

# Multiple Point Bin Volume Measurement

(800) 792-7427

- **Continuous and non-contact measurement**
- **Measures virtually any solid material**
- **Maximum measuring range 200 feet**
- **Measures in extreme levels of dust**
- **Patented acoustics-based technology**
- **Communications via 4-20/HART, Modbus RTU, or TCP/IP**
- **Easy to install**
- **Self-cleaning**

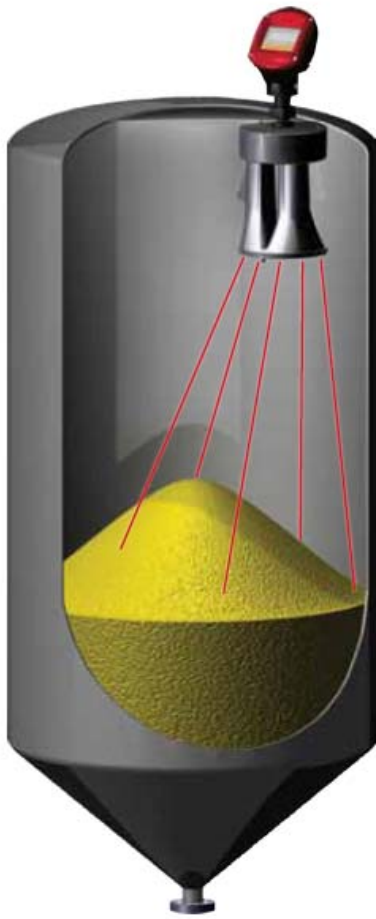


## 3D Level Scanner™

CONTACT YOUR DEALER:

**Gulf Atlantic**  
INDUSTRIAL EQUIPMENT INC.

**BINMASTER**



# Non-Contact, Dust Penetrating Bin Volume Measurement

(800) 792-7427

Using patented acoustics-based technology, the BinMaster 3DLevelScanner measures bin contents at multiple points making it one of the most accurate devices on the market today. Its advanced technology penetrates dust, allowing it to perform reliably where radar and ultrasonic units have failed. The 3DLevelScanner provides the user a scaled 4-20 mA output that can represent either the product or headroom volume.

Using an optional HART, TCP/IP, GPRS or RS-485 connection, the user can also connect to the scanner using the 3DLevel Manager software. The 3DLevel Manager software charts the level of the bin over the course of each day allowing for historical tracking, which creates data that is useful for operations management and inventory planning purposes. It tracks bin volume over time, which can be helpful for operations that risk downtime if bins get too full or empty.

## Multiple Point Measurement Ensures High Accuracy

Unlike standard ultrasonic, radar or cable-based units that are measuring one point and determining a single distance, the 3DLevelScanner scans and takes measurements from various points within the bin. These points are used to determine the volume of material in the bin. Measurement points are not averaged to calculate bin volume. Instead, each point is given a "weight" or strength of accuracy rating assigned by an algorithm to determine the true volume of material within the bin.

In many cases, especially with applications prone to irregular material surfaces, there will be points in the bin that are lower or higher than the majority of the bin contents. If a simple average formula was used to determine average height of the product, it could be inaccurate. By using an algorithm that bases the average height from all of the points and the weights associated with them to determine the average volume and height/distance, the 3DLevelScanner can provide a much more accurate estimation of bin volume.

There are three models of the 3DLevelScanner referred to as S, M and MV. The M and MV models employ a 2-dimensional array beam-former that sends very low frequency (dust penetrating) acoustical pulses and receives echoes of the pulses from multiple points within a 70° beam angle on the surface of the material in the bin. The MV model offers the added feature of visualization, generating maps of bin topography. The S model employs the same technology, but within a narrower 30° beam angle. The S model takes an average of all the numerous measurements within a narrower 30° coverage window, and calculates the average volume from the measurements within that window.



# Safe, Non-Contact Technology Eliminates Contamination Risk

The 3DLevelScanner is a non-contact device, so it is ideal for food processing, pharmaceuticals, or chemicals where contact with the material being measured must be avoided. It is also suitable for “sticky” materials whose level needs to be monitored, but the material could cause problems by adhering to the measurement device. It also avoids situations such as broken or buried cables, which can cause maintenance problems and result in downtime and periods when no measurements can be taken.

## Feature

## Benefit

Multiple Point Accuracy	Taking measurements from multiple points versus a single point takes into account variations that can occur on material surfaces.
Dust-Penetrating Technology	Acoustical-based, low frequency technology is unaffected by dust, working where ultrasonic and radar have failed.
Non-Contact Measurement	Appropriate for foods, chemicals and pharmaceuticals as there is no risk of moving parts coming into contact with bin material.
Unaffected by Material Type	Can be used in a variety of powders, granulates, pellets and other solids with no need for special calibration.
Long Measurement Range	Appropriate for tall bins (taller than they are wide) and able to measure a range up to 200 feet.
Low Power	Consumes very little power, making it cost effective to operate.
System Redundancy	Three independent transducers help to ensure accuracy.
Remote Configuration	A remote link with BinMaster’s engineering laboratory during the initial installation period allows bin parameters to be loaded in the software and fine tuned for optimum performance.



*Outer unit is coated with build-up from dust.  
Inside the unit is clean and fully operational.*



## Works in Dust, Unlike Radar or UltraSonic

The 3DLevelScanner uses a very low frequency acoustical signal to penetrate dust and take measurements which are determined by how long the signal takes to “travel to” solid or powder material and “return” to the device. These very low frequency acoustical signals are able to penetrate suspended dust, unlike other technologies whose signals become “confused” when attempting to take measurements in dusty environments. The acoustical signals, combined with a non-stick material, prevent material from adhering to the internal workings of the device ensuring long-term reliable performance. The 3DLevelScanner is self cleaning, offering very low maintenance in even the dustiest environments.

(800) 792-7427



(800) 792-7427

# Suitable for Pellets, Granulars, Powders and Most Other Bulk Solids

- **Grain, Seed & Feed**
- **Chemical Processing**
- **Aggregates & Cement**
- **Food Processing**
- **Bioenergy**
- **Pulp & Paper**
- **Petrochemicals**
- **Plastics Manufacturing**
- **Power-Coal, Fly Ash or Clinker**
- **Limestone**



**Gulf Atlantic**

INDUSTRIAL  
EQUIPMENT  
INCORPORATED

P. O. Box 2169  
Crystal River, FL 34423  
[www.gulfatlanticequipment.com](http://www.gulfatlanticequipment.com)  
[info@GulfAtlanticEquipment.com](mailto:info@GulfAtlanticEquipment.com)  
(800) 792-7427

