

Barcode Reader



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Barcode Reader Product information

Barcode Reader – for optimal automation in analytics

Encoding sample information in barcodes is a common tool in laboratory automation. Almost every laboratory information management system (LIMS) offers the generation of barcode labels so that information can be exchanged easily and error-free between LIMS and other data systems. Depending on the application, several units of information are to be transferred. The usual 1D barcodes, as known from the consumer goods sector, can only transport a small amount of information. 2D barcodes, on the other hand, are capable of encoding much more information with high recognition accuracy. This is possible on small labels, so that even 2 mL vials can be provided with a lot of information.

Axel Semrau has developed a barcode reader that enables the safe and automatic transfer of information about the sample directly into the sample preparation or a sample list. The XYZ robot CHRONECT Robotic integrates the Barcode Reader into the fully automated sample preparation.



Figure 1: A rotating platform ensures error-free reading of the barcode. Various inserts allow the use of different vial sizes.

The advantage: The information scanned in via the 2D barcode no longer has to be entered manually. Thus, the Barcode Reader saves a lot of working time. Errors due to incorrect entry are avoided.

The laboratory's EDP or LIM system manages the sample-specific information and prints the 2D barcode labels. This information is transferred to the CHRONOS sample list and thus to the GC-MS evaluation software. It is then available for processing the sample list as well as for evaluation in Xcalibur™, ChemStation or Analyst.

The Barcode Reader is controlled via the CHRONOS master software. This tool is made particularly powerful by CHRONOS' just-in-time scripting capability. With this function, the software does much more than just read out and transfer information to the sample list. All information is processed during the runtime of the analysis sequence in such a way that an automatic and intelligent sequence control via the barcode is possible.

The following possibilities are easily realized:

- Deposit of the GC-MS or LC-MS analysis method in the barcode: This information is used by CHRONOS to control the data system.
- Deposit of information such as sample weight: Information of this type is used in CHRONOS for the calculation of dilution steps or for transfer to the data system.
- Deposit of the quantity of the calibration standard to be added in the barcode: This information is used by CHRONOS to control the CHRONECT Robotic Autosampler.
- Deposit of the injection volume in the barcode: This information is also passed on to the data system and automatically implemented.
- Deposit of a predefined time for the analysis: CHRONOS starts the analysis exactly at this time.

To ensure reliable detection, the vial rotates slowly on a rotating platform in front of the reading unit. Nevertheless, if a scanning error occurs, you can define in CHRONOS what to do in this case. For instance, the sample can be

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skipped or a notification can be sent to the laboratory staff.

The reading unit automatically detects the type of bar code used. Of course, 1D barcodes are also recognized and read.

A total of ten different pieces of information can be stored in a barcode and evaluated separately by CHRONOS. Thanks to the simple rotation of the rotating platform, a single barcode is sufficient for readability, so that there is also room for plain text on the label. This enables users to identify the contents without a barcode reader if required.



ID : AB54321
Name: Produkt A Ch/B 2134
Meth: headspace-LHKW.meth

Figure 2: Typical label for the Barcode Reader.

Technical specifications

- Supports all common 1D and 2D barcodes
- Supports 20 mL, 10 mL or 2 mL vials
- Simple, rotating vial holder for reliable detection
- Label with only one barcode and space for plain text usable
- Connection via USB to evaluation computer
- Requires CHRONOS version 3.0 or higher
- A German and English manual is available for the Barcode Reader.

The Barcode Reader is a
development by Axel Semrau.

Subject to technical changes

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