



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

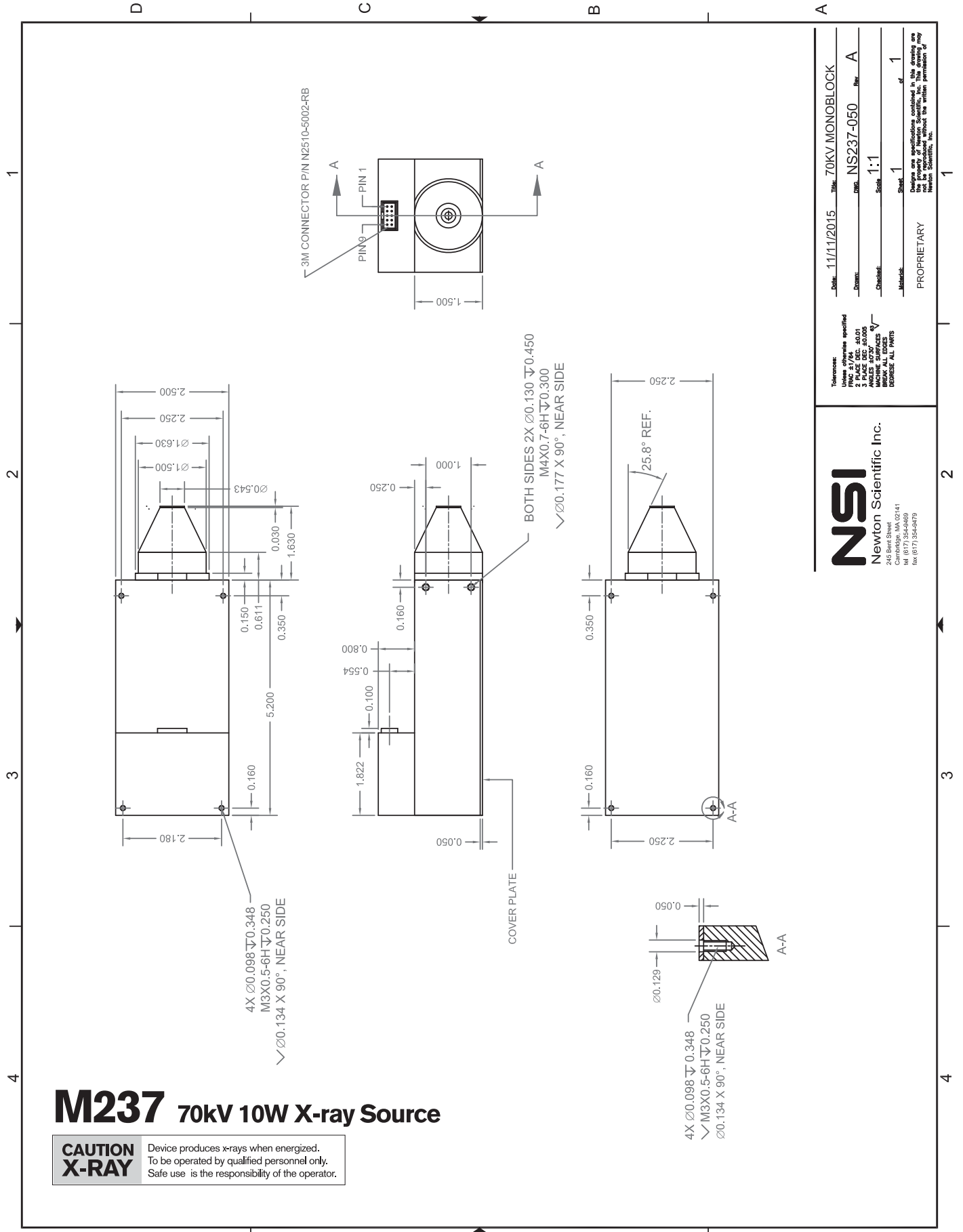
Tube type:	Metal-ceramic
Tube voltage*:	35 kV – 70 kV
Tube current:	5 – 200 µA
Tube power:	10 watts maximum
Cathode type:	Tungsten filament
X-ray window:	Beryllium
Target type:	Transmission
Available targets:	Au, Ag, Rh, W
Depth to focal spot:	2.4 mm (see drawing)
X-ray cone angle:	110° (see drawing)
Input voltage:	11-12 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



M237 70kV 10W X-ray Source

CAUTION X-RAY

Device produces x-rays when energized. To be operated by qualified personnel only. Safe use is the responsibility of the operator.

Date:	11/11/2015	Titl:	70KV MONOBLOCK
Drawn:	DWG.	Part No.:	NS237-050
Checked:		Scale:	1:1
Material:		Sheet:	1 of 1
Design and specifications contained in this drawing are the property of Newton Scientific, Inc. This drawing may be used for manufacturing only in the absence of written permission of Newton Scientific, Inc.			
PROPRIETARY			

NSI
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Tolerances:
 Unless otherwise specified
 2 PLACE DEC. 50.01
 3 PLACE DEC. 50.008
 ALL DIMENSIONS IN INCHES
 MACHINE SURFACES
 UNLESS OTHERWISE SPECIFIED
 FINISH TO 32 RMS