



IRIDIUM 192 (Ir-192)

INDUSTRIAL ISOTOPE DATASHEET

Iridium-192 is versatile and ideal for most industrial radiography applications especially pipelines and petrochemical plants. Iridium-192 provides better contrast sensitivity for thicker materials in comparison to Selenium-75, which tests relatively thin materials. Gammatec also offers enriched Iridium-192 as an alternative for customers who require smaller focal sizes and provides similar contrast sensitivity.

Ir-192 is the most used isotope for industrial radiography. Ir-192 truly shines in industrial radiography, especially when it comes to inspecting dense or thick-walled materials where image clarity is critical.



Gammatec NDT Supplies SOC Ltd Is A Leading Provider Of Non-Destructive Testing (NDT) Equipment, Accessories, And Consumables. With Over 40 Years Of Experience, The Company Has Established A Reputation For Delivering High-Quality Solutions And Outstanding Customer Support.

WHY IRIIDIUM 192?

Iridium-192 is the workhorse of industrial radiography especially for inspecting dense and thick-walled materials. Its versatility makes it perfect for applications such as:

- Pipeline weld inspection
- Corrosion monitoring
- Structural integrity assessment
- Petrochemical infrastructure analysis

KEY ADVANTAGES

Contrast Sensitivity	Ideal for materials around 1 inch (25.4 mm) thick
Versatility	Suits a range of industrial applications
Image resolution	Delivers sharp, high-quality images
Compatible Projectors	<ul style="list-style-type: none"> • Exertus: Dual 60, Dual 120, Fortes, ITS • Sentinel 880 Series • INC IR-100 • Teletron • SPEC 2-T

IRIDIUM SOURCE COMPARISON

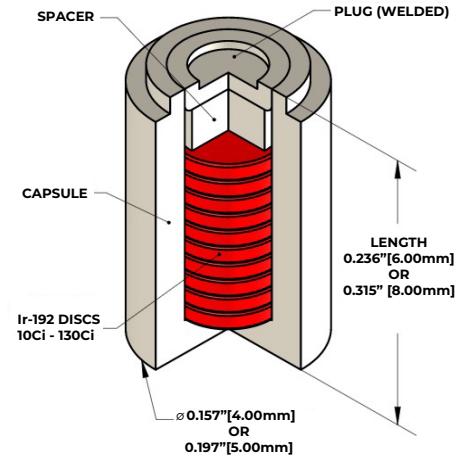
Specification	Natural Ir-192	Enriched Ir-192
Isotopic Composition	~38% Ir-191 / ~62% Ir-193	~80% Ir-191 / ~20% Ir-193
Specific Activity	Lower	Higher
Focal Spot Size	Larger	Smaller
Image Sharpness	Moderate	Exceptional
Cost	Cost-effective	Premium
Application Focus	General radiography	Precision, compact inspections

SHIELDING REFERENCE GUIDE


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



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TECHNICAL SPECIFICATIONS

Basic Construction Standards	ISO 3999:2004 Compliant
Half Life	73.83 Days
Image Resolution	
Gamma Energy Range	206–612 keV
Steel Thickness Range	10–90 mm
Exposure Rate Constant	469 mR·m ² /hr·Ci
Decays to	Platinum-192
Radioisotope Output	At 1 m per Ci (37 GBq): 0.48 R/hr (4.80 mSv/hr) At 1 ft per Ci (37 GBq): 5.2 R/hr (52.0 mSv/hr)
Emits	Beta particles and gamma radiation. Strong gamma ray emitter.
Appearance	Sources are constructed from Iridium metal disks that are encased in a welded stainless steel capsule.

ADDITIONAL INFORMATION

Source forms	All Ir-192 sources are supplied in Special Forms for enhanced safety, compliance, and performance.
Transport Container	Gammatec transport fleet consist of: <ul style="list-style-type: none"> • Multiple 6 Channel Transport Containers for Wire Type Source Assemblies. • Multiple 4 Channel Transport Containers for Re-usable Link Type Source Assemblies. • Multiple 10 Channel Transport Containers for Re-usable Link Type Source Assemblies. • Limited 6 Channel Tungsten Transport Containers that will accommodate Wire and Link Type Source Assemblies.
Loading Facilities	Gammatec also have the capability to produce sources from multiple facilities across the Globe.



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NATURAL MATERIAL RADIOACTIVE IRIIDIUM ISOTOPES WITH SPECIAL FORMS		ENRICHED MATERIAL RADIOACTIVE IRIIDIUM ISOTOPES WITH SPECIAL FORMS	
Activity	Dimensions	Activity	Estimated Dimensions
20 Ci	2mm x 1 mm	20 Ci	2.00 mm x 0.13 mm
25 Ci	2mm x 1 mm	25 Ci	2.00 mm x 0.13 mm
30 Ci	2mm x 1 mm	30 Ci	2.00 mm x 0.25 mm
35 Ci	2mm x 1.5 mm	35 Ci	2.00 mm x 0.38 mm
40 Ci	2mm x 1.5 mm	40 Ci	2.00 mm x 0.50 mm
45 Ci	3mm x 2 mm	45 Ci	2.00 mm x 0.63 mm
50 Ci	3mm x 2 mm	50 Ci	2.00 mm x 0.75 mm
55 Ci	3mm x 2 mm	55 Ci	2.00 mm x 0.88 mm
60 Ci	3mm x 2 mm	60 Ci	2.00 mm x 1.00 mm
65 Ci	3mm x 2 mm	65 Ci	2.00 mm x 1.13 mm
70 Ci	3mm x 2 mm	70 Ci	2.00 mm x 1.25 mm
75 Ci	3mm x 2 mm	75 Ci	2.00 mm x 1.38 mm
80 Ci	3mm x 2 mm	80 Ci	2.00 mm x 1.50 mm
85 Ci	3mm x 2 mm	85 Ci	2.00mm x 1.63 mm
90 Ci	3 mm x 2.5 mm	90 Ci	2.00 mm x 1.75 mm
95 Ci	3 mm x 2.5 mm	95 Ci	2.00mm x 1.88 mm
100 Ci	3 mm x 2.5 mm	100 Ci	2.00 mm x 2.00 mm
110 Ci	3 mm x 2.5 mm	110 Ci	2.00 mm x 2.13 mm
120 Ci	3mm x 3mm	120 Ci	2.00 mm x 2.25 mm

EXPOSURE CONSIDERATIONS

Source strength (activity in curies): Higher activity shortens exposure time but also affects safety distance.

Material composition and thickness: Heavier alloys require longer exposure or stronger sources.

Focal spot size: Smaller spots mean better resolution and generally lead to a larger depth of field but also reduces the amount of radiation flux reaching the film. The impact on image quality can be nuanced as factors like object size and density can also play a role.

CONTACT US

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