

QSA GLOBAL.



SENTINEL 1075 SCARPro.

EXPERIENCE 24/7 SCAR PRODUCTIVITY.

With the SENTINEL™ 1075 SCARPro, you can obtain up to 98% reduction in exclusion zones compared to conventional radiography techniques.



For more information visit us at qsa-global.com

EXPERIENCE 24/7 SCAR PRODUCTIVITY.

Perform Small Controlled Area Radiography (SCAR) radiographic inspections in close proximity to other trades, nucleonic process control equipment, and critical safety systems, such as visual flame detectors, to minimize the impact of radiography testing on continuing operations or outage schedules.

With the SENTINEL 1075 SCARPro, you can obtain up to 98% reduction in exclusion zones compared to conventional radiography techniques.

Designed, tested, and manufactured to the requirements of ANSIN432-1980, ISO 3999:2004(E), IAEA TS-R-1 (2009), IAEA SSR-6 (2012), USNRC 10CFR34, USNRC 10CFR71, and USDOT 49CFR173.



24/7 Radiography Testing



Increase Productivity During Turnarounds and Outages

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Se.
SELENIUM

Se-75 Preferred Isotope





MINIMIZE EXCLUSION ZONES.

With the SENTINEL 1075 SCAR*Pro*, you can obtain up to 98% reduction in exclusion zones compared to conventional radiography techniques. Utilizing bismuth FlexShield radiation blankets, guide tube shields, and scatter shields with a proper setup, you can perform gamma radiography inspections with exclusion zones as small as 3 to 6 feet (1 to 2 meters) for demanding applications or 10 to 15 feet (3 to 5 meters) for typical applications required by clients to realize the SCAR value.

IMPROVE PRODUCTIVITY FOR TURNAROUNDS & OUTAGES.

During turnarounds and outages, traditional gamma radiography is either performed in shooting windows totaling only 1-2 hours in a 12-hour shift, or other trades such as welders and electricians must be cleared from the exclusion zone while radiography is performed.

The SCAR Radiography technique utilizing the SENTINEL 1075 SCARPro eliminates the need for shooting windows or impacting other trades. It enables continuous 24/7 gamma radiography inspections maximizing inspection productivity and accelerating your turnaround.

GAMMA RADIOGRAPHY TESTING (RT)

| | Shooting Windows | Production | Welds /Shift |
|------------------------------------|---|---------------------|--------------|
| Traditional RT in Shooting Windows | 1 hr shift change + 0.5 - 1 hour lunch | 10 welds / hour | 15-20 |
| 24/7 RT with SENTINEL 1075 SCARPro | 24/7 continuous operations | 3-4 welds / hour | 36-48 |

CLOSE PROXIMITY TESTING WITH SCARPro

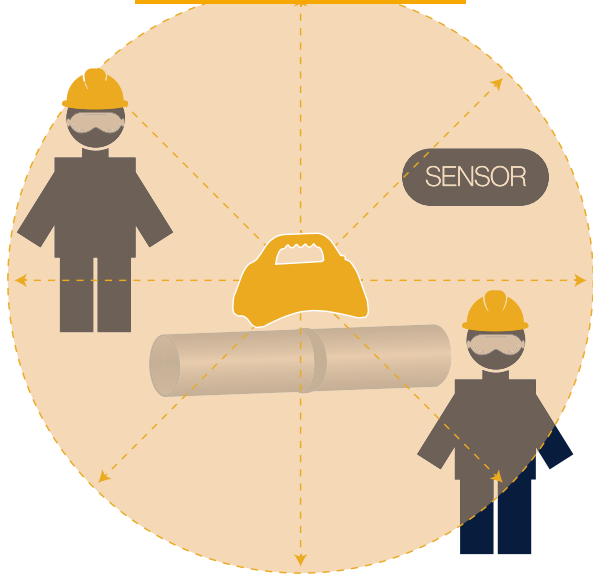
Gamma rays, x-rays, and scatter radiation from radiographic testing can interfere with nucleonic process control gauges and critical safety systems such as visual flame detectors (VFDs) commonly found in oil refineries, petrochemical plants, and power plants.

Nucleonic gauges utilize radiation in many process control applications, including measuring process fluid density, locating phase interfaces, and level switches. UV VFDs detect UV radiation from fires and can trigger fire suppression systems. These systems often cannot differentiate the radiation they are designed to detect from radiation resulting from radiographic testing. As a result, critical processes may need to be manually monitored, operated without real-time process information, or shut down entirely while traditional radiographic testing (RT) is being performed.

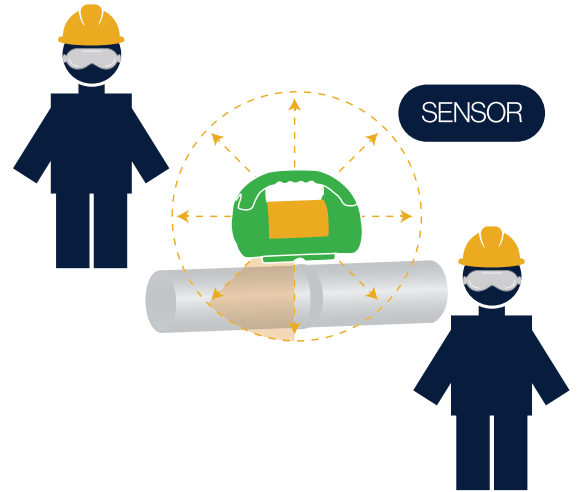
The SCAR radiography technique allows you to perform RT in close proximity to sensor systems without the risk of interfering with process measurements or generating false alarms in critical safety systems.



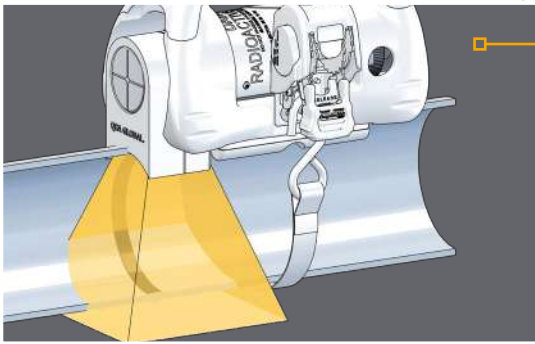
TRADITIONAL RT



1075 SCARPro RT

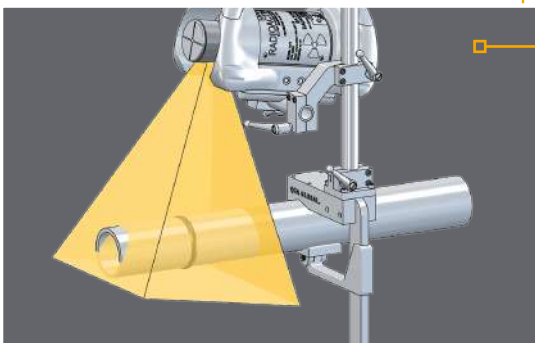


SWITCH CONFIGURATIONS EFFORTLESSLY.



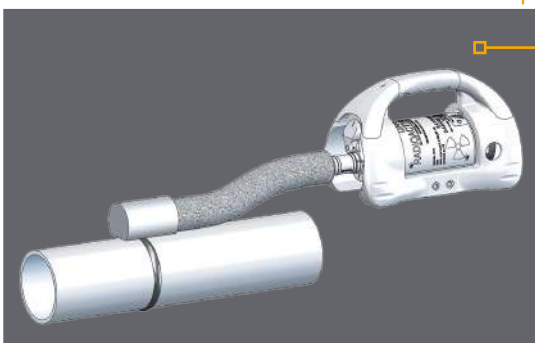
CONTACT FIXTURE CONFIGURATION

The SENTINEL 1075 SCARPro comes standard with a contact fixture kit to perform category I close-contact SCAR radiography. The contact fixture kit allows you to securely mount the exposure device to any diameter pipe. Contact shots are typically preferred on piping 3" OD and above.



OFFSET FIXTURE CONFIGURATION

Available when you require an increased source to film distance (SFD) for small piping, typically 2" and below, enabling you to perform superimposed and elliptical shots. This kit securely mounts the projector in any orientation. If the pipe itself is not suitable for mounting this kit can easily be attached to nearby piping or structural material and the components can be configured to aim the projector's collimated beam at the sample.



PROJECTION STYLE CONFIGURATION

This device operates as a category II projection-style gamma radiography source projector to perform industrial axial, radial and panoramic exposures in tight access areas where the body of the gamma-ray projector will not fit. Interchangeable front plates allow for standard guide tube application or direct contact shots.

ACCESSORIES.

Accessories such as controls, guide tubes, and collimators are interchangeable with the SENTINEL 880 Series gamma-ray source projectors for easy integration into your fleet of gamma radiography equipment.



SUPERIOR SELENIUM-75 RADIOISOTOPE SOURCES

The SENTINEL 1075 SCARPro is designed specifically for use with Selenium-75. Se-75 is the preferred radioisotope source for the SCAR technique. The lower average energy compared to Ir-192 results in manageable shielding requirements for achieving SCAR, a minimized zone of influence, and improved radiographic image quality. Holding up to 81 Ci of Se-75, the SENTINEL 1075 SCARPro balances production needs and SCAR performance.

QSA Global, Inc. has the most diversified supply of Se-75 and the industry's largest fleet of radioisotope source changers to deliver a single Se-75 source or up to ten sources in a container to keep you up and running. Se-75 radioisotope sources for the 1075 SCARPro are field loadable or can be exchanged by your local QSA Global, Inc. authorized service center, saving you additional time and productivity.



CONTACT FIXTURE KIT

Seamlessly mounts and secures the projector onto any pipe surface.



OFFSET FIXTURE KIT

Securely mounts the projector onto pipes up to 8 inches in diameter.



SCAR SHIELDING

Providing custom-tailored solutions to help you meet your shielding criteria.

SPECIFICATIONS

SENTINEL 1075 SCAR^{Pro} GAMMA-RAY SOURCE PROJECTOR*

| | |
|----------------------------|---|
| Length | 11.20 in (284 mm) |
| Width | 6.00 in (152 mm) |
| Height | 7.25 in (184 mm) |
| Maximum Device Weight | 37 lb (16.8 kg) |
| Device Capacity - Isotope | 81 Ci (3 TBq) Se-75 |
| Device Shielding Materials | Tungsten & Stainless steel |
| Transport Approvals | Type A within the model SENTINEL 1075A overpack meets 49 CFR173, IAEA TS-R-1 (2009) and IAEA SSR-6 (2012) |
| Transport Package Weight | 60 lbs (27.2 kg) |

SE-75 ASSEMBLY SPECIFICATIONS A425-6*

| | |
|--|--------------------------|
| Capsule Design | Double Encapsulation |
| Special Form Certificate | USA/0335/S-96 |
| Sealed Source and Device Registration Number | MA-1059-D-378-S |
| ANSI/ISO Source Classification | 97E64515 |
| Maximum Source Activity | 81 Ci (3 TBq) |
| Nuclide / Isotope | Selenium-75 |
| Isotope Gamma Energy Range | 66 – 401 keV |
| Isotope Half Life | 120 days |
| Isotope Output at 1 meter per Curie (37 GBq) | 0.203 R/hr (2.03 mSv/hr) |
| Isotope Output at 1 foot per Curie (37 GBq) | 2.2 R/hr (22.0 mSv/hr) |

REGULATION COMPLIANCE

To meet or exceed regulatory and performance standards for safety and reliability, the SENTINEL 1075 SCAR^{Pro} is designed, tested, and manufactured to the requirements of ANSI N432-1980, ISO 3999:2004(E), IAEA TS-R-1 (2009), IAEA SSR-6 (2012), USNRC 10CFR34, USNRC 10CFR71, and USDOT 49CFR173.

Additionally, the SENTINEL 1075 SCAR^{Pro} projector is designed, manufactured, and serviced under an ISO 9001:2015 and USNRC 10CFR71 subpart H QA program. The QA program also includes the reporting requirements of USNRC 10CFR21 for suppliers of source and byproduct materials.

TRAINING & MAINTENANCE

QSA Global, Inc. is dedicated to helping you succeed with the SENTINEL 1075 SCAR^{Pro} system. We provide complimentary functional training to help you setup your device with the proper fixture kit and accessories, switch between configurations, learn what each parts of the device are for, and provide technical instruction on how to use the device to achieve appropriate SCAR gamma radiography testing.

We are dedicated to helping you maximizing productivity by minimizing maintenance down time. We supply parts for all mechanical components in your SENTINEL 1075 SCAR^{Pro} projector.

For more information
visit us at
qsa-global.com

*Manufactured by QSA Global, Inc. located in Burlington, MA, USA.