



SENTINEL™ IRIIDIUM-192 INDUSTRIAL RADIOISOTOPES.

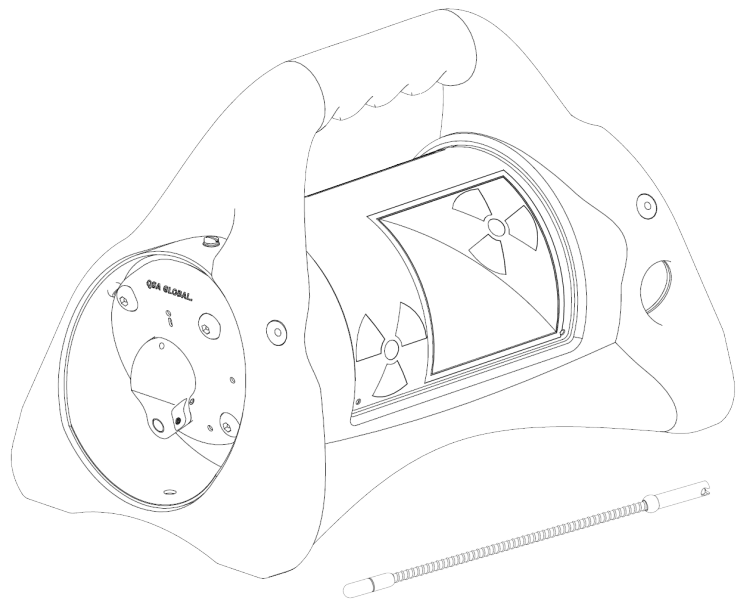
QSA Global, Inc. is the world-leading supplier of SENTINEL Iridium-192 (Ir-192) sealed radioisotope sources to the industrial gamma radiography industry. Our exclusive and diversified supply chain ensures a reliable, long-term supply of SENTINEL Ir-192 to our customers.

Available up to 240 Ci (8.88 TBq) activity, our radioisotope sources are double-encapsulated* and laser welded for superior quality and safety. Custom activities are also available to meet your specific application needs.

QSA Global, Inc.'s natural and enriched Iridium-192 sources are constructed using iridium metal discs or pellets of uniform size in a welded stainless steel capsule. Utilizing enriched Ir-192 produces smaller focal sizes for optimum image quality.

SENTINEL Ir-192 is designed for use with steel thickness ranges of 0.39 - 3.54 in (10 - 90 mm) per ISO 5579:2013.

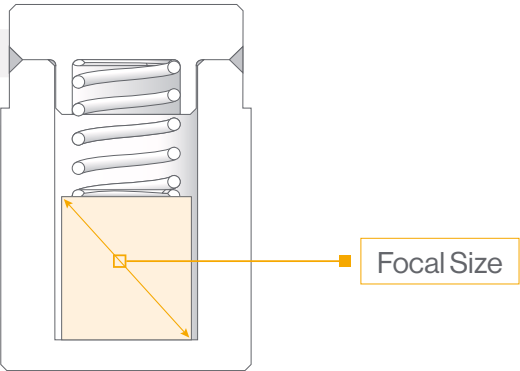
* Select Ir-192 sealed sources are single-encapsulated



ACTIVITIES & FOCAL SIZES.

NATURAL IRIIDIUM-192 SOURCES

Minimum Focal Size in (mm)	Nominal Activities Ci (TBq)
0.181 (4.60)	140 (5.18)
0.178 (4.52)	130 (4.81)
0.171 (4.34)	120 (4.44)
0.160 (4.06)	110 (4.07)
0.154 (3.91)	100 (3.70)
0.148 (3.76)	90 (3.33)
0.142 (3.61)	80 (3.00)
0.137 (3.48)	70 (2.59)
0.132 (3.35)	60 (2.22)
0.128 (3.25)	50 (1.85)
0.124 (3.15)	45 (1.67)
0.123 (3.12)	40 (1.48)
0.098 (2.49)	35 (1.30)
0.091 (2.31)	30 (1.11)



ENRICHED IRIDIUM-192 SOURCES

Maximum Focal Size in (mm)	Nominal Activities Ci (TBq)
These sources are available in custom Focal Sizes	300 (11.10)
	280 (10.36)
	260 (9.62)
	240 (8.88)
	220 (8.14)
	200 (7.40)
	190 (7.03)
	180 (6.66)
	160 (5.92)
	140 (5.18)
0.152 (3.76)	130 (4.81)
0.145 (3.51)	120 (4.44)
0.138 (3.43)	110 (4.07)
0.138 (3.43)	100 (3.70)
0.132 (3.28)	90 (3.33)
0.127 (3.15)	80 (3.00)
0.122 (3.10)	70 (2.59)
0.119 (3.02)	60 (2.22)
0.115 (2.92)	50 (1.85)
0.096 (2.44)	45 (1.67)
0.096 (2.44)	40 (1.48)
0.093 (2.36)	35 (1.30)
0.088 (2.24)	30 (1.11)
0.084 (2.13)	25 (925 GBq)
0.077 (1.96)	20 (740 GBq)
0.071 (0.80)	15 (555 GBq)
0.066 (1.68)	10 (370 GBq)
0.062 (1.57)	2 - 7 (74 - 259 GBq)
0.056 (1.42)	1 (37 GBq)
0.028 (0.71)	



SPECIFICATIONS

GAMMA-RAY SOURCE PROJECTORS

Device	Assembly Number	Maximum Capacity Ci (TBq)
SENTINEL 880 Series Delta	A424-9	150 (5.55)
SENTINEL 880 Series Elite	A424-9	50 (1.85)
SENTINEL 880 Series Omega	A424-9	15 (0.55)
SENTINEL 959M SCAR	875XX	15 (0.55)
SENTINEL 959 SCAR	95904	15 (0.55)
SENTINEL 865	86520	240 (8.88)
INC IR-100	87703	120 (4.44)
SPEC-150®	969	150 (5.55)
GammaMat TI Series	875XX	100 (3.7)

Ir-192 PROPERTIES

Gamma Energy Range	206 - 612 keV
Steel Thickness	0.39 - 3.54 in (10 - 90 mm)
Isotope Output at 1 meter per Curie (37 GBq)	0.48 R/hr (4.80 mSv/hr)
Isotope Output at 1 foot per Curie (37 GBq)	5.2 R/hr (52 mSv/hr)
Iridium-192 Half-Life	74 days
Special Form Certifications	USA/0392/S-96 USA/0179/S-96 USA/0335/S-96

SELECTED ATTENUATION DATA

Material	Material Density g/cm ³	Half-Value Thickness in (mm)
Concrete	2.35	1.7 (43.2)
Steel	7.80	0.512 (13.0)
Lead	11.34	0.200 (5.1)
Tungsten	17.80	0.130 (3.3)

TRANSPORTING ISOTOPES

QSA Global, Inc. distributes radioisotope sources worldwide by utilizing the industry's largest fleet of source changers. Source changers are available to deliver a single source up to ten sources in a Type A/B(U) container for device reloads at your facility or at one of QSA Global, Inc.'s authorized service centers.

LOADING & UNLOADING

QSA Global, Inc. offers a variety of options for SENTINEL Ir-192 source changes to minimize downtime of your assets. QSA Global, Inc. and our authorized distributors can reload your SENTINEL Ir-192 device at local facilities around the world by trained technicians or sources can be delivered directly to your facility for reload by your trained technicians.

ISOTOPE DISPOSITION

Radioactive materials that are no longer required must be transferred to a licensed recipient for final disposition. QSA Global, Inc. provides a one for one exchange on SENTINEL Ir-192 radioisotope sources.

For more
information visit us
at
www.qnde.ca