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Anywhere is CIT



Manufacturer's of World's Most Advanced Digital Computed Radiography Imaging Technology

PRODUCT SHEET

## Se75/Ir192/Yb169 Radiation Isotope Projector unit to be used with Digital Computed Radiography

CIT's latest small diameter gamma radiography projectors are offered to enable reduced control zone area for digital computed radiography to be conducted. The innovative design allows the projector to be fully compliant with the governing regulations and standards and to be light, compact, intuitive to use while containing no Depleted Uranium. The projector is constructed from only Tungsten and Stainless Steel ensuring lasting reliability with no disposal costs.

Uniqueness of this projector is that this is only projector that can be loaded with Ir192, Se75 or Yb169 and used for either projection or close proximity radiography. The innovative use of tungsten allows for an intimate contact with a large collimator allowing close proximity radiography to be carried out—no hot pass even when using Iridium 192. The projector includes a wide selection of accessories: retort stand and clamps, windouts and collimators to ensure that your system meets your requirements.



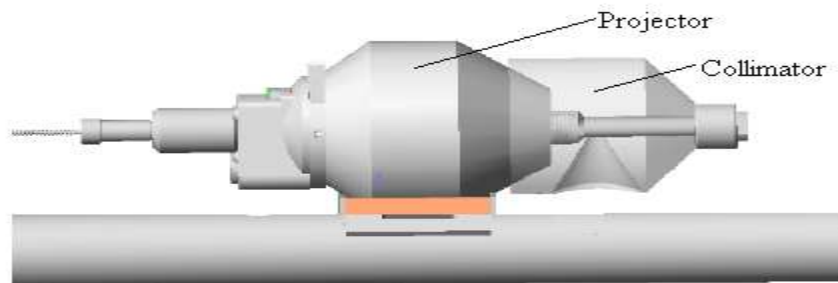
Projector X-233mm

Projector V-213mm

Projector I-173mm

### System Configuration

The projector may be used in a variety of different configurations depending on the location and type of work to be carried out. The projector system is capable of allowing small controlled area radiography through the use of tightly collimated exposure coupled with scatter radiation shields.



Example Close Proximity Set Up



**Technical Specifications**

**1. Products Inspected**

- Materials inspected
  - Aluminium 200mm
  - Steel (70mm equivalent)
  - Ferrous/Non ferrous
- Product type
  - Pipes weld
  - Castings
  - Assembled items
  - With/without cladding

**2. Meets the following standards**

- System fully meets ISO 3999
- International Atomic Energy Agency requirements No. TS-R-1 (2005)
- International Air Transport Association, Dangerous Goods regulations.
- International Civil Aviation Organization, Technical Instructions for the Safe transport of Dangerous Goods by Air.
- International Maritime Organization, International Maritime Dangerous Goods Code.
- ADR, European Agreement of Road Transportation.

**3. Shielding**

The projector utilizes a Tungsten Heavy alloy shield to allow an effective activity of radioisotope to be transported and used cost effectively, efficiently and most of all safely. Tungsten is not radioactive and thus does not present the safety or environmental risks associated with the use of depleted uranium shielding.

**4. Activity Limitations**

	Loaded Activity	Projector I		Projector V		Projector X	
		SDR	Ti	SDR	Ti	SDR	Ti
		μSv/hr		μSv/hr		μSv/hr	
Ir 192	1 Curie	900	0.5	50	0.0	10	0.0
	30 Curies	-	-	1500	0.6	300	0.1
	100 Curies	-	-	-	-	900	0.5
	200 Curies	-	-	-	-	1800	1.0
Se 75	1 Curie	1	0.0	0	0.0	0	0.0
	30 Curies	100	0.0	10	0.0	5	0.0
	100 Curies	-	-	30	0.0	15	0.0
	200 Curies	-	-	-	-	30	0.0
Yb 169	1 Curie	0	0.0	0	0.0	0	0.0
	30 Curies	5	0.0	0	0.0	0	0.0
	100 Curies	-	-	0	0.0	0	0.0
	200 Curies	-	-	-	-	0	0.0

Isotope	Maximum Activity					
	Projector I		projector V		Projector X	
	Ci	GBq	Ci	GBq	Ci	GBq
Ir-192	1	37	30	1110	200	7400
Se-75	81	3000	200	7400	200	7400
Yb-169	81	3000	200	7400	200	7400

Package type maximum activities

**5. Projector Specifications**

	Projector I	Projector V	Projector X
Mass (Kg)	8.5	17	23
Capacity (Ci/GBq)	Ir 192	1/37	30/1110
	Se 75	80/3000	150/5550
	Ytb 169	80/3000	150/5550
Shielding Material	Tungsten	Tungsten	Tungsten
Dimensions of Projector (cm x cm x cm)	17.3 x 9 x 14.7	21.3 x 12 x 15.9	23.3 x 12.7 x 16.5
Dimensions of Projector In case (cm x cm x cm)	48 x 17 x 34	48 x 17 x 34	48 x 17 x 34
Mass of Container and Case (Kg)	12.1	20.6	26.75
Component Materials	St Steel 304, Tungsten Alloy	St Steel 304, Tungsten Alloy	St Steel 304, Tungsten Alloy

**6. Winding Apparatus**

The winding apparatus available for use with the projector comes in standard length of 5, 10 and 15 meters in three types of windouts

- Hand Controlled/Cage mounted/Boxed
- Hydraulic/Pneumatic/Electrical actuation and control

**7. Guide Tubing**

Two varieties of guide tubing, both consists of reliable steel housing surrounded in varying grades of PVC



- Light weight guide tube for day to day requirements/ Heavy duty guide tube for demanding and hazardous areas

**8. Source Termination**

For flexibility three varieties of termination

- Removable Tube Terminus/Direct Terminus/Terminated Guide Tube

**9. Collimators**

Projection Collimators		W-1	W-2	
				
Mass (Kg)		0.65	0.9	
Dimensions (cm x cm x cm)		3 x 3 x 5	4.5 x 4.5 x 5	
Throw		45°	45°	
Direction of Throw		Side	Side	
Close Proximity?		No	No	
Approximate HVL for Ir192		2.5	5	
Close Proximity Collimators		CP-1	CP-2	CP-3
				
Mass (Kg)		2	4.5	7
Dimensions (cm x cm x cm)		5.5 x 8 x 10	6.5 x 6.5 x 11	9 x 9 x 13
Throw		50°	50°	50°
Direction of Throw		Side	Side	Side

CP collimator inserts of 10°Draft, 10°Slot and 20°Draft is also available on request.

**For ordering/query, please contact CIT UK at [info@cituk.com](mailto:info@cituk.com)**