

CREATE INSTANT VISIBILITY INTO KEY MANUFACTURING METRICS

The QualityWorX Dashboard provides the most comprehensive, easy-to-use reporting platform for production and quality management in the industry. Begin by configuring your own personal dashboard of concise, at-a-glance summaries of key manufacturing metrics. Explore detailed reports for more in-depth analysis, and review individual birth history records to identify root cause. Generate instant ROI by creating top-down visibility into manufacturing performance, proactively driving up quality and yields, and streamlining engineering tasks. This is the all-in-one reporting tool that has something for everyone, from VP to engineer, from operator to plant manager. And as a web-based application, the full power of these reports is accessible from any computer on your network.

FEATURES & BENEFITS

Quickly and easily gain insight into your production processes

- Generate powerful reports in seconds instead of hours
- Provide visibility to all levels within the organization
- Drill down from high level summaries to complete, individual part history in three clicks

Create your own personal dashboards to instantly track the KPIs that matter most to you

- Configure once, then get the latest data each time you refresh your web page
- At-a-glance reports provide instant feedback on critical metrics, with Red, Yellow, Green zones to indicate when KPIs are in line with targets

- Track first time yield, throughput, scrap and more
- Identify top failure modes, underperforming stations

Quickly drill into details using comprehensive library of production reports

- Manage your production line proactively, instead of reactively
- Accurately monitor production line performance, driving continuous process improvement
- Maximize yields by quickly identifying the cause of bottlenecks in manufacturing processes

Create your own charts and analysis to track custom metrics

- Create mathematical formulas to calculate your own custom production metrics
- Chart the results using bar charts, pie charts, histograms, 3D line charts and more

Save time by saving report configurations and setting your own personal preferences

- Share reports with colleagues by saving definition files or exporting to PDF, Excel
- Manage library of reports using Report Manager to list, edit, delete, or launch reports directly

Accessible to anyone, anywhere

- Web-based application provides complete access to quality data from any computer with a network connection
- No local software to install, all you need is your web browser – simply install the application on your web server, configure and go!
- Simple, intuitive interface makes it accessible to all levels within the organization, from technician to executive



OVERVIEW

The QualityWorX Dashboard provides a unified reporting environment that supports three distinct levels of reports. At the highest level, the Dashboard tab provides high level, at-a-glance summaries of key manufacturing metrics. These mini-reports are automatically updated each time the web page is refreshed. At the next level down are the Reports, each of which delivers aggregate data for a given KPI. Clickable elements launch related reports refined to focus on that specific dataset. Drill-downs expose sub-tables that contain the next level of detail, extending to lists of individual serial numbers. Serial numbers serve as active links to the final level, the Part History reports. This report enables the user to review every element of the birth history record stored in the database for that specific part, including all waveforms.



The layout of the Dashboard web page is shown in the figure below. Navigation between the three reporting levels is performed by selecting the appropriate tab at the top of the main panel. Productivity tools are accessed from the toolbar that is anchored just to the left of the main panel.



REPORTING OPTIONS

The Dashboard offers three categories of reports: i) **Dashboards**, ii) **Reports**, and iii) **Part History**.

DASHBOARDS




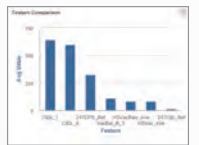
The Dashboard tab provides a user-configurable environment for creating concise, at-a-glance summaries of key performance indicators. Configuration options include:

- Add or delete sub-tabs, configuring up to 8 columns of reports. Re-order reports on the tab by simply dragging and dropping
- Dashboard configurations are saved automatically with every change. Export configuration files to your local computer and share with other users
- Configure sizes of charts, and choose font sizes to suit your display
- All reports can be configured to focus on specific time/date ranges (this shift, today, this week, last 30 days), models, sections, stations, part parameters, results (pass, fail, no result, etc.) and/or op count.

In addition, the Dashboard offers the following powerful features:

- Click through from the dashboard to more detailed reports to progress from high level summary to low level detail in just a few clicks. For example:
 - Click on a bar in an FTY Trend to generate a Failure Pareto report for the dataset associated with the specific FTY bar, then drill down to a serial number and open its part history report to review its wave forms.
 - Open a part count report that features dynamically adjustable binning by clicking on a Part Count gauge or trend chart.
- “Marquee view” – this option allows the administrator to configure a live dashboard that is automatically updated based on a configurable timer. Designed for use as a public display board, whether on the plant floor or in the office, the Marquee view features a narrower top banner and removes the toolbar to maximize the available display area. Accessible only with an Administrator login.

The following chart types are offered:

CHART TYPE	CHART FEATURES	CHART OPTIONS	SIZING OPTIONS
Needle Gauge	<ul style="list-style-type: none"> • Numerical value prominently displayed at bottom of gauge • Red, Yellow, Green zones for rapid visualization 	<ul style="list-style-type: none"> • Upper/Lower bound of gauge range • Minimum (upper bound of Red range) • Target (upper bound of yellow range) 	<ul style="list-style-type: none"> • Small, medium, large diameter • Font size: small, medium, large 
Pie Chart	<ul style="list-style-type: none"> • Text labels indicate numerical breakdowns 		<ul style="list-style-type: none"> • Small, medium, large diameter • Font size: 8, 10, 12, 14, 16, 18, 20 point 
Line Chart	<ul style="list-style-type: none"> • Shading (select reports) provides visual emphasis of upward or downward trends 	<ul style="list-style-type: none"> • Target value – displayed as solid green line 	<ul style="list-style-type: none"> • Small, medium and large size • Aspect ratio: 1, 1.5 and 2 • Font size: 8, 10, 12, 14, 16, 18, 20 point 
Bar Chart	<ul style="list-style-type: none"> • Below target values highlighted in red – above target in green • Limit the number of bars displayed to prevent overcrowded reports • Sort columns in ascending or descending order 	<ul style="list-style-type: none"> • Target value – displayed as solid green line 	<ul style="list-style-type: none"> • Small, medium and large size • Aspect ratio: 1, 1.5 and 2 • Font size: 8, 10, 12, 14, 16, 18, 20 point 

The current library of dashboard reports includes the following report definitions:

REPORT	DESCRIPTION	CHART TYPE	CHART FEATURES AND OPTION
Failure Pareto	Display top failures by station or operation	<ul style="list-style-type: none"> Bar chart Pie chart 	<ul style="list-style-type: none"> Click-through to Failure Pareto Report
Defect Pareto	Display top defects by station or operation, grouped by a combination of Defect, Component and Location	<ul style="list-style-type: none"> Bar chart Pie chart 	<ul style="list-style-type: none"> Click-through to Defect Pareto Report
Feature Trend	Drill down to a specific feature on any station, operation, or waveform, and plot vs. time or serial number	<ul style="list-style-type: none"> Line chart 	<ul style="list-style-type: none"> Plot upper and lower spec limits on graph Display feature statistics in a table below chart
First Time Yield Gauge	Display FTY across a selection of sections and stations	<ul style="list-style-type: none"> Needle gauge 	<ul style="list-style-type: none"> Click through to Failure Pareto Report
First Time Yield Trend	Trend FTY vs. time or compare FTY by model, section, station or part parameter	<ul style="list-style-type: none"> Line chart (shaded) Bar chart 	<ul style="list-style-type: none"> Bin time by shift, hour, day, or week Click through on any point/bar to Failure Pareto Report
Part Count Trend	Trend parts count over time or compare by model, section, station, or part parameter. Use the op count filter (first, last, >, <, =) and result filters (pass, fail, no result, etc.) to trend parameters such as Total Output or Hourly Scrap rate.	<ul style="list-style-type: none"> Line chart Bar chart 	<ul style="list-style-type: none"> Bin time by shift, hour, day, or week Click through on any point/bar to Part Count Report
Part Count Gauge	Display number of parts through any station or group of stations within the specified period of time. Use the op count filter (first, last, >, <, =) and result filters (pass, fail, no result, etc.) to track parameters such as Total Output or Hourly Scrap rate.	<ul style="list-style-type: none"> Line chart (shaded) Bar chart 	<ul style="list-style-type: none"> Click through on any point/bar to Part Count Report
Operation Gauge	Instantly review breakdown of pass, fail, no result, no-op, etc. results for any key operation	<ul style="list-style-type: none"> Pie chart 	
Operation Trend	Plot operation result vs. time to reveal if there are any unusual trends in the pass/fail results	<ul style="list-style-type: none"> Line Chart 	
SPC Trend Chart	Drill down to a feature and trend Avg, Min, Max, Sum or Std Dev vs. time, grouping by time-date or by number of records (eg: every 10 data points), or plot vs. model or part	<ul style="list-style-type: none"> Line Chart Bar Chart 	<ul style="list-style-type: none"> Aggregate by Avg, Min, Max, Sum, Std Dev, Bin time by shift, hour, day, or week If the same feature label appears in multiple stations, compare sections, stations
Feature Comparison	Compare Avg, Min, Max, Sum or Std Dev between multiple features, across sections, stations, operations and waveforms	<ul style="list-style-type: none"> Bar chart 	<ul style="list-style-type: none"> Limit number of bins and sort in ascending or descending order
Feature Gauge	Track a feature value in a gauge, selecting from Avg, Min, Max, Sum or Std Dev.	<ul style="list-style-type: none"> Needle gauge 	<ul style="list-style-type: none"> Aggregate by Avg, Min, Max, Sum, Std Dev,

REPORTS

Reports provide in-depth analysis of key performance indicators such as first time yield, failure modes, or defects and repairs. Drill-downs and embedded links between reports expose progressively greater and greater detail, enabling you to quickly isolate the source of failures or falling yields.

Each report is based on a flexible query definition that allows you to isolate a specific dataset from within the database. Once a report is selected, report-specific settings allow you to configure the report to suit your needs. Clicking the Launch button brings up the report in a new window or tab, leaving your settings intact in the original window for easy editing, or ready to launch a different report on the same dataset. Both the query and report settings can be stored to a file for rapid re-generation of any report.

First Time Yield

Calculate First Time Yield (FTY) by station or Rolled Throughput Yield (RTY) across multiple stations.

- *First Time Yield* is the number of unique parts without any failures (at that station), divided by the total number of unique parts through the same station.
- *Rolled Throughput Yield* is the product of the individual station FTY values.
- Toggle chart between FTY vs. station, and RTY vs. time, where RTY is calculated over a period of a day, week, or month, as selected by the user. Or compare yields between sections or part parameter values.
- Sort the main table by clicking on a column heading to quickly highlight which stations or operations are failing the most parts in any bin.
- Click on any bar in the chart to drill down to the Failure Pareto Report associated with that specific subset of records.



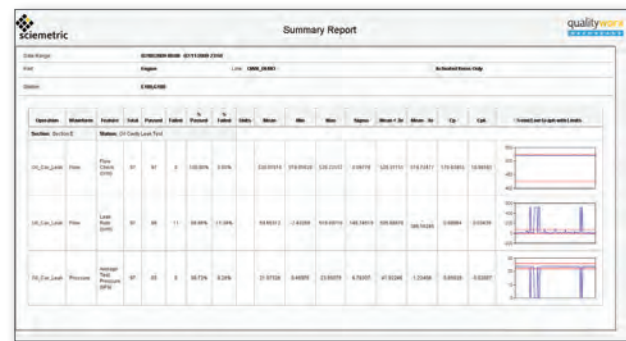
FTY Pareto

Generate a report that combines First Time Yield (FTY) and Failure/Defect Pareto reports so you can view the overall FTY as a function of time, where the time range is broken into last 30 days binned by week, rolling 20 days (just one bin), and last 10 days binned by day. The report also contains a Failure/Defect Pareto table that lists the top 10 most common failed operations, where unique parts are totaled within each time bin. For each operation failure, you can list up to the top three most common defects, with the choice of detailing by Defect Code, Component and/or Location.



Summary Report

Generate a table of operation yields, then drill down to a detailed summary table of feature statistics by clicking on an operation label. Select from a list of 13 statistical parameters, as well as embedded charts that provide quick, at-a-glance displays of feature trends. Filter by result (eg: Pass, Fail, No Op, No Result, etc.) or operation count (first, last, or a specific value).



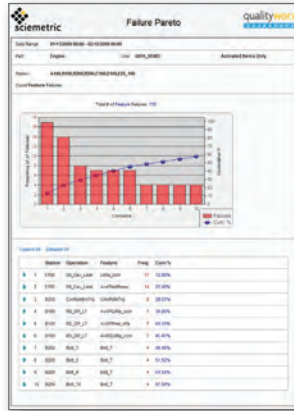
Trend Browser

Drill down to individual operations or features and display trend chart vs. serial number or date-time stamp. Toggle between detailed serial number list, and statistical summary. Sort the detailed table by clicking on any table heading. Click on a serial number to bring up its Part History Report and view the related waveform.



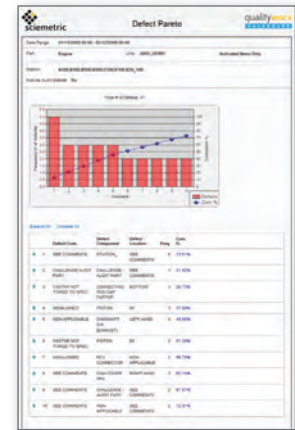
Failure Pareto

Quickly generate a Pareto chart of the top 10 failure modes. Expand each category to reveal a list of affected serial numbers, then click on a serial number to drill down to its individual Part History Report to quickly isolate and identify production issues.



Defect Pareto

Create Pareto chart of top 10 defects, categorized by defect details. Drill-downs and links to individual serial numbers assist in rapid identification of primary sources of defects (only available if Sciometric Repair Bay Manager installed on production line).



Failure Report

Review detailed listing of failed serial numbers with breakdown of individual failures by station and operation.



Analysis Grid

Create a spreadsheet-like table of feature or operation data that allows each user to create custom analysis and charts. Sort, apply filters or aggregate data (sum, average, minimum, maximum), add columns with mathematical formulas. Create custom charts, then simply click a button to add to your Dashboard.



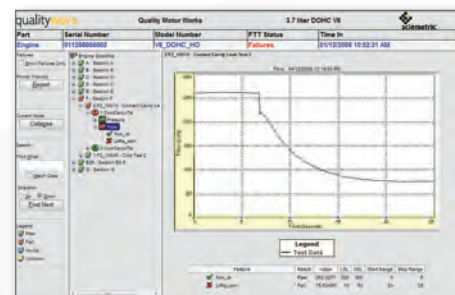
Repair Traffic

Generate a detailed list of all serial numbers that have been repaired, specifying both the defects and the repairs (only available if Sciometric Repair Bay Manager installed on production line).



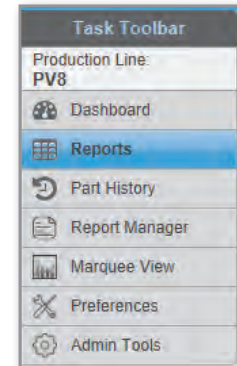
PART HISTORY

Intuitive tree-based navigation of birth history record enables detailed investigation of all pass/fail results, waveform characteristics and feature checks on the selected unit. Color coding of tree elements and search functions enable user to rapidly locate and identify points of concern.



PRODUCTIVITY TOOLS

The Dashboard features a set of productivity tools that help accelerate report generation through personalization, file management and information displays. In addition, administrators can tailor access to specific functionality through a simple user rights management interface.



REPORT MANAGER

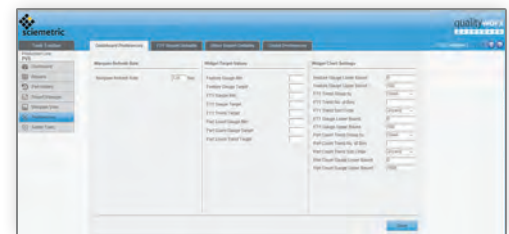
The Report Manager provides a convenient utility for managing stored definition files created in the Reports or Dashboard tabs:

- *load* a stored report configuration into the “Reports” tab, ready to be edited and launched
- *delete* or *rename* report files
- *Import* or *export* files from the server directory to a local directory to enable you to share files with other users
- *launch* reports directly from the Report Manager file list
- *Deactivating* one or all configured panel using the Dashboard tab



PREFERENCES

Each user can set their own personal preferences to facilitate rapid report generation. Available preferences include default configuration settings for the Reports and Dashboards and the refresh rate for the Marquee. The user can also configure default settings for the date range in the basic query, and display label and/or descriptions across all reports and panels for sections, stations, operations and waveforms.



ADMIN TOOLS

The Admin Tools tab contains configuration and administration settings that are only available to logins that have administrator privileges. Within this section, there are four divisions, each organized into its own tab:

1. **Connection Manager:** allows the administrator to edit or delete existing production line definitions, or configure new ones
2. **Rights Management:** contains User Rights Management settings, where access to reports, features and tools can be enabled or disabled based on user groups
3. **Admin Password:** allows management of the Dashboard administrator’s password
4. **External Marquee:** makes the Dashboard available to other users without that user having to log in



SERVER INSTALLATIONS

The QualityWorX Dashboard is an optional reporting tool designed to work with QualityWorX V3.2x and higher. As a web-based application, it is designed to be installed on a server that meets the requirements below. For optimum performance, it is recommended that the Dashboard NOT be installed on the same server as the QualityWorX production line database.

	QualityWorX Dashboard Server Requirements	QualityWorX Dashboard Client Requirements
PROCESSOR	Min 1 GHz Pentium dual-core processor or equivalent; Xeon 3.0 GHz processor recommended	Min 1 GHz Pentium processor or equivalent
MEMORY	8 GB min	256 MB min
HARD DRIVE	1 GB of free hard disk space min	N/A
REMOVABLE DRIVE	CD-ROM	N/A
DISPLAY	SVGA (800x600)	WXGA (1280x768)
OPERATING SYSTEM	<ul style="list-style-type: none"> Windows Server 2012R2 (legacy support for 2008R2) 	<ul style="list-style-type: none"> Windows XP, Vista or 7 Windows 10 support using IE
ADDITIONAL SOFTWARE	<ul style="list-style-type: none"> Microsoft Internet Information Server (IIS) Microsoft .NET Framework 2.0 (or later) 	<ul style="list-style-type: none"> Microsoft Internet Explore, version 7 or higher; works with IE 11 Other browsers may not support all features
CONNECTIVITY	Ethernet 100 Base T connection	Ethernet 100 Base T connection

For information on the separate QualityWorX Data Server requirements please visit our website.