



Model M237:

The M237 x-ray monoblock is a fully integrated 70 kV, 10 W x-ray generator designed specifically to be used as component of a handheld, portable, or bench-top x-ray instrument. The source includes a miniature sealed x-ray tube with a transmission-type end window, a high voltage power supply, and control electronics contained in a compact grounded enclosure.

Features

- Optimized** for x-ray imaging and high energy XRF applications
- Compact, lightweight design** – ideal for portable and bench-top instruments
- Low power consumption** – compatible with battery operation
- Fully machined metal enclosure** – precision mounting and alignment
- Patented X-ray Omnishield™** – self-shielded with lightweight radiation shielding
- Wide cone angle** – 110 degree full width standard x-ray cone angle

Applications

X-ray Imaging

- Medical and dental imaging
- Veterinary imaging
- NDT
- Security, contraband

XRF Materials Analysis

- PMI, including rare earth metals
- ROHS and ELV compliance
- Environmental analysis
- Forensic science
- Mining and geology
- Art and archeology
- Coating thickness
- Quality control
- Precious metal verification

Specifications

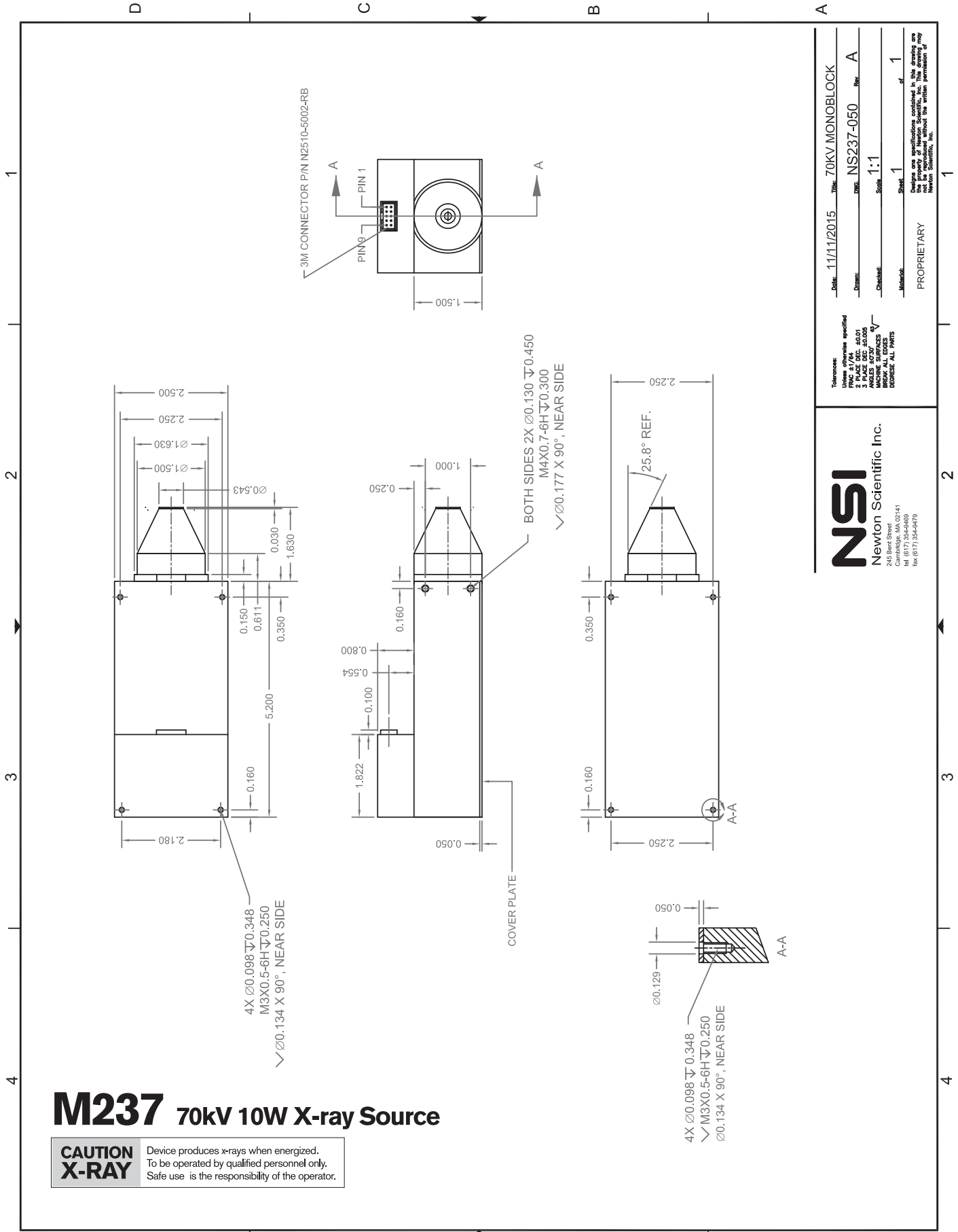
Tube type:	Metal-ceramic
Tube voltage*:	35 kV – 70 kV
Tube current:	5 – 200 µA
Tube power:	10 watts maximum
Cathode type:	Tungsten filament
X-ray window:	Beryllium
Target type:	Transmission
Available targets:	Au, Ag, Rh, W
Depth to focal spot:	2.4 mm (see drawing)
X-ray cone angle:	110° (see drawing)
Input voltage:	11 VDC
HV polarity:	Grounded anode
HV stability:	< 0.1%
Electrical insulation:	Silicone potting
Radiation shielding:	Self-shielded
Operating temp (case):	-10°C to 60°C
Storage temp:	-25°C to 85°C
Cooling:	Air cooled
Ambient humidity:	30 to 90%
Weight:	< 700g

*Custom voltage ranges available (from 15 kV to 80 kV).



Interface

PIN	NAME	TYPE	RANGE	SCALING / VALUE
Pin 1	V+	Input Power	11 VDC	
Pin 2	V+	Input Power	11 VDC	
Pin 3	GND	Ground	0V	
Pin 4	GND	Ground	0V	
Pin 5	TUBE I CONTROL	Analog Input	0-4V	0-200 µA (10 W limit)
Pin 6	TUBE HV CONTROL	Analog Input	1.75V-3.5V	35-70 kV
Pin 7	TUBE READY	Digital Output	0V or 5V	LOW = NOT READY HIGH = READY
Pin 8	TUBE ENABLE	Digital Input	0V or 5V	LOW = OFF HIGH = ENABLE
Pin 9	TUBE HV MONITOR	Analog Output	1.75-3.5V	35-70 kV
Pin 10	TUBE I MONITOR	Analog Output	0-4V	0-200 µA



Date:	11/11/2015	Title:	70KV MONOBLOCK
Drawn:	DWG	Part No.:	NS237-050
Checked:		Scale:	1:1
Material:		Sheet:	1 of 1
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PROPRIETARY			

NSI
Newton Scientific Inc.
 245 Bent Street
 Cambridge, MA 02141
 Tel: (617) 354-9469
 Fax: (617) 354-9479

Tolerances:
 Unless otherwise specified
 2 PLACE DEC. 0.01
 3 PLACE DEC. 0.005
 ALL DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED
 MACHINE SURFACES ∇
 UNLESS OTHERWISE SPECIFIED
 REFERENCE ALL PARTS