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| **At a Glance**   * Modular system allows individual solutions for volume measurement in conveyor systems * Application-specific contour detection without shadowing, optionally with up to three LiDAR sensors * High throughput and fast conveyor speed due to sampling rate of up to 100 Hz * Maximum measuring precision with maximum accuracy of up to ± 3 % due to angular resolution of 0.042° * Speed measurement with supplied rotary encoder, PLC signal, or adjustable static value * Comprehensive real-time data for flexible use in the measuring application |

# Volume Measurement on Conveyor Belts

## LiDAR Technology Captures Loads in 3D and in Real Time

**The Volume3D volume detection system continuously measures the load on conveyor belts in three dimensions, providing detailed information on utilization. The modular system is characterized by easy installation, noncontact measurement, and low maintenance requirements. It can be flexibly adapted to suit the requirements of different plants.**

The system consists of a LiDAR sensor, an evaluation unit, an optional rotary encoder, and the required connection cables. It can precisely measure both bulk material and randomly arranged objects on conveyor belts, without contact, and in real time. Integrated contamination detection means it can also be used in dusty environments.  
  
Two different LiDAR sensor types are available: The R2000, which has a high-precision angular resolution of 0.042°; and the R2300, which offers a high scan rate of up to 100 Hz. Up to three LiDAR sensors can be connected to avoid shadowing. The conveyor speed can be recorded with a rotary encoder, input as a PLC signal, or set as a fixed variable. The system provides precise data on volume, volume flow, dimensions, and other load indicators. It is suitable for a wide range of applications, from intralogistics to mining.

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| **Caption** | 3D detection of bulk material |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_Y2pWbU9VOU9WV1pDY2xsS1JqZ3JkbFJGTTB0d1FUMDk&download=1> | |

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| **Caption** | Volume3D system with rotary encoder, LiDAR sensor, evaluation unit, and cables |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_Y1d0RFRtSkhhV3M1V0VSekwycE9XWEp0WXpGQ2R6MDk&download=1> | |

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| **Caption** | For contour detection without shadowing, up to three LiDAR sensors can be connected to the evaluation unit. |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_Y0RZdlVXMUhZV3BvZWpsMVpVaENZbEF2TjBwU1p6MDk&download=1> | |

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| **Caption** | Precise measurement of objects in a random arrangement with the R2000 LiDAR sensor |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_ZW1OWGJuSTFaMjlTYkZneWJIaFdWM0ZyT1RCU1VUMDk&download=1> | |

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| **Caption** | For high conveyor speeds: Volume3D with R2300 LiDAR sensor |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_UVZKWFFUWnNRMXBaWm1FeVNXWnFVVU5SYXpaQ1p6MDk&download=1> | |

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| **Caption** | For contour detection without shadowing, up to three LiDAR sensors can be connected to the evaluation unit. |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_UVhGclFVTlJkWEFyTTNWUFoySjJPWEkxWnk5RVVUMDk&download=1> | |

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