

# **BINMASTER**

## **3D LEVEL SCANNER**



### *Pump Up the Volume Accuracy with Multiple-Point Measurement and 3D Mapping*

The cement, aggregates, power and mining industries are characterized by many common challenges when it comes to materials management and storage. While some materials used to produce cement, power or metals are heavy, abrasive, coarse and lumpy... others are powdery, dusty, sticky and clumpy. The acoustics-based technology used by the BinMaster 3DLevelScanner offers plants that produce products and services using challenging materials unique benefits that radar and ultrasonic devices cannot match.

**Multiple-point measurement for improved accuracy:** By measuring and mapping the material surface at multiple points and providing minimum, maximum



and average distances the 3DLevelScanner calculates a volume estimate that is more accurate than radar or ultrasonic devices.

**Non-contact:** The 3DLevelScanner employs an acoustics-based technology, so there is no equipment coming into contact with the surface of the material as there is with a radar-on-a-rope device. This eliminates the risk of equipment breaking off or becoming trapped in material and potentially causing damage to sweepers or conveyors in the bottom of the silo.

**Penetrates dust:** In the cement and aggregates industry, many materials generate excessive amounts of dust making it difficult or impossible for technologies such as radar or ultrasonic to provide accurate

readings. The 3DLevelScanner penetrates dust and provides a highly accurate volume measurement in even extreme conditions.

**Detects bridging and sidewall buildup:** By taking multiple measurements within the bin and then mapping the topography in the bin, the computerized profile created by the 3DLevelScanner can show bridging as well as material built up on the sides of the silo. By detecting irregularities in the material surface, excessive build-up can be accounted for in volume calculations. With single point devices, a measurement may show the bin is almost empty, even when a significant amount of material remains in the bin.

**Excels at measuring powders:** Many materials used in the production of cement are powders than are prone to creating dust, bridging or building up on the sidewalls of the silo. The surface of powdery materials tends to be irregular, which makes the 3DLevelScanner and its multiple-point measurement and mapping capability ideal for the challenges associated with powders.

*continued on page 2*



#### **Inside this issue:**

Multiple-Point Measurement	1
Why BinMaster	2
Models and Uses of 3DLevelScanners	3
Worldwide Applications of 3DLevelScanners	3

continued from page 1

**Challenging materials:** Hard to measure materials, such as flyash, are stored in silos in cement applications where there is a requirement to measure the quantities fairly accurately. With its highly accurate

### 3D Meets the Challenge of Tough Materials



- Aggregates**
- Aluminum**
- Calcium**
- Chalk**
- Clay**
- Coal**
- Coke**
- Crushed Shells**
- Flyash**
- Gravel**
- Grit**
- Gypsum**
- Iron Ore**
- Lime**
- Limestone**
- Marl**
- Sand**
- Shale**
- Silica**
- Slag**
- Slate**

volume estimates, the 3DLevelScanner offers an alternative to weighing the material.

**Self cleaning:** The 3DLevelScanner automatically cleans itself, which reduces the frequency of preventive maintenance. Suspended dust tends to stick to radar or ultrasonic devices, requiring cleaning or maintenance at frequent intervals in order for the instrument to continue working. The 3DLevelScanner's self cleaning technology is proven to be very effective in preventing dust from adhering to the transducers.

**Alerts to the need for preventive maintenance:** By detecting sidewall build-up early, silos can be cleaned and serviced before material hardens and becomes even tougher to clean out of the silo. Preventive maintenance can be performed early when it is an easier and less expensive undertaking.

**Prevent silo collapse:** There have been instances around the world where excessive build up on one side of the silo has caused the silo to collapse. By detecting the build up of material early, excessive damage to the silo and surround-



ing structures can be avoided. Installing a 3DLevelScanner can lead to a reduction of insurance claims and costly, time-consuming rebuilding of structures.

## Why 3DLevelScanner from BinMaster



**More than 50 Years Experience** – Since 1953, BinMaster and its parent company Garner Industries have built its reputation by treating customers right. We are financially strong and will be here to service your needs now and well into the future.

**Thousands of Satisfied Customers** – For 50 years, BinMaster has been supplying companies of all types and sizes with a wide variety of bin level solutions. Our skilled support staff fits you with what you need to address your challenges and meet your budget.

**75,000 Square Foot Operation** – Not just a sales office! BinMaster operates an ISO certified, state-of-the-art manufacturing plant in Lincoln, Nebraska, USA and is 100-employees strong. BinMaster manufactures level controls and also has an extensive machine shop for metals and plastics fabricating.



**Engineering Expertise** – BinMaster employs five full-time engineers and has a highly experienced in-house technical support staff, plus a nationwide support network of fully-trained distributors. We address every inquiry on the same business day!

# Models for Silos Large and Small ...

*Plus, Measure Bunkers and Piles that Other Devices Cannot!*

**Very tall silos:** The M and MV models can provide unmatched accuracy in bins up to 45 feet wide and 230 feet tall.

**Narrow silos:** In narrow silos, such as those used by concrete manufacturers, plants can optimize the manufacturing process by starting to fill according to the “minimum level” reading and stop the fill according to the “maximum level” reading.

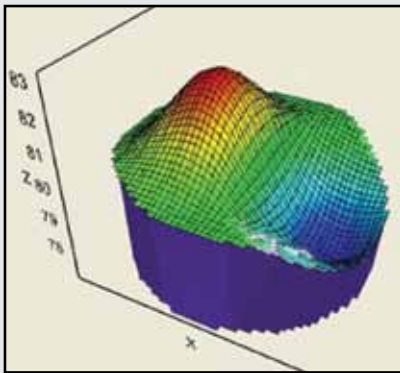
**Extremely wide silos:** For silos up to 90 feet wide, the new MVL model integrates two 3DLevelScanners with highly specialized software that combines the data from the two scanners into a highly accurate volume estimate.

**Bunkers, open bins and piles:** The 3DLevelScanner can measure and map the surface area of the material inside a bunker, open bin or pit and provide a volume estimate of the contents.

**Small silos:** With its 30° beam angle, the S model is ideal for smaller diameter silos. When a very high level of accuracy is desired – such as when processing very expensive materials – the M or MV models can be used.



## Proven to Work in Worldwide Applications



*The image on the top shows the irregular material surface during the empty cycle; the image above is the visual representation created by the software.*

### *United States*

The 3DLevelScanner was installed at a major producer of lime and limestone products to help them improve inventory management.

### *Scandinavia*

A leading producer of high quality, limestone-based products for the Northern European market has installed the 3DLevelScanner to measure raw materials in several Scandinavian sites.

### *Poland*

A Polish subsidiary of the world's largest producer uses the 3DLevelScanner to monitor the volume of lightweight, expanded clay aggregates.

### *Spain*

A top Spanish manufacturer and marketer of gypsum and laminated gypsum board uses the 3DLevelScanner to assess inventories of raw gypsum mineral crystals under very harsh environmental conditions.

### *Greece*

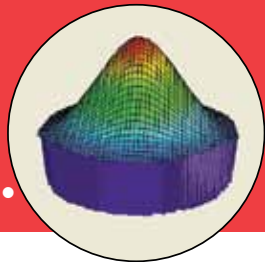
A large Greek producer of white cement and mortar installed the 3DLevelScanner to monitor inventories under very challenging process conditions.

### *Poland*

One of the top global companies in the cement industry, with a presence in more than 50 countries across five continents, installed the 3DLevelScanner in multiple sites in Spain and Poland to accurately measure loads of raw material that randomly form inside silos under extremely challenging, dusty environmental conditions.



Established in 1953, Garner Industries is home to the BinMaster® level control business. Additionally, our state-of-the-art ISO 9001:2000 certified facility in Lincoln, Nebraska USA offers jobshop and precision tooling services for a wide variety of industries including automotive, refining, electronics, aerospace, and telecommunications ... to name but a few. Visit [www.garnerindustries.com](http://www.garnerindustries.com) to find out about our full suite of services.



## ***BINMASTER*** 3D LEVEL SCANNER ***KNOW WHAT'S REALLY IN YOUR SILO***

**Revolutionary non-contact technology**

*No risk of losing cables*

**Dust penetrating sensor**

*Outperforms ultrasonic and radar*

**Measures and maps uneven surfaces**

*Highly accurate volume*

**Multiple-point measurement**

*Minimum, maximum and average distances*

**Monitor inventory from a PC**

*Know to refill without leaving the office*

**Maintenance-free, self-cleaning**

*No routine maintenance needed*



**BinMaster Level Controls**  
**Lincoln, NE, USA**  
**800-278-4241 • 402-434-9102**

**3D, SmartBob, Rotaries and  
more Point Level Indicators  
at [www.binmaster.com](http://www.binmaster.com)**