DESIGNED & ASSEMBLED IN USA

SCREENING | MONITORING | COMPLIANCE

# COVID SOLUTIONS

- Screen employees and visitors against spread of virus
- Ideal where high accuracy is critical, such as medical facilities, businesses, warehouses and factories
- Advanced AI analytics can improve compliance to your infection prevention measures by monitoring:
  - Wearing of Personal Protection Equipment (PPE)
  - Proper hand sanitization
  - Social distancing
  - Contact tracing
  - People counting
  - Avoidance detection
- Non-contact screening based on core body temperature estimation, more accurate than checking skin temperature
- Exceeds April 2020 FDA thermographic recommendations
- Stabilized thermal camera with fixed thermal reference source (TRS) negates fluctuating ambient temperatures

## Integrated Technology Solutions for Infection Screening and Prevention in Workplaces, Buildings and Public Spaces

SMART Embedded Computing offers a scalable Screening, Monitoring and Compliance (SMC) solution that monitors workplaces, buildings and public spaces to ensure that employees and visitors follow infection prevention measures in the wake of the COVID-19 pandemic.

Estimates for the proportion of infected people that may be asymptomatic, pre-symptomatic or mildly symptomatic vary from 45% to 80%, so infection prevention measures are critical to stopping the spread of a virus.

This system scales from a single, integrated kiosk-style unit to a full facility-level solution that integrates into existing security systems to widen the use of functions such as mask wearing, hand sanitization, social distancing, cleaning routines and contact tracing.

SMART™ Embedded Computing

*"Prompt identification and isolation of potentially infectious individuals is a critical step in protecting workers, customers, visitors, and others at a worksite." (OSHA)*



## Advanced Analytics

Artificial Intelligence software that continuously analyzes the scene and alerts a supervisor to events that fall outside of set parameters.

- Elevated core body temperature
- Wearing of Personal Protection Equipment
- Proper hand sanitization
- Avoidance detection
- Proper social distancing
- Detection of eyeglasses or other facial covering
- Traffic volume or screening rate

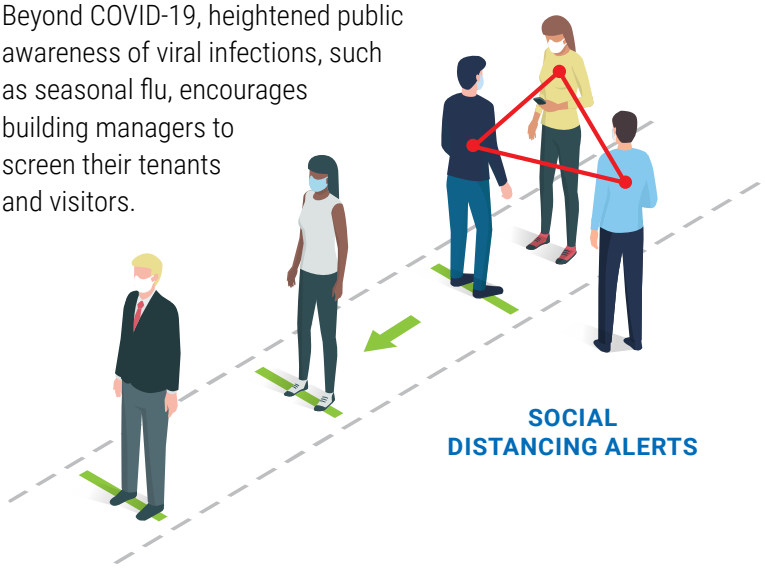
An elevated body temperature screening system enables rapid identification of potential cases during an infectious disease outbreak. However, screening and health checks are not a replacement for other protective measures, such as social distancing and face masks. Public health management requires wider compliance to these other protective measures: controls that depend on the behavior of employees and visitors.

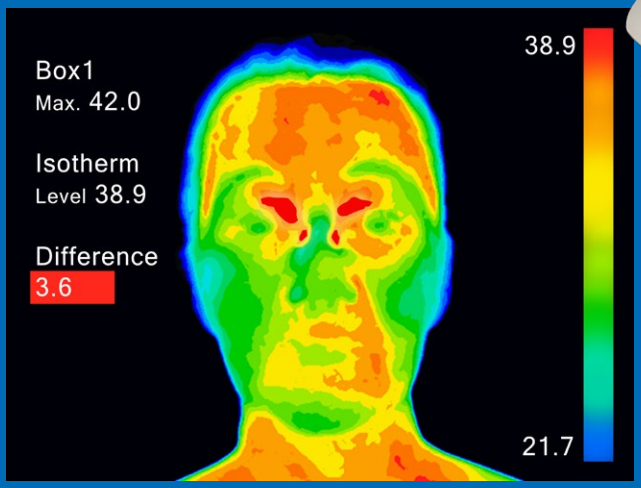
Beyond the above measures, safe work practices and public place controls, such as use of hand sanitizer or hand washing, cleaning schedules, and use of personal protective equipment (PPE) are critical to protecting employees and visitors.

The SMART Embedded Computing Screening, Monitoring and Compliance (SMC) solution is the answer.

Using a combination of specialized thermal cameras, security cameras and AI analytics software, the SMC can help enhance compliance to your infection prevention measures. This system not only detects elevated body temperature, but also detects whether someone is wearing a mask, has properly sanitized their hands, and is maintaining safe social distances, helping prevent the spread of the disease by people that don't even know they have it.

Beyond COVID-19, heightened public awareness of viral infections, such as seasonal flu, encourages building managers to screen their tenants and visitors.






*SMART EC thermal screening, monitoring and compliance solutions can be deployed in a wide range of configurations to suit your environment and application.*

This scalable solution can be integrated with your building infrastructure to include functions such as social distancing, contact tracing, or following trends in vital signs across multiple visits. Our solution uses deep learning to accurately extract information from both thermal and RGB cameras on a real time basis.

Our deep learning models can minimize false positives, allowing for incredible accuracy. You can't trick the system into thinking you're wearing a mask by putting your hand over you mouth or simply holding an object in front of your face.

Our software can adapt to changing conditions and provide rich contextual information, such as motion interpretation. The predictive power of deep learning models far surpass those of conventional models.

The computing power behind this advanced software relies on very high-performance processors, which are located on-site with the cameras to enable decision making in real time. Our analysis shows that local processing (edge computing) is more cost effective and faster than using cloud-based systems. Please contact us for more details.

## Thermal Camera System

SMART EC's thermal cameras detect elevated body temperature at the tear ducts by the bridge of the nose (inner canthus). This is far more accurate than lesser cameras that only measure elevated skin temperature and can be fooled by sunburn or people coming in from the heat or cold.

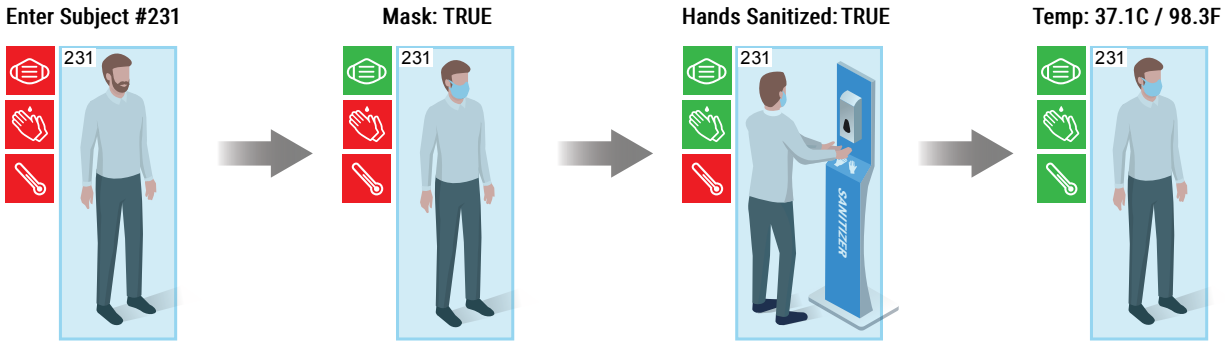
- Temperature stabilized camera body ensures precise body temperature measurement
- Thermal reference that keeps the thermal camera calibrated in real time

The system automatically detects a face, identifies the inner canthus and takes a temperature reading.

Telethermographic or thermal imaging systems, infrared thermal detection systems and non-contact infrared thermometers use different forms of infrared technology to measure temperature. When used correctly, these systems can accurately measure surface skin temperature.

A stabilized and calibrated camera measuring body temperature not only provides highly accurate data, it also reduces the incidence of false positives (alerts) and false negatives (undetected elevation) versus a system based on measuring skin temperature.

### SAFETY MONITORING PROGRESSION



## Personal Information

The solution is designed to capture what is considered non-personally identifiable information. It collects pixel-level environmental information on selected objects.

Our AI platform aggregates and analyzes that environmental information against environmental information collected in previous encounters to recognize patterns. It then generates confidence interval data as to whether an object is recognized as the same object as in one or more previous encounters

The confidence interval data cannot be used to distinguish, identify or trace an individual's identity (no biometric records, etc.), and is only used to recognize, track, and help understand behaviors of objects.

## Future Functionality

As techniques are developed to improve the detection of respiratory infections, such as measuring breathing rate and pattern, the SMART EC system can be updated to ensure you continue to have an optimized solution.

## Sources / More Information

**Guidance on Preparing Workplaces for COVID-19**
**U.S. Department of Labor Occupational Safety and Health Administration**
**OSHA 3990-03 2020**
**www.osha.gov/Publications/OSHA3990.pdf**

**The CDC website provides the latest information about COVID-19 transmission:**
**www.cdc.gov/coronavirus/2019-ncov/about/transmission.**

**Enforcement Policy for Telethermographic Systems During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency**
**www.fda.gov/media/137079/download**

**Up to 45 percent of SARS-CoV-2 infections may be asymptomatic**
**www.sciencedaily.com/releases/2020/06/200612172208.htm**

**Coronavirus disease 2019 (COVID-19) Situation Report - 46**
**www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf**


### CONTACT DETAILS

**+1 602-438-5720**
**Info@smartembedded.com**
**www.smartembedded.com/ec/contact**


*Note: this information is applicable to thermal imaging systems that are not intended for a medical purpose. This means that the system is not intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease and, therefore, does not meet the definition of "device" set forth in Section 201(h) of the Federal Food, Drug, and Cosmetic Act.*



SMART™ Embedded Computing