THERMAL SOLUTIONS FOR THE RECYCLING INDUSTRY

24/7 ACCURATE TEMPERATURE MEASUREMENTS FOR FIRE PREVENTION

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HIKVISION®

Solution strengths

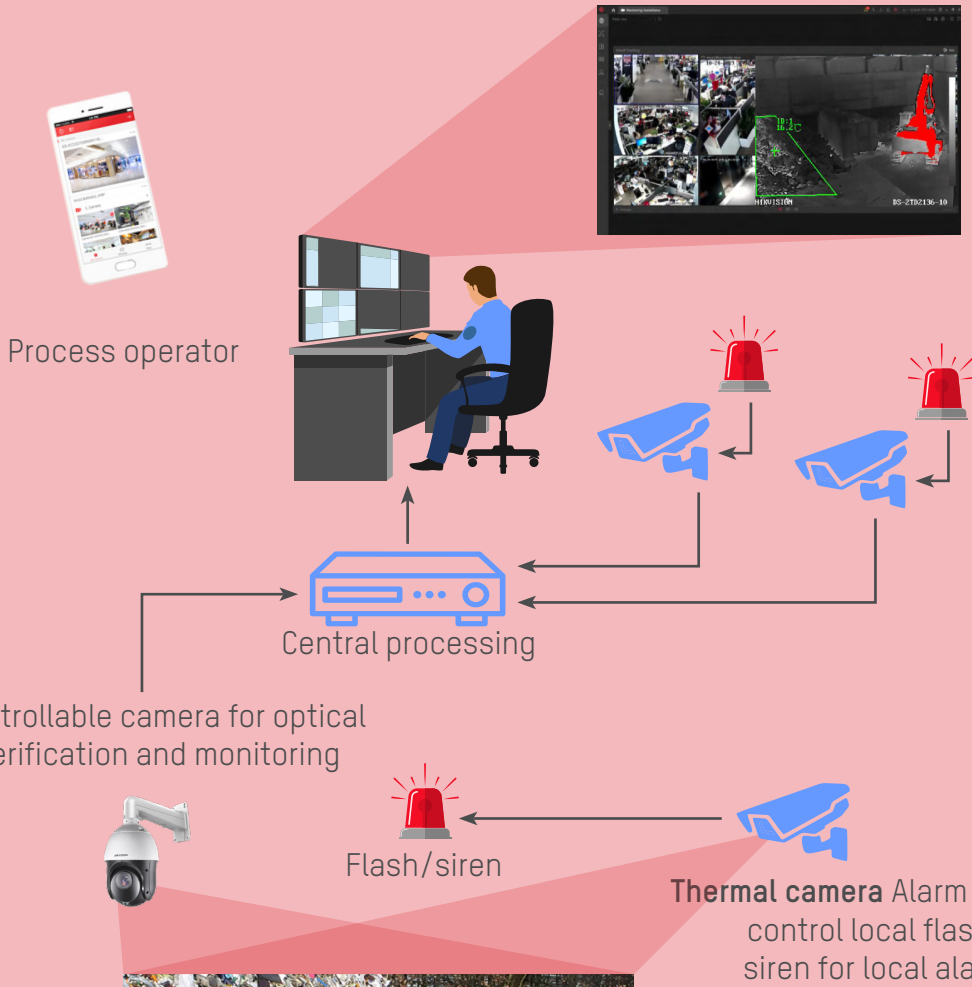
Fire is a major risk for recycling companies. One of the most common causes of fire is scalding. Scalding is a slow process that builds up until certain materials have reached a critical temperature. However, once fire breaks out, this then spreads out at great speed and is difficult to extinguish. This can result in building damage, environmental hazards and operational risks. Incidents like this can lead to an environmental permit being withdrawn.

What does my fire alarm installation do?
Traditional fire alarm installations, such as smoke alarms, are there to warn people as soon as possible of a fire. This means that once this installation sounds an alarm, smoke is already building up. The actual fire will soon follow, and will be uncontrollable in a matter of minutes. Scalding fires often occur at the weekend, when waste flows are at a standstill. By the time your fire alarm system is activated, it is usually too late.

How can thermal technology help us?
Thermal camera technology is based on detecting temperature differences. Based on the temperatures measured, these cameras can sound alarms when the temperature detected is too high. Instead of issuing an alarm when smoke is already building up, the thermal camera can do so long before smoke arises.

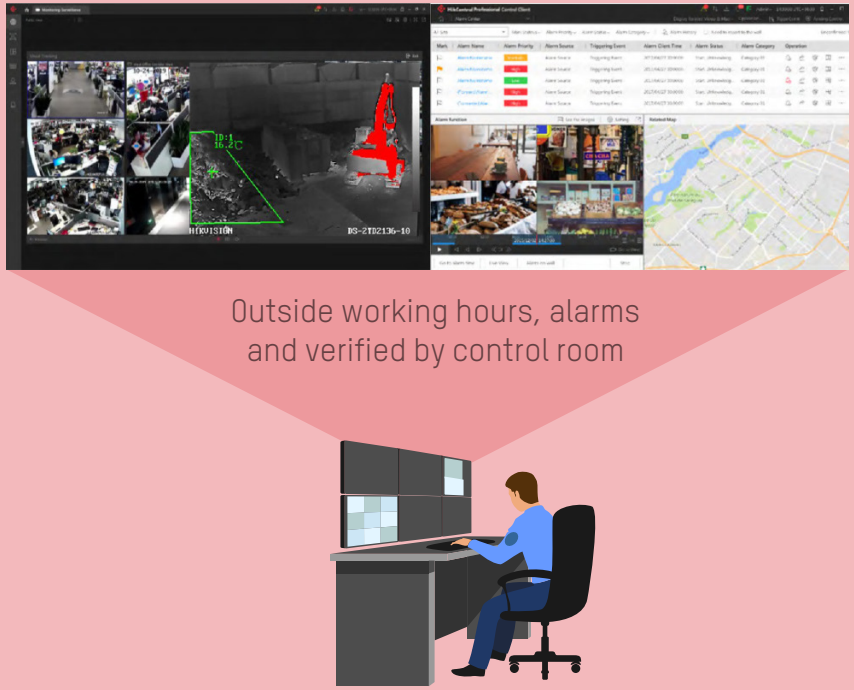
Can we prevent fire?
Temperatures can be measured all around the facility by fitting both external areas and internal spaces with thermal cameras. We can then set a temperature limit. Once this limit is in danger of being reached, we can issue a pre-alarm in advance so that the situation can be monitored in a timely manner. Once the temperature limit is actually reached, an alarm can be issued. This means the action can be taken before the fire breaks out.

Solution System Architecture



Local notifications
During working hours, the responsible employee can receive temperature alarms and follow up directly on the Control Room a local monitor to verify the alarm through camera images. This is arranged through HikCentral, Hikvision's central software platform. Due to the link with HikCentral, all alarms and video images can also be received on a mobile or tablet.

Control room follow-up
Outside opening hours, alarms are forwarded to a (private) video monitoring room. When a temperature alarm comes in, it will be handled, using an agreed protocol by the control room. The control room receives the alarm from the location and can watch the thermal cameras live, showing the temperature observations. Based on the thermal images, the control room can see at a glance is the source of the temperature alarm and whether action is required.



Hardware options

Thermal fixed and controllable cameras

The Hikvision Thermal Design Tool allows a projection to be made according to an insurance cover requirement. This is based on a minimum measurement for detection. The tool will be based on 5IFOV, allowing it to provide an even more accurate result than the 3IFOV value usually applied.

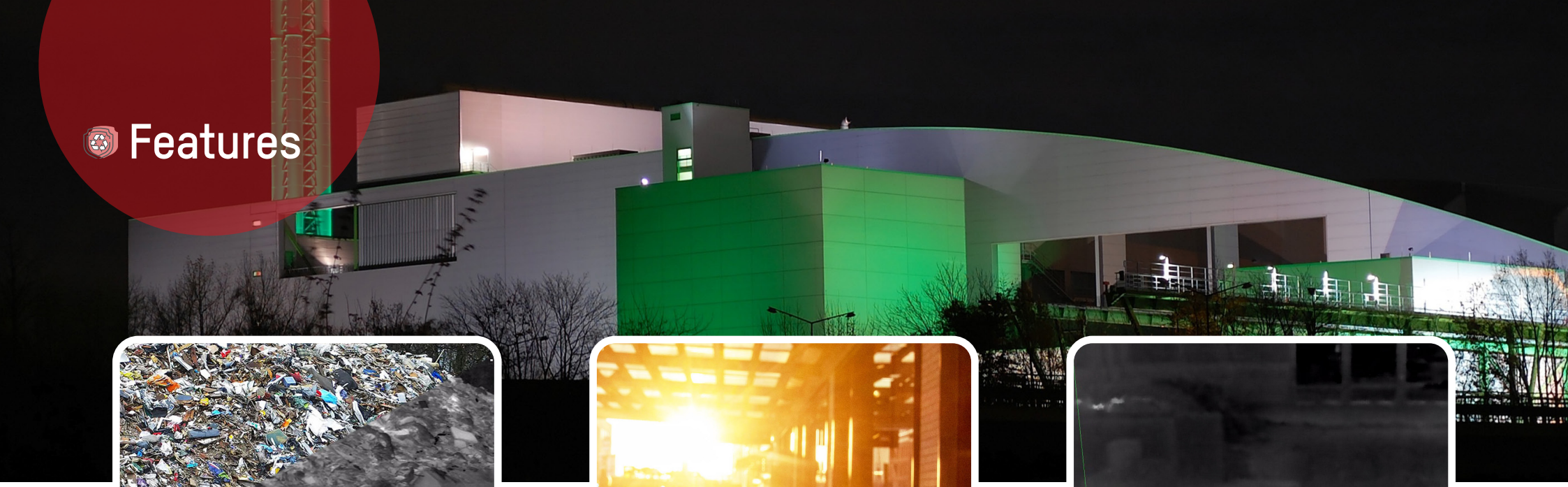
Thermal movable cameras

Fitting thermal cameras to a movable mast can also make flexible fire-prevention possible. There's a rotating PTZ camera at the top of the mast, meaning a site can be monitored 360 degrees. Cameras can also be added to achieve more viewing angles.

Always useful: Thermal handhelds

Thermal handheld devices can also be used for manually inspecting waste dumps. You can immediately see whether heat is building up and can take action in time. The thermal handheld is basically a portable thermal camera. This scanner detects temperature differences and converts these into a heat image that people can understand. This means that this scanner does not require observable light in order to operate.

Features



Optical & Thermal

With a B-Spectrum camera there's both an optical and a thermal image. These can be presented next to or over each other, so you can always clearly see what's happening. These images can also be combined into one image for extra detail. Always being able to quickly see what's happening means optimum fire protection.

Excludes reflection

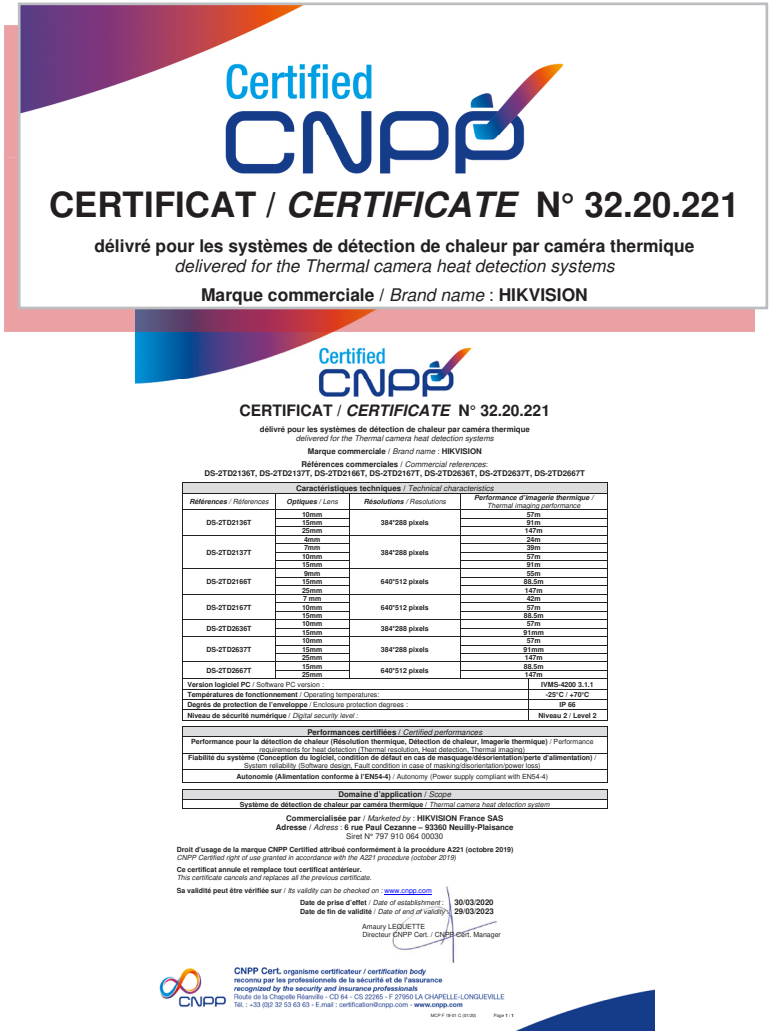
High temperatures are sometimes caused by the sunlight being reflected. With high temperatures, smart algorithms will examine whether the heat source can be associated with strong sunlight. The camera will exclude the reflection to eliminate false alarms.

Excludes vehicles

Vehicles driving over the site can also generate heat. Smart algorithms will exclude moving vehicles by looking at whether the heat source moves through the image. This means fewer problems with false alarms.

Quality marks

	Insurance requirements	Hikvision
Different temperature alarms	Insurers may require that in the absence of people, a notification must be generated if the temperature exceeds 50° C. This notification must immediately be verified by a control room.	Hikvision cameras can issue an alarm once a pre-set temperature has been reached. Depending on the settings, outside working hours this alarm is forwarded to a control room for verification.
Vds3189	VdS guidelines for thermal-camera accuracy when applied as temperature monitoring for fire prevention.	Using the right thermal cameras from the Hikvision portfolio means the required accuracy is fulfilled. According to the current requirement, this is a measurement range of 0-550° C, with a maximum discrepancy of 2% or 2° C.
NEN 2535	NEN 2535 states rules for the design, finish, compatibility and quality of the fire alarm installation to be installed.	The Hikvision system meets the redundancy standards set in the NEN235 standard. The fire test can of course also be used to test the system according to this standard.
Recording measurement data	Measurement data must be updated in a logbook as evidence for an insurance audit.	Temperature images stored contain temperature data. The Hikvision central software platform is able to generate both daily and weekly reports.
3IFOV and object size	3IFOV means that with a minimum object size (usually 30 x 30cm), there are at a minimum 3x3 pixels in the image for performing an accurate temperature measurement.	Hikvision uses a thermal design program in which 5IFOV is applied as a thermal detection size. This means the 3IFOV requirement is more than fulfilled.
Coverage	Depending on the risk, a certain degree of coverage of the camera's field vision over the entire area to be monitored is required.	This coverage can be charted out in advance using the Hikvision thermal design program.



Certified CNPP

CERTIFICAT / *CERTIFICATE* N° 32.20.221

délivré pour les systèmes de détection de chaleur par caméra thermique
delivered for the Thermal camera heat detection systems

Marque commerciale / *Brand name* : **HIKVISION**

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Références commerciales / *Commercial references:*
DS-2TD2136T, DS-2TD2137T, DS-2TD2166T, DS-2TD2167T, DS-2TD2636T, DS-2TD2637T, DS-2TD2667T

Caractéristiques techniques / *Technical characteristics*			
***Références** / Références*	***Optiques** / Lens*	***Résolutions** / Resolutions*	***Performance d'imagerie thermique** / Thermal imaging performance*
DS-2TD2136T	10mm	384*288 pixels	57m
	15mm		91m
	25mm		147m
DS-2TD2137T	4mm	384*288 pixels	24m
	7mm		39m
	10mm		57m
	15mm		91m
DS-2TD2166T	9mm	640*512 pixels	55m
	15mm		88.5m
	25mm		147m
DS-2TD2167T	7 mm	640*512 pixels	42m
	10mm		57m
	15mm		88.5m
DS-2TD2636T	10mm	384*288 pixels	57m
	15mm		91mm
DS-2TD2637T	10mm	384*288 pixels	57m
	15mm		91mm
	25mm		147m
DS-2TD2667T	15mm	640*512 pixels	88.5m
	25mm		147m
Version logiciel PC / Software PC version :			IVMS-4200 3.1.1
Températures de fonctionnement / Operating temperatures:			-25°C / +70°C
Degrés de protection de l'enveloppe / Enclosure protection degrees :			IP 66
Niveau de sécurité numérique / Digital security level :			Niveau 2 / Level 2

Performances certifiées / *Certified performances*
Performance pour la détection de chaleur (Résolution thermique, Détection de chaleur, Imagerie thermique) / Performance requirements for heat detection (Thermal resolution, Heat detection, Thermal imaging)
Fiabilité du système (Conception du logiciel, condition de défaut en cas de masquage/désorientation/perte d'alimentation) / System reliability (Software design, Fault condition in case of masking/disorientation/power loss)
Autonomie (Alimentation conforme à l'EN54-4) / Autonomy (Power supply compliant with EN54-4)

Domaine d'application / *Scope*
Système de détection de chaleur par caméra thermique / *Thermal camera heat detection system*

Commercialisée par / *Marketed by* : **HIKVISION France SAS**
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Date de fin de validité / *Date of end of validity* : **29/03/2023**

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About Hikvision

Since 2001, Hikvision has grown from being a single-product supplier to the world's leading provider of security products and solutions. From the early digital age to today's intelligence era, we have seized every opportunity to advance the industry with our innovative technologies. And venturing into new areas of inspiring technology – such as Artificial Intelligence, cloud computing, and the fusion of deep learning and multi-dimensional perception technologies, to name a few – Hikvision leads the security industry as an IoT provider with video as the core competency. Now we have brought these innovation to the Utilities market, combining them with partner technologies to provide state-of-the-art solutions.

Hikvision Partner Ecosystem

Hikvision believes that close collaboration with its ecosystem of partners can further accelerate innovation, while also securing maximum value creation for its customers and their communities. A cornerstone of the ecosystem is the Technology Partner Program (TPP). Together, Hikvision and its technology partners combine expertise, skills, technological understanding, and industry focus to deliver optimum solutions, expand business scope, and increase profitability. The integration of Hikvision's innovative video technology with the technologies born out of these programs offers end-user customers with secure, customized solutions.

Why Hikvision?

We aim to be experts in all industries we focus on, enabling us to design tailor-made **solution** that solve specific industry challenges

Our robust network of **eco-system partners** allows us to offer innovative and fully integrated solutions

We create **trust** in our solution by participating in industry organizations and providing extensive training programs for partners

5-year warranty, secure-by-design products and 3rd party **quality** certifications show our commitment to quality

We have an extensive **support** network, that ranges from a fully equipped local Benelux team to branch offices and R&D teams all over the world

Our broad multi-purpose product range provides **versatility** for tailor-made solutions

We aspire to use innovative technologies to contribute to the **sustainable** development of society and the environment. As a responsible corporate citizen, we are dedicated to public welfare

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