SECURITY CATALOG
2021

SEE BEYOND THE VISIBLE

OPGAL
Beyond the Visible

DUSK TILL DAWN AWARENESS

![OPGAL Beyond the Visible]

> **The only real security that a man can have in this world is a reserve of knowledge, experience and ability.**
>
> **Henry Ford**

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What's Up With The Owl?

✓ Owls, of course, do not see in infrared, but they are part of a small group of birds that **live nocturnally**. Unlike other species, owls do not use echolocation to guide them in low-light situations. **They use their eyes to see beyond the visible.**

✓ Owls are known for their disproportionally large eyes. They cannot move them, so instead, owls swivel their heads through an angle of up to 270° to view their surroundings. **They come with a built-in Pan & Tilt system.**

✓ Also, owls have the most frontally placed eyes among all avian groups, which gives them the largest binocular field of view. **They use a unique set of optics to see in the dark with a focused field of view.**

✓ The best part is that the primary nocturnal function in an owl's vision is due to its large focal length. Retinal image brightness is maximized within secondary neural functions, making the owl's nocturnal eyesight far superior to that of its prey. **They use their own proprietary image processing techniques.**

But why the Eurasian Eagle-Owl?

✓ Well, this particular owl is most common in Europe and Asia – where we operate at large. It makes its home in irregular and diverse topography. These owls live in almost every climatic and environmental condition on the Eurasian continent, from northern coniferous forests to the edge of vast deserts. **Like our cameras, the Eagle-Owl can tackle any environment and any weather.**

✓ Last, but certainly not least, is the Eagle-Owl's unique eye color. While most closely related species generally have yellowish irises, **our mascot boasts a stunning pair of bright-orange irises.**

Now you know the story behind our brand!

Meet the Eurasian Eagle-Owl: Opgal's Official Mascot

"

We must look beyond the visible and leverage technology to our advantage.

Since the early dawn of man, innovations have brought light, heat, and protection. Our goal remains the same, only now we use light and heat beyond that of a burning campfire: we use thermal imaging.

Let us gather around the IR sensor as we tell you all about how we help bring the invisible into light with technological innovation and an unwavering vision towards the future.

Hindsight is 2020

Foresight is 2021

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Tsachi Israel
President & CEO

The year 2020 was full of trials and tribulations, the biggest one being the COVID-19 pandemic, which directly impacted the physical security market. The Coronavirus outbreak brought on countless challenges, and the security market had to adapt to respond to a new kind of an invisible threat quickly.

As we enter the year 2021, the world is not as we once knew it. The world is learning to live with lockdowns, quarantine, hyper hygienic awareness, social distancing, and an economic state of stagnation. New challenges arise as we take our first steps into a new normal, a new level of personal safety and security.

Opgal's primary duty has always been to the safety and security of its customers. In 2020, we came to see our mission in a new light. We utilize our vast experience, expertise, and pioneering infrared technology to defend against invisible danger, whether symptoms of a manifesting disease, an invading drone, a simmering fire hazard, or an armed intruder.

Smart edge-based analytics and thermal imaging technology will help shape the "New Normal" into a secure and convenient way of life. Standing as the first line of defense, they will keep an eye out for elevated body temperature, social distancing, and more to ensure the safest viable way to return to a degree of normalcy under COVID-19.

Security concerns may become more prevalent, and Opgal's high-end 24/7 all-weather surveillance solutions will continue to be there to protect borders, airports, critical infrastructure, and different perimeters, as they have always been for the past four decades.

Our electro-optical components sit at the heart of hundreds of thousands of thermal-imaging based systems around the world. Tested in the air, on land, and at sea, they have proven themselves reliable and resilient for decades. With 40 years of field-proven experience, countless projects, and numerous collaborations, we are always seeking new frontiers into which we can venture.

Joining forces with various partners to create multidisciplinary R&D teams, Opgal strives to implement its smart infrared technology to enhance security in various sectors – from industrial monitoring through transportation safety, to drone detection, enhanced vision systems for driving and aviation, and more.

In times of great global efforts to better lives, livelihood, and longevity, I call onto any organization interested in bettering safety and security through technological innovation to join hands with us in this crucial endeavor. Together, we will build a safer, more secure world.

Thermally yours,

Tsachi Israel

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About OPGAL

Opgal's 24/7 surveillance solutions tackle prevalent security concerns with a wide range of customaized thermal imaging and multispectral cameras.

Opgal is a key global provider of thermal imaging systems and 24/7 all-weather surveillance solutions.

Leveraging forty years of experience in the predominantly exclusive thermal imaging market, Opgal uses its vast field expertise to create high-performance electro-optic observation systems for various applications.

Our feature-rich, modular, and ruggedized products stand the test of time under diverse weather and harsh conditions. Opgal's cameras protect site perimeters, borders and frontiers, critical infrastructure, government sites, public utilities, seaports, airports, industrial plants, solar farms, and even entire cities.

With a impressive repertoire of active projects worldwide, we are looking forward to the next challenge. **Will YOUR project be next?**

CONTACT US

info@opgal.com

> **In general, security is the quality or state of being secure — to be free from danger. In other words protection against adversaries— from those who would do harm, intentionally or otherwise— is the objective.**
> **Michael E. Whitman**

Our Vision

Our vision is all about **YOUR** vision. We strive to see thermal imaging solutions light up the way of our customers.

We will use our vast experience and field-proven expertise to better the safety and security of our clients, by providing customized thermal imaging solutions to keep people and assets safe and secure – come rain or shine.

Our Mission

Our mission is to be **YOUR** professional team of choice, offering quality surveillance solutions based on a customer-oriented approach and application-based needs.

We will provide a quality product, on time and within budget, while nurturing long-term partnerships built on consideration, trust, open communication, integrity, and professionalism.

For 40 years, Opgal has been creating long-term partnerships to provide high-end thermal imaging solutions. Our four guiding principles are innovation, quality, variety, and service to our valued customers.

INNOVATION

Opgal is known for its pioneering thermal imaging solutions, with many technological breakthroughs and industry-firsts in its portfolio.

Our innovation is fueled by our close partnerships and decades of research, development, and manufacture of infrared imaging systems.

QUALITY

When it comes to security, safety, or defense, accuracy is critical. Reliable imaging systems and high image quality are not just core values – they are at the very heart of our business.

Our products have been field-tested under the most demanding conditions, meeting the highest international standards.

Commitment
To Excellence

Opgal is committed to excellence in the development of advanced thermal solutions in a variety of spectral ranges. Opgal's Management Team puts the highest emphasis on customer satisfaction, and invests substantial resources to assure all products meet the highest quality and reliability standards.

VARIETY

Opgal's imaging technologies span through the whole visible and infrared spectrum.

Our off-the-shelf and custom-made products offer our customers an array of solutions for various applications.

SERVICE

Opgal focuses on listening and understanding our customers' business challenges.

Our prompt provision of hands-on advice and support make us unique in the industry.

Commitment
To Quailty

Opgal makes every effort to better understand customer needs and expectations and to ensure that its products meet the relevant legal requirements, industry standards and contractual specifications. Accordingly, a Quality Management System has been implemented to meet the AS 9100:2015 requirements for Aviation, Space and Defense Organizations (incorporating also the ISO 9001:2016 requirements).

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Company History

Born on the Fourth of July, 1982

Hard to believe, but close to forty years have passed since we developed our first thermal imager, **Midron Adom** (translated as Red Slope), back in 1982.

Opgal started in a small shed in **Rafael Advanced Defense Systems'** backyard, and we've only grown from there...

1986

MIDRON ADOM

Developed under Rafael Defense Systems. Over 1,000 units deployed to protect Israeli borders.

1999

EVS I

First to provide an FAA-approved landing assist & situational awareness system for the avionic industry.

2004

DVE & SA System

Thousands of driving enhancement systems deployed on the "Merkava" and "Namer" tanks still operate today.

2006

EyeCGas 1.0

The only gas leak detection camera certified for use in sensitive and hazardous locations.

2013

Therm-App

The world's first open source, lightweight, high performance Android-based thermal cameras.

2019

EyeR Core VV-XS

Compact and lightweight thermal imaging core for mini-sized applications and SWaP considerations.

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Our Product Line

SECURITY

Securing sites requires 24/7 surveillance. Opgal's high-end thermal perimeter security cameras provide unprecedented situational awareness, allowing security forces to detect and identify possible threats, day or night, and under harsh visibility conditions.

DEFENSE

Ranging from tactical thermal imagers and weapon sights, through Driver Vision Enhancers, to Local Situational Awareness systems, Opgal's military-grade thermal imaging technology meets the needs of integrators, OEMs, and end-users worldwide.

AVIATION

Our FAA-approved wide-spectrum infrared cameras provide pilots with a clear Head-Up Display image of realtime landscape and runway obstructions normally undetectable by the naked eye at night or in bad weather.

INDUSTRIAL

Opgal is a global producer of groundbreaking Optical Gas Imaging (OGI) technology. Our OGI cameras detect and quantify fugitive gas emissions, inspect possible leaks, and prevents disaster before it happens.

OEM Solutions

With its small adjustable dimensions, and optional compatible lenses, our OEM and Open Frame Camera solutions are highly versatile, modular, and can be seamlessly integrated into any system.

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Security Product Line

The Opgal line of products presents one of the broadest assortments of off-the-shelf security cameras and systems available today, combining a range of thermal cores, thermal imaging lenses, accessories, software, and support services.
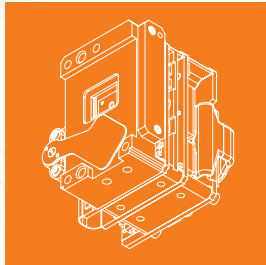
Sii CORE
OEM Thermal Cores

The *Sii CORE* family is a range of micro-thermal imaging cores. They have an advanced, versatile, and modular platform specially designed for civilian applications.
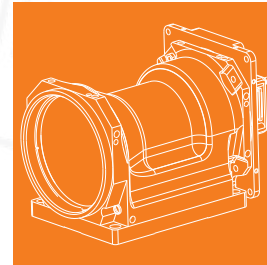
Sii CORE+
Open Frame Thermal Cameras

The *Sii CORE+* comprise a thermal core, thermal lens, open frame enclosure and core mount plate. Available with a variety of athermalized and zoom optics.
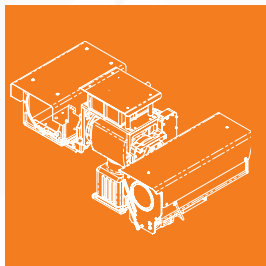
Accuracii Systems
Thermal PTZ Camera Systems

The *Accuracii* family of camera systems combines two video channels on an ruggedized pan-tilt positioner. These systems utilize continuous zoom optics and high-resolution imagers for long-range threat detection.

Sii Camera
Complete Thermal Cameras

The *Sii* thermal security camera with edge-analytics provides crisp, clear surveillance video with intrusion alerts and tracking through dark, fog, haze, or smoke.

Cyber Safety First

Our relevant cores and cameras go through a meticulous Penetration Testing and a Secure Development Life Cycle.
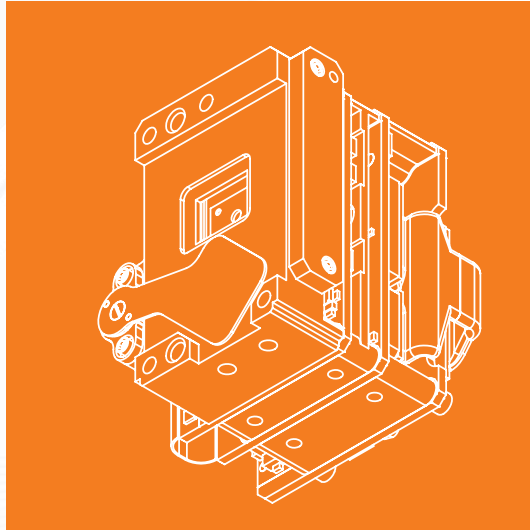
★ ★ ★ ★ ★
NDAA
SECTION 889
COMPLIANT

ONVIF Compliance

Where applicable our IP-based cameras comply with ONVIF.

For more information, email us at info@opgal.com or contact your Sales Director.

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CORES

OPEN FRAME CAMERAS

FULL CAMERAS

PTZ CAMERA SYSTEMS
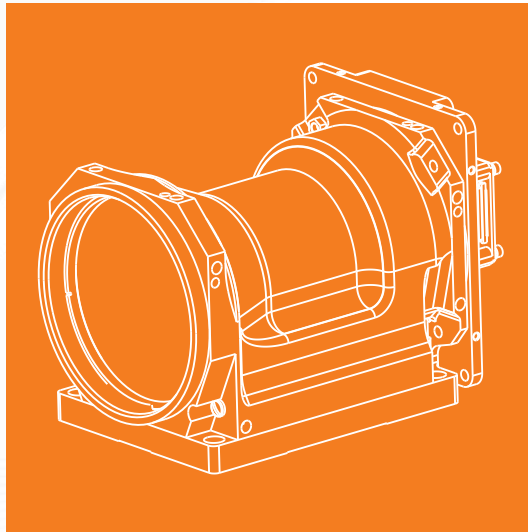
SOLUTIONS

Sii CORE

OEM Thermal Cores

Sii **CORE ᵁᶜ** High-Sensitivity

This is a high-sensitivity, uncooled thermal imaging core. The core uses high-end algorithms for TECless operation. With its exceptional sensitivity, it's ideal for long-range observations. The 32mK sensor provides a detailed image, discerning between slight temperature differences.

Imager Type
FPA Pitch 17µ
8-14µm

Resolution
640 x 480

Shutter
Shutterless
(Defocus) / Shutter

NETD
< 32°mK

Video Output
Analog Video (PAL/
NTSC) 8bit
Camera Link 16bit

Core Dimensions (mm)
39.2(H) x 48.5(W) x 39.2(L)

Sii **CORE ᵁᶜ**

This Sii CORE is an uncooled longwave infrared (LWIR) thermal imager, with ideal size, weight, and power considerations.

This versatile core is highly customizable, suitable for OEM applications such as surveillance cameras, binoculars, drone payloads and more, enabling hosts to perform advanced video-image processing and analytics.

Imager Type
FPA Pitch 17µ
8-14µm

Resolution
640 x 480

Shutter
Shutterless / Shutter

NETD
< 50°mK

Video Output
USB2 / CL 16bit
25/30Hz (NUC+BPR
upload by user)

Core Dimensions (mm)
31.3(H) x 31(W) x 31(L)

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Sii CORE+

Open Frame Thermal Cameras

Sii CORE^{UC}+

Our most compact thermal imaging core provides the ideal solution - without compromise. This uncooled micro-core with optional high-sensitivity detector comes with multiple lens configurations, giving customers flexibility for seamless integration. The core provides raw video, enabling hosts to perform advanced video-image processing and analytics necessary for specific applications.
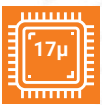
Imager Type
FPA Pitch 17µ
8-14µm

Resolution
640 x 480

Lens Option (mm)
8.5, 19, 35 & per requirement

NETD
< 50°mK
(35°mK optional)

Digital Output
USB2 / CL 16bit
25/30Hz (NUC+BPR upload by user)

Core Dimensions (mm)
31.3(H) x 31(W) x 31(L)

Sii CORE^{UC}+ Zoom

This high-sensitivity uncooled thermal imager has ideal size, weight, and power (SWaP) considerations. The versatile core is highly customizable, with a wide range of lens options and provides raw 16bit video footage, enabling hosts to perform advanced image processing and analytics.

Imager Type
FPA Pitch 17µ
8-14µm

Resolution
640 x 480

Lens Option (mm)
8.5 to 25-225

NETD
< 32°mK

Digital Output
Analog Video (PAL/NTSC) 8bit
Camera Link 16bit

Core Dimensions (mm)
39.2(H) x 48.5(W) x 39.2(L)

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Sii CORE^{CL}+

The Sii CORE CL + VGA.15 is a cooled thermal imaging core, with a choice of two long-range lenses for a wide variety of OEM and Open Frame Camera (OFC) solutions where SWaP considerations are critical.
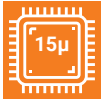
Imager Type
Cooled 15μ
3-5μm

Resolution
640 x 512

Lens Option (mm)
19 - 275
48.5-700

NETD
<23°mK

Digital Output
CL 16bit 120Hz
(NUC+BPR)

Core Dimensions (mm)
189(L) x 78(W) x 103(H)

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SCORES

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Sii Cameras

Complete Thermal Cameras

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Sii OP

A dual-channel surveillance camera with multiple lens options, onboard VMD analytics, and advance cybersecurity features to ensure privacy and security of relayed information.

Imager Type
Uncooled 17μ
8-14μm

Resolution
640 x 480 or
384 x 288

Onboard VMD Analytics
Video Motion Detection,
Region of Interest and
Virtual Fence

NETD
VGA < 50°mK
QVGA < 70°mK

Cybersecurity Ready
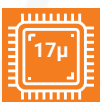Tested against the
strictest protocols

Lens Options (mm)
10, 14.2, 19, 25,
35, 50, 60, 100

Sii AT FD

A thermal surveillance camera with onboard fire detection and hot spot analytics to ensure a quick response and disaster prevention.

Imager Type
Uncooled 17μ
8-14μm

Resolution
640 x 480

Fire Detection
Flame behavior analysis &
hotstpot detection

NETD
< 50°mK

Time to Detect
Hot Spot: Immediate
Fire: 2 seconds of
continuous detection

Lens Options (mm)
8.5, 14.2, 19, 25,
35, 60

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Sii ML

The Sii ML thermal camera comes with a Dual Field of View or a Continuous Zoom lens for mid-range applications and a low ownership cost.

Imager Type
Uncooled 17μ
8-14μm

Resolution
640 x 480

Zoom
Continuous Zoom or
Dual Field of View

NETD
<35°mK or <50°mK

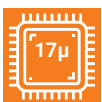**Communication Protocol**
Pelco D or ONVIF S

Lens Options (mm)
15-100, 45/135

Sii XRU

The Sii XRU is an uncooled thermal camera with a 25-225mm continuous zoom lens for long-range detection. The significant advantage of this camera over an equivalent cooled camera is its low maintenance requirements.

Imager Type
Uncooled 17μ
8-14μm

Resolution
640 x 480

Zoom
Continuous Zoom with
Autofocus

NETD
< 50°mK

Communication Protocol
Pelco D

Lens Options (mm)
25-225

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Sii XR

The Sii XR is a cooled thermal camera with a range of continuous zoom lenses for extreme long-range detection.
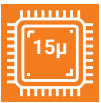
Imager Type
Cooled 15µ
8-14µm

Resolution
640 x 512

Zoom
Continuous Zoom with Autofocus

NETD
< 25°mK

Communication Protocol
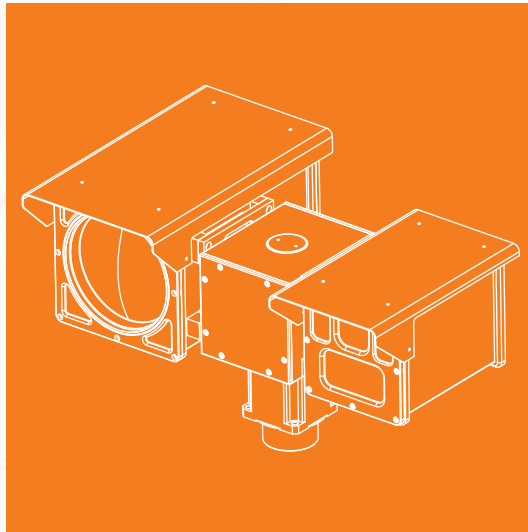Pelco D

Lens Options (mm)
19-275, 15-300,
21-420, 48.5-700

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Accuracii Systems

Thermal Cameras PTZ Systems

Accuracii **Mini HD**

The Accuracii Mini HD is a compact low-cost PTZ dual-channel security camera, ideal for surveillance on the move or a fixed solution.

Imager Type
Uncooled 17μ
8-14μm

Resolution
Thermal: 640 x 480
Visual: 1920 x 1080

Focus
Athermal, Focus-free

NETD
< 50°mK

Communication Protocol
ONVIF S

Lens Options (mm)
35, 50, 60, 100, 26-105

Accuracii **TO Mini**

The Accuracii TO Mini is a thermal camera on a high-speed pan-tilt positioner with zone-based motion edge analytics optimized for threat detection at critical assets needing 24/7 protection.

Imager Type
Uncooled 17μ
8-14μm

Resolution
Thermal: 640 x 480

Focus
Athermal, Focus-free
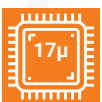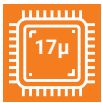
NETD
< 50°mK

Communication Protocol
ONVIF S

Lens Options (mm)
35, 50, 100

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Accuracii **TO**

The Accuracii TO is a robust thermal observation system integrated on a ruggedized PTZ to deliver 24/7 covert security.

Imager Type
Uncooled 17µ
8-14µm

Focus
Athermal, Focus-free or Autofocus (with Dual Field of View option)

Communication Protocol
Pelco D or ONVIF S

Resolution
Thermal: 640 x 480

NETD
< 50°mK

Lens Options (mm)
60, 100, 45/135

Accuracii **ML HD**

The Accuracii ML HD is a dual-channel (thermal and high-definition visual) PTZ camera system with mid-range observation capabilities, ideal for detecting a threat and wide-area surveillance.

Imager Type
Uncooled 17µ
8-14µm

Zoom
Continuous Zoom or Dual Field of View with Autofocus

Communication Protocol
Pelco D or ONVIF S

Resolution
Thermal: 640 x 480
Visual: 1920 x 1080

NETD
< 50°mK
or <35°mK

Lens Options (mm)
100, 26-105, 45/135, 25-150

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Accuracii **XRU HD**

The Accuracii XRU HD is a dual-channel (thermal and high-definition visual) PTZ camera system, featuring one of the longest focal lengths combined with the highest sensitivity uncooled thermal cameras available in the market.

Imager Type
Uncooled 17µ
8-14µm

Resolution
Thermal: 640 x 480
Visual: 1920 x 1080

Zoom
Continuous Zoom with Autofocus

NETD
<50°mK
or <35°mK

Communication Protocol
Pelco D or ONVIF S

Lens Options (mm)
25-225

Accuracii **XR HD**

The Accuracii XR HD is an ultra-long-range dual-channel (cooled thermal and high-definition visual) PTZ camera system, ensuring 24/7 remote covert surveillance in all weather conditions.

Imager Type
Cooled 15µ InSb
3-5µ

Resolution
Thermal: 640 x 512
Visual: 1920 x 1080

Zoom
Continuous Zoom with Autofocus

NETD
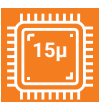< 25°mK

Communication Protocol
Pelco D or ONVIF S

Lens Options (mm)
19-275, 15-300,
21-420, 48.5-700

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Secure Yourself with Opgal

Our portfolio consists of a range of fixed and PTZ thermal cameras and systems, multi-sensor systems, multispectral solutions, and handheld thermal cameras. When integrated with complementary security solutions, such as a radar and command and control software, our systems provide complete security coverage for numerous applications.

Whatever your security need may be, we will work together to design a full comprehensive solution suitable for your specific surveillance concerns.

Border Surveillance

Securing land and coastal frontiers require round-the-clock, all-weather, long-range observation technology. Border surveillance systems scan vast areas and identify targets in real-time, alerting border patrol of any potential threat.
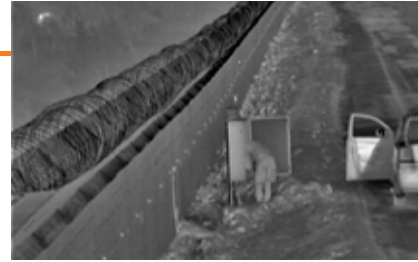
Airport Security

Airports face many security challenges, including theft, trespassing, vandalism, and potential terrorist attacks on strategic aviation targets. Make sure your perimeter remains secure 24/7, day and night, in all weather conditions.

Drone Detection

Drones have become as ubiquitous as pigeons. Most mean no harm, but the potential damage they may afflict if operated by the wrong hands is enormous. To be prepared, monitor your airspace to be ready in case of an aerial intrusion, whether accidental or malevolent.


Critical Infrastructure

Thermal cameras can passively monitor critical infrastructure. Strategically placed cameras can help monitor important areas and infrastructure and mitigate any risks, such as theft or sabotage.

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Oil and Gas Security

Refineries and pipelines are at constant risk of criminal or terrorist attacks, requiring security and safety solutions to rapidly identify threats to a perimeter or before any potential damage to the installations. Thermal security cameras enable 24/7 threat assessment in complete darkness or bad weather.
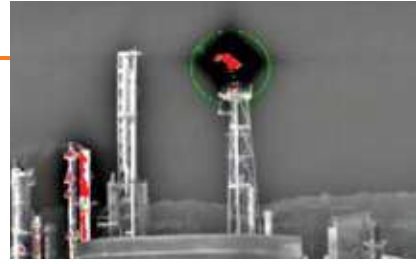
Fire Detection

A thermal camera has enormous benefits for fire detection. With embedded analytics, they can identify the temperature anomalies before a fire starts or if the fire has already started before a conventional smoke detector can detect the smoke.

Port & Maritime Security

A diverse range of maritime applications utilizes thermal imaging solutions; these include harbor navigation, coastal surveillance, vessel and obstacle detection, and search & rescue. Improve your maritime security with early threat detection, saving lives, and assets.

Safe City

Thermal imaging can deter crime and enhance safety in urban areas and provide images in all weather conditions and complete darkness. The cameras can help spot a potential suspect and see a crime taking place in dark or poorly lit areas, enabling an effective response.

Fog Penetration

Cameras that can penetrate through fog and haze are critical for aviation, airborne reconnaissance, railways, borders, and port and harbor security applications, where fog and haze regularly occur.

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CASE STUDY

Installations Examples

40 Years of Hands-On EXPERIENCE

100 Years of Cumulative KNOWLEDGE

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Notable Projects

Opgal has been operating worldwide for over 40 years. We have installed our thermal cameras, cores, and open frame cameras in countless applications for military, HLS, and industrial solutions, each tailormade specifically for a specific project.

Many of our systems guard airports, borders, and different sensitive facilities. Unique OEM solutions are the core of several renowned defense systems and civilian applications - from a monitoring solution for excavators to naval solutions, handheld law enforcement thermal imaging solutions, drones, enhanced vision systems for aircraft and armored vehicles, gimbaled observation units, and so forth.

Often such projects are confidential, and we can't write much about them. However, here are a few examples of what we can share:

Demonstration

You don't always need the shiniest gadget out there to get the job done.

What you need is to see in low to zero visibility conditions. Since seeing is believing, we happily put our cameras to the test face-to-face with our competitors. Our dedicated team travels all over the world to conduct live demonstrations.

Installation

You are not alone.

Our team will personally guide you through the entire pre-sale process, development, testing, and installation. Custom-made solutions are one of our core competencies, and you have a say in it all. You are our top priority. Together, we will make your project a success.

Support

When you buy our thermal camera, you create a partnership.

Opgal ensures product longevity by offering technical support, an extended warranty, repair services, as well as on-site maintenance, and temporary replacement units to keep your observation equipment up and running 24/7, 365 days a year.

Fire Detection, Norway

Røros and many other cities in Europe have a high concentration of historic wooden structures. A fire in the center of the city would be catastrophic, as all the wooden buildings are connected, creating the perfect conditions for a fire to spread quickly. Opgal installed a 24/7 surveillance system that could cover a wide area, provide early fire detection, and operate under extreme weather conditions (as cold as -40°C).

Chuquicamata Mine, Chile

Mining sites face challenging conditions, from landslides to security concerns. As such, they need to monitor what is happening on the ground from a safe distance. Opgal leveraged the Accuracii modular design to combine three separate sensors: a cooled thermal long-range camera, a visual camera, and a Laser Range Finder (LRF). The resulting camera system was a uniquely modified, sophisticated surveillance solution for mining companies.

CORES

OPEN FRAME CAMERAS

FULL CAMERAS

PTZ CAMERA SYSTEMS

SOLUTIONS

OPGAL
Beyond the Visible

Hungarian Border, E.U.

Hungary is in a high traffic region, nestled right between Eastern and Western Europe. Illegal immigration, human trafficking, and smuggling threaten Hungary's borders. The solution required a dual-channel 24/7 camera system alongside the radar and mobile command and control elements. The result was a dynamic portable solution that could be deployed quickly along the frontier at any time.

Solar Farm, Eastern Europe

Faced with ongoing vandalism and theft, one of Europe's largest solar farm operators turned to us for a remote site monitoring solution for several of their solar facilities. Opgal's thermal camera simultaneously offered monitoring and observation with a low false alarm rate, substantially reducing both price and ongoing costs. A key deciding factor was Opgal's proprietary algorithms, which enabled complete customized control with optimal performance for each camera and the ability to monitor multiple cameras concurrently.

Recycling Facilities, USA

Recycling facilities endure a constant risk of spontaneous combustion, especially at night and after-hours. If not detected early, a fire can causing millions of dollars in damage. EyeMax Security chose Opgal to monitor recycling facilities across the USA. Two types of Sii cameras were chosen to protect facilities in Florida, New Mexico, and Maryland. Thanks to their IP configuration, the cameras were integrated seamlessly with the EyeMax's video monitoring systems. Their advanced proprietary image processing and temperature threshold calibration virtually eliminated false alarms.

Power Station, Belgium

Remote electrical substations fall prey to copper theft taken from earthing cables, often resulting in power outages, fires, and even injury or death. Facing regular break-in attempts, ELIA, Belgium's electricity transmission system operator, sought an efficient perimeter security solution for unmanned substations. ELIA required thermal security cameras coupled with analytics; all monitored from a central command center. Opgal's thermal imaging cameras are designed for easy integration with Video Management Systems (VMS), sending real-time alerts from substations nationwide.

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Airport Security, Europe

There are numerous threats within the perimeter of an airport, from intrusions to risk mitigation. At one European airport, we placed Accuracii XRU cameras to cover the airfield. Shorter range Accuracii ML cameras protect blindspots closer to the perimeter. Combined with radar and video analytics, these Accuracii cameras monitor the movement of people and vehicles. Sii thermal cameras passively monitor the perimeter fence for any breaches. All the collated data provided on screens in the central security control room.

Port Surveillance, Chicago

With thousands of cargo and passenger terminals worldwide covering both land and sea, securing these critical areas is challenging. The threats range from theft and vandalism to more severe threats that endanger property and lives, such as terrorist attacks on critical infrastructure. Thermal imaging cameras operate irrespective of prevailing weather conditions, providing accurate visuals in challenging weather and total darkness and provide a clear image even in humid conditions.

Prision Security, Worldwide

Our cameras are installed at prisons as an alternative to bright and intrusive lighting combined with traditional CCTV cameras. Thermal cameras require no visible light and can easily detect a threat in remote or urban areas, regardless of the weather. In an attempt to end the influx of contraband coming over the walls, many prisons have installed thermal camera systems around their perimeters. These cameras identify people approaching the facility with the intent to throw contraband over the walls or detect drones in the vicinity. With edge analytics, instant alerts can ensure fast and decisive action.

Railway Safety, Israel

Railway safety systems on alert train operators of any problem on the tracks or at a nearby crossing. Thermal-imaging cameras are ideal for identifying vehicles, people, stray animals or other objects, night and day, and in adverse visibility such as fog or smoke. With supporting analytics, the system alerts when something penetrates a predefined "secure zone". Depending on the thermal sensor used, it is possible to detect a vehicle or person from 100 meters to 2 km away (1.2 miles), thus achieving a measurable reduction in train-motor vehicle crashes.

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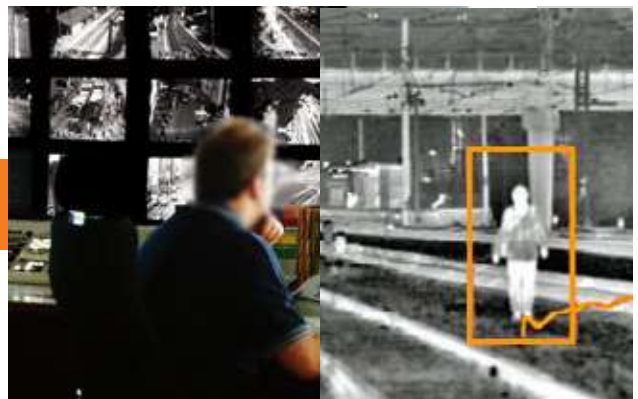
24/7 Drone Detection & Verification

Prompt visual confirmation of a flying target is crucial for first responder teams. When multiple objects approach, quick decisions are required to prioritize methods of retaliation.

The new and improved Accuracii PTZ models are advanced IP observation systems with drone detection capabilities. Equipped with an integrated external device, the Accuracii runs on-board analytics for superior **Automatic Target Recognition (ATR)** for **Drone/Not a Drone identification**.

The Accuracii's ATR can identify an unlimited number of targets, with a minimum of 3x4 pixels for an efficient ATR and track. Since a single camera can only track a single target, it is up to an **AI software** or a human operator to deem which target is the riskiest, then slew and cue the camera for visual confirmation and identification.

The Accuracii XRU can detect a drone up to 2kms (1.25 miles) for maximum accuracy, and the Accuracii XR can identify a target up to 4kms (2.5 miles), depending on atmospheric conditions. For maximum efficiency, Opgal provides the SDK and API for camera control and analytics, giving customers the flexibility to develop software and system interfaces according to their specific needs.

When connected to a radar or RF sensor, the system becomes a vital part of the anti-drone system. Once the radar or the RF sensor detects suspicious activity, they slew to cue the camera via third-party C2 software. Once within the camera range, the system classifies objects as drone/not a drone. It marks drone targets only.

If the **Full Automation** option is activated, the system AI classifies the drones according to different threat-levels to determine which target it should lock on and track for visual confirmation. Hexa-drones (6 propeller blades) are potentially a greater threat, or if a drone carries an external device (like a weaponized payload), it will get higher tracking priority.

If a human operator is in the loop, then after the initial Drone/Not Drone ATR, the operator can select between either start or stop tracking and which object the system should follow.

While the operational scenario is quick – usually no more than several seconds to verify that the object detected by the radar is a drone – the Accuracii's analytics can track the object for several minutes; this gives human operators time to reassess threat-level and options.

The ATR & tracking functions work on different types of targets, such as humans, vehicles, UAV, vessels, airplanes, etc.
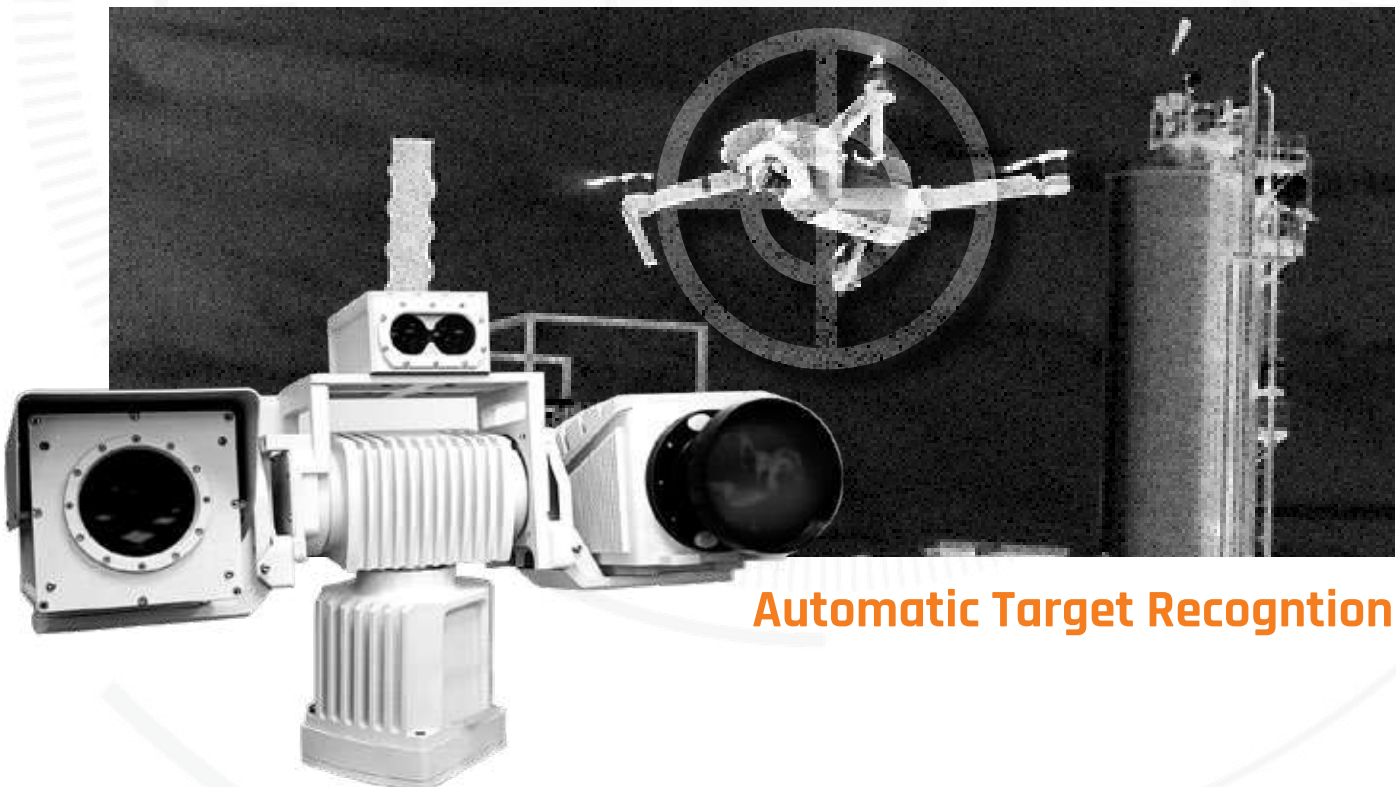

Automatic Target Recogntion

SiteBuilder Planning Tool

Opgal has developed the complimentary Sitebuilder Security Site Planning application as a user-friendly way to support customers and replicate security cameras in the field.

Our suite of tools allows you to simulate mounting height, rotation, range, and object detection simulation to ensure accurate placement and performance. Using satellite imagery through Google Maps, you can place any number of cameras at your desired coordinates anywhere on Earth. Once you have built your layout, you can save it to your folder, create a PDF, print, export the design, or email the request to Opgal for a quotation.
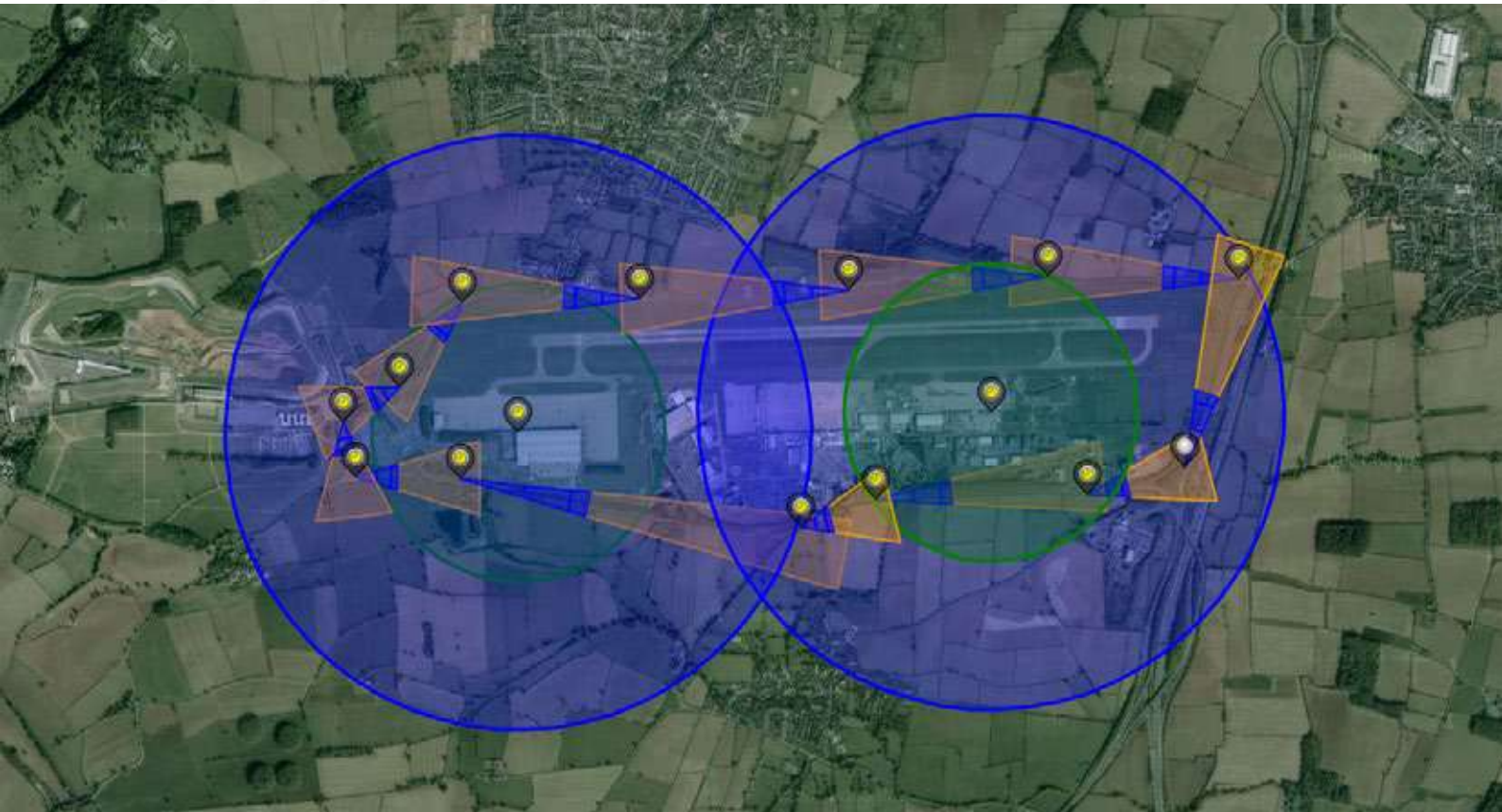
01 Find Your Specific Site

By utilizing the Google Maps database, you can effortlessly search for your specific site using an address or coordinates, ensuring you find the exact location you need.

02 Calculate Range & Dead Zones

For every camera, you can select the mounting height, tilt, and rotation of the camera. The tool will give you an accurate representation of the maximum range for object detection and the dead zone from the mounting location, ensuring you can cover any blind spots.

03 Unlimited Sites & Variations

The tool will allow you to create an unlimited number of sites and site variations, which can be saved in a secure area, ensuring you always have access to your designs. There are also various options to keep your plans offline.
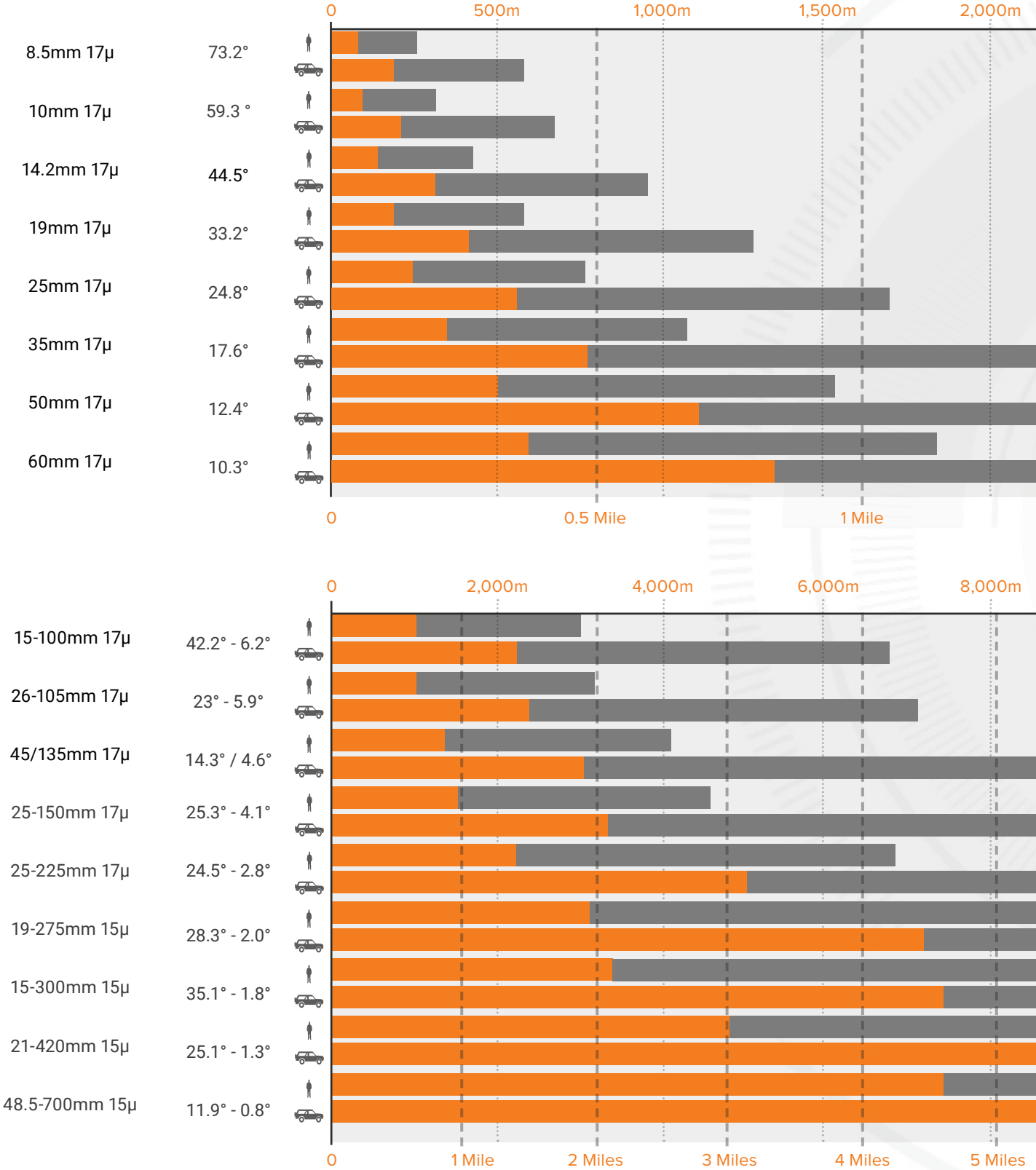
04 Planning for Fire Detection

It's simple to change from a security camera to a fire detection camera or combine both solutions for a complete security and safety solution. Fire detection cameras will provide you the maximum detection range of a fire based on the lens configuration.

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DRI Chart

	8.5		10		14.2		19		25		35		50		60		100		105	
	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car
Rec	87	192	102	225	145	320	194	428	255	564	357	789	509	1,128	611	1,353	1,019	2,255	1,070	2,368
Dec	260	575	306	676	434	961	581	1,285	764	1,691	1,070	2,368	1,528	3,382	1,834	4,059	3,057	6,765	3,209	7,103

Lens	HFOV
8.5mm 17μ	73.2°
10mm 17μ	59.3 °
14.2mm 17μ	44.5°
19mm 17μ	33.2°
25mm 17μ	24.8°
35mm 17μ	17.6°
50mm 17μ	12.4°
60mm 17μ	10.3°

| Lens	HFOV
15-100mm 17μ	42.2° - 6.2°
26-105mm 17μ	23° - 5.9°
45/135mm 17μ	14.3° / 4.6°
25-150mm 17μ	25.3° - 4.1°
25-225mm 17μ	24.5° - 2.8°
19-275mm 15μ	28.3° - 2.0°
15-300mm 15μ	35.1° - 1.8°
21-420mm 15μ	25.1° - 1.3°
48.5-700mm 15μ	11.9° - 0.8°

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= Human Subject Size 1.8mx0.6m

= Vehicle Subject Size 2.3mx2.3m

Recognition — 6 lines on subject
Detection — 2 lines on subject

	135		150		225		19-275		15-300		21-420		48.5-700	
	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car	Man	Car
Rec	1,375	3,044	1,528	3,385	2,292	5,074	3,300	7,300	3,425	7,580	4,700	9,500	7,500	13,300
Dec	4,126	9,132	4,585	10,147	6,877	15,221	10,500	17,700	10,800	17,840	12,700	18,800	16,000	20,500
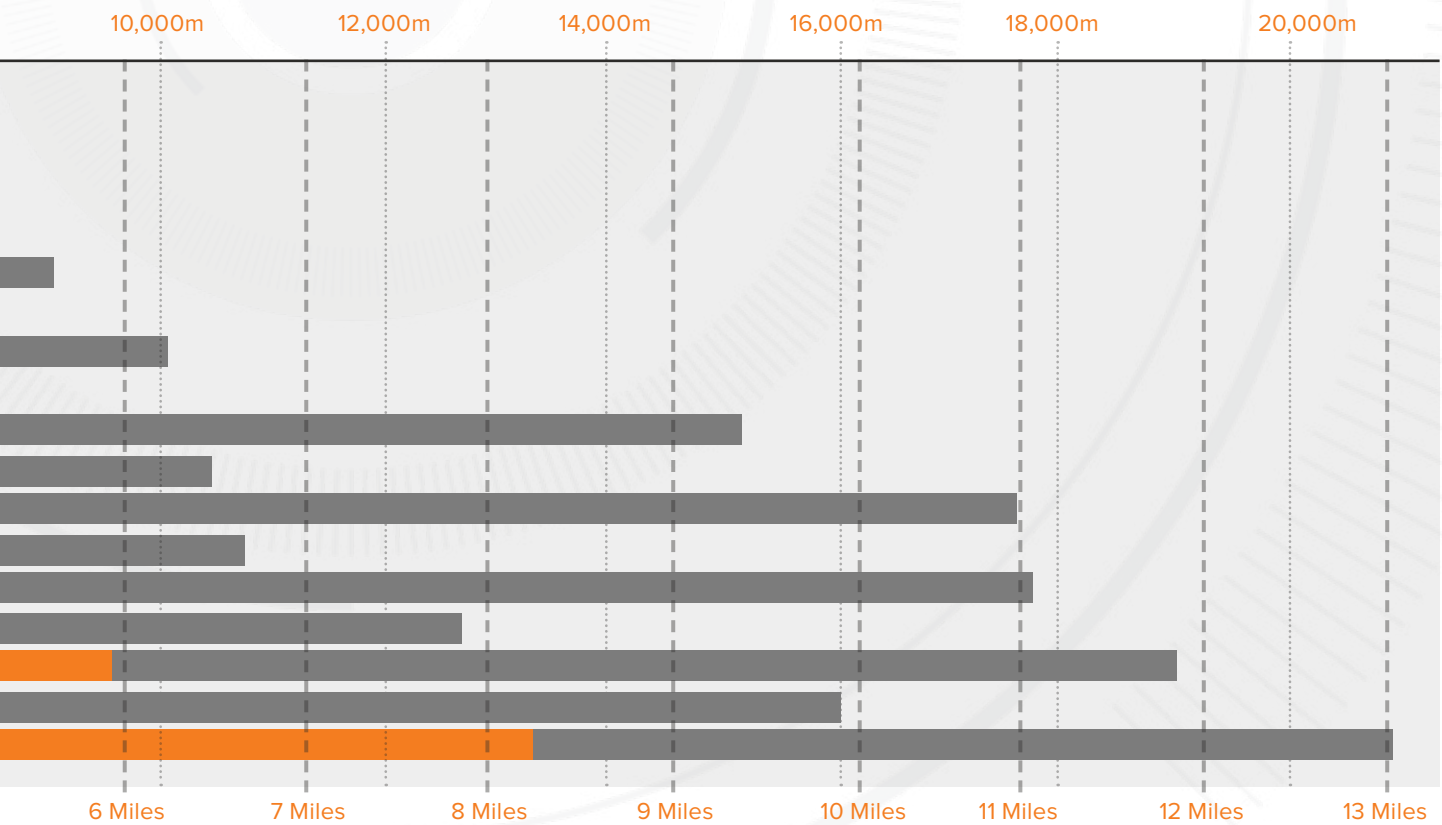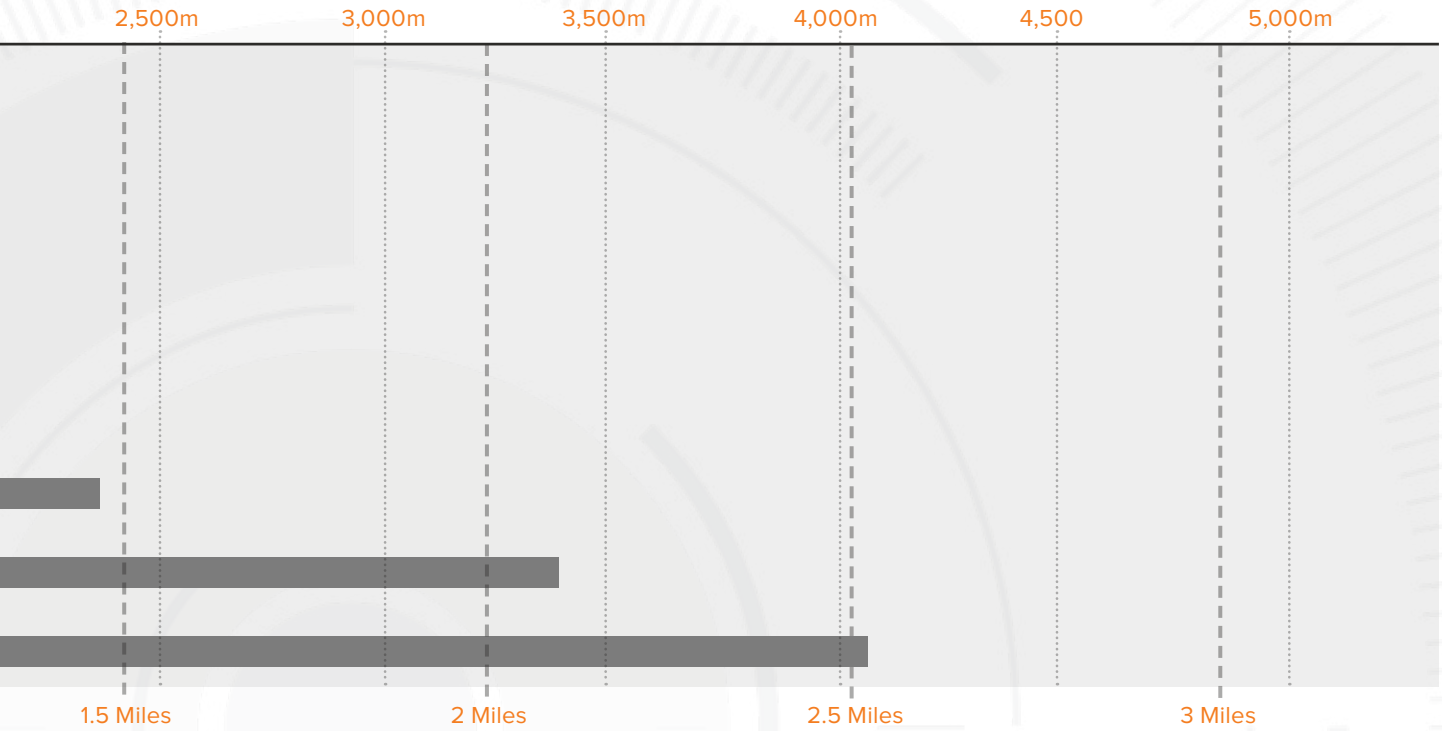
* Performance dependent on atmospheric conditions

24/7
Security Solutions

" At the end of the day, the goals are simple: safety and security.

Jodi Rell

Contact Opgal **Today**

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