



# VIRALERT 3

## Sales Guide

Version 1.2



## INTRODUCTION

This guide is designed to help you become more comfortable discussing temperature screening to combat COVID-19 with prospects and customers; to create interest, overcome obstacles, and objections, and close sales for the VIRALERT 3 Temperature Screening System.

This guide has been built using voice of the customer feedback and interactions with a growing spectrum of end users in numerous markets, however, to keep this advice relevant please feedback details of any challenges that future readers of this document will benefit from being shared.

The information provided is a mix of general temperature screening knowledge, and hopefully easy to understand explanations of technical concepts. It is not possible to cover every eventuality in a brief 'guide', therefore please get in touch if a critical question has not been covered.

## REPUTATION AND HERITAGE

There are many new entrants into this red-hot market. Many of these new entrants lack expertise or suitable products and are making claims that are quite frankly, ludicrous. This creates the risk that the whole temperature screening industry's reputation will suffer.

The key is education. Land will continue campaigns communicating key temperature screening knowledge, to educate prospects why temperature screening, if implemented with suitable equipment, and an adequate process can be an excellent tool in the fight against COVID. It can combine with other measures to give greater resilience to facilities, however, if it is implemented with inadequate equipment/process, it can make a bad situation worse; increasing risk.

**Who are AMETEK Land? We are experts in accurate temperature measurement** – after more than 70 years leading the market in non-contact temperature measurement innovation, we are trusted by the major global players in heavy industries including steel, glass, and oil & gas. They know, we know how to measure the temperature of their critical systems, accurately, and at a safe distance.

**Why AMETEK Land? We know how to overcome the major challenges of human temperature screening** - Land have been developing Human Body Temperature Measurement equipment since 2002 and the original SARS epidemic. We patented 'in-scene' temperature calibration; pioneering the technology & techniques that have become the industry gold standard for accuracy.

Q.

*Why should we  
temperature  
screen?*

A.

*A combination of effective measures are the  
best way to combat COVID, temperature  
screening can be an effective measure*

Many businesses and organisations are following government guidance to implement a range of measures designed to limit the spread of the corona virus. The core advice around social distancing, hand hygiene, and wearing of face coverings will continue to be important, but this isn't always practical or possible in many enclosed spaces and environments such as; offices, factories, shops, and leisure facilities where the virus is more easily spread.

Equally, indefinite lockdowns and restrictions of movement, commerce and leisure are extremely damaging economically and socially.

This is where the addition of temperature screening to these measures can increase an organisation's resilience and ability to remain open by delivering an extra level of protection for staff, customers, suppliers, and visitors.

### **BENEFITS AND LIMITATIONS OF TEMPERATURE SCREENING**

To gain credibility and trust is important to understand the benefits of temperature screening, and it is equally important to understand the limitations.

Government guidance and mandates have been issued in many regions, such as in the USA to add temperature screening to the core countermeasures of social distancing, thorough hand hygiene and face coverings.

There are different methods of human body temperature measurement with varying levels of ease of use, accuracy, repeatability, and practicality.

For example, a rectal temperature reading is considered to give the most accurate measurement of core body temperature. Whilst accurate, if taken with a sensitive and calibrated medical thermometer, it is perhaps not very practical and not ideal for encouraging staff, customers, or visitors back to a facility.

Certified In-ear medical thermometers, again if calibrated, are also considered to give an accurate reading of body temperature. While more practical than the previous suggestion this method also involves close contact. The use of this type of device would be good for a final check but is far from ideal in the main screening process as it increases risk and will slow movement of personnel to a crawl.

## BENEFITS AND LIMITATIONS OF TEMPERATURE SCREENING

Other means of temperature measurement include non-contact thermometers. Some of these instrument's accuracies can be as high as  $\pm 2$  °C (3.2 °F) which gives a margin of error likely to create a large number of false positive or false negative readings when trying to detect elevated temperatures.

### **OBJECTION**

*I DON'T CARE  
ABOUT ACCURACY!*

### **RESPONSE**

*If you don't want the potentially infected to be cleared by your system, when they are showing signs of fever, or the headache of dealing alarms when there isn't an actual elevated temperature, you need to care about accuracy.*

It is possible to measure temperature accurately using non-contact infrared thermometer or thermal imager. However, this is a challenge as the amount of heat energy (infrared radiation) emitted by the human body is relatively small (~100 Watts; equivalent to a light bulb) and therefore this presents a challenge in making reliable measurements in non-ideal conditions.

Ideal conditions would typically entail zero solar radiation or reflections (a dark room) with constant ambient temperature and a measurement time for each individual stretching into minutes with the person kept in the same place (restrained) during the measuring process, hardly practical.

As the amount of energy radiated by the human body is relatively low and installations are often in conditions that are far from ideal, further consideration needs to be given to the design of system in order to give accurate and repeatable temperature measurement readings.

A proven method, patented by Land, to minimise the effects of the surrounding environment uses the integration of a black body heat source. A black body is a precision engineered component that provides a reference heat source to a very tight tolerance. This can be viewed in the same frame as the individual that is being measured.

If the distance of the black body and the person measured are known, it is possible to 'calibrate' the measurement in real time, in non-ideal conditions, using a feedback loop and algorithm in the associated software.

An important point to note here is that these distances are 'known' and understood. This means that a unit with an integrated black body at specified fixed distance removes potential errors in complicated software set-ups where the black body is a separate unit that can be mounted in different locations relative to the thermal imager.


There is a lot to consider here and possibly get wrong that's why the VIRALERT 3 has been designed to address these challenges with an integrated Black Body Source (BBS) to give 'in-scene' real time calibration in real world settings – reliable, repeatable results at a safe distance.

**OBJECTION**  
*NO THANKS, WE'RE USING HANDHELD THERMOMETERS*

Non-contact hand-held thermometers offer a low-cost option for temperature screening. However, the inaccuracy of results from non-contact hand-held thermometers can be made significantly worse by inconsistent measurement distances and measurement of different areas of the face. This is likely to create a problematic user experience and as importantly this type of technology requires social distancing guidelines to be violated.

This means that the person carrying out the measurement will need to get within a few inches of the individual being measured. This increases the risk of infection of the person measuring and subsequently everyone else entering the facility.

**NON-CONTACT HAND-HELD THERMOMETERS**



✓ Low purchase cost ~\$50/£40	✗ High cost of ownership - staff wages
✓ Apparently easy to use	✗ Poor accuracy +/- 2 °C (3.2 °F)
	✗ High chance of false positives & negatives
	✗ Typically lack robust data logs for auditing
	✗ Anxiety causing & invasive user experience
	✗ Can create greater risk than no screening

**CONCLUSION; ARE HAND-HELD THERMOMETERS GOOD FOR TEMP SCREENING?**

In conclusion, hand-held thermometers are not suited to temperature screening due to the high cost of ownership, inaccurate and variable results, slow speed of measurement, and increased risk of transmitting infection.



**OBJECTION**  
**WE'RE NOT INTERESTED, WE NEED MULTI-PERSON / CROWD SCANNING THERMAL IMAGING TO COPE WITH HIGH FOOTFALL**

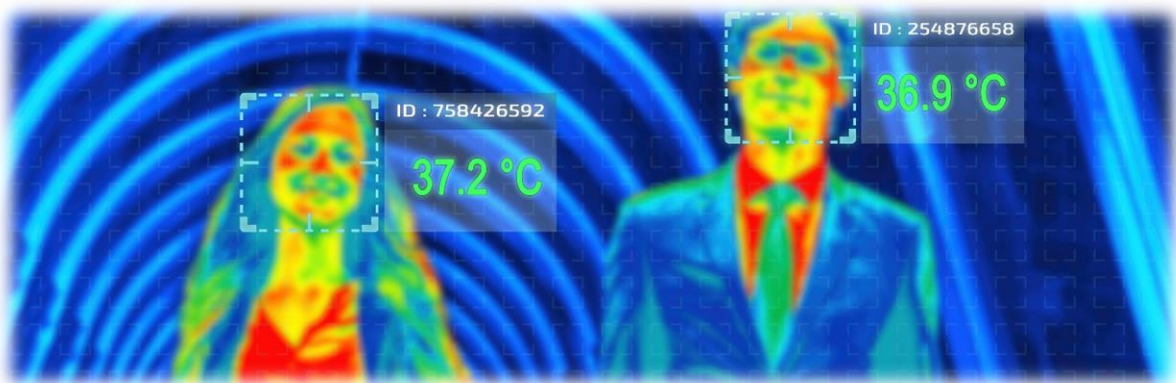
Non-contact, high resolution thermal imagers are increasingly being offered to provide multi-person or crowd scanning thermal screening.

As covered previously in this document taking accurate human body temperature measurements requires the integration of a black body heat source at a known distance from the individual being measured. This then requires software integration to build an algorithm to provide 'in-scene' real time calibration for accurate temperature measurement.

If the distance of the black body and the person measured are known, it is possible 'calibrate' the measurement in real time in non-ideal conditions using a feedback loop and algorithm in the associated software.

An important point to note is that these distances are 'known' and 'understood'. Therefore a system with an integrated black body at specified fixed distance removes potential error that is possible in situations where a complicated software set-up is needed to integrate a separate black body unit that can be mounted at differing relative distances to the thermal imager.

**MULTI-PERSON & CROWD SCANNING THERMAL IMAGERS**



<ul style="list-style-type: none"> <li>✓ Low cost of ownership</li> <li>✓ Automated – maintains social distance</li> </ul>	<ul style="list-style-type: none"> <li>✗ High cost, up to x6 the VIRALERT 3 price</li> <li>✗ Accuracy questionable if no integrated BBS</li> <li>✗ Facial recognition - creates privacy issues</li> <li>✗ Inadvertent false positives and negatives</li> </ul>
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**CONCLUSION; IS CROWD SCANNING AND MULTI-PERSON MEASUREMENT A GOOD IDEA FOR TEMPERATURE SCREENING?**

In conclusion, high resolution crowd scanning or multiple person thermal screening is problematic in terms of black body integration, and therefore can suffer from inaccuracy of measurement. Indeed, the FDA have issued advice to this effect, [available here](#).

Further the cost of a thermal imager typically increases per pixel and higher resolution can mean a much higher price tag. For the price of 1 high resolution system, up to 6 VIRALERT systems can be purchased to give similar or higher throughput with assured accuracy.

**THE GOLD STANDARD OF TEMPERATURE SCREENING - ‘IN-SCENE’ CALIBRATION WITH INTEGRATED BLACK BODY SOURCE (BBS)**

As we have seen the seemingly cheap options of a handheld thermometer comes with hidden expense and risk or creating more risk than it can mitigate when used for thermal screening.

At the other end of the market we have covered how seemingly higher specification, high resolution systems can be just as inaccurate as a handheld device yet cost many times the price of the VIRALERT.

To complete the roundup the following table gives an overview single person thermal screening with integrated black body. Note that all systems are not created equally.

If the black body of competitor system is separate or an option, then you can assume that the system set-up and chance of error are much higher than with the VIRALERT.

THERMAL SCREENING c/w INTEGRATED BLACK BODY SOURCE (BBS)	
<ul style="list-style-type: none"> <li>✓ Low cost of ownership</li> <li>✓ Automated – maintains social distance</li> <li>✓ Integrated BBS – real world accuracy</li> <li>✓ Face detection to avoid error readings</li> </ul>	<p>✗ The statements opposite are only accurate &amp; of value if ‘in-scene’ calibration is implemented. This needs a high-quality BBS integrated adequately to provide real-time calibration – just like the VIRALERT</p>

**CONCLUSION - TEMPERATURE SCREENING BEST PRACTICE**

In conclusion, a system with an integrated black body source (BBS) that can offer real time calibration is required to give accurate temperature screening results. That said, the chance of error with systems that use a separate BBS is substantially higher than systems with a fixed BBS. The VIRALERT being the only product on the market to offer this feature at present.

Put simply handhelds are inaccurate, with a high cost of ownership and increased risk of infection, while high resolution imagers can still suffer from inaccuracies and have a very high purchase cost.

**Also note that the VIRALERT complies with NDAA regulations**

The following section provides guidance for specific competitor products. Much of this guidance is applicable to other similar competitors, however, if you have difficulty with a competitor that is not listed, let us know.

## AMETEK LAND - VIRALERT 3



Thermal Resolution	80 x 60 Thermal
Integrated Black Body	✓
MRRP	£3,160 / \$4,490
Integrate into building system	✓
Automatic operation / Face Detection	✓

### POINTS TO EMPHASISE

**Easy** - Set-up <30 minutes and Intuitive, pre-configured software | Quick results <2 seconds

**Accurate** - Real time calibration with black body | Automatic face detection

**Trusted** - 70+ years temperature expertise | VIRALERT in use since SARS epidemic

## SEEK THERMAL - Seek Scan



Thermal resolution	206 x 156
Integrated Black Body	✗
MRRP	\$2,000
Integrate into building system	✗
Automatic operation	✓

### POINTS TO EMPHASISE

**Difficult** - Complicated set-up with separate black body source | Software requires configuration - potential for error

**Accurate?** - Accuracy dependent on quality of installation and software set-up 0.3 °C claimed – it is questionable whether this is possible

**Trusted?** - New entrant in Human Temperature Measurement market



## AMETEK LAND - VIRALERT 3



Thermal Resolution	80 x 60 Thermal
Integrated Black Body	✓
MRRP	£3,160 / \$4,490
Integrate into building system	✓
Automatic operation / Face Detection	✓

**POINTS TO EMPHASISE**

**Easy** - Set-up <30 minutes and Intuitive, pre-configured software | Quick results <2 seconds

**Accurate** - Real time calibration with black body | Automatic face detection

**Trusted** – **NDAA compliant** plus 70+ years temperature expertise | VIRALERT in use since SARS epidemic



## HIKVISION - DS-K1T671TM-3XF



Thermal resolution	160 x 120
Integrated Black Body	✗
MRRP	£4,000
Integrate into building system	✗
Automatic operation	✓

**POINTS TO EMPHASISE**

**Complicated** - Two-point mounting if using blackbody. Larger and heavier blackbody (only available as accessory)

**Accurate?** - Accuracy dependent on quality of installation and software set-up. Claimed +/- 0.5 °C without blackbody

**Trusted?** – **Not NDAA compliant** plus Chinese state-owned security specialists - concerns around data protection

## AMETEK LAND - VIRALERT 3



Thermal Resolution	80 x 60 Thermal
Integrated Black Body	✓
MRRP	£3,160 / \$4,490
Integrate into building system	✓
Automatic operation / Face Detection	✓

### POINTS TO EMPHASISE

**Easy** - Set-up <30 minutes and Intuitive, pre-configured software | Quick results <2 seconds

**Accurate** - Real time calibration with black body | Automatic face detection

**Adaptable** - Switchable log systems ideal for audit purposes, record all measurements or just alarms

## Thermoteknix - FivIR Scan 2



Thermal resolution	384x288
Integrated Black Body	✗
MRRP	£20,000
Integrate into building system	✗
Automatic operation	✓

### POINTS TO EMPHASISE

**Complicated** - Difficult set-up. No integrated visual camera

**Expensive** - More than 6 times the price

**Lacks basic data management tools** - No automation of logging capabilities

## AMETEK LAND - VIRALERT 3



Thermal Resolution	80 x 60 Thermal
Integrated Visual Camera & Black Body	✓
MRRP	£3,160 / \$4,490
Integrate into building system	✓
Automatic operation / Face Detection	✓

### POINTS TO EMPHASISE

**Easy** - Set-up <30 minutes and Intuitive, pre-configured software | Quick results <2 seconds

**Accurate** - Real time calibration with black body | Automatic face detection

**Automated Value-add** - Automated measurement that can be integrated easily with door access and time and attendance systems

## FLIR - Exx-, T-Series



Thermal resolution	1024x768
Integrated Visual Camera & Black Body	✗
MRRP	€30,000
Integrate into building system	✗
Automatic operation	✓

### POINTS TO EMPHASISE

**Expensive** - Nearly 10 x's the cost | No integrated visual camera

**Accurate?** ±2 °C / ±3.6 °F!

**Manual, labour intensive** - No automation, alarms, or integration capability