



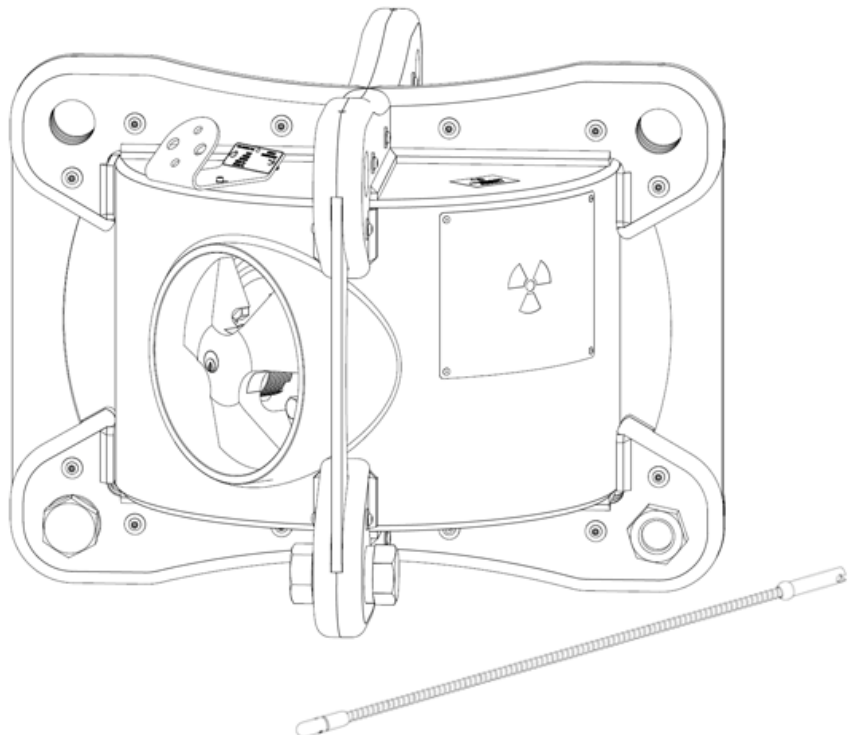
## SENTINEL™ COBALT-60 INDUSTRIAL RADIOISOTOPES.

QSA Global, Inc. is the world-leading supplier of SENTINEL Cobalt-60 (Co-60) sealed radioisotope sources to the industrial gamma radiography industry. Our exclusive and diversified supply chain ensures a reliable, long-term supply of SENTINEL Co-60 to our customers.

QSA Global, Inc.'s SENTINEL Co-60 radioisotope sources are compacted High Specific Activity (HSA), double-encapsulated, and welded for superior quality and safety.

Our SENTINEL Co-60 radioisotope sources are available up to 330 Ci (12.21 TBq) activity. Custom activities may be ordered to meet your specific application needs.

Designed, tested, and manufactured to the requirements of ISO 5579:2013.



# SPECIFICATIONS

## GAMMA-RAY SOURCE PROJECTORS

Device	Assembly Number	Max Capacity Ci (TBq)
SENTINEL SENTRY 330	A424-13 A424-14	330 (12.21) 110 (4.07)
SENTINEL SENTRY 110	A424-14	110 (4.07)
680 Series	A424-14	110 (4.07)
741 Series	A424-18	33 (1.22)*
684 Series	A424-15	11 (407 GBq)*

\*10.8 Ci (400 GBq) for shipments

## TECHNICAL SPECIFICATIONS

### Nominal Activities Ci (TBq)

300 (11.10)	60 (2.22)
250 (9.25)	50 (1.85)
200 (7.40)	45 (1.67)
150 (5.55)	40 (1.48)
100 (3.70)	35 (1.30)
90 (3.33)	30 (1.11)
80 (3.00)	20 (740 GBq)
70 (2.59)	10 (370 GBq)

\*Tolerance  $\pm 10\%$

## SELECTED ATTENUATION DATA

Material	Material Density g/cm <sup>3</sup>	Half-Value Thickness in (mm)
Concrete	2.35	2.400 (61.0)
Steel	7.80	0.827 (21.0)
Lead	11.34	0.500 (12.7)
Tungsten	17.80	0.310 (7.9)
Depleted Uranium	18.70	0.270 (6.8)

## WORLDWIDE DELIVERY

We understand that dealing with radioactive materials is complex. Shippers of radioactive materials in regulatory jurisdictions must ensure full compliance with all current and applicable transport regulations. QSA Global, Inc.'s global network of export specialists and brokers are available to provide you with the expertise needed to solve challenging logistics issues.

## LOADING & UNLOADING

QSA Global, Inc. offers a variety of options for loading and unloading SENTINEL Co-60 radioisotope sources to help minimize downtime. SENTINEL Co-60 can be loaded and unloaded from your device to our Type A or Type B(U) Transport Containers:

- By a trained professional we send to your location
- Locally in your bunker by your trained technicians
- At QSA Global, Inc. headquarters via your local service center

## Co-60 PROPERTIES

Gamma Energy Range	1.17 - 1.33 MeV
Steel Thickness	1.5 - 8.0 in (40 - 200 mm)
Concrete Thickness	10 - 40 in (200 - 1,000 mm)
Light Alloys Thickness	1.5 - 7.5 in (40 - 190 mm)
Isotope Output at 1 meter per Curie (37 GBq)	1.30 R/hr (13.0 mSv/hr)
Isotope Output at 1 foot per Curie (37 GBq)	14.0 R/hr (140 mSv/hr)
Half-Life	5.27 years
Special Form Certifications	USA/0377/S-96

For more information  
visit us at  
[qsa-global.com](http://qsa-global.com)