

AIR ENTRAINMENT METER



Measuring the air content of fresh concrete and mortar is one of the most fundamental quality control steps in modern construction. The correct level of entrained air directly affects a mix's freeze-thaw durability, workability, and long-term structural performance. Choosing the right concrete air meter for your project determines whether your testing delivers the accuracy, speed, and compliance your team needs on every pour.

The ToronCAM™ and ToronMAM™ series cover every scenario a construction team, ready-mix plant, or testing laboratory will encounter. The ToronCAM™ line delivers seven precision-built concrete air meters for freshly mixed concrete — spanning entry-level dual-method testers, portable field instruments with built-in pumps, ultra-precision models with temperature detection, and fully digital battery-powered units with ceramic sensing chips. The ToronMAM™ line addresses mortar testing with three purpose-built mortar air entrainment meters, each optimized for the finer-grained sample characteristics of cement mortar and CA mortar.

Together, these ten instruments form a complete air meter concrete testing ecosystem. Every model in both series is built on the internationally recognized pressure method and is aligned with ASTM, AASHTO, EN, and CSA standards. Whether you need a standard concrete air tester for routine batch plant QC or a wide-range digital mortar meter for laboratory research, there is a ToronCAM™ or ToronMAM™ instrument built for that exact application.

Ready to Find the Right Air Meter for Your Project?

The ToronCAM™ and ToronMAM™ series give construction teams, ready-mix producers, testing laboratories, and infrastructure contractors a complete, standards-compliant air meter concrete and mortar testing solution. Use the comparison table above to identify the model that matches your application, accuracy requirement, and budget. Contact our team for pricing, lead times, calibration documentation, and product support.

From the entry-level ToronCAM™ DM dual-method concrete air meter to the precision ToronMAM™ D digital mortar air entrainment meter — every instrument in this series was built to perform in the field, comply in the lab, and give your team results you can stand behind.

APPLICATIONS

Applications

The ToronCAM™ and ToronMAM™ series serve professionals across the construction value chain — from batch plants and jobsite QC teams to independent laboratories and government inspectors. The following are the primary application areas covered by this product family:

Concrete Construction & Infrastructure

- Ready-mix concrete batch plants: routine air entrainment meter testing on every truck load before dispatch
- Bridge decks, highway pavements, and airport runways: verifying freeze-thaw durable concrete air content per DOT specifications
- Precast and prestressed concrete manufacturing: production-line air content QC for air-entrained mix designs
- High-performance and specialty concrete: precision air meter for concrete used in structural, architectural, and infrastructure applications
- Dam and hydraulic structures: monitoring entrained air for long-term durability and watertightness
- Residential and commercial slabs, flatwork, and driveways: air content verification for freeze-thaw exposed flatwork

Mortar, Masonry & Specialty Cementitious Products

- Masonry mortar QC: air content checks for Type S, N, and M mortars in brick, block, and stone construction
- Plastering, stucco, and render systems: air entrainment testing across base coats, brown coats, and finish coats
- Prepackaged mortar manufacturing: plant-level air content QC for bagged and bulk mortar products
- CA mortar and calcium aluminate applications: wide-range mortar air tester for specialty product verification
- Concrete repair and patching compounds: air content testing for cementitious overlay and repair mortar mixes

Testing, Research & Regulatory Compliance

- Independent testing laboratories: standardized concrete air tester and mortar air meter results for ASTM, AASHTO, and EN compliance
- Government and DOT project oversight: specification compliance verification on publicly funded infrastructure
- Mix design and admixture research: accurate air content baseline measurements for trial batches and product development
- Cold-weather and hot-weather concrete operations: temperature-capable models support year-round site testing

FEATURES

Why Choose the ToronCAM™ and ToronMAM™ Series?

Selecting an air meter for concrete or mortar is not just a purchasing decision — it is a quality assurance commitment. The instrument you choose affects the reliability of every test result, the compliance of every batch, and the durability of every structure built with that concrete or mortar. The ToronCAM™ and ToronMAM™ series were engineered with that responsibility in mind.

1. A Complete Testing Ecosystem in One Series

Most suppliers offer one or two concrete air tester models and leave the rest to guesswork. The ToronCAM™ and ToronMAM™ series give you ten purpose-built instruments across two product families — covering every combination of concrete and mortar testing, analog and digital readout, standard and ultra-precision accuracy, and portable and bench-top deployment.

2. International Standards Compliance Built In

Every ToronCAM™ and ToronMAM™ instrument is designed to support testing under ASTM C231, AASHTO T152, EN 12350-7, and CSA A23.2-4C for concrete, and ASTM C185, AASHTO T137, ASTM C780, and EN 1015-7 for mortar. No adaptation, no workarounds. Whether your project is governed by North American DOT specifications or European construction standards, this air entrainment meter lineup delivers traceable, compliant results from day one.

3. Precision Tiers for Every Budget and Application

Not every project requires the same level of accuracy. The ToronCAM™ series offers three precision tiers: standard accuracy ($\pm 0.2\%$ – $\pm 0.35\%$), high precision ($\pm 0.1\%$ – $\pm 0.15\%$), and ultra-precision ($\pm 0.0020\%$ – $\pm 0.12\%$). The ToronMAM™ mortar air meter series mirrors this structure, with standard and wide-range models accommodating everything from routine masonry QC to research-grade formulation testing. You pay for the precision you need — not for capability you will never use.

4. Advanced Sensing Technologies

The ToronCAM™ and ToronMAM™ series draw on multiple high-performance sensing technologies tailored to each application. The ToronCAM™ D digital concrete air meter uses an imported ceramic sensing chip for sub-percent accuracy across the full range. The ToronCAM™ HP incorporates Sanyo sensing technology from Japan for high-stability performance across the C15–C80 strength spectrum. The ToronMAM™ WR and ToronMAM™ D mortar meters integrate German sensing technology, delivering consistent results even in the challenging 0%–100% measurement range. Each technology choice was matched to the instrument's specific use case — not applied generically.

5. Field-Ready Durability

Every air meter concrete professionals deploy on a jobsite must survive drops, dust, water, and temperature swings. ToronCAM™ and ToronMAM™ instruments are built from magnesium-aluminum-zinc or magnesium-aluminum-silicon alloy bodies with copper or stainless steel valve and gauge assemblies. Dustproof, waterproof, and explosion-proof gauge housings are standard on models designed for frequent field use. The ToronCAM™ UP ultra-precision concrete air tester extends this further with a temperature detection range of -30°C to 60°C — making it the go-to choice for concrete operations in northern climates and extreme heat.

6. Fast Setup, Minimal Operator Dependency

Test speed and repeatability depend on instrument design as much as operator training. The ToronCAM™ P portable concrete air meter features a quick-cover clamping system and a built-in manual pump, cutting setup time significantly compared to standard bolt-down bowl assemblies. The ToronMAM™ P mortar meter adds a pressure gauge lock — a feature that eliminates pressure bleed between pressurization and reading, directly improving test-to-test repeatability. Digital models in both series remove the subjectivity of analog gauge reading entirely, delivering on-screen percentage readouts that reduce transcription error and speed up data recording.

7. Specialized Mortar Testing — Not an Afterthought

Mortar air content testing is frequently overlooked in product catalogs that treat it as a secondary application of concrete instruments. The ToronMAM™ series addresses this gap with three instruments designed from the ground up for mortar: a 1-liter stainless steel bowl sized for mortar samples, a 0% to 100% measurement range that covers CA mortar and specialty admixture mixes, and German sensing technology providing graduated accuracy across the full range. For masonry contractors, prepackaged mortar producers, and plastering specialists, these mortar air entrainment meters deliver the measurement quality their products demand.

TECHNICAL SPECIFICATIONS

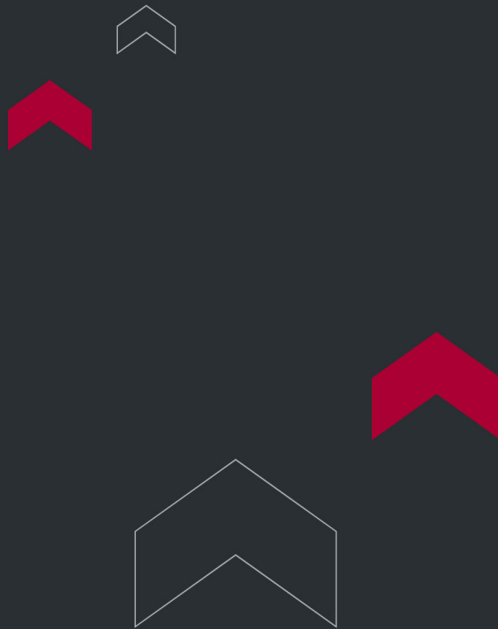
Product Comparison

The table below provides a side-by-side overview of every model in the ToronCAM™ concrete air meter and ToronMAM™ mortar air entrainment meter series. Use the 'Best For' column to quickly identify which instrument matches your application, project type, or accuracy requirement.

Model	Product Name	Air Content Range	Best Accuracy	Test Method	Bowl Capacity	Best For
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ToronCAM™ Series — Concrete Air Meters						
ToronCAM™ DM	Dual-Method Concrete Air Meter	0%–10%	±0.25%	Dual (Direct + Non-Direct)	7,000 mL	Versatile field & lab testing — two test methods in one unit
ToronCAM™ S	Standard Concrete Air Meter	0%–10%	±0.2%	Single Direct-Reading	7,000 mL	Reliable everyday batch plant and jobsite QC
ToronCAM™ D	Digital Concrete Air Meter	0%–10%	±0.0020%	Digital Direct-Reading	7,000 mL	Digital readout, battery-powered remote site testing
ToronCAM™ UP	Ultra-Precision Concrete Air Meter	0%–14%	±0.1%	Single Direct-Reading	7,000 mL	Ultra-precision & extreme temp testing (-30°C to 60°C)
ToronCAM™ HP	High-Precision Concrete Air Meter	1%–10%	±0.1%	Single Direct-Reading	7,000 mL	High-precision testing across C15–C80 concrete strengths
ToronCAM™ P	Portable Concrete Air Meter	0%–100%	±0.1%	Direct-Reading (pump)	7,000 mL	Lightweight fast-deploy site testing, elevation-independent
ToronMAM™ Series — Mortar Air Entrainment Meters						
ToronMAM™ S	Standard Mortar Air Meter	0%–20%	±0.1%	Single Direct-Reading	1,000 mL	Entry-level mortar air testing for masonry & stucco
ToronMAM™ P	Precision Mortar Air Meter	0%–20%	±0.1%	Direct-Reading (pump + lock)	1,000 mL	High-repeatability mortar testing with pump & gauge lock

ToronMAM™ WR	Wide-Range Mortar Air Meter	0%-100%	±0.1%	Direct-Reading (German tech)	1,000 mL	Ordinary & CA mortar — broadest mortar range available
ToronMAM™ D	Digital Mortar Air Meter	0%-100%	±0.1%	Digital Direct-Reading (German tech)	1,000 mL	Digital readout for high-frequency mortar QC



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