

Da Vinci Smart Manufacturing

BRD S06.08 Reports Quality Summary

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This document outlines the detailed specifications for the **Production** Report module. The module enables users to configure, generate, manage, and share reports that analyze

Production results across furnaces. This supports decision-making, efficiency tracking, and auditing through dynamic filters, KPI selection, and export capabilities.

1. Overview

The Report module consists of:

- Report Configuration Interface (Setup View)
- Report Output View (Generated Report)
- Variant Management System (for saved configurations)
- Export and Print functionalities

2. Report Configuration Interface (Setup View)

2.1 Variant Name Selection

- A dropdown labeled “**Variant Name**” is provided at the top.
 - User selects the Variant ID from a single select dropdown
 - Mandatory - No
 - Default value - No
 - Field Type - Single Select Dropdown Values: All Variants saved (Public and Private). **Dropdown Structure:**
 - **My Variants**
 - Private
 - Public (shared icon)
 - **Public Variants** (created by others)
 - Validation - No
 - **Permissions:**
 - Only the creator can edit, delete, or update their variant.
 - Other users can view or clone public variants.
- Upon selecting a variant, previously saved filters and KPI selections are auto-populated.

2.2 Report Filters (Mandatory fields marked with *)

Filter	Type	Description
Furnace ID*	Multi-select dropdown	Lists all active furnaces assigned to user or organization.

Date Range*	Calendar picker	From and To date selectors.
Material ID*	Multi-select dropdown	WIPs corresponding to the Furnace
Quality	Multi-select dropdown	Quality of WIP material

Filter Behaviour:

- Default values are empty; required fields must be selected to proceed.
- All Filter drop downs should be sorted alphabetically / numerically

2.3 KPI Selection

- KPI checkboxes/toggles are listed for selection.
- Backend provides the available KPIs per report.
- KPIs are not mandatory and report can be generated without selecting any.
- KPI Permissions Logic
 - **Selectable KPIs:** A user can only **select** KPIs for which their role has explicit permission.
 - **Visible but Disabled:** KPIs outside the user's permission scope will still be **visible** in the interface but will appear **disabled** (e.g., grayed out) and **cannot be selected**.
- **Max 3 KPIs can be selected.**
 - If a user selects more than 3, an inline validation appears: "*You can select up to 3 KPIs only.*"
- Each KPI has a **default chart type** (bar, line, pie, etc.) configured by backend.
- In the **generated report screen**, users can change the chart type per KPI using a dropdown.

2.4 Action Buttons

Button	Function
Generate Report	Validates inputs and transitions to Report Output View.

Reset	Clears all filters and KPI selections to default state.
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The screenshot shows the 'Quality Summary (Grading)' page. On the left is a vertical sidebar with icons for variants, variants by date, variants by material, variants by furnace, variants by defect rate, variants by rework rate, variants by first pass yield, and a save icon. The main area has a header 'Quality Summary (Grading)' with a refresh icon. Below it is a 'Variant Name' section with a dropdown menu 'Select Variant Name'. A 'Filters' section contains three dropdown menus: 'Furnace ID*', 'Date Range*', and 'Material ID*'. Under 'KPIs', there are four radio buttons: 'Production Efficiency (%)', 'Defect Rate (%)', 'Rework Rate (%)', and 'First Pass Yield (FPY)'. In the bottom right corner is a 'Generate' button.

3. Report Output View

Upon clicking **Generate Report**, the system transitions to a new screen with the following sections:

3.1 Filters Summary Section

- Displays all selected filters and metadata.

Fields include:

1. Variant Name (default: *Untitled* until saved)
 - a. Min - 1 and Max - 30 characters, alphanumeric, Only '-' and '_' is allowed, Single space is allowed in between the words, No leading spaces allowed.
 - b. **Edit Icon** (✎): Appears for saved variants created by the user.
 - c. Enables inline editing of Variant Name and Access Modifier (Private/Public).
 - d. A **Save** button confirms updates.
2. Furnace ID
3. Date Range (From - To)
4. Material ID
5. **Executed On** – *Displayed only in print view; not saved in variant.*
6. **Executed By** – *Displayed only in print view; not saved in variant.*

3.2 KPI Visualization Section

- KPIs selected are shown in graphical format.

Features:

- KPIs can be **removed** via a close (x) button on hover.
- KPIs can be **reordered** via drag-and-drop.
- KPI metadata and units are displayed.
- Users can **change the chart type per KPI** via dropdown (Gauge, Bar Chart, Line Chart and Pie Chart).

3.3 Report Data (Tabular Format)

- Data displayed based on filters and granularity.
- It will have the following columns
 - Date
 - Furnace ID
 - Material ID
 - Quality
 - Total Value (%)

Table Features:

- Configurable columns via “Add Columns” menu
- Sorting and rearranging columns via drag-and-drop
- Pagination for large datasets
- Export to Excel (XLSX) File Name “MMDDYY_QualitySummaryReport”

This screenshot shows a report interface. On the left is a dark sidebar with various icons. The main area has a header "Report". Below it is a table with columns: Date, Material ID, Furnace ID, and Total On Grade/Off grade/Target (%). The data shows 10 rows of entries for MBO1_Serrabal on furnace 1. At the bottom of the table are buttons for navigation and row selection. Below the table is a section titled "User Notes" with a text input field labeled "Enter your notes".

3.4 Notes Section

- Free-text input area for user insights. All (Including special characters), 100 characters
- Not saved with variant — intended for print inclusion only.

This screenshot shows a "Quality Summary (Grading)" view. It includes a header with a back button, user info, and print/copy icons. A "Filters" section allows setting Variant Name (Untitled), Furnace ID (11), Date Range (15/10/2024 - 16/9/2024), Material ID (MBO1_Serrabal), Executed by (sbadal | Sahana Badal), and Executed on (15/10/2024 | 3:15 pm). Below this is a "KPIs" section with three gauge charts: Production Efficiency (%) at 89%, Defect Rate (%) at 89%, and Rework Rate (%) at 89%. At the bottom is a "Report" section with a table identical to the one in the first screenshot, showing data for MBO1_Serrabal on furnace 1.

3.5 Navigation – Back to Configuration

- A **Back** button appears in the report view.
- Clicking it returns the user to the **Setup View**, retaining all previous filter and KPI selections.
- Ensures seamless editing without re-entering data.

4. Report Actions

4.1 Print

- Exports the entire report as PDF.
- User selects sections to include:
 - Filter section
 - Notes section
 - Specific pages of data

4.2 Save Variant

- Saves current report configuration.
- Required fields:
 - Report Name
 - Access Modifier (Private/Public)
- Only the creator can edit or delete saved variants.

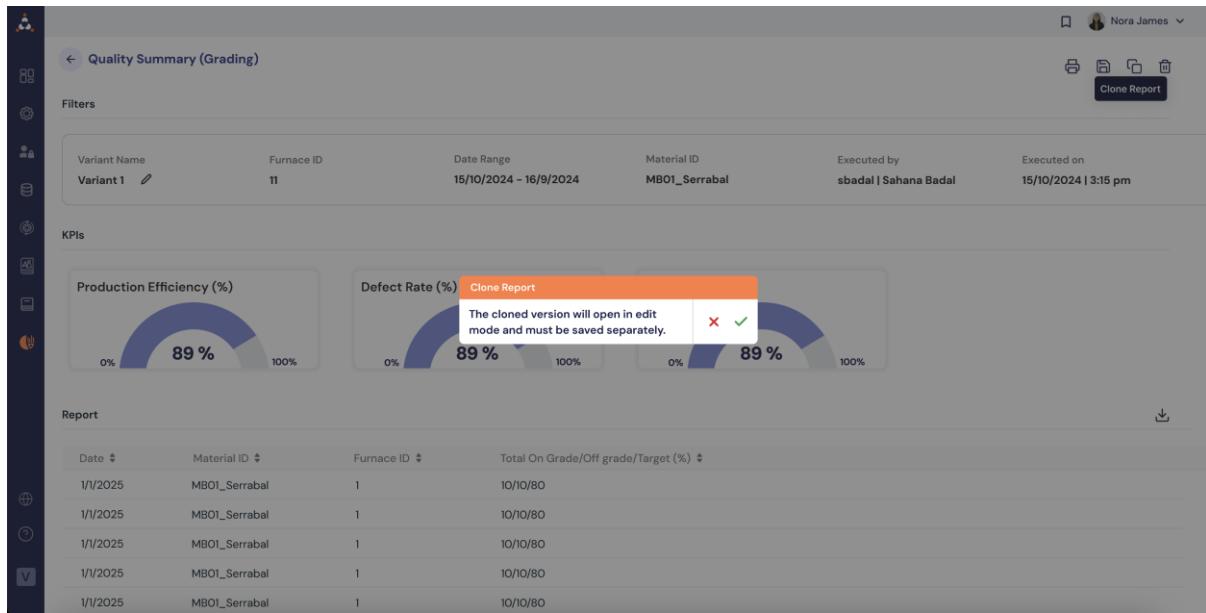
The screenshot shows a report titled "Quality Summary (Grading)". At the top right, there is a "Save Variant" button. A modal dialog box is open over the KPIs section, titled "Save Report Variant". It contains fields for "Enter Variant Name" (with "Untitled" as the placeholder), a "Public" checkbox (unchecked), and two buttons: a red "X" and a green checkmark. In the background, the KPIs section displays two gauge charts: "Production Efficiency (%)" at 89% and "Defect Rate (%)" at 89%. Below the KPIs is a "Report" section containing a table with five rows of data. The columns are Date, Material ID, Furnace ID, and Total On Grade/Off grade/Target (%). All entries show the same values: Date 1/1/2025, Material ID MBO1_Serrabal, Furnace ID 1, and Total On Grade/Off grade/Target (%) 10/10/80.

4.3 Clone Variant

- Clones any saved variant (private or public).
- Confirmation message appears:

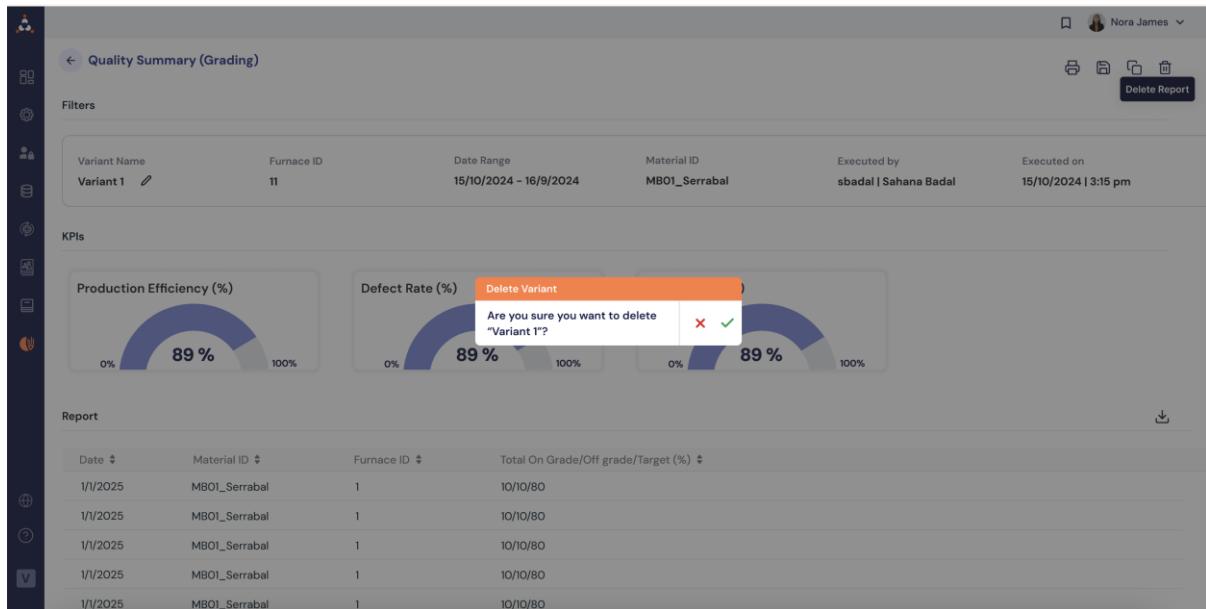
"Are you sure you want to clone this variant? The cloned version will open in edit mode and must be saved separately."

- Opens the cloned configuration in edit mode with name defaulted to *Untitled*.



4.4 Delete Variant

- Available for user-created variants.
- Delete via dropdown or trash icon with confirmation prompt.
 - “Are you sure you want to delete this variant “Variant Name”?



5. Edge Cases & Validations

Scenario	Expected Behaviour
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Required filter missing	Prompt user to complete all mandatory fields
Deleting a variant in use	Show confirmation and warn about unsaved changes when traversing to another module
Selecting public variant	Load values in read-only mode unless cloned
No KPIs selected	Section remains empty; no validation error
Selecting > 3 KPIs	Show inline warning and prevent further selections