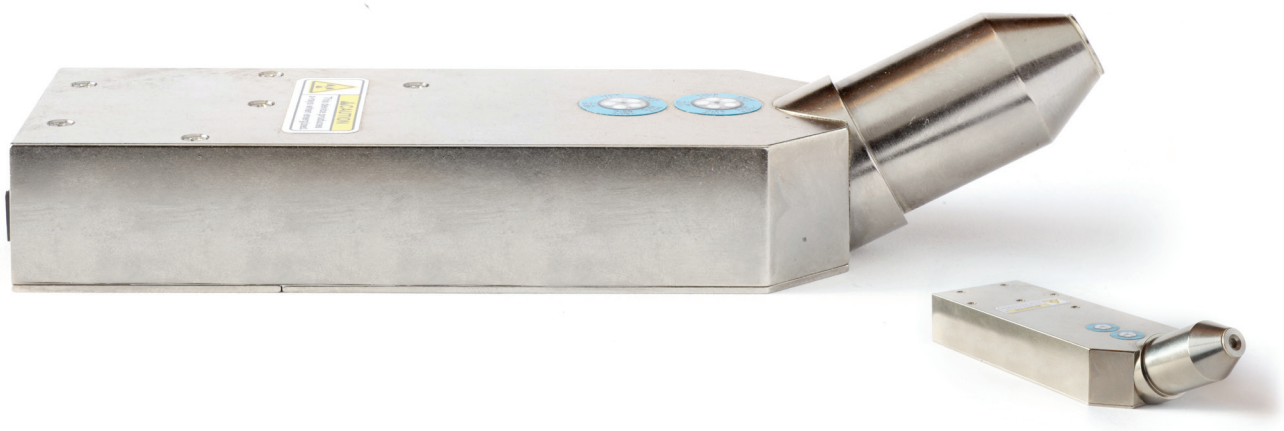
NEWTON SCIENTIFIC

M54 50kV 4W X-ray Source

light weight and compact design - only 365 grams



Model M54: 50 kV, 4W X-ray Monoblock - The M54 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 benchtop 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 benchtop instruments

Low power consumption – compatible with battery operation

Easy to operate – analog control interface

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 µA
Tube power:	4 watts maximum
Cathode type:	Tungsten filament
X-ray window:	Be, 125 µm
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. 365 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 µA (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 µA

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