

SinterCast Process Control - System 3000

The fully automated System 3000 provides a flexible, robust and accurate hardware and software platform that enables SinterCast's customers to independently control CGI series production and product development. The System 3000 is comprised of individual hardware modules that can be configured to suit the layout, process flow and production volume of any foundry, both for ladle production and pouring furnaces. The basic configuration consists of one Sampling Module (SAM), one Operator Control Module (OCM), a Power Supply and a network-linked Wirefeeder for automated addition of magnesium and inoculant prior to casting. This configuration provides sampling capacity for approximately 15 ladles per hour. Additional Sampling Modules can be added to increase the throughput. The System 3000 Plus also incorporates automatic feedback control of the base treatment process.



Figure 1: Fully Automated System 3000 with two Sampling Modules

The System 3000 features include:

- **Accuracy:** Proven, high resolution SinterCast thermal analysis.
- **Process Control:** Automatic cored wire correction of magnesium and inoculation for each ladle.
- **Automation:** Automatic base treatment by wire, based on automated input of ladle weight, temperature and historical SinterCast analysis results from previous ladles.
- **User-Friendliness:** Display of magnesium, inoculant and carbon equivalent results as histogram run-charts with all information in the local language.
- **Process Database:** Collection of melting and pouring data into a single database, including all System 3000 thermal analysis results and process data for advanced traceability.
- **Consistency:** Re-useable thermocouples used for up to 250 measurements to provide accuracy and traceability.
- **Efficiency Benchmarking:** Production results compiled every month and delivered to each customer with analysis and process improvement recommendations from SinterCast engineers.
- **Independent Control:** Supervisor-level access to process parameters, directly at the Supervisor's desktop computer. Full access to all process parameters.
- **Robust:** Rugged Windows® embedded operating system and proven hardware in the foundry environment.
- **Remote Support:** VPN access by SinterCast for technical support and maintenance.
- **Flexible:** Pallet mounted (pictured above), individually floor-mounted, or wall-mounted to suit any foundry layout.
- **Image Analysis:** Microstructure analysis according to the SinterCast rating technique adopted by the international ISO 16112 standard for CGI. The image analysis macro is available for use in Image Pro Plus image analysis software.

System 3000 Specifications

Components	Sampling Module (SAM) Operator Control Module (OCM) Power Supply Module Complete Wirefeeder
Foot-print	1,200 x 800 mm, on pallet
Max Height	1,960 mm
Weight	392 kg (pallet mounted items) 290 kg (Complete Wirefeeder)
Power Supply	110–120V, 50–60Hz, 2kW max 220–240V, 50–60Hz, 2kW max Single Phase. To be specified on order 380–415V, 3 kW max, Three Phase Dry oiled compressed air 5–10 bar



Figure 2: Automatic Wirefeeder, including Wirefeeder Head, Control Cabinet, Operator Box and Signal Lamp Assembly