

**Model M25:** 50 kV, 4W X-ray Monoblock - The M25 x-ray monoblock is a fully integrated miniature 50 kV, 4W 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

**Compact design** – ideal for handheld, portable and bench-top instruments

**Low Power** consumption – compatible with battery operation

**Integrated design** – no high voltage cables

**Machined metal enclosure** – precision mounting and alignment

**Patented X-ray Omnishield™** – 360 degree light weight radiation shielding

**Wide Cone Angle** – 110 degree full width x-ray cone angle

**Threaded adapter** for collimated applications – optional

## Applications

### XRF Materials Analysis

- Alloy and metal sorting
- ROHS and ELV compliance
- Environmental analysis
- Forensic science
- Mining and geology
- Art and archeology
- Coating thickness
- Lead detection
- Quality control
- Precious metal verification

### X-ray Imaging

- Medical, dental, small animal
- NDT
- Security, contraband

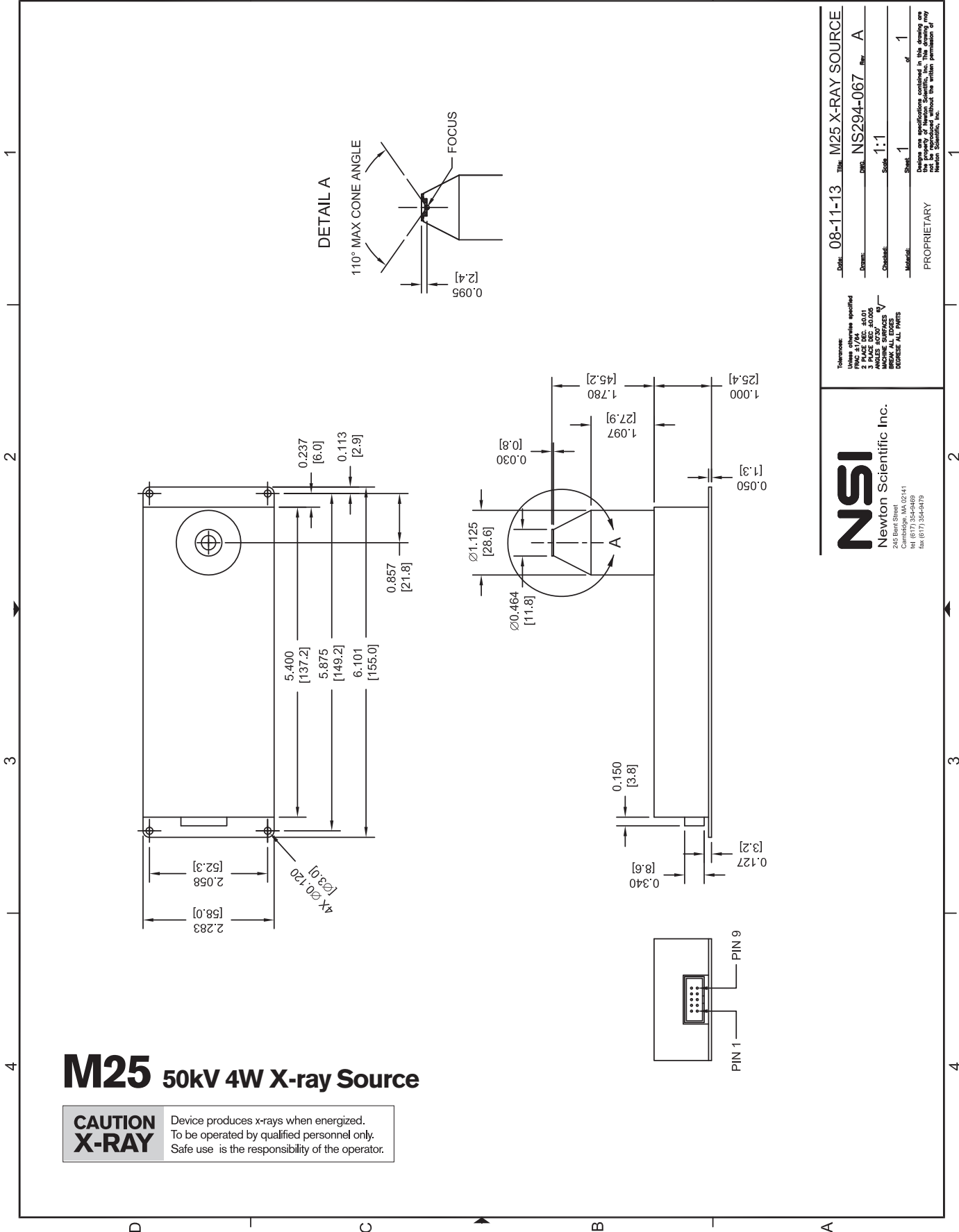
## Specifications

Tube type:	Metal-ceramic
Tube voltage:	5 kV – 50 kV
Tube current:	0 - 200 $\mu$ A
Tube power:	4 watts maximum
Cathode type:	Tungsten filament
X-ray window:	Be, 125 $\mu$ m
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:	5-12 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:	90% max (non-condensing)
Weight:	Approx. 385 g.



## Interface

PIN	NAME	TYPE	RANGE	SCALING / VALUE
Pin 1	V+	Input Power	5-12 VDC	
Pin 2	V+	Input Power	5-12 VDC	
Pin 3	GND	Ground	0V	
Pin 4	GND	Ground	0V	
Pin 5	TUBE I CONTROL	Analog Input	0-4V	0-200 $\mu$ A (4W limit)
Pin 6	TUBE HV CONTROL	Analog Input	0-4V	0-50 kV
Pin 7	TUBE READY	Digital Output	TTL	LOW = NOT READY HIGH = READY
Pin 8	TUBE ENABLE	Digital Input	TTL	LOW = OFF HIGH = ENABLE
Pin 9	TUBE HV MONITOR	Analog Output	0-4V	0-50 kV
Pin 10	TUBE I MONITOR	Analog Output	0-4V	0-200 $\mu$ A



Date: 08-11-13 Title: M25 X-RAY SOURCE  
 Drawn: DMS NS294-067 Rev: A  
 Checked: Scale: 1:1  
 Material: Steel  
 PROPRIETARY  
 Design one specification contained in this drawing are the property of Newton Scientific, Inc. This drawing may be used only for the specific part for the benefit of Newton Scientific, Inc.

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Tolerances:  
 Unless otherwise specified  
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 BREAK ALL EDGES  
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