COGNEX

**On-Line Detection,
Identification,
and Visualization of
Metal Defects**

SMART VIEW®

METALS

SmartView® Metals

SmartView Metals has become the most trusted surface inspection system worldwide. With more installations on more lines than any surface inspection system ever, SmartView is relied upon around the world by virtually every major flat-rolled products producer. For many of them, SmartView is the de-facto standard in on-line defect detection and identification.

Our Surface Inspection Experience

Since our first surface inspection system in the 1980's to today's state of the art SmartView systems, our engineers have understood the complexities of surface inspection of metals. A "one size fits all" solution does not provide optimum performance for the product requirements and the range of metals processing lines available today. Various metal strip processes all have unique surface properties and defects that require unique solutions to achieve accurate real-time surface inspection. Based on years of experience, we know the right combination of lighting, cameras, and other hardware, as well as detection and classification software for every metals process line. We provide the best technology for each application and never make compromises with the results. Only SmartView provides advanced inspection technology ensuring real-time detection of all surface defects, while our special surface inspection software can easily be configured to provide unparalleled, automatic identification, and visualization of your defects.
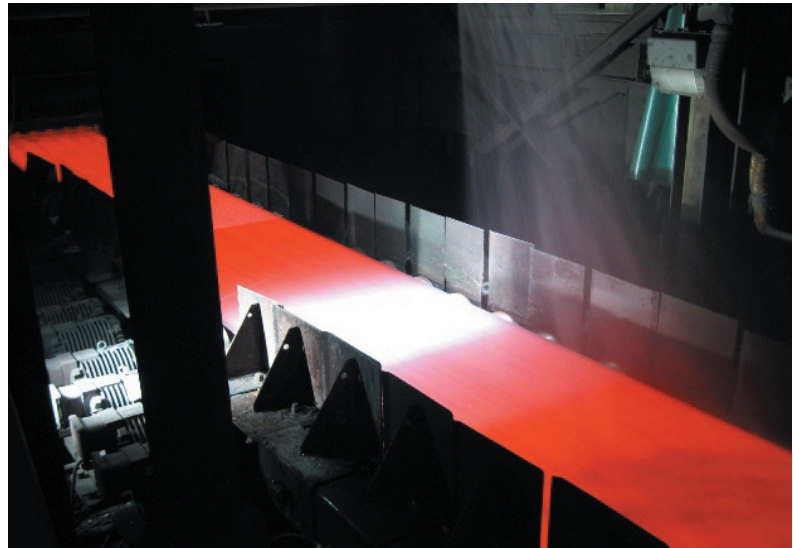
During the manufacturing process, it is crucial to detect defects early in the process. The sooner you find the problems, the sooner you can fix them. Knowing about even the smallest problems in real time allows an immediate response to worsening conditions, reducing scrap and increasing yield. Additionally, it keeps you from passing bad material on to value-added processes, thus reducing scrap and customer returns, again, increasing yield.

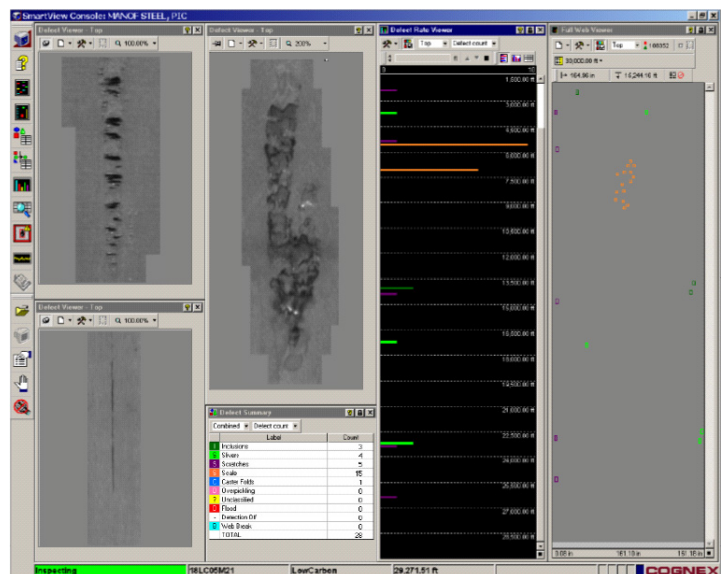# View real-time or historical defect images and data

Our Detection

The SmartView metals system is highly modular, allowing the use of appropriate technology for your application using standard system components. We install appropriate light and cameras configurations for each line. Some allow coil inspection while going over a roller and others allow inspection on the flat portion of the line. Cognex offers the most comprehensive selection of lighting solutions in the industry, applying collimated, diffuse, or side lighting depending on your application needs. For example, the use of collimated light allows us to employ our exclusive synchronized-view technology with two sets of cameras looking into the surface from different angles. In addition, our collection of thresholding algorithms can be optimized for your particular surface and requirements, all performing on-line in real time. You never have to wait for SmartView results.
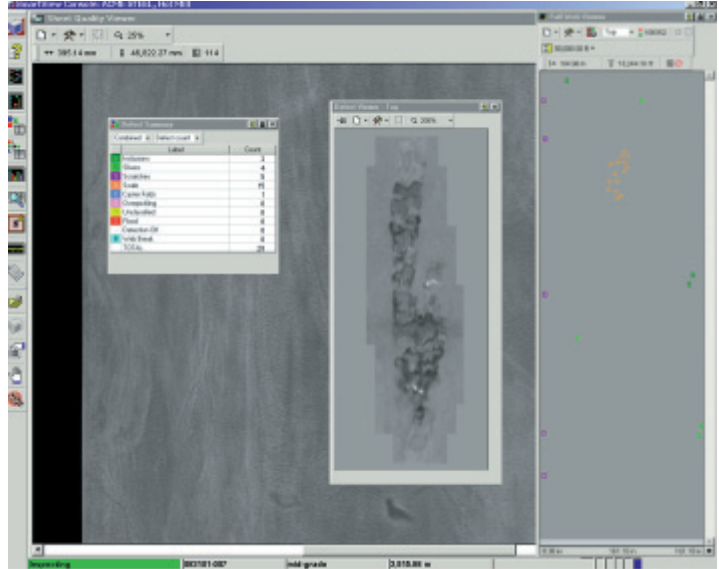
Our Classification

The SmartLearn multi-step classifier is a patented classification tool set for SmartView surface inspection systems. SmartLearn provides the flexibility to implement classification schemes tailored to your particular process and require-ments. The advanced SmartLearn architecture allows the use of various learning classifiers. Combining automatic learning classification with expert knowledge, SmartLearn maximizes the potential of your inspection system for improved product quality, higher production yield, and decreased customer returns.

Maximize results - from factory floor to front office

Our Through-Process Visability

The Windows®-based SmartView Metals system, connected to your mill network, provides information for mill-wide users, from the manufacturing floor to the front office. SmartView Metals uses industry standards like OPC and ODBC to ensure easy integration with other plant business, production, and quality systems. A real-time operator interface shows current inspection results on-line all the time. The Open Network Inspection Viewer, distributed across the plant network, enables any user to view current or historical inspection results remotely from any step in production, from hot mill to the finishing line.

Our Value

SmartView provides more value to users than any other surface inspection system.

- Improve product quality

- Maximize yield

- Detect, identify, and visualize defects before value-added processes

- Reduce the need for manual inspections

- Provide the reports you need in a form you can use

We have been successfully inspecting metals surfaces for two decades. In fact, SmartView systems inspect over 1 billion square meters of metal every day! We have metals customers on all continents and more metals customers worldwide than anyone else in the industry. More companies guarantee their quality with SmartView systems than any other surface inspection system.

Steel - Aluminum - Copper - Brass

Steel

Hot Mill
Pickling Line
Cold Rolling Mill
Annealing Line
Temper Mill

Electro Galvanizing Line
Hot Dip Galvanizing Line
Electro Tin Line
Hot Dip Tin Line
Coating Line
Inspection Line

Aluminum

Hot Mill
Cold Rolling Mill
Foil Mill
Leveling Line
Coating Line
Inspection Line

Copper / Brass

Pickling Line
Cold Rolling Mill
Annealing Line
Stretch Bend Leveler Line
Coating Line
Foil Treatment Line
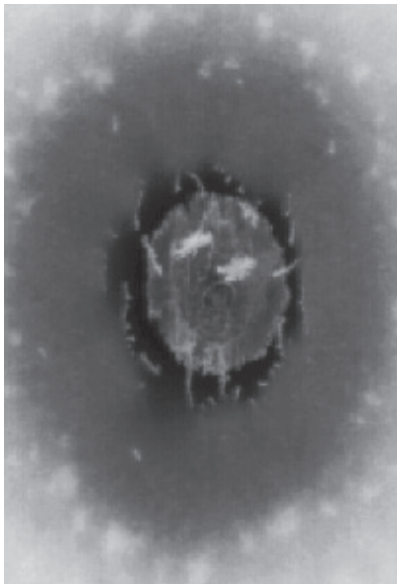Inspection Line

SmartView Can Do More

SmartView users can easily upgrade their system with powerful capabilities that are not available anywhere else.

Our Surface Quality Monitoring software automatically measures and reports the surface quality characteristics of the coil in real time. For the first time you can have a measurement of overall surface properties such as spangle, cloudiness, roll chatter marks, or surface roughness. It can even predict post-processing properties of the product when it is being produced.

SmartView Streaming Video can combine defect detection with full-width video recording of the strip. Watch in real time or go back and re-play any archived coil to virtually inspect the strip. All this is done with standard SmartView cameras and lighting.
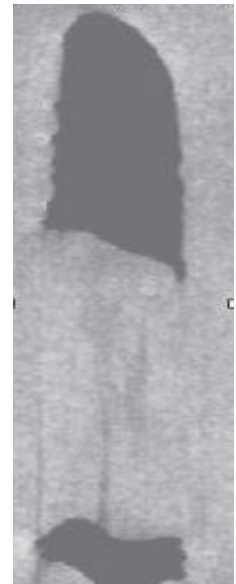
Copper Foil Acid Spot	Hot Mill Roll Mark	Pickling Scale	Temper Mill Hole

Since 1981, Cognex Corporation has achieved industry leadership by focusing its expertise exclusively on vision inspection technology. The success of our surface inspection division is enhanced by Cognex's financial stability and continued commitment to Research & Development, with more than 300 vision engineers worldwide. Our network of service and support professionals has made us the world's leading supplier of machine vision systems. Our goal is to exceed our customer's expectations by providing real, lasting value through innovative surface inspection solutions. Let Cognex ensure your success and guide you through your next generation of quality improvements.

Cognex Corporation designs, develops, manufactures, and markets machine vision sensors and systems, or devices that can "see". Cognex vision sensors are used in factories around the world to automate the manufacture of a wide range of items and to assure their quality. Cognex is the world's leader in the machine vision industry, having shipped more than 350,000 machine vision systems, representing over $2 billion in cumulative revenue, since the company's founding in 1981. In addition to its corporate headquarters in Natick, Massachusetts, Cognex also has regional offices and distributors located throughout North America, Japan, Europe, Asia, and Latin America. Visit Cognex on-line at http://www.cognex.com/.

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