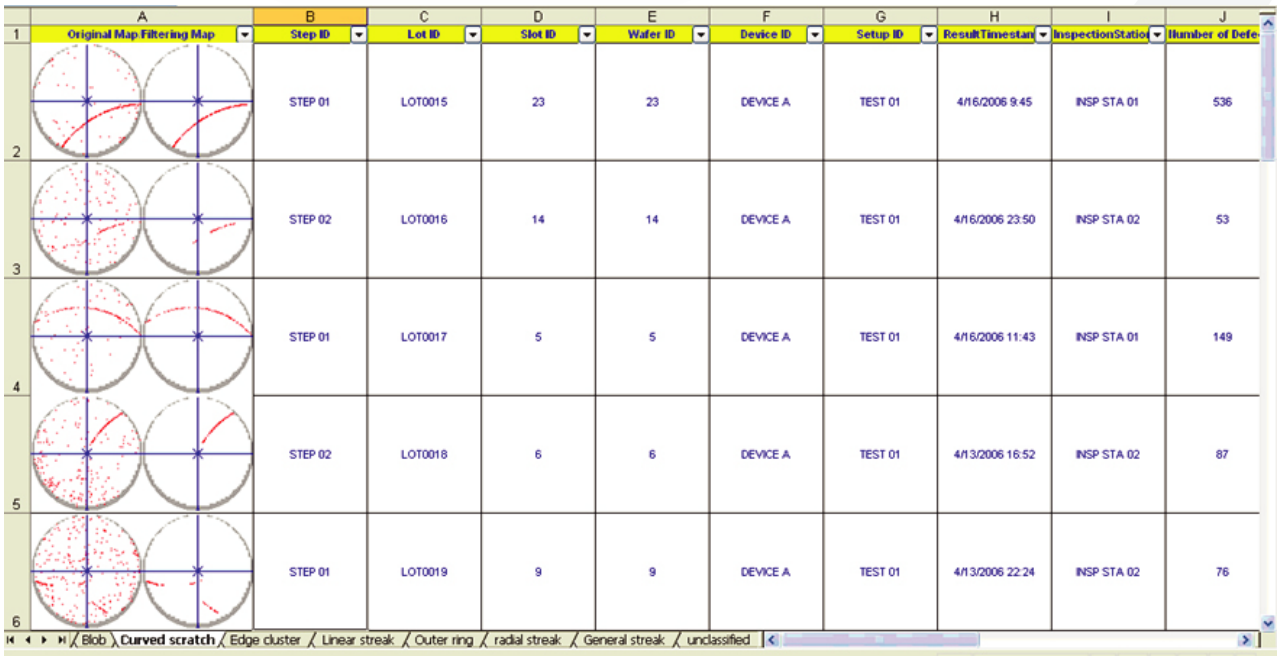
IRS DATA SHEET

Intelligent Reporting System (IRS™) is one of the main components of SiGlaz Intelligent Defect Analysis software suite. IRS allows the user to review the results of an IDA analysis recipe either on an individual wafer basis or as a summary of the analyses that have been performed over an extended period of time. The report may be used to optimize the Automation Workbench recipes, to diagnose the root cause of a process excursion or to identify trends in the inspection data over an extended period of time.

To generate the data for an IRS report, the AWB analysis recipe writes the signature information to a data repository file (.mdb format). The recipe generates an entry in the repository for each signature identified on the wafer. The user may then schedule IRS to automatically analyze the data repository file and run a report on a regular basis.



	A	B	C	D	E	F	G	H	I	J
1	Original Map Filtering Map	Step ID	Lot ID	Slot ID	Wafer ID	Device ID	Setup ID	ResultTimestam	InspectionStatio	Number of Defe
2		STEP 01	LOT0015	23	23	DEVICE A	TEST 01	4/16/2006 9:45	INSP STA 01	536
3		STEP 02	LOT0016	14	14	DEVICE A	TEST 01	4/16/2006 23:50	INSP STA 02	53
4		STEP 01	LOT0017	5	5	DEVICE A	TEST 01	4/16/2006 11:43	INSP STA 01	149
5		STEP 02	LOT0018	6	6	DEVICE A	TEST 01	4/13/2006 16:52	INSP STA 02	87
6		STEP 01	LOT0019	9	9	DEVICE A	TEST 01	4/13/2006 22:24	INSP STA 02	76

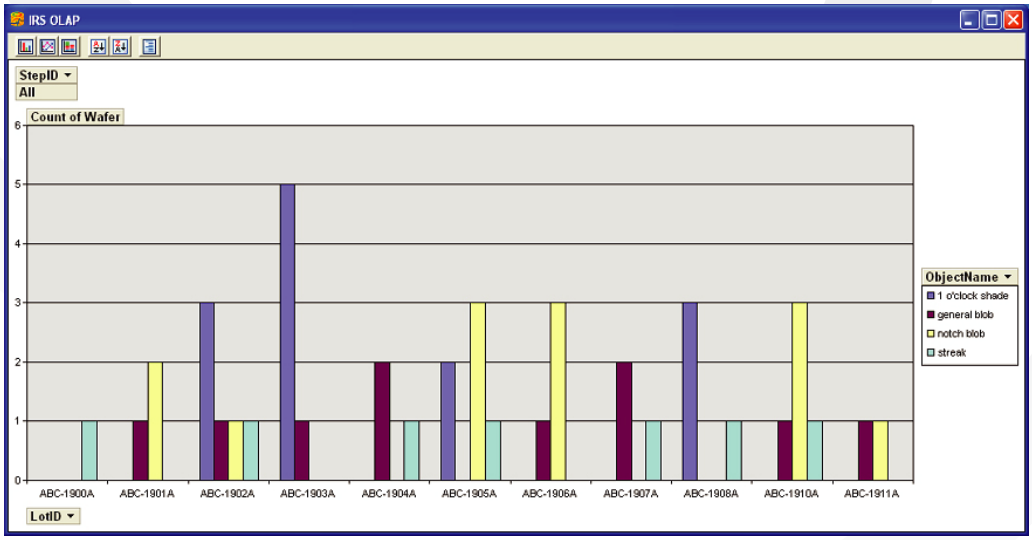
Blob | Curved scratch | Edge cluster | Linear streak | Outer ring | radial streak | General streak | unclassified

IRS table may be exported to an Excel spreadsheet. Thumbnails of the original file and the classified signature defects are displayed for each wafer level. Each signature type is divided into a separate Excel worksheet.

The IRS table is a useful report to review the individual wafer results from an analysis recipe. An IRS analysis report may be exported to an Excel file for detailed review. The analysis results are sorted by signature type; there is a separate Excel worksheet for each specified defect signature type (by classification number).

Two thumbnail images are displayed for each signature type: one shows all of the defects on the wafer level; the second thumbnail shows only the defects of the specified signature. Wafer information (e.g., Step ID, Device ID, Lot number, wafer slot) is also displayed with the images. By reviewing the IRS report table, the user can quickly validate the signatures that were identified by the IDA analysis and identify the wafers that have been affected.

The pivot table is a popular tool for both temporal and multi-dimensional analysis. IRS enables the signature data in the repository files to be used effectively for online analysis, providing rapid responses to iterative, analytical queries. The pivot table's multidimensional data model organizes and summarizes the data so it can be displayed quickly using online analysis and graphical tools. The answer to a query into historical yield data often leads to subsequent queries as the analyst searches for answers or explores possibilities. IRS provides the speed and flexibility to support the analyst in real time.



IRS enables the user to analyze IDA results over an extended period of time using the pivot table. In the above example, the number of wafers with each signature type is shown as a function of Lot ID. The time-based results for the Step ID may be displayed by swapping the selected fields in the Filter area.

Key Features

Pivot table functionality: IRS supports a variety of end user analytical activities including: trend analysis over sequential time periods; slicing subsets for on-screen viewing; drill-down to deeper levels of consolidation; and reaching through to underlying detail data.

Automatic report generation: IRS enables the user to generate analysis templates for frequently used reports. The user may schedule IRS to automatically run a report on a regular basis (for example, last 24 hours; last 5 days). The report can then be automatically emailed to designated users.

Daily data repository files: IRS generates a new data repository file each day to enable easy management of the IDA analysis data.

Multidimensional analysis: The system provides a multidimensional conceptual view of the data, including full support for hierarchies and multiple hierarchies, as this is certainly the most logical way to analyze the semiconductor manufacturing process.

Security: IRS implements all the security requirements for confidentiality and concurrent update locking at an appropriate level for multiple write access.

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