

Beyond Inspection

ISRA VISION

德国伊斯拉视像

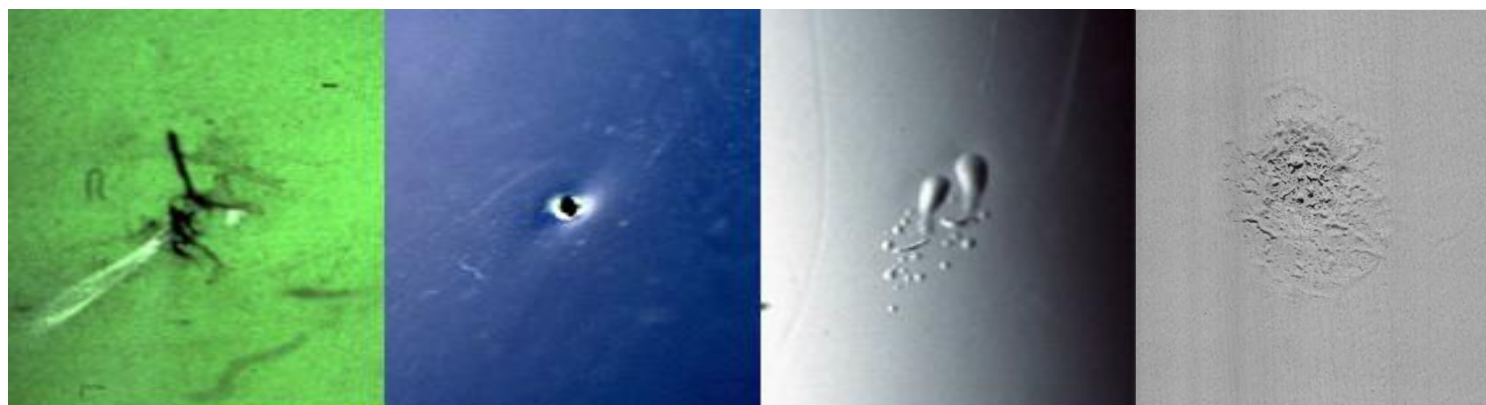
 Ringier Conferences

荣格研讨会，聚合行业专家的巅峰论坛！
Connecting industry through information exchange!

把检测作为起点

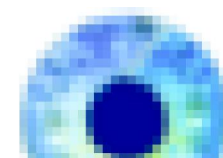
伊斯拉高级薄膜/无纺布视像检测系统

ISRA SURFACE VISION - SMASH



**Detect, recognize,
Classify, Visualize defects
Provide accurate statistics & report**

在线检测，识别
分类，显示瑕疵
提供可靠的统计和分析报告



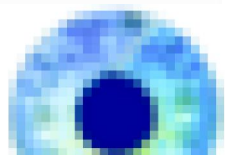
成立： 1985

公司性质： 德国法兰克福上市公司

员工数量： 480

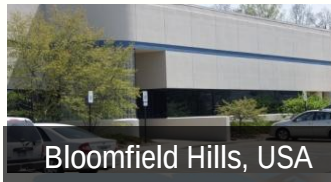
销售额 2010/2011： 75 Mio. €

R&D Investment研发投入： 14 Mio. €



Worldwide Organization Close to the Customer

ISRA
VISION



Bloomfield Hills, USA



Aachen, GER



Herten, GER



Atlanta, USA

● Subsidiaries:

Germany:

- Darmstadt (Headquarters),
- Aachen,
- Berlin,
- Herten,
- Karlsruhe,
- Mainz,
- Bielefeld

USA

- Atlanta,
- Bloomfield Hills

China

- Shanghai,
- Tianjin

Korea

- Seoul

Japan

- Tokyo

Taiwan

- Taoyuan

India

- Mumbai,
- Calcutta

Brazil

- Sao Paulo

Turkey

- Istanbul

UK

- Hampshire,
- London

Finland

- Helsinki

Italy

- Rovereto

Spain

- Barcelona

Russia

- Moscow

Production :

Germany:

- Darmstadt,
- Herten,

USA

- Atlanta,

China

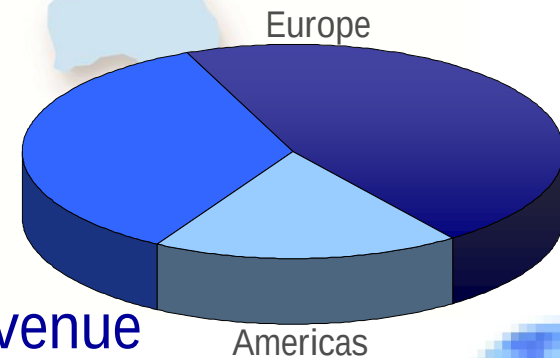
- Shanghai,

Turkey

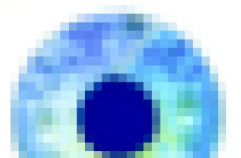
- Istanbul

Asia/
ROW

Revenue
in Regions



Shanghai, CN



The More You See..



表面视觉

金属工业

Thyssen, PoscoG, ALCOA, ALCAN, 宝钢,

玻璃工业

Schott, ASAHI, Pilkington, St. Gobain, PPG

薄膜、无纺

DuPont, 3M, BBA, Alcan, Clopay, Tredegar ...

印刷、造纸

MAN Roland, Tetra Pak 利乐, M-Real, Stora, ...



机器人视觉

汽车工业

Daimler-Chrysler, BMW, Volkswagen, Audi, Nissan, General Motors, Ford, Hyundai,

系统整合

KUKA, SCA-Schucker, Grenzebach...

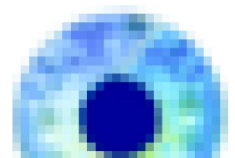


伊斯拉视像设备制造（上海）有限公司ISRA Shanghai

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- 成立Established: 2005年4月
- 地点Location: 上海Shanghai, 浦东新区 Pudong
- 实现本土化Local Team:
 - 装配中心Assembling Center
 - 备品备件中心Spare Parts Center
 - 售后服务中心Support Center



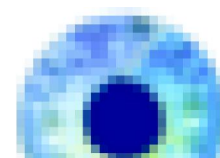
The More You See..

高速、可靠、易用：

SMASH无纺布检测系统

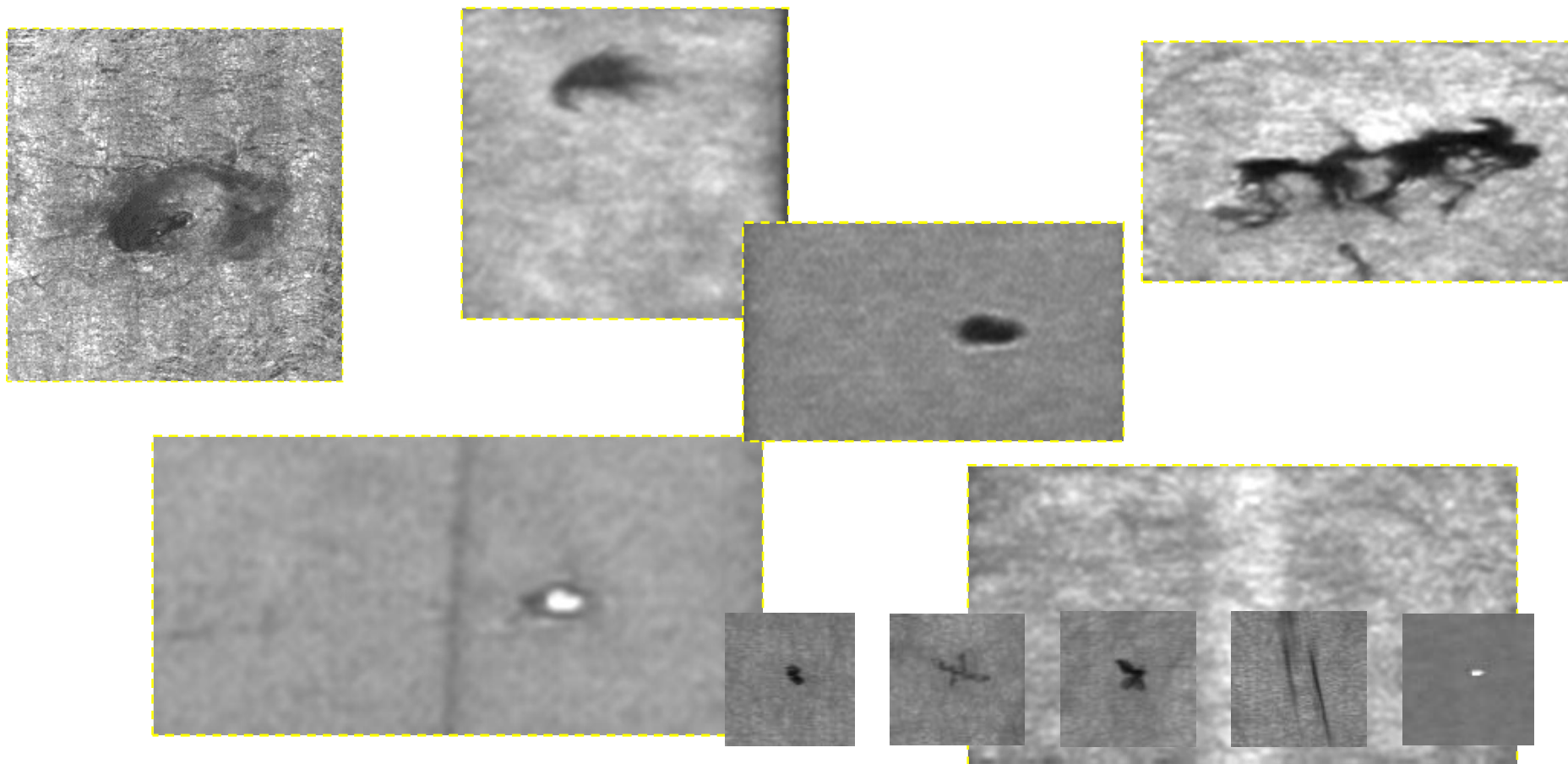
应用于：

- 热风/水刺/纺粘/
熔喷/针刺/热轧等无纺布

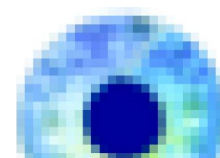


您的无纺布有这些缺陷吗？

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伊斯拉的高分辨率图像=准确的缺陷分类

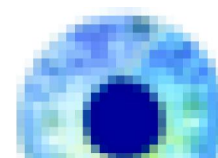
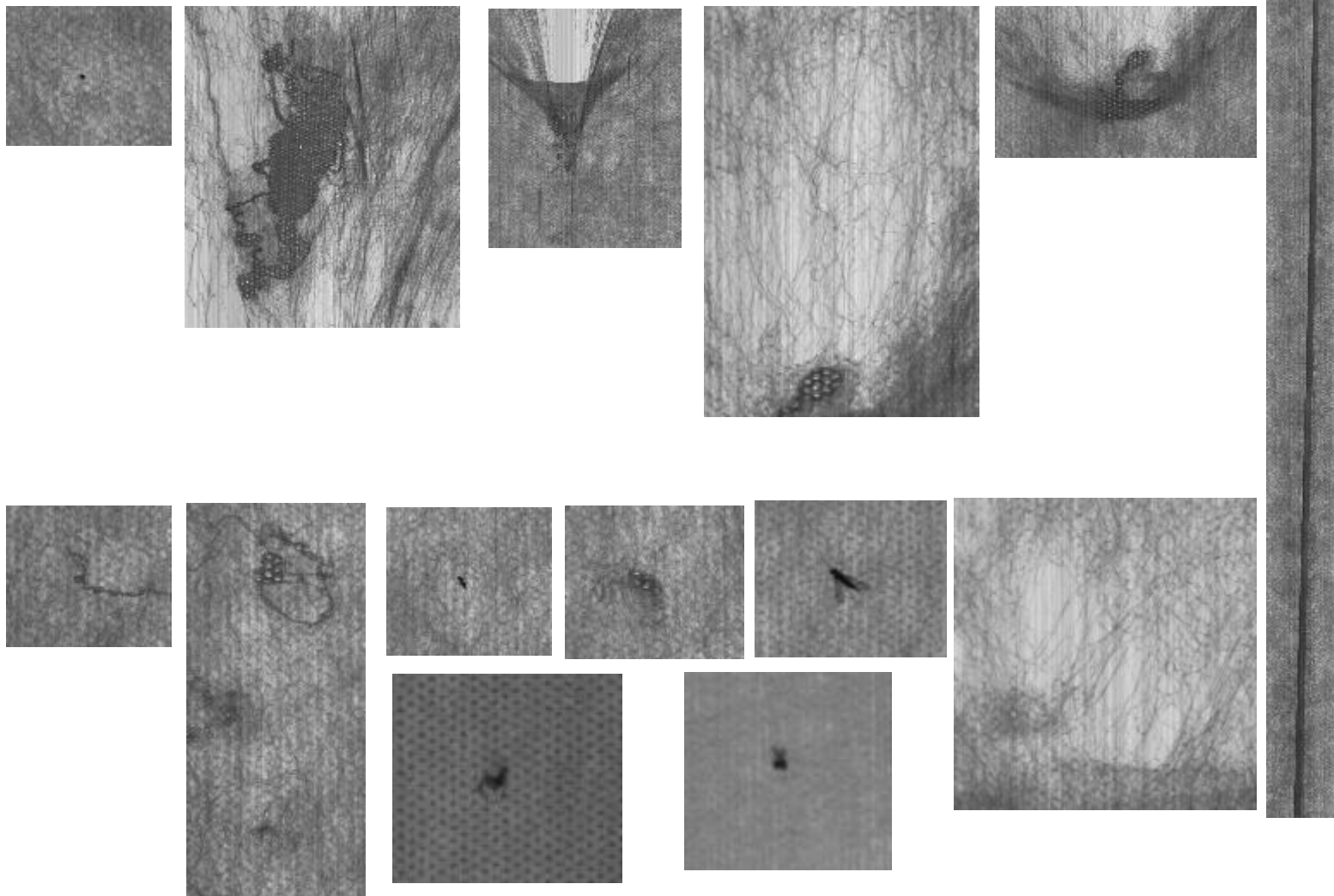


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您的无纺布有这些缺陷吗？

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革命性的高速检测：在1200米/分钟的高速下可以被捕获的缺陷不仅只有昆虫！



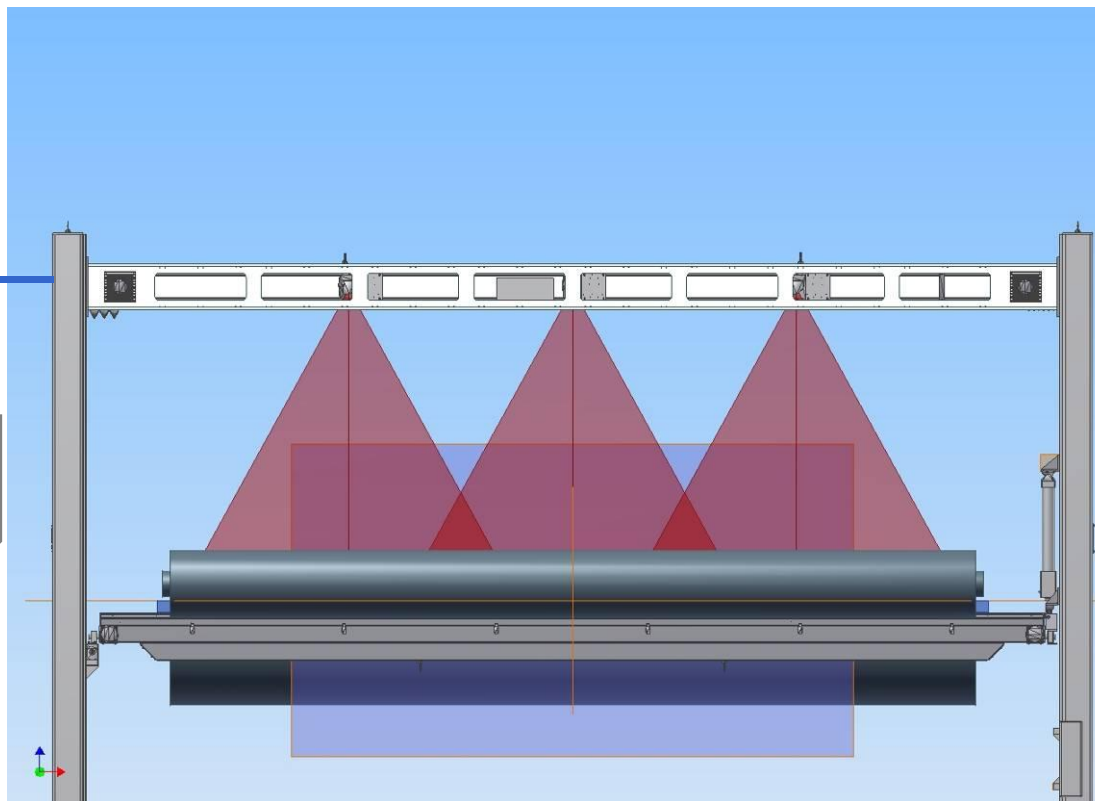
The More You See..

系统组成

ISRA
VISION
浏览, 管理

Junction Box

Power supply
I/O Signals



Master-PC / Operator Station

Ethernet

- 用户界面
- 控制中心
- 警报信号输出
- 打标机控制
- 打印报告
- 网络连接



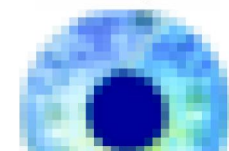
Roll data
Defect data
Defect images

mill network

报告管理

数据库

分切机管理



The More You See..

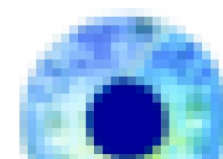
Installation example

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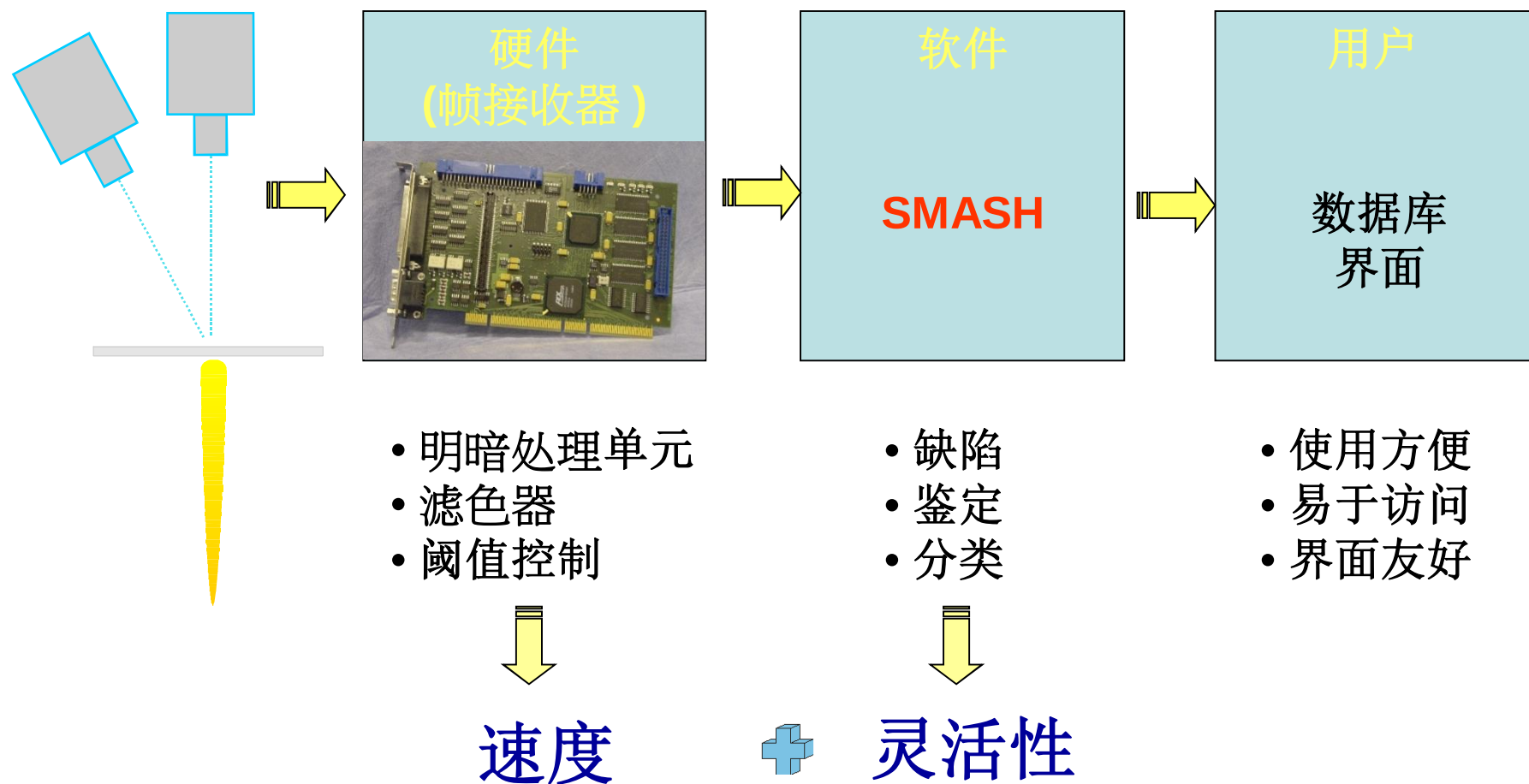


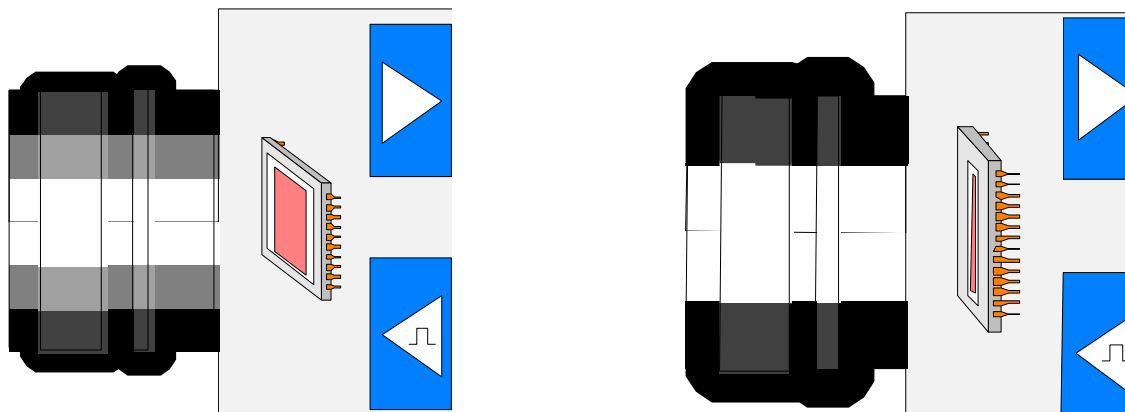
 **Ringier Conferences**

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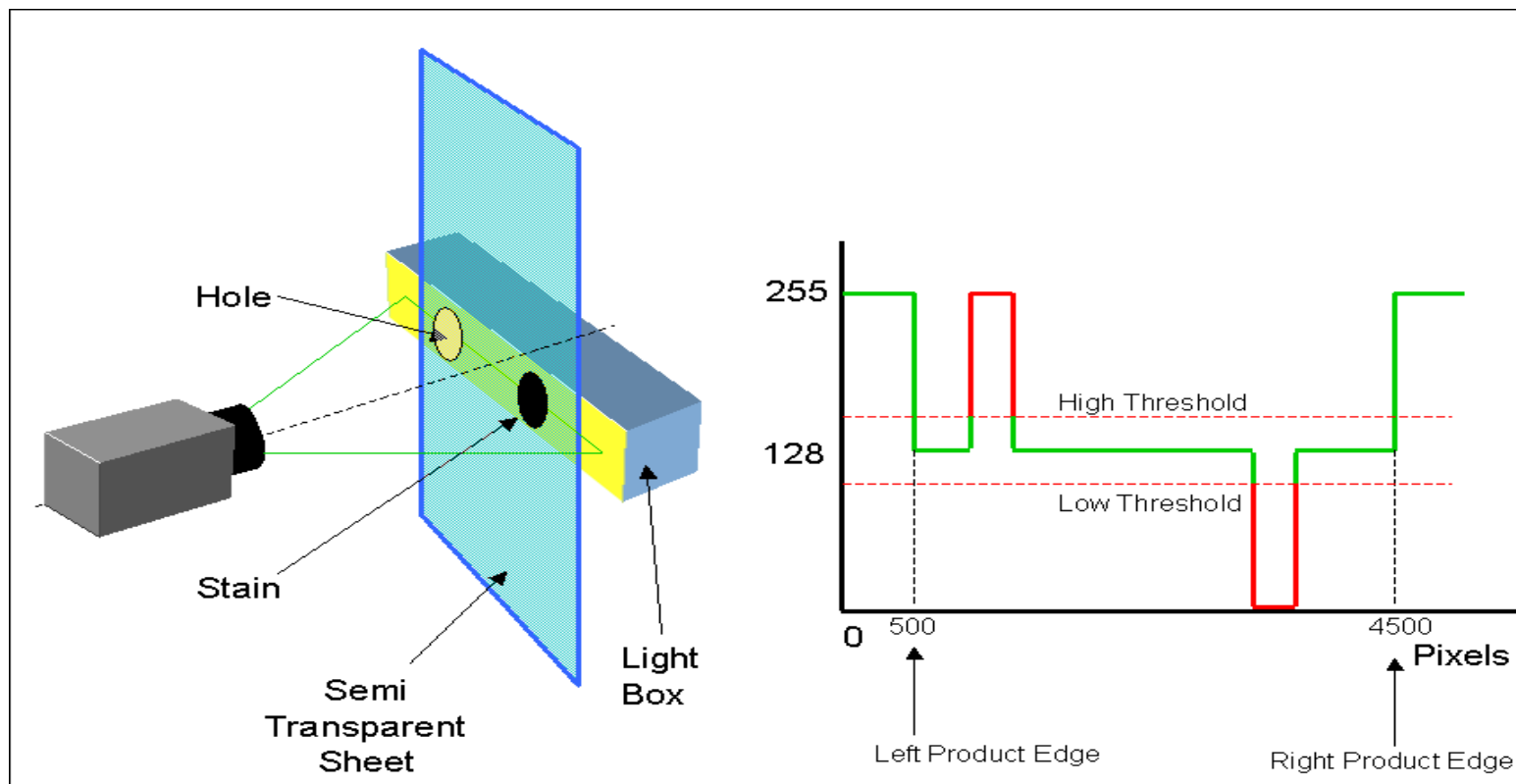


目前有两种CCD摄像头

- 矩阵式
- 线性式

对于薄膜检测，仅线性扫描摄像头是适合的！

- CCD传感器的工作原理



最先进的摄像机

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➔ 最多的摄像机选择:

512 / 1024 / 2048 / 4096 / 6124 / 8192
/ 12288 像素

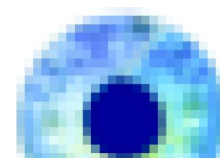
➔ 最快的摄像机:

60 MHz / 160MHz / 320MHz 处理速度

60 MHz 处理速度



+ 更高的分辨率
+ 更清晰的图象
+ 最准确的缺陷分类



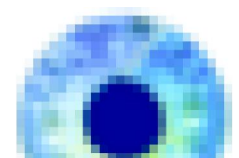
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SWP: Line scan cameras @ 60,120,160, MPixel/s

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Feature	Standard			High Speed				High Speed	
Number of pixels:	1024 Pixel	2048 Pixel	4096 Pixel	2048 Pixel	6144 Pixel	8192 Pixel	12288 Pixel	2048 Pixel	4096 Pixel
pixel size	14 x 14 μm	14 x 14 μm	10 x 10 μm	14 x 14 μm	7 x 7 μm	7 x 7 μm	5 x 5 μm	10 x 10 μm	10 x 10 μm
Data CLK:	30 MHz	30 MHz	30 MHz	30 MHz	40 MHz	40 MHz	40 MHz	40 MHz	40 MHz
Pixel rate:	60 MHz	60 MHz	60 MHz	120 MHz	160 MHz	160 MHz	320 MHz	160 MHz	160 MHz
max. line rate	53 kHz	28 kHz	14 kHz	52 kHz	25 kHz	19 kHz	23,5 kHz	68 kHz	36,2 kHz
Sensitivity	High	High	High	High	High	High	High	High	High
Antiblooming	x150	x150	x150	x100	x100	x100	x100	x100	x100
Dynamic range / dB	67	67	67	56	56	56	56	52	52
Spectral range	250 - 1100 nm			250 - 1100 nm				400 - 1000 nm	
Operate via Serial Control Lines	yes	yes	yes	yes	yes	yes	yes	yes	yes
Integration time control	yes	yes	yes	yes	yes	yes	yes	yes	yes
Gain / dB	40	40	40	24	24	24	24	-10/+10	-10/+10
Output format 8 / 10 / 12 Bit	8/10/12	8/10/12	8/10/12	8 / 10	8 / 10	8 / 10	8 / 10	8 / 10	8 / 10
Trigger Mode (external / internal)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Flat Field Correction	no	no	no	no	no	no	no	yes	yes
Dimensions	56 x 60 x 39,4 mm ³			56 x 60 x 54 mm ³ / 82 x 60 x 54 mm ³				85 x 85 x 53,8 mm ³	
Weight	220 g			500 g				450 g	
Single Power Supply	DC single 12 to 25 V			DC single 12 to 25 V				DC single 12 to 15 V	
Power dissipation	< 7 Watt			< 6,3 Watt				< 10 W	
Operating temperature	0 to 65 °C			0 to 55 °C				10° to 50°C	
CE and FCC Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lens mount	C,F,T2, M42 x 1			no optical mount or F,T2 or M72 x 0,75				F, M72 x 0,75	
Interface	LVDS / CL	LVDS / CL	LVDS / CL	CL	CL	CL	CL	CL	CL



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High Speed Cameras(esp for Recofil SMS)

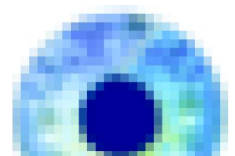
Specifications

Basler sprint	spL4096 -39km	spL4096 -39kc	spL4096 -70km	spL4096 -70kc	spL4096 -140km
Camera					
Sensor Size (pixels per line)	4096	4096	4096	4096	4096
Sensor Type	Dual Line CMOS				
Mono / Color	Mono	Color	Mono	Color	Mono
Pixel Size	10.0 μm x 10.0 μm				
Camera Link Pixel Clock*	10/80 MHz	40/80 MHz	40/80 MHz	10/80 MHz	40/80 MHz
Max. Data Speed	160 MHz	320 MHz	320 MHz	640 MHz	640 MHz
Max. Line Rate	38.6 kHz	38.6 kHz	70 kHz	70 kHz	140 kHz
Pixel Depths	Selectable 8 bit, 10 bit, or 12 bit				
Video Output Format (taps)*	2/4	2/3/4/6/8	2/4/8	2/3/4/6/8	2/4/8
Synchronization	Via external signal or free run				
Exposure Control	Edge-controlled, level-controlled, or programmable				
Mechanical / Electrical					
Power Requirements	12 VDC (±10%), max 10.0 W @ 12 VDC				
Lens Mounts	F-mount, M42				
Housing Size (L x W x H)	53.4 mm x 87.0 mm x 62.0 mm				
Weight	360 g (without F-Mount adapter)				
Conformity	CE, FCC				
Housing Temperature	Up to 50°C				

Specifications are subject to change without prior notice.

* can be changed via CCT+

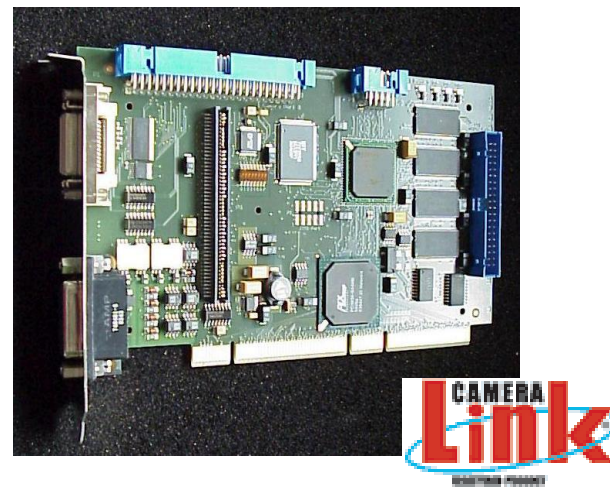
For detailed technical information, please see the camera manual that can be found on our website: www.baslerweb.com/manuals



图像处理板卡

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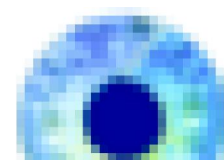
- 伊斯拉专利产品
- **SMASH**系统技术核心
- 灵活的设计保证了较长的使用寿命
- **640 MB/s** 的数据输入速度
- 确保伊斯拉系统可以使用最快的相机



伊斯拉自主
研发的当前最
复杂而高效的
帧处理器

Ringier Conferences

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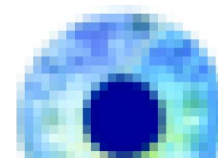
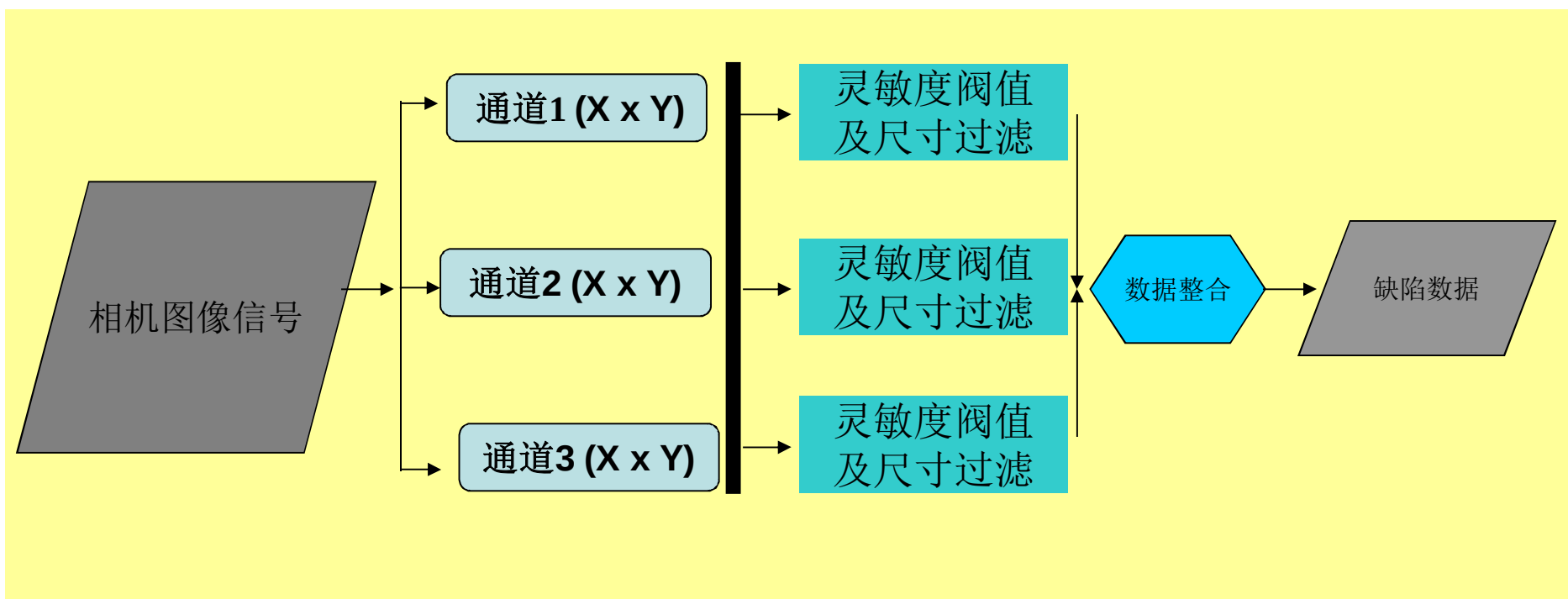


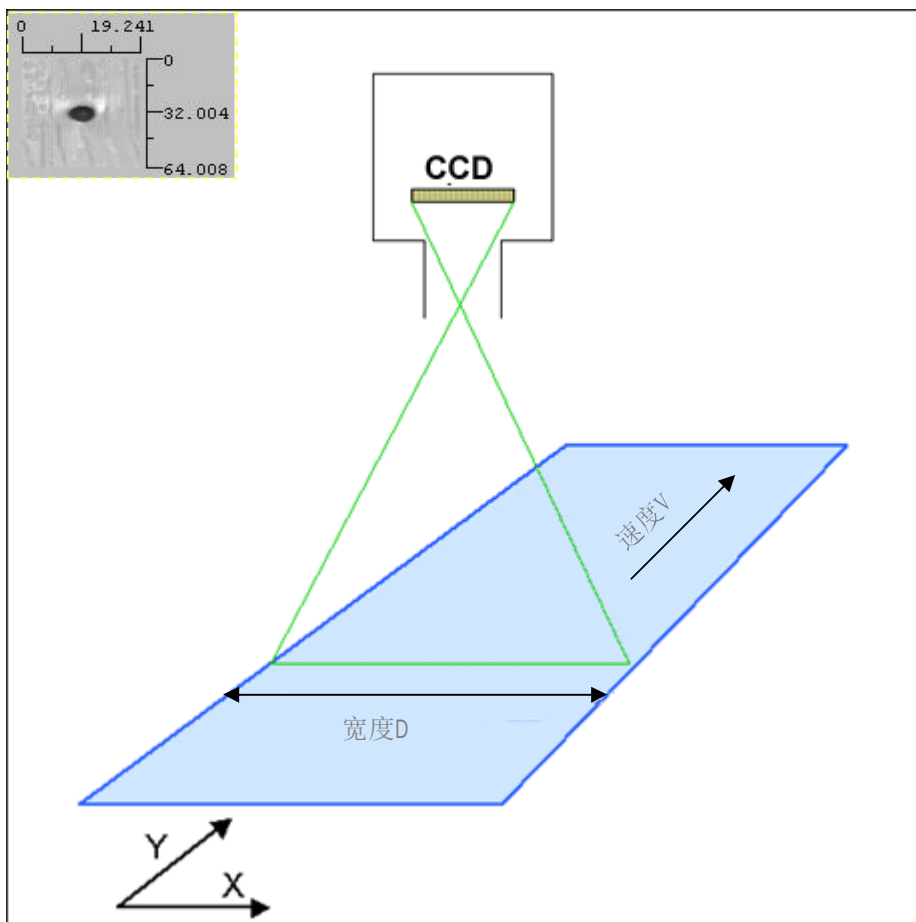
The More You See..

第一重 检测

彻底解决在线检测系统误报和漏报问题的秘诀！

三重缺陷过滤器系统





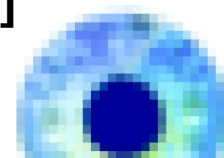
横向分辨率 (CD)

$$R_{CD} = \frac{\text{检测宽度(mm)}}{\text{摄像机数目} \times \text{像素大小}}$$

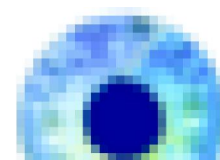
纵向分辨率 (MD)

取决于:

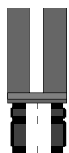
- 摄像机像素时钟频率 [MHz]
- 摄像机最大扫描频率[1/sec]
- 摄像机像素值
- 布面前进速度 [m/min]



光源配置 光源类型



摄像机



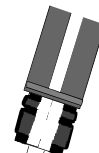
膜

光源



透射式

摄像机

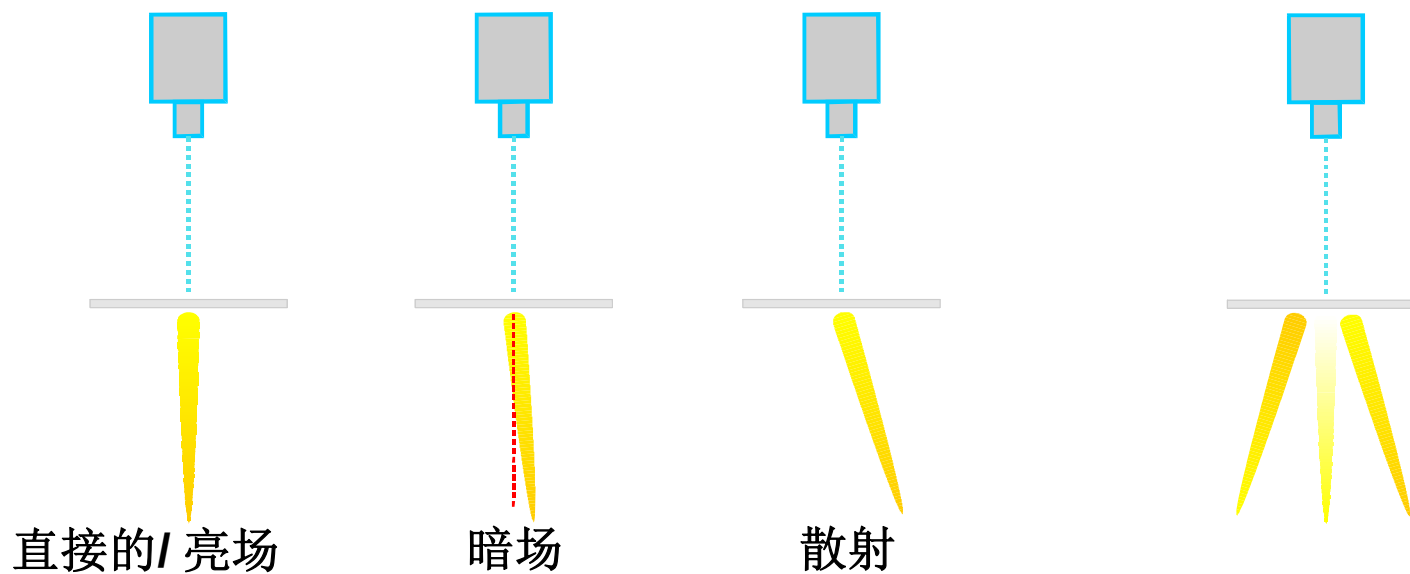


光源

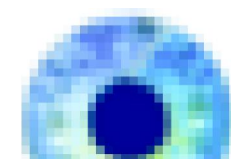
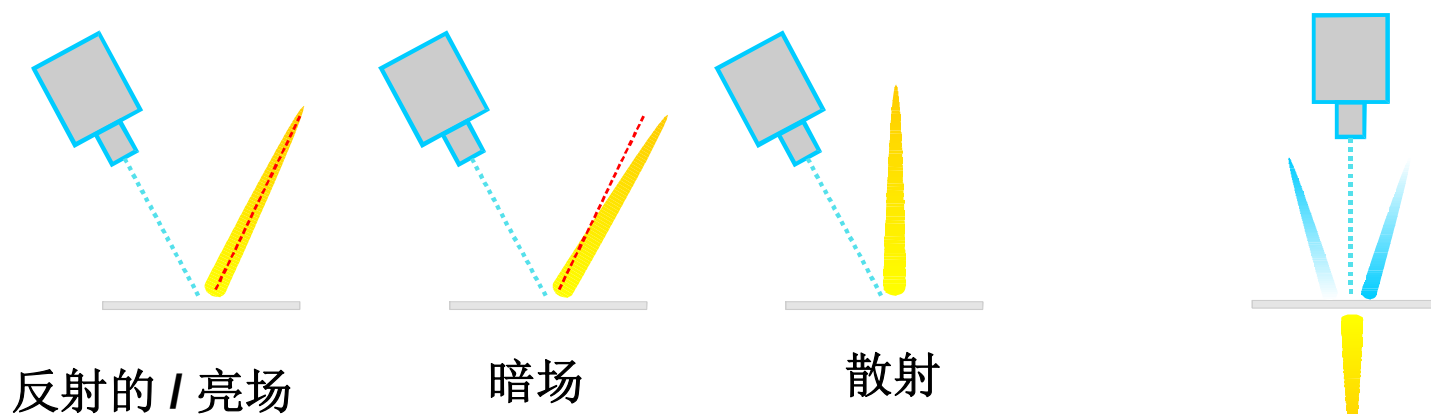
膜

反射式

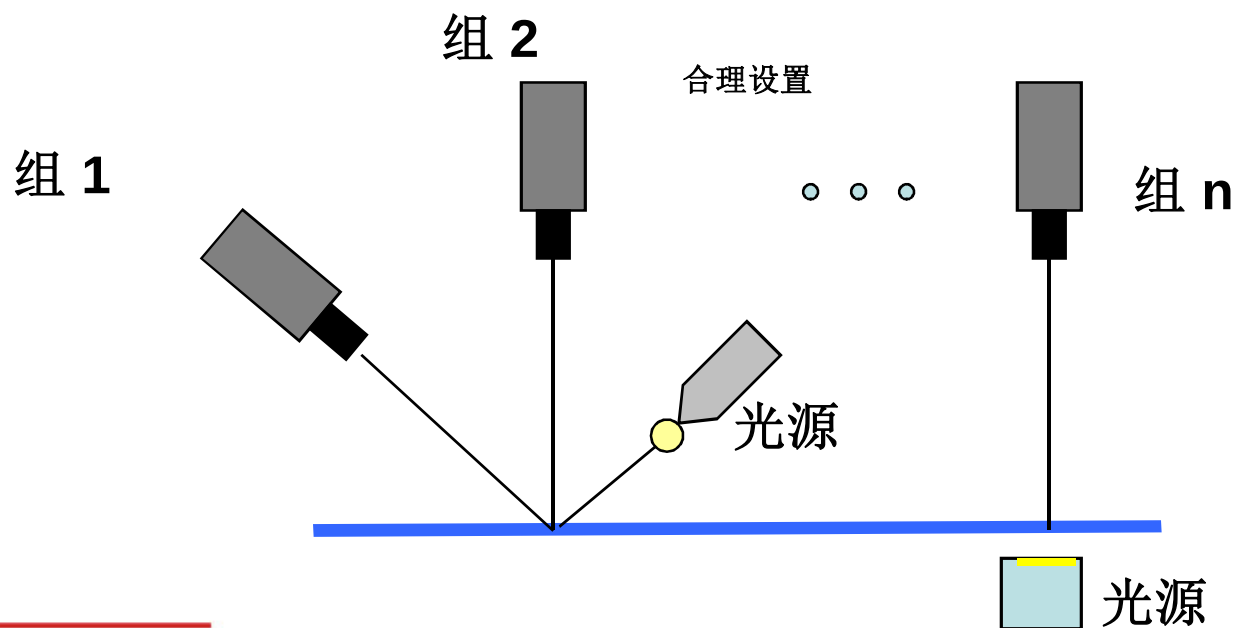
透射式



反射式



- + 多个 摄像机组
- + 每组含多个摄像机
- + 对每组的结果进行组合



硬件的提升-适应产线的提升以及新的产品

ISRA
VISION

- 装备全世界最好的行扫描相机(60MHz/160MHz/320MHz)
- 伊斯拉自主核心专利技术：第二代Smash图像处理卡---世界最快640Mbt/s
- 德国威图工业级机柜，空调；源自德国的质量保证
- 德国西门子定制工控机
- 德国施耐德：镜头，电气
- 尼康提供50mm/60mm标准镜头

DALSA

AMEL

FUJITSU
COMPUTERS
SIEMENS

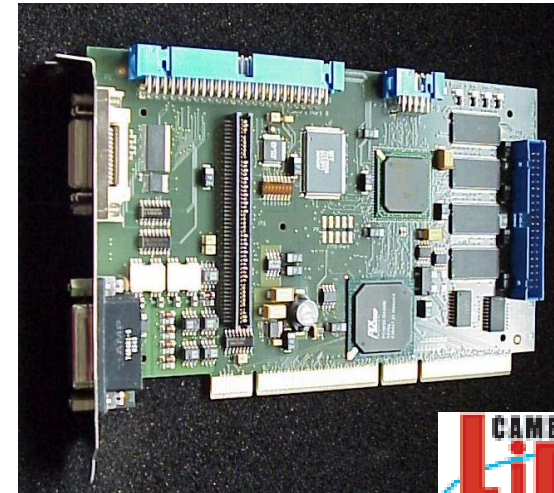
Schneider
KREUZNACH

RITTAL

Nikon

LAPP GROUP

所有主要零部件均在德国生产！



CAMERA
Link

The More You See..

ISRA

V I S I O N

强大的软件功能

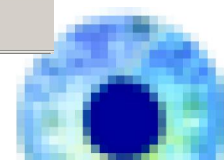
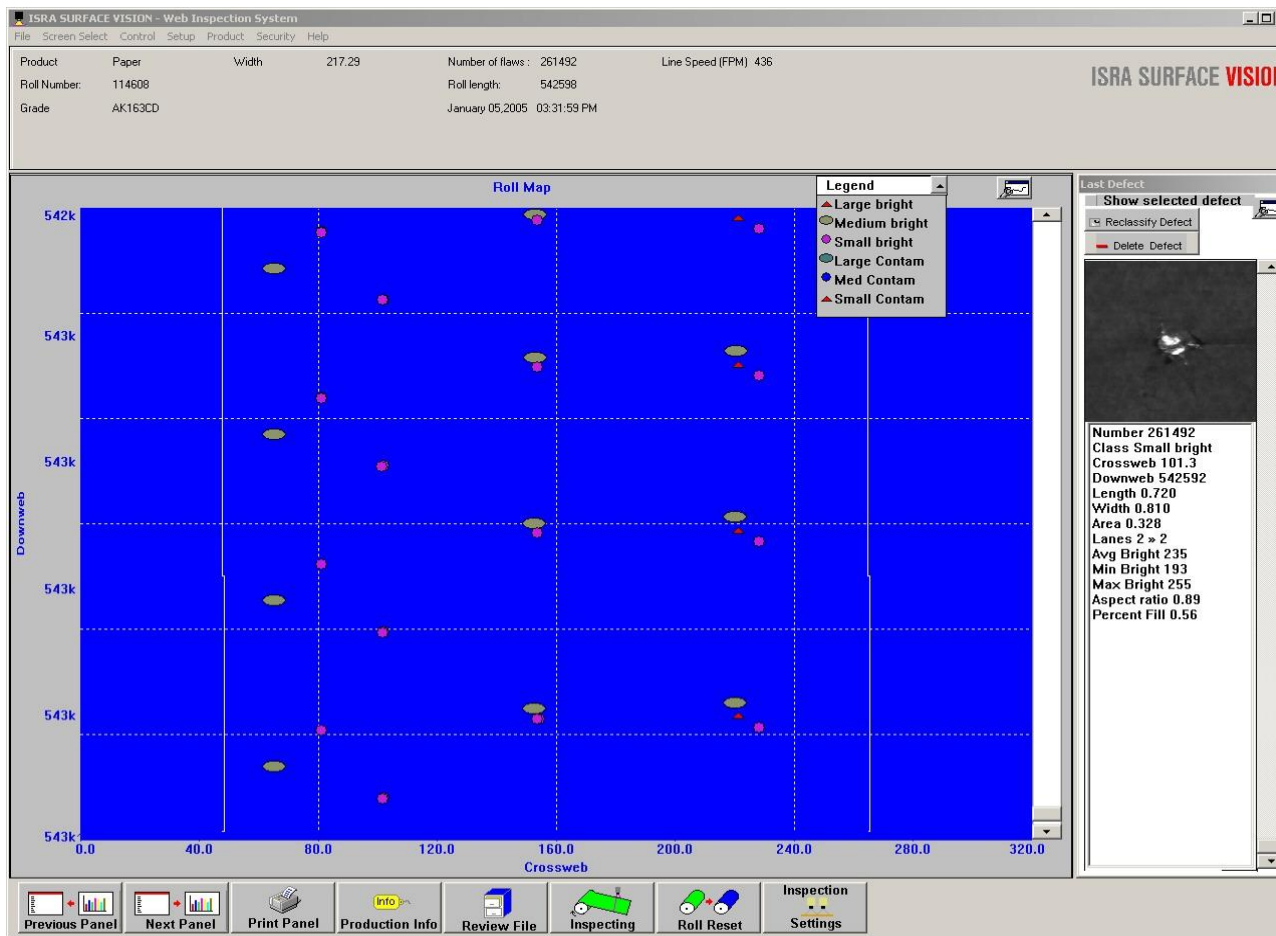
SMASHTM



主界面卷图Roll Map

ISRA
VISION

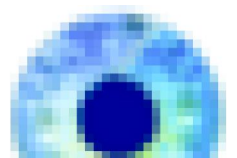
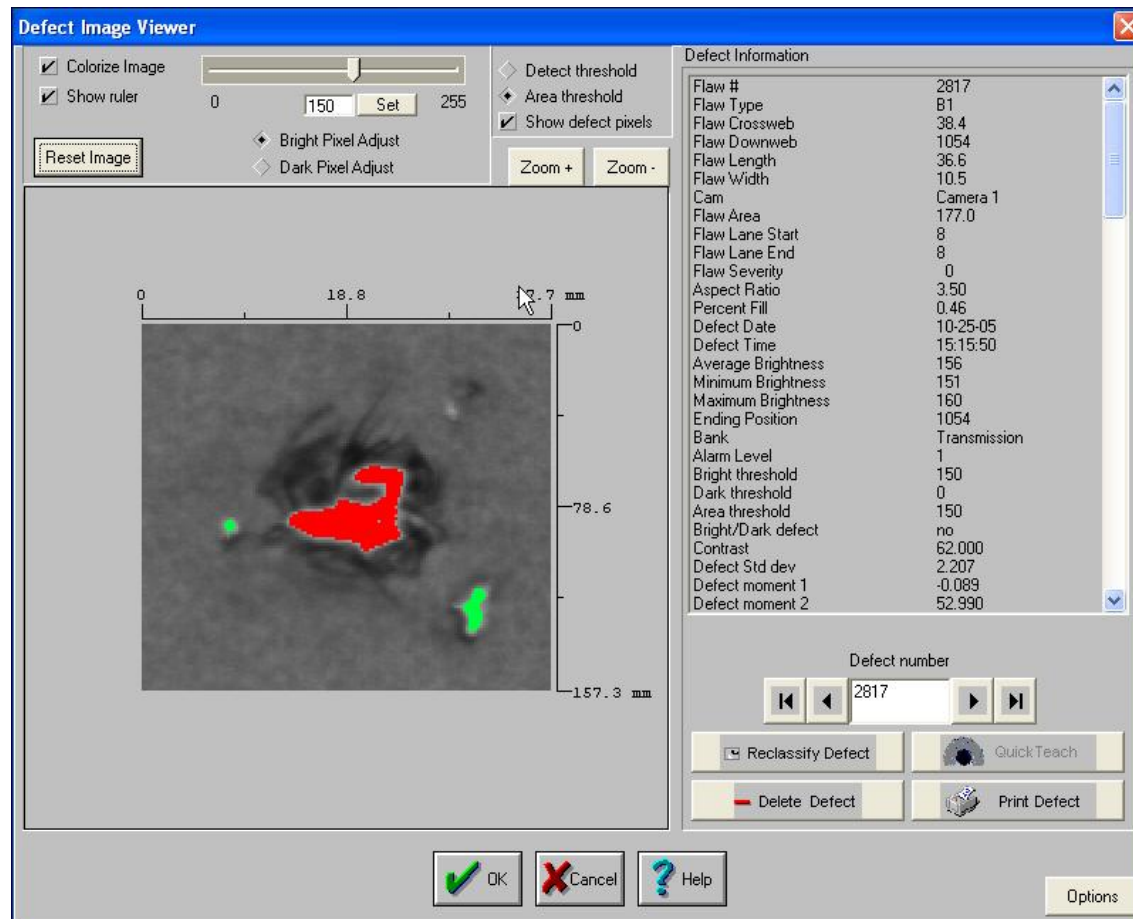
仅需对操作
员进行
简单的培
训即可



The More You See..

缺陷图像浏览器 Defect Image Viewer

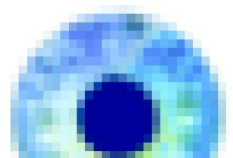
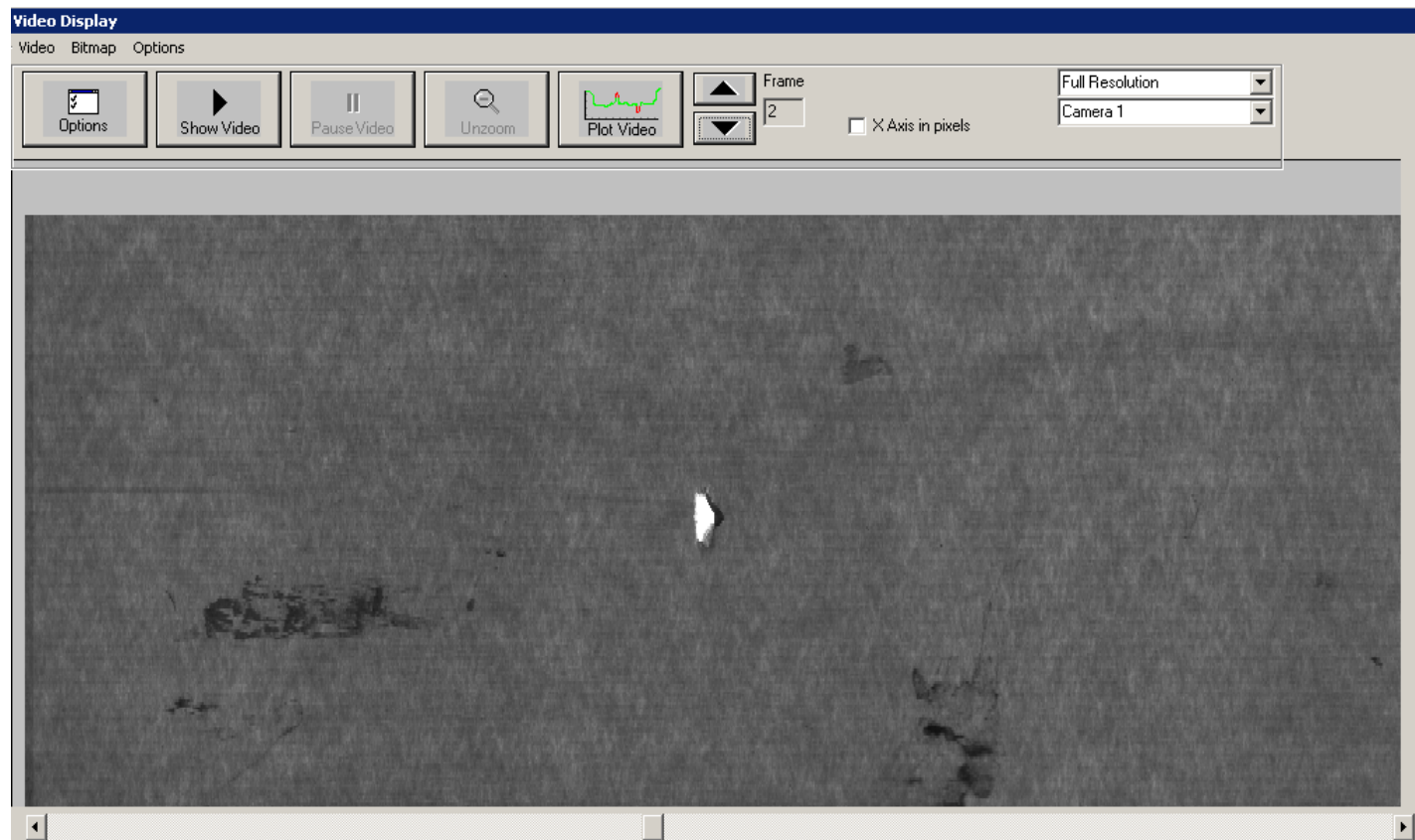
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生产线浏览器 Web Viewer

ISRA
VISION



The More You See..

缺陷数据列表 Defect List

Previous Production Runs

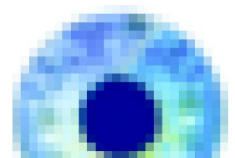
Browse Load All Records

Roll number search 0 Go

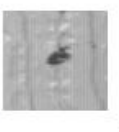
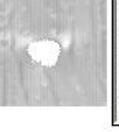
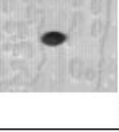
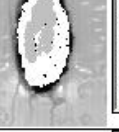
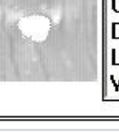
Record	Date	Time	Product	Roll Number	Flaws	Roll Length	File Name
1	January 19,2005	01:34:36 PM	Paper	123475	0	0	C:\data\Jan\19\123475\123475Jan19.dft
2	January 19,2005	07:40:32 AM	Paper	123474	6	750	C:\data\Jan\19\123474\123474Jan19.dft
3	January 19,2005	07:23:02 AM	Paper	123473	10	1113	C:\data\Jan\19\123473\123473Jan19.dft
4	January 11,2005	07:33:59 PM	Paper	123472	7	972	C:\data\Jan\11\123472\123472Jan11.dft
5	January 11,2005	07:33:19 PM	Paper	123471	9	1097	C:\data\Jan\11\123471\123471Jan11.dft
6	January 11,2005	07:32:40 PM	Paper	123470	9	1097	C:\data\Jan\11\123470\123470Jan11.dft
7	January 11,2005	07:32:00 PM	Paper	123469	9	1097	C:\data\Jan\11\123469\123469Jan11.dft
8	January 11,2005	07:31:21 PM	Paper	123468	9	1097	C:\data\Jan\11\123468\123468Jan11.dft
9	January 11,2005	07:30:42 PM	Paper	123467	9	1097	C:\data\Jan\11\123467\123467Jan11.dft
10	January 11,2005	07:30:02 PM	Paper	123466	9	1097	C:\data\Jan\11\123466\123466Jan11.dft
11	January 11,2005	07:29:23 PM	Paper	123465	9	1097	C:\data\Jan\11\123465\123465Jan11.dft
12	January 11,2005	07:28:43 PM	Paper	123464	9	1097	C:\data\Jan\11\123464\123464Jan11.dft
13	January 11,2005	07:28:04 PM	Paper	123463	9	1097	C:\data\Jan\11\123463\123463Jan11.dft
14	January 11,2005	07:27:25 PM	Paper	123462	9	1097	C:\data\Jan\11\123462\123462Jan11.dft
15	January 11,2005	07:26:45 PM	Paper	123461	9	1097	C:\data\Jan\11\123461\123461Jan11.dft
16	January 11,2005	07:18:33 PM	Paper	123460	10	1018	C:\data\Jan\11\123460\123460Jan11.dft
17	January 11,2005	07:17:41 PM	Paper	123459	12	1460	C:\data\Jan\11\123459\123459Jan11.dft
18	January 11,2005	07:17:06 PM	Paper	123458	8	969	C:\data\Jan\11\123458\123458Jan11.dft
19	January 11,2005	07:16:45 PM	Paper	123457	4	552	C:\data\Jan\11\123457\123457Jan11.dft
20	January 11,2005	07:16:25 PM	Paper	26	5	546	C:\data\Jan\11\26\26Jan11.dft
21	January 11,2005	07:16:10 PM	Paper	25	3	363	C:\data\Jan\11\25\25Jan11.dft
22	January 11,2005	07:16:00 PM	Paper	25	2	229	C:\data\Jan\11\25\25Jan11A.dft
23	January 11,2005	07:12:27 PM	Paper	25	10	1271	C:\data\Jan\11\25\25Jan11.dft
24	January 06,2005	06:44:51 AM	Paper	25	74	9129	C:\data\Jan\06\25\25Jan06.dft
25	January 06,2005	05:47:06 AM	Paper	25	83	10119	C:\data\Jan\06\25\25Jan06.dft
26	January 06,2005	05:41:32 AM	Paper	25	83	10119	C:\data\Jan\06\25\25Jan06.dft
27	January 06,2005	05:35:58 AM	Paper	25	83	10119	C:\data\Jan\06\25\25Jan06.dft

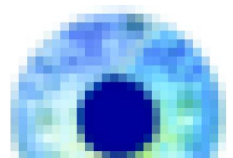
Production History

OK Cancel Help



缺陷图像列表 Image List

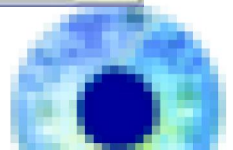
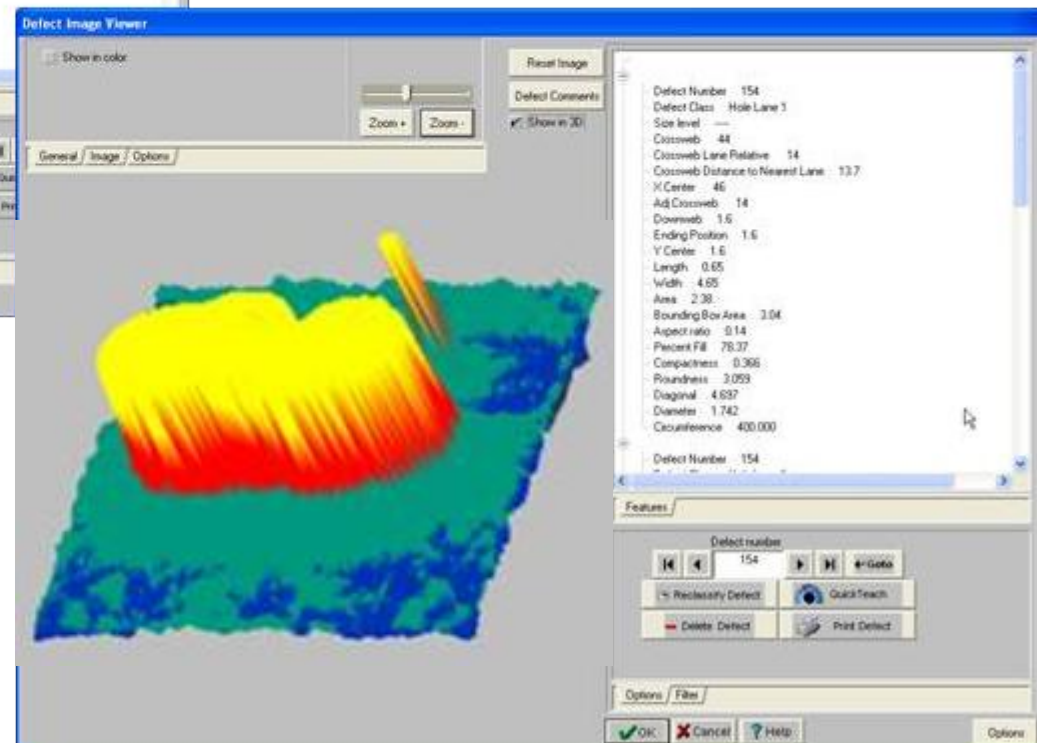
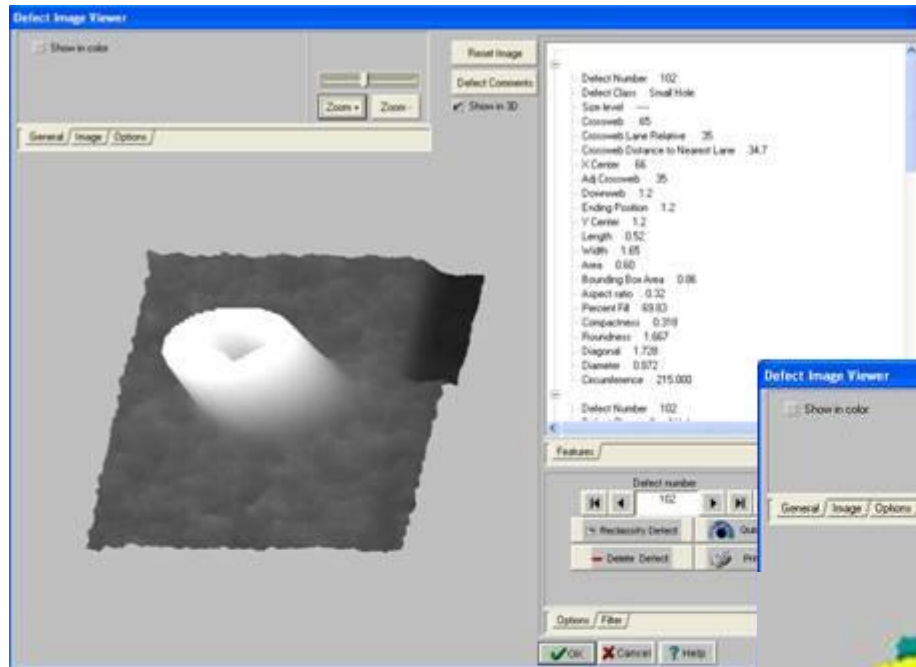
Image List		Image List		Image List		Image List		Image List	
	Num 4 Class Bright CW 87.1 in DW 160 ft Len 0.05 in Wid 0.14 in		Num 5 Class Dark 0. CW 68.7 in DW 200 ft Len 2.00 in Wid 0.34 in		Num 6 Class Dark 0. CW 55.9 in DW 240 ft Len 5.93 in Wid 0.42 in		Num 7 Class Dark 0. CW 12.4 in DW 280 ft Len 5.46 in Wid 0.36 in		Num 8 Class Dark > CW 52.8 in DW 320 ft Len 2.74 in Wid 0.74 in
	Num 9 Class Dark > CW 7.8 in DW 360 ft Len 3.46 in Wid 1.46 in		Num 10 Class Dark 0- CW 35.4 in DW 400 ft Len 2.26 in Wid 0.02 in		Num 11 Class Bright : CW 77.6 in DW 440 ft Len 2.58 in Wid 1.64 in		Num 12 Class Dark > CW 2.3 in DW 480 ft Len 4.67 in Wid 0.90 in		Num 13 Class Dark > CW 7.2 in DW 520 ft Len 0.30 in Wid 1.46 in
	Num 14 Class Dark > CW 9.9 in DW 560 ft Len 3.17 in Wid 1.36 in		Num 15 Class Dark 0- CW 36.9 in DW 600 ft Len 3.59 in Wid 0.14 in		Num 16 Class Bright : CW 71.4 in DW 640 ft Len 0.17 in Wid 0.88 in		Num 17 Class Bright : CW 72.8 in DW 680 ft Len 1.12 in Wid 1.58 in		Num 18 Class Bright : CW 12.2 in DW 720 ft Len 2.76 in Wid 0.92 in
	Num 19 Class Bright : CW 8.9 in DW 760 ft Len 5.81 in Wid 1.64 in		Num 20 Class Bright : CW 44.2 in DW 800 ft Len 2.12 in Wid 0.96 in		Num 21 Class Dark > CW 89.1 in DW 840 ft Len 2.76 in Wid 0.54 in		Num 22 Class Bright : CW 35.8 in DW 880 ft Len 4.57 in Wid 0.98 in		Num 23 Class Bright : CW 7.2 in DW 920 ft Len 5.09 in Wid 0.76 in



Get more info from 3D-images

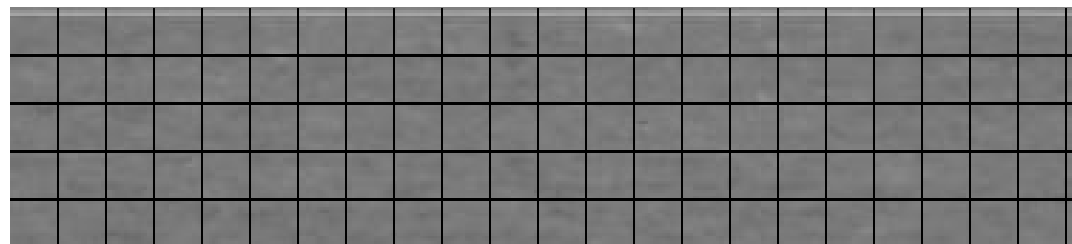
ISRA
VISION

**Get a better understanding
of the defects by using ISRA
analysing tools !**



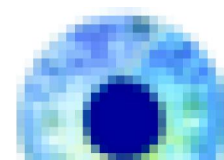
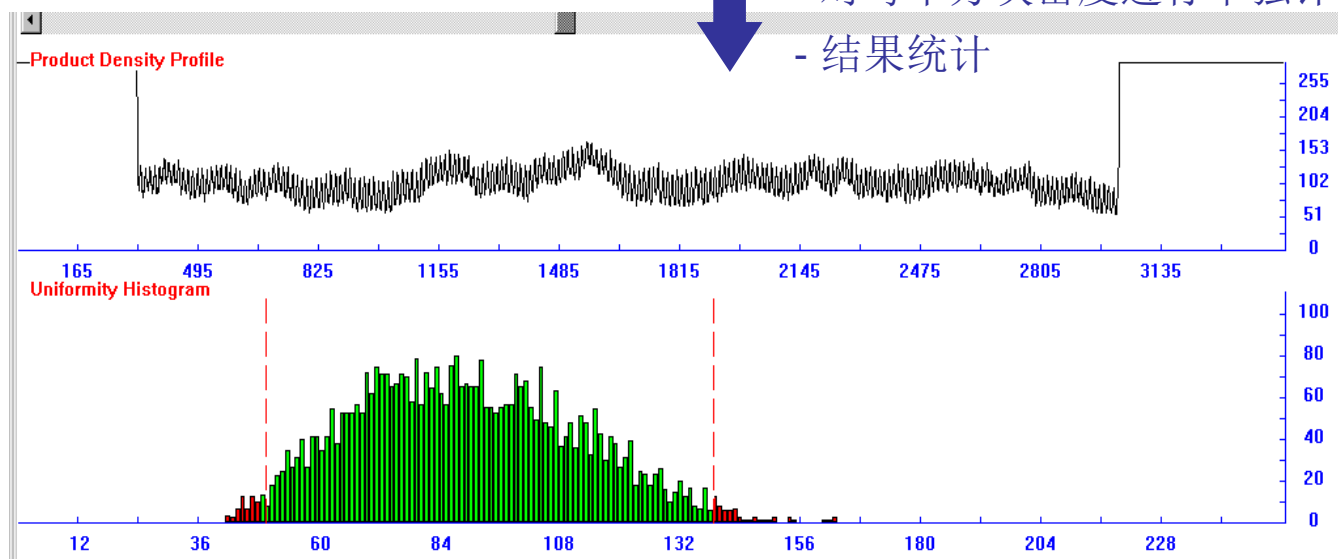
The More You See..

均匀度分析-图像处理

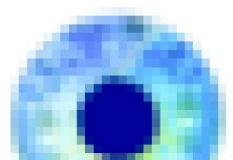
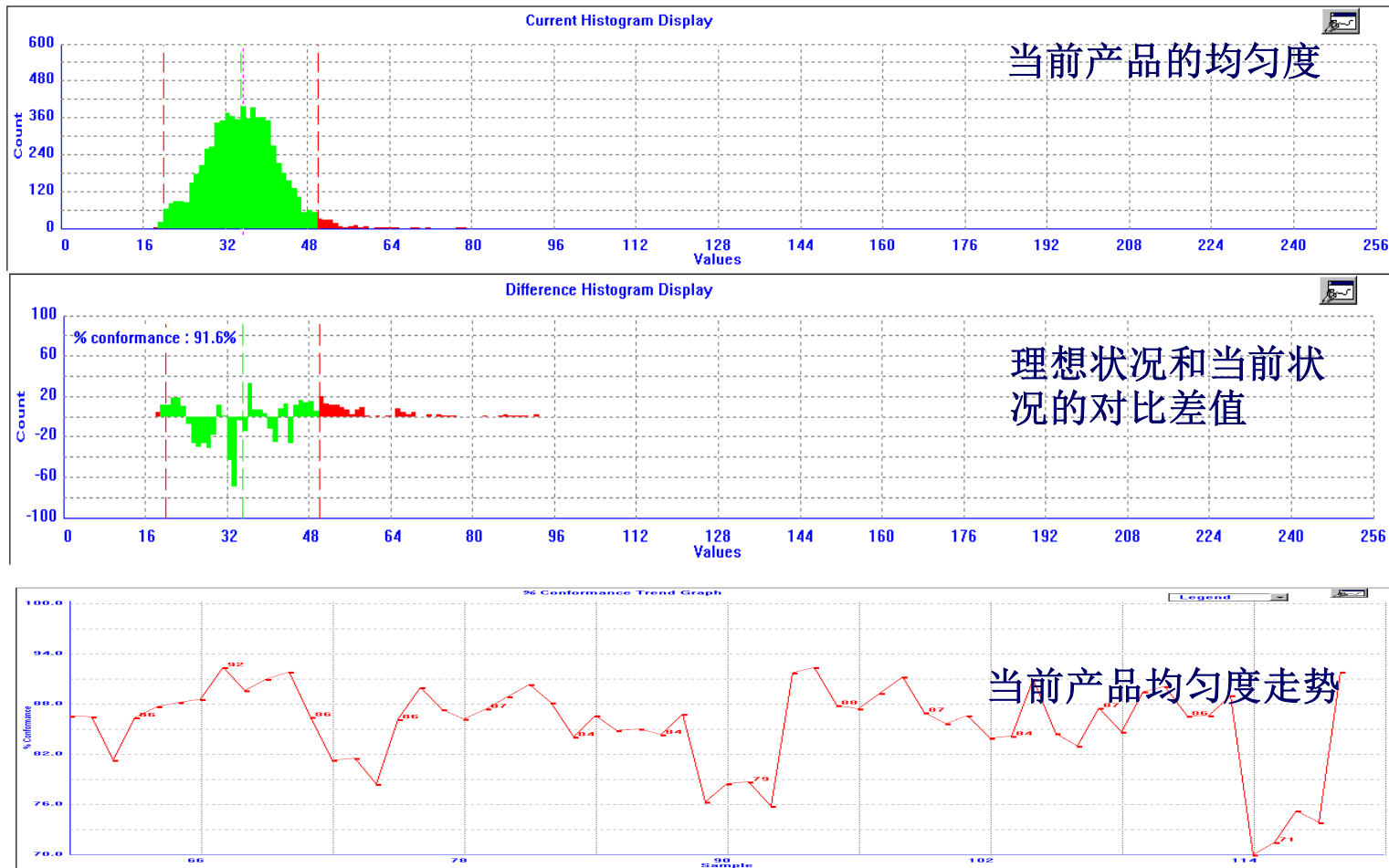


机器方向

- 把图像细分为小方块
- 对每个方块密度进行单独计算
- 结果统计



均匀度分析



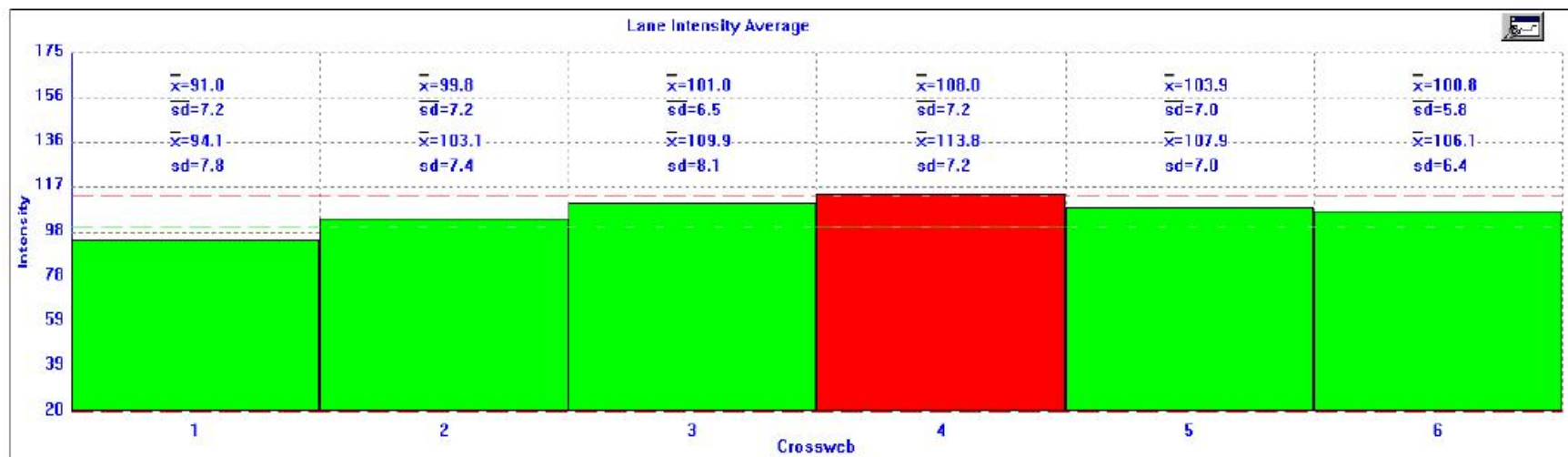
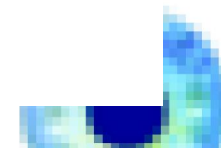


圖 1 – 影像分析顯示

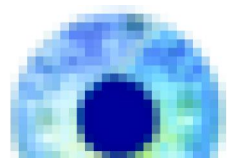
紅色虛線表示期望得到的影像光強上限。任何超過了限制的光強都將以紅色來表示。
綠色虛線表示平均光強的目標值。

每個子卷上方顯示的統計數位如下：

- $\bar{\bar{x}}$ - 這是該子卷所有平均光強的總平均值。
- $\bar{SD}$ - 這是該子卷所有標準偏差的平均值。
- $\bar{x}$ - 這是當前分析出該子卷的平均光強。
- SD - 這是當前分析出該子卷的標準偏差。

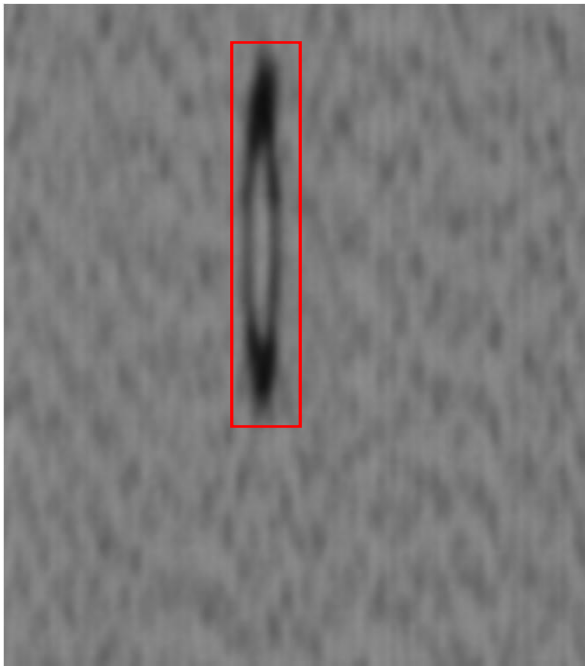


-高级缺陷分类模块**Quick Teach**

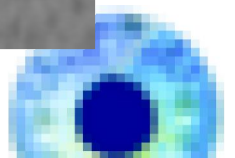
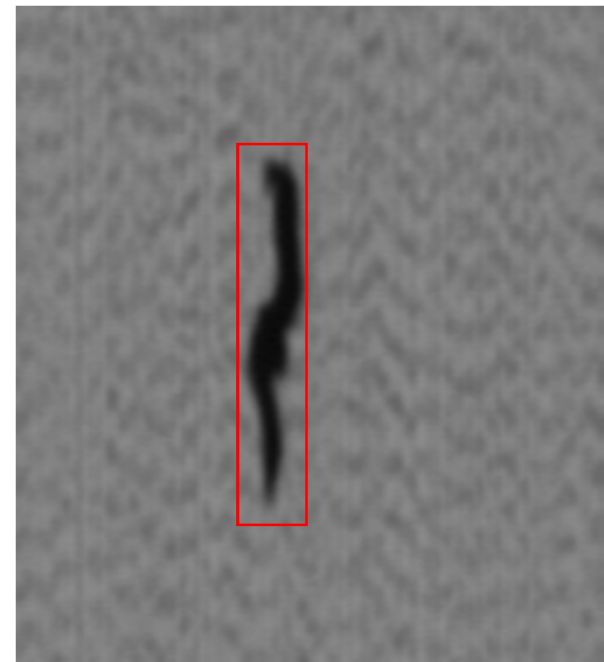


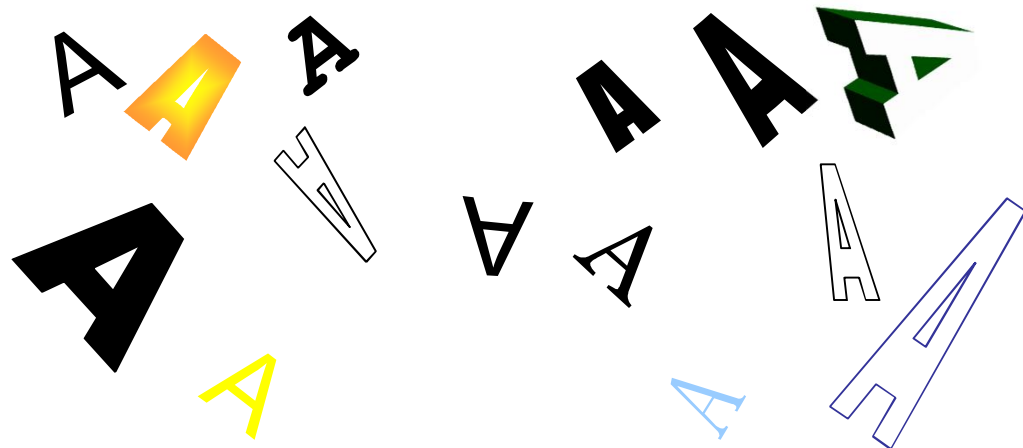
简单缺陷分类的标准:

- 暗 / 亮
- 长 / 宽
- 面积
- 比例



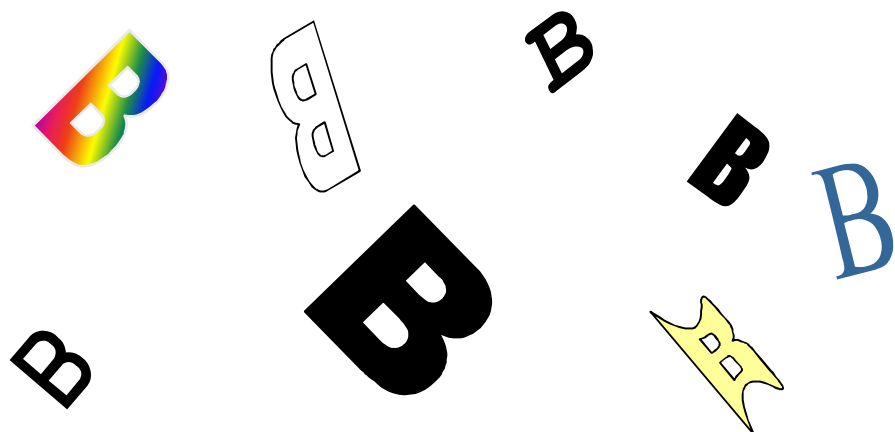
=





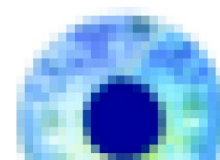
大写字母

= A



大写字母

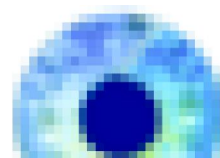
= B



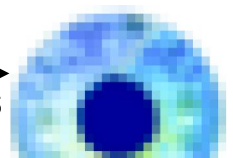
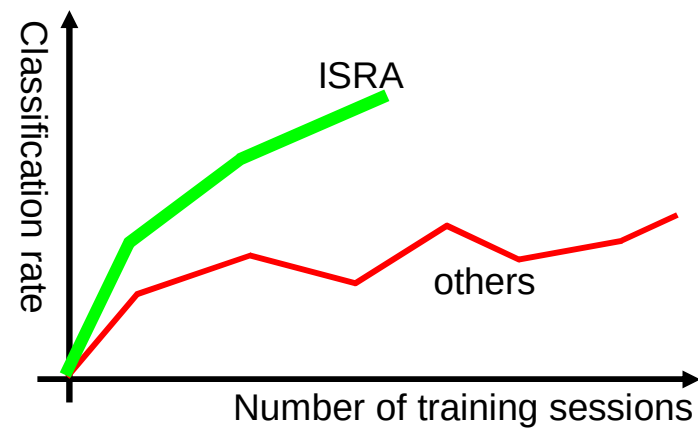
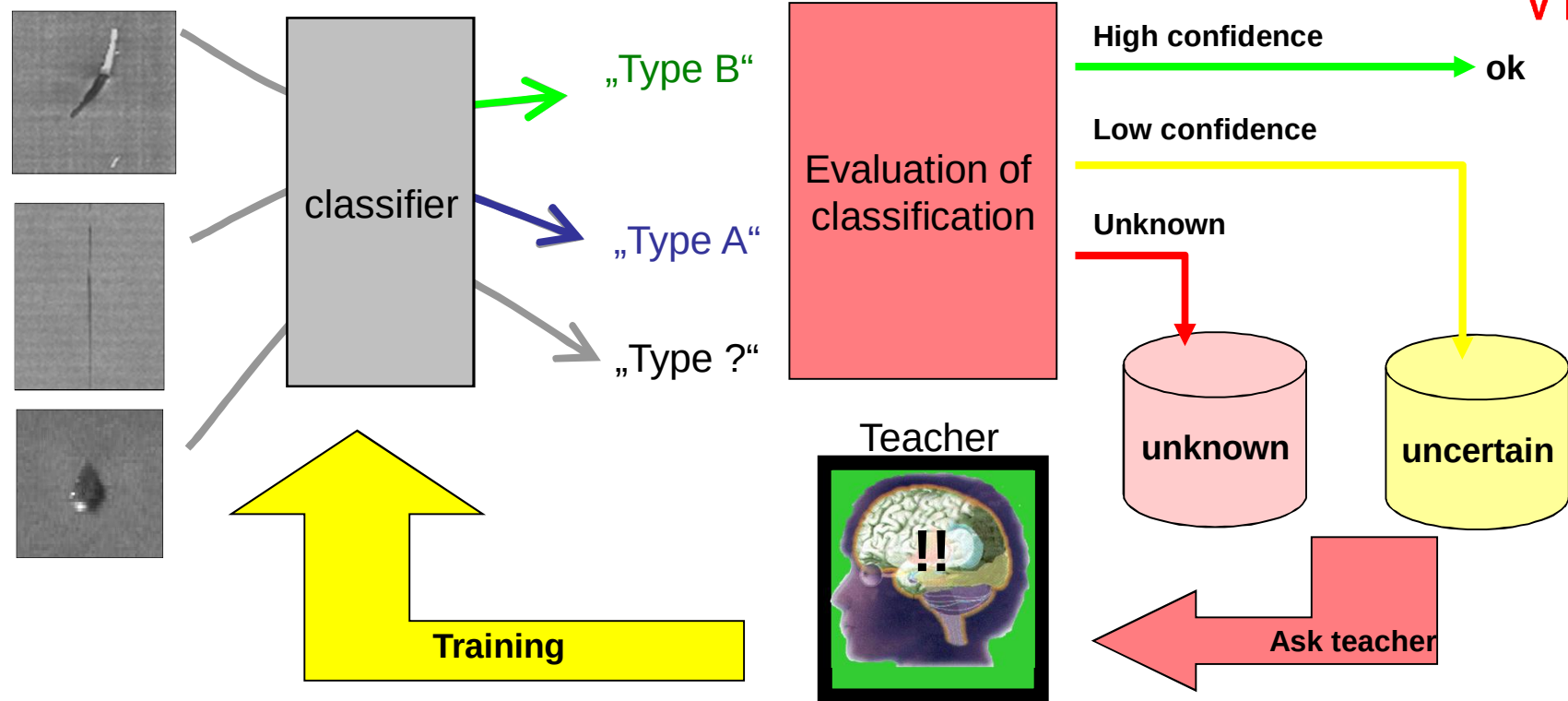
高级缺陷分类—Quick Teach



这是大写字母 A

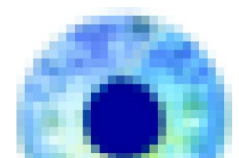
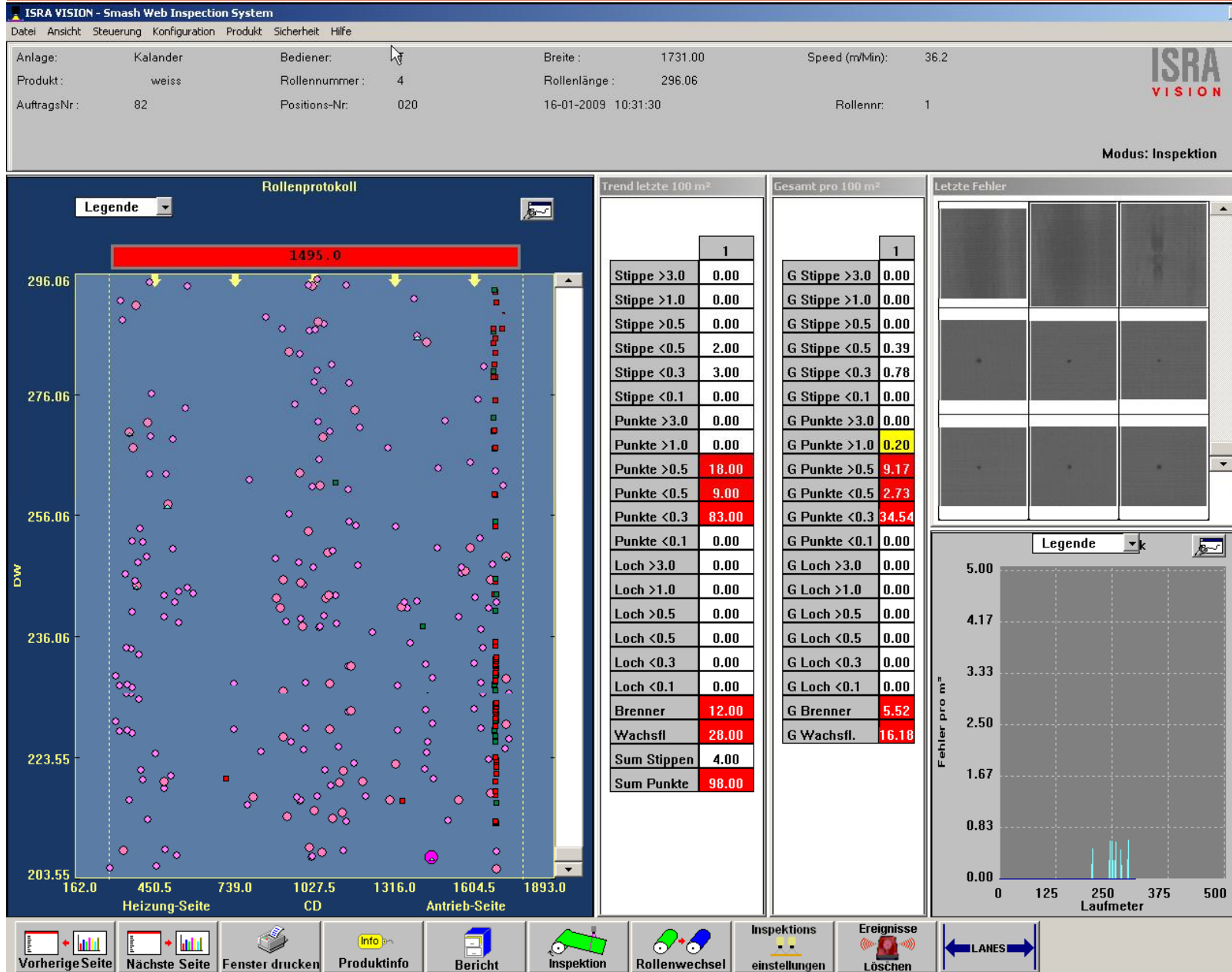


Automatic Generation of Training Data



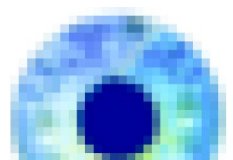
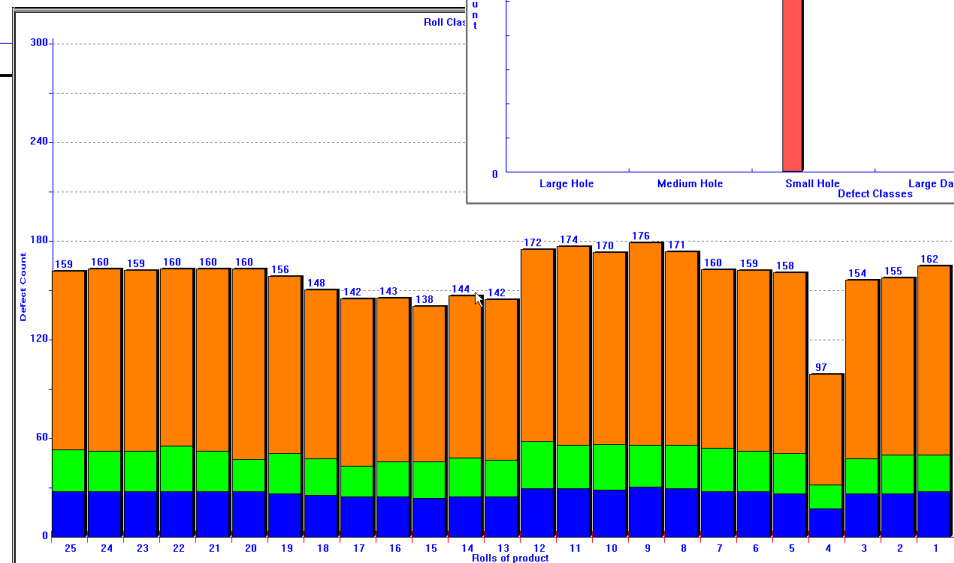
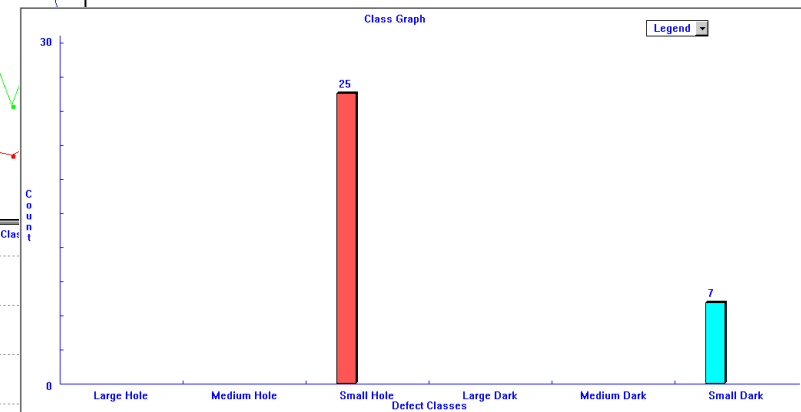
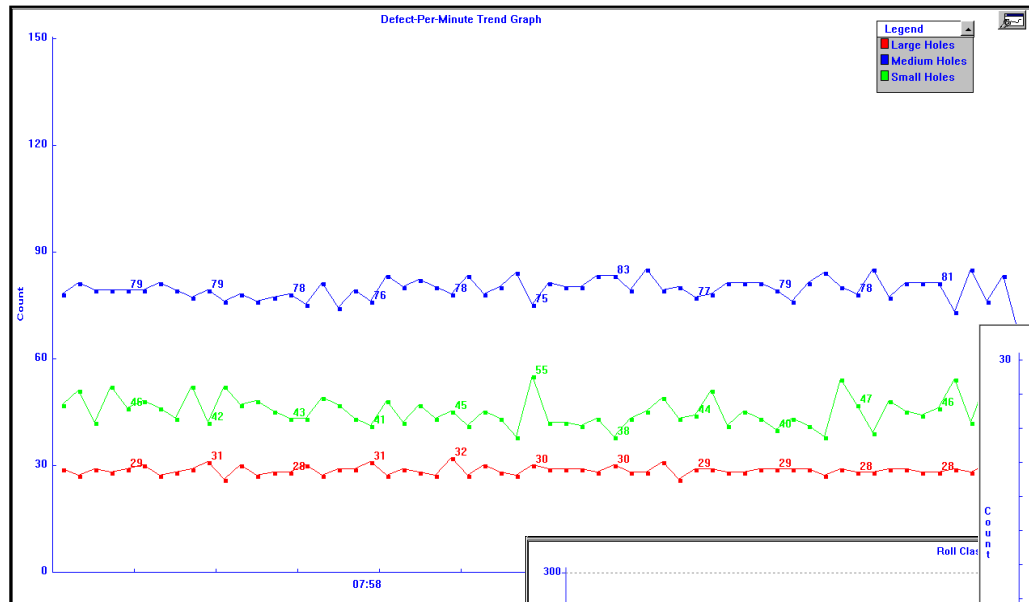
质量评估—容忍度设定

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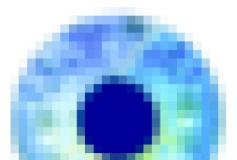
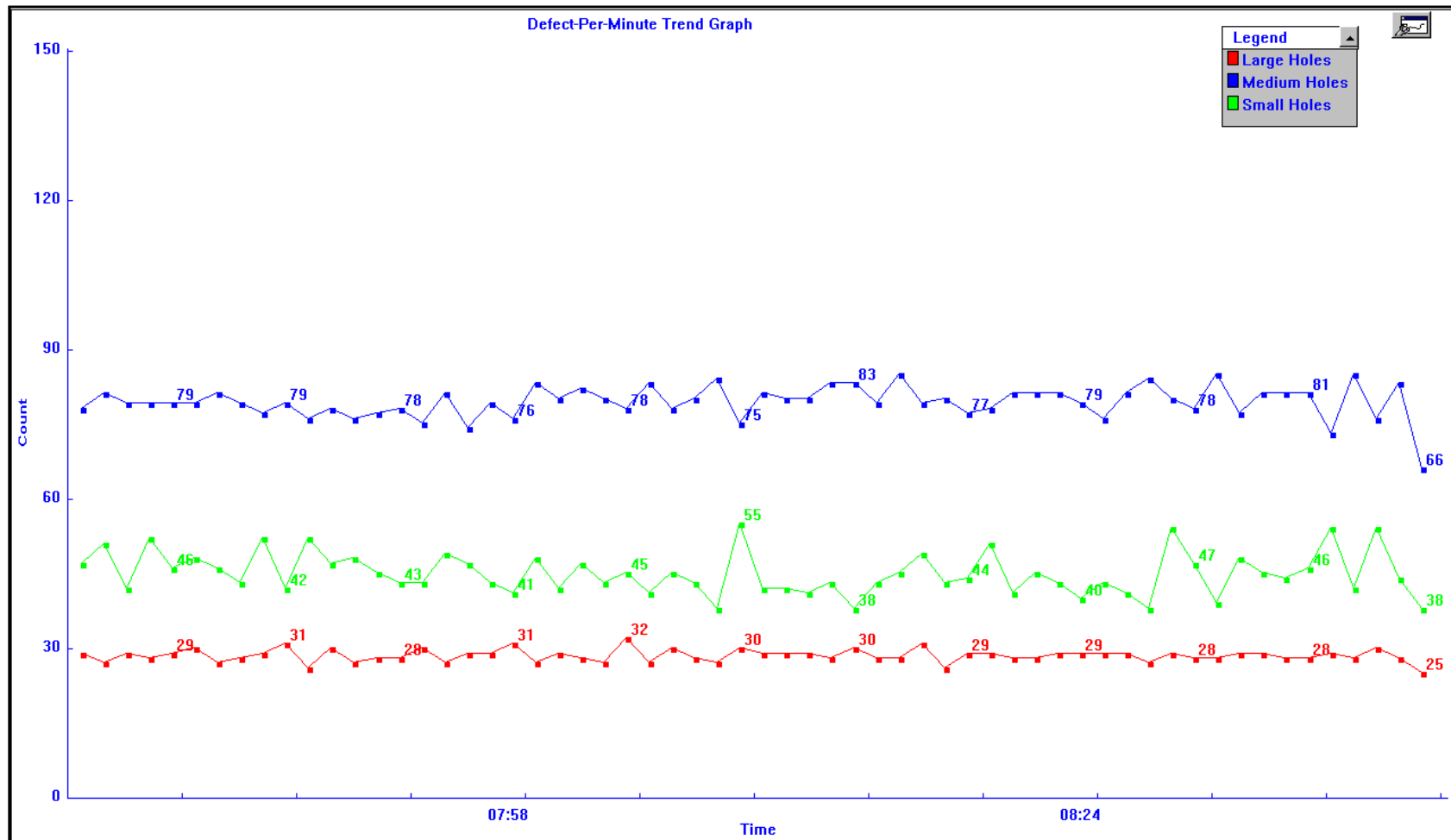


The More You See..

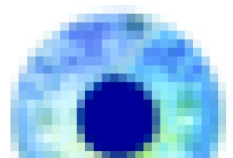
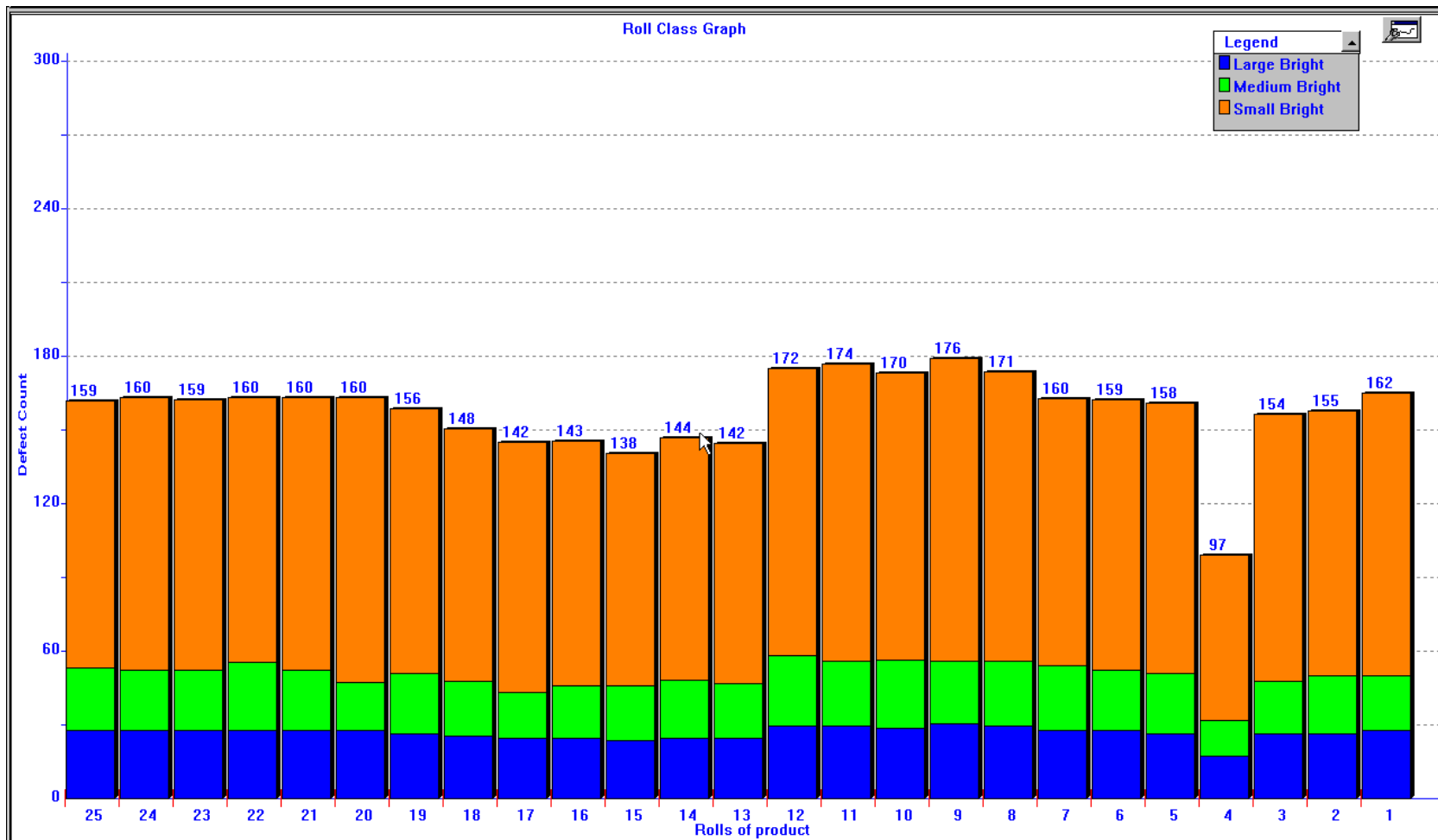
趋势图 Trend Graph 分类图 Class Graph



趋势图 -----追踪缺陷，将问题解决在萌芽阶段

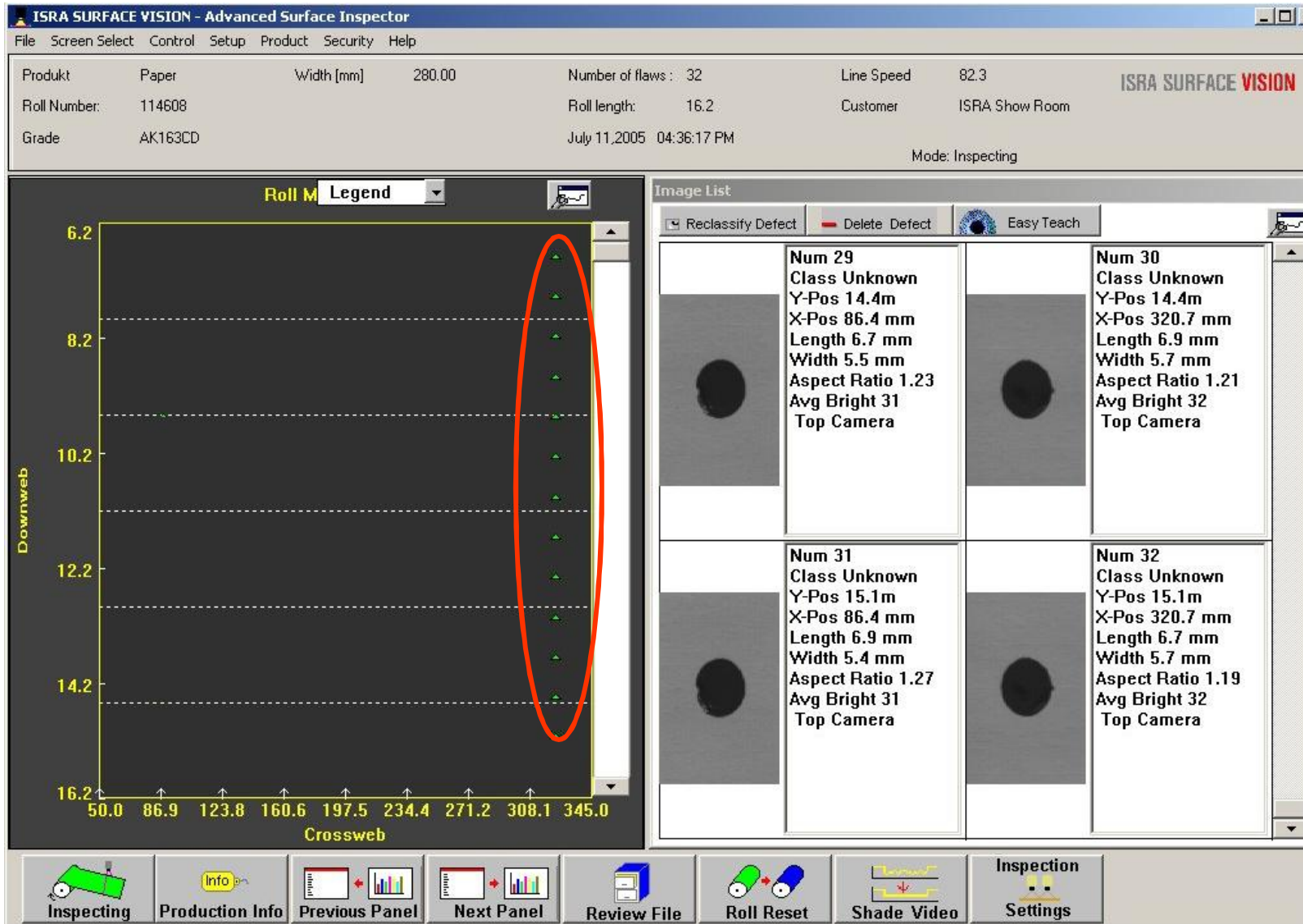


最近50卷质量柱状图---一张价值连城的图



重复缺陷自动报警系统

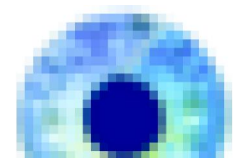
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VISION



Ringier Conferences

荣格研讨会，聚合行业专家的巅峰论坛！
Connecting industry through information exchange!

Repeating defects generate a special alarm !



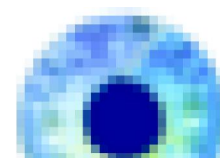
The More You See..

前段高效的缺陷检出



缺陷的准确剔除

后端可靠的零缺陷出厂

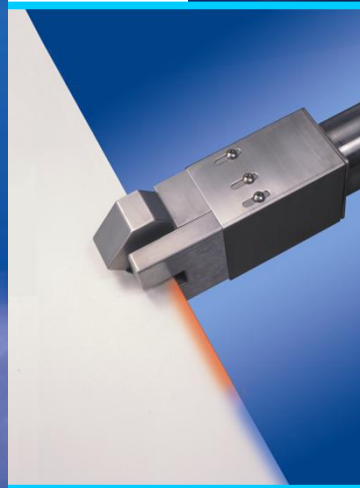


缺陷标记系统

ISRA
VISION

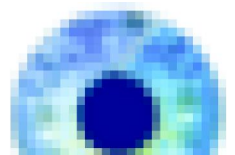
缺陷标记器

缺陷打标机



Ringier Conferences

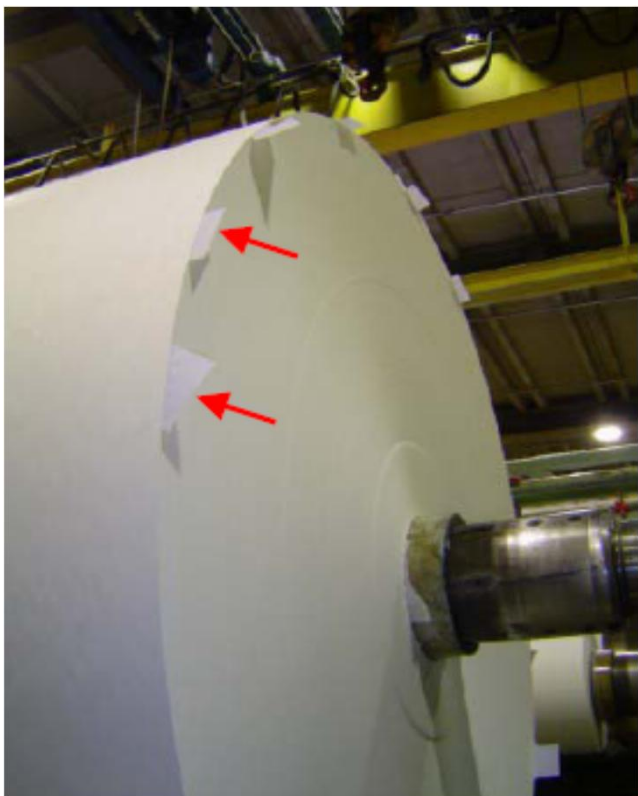
荣格研讨会，聚合行业专家的巅峰论坛！
Connecting industry through information exchange!



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人工塞纸条？可靠度不够

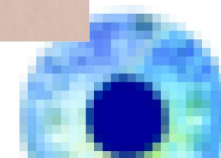
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- 自动打标也不够可靠
- 标签成本高昂
- 标签有可能掉落
- 需要人工操作降速停机

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ISRA Rewind Manager - 100% 可靠度

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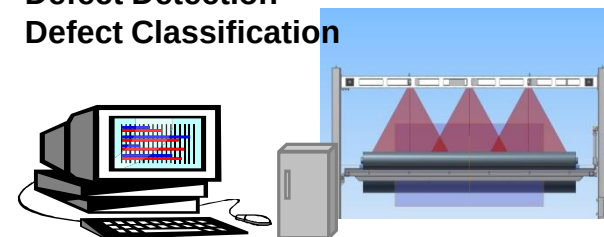
- 提前缓慢降速
- 防止突然张力变化
- 提高效率

Rewind Manager 的作用是提前给予分切机降速和停机信号，让分切机停在缺陷的位置



Inspection System(s)

Defect Detection
Defect Classification



Inspection Data



Rewind
Manager

Stop at Defect
Position



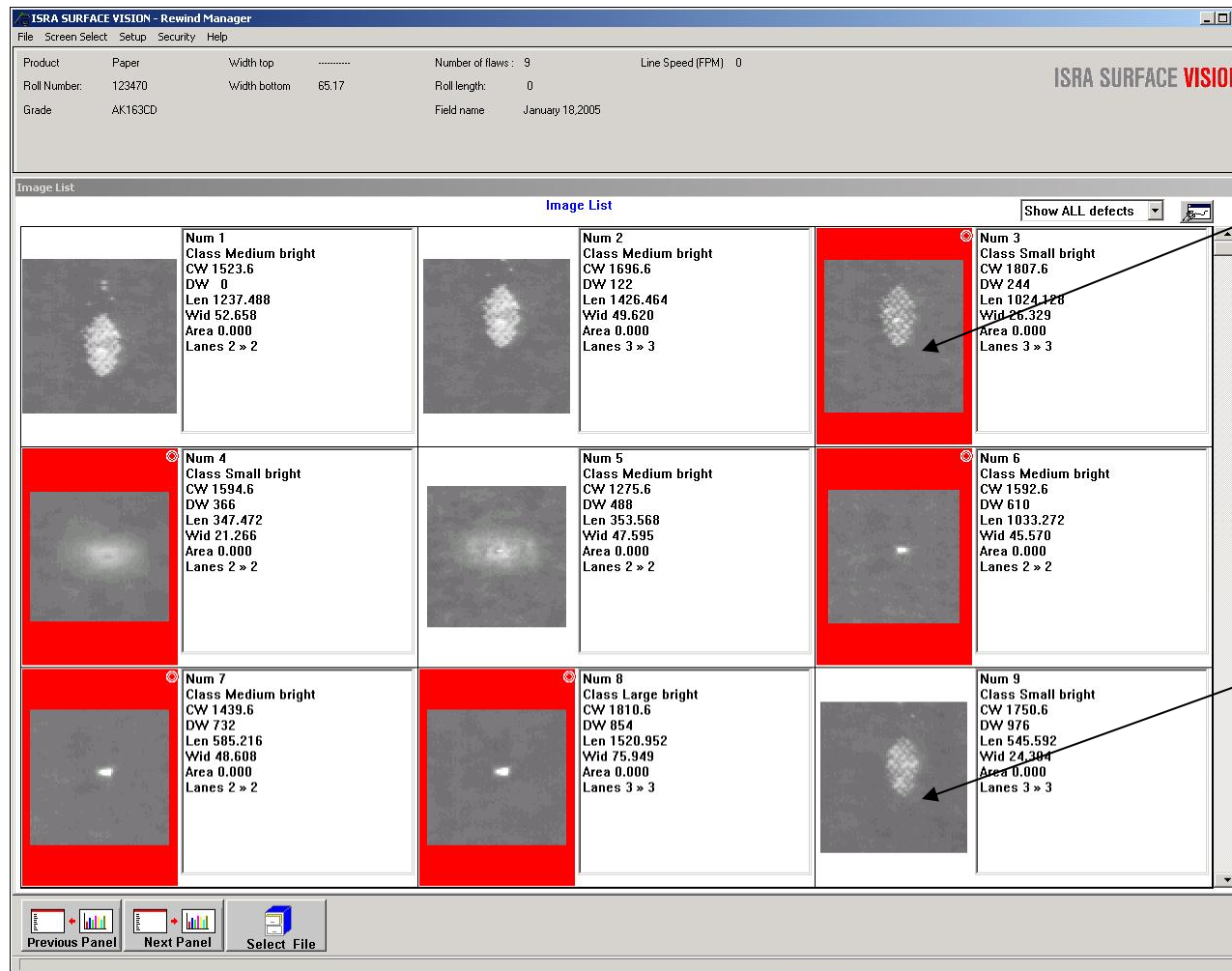
Rewind
Controls



The More You See..

Rewind Manager – 选择需要停机的缺陷

ISRA
VISION



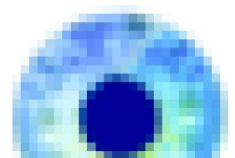
红色代表需要停机

如果点错，只需再点一下鼠标便取消选择

Ringier Conferences

荣格研讨会，聚合行业专家的巅峰论坛！
Connecting industry through information exchange!

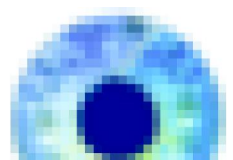
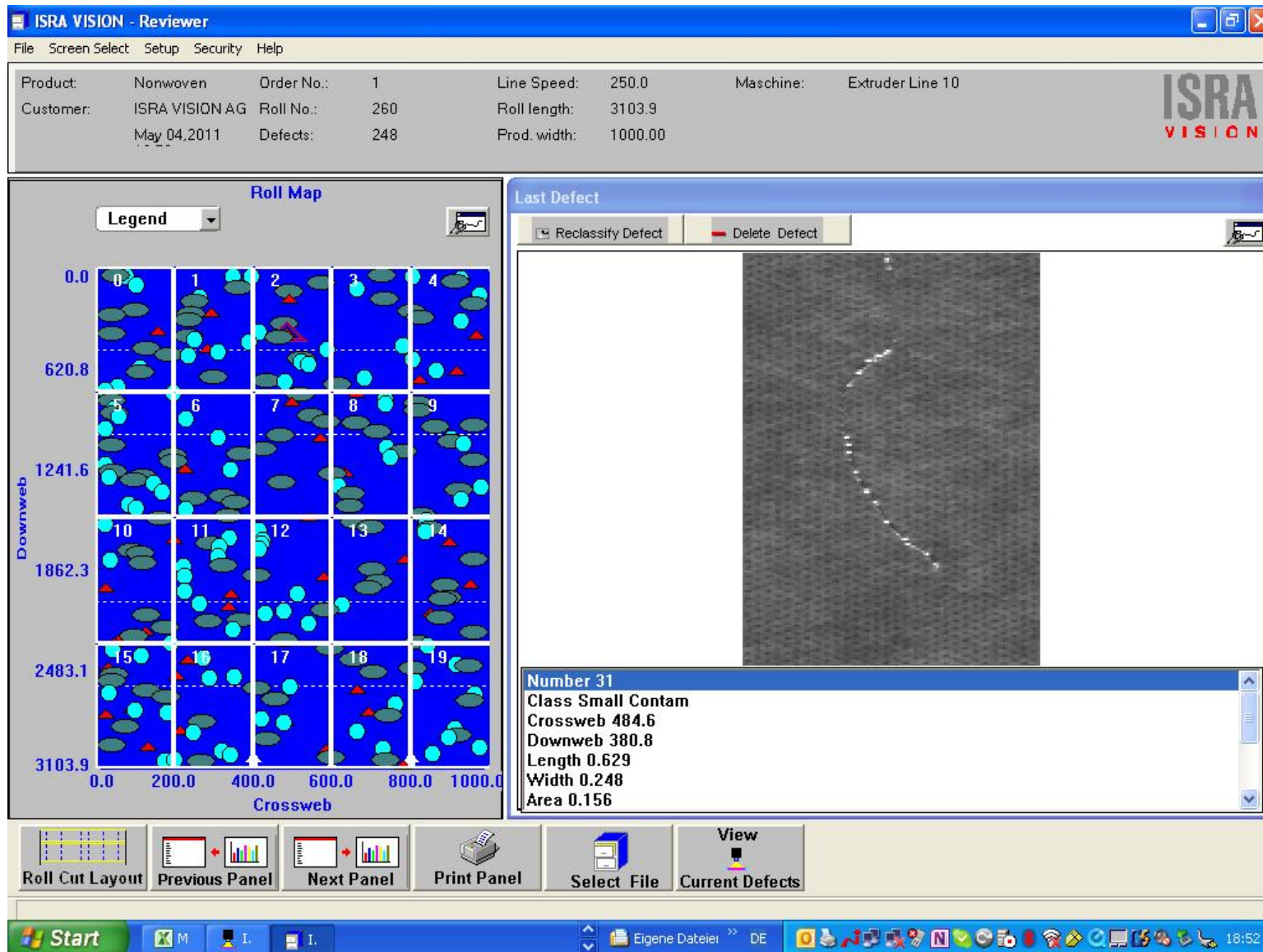
只需轻点鼠标，傻瓜式操作！



The More You See..

Roll Cut Shema

ISRA
VISION



The More You See..

分切优化系统

ISRA
VISION

ISRA VISION - Reviewer

File Screen Select Setup Security Help

Product: Nonwoven Order No.: 1 Line Speed: 250.0 Maschine: Extruder Line 10
Customer: ISRA VISION AG Roll No.: 260 Roll length: 3103.9

Roll Layout - File C:\Central\default.drl

Number of Cuts: 5 ☐ Waste cut

Cut	Length (m)
1	775.970
2	775.970
3	775.970
4	775.96
5	0.00

+ Insert - Delete

Number of Lanes: 5 Use lanes from cut: Cut 1 Set
Start of first lane: 0.000 mm Use lanes from file: GM Set Save

Index	Width (mm)	Roll Number	Order ID
1.1	200.000		1
1.2	200.000		1
1.3	200.000		1
1.4	200.000		1
1.5	200.000		1

+ Insert - Delete

Layout Options

OK Cancel Help

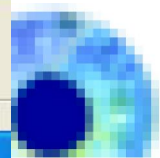
Downweb

3103.9

0.0 200.0 400.0 600.0 800.0 1000.0

Crossweb

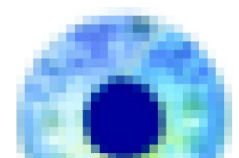
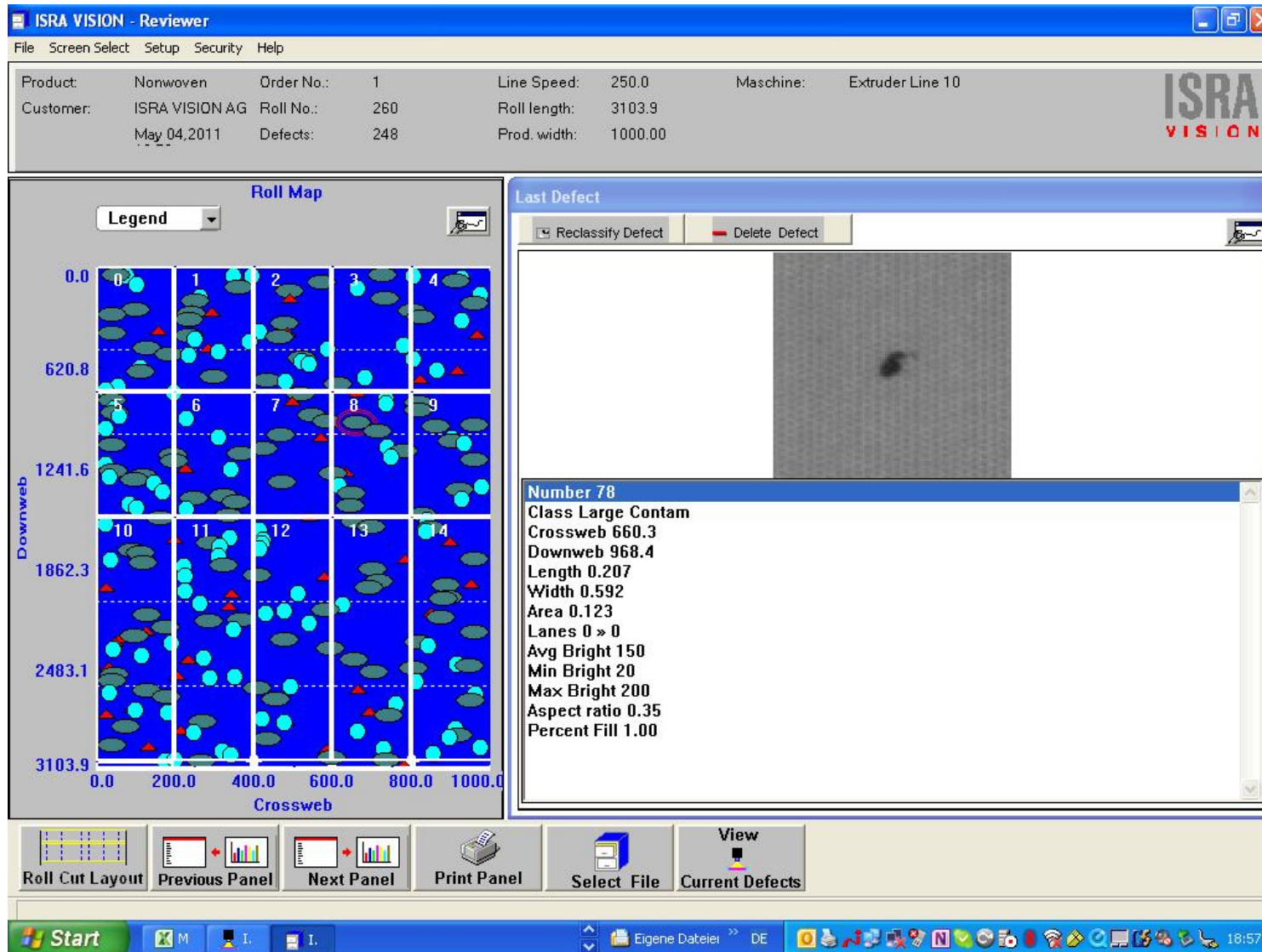
Roll Cut Layout Previous Panel Next Panel Print Panel Select File View Current Defects



The More You See..

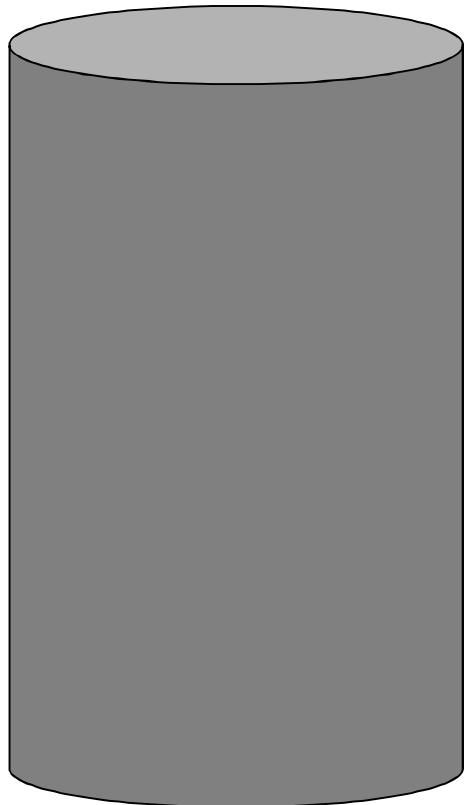
Roll Cut Shema

➔ 根据不同客户喜好设置不同分切尺寸



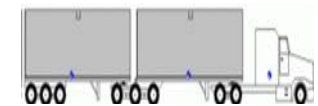
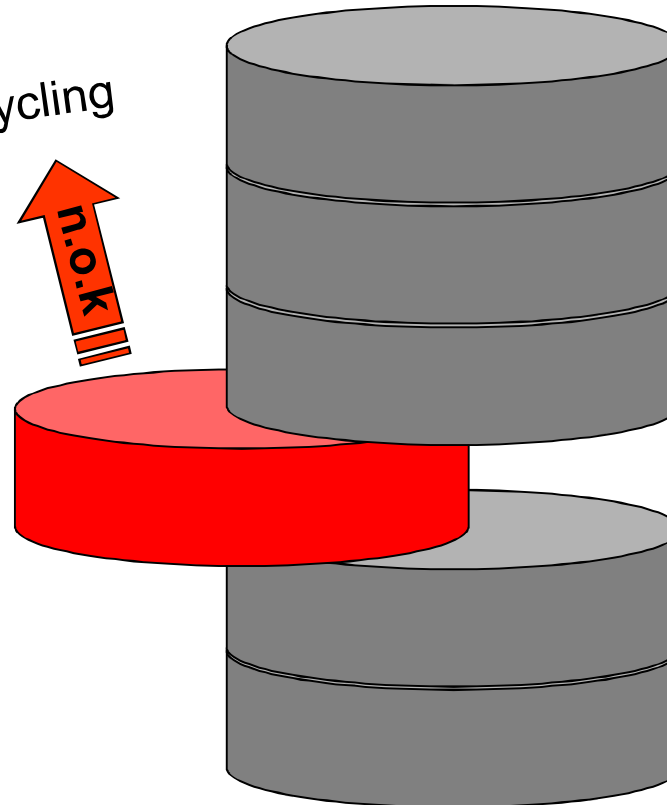
Daughter roll data segregation by finished roll number

Rolls (full width)
from Production line

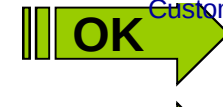


Finished slit rolls at subsequent in-line / off-line slitting operation

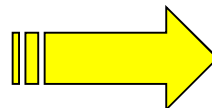
Recycling



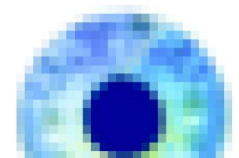
Transportation to
Customer



Inspection Data



Pass/Fail grading



Quality Reviewer

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ISRA Quality Reviewer

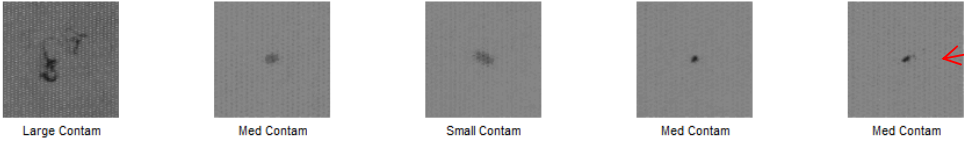
File Setup Help

Refresh

Orders

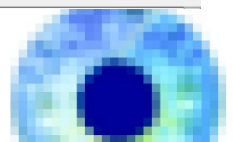
Index	Date	Time	Metry	Set	1	2	3	4	Jumbo	Set State
1	Februar 23, 2012	12:34:27	143,0	1	0	6	4	2	378	Ok
2	Februar 23, 2012	12:34:27	143,0	2	2	2	1	5	378	Scrap roll
3	Februar 23, 2012	12:34:27	143,0	3	2	2	5	1	378	Ok
4	Februar 23, 2012	12:34:27	143,0	4	3	2	4	0	378	Ok
5	Februar 23, 2012	12:34:27	143,0	5	9	1	1	0	378	Ok

点击该子卷，缺陷图片便会列出



Large Contam Med Contam Small Contam Med Contam Med Contam

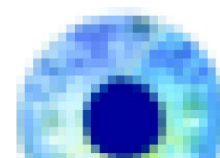
对于客户的投诉，所有的缺陷信息都有据可循！



The More You See..

以下是否您所关心的

- ISRA系统可以连接打印机，打印任何质量报告
- 所有ISRA质量报告可以通过输出模块以Excel文件输出
- ISRA系统自带OPC Server，可连接在线金属检测仪器同步缺陷位置
- ISRA系统可以远程连接，ISRA工程师随时为您远程服务
- ISRA系统1天可完成机械安装，这样的停机时间您是否满意？



典型安装

ISRA
VISION



封闭式摄像机组

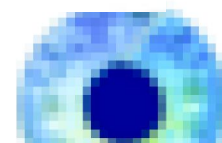
反射光源

专用背景板

机柜，电脑，显示器

 **Ringier Conferences**

荣格研讨会，聚合行业专家的巅峰论坛！
Connecting industry through information exchange!



The More You See..

典型安装

ISRA
VISION



开放式摄像机组

反射光源

专用背景板

机柜，电脑，显示器



The More You See..

无纺布典型安装

ISRA
VISION

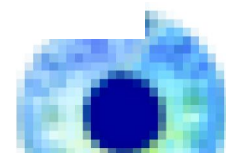


封闭式摄像机组

透射光源

Ringier Conferences

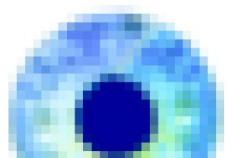
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The More You See..

典型安装

ISRA
VISION



The More You See..

Benefits 客户效益

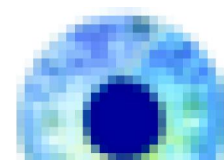
ISRA
VISION



客户得到的是...零缺陷的承诺

- 
- 减少客户投诉和退货率
 - 减少成品浪费
 - 减少误工时间

- 
- 更好的质量
 - 更高的附加值
 - 更具竞争力



和科技领先者德国**伊斯拉**合作

-使您的投资回报最大化

感谢参与！

伊斯拉视像设备制造（上海）有限公司

销售经理 李晨恺

