

**Thermo Fisher Scientific  
Automated Scrap Monitoring (ASM) Series SE, Series II, and Series III FAQ's**

**Question: What is the purpose of the Automated Scrap Monitoring (ASM) Series SE, Series II and Series III?**

Answer: The Automated Scrap Monitoring (ASM) Systems were designed to detect the presence of radioactive sources in the scrap metal stream and to prevent such scrap from making its way into the steel making process. While these sources are generally in the form of discreet sources discarded from industrial or medical facilities, that can seriously contaminate a steel melt or a bag house, there are other sources of radioactive material that can also be present in the scrap such as radium dials used in aircraft gauges, to pipe containing a buildup of minerals (pipe scale), or other naturally occurring radioactive material (NORM). While these discreet orphaned sources may be quite strong, the radiation is highly attenuated by the lead and steel housings in which they are encased. The scrap surrounding these sources also has a shielding effect which is often very irregular, sometimes allowing only a few narrow beams of measurable intensity to be detected. In some cases, this attenuation is sufficient to prevent any measurable radiation from escaping from the vehicle.

**Question: What does the 3000 or 6000 in the model number designate?**

Answer: This number typically indicates the approximate total volume of the detector used by a particular system in cubic inches. A single detector is 1500 cubic inches. Using multiple detectors result in 3000 to 12000 cubic inch ASM systems.

**Question: How does background radiation affect the ASM operation?**

Answer: The ASM system continually monitors background radiation levels and calculates alarm set points based on a statistical analysis of the scan data for individual vehicles at the particular time it is being monitored.

**Question: What applications are best suited for ASM SE?**

Answer: The ASM SE is designed for less demanding vehicle monitoring applications in the solid waste/municipal waste industries. It is also used as a monitoring system for small vehicles and in conveyor monitoring applications in the scrap metal recycling industries. A 3000 cubic inch system is typically used for this application.

**Question: What applications are best suited for ASM/II?**

Answer: The ASM/II series systems are can be used in a variety of applications in the material handling process, including monitoring vehicles, conveyors and charge bucket loading. A 6000 cubic inch system typically is used in this application.

**Question: What applications are best suited for the ASM/III?**

Answer: The ASM is used for monitoring the transportation process for trucks and rail cars in steel mill, metal recycling and foundry applications. A 6000 to 12000 cubic inch system typically is used in this application.

**Question: What standards will the ASM comply with?**

Answer: ASM Systems with the CE Marking comply with the EMC directive (89/336/EEC) issued by the Commission of the European Community. Compliance with the directive implies conformity to the following European Standards: Emissions Specification EN 55011: 1991 Group I, Class A; Immunity Specification EN 50082-2: 1995

**Question: How is the operation of the ASM checked?**

Answer: The ASM operation can be tested using an 8-10 microcurie Cs-137 (cesium-137) button check source. With the system in its normal operating mode, block the sensors imitating a vehicle passing between the detectors, walk through the monitor, down the center of the road, at about 3 to 5 mph, holding the source above your head, in line with the center of the detectors, unblock the sensors in the order originally blocked. The system should alarm. Note that this source is a very small, unshielded source, but the test simulates the effect of a larger, shielded radioactive source buried in scrap in a vehicle.

**Question: What type of radiation is associated with these systems and are they safe to be around.**

Answer: The ASM systems have no radioactive sources associated with them. They are passive monitoring systems, meaning their detectors are waiting for radiation to interact with them in order to be detected.

**Question: What is the printer paper part number?**

Answer: The thermal printer paper part number, 9990032, is supplied as a box containing five roles. The non-thermal printer paper part number is 152281. The ink ribbon part number, 152280, is used mainly in Europe for the POD systems.