Manual

Software CWL-ProductionReport

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1 Introduction

The CWL-ProductionReport software logs the production of a Schleuniger cable processing machine in conjunction with the Schleuniger Cayman software (from version 12.10).

You can log order name(s), article name(s), number of produced articles, date / time of production, change of raw material and material consumption.

Log formats currently available:

- CSV (Comma Separated Value) format

New: Production journal:

In addition to the continuously updated report file, specific production data of a freely selectable period can be displayed and exported as a file, see chapter 4.2.5.

2 Installation and launch of the Toolbox

2.1 Installation

The setup installs all components of the software collection. The recommended installation location is a directory in the root directory of c:, e.g. c:\CaymanToolbox\. The installation directory will be created during the installation process. For the installation and operation of the program, write permissions must exist here. If further ***iret***-CaymanTools are already installed on the PC (e.g. CaymanToolboxBasic), the installation should take place in the same folder so that saved settings such as user language are retained.

Note:
The CWL-ProductionReport can only log production events if it is started before production starts. It is recommended to integrate it in the Windows autostart folder, this option is offered in the setup. This ensures that the CWL-ProductionReport is started automatically when the PC is switched on and is active as soon as jobs are processed with Cayman.

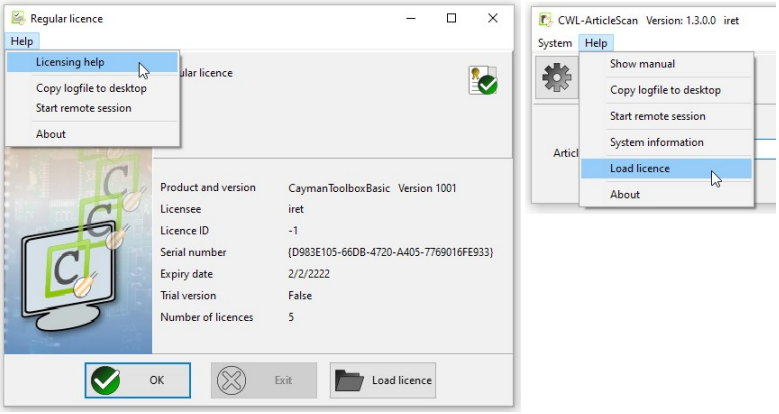
Note:
The CWL-ProductionReport can only log production events correctly if production is controlled via Cayman (on the PC) (e.g. start / stop / material load / zerocut etc.). The operation must not be done via the touch display on the machine.

Additional technical documentation is copied into the installation folder together with this operating manual. They include the description of the recorded production events (e.g. 'cable produced', 'production finished' etc.). The files are located in the subfolder /doc/ but can be displayed at any time from the pop-up menu (see Chapter 3).

“File name	Description
td_productionreport_en_csv.pdf	Description of logging in CSV format (english language).
td_productionreport_csv_de.pdf	Description of logging in CSV-formt (german language).

2.2 Licensing

1.The licensing of the CaymanToolbox software is described in a separate document. You can display this document in the license dialog (menu 'Help', menu item 'Licensing help'). The license dialog is displayed in the demo version of the Toolbox at program start. You can also reach it via the program main menu 'Help', menu item 'Load license'.



3 Prerequisites for operating the CWL ProductionReport

The Schleuniger software "Cayman" version 12.10 or higher is required to run the CWL ProductionReport. To log the raw material consumption, the connected Schleuniger cable processing machine must support the reading of the material counter (EcoStrip 9380, MultiStrip 9480, PowerStrip 9550, MegaStrip 9650; Status 01/2020)..

3.1.1 Cayman in Administrator Mode / User Mode

The installation directory of the Cayman software contains the executable files "CaymanAdmin.exe" and "Cayman.exe". By calling one of these files, Cayman is started in one of two possible operating modes:

- The **administrator mode** (by calling "CaymanAdmin.exe") allows changes to program settings such as interfaces and paths, which rarely change and should be made by an administrator.
- The **user mode** (by calling "Cayman.exe") should be used in production, since no unwanted changes can be made here.

Note:
The CWL-ProductionReport can only log production data when Cayman is running in **user mode**. Then the CWL-ProductionReport automatically connects to Cayman.

If administrative changes are to be made in Cayman, Cayman in user mode must first be closed. Now the CWL-ProductionReport no longer logs. After starting Cayman (Admin) and changes have been made, Cayman (Admin) must be closed again.

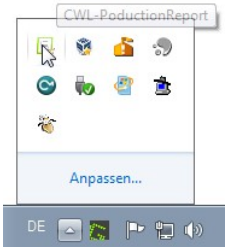
If Cayman is then restarted in user mode, the CWL-ProductionReport automatically reconnects to Cayman and can continue logging.

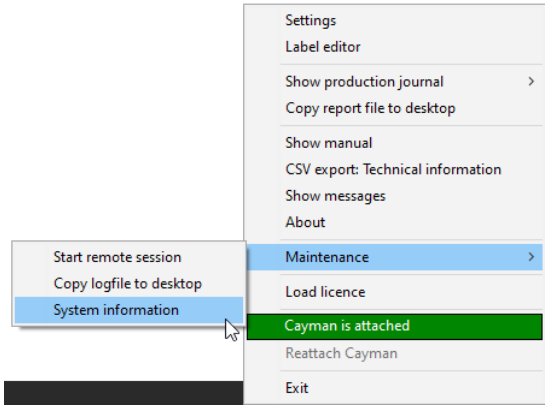
4 Overview

The CWL-ProductionReport works in the background without visible components. A popup menu opens the operating dialog:

- In the task bar : Left mouse button click on "Show hidden symbols".

- In the System tray: Right mouse button click on "CWL-ProductionReport".





Function	Description
Settings	Opens the settings-dialog.
Label editor	Opens the label editor dialog (see chapter 4.3)
Show production journal	View / export production data of a selectable period: Material consumption in the period, broken down by raw material, job or article; production quantity, broken down by article. For details see chapter 4.2.5.
Copy report file to desktop	Copies the report file to the desktop. Name is “production.csv”.
Show manual	Shows this document (a PDF reader must be installed).
CSV export: Technical documentation	Shows the document „Interface documentation: Production report in CSV format“. A PDF reader must be installed.
Show messages	Opens or closes a window showing selected production messages (see ch. 4.1.1).

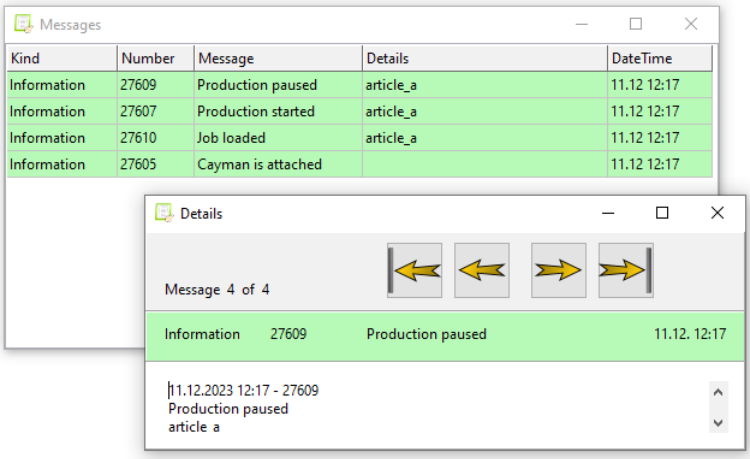
Function	Description
About	Shows program and licensing information.
Maintenance: Here you can find the items for program maintenance:	**Starts remote session.** **Copy logfile to desktop:** Copies a zipped logfile of the previous program run to then computer desktop. This function is mostly for maintenance purposes. **System information:** Shows information (e.g. paths) to required system files.
Load licence	Opens the dialog window for loading a license.
Cayman status: Green: Cayman is attached Red: Cayman is **not** attached	Shows the Cayman status. Cayman *must* be attached for the CWL-ProductionReport to log production data.
Re-Attach Cayman	Try to attach to Cayman (again). Only possible if Cayman is not attached and not running in administrator mode.

Note:

As soon as Cayman was started in user mode, the ProductionReport tries to connect (attach) to Cayman. As long as Cayman shows one or more message windows (e.g. “Cayman started twice”, “material or process not found”), Cayman cannot be attached! After closing all Cayman messages, the ProductionReport automatically connects to Cayman. Please check Cayman status ('Cayman is attached') before starting production.

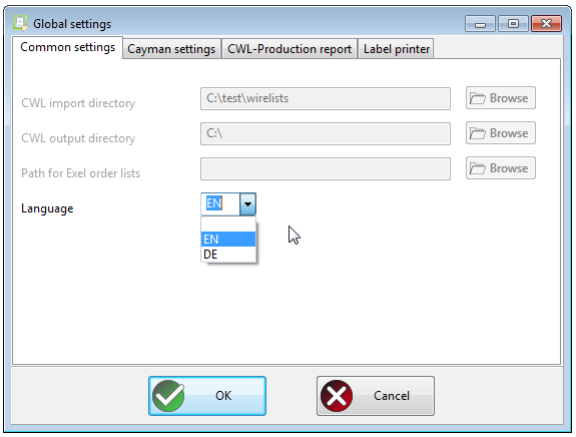
4.1.1 Menu item 'Show messages'

Selected production messages are displayed in tabular form. A double-click on a table row shows the details of the message. Four buttons (oldest, last, next, newest) can be used to navigate through the message history.



4.2 Settings

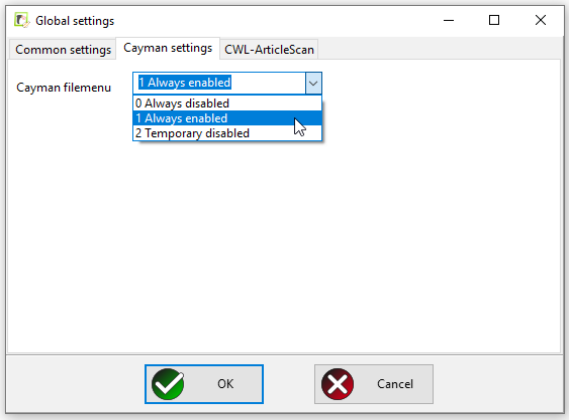
4.2.1 Common settings



The user language can be selected here. English and German are currently available. The path settings can not be changed in CWL-ProductionReport and are therefore grayed out.

Note: Further explanations about the 'Common settings' can be found in the manual of the 'CaymanToolboxBasic', which was installed in the folder '"\doc\".

4.2.2 Cayman settings

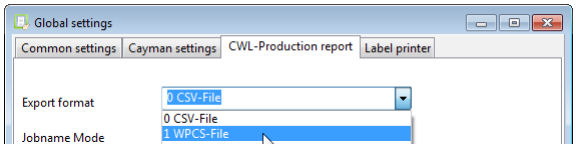


Selecting "Cayman filemenu" activates or deactivates the Cayman file menu. If the menu is activated, article lists can be loaded or saved directly from Cayman at any time, for example.

Function	Description
0 Always disabled	The file menu is always disabled (icons are grayed out).
1 Always enabled	The file menu is always enabled.
2 Temporary disabled	The file menu is disabled for the following tools, because manual loading and saving in these tools should be avoided: CaymanToolboxBasic: • CWL-ArticleScan • CWL-Harness CaymanToolboxERP • ERP2Cayman

Function	Description
	• CWL-JobTool • CWL-Import

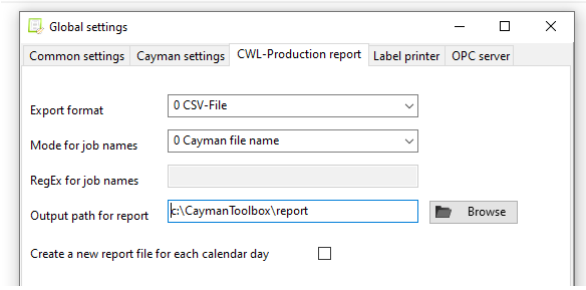
4.2.3 CWL-ProductionReport settings



Export format: The output format can be specified here. Currently supported:

Function	Description
0 CSV-File	Output in CSV (Comma Separated Value) format
1 WPCS-File	Output in WPCS (Wire Production Communication Standard) format **Currently not available, planned for Version 1.1.0**

Jobname mode: The setting determines what is registered in the log line under "Jobname".



Possible values are:

Function	Description
0 Cayman file name	The name of the loaded .cwl file.
1 Article name	The article name.
2 Apply RegEx to Cayman file name	A regular expression will be applied to the Cayman file name.
3 Apply RegEx to article name	A regular expression will be applied to the current article nam.

The setting "RegEx for job names" may contain a regular expression to shorten the job name. Example:

- The cayman file is "Job1-partlist001.cwl"
- The report shall contain only the name of the job "Job1" but not the name of the partlist
- --> Use the regular expression "^[0-9a-zA-Z]*"

Note: If option 0 or 1 chosen, the input field for 'regular expressions' is grayed out.

The setting "Output path for report" defines the output path of the log file.

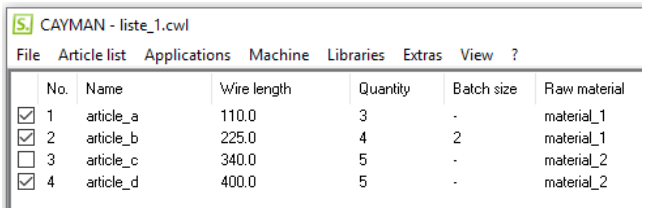
Option "Create a new report file for each calendar day":

With this option, the production messages of one day / one work shift can be logged separately. It also makes the size of the current report file more manageable.

If this option is activated, a new report file is created in the selected directory when the program starts. If a report file already exists here, it is renamed with a date/time stamp in the file name. For example, if the PC is restarted on October+/ 15 / 2020 at 7:30 a.m., an existing "production.csv" is renamed to "production_2020-10-15T07-30-00.csv". The appendix of the timestamp is generated from "YYYY-MM-DDThh-mm-ss" (**Y**ear **M**onth **D**ay T **h**our **m**inute **s**econd).

4.2.4 Example of a production log

The processing of the following Cayman article list ("liste_1.cwl") is logged, "CSV file" is selected as export format (see 4.2.3).



	No.	Name	Wire length	Quantity	Batch size	Raw material
☑	1	article_a	110.0	3	-	material_1
☑	2	article_b	225.0	4	2	material_1
☐	3	article_c	340.0	5	-	material_2
☑	4	article_d	400.0	5	-	material_2

The list contains for 4 items (article_a to article_d). Item 2 (article_b) is processed in batches of 2, item 3 (article_c) is unchecked and will not be produced. Totality 2 raw materials (material_1, material_2) are used.

The CWL ProductionReport generates the following log file:

```
"JobName";"Timestamp";"EventID";"CableName";"DataValue";"Description";"EventName"
"liste_1.cwl";"2020-01-30T10:49:56";5;"";"";"";"psStart                "
"liste_1.cwl";"2020-01-30T10:50:00";2;"article_a";"material_1";"";"psMaterial      "
"liste_1.cwl";"2020-01-30T10:50:00";1;"article_a";"1";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:03";1;"article_a";"2";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:05";1;"article_a";"3";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:05";15;"article_a";"3";"";"psTotal          "
"liste_1.cwl";"2020-01-30T10:50:05";9;"article_a";"328";"material_1";"psMaterialCount "
"liste_1.cwl";"2020-01-30T10:50:11";1;"article_b";"1";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:13";1;"article_b";"2";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:13";20;"article_b";"";"";"psBatch          "
"liste_1.cwl";"2020-01-30T10:50:18";1;"article_b";"3";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:20";1;"article_b";"4";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:20";20;"article_b";"";"";"psBatch          "
"liste_1.cwl";"2020-01-30T10:50:20";15;"article_b";"4";"";"psTotal          "
"liste_1.cwl";"2020-01-30T10:50:20";9;"article_b";"900";"material_1";"psMaterialCount "
"liste_1.cwl";"2020-01-30T10:50:24";2;"article_d";"material_2";"";"psMaterial      "
"liste_1.cwl";"2020-01-30T10:50:24";1;"article_d";"1";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:26";1;"article_d";"2";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:29";1;"article_d";"3";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:31";1;"article_d";"4";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:34";1;"article_d";"5";"";"psCount          "
"liste_1.cwl";"2020-01-30T10:50:34";15;"article_d";"5";"";"psTotal          "
"liste_1.cwl";"2020-01-30T10:50:34";9;"article_d";"2000";"material_2";"psMaterialCount "
"liste_1.cwl";"2020-01-30T10:50:34";8;"article_d";"";"";"psJobTerminated "
"liste_1.cwl";"2020-01-30T10:50:35";9;"article_d";"2";"material_2";"psMaterialCount "
"liste_1.cwl";"2020-01-30T10:50:35";6;"article_d";"";"";"psPause          "
```

The table columns have the following meaning:

"JobName"	"Timestamp"	"EventID"	"CableName"
<cayman file name>	<date / time>	>internal event ID>	<article name>

"DataValue"	"Description"	"EventName"	Description
(empty)	(empty)	psStart (5)	Start production
<raw material>	(empty)	psMaterial (2)	Change to raw material <...>
<sequence number>	(empty)	psCount (1)	Article No.<...> was produced
<number of produced items>	(empty)	psTotal (15)	A total of <...> items was produced
<material consumption in mm>	<raw material>	psMaterialCount (9)	Consumption <...> of raw material <...>
<batch No>	(empty)	psBatch (20)	Batch No. <...> was produced
(empty)	(empty)	psJobTerminated (8)	Job finished
(empty)	(empty)	psPause (6)	Cayman waits new jobs

The protocol lines for "article_a" are highlighted in yellow as an example:

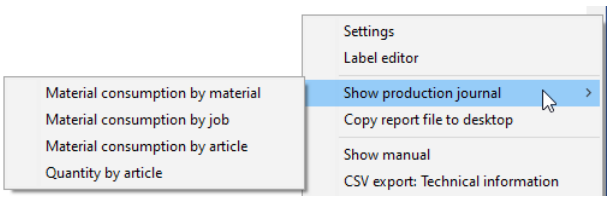
- The production start of "liste_1.cwl" was on 30.01.2020 at 10:49:56,
- at 10:50:00 it was logged that "material_1" is used to produce "article_a",
- until 10:50:05 3 items were produced by "article_a", the total (3) was produced,
- at 10:50:05 for "article_a" a material consumption of "328 mm" was logged by "material_1".

(The production of "article_b" and "article_d" is logged in the same way).

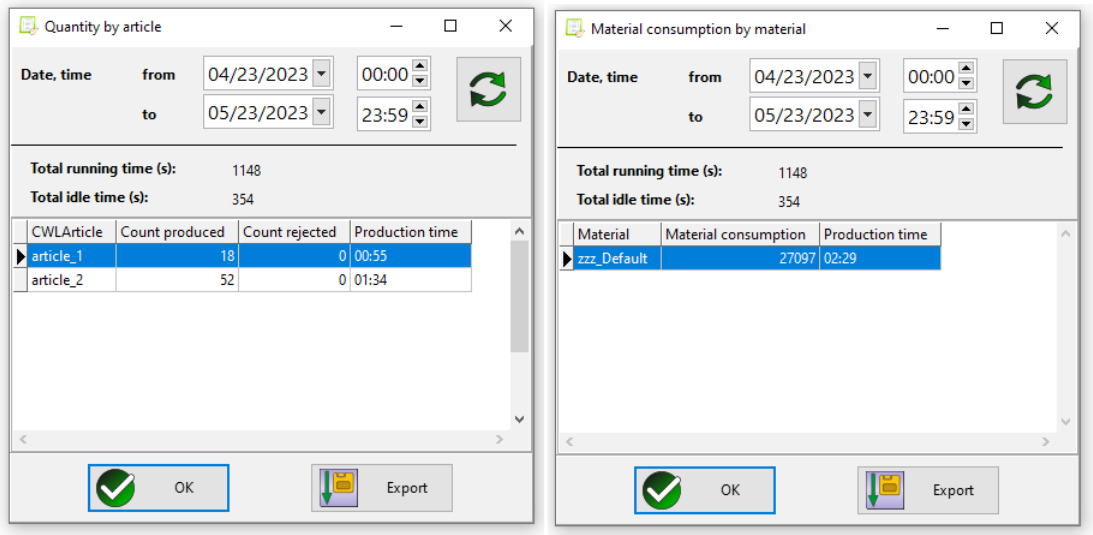
For example, to determine the total consumption of "material_1", all entries of the column "DataValue" are summed up in the table, for which the column "Description" contains the entry "material_1" and the column "EventName" contains the entry "psMaterialCount". These rows are marked green. You get 328 + 900 = 1228 mm total consumption.

4.2.5 Production journal

The production journal informs about different production data within a selectable time period. Currently, the following can be evaluated: Material consumption, broken down by material (raw material), job or article as well as produced quantity, broken down by article. In addition, the running and idle times of the machine during this period are displayed.



The period of the last 30 days including the current day is preset. It can be freely selected with the date and time selectors "from" and "to". If you change the date or time, the results will be updated, as well as when you press the Refresh button.



The material consumption in millimeters [mm] or the produced quantity in pieces is indicated together with the production time (format minutes:seconds).

Note: The number of pieces under entry 'Counts rejected' *only* refers to articles that Cayman has *automatically* sorted out, e.g. by a 'Splice detection unit'. Manual Cayman entries under 'Rejects' are not taken into account.

Button function	Description
Refresh	Updates the overview
OK	Closes the overview.
Export	Exports the listed production data in Excel format, the path of the report file is preset. See also Chapter 4.2.6).

4.2.6 Export of production data

The table data of the respective production journal is exported as an Excel file.

	A	B	C	D	E
1	Project:	Cayman-Toolbox			
2	Tool:	Production-Report			
3	Function	Template4:			
4					
5	Headline1	Headline2	Headline3	Headline4	Headline5
6					
7	Datafield1	Article	Produced	Rejected	Production time
8					
9		article_2	90	0	3:43
10		article_1	49	0	2:28
11	Sum:	0	139	0	0
12					
13					

The production data always starts in cell "B9" (here 'article_2') and includes all rows and columns of the displayed overview. Below the last line with production data (here line 11) a sum line is automatically inserted, which adds up all numerical values above it for the columns 'Produced', 'Rejected' and 'MaterialConsumption'.

Note: The cell contents 'Headline1-5' and 'Datafield1-5' are replaced by 'Article', 'Job', 'Material' ,'Produced', 'MaterialConsumption' etc. depending on the journal type. This is based on four Excel templates that are copied into the /data/ subfolder during installation.

Journal type	Excel template
Material	'productionTemplate1.xlsx'

Journal type	Excel template
Material by Job	'productionTemplate2.xlsx'
Material by article	'productionTemplate3.xlsx'
Article	'productionTemplate4.xlsx'

The templates can be customized, but the production data is always inserted from cell 'B9'.

The location of the Excel file is the directory for reports (see Settings, Chapter 4.2.3). The suggested file name is:

‚**production_**‘ + <station name> + <shortcut for journal kind> :

- ‘**Material**‘ : Material consumption by material or
- ‘**MaterialByJob**, : Material consumption by job or
- ‘**MaterialByArticle‘ :** Material consumption by article or
- ‘**Article**‘ : Quantity by article

+ <Period from... until , each consisting of Date + Time> + ‚**.xlsx‘**

Examples:

production_station1_MaterialByArticle_2021-08-01T00-00_2021-08-31T23-59.xlsx‘

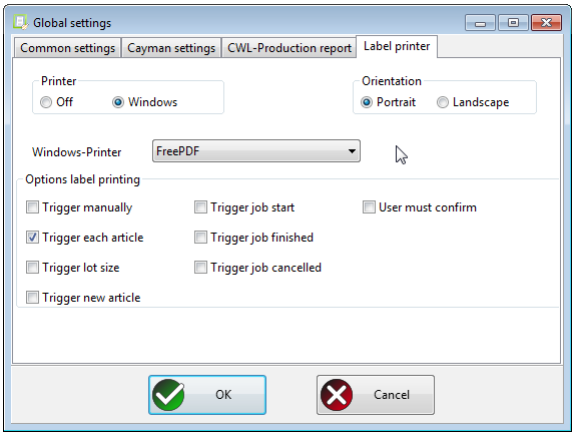
Material consumption at ‚station1‘, by article (name), from 8/1/2021, 00-00am, until 8/31/2021, 11-59pm).

‘production_station2_Article_2021-09-14T06-00_2021-09-14T14-00.xlsx‘

Quantity at ‘station2‘, by article (name), at 9/14/2021 from 06-00am to 02-00pm (e.g. an early shift).

4.2.7 Label printer settings

In addition to the production report log, stickers or labels for packaging etc. can be printed at certain production times.



Function	Description
Printer	Select “Off”(no printing) or a Windows printer
Orientation	Select printing format: Portrait or landscape

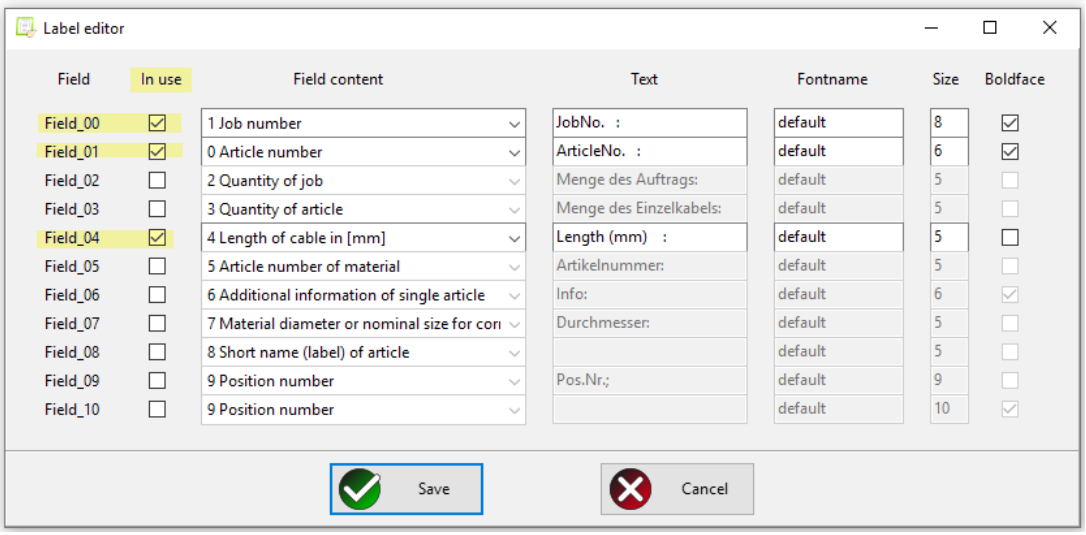
Function	Description
Windows-Printer	A printer installed on the PC can be selected here.
Options label printing	Here you can define (set checkbox) for which production events a print should be triggered.

4.3 Label Editor

Up to 11 text fields with field contents from the following table can be printed. The content, text, font, font size and boldface can be freely selected per field.

Field number	Field content
0	Article number
1	Job number
2	Quantity of job
3	Quantity of article
4	Length of cable in [mm]
5	Article number of material
6	Additional information of single article
7	Material diameter or nominal size for corrugated pipe machines
8	Short name (label) of article
9	Position number

To edit the label layout, select "Label editor" from the pop-up menu.



Example: 3 out of 11 possible fields are printed ("In use" is checked in the fields 00, 01,04).

This results in the following layout:

- Field_00: Text "JobNo. :" + <Cayman-Filename> Font <default>, Size <8> <Boldface>
- Field_01: Text "ArticleNo. :" + <Article name from Cayman> Font <default>,Size <6> <Boldface>
- Field_04: Text "Length (mm):" + <wire length from Cayman> Font <default>, Size<5>

Note: To change the entries of a field, the "In use" checkbox must be checked.

Layout settings are saved to a file "labelprinter.ini" in the application directory by clicking the "Save" button and are automatically reloaded when the program is restarted. During the program installation, the "labelprinter.ini" of the example layout shown here is also installed.

5 OPC UA Interface

The CWL-ProductionReport includes an OPC UA server that provides information about the current state of the cable processing machine and the production process to a requesting client.

The following information is provided by the server:

Node name	Description	Data type	Update at
"Stoerung"	Liegt eine Störung vor?	**Boolean** yes ('true'), no ('false')	'true': Cayman nicht erreichbar / offline 'false': Cayman ist erreichbar / online
"Automatik"	Maschine bereit?	same	'true': Cayman produziert eine Artikelliste 'false:' Cayman produziert nicht
"Takt"	Produziert die Maschine?	samr	'true': Cayman produziert eine Artikelliste oder ein Einzelstück 'false': Cayman produziert nicht
"Ausschuss"	Wurde ein fehlerhaftes Stück gefertigt?	same	Produziertes Stück: 'true': Stück wird zurückgewiesen 'false': Stück ist in Ordnung
"Rüsten"	Wird die Maschine gerüstet?	same	'true': Cayman wartet, weil Maschine gerüstet wird (Material, Messer etc.) 'false': Cayman produziert oder wartet auf Auftrag oder ist gestört
"Auftragsname"	Auftragsname	**String**, max. 128 chars	Nach Laden einer Caymandatei
"Artikelname"	Artikelname	same	Bei Produktionsbeginn eines Stücks dieses Artikels.
"Auftragszähler“.“Soll“	Zu Produzierende Stückzahl dieses Auftrags	**Integer number >=0**	Nach Fertigstellung eines Stücks.
"Auftragszähler“.“Rest“	Verbleibende Auftragsstückzahl	same	same
“Auftragszähler“.“Gesamt“	Produzierte Menge (Auftragsstückzahl "in Ordnung" + "nicht in Ordnung")	same	same
“Auftragszähler“.“IO“	Auftragsstückzahl "in Ordnung"	same	same
“Auftragszähler“.“NIO“	Auftragsstückzahl "nicht in Ordnung"	same	same
"Materialverbrauch MM"	Materialverbrauch in mm	same	same
“Gesamtzähler“.“Gesamt“	Gesamtstückzahl ("in Ordnung" + "nicht in Ordnung")	same	same
“Gesamtzähler“.“IO“	Gesamtstückzahl "in Ordnung"	same	same
“Gesamtzähler“.“NIO“	Gesamtstückzahl "nicht in Ordnung"	same	same