

# HMT-MS Measuring Station

## for Concrete Test Cylinders

The **HMT-MS Concrete Test Specimen Measuring Station** from **HM Technologies** has been specifically designed using the latest technology in laser sensors for **accuracy, repeatability, ease of use, efficiency and Safety.**

The Measuring Station for Test Cylinders is designed to measure the dimensions and mass of concrete test cylinders. Engineered to comply with AS/NZ Standards AS1012-8 and ASTM C39/C39M-05, the measuring station utilises **edge measurement technology** to minimise errors due to craters in the sample surface.

Measurement is digital and is independent of temperature, surface texture, colour of sample or dirt on lenses.

With an ergonomic design, measurement cycle time of less than 1 second and custom software interface to supply the measurement data directly to your LIMS software throughput rates of more than 180 test cylinders an hour are achievable.



### Why use the HM Technologies Measuring station rather than the traditional manual process?

- ✓ Accurate measurement and recording of data
- ✓ Accurate results ensure optimal mix costs
- ✓ Data transmitted directly to QC system
- ✓ Massive saving in measurement process time
- ✓ 400% productivity improvement
- ✓ Headcount saving or re-focus staff on value adding tasks
- ✓ Reduces the manual task
- ✓ Improves Workplace Health and Safety

Traditional manual systems are slow and require continuous concentration in a very repetitive process. At times due to human error and typical laboratory time pressures short cuts may be taken, thus affecting the validity and accuracy of results

The measuring station can handle all measurement and recording of critical data, the key human involvement is down to the correct placement of the cylinder on the station. This means a massive saving in measurement process time and accuracy of the results.

## Key Features

- Available in two different models one designed to measure Ø100mm (4”) cylinders only while the other is capable of measuring both Ø100mm (4”) and Ø150mm (6”) diameter cylinders by installing or removing buffer blocks to change sizes.
- Actual dimensions and weights are displayed in the HMT –MS specimen measuring station. This allows the system to operate in standalone mode.
- Option to allow system to operate in Stand by mode i.e.: if QC system is down results table can be created for retrieval at a later date when QC system is available.
- Flexible and simple data transfer to QC system.
- Optional supply of Ø100mm (4”) and Ø150mm (6”) calibration cylinders and with a rapid “one touch” calibration procedure.
- Clever design using smart sensor technology and sophisticated software means the HMT-MS is field serviceable.
- Optional Stainless Steel Stand with removable dust and grit trays is stable and ergonomically designed to minimize fatigue and makes the workspace even easier to keep clean.
- Ability to split screen and show both dimensions from Measuring Station and QC Software (specimens for test) on one screen.

How the HMT MS adds value	
<b>Accuracy and Repeatability</b>	<b>Efficiency</b>
The HMT MS ensures accuracy and repeatability, two critical elements required to give the technical manager confidence to optimize mix performance or costs without compromising quality.	400% productivity and throughput improvement is achievable versus manual processing the system is capable of measuring 3 cylinders per minute.
Accurate results which are transferred directly into your data base or QC system eliminating double handling and data entry errors	Reduction in man hours which could result in a headcount saving or the ability to use labour to focus on value adding tasks.
Edge measurement ensures the highest degree of accuracy: Accuracy with Temperature Change < ±0.1mm for ±10 degrees C, tested over ranges from 10 to 30 degrees	No double handling of information, as the data transfers directly into the lab QC system there is no need to write down results and capture data into the system, ensuring an efficient process and accurate recording.
<b>Ease of Use</b>	<b>Safety</b>
The HMT MS is easy to use the operator simply places the cylinder on the station and the systems weighs and measures the cylinder and transfers the data directly into the QC system .	The HMT MS reduces the manual task associated with weighing and measuring test cylinders, the operator simply places and removes the cylinder from the measuring system .
Actual dimensions and weights are displayed in the HMT –MS specimen measuring station. This allows the system to operate in standalone mode.	Optional Stainless Steel Stand with removable dust and grit trays is stable and ergonomically designed to minimize fatigue and makes the workspace even easier to keep clean.

Fully compliant to the AS 1012.0-1999 and ASTM C39/C 39M-5 test standards the HMT-MS will integrate seamlessly with your laboratory systems.

## Edge Vs Triangulation Measurement

Currently in the market there are two dimensional measurement systems, "Triangular" and "Edge". The HM Technologies measuring station utilises "Edge" measurement.

Edge Measurement	Triangular Measurement
<b>Measurement</b> Uses an "edge-through" laser and digital CCD receiver	Uses a light source projected on the top of the surface and received by an analog PSD receiver
<b>Surface</b> Measurement is not effected by surface colour or reflectiveness.	Measurement is effected by reflective surfaces effecting both calibration & measurement; reference cylinders must be of a consistent colour to the tested samples.
<b>Dirty Lenses</b> Not affected by a dirty lens unless particles are greater than 1mm.	Sensitive to particles on the lens and effected by particles smaller than 1 mm.
<b>Accuracy with Temperature Change</b> 0.1mm for $\pm 10$ degrees C, tested over ranges from 10 to 30 degrees	0.2mm for $\pm 10$ degrees C, excluding the effect of the analog to digital converter unit.
<b>Sensor Distance</b> The distance of measured object to sensor is 500mm, the distance between sender and receiver is less than 500mm, therefore sender and receiver can both be 250mm from the sample.	20mm range and a stand off distance of 65mm to capture the received signal. It is not possible to measure the diameter at 90 degrees and have enough gap between the sensors - therefore the sensors are angled at 120 degrees. Typically Standards specify measurement at 90 degrees; therefore it is necessary to get special dispensation if 120 degrees is used.
<b>Calibration</b> Can be done using push button or PC instruction.	Requires manual intervention and adjustment of pots.
<b>Surface Texture</b> Not affected by craters on the surface of the sample, the colour or reflectivity of the light source	The received light source data is effected by craters, colour or reflectivity of the sample surface.

***For more information please contact HM Technologies Pty Ltd***