

ANIXTER



Products. Technology. Services. Delivered Globally.

ANIXTER ip assuredSM
Defining IP Security Infrastructure

ANIXTER IPASSUREDSM
FOR SECURITY APPLICATIONS



Anixter is a leading global supplier of communications and security products, electrical and electronic wire and cable, fasteners and other small components. We help our customers specify solutions and make informed purchasing decisions around technology, applications and relevant standards. Throughout the world, we provide innovative supply chain management solutions to reduce our customers' total cost of production and implementation.



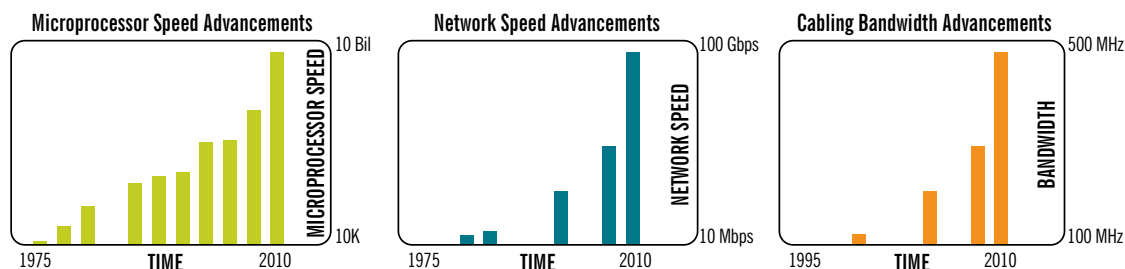
Anixter's ipAssuredSM Program

As more devices are integrated into a single Ethernet network, uptime is critical for an increasing number of physical security systems such as video surveillance and access control. Companies that want the best possible network to support current needs and future requirements will look to the cabling and associated infrastructure to meet their technical and performance specifications. To have a fully supportable Internet Protocol (IP) network solution, it is becoming increasingly important to make the right choices up front when considering the network cabling and components. Anixter ipAssured protects a network investment by matching the cabling infrastructure to its components based on the end-user's technical and life-cycle requirements to support current and future applications.

Anixter has made choosing infrastructure simple. Just tell Anixter the types of technologies and applications needed for the network—from IP and analog cameras to Power over Ethernet and biometric access control—and Anixter can recommend an IP infrastructure solution that will provide the best performance today and in the future.

Network Trends

Network speeds, microprocessor speeds and cabling system bandwidth have all increased substantially over the past few years. As this trend continues, a high-end cabling infrastructure becomes necessary to support future network growth.



Security Trends

The convergence of physical and logical security is redefining how enterprises approach safety in and around their workplaces. The technological advancements offered by Ethernet cabling and Internet Protocol allow more devices to be connected to a centralized location through a single network infrastructure. Even though these developments offer new possibilities, they also create greater dependency on the cabling infrastructure to support the physical and logical security requirements of IT, access control and video surveillance.

The security industry has seen several trends related to these advancements:

- Increased protection through the convergence of formerly stand-alone, proprietary security systems
- Greater protection of assets and information through wireless RFID tracking, video surveillance and audit trail capabilities
- Faster and more reliable responses based on security information gained in real-time
- Movement from a reactive position to a proactive and predictive response
- Ability to integrate with other systems in order to provide additional operation control, reduce costs and preserve existing capital
- Greater interoperability of security subsystems to automate responses across the network for improved security
- Increased bandwidth usage with high-quality video surveillance



Anixter ipAssured

Anixter ipAssured is an infrastructure assurance program that matches the cabling infrastructure to the security equipment based on the technical, application and life-cycle requirements of the user. Developed by extensive testing and research from Anixter's Infrastructure Solutions Lab, Anixter ipAssured provides cabling recommendations based on the security applications a company is running, including analog video, IP video, access control, storage and recording. The results from the testing done in The Lab allow Anixter to make cabling recommendations based on the planned life cycle of the security applications. Divided into IP-ClassSM 1+ (1 to 5 years), IP-Class 5+ (5 to 10 years) and IP-Class 10+ (more than 10 years), Anixter ipAssured provides a robust cabling infrastructure for the entire planned life cycle of the equipment.

Determining the Right IP-Class

Anixter ipAssured is divided into three distinct classes, IP-Class 1+, IP-Class 5+ and IP-Class 10+, that provide users with readily identifiable categories to understand the usable life cycle of their security infrastructure. Based on a life cycle of 1 to 10+ years, Anixter ipAssured addresses current needs while allowing headroom for future expansions or advancements.

All of the IP-classes are tested in the Anixter Infrastructure Solutions Lab for Anixter ipAssured compliance (transmission performance) and environmental performance and are backed by a manufacturer's warranty. The charts below help identify the types of security applications that are best supported with the corresponding IP-Class of Anixter ipAssured cabling infrastructure.



IP-Class 1+

The IP-Class 1+ cabling solution is meant to support applications that are anticipated to have a shorter life span of 1 to 5 years before replacement is necessary. It is characterized by 155 MHz of usable bandwidth, can support 1 Gigabit Ethernet and **exceeds** the standard criteria of a Category 5e cabling solution. A Category 5e solution is the minimum infrastructure required to run the following applications. Anixter's IP-Class 1+ goes beyond the Category 5e standard requirements to confirm optimal performance and life span.

Use an IP-Class 1+ cabling infrastructure if...

you are installing...

Video surveillance
Access control
Storage and recording

Physical infrastructure products*

and using these typical products...

- Analog cameras with encoders
- Existing panels
- External DVR storage
- H.264 DVR
- OM2 fiber
- 4-Post racks
- PoE (13 watts)
- Passive cooling
- 3-Phase monitored power



With 50 percent of network problems attributed to the cabling system, one way to minimize network downtime and experience the full benefits of IP's capabilities is to invest more into the physical layer infrastructure. You can rely on Anixter to recommend the right solutions through Anixter ipAssured.



IP-Class 5+

The IP-Class 5+ cabling solution is meant to support applications that are anticipated to have a life span of approximately 5 to 10 years before needing to be replaced or upgraded. It is characterized by 250 MHz of usable bandwidth, can support 1 Gigabit

Ethernet and exceeds the standard criteria of a Category 6 cabling solution.

A Category 6 solution is the minimum infrastructure required to run the following applications. Anixter's IP-Class 5+ goes beyond the Category 6 standard requirements to confirm optimal performance and life span.

Use an IP-Class 5+ cabling infrastructure if...

you are installing...

Video surveillance
Access control
Storage and recording
Physical infrastructure products*

and using these typical products...

- IP standard-definition H.264 cameras
- IP controllers with video integration
- External RAID expandable storage
- NVR with external analytics engine
- OM3 fiber
- IP lockable cabinets
- Upgradable Intelligent Infrastructure Management (IIM)
- PoE+ (25 watts)
- Enhanced passive cooling
- 3-Phase monitored power



IP-Class 10+

The IP-Class 10+ cabling solution is meant to support applications that are anticipated to have a longer life span of 10+ years before needing to be replaced or upgraded. It is characterized by 500 MHz of usable bandwidth, can support

10 Gigabit Ethernet and **exceeds** the standard criteria of a Category 6A cabling solution.

A Category 6A solution is the minimum infrastructure required to run the following applications. Anixter's IP-Class 10+ goes beyond the Category 6A standard requirements to confirm optimal performance and life span.

Use an IP-Class 10+ cabling infrastructure if...

you are installing...

Video surveillance
Access control
Storage and recording
Physical infrastructure products*

and using these typical products...

- Multimegapixel cameras capable of edge analytics
- IP controllers with BAS integration
- Edge recording with auto updates to centralized storage
- NVR with internal analytics capability
- OM4 fiber
- IP monitored and controlled cabinets
- Intelligent Infrastructure Management (IIM)
- PoE++(70 watts)
- Precision cooling
- 3-Phase monitored power

* The recommended physical infrastructure products will help the IP-Class infrastructure perform at optimal levels.



Developed by Anixter's Infrastructure Solutions Lab

The criteria for Anixter ipAssured were developed in Anixter's Infrastructure Solutions Lab. Based on rigorous testing and research, The Lab used a variety of tests to confirm an Anixter ipAssured classification can withstand future physical security requirements.

Testing for the Anixter ipAssured program covers two areas:

- Transmission performance
 - Anixter ipAssured performance spec tests go above and beyond ANSI/TIA, ISO and IEEE standards and requirements.
- Environmental performance
 - Anixter ipAssured tests the effect of elevated temperatures on performance.



The Anixter Infrastructure Solutions Lab



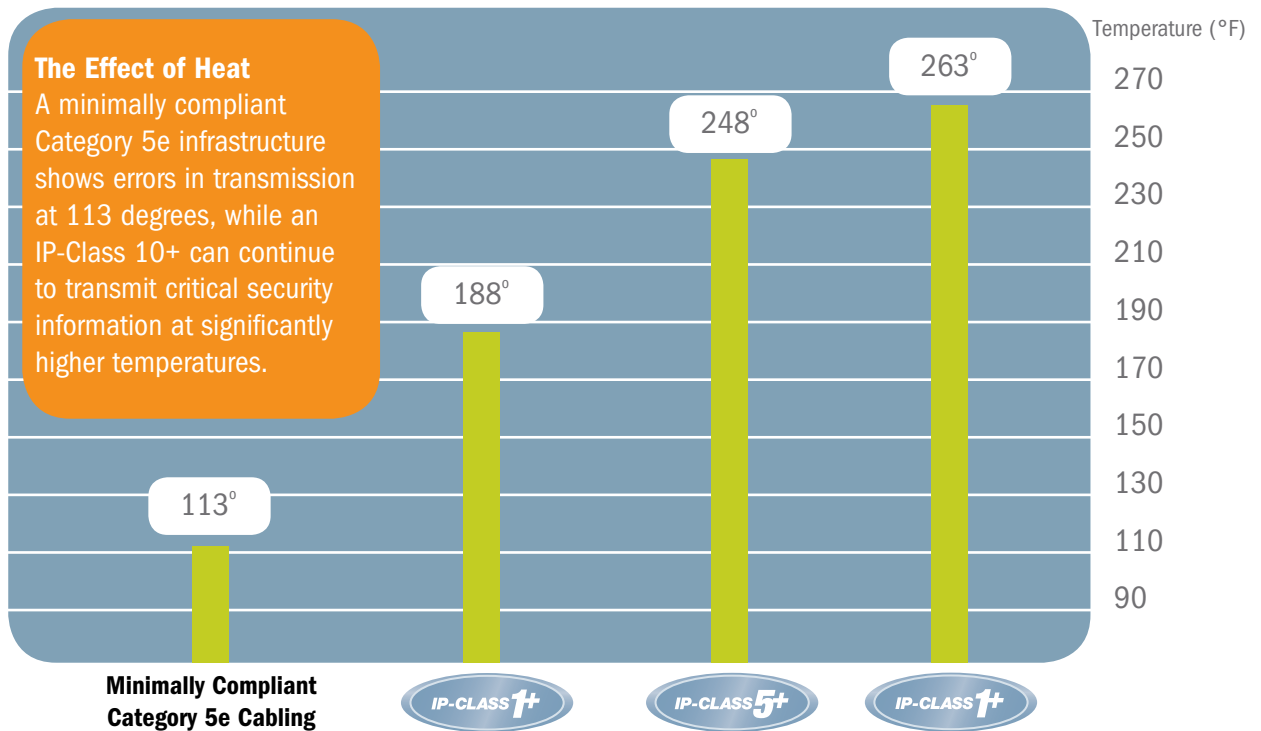
By actively demonstrating and evaluating the latest infrastructure and security solutions from best-in-class manufacturers in the areas of enterprise cabling, data center design, video security, industrial automation and access control, the Infrastructure Solutions Lab continually tests products to confirm they deliver consistency and quality across product lines and within systems. The Lab tests to all relevant standards including TIA-568, ISO 11801 and IEEE 802.3 and also tests for interoperability of divergent systems to help customers integrate products and follow the trend toward convergence. Anixter's Infrastructure Solutions Lab tests full Category 6A products and systems with complete throughput testing capabilities and received UL Certification from Underwriters Laboratories' Performance Verification Program.

In addition to Anixter's one-of-a-kind Infrastructure Solutions Lab located at Anixter's global headquarters, Anixter has a variety of demonstration and educational facilities around the globe that provide technical leadership and support to Anixter's customers, technical staff and manufacturers. Customers have used Anixter's state-of-the-art labs for a variety of testing and research functions, from demonstrating the image quality of dozens of analog and IP video surveillance cameras to evaluating a network infrastructure to confirm it will successfully handle bandwidth demands.

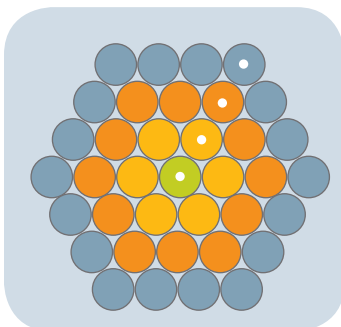
THE LAB
ANIXTER'S INFRASTRUCTURE SOLUTIONS LAB

Infrastructure Assurance Lab Tests

Elevated Temperature Test



Cable Bundle Test



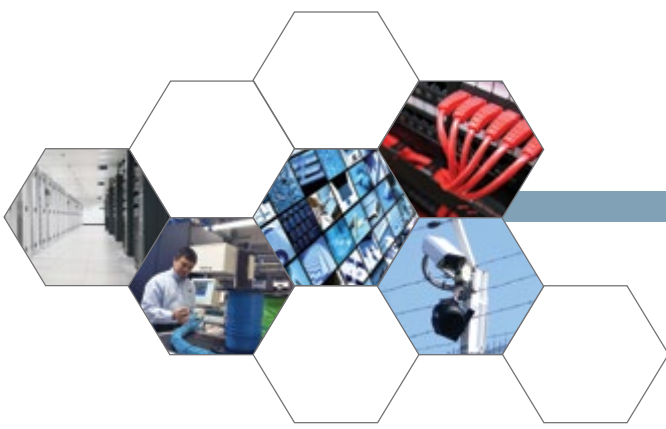
36 Around 1 Cable Bundle Test Setup

Another test conducted by The Lab took a typical 36 around 1 cable bundle and continuously ran 750 milliamperes (mA) through each conductor pair for 24 hours to measure the effect of the heat generated on the signal.



Bottom line: There is a 25 percent increase in signal loss on a Category 5e cable when compared to the same test run on an IP-Class 5+ cable.

In addition, as you add cables to the bundle, the subsequent rise in heat will cause a further increase in the bundled cable's temperature, which can also negatively affect data transmission.



Determining Return on Investment

The testing in The Lab has shown how an Anixter ipAssured solution can improve a company's return on investment (ROI) by selecting the right cabling infrastructure. In a sample scenario that uses 50 IP cameras, 12 access control doors, one network video recorder (NVR) and an average cable run of 150 feet, the cabling costs over an assured lifetime for a minimally compliant Category 5e cabling infrastructure was \$5,280 per year. This compared to \$1,143 for an IP-Class 1+, \$971 for an IP-Class 5+ and \$813 for an IP-Class 10+. This scenario shows just how much Anixter ipAssured can improve return on investment over the lifetime of a cabling infrastructure.

Sample Project Calculator

How many cameras will be installed?	50
How many access control doors will be installed?	12
How many NVRs will be installed?	1
How many software licenses will be installed?	50
What is your average cable run length?	150
What is the average labor rate of your technicians?	\$60

By using the variables above, we are able to calculate the small upfront investment needed to upgrade to an Anixter ipAssured infrastructure that maximizes the useable life of the security infrastructure.

Sample Project Cost

	Minimally Compliant Category 5e	IP-CLASS 1+	IP-CLASS 5+	IP-CLASS 10+
Cameras	\$45,000	\$45,000	\$45,000	\$45,000
Access Control	\$12,000	\$12,000	\$12,000	\$12,000
Cabling Infrastructure	\$5,280	\$5,716	\$9,716	\$12,097
Recorders	\$2,000	\$2,000	\$2,000	\$2,000
Software	\$50,000	\$50,000	\$50,000	\$50,000
Product Cost	\$67,280	\$67,716	\$71,716	\$74,097
Installation Cost	\$4,560	\$4,560	\$4,560	\$4,560
Project Total	\$121,840	\$122,276	\$126,276	\$128,657
Cabling as Percentage of Total	4.3 %	4.7 %	7.7 %	9.4 %
Years Assured	N/A	1-5 Years	5-10 Years	10+ Years
Cabling Cost Over Assured Lifetime Per Year	\$5,280	\$1,143	\$971	\$813

For this example, upgrading from a minimally compliant Category 5e to an IP-Class 10+ solution will cost significantly less over the life of the infrastructure.

A History of Innovation

In the late 1980s, Anixter discovered in early testing that twisted-pair cabling performance varied widely. As a result, Anixter developed and defined performance requirements for a twisted-pair networking infrastructure based on customers' applications. The basis for these performance requirements were adopted by the ANSI/TIA/EIA standards bodies and renamed "Categories" (e.g., Category 3 and Category 5) in the 1990s.

In addition to its work on structured cabling, Anixter was also a driving force in helping to establish the creation of BICSI and the Registered Communications Distribution Designer (RCDD) program, helping to write the first RCDD training manuals. Because technology is constantly evolving, Anixter and The Lab's dedication to technical innovation continues today. From the active involvement in numerous standards committees to the development of Anixter ipAssured, Anixter is committed to exploring the latest technologies and test methodologies in the network and security industries.

The Anixter Difference

Anixter understands the technical requirements needed to run a full IP solution and supplies only the best products to meet the technical demands of the end-user. Anixter partners with manufacturers that have been endorsed by leading IT organizations to help achieve optimal above-standards performance of cabling infrastructures. Through the manufacturers' warranties, Anixter ipAssured offers guaranteed standards performance for the specified life cycle. Our ipAssured solutions perform beyond Category 5e, 6 or 6A performance requirements, and they will support end-users' security application requirements running today as well as in the future.

Many of the manufacturers that Anixter partners with offer certified installer programs. A certified installer has the added benefit of receiving performance guarantees from certain manufacturers to a stated performance.

Anixter invites its customers to visit The Lab to test their chosen security solution. The Lab also conducts research with its manufacturer partners, and in some instances, provides recommendations surrounding the design of new products based on feedback received from customers or where there is a gap in the market.

With over 100 RCDDs, Anixter also has technical resources in the field that provide customers with training and support on products, applications and trends affecting a particular market. Anixter has a global network of security specialists and systems engineers with accreditations from leading industry organizations ready to help customers make informed purchasing decisions. Anixter's educational curriculum- called Anixter University (AU)- creates awareness and provides general solutions for current and future technologies. Some of the classes in the University include video surveillance, access control, the IP Connected Enterprise and the migration to intelligent networks. In addition, Anixter also provides specialized security training sessions for its customers.

For more information on Anixter University, visit anixter.com/au.





Our Supply Chain Solutions

Selecting the cabling infrastructure through Anixter ipAssured is only the beginning of an installation. A successful deployment strategy can help deliver materials arrive on the job site in the right condition, ready to be installed. Anixter can provide the supply chain solutions deliver materials on time, at the right place for an easy and quick deployment.

Anixter's Supply Chain Solutions can help customers stay profitable and competitive in the marketplace. By customizing our Supply Chain Solutions, we provide our customers with effective, scalable and repeatable solutions to eliminate costs, save time, mitigate risk and enhance productivity through the deployment process.

READY!™ Deployment Services by Anixter map our distribution and Supply Chain Solutions to the construction or deployment process of any technology project. We combine sourcing, inventory management, kitting, labeling, packaging and deployment services to simplify and address the material management challenges at the job site(s). READY! Deployment Services by Anixter will help you improve the speed of deployment, lower your total cost of deployment and deliver your product specifications are delivered as planned.



For more information about Anixter and our ipAssured program, contact your local sales representative at 1.800.ANIXTER or visit anixter.com/ipassured.

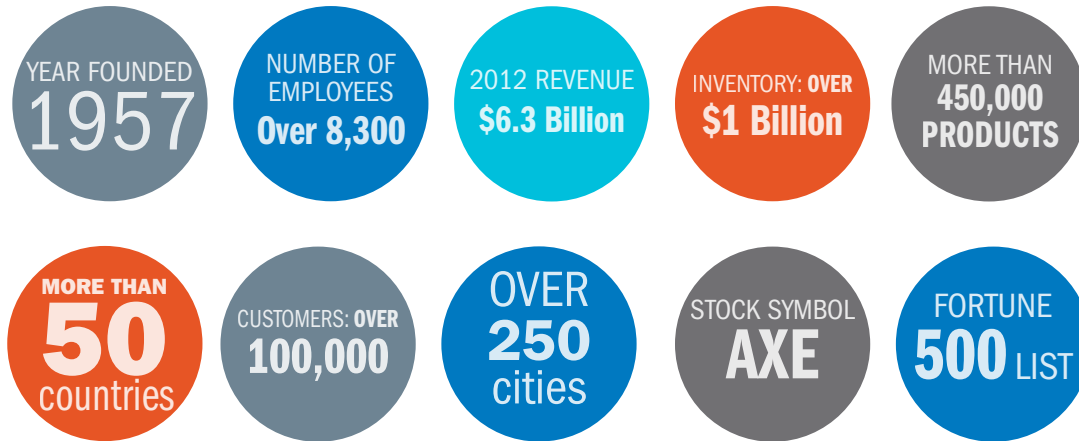


Anixter Association and Committee Memberships

- Telecommunications Industry Association (TIA)
- International Organization for Standardization (ISO)
- Institute of Electrical & Electronics Engineers (IEEE)
- ONVIF
- Building Industry Consulting Services International (BICSI)
- Security Industry Association (SIA)
- Control Systems Integrators Association (CSIA)

Technical Certifications

- ASIS CPP (Certified Protection Professional)
- More than 90 Registered BICSI RCDDs
- PSPs (Physical Security Professional Certification)
- CCNAs (Cisco Certified Network Associate)



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