

# Sources for Dedicated PET



These products are available through:

**JRT Associates**

**800-221-0111**

Isotope Products Laboratories is the leader in source manufacturing for Positron Emission Tomography (PET) studies. IPL manufactures Ge-68 Transmission Sources and quality assurance sources for major dedicated PET camera makers such as GE Medical Systems, Siemens Medical Systems, Positron Corporation and others. In addition, IPL manufactures Cs-137 and Na-22 sources for dedicated PET cameras for Philips Medical Systems and Siemens/CTIMI Medical Systems.

Custom Sources: IPL can manufacture PET sources for custom needs. Please contact an IPL Medical Imaging Customer Service Representative for additional information.

**SIEMENS MEDICAL SYSTEMS ECAT  
EXACT/HR/ART/951R/951/31/931/08™  
Phantom for Quality Assurance**

Product Code	Nuclide	Activity
EG-0068	Ge-68	2.5-4.0 mCi (92.5 - 148 MBq) without groove
EG-0310	Ge-68	1.2-4.0 mCi (44.4 - 148 MBq) with groove
EG-0317	Ge-68	1.2-4.0 mCi (44.4 - 148 MBq) with groove

IPL DRAWING NUMBER	A1911
ENCAPSULATION	High density polyethylene right circular cylinder
DIMENSIONS	8.37" diameter x 8.87" high (21.3cm x 22.5cm)
ACTIVE VOLUME	6 Liters
SOURCE MATRIX	Epoxy
DENSITY	1.0 g/cm <sup>3</sup> ±7%
NUCLIDE PURITY	>99%
UNIFORMITY	±5% coefficient of variation measured with a resolution of 1 cm <sup>3</sup> source volume
CALIBRATION	Calibrated and NIST traceable with an absolute activity accuracy ±5% of measured value



**Ge-68 Phantom**

**ADAC MEDICAL C-PET™  
Quality Assurance Point Source**

Product Code	Nuclide	Activity
GF-0227	Na-22	100 uCi (3.7 MBq)

IPL DRAWING NUMBER	1001 (Type D)
OVERALL DIMENSION	1" diameter x 0.250" high (25.4mm x 6.35mm)
ACTIVE DIMENSION	.040" (1mm)
NUCLIDE PURITY	>99%



**Point Source**

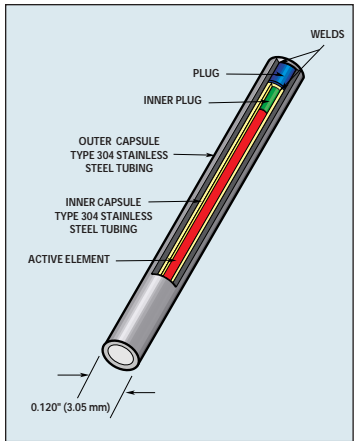


The Ge-68 line source is utilized to calibrate Positron Emission Tomography scanner systems. It is used as a transmission standard or a source of annihilation photons to provide a tissue density correction to permit more accurate diagnostic scanning of patients. The source is mounted on a movable holder which revolves around the patient's head or body. The source emits photons which attenuate in the patient to varying degrees, depending on the particular location of the source with respect to the patient. The counter-opposed detectors on the PET system detect the radiation at any given point and the system software computes and stores this information. The instrumentation "corrects" the annihilation radiation intensity emitted from the administered radiopharmaceutical, automatically adjusting for the effect of the density and thickness of the tissue through which the photons travel at all the reference locations. This provides a "background corrected" scan of the patient to optimize resolution and define more precisely the distribution of the radiopharmaceutical.

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**Doubly Encapsulated Point Source**

**GE MEDICAL SYSTEMS PET ADVANCE™  
Transmission and Quality Assurance Pin**

Product Code	Nuclide	Activity
HEGL-0019	Ge-68	10.8 mCi x2 (400 MBq) x2
HEGL-0020	Ge-68	1.62 mCi (60 MBq)



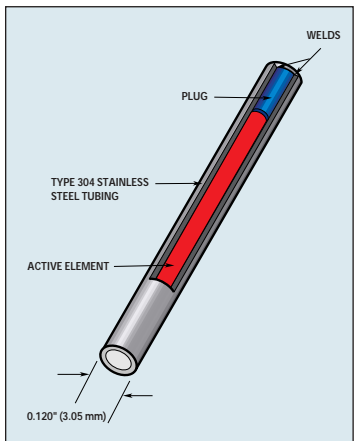
IPL DRAWING NUMBER A3407  
 ENCAPSULATION Triply encapsulated 304 stainless steel  
 OVERALL LENGTH 8.88" (225.6 mm)  
 ACTIVE LENGTH 6.108" (155 mm)  
 OVERALL DIAMETER 0.156" (3.96 mm) (handle is 0.75" 19.05 mm)  
 ACTIVE DIAMETER 0.060" (1.52 mm)  
 NUCLIDE PURITY >99%  
 UNIFORMITY ≤5% integral non-uniformity measured in centimeter long segments

**GE MEDICAL SYSTEMS DISCOVERY ST™  
Normalization Pin**

Product Code	Nuclide	Activity
HEGL-0132	Ge-68	1.49 mCi (55 MBq)



IPL DRAWING NUMBER A3429  
 ENCAPSULATION Singly encapsulated 304 stainless steel  
 OVERALL LENGTH 11.54" (293.1 mm)  
 ACTIVE LENGTH 6.30" (160 mm)  
 OVERALL DIAMETER 0.156" (3.96 mm) (with handle 0.75" 19 mm)  
 ACTIVE DIAMETER 0.055" (1.40 mm)  
 NUCLIDE PURITY >99%  
 UNIFORMITY ≤5% integral non-uniformity measured in centimeter long segments



**Singly Encapsulated Point Source**

**SIEMENS MEDICAL SYSTEMS ECAT EXACT/HR™  
Transmission Pin**

Product Code	Nuclide	Activity
HEGL-0080	Ge-68	2.5-4.0 mCi x3 (92.5-148 MBq) x3



IPL DRAWING NUMBER A3418-2  
 ENCAPSULATION Singly encapsulated 304 stainless steel  
 OVERALL LENGTH 7.56" (192 mm)  
 ACTIVE LENGTH 7.21" (183 mm)  
 OVERALL DIAMETER 0.125" (3.18 mm)  
 ACTIVE DIAMETER 0.093" (2.36 mm)  
 NUCLIDE PURITY >99%  
 UNIFORMITY ≤5% integral non-uniformity measured in centimeter long segments

# Sources for SPECT

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Isotope Products Laboratories manufactures a wide range of Attenuation Correction line sources for Single Photon Emission Computed Tomography (SPECT) studies.

A SPECT image is developed by measuring a collimated radiation beam emitted from a patient's body. The radiation beam is produced by injecting a known radiopharmaceutical into the patient. SPECT image quality can suffer from unquantified attenuation effects caused as the beam passes through tissue of varying density and thickness. A line source is utilized to produce a "control beam" that is measured concurrently with the "radiopharmaceutical beam." The two beams are integrated and patient specific attenuation is calculated. The resulting image is of higher quality than an image produced without attenuation correction.

The typical Attenuation Sources for SPECT studies are Gd-153, Co-57 and Ba-133. Isotope Products Laboratories also manufactures Molecular Coincidence Detection (MCD) sources for PET applications. Typically the MCD sources for PET studies are Gd-153, Cs-137 and Ba-133.

Sources for both applications are configured in both line and point geometries. The nuclides, activities and dimensions are manufactured in accordance to OEM Camera manufacturer specifications. Line sources are singly or doubly encapsulated with welded joints.

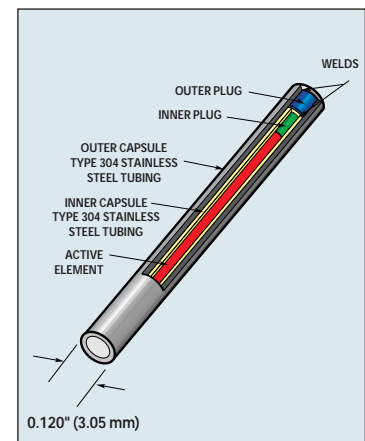
Custom Sources: As part of IPL's commitment to Nuclear Medicine, custom Line Sources for standard and non-standard gamma cameras can be manufactured. Please contact an IPL Medical Imaging Customer Service Representative for additional information.

### ADAC MEDICAL SYSTEMS VANTAGE™ Transmission Pin



Product Code	Nuclide	Activity
NES 8412	Gd-153	250 mCi x2 (9.25 GBq) x2

IPL DRAWING NUMBER	A3402
ENCAPSULATION	Doubly encapsulated in 304 stainless steel
OVERALL LENGTH	20.5" (520.7mm)
ACTIVE LENGTH	20.0" (508mm)
OVERALL DIAMETER	0.12" (3.05mm)
ACTIVE DIAMETER	0.060" (1.52mm)
NUCLIDE PURITY	<0.005% High Energy Impurities
UNIFORMITY	≤5% integral non-uniformity measured in centimeter long segments



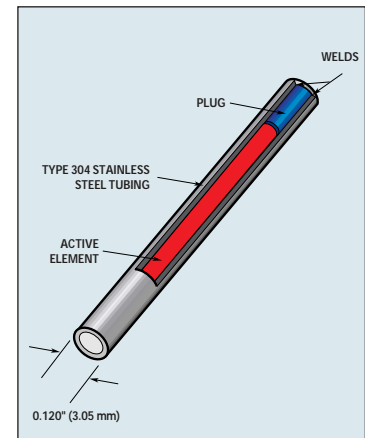
**Doubly Encapsulated Line Source**

### ADAC MEDICAL SYSTEMS MCD™ Quality Assurance Pin



Product Code	Nuclide	Activity
HEGL-0109	Ge-68	500 uCi (18.5 MBq)

IPL DRAWING NUMBER	A3402
ENCAPSULATION	Doubly encapsulated in 304 Stainless Steel
OVERALL LENGTH	5.7" (144.8mm)
ACTIVE LENGTH	5.2" (132.1mm)
ACTIVE DIAMETER	0.060" (1.52mm)
OVERALL DIAMETER	0.12" (3.05mm)
NUCLIDE PURITY	>99%
UNIFORMITY	≤5% integral non-uniformity measured in centimeter long segments



**Singly Encapsulated Line Source**

# Sources for SPECT

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## SMV MEDICAL SYSTEMS DST™ Transmission Pin



Product Code	Nuclide	Activity
NES 8424	Gd-153	323 mCi x2 (12GBq) x2

IPL DRAWING NUMBER	A3421
ENCAPSULATION	Doubly encapsulated in 304 stainless steel
OVERALL LENGTH	9.06" (230 mm)
ACTIVE LENGTH	8.66" (220 mm)
OVERALL DIAMETER	0.120" (3.05 mm) (Ring OD 0.177", 4.5 mm)
ACTIVE DIAMETER	0.060" (1.52 mm)
NUCLIDE PURITY	<0.005% High energy Gamma impurities
UNIFORMITY	≤5% integral non-uniformity measured in centimeter long segments

## SIEMENS MEDICAL SYSTEMS ECAM PROFILE ATTENUATION™ Transmission Pin



Product Code	Nuclide	Activity
NES 8426 (Set of 4)	Gd-153	20 mCi x4 (740MBq) x 4

IPL DRAWING NUMBER	A3410
ENCAPSULATION	Singly encapsulated in 304 stainless steel
OVERALL LENGTH	8.11" (206 mm)
ACTIVE LENGTH	7.86" (200 mm)
OVERALL DIAMETER	0.120" (3.05 mm)
ACTIVE DIAMETER	0.090" (2.29 mm)
NUCLIDE PURITY	<0.005% High Energy Impurities
UNIFORMITY	≤10% integral non-uniformity measured in centimeter long segments

## GE MEDICAL SYSTEMS MILLENIUM/ACUSCAN™ Transmission Pin



Product Code	Nuclide	Activity
NES 8429	Gd-153	450 mCi (16.6GB) x 2

IPL DRAWING NUMBER	A3431
ENCAPSULATION	Singly encapsulated in 304 stainless steel
OVERALL LENGTH	20.5" (520.7 mm)
ACTIVE LENGTH	20.0" (508 mm)
OVERALL DIAMETER	0.120" (3.05 mm)
ACTIVE DIAMETER	0.060" (15.24 mm)
NUCLIDE PURITY	>99%
UNIFORMITY	≤10% integral non-uniformity measured in centimeter long segments

