulfill various customer demands related to skin temperature screening applications."

Lidman continued, "I'm extremely proud that our products and technology are now playing a critical role in helping combat the spread of this Covid-19 virus. Although these thermal cameras cannot detect or diagnose any type of medical condition, the cameras do serve as an effective tool to identify elevated skin temperatures through accurate, non-contact temperature monitoring."

"Zero" confirmed COVID-19 patients

IIAC announced that it has had no confirmed COVID-19 patients among passengers aboard flights departing from the Incheon International Airport, or its full-time staff working at the airport as of the end of April.

"Since we introduced our skin temperature screening protocol on the departure level, we haven't had any confirmed COVID-19 patients. We did have two or three airport users with fever-like symptoms. But fortunately, they all tested negative for COVID-19," said Executive Director of the Safety Innovation Group at IIAC Jae-Kon Lee.

"Also, we haven't found any COVID-19 patients among our full-time staff either. Incheon International Airport has thermal imaging cameras in access ways used by full-time airport staff only, and we are sterilizing/disinfecting all of our facilities at the airport thoroughly. Thanks to these efforts, we haven't had a single confirmed COVID-19 patient even though we have almost 80,000 full-time employees at the airport," said Lee.

Incheon International Airport screens all passengers for elevated skin temperature in three steps - at the terminal entrance, the departure check-in counter, and each boarding gate. For the first two screening steps, the airport uses FLIR thermal imaging cameras, and for the final step, it uses thermometers.

Since introducing the skin temperature screening protocol on the departure level, Incheon International Airport has not reported a single confirmed case of COVID-19. No confirmed COVID-19 patients have been reported among the 80,000 full-time airport staff, either.

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www.flir.com
NASDAQ: FLIR

CORPORATE HEADQUARTERS
FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
PH: +1 877.773.3547

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