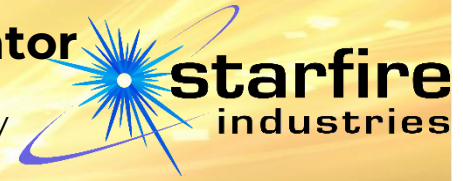


# nGen<sup>®</sup>-300 Series Portable Neutron Generator

Portable, Fast Neutron Interrogation powered by nGen<sup>®</sup> technology



## PORTABLE NEUTRONS FOR BASIC INTERROGATION

The nGen<sup>®</sup>-300 series is a lightweight, high-output sealed fusion neutron generator suitable for a range of uses. The ultra-compact form factor contains the generator and supporting hardware including all high-voltage and controller components. The nGen<sup>®</sup>-300 enables both continuous (CW) and pulsed operation (0—100% duty factor).

## DO MORE WITH LESS DOSE USING GROUNDED TARGET

Using Starfire's patented biased-plasma source and grounded-target technology, the nGen<sup>®</sup>-30 generates copious neutrons a few mm from the device edge permitting:

- Close coupling with moderator or shield assemblies to minimize size and weight
- $>2\pi$  solid angle access to the high-flux neutron emission zone
- Higher neutron utilization leveraging forward-directed DD anisotropy
- Reduced size and weight of radiation shielding and support infrastructure



Superior Neutron Utilization

## D-D (2.45 MEV) OR D-T (14.1 MEV) NEUTRONS

The nGen<sup>®</sup>-300 series is configured for either D-D or D-T operations. The D-D neutron energy allows for more compact shielding/moderation, fewer secondary reactions, and faster thermalization time for pulsed applications. The 14-MeV D-T version have  $\sim 50x$  higher output and generates inelastic scatter gamma signatures in addition to captures.

## nGen<sup>®</sup>-300 SERIES ADVANTAGE

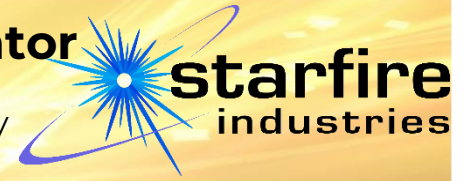
- Cost-effective, simple
- Air-cooled
- Sealed, compact form for human portable applications
- Standard AC wall plug and USB interface
- Neutrons generated at tube end for higher available neutron flux
- Easy to use PC software for operation



3310 N. Duncan Road • Champaign, IL 61822 USA • +1 (217) 721-4165 • [starfireindustries.com](http://starfireindustries.com)

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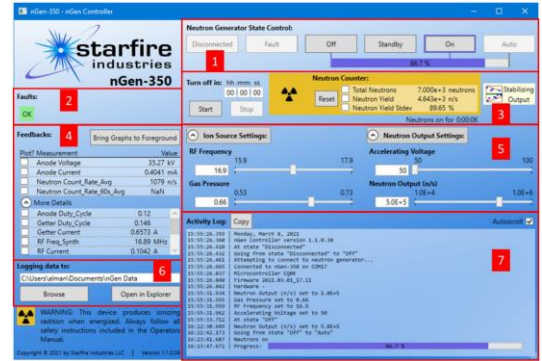


## APPLICATIONS



Complete nGen®-300 System

- On-site Inspection
- PGNAA/Materials Analysis
- Security/Inspection
- Quality Control / Gauging
- Laboratory research



nGen® Controller software

## SPECIFICATIONS

### Neutron Output

Time-averaged Yield	5E6 DD n/s; 3E8 DT n/s
Neutron Energy	2.5 MeV D-D; 14.1 MeV D-T
Ion Source Type	Electrodeless RF
Flexible Pulse Options	Continuous (CW) or pulsed 0—100% DF
Max Neutron Flux	>5E5 DD n/cm <sup>2</sup> *s at snout target plane
Beam Spot Size	<13 mm

### Power and Operation

Operating Voltage	100—120 kV internal, IP60 enclosure
Power Requirements	<75 W <sub>AC</sub>

### System Information

Generator Head Dimensions	~3.5" OD x 18" L (8.9cm OD x 46 cm L)
Generator Head Weight	17 lbs (7.75 kg)
Supporting Hardware Dimensions	6" W x 2" H x 11" L (15cm W x 5cm H x 28cm L)
Supporting Hardware Weight	3.7 lbs (1.7 kg)
Warranty	500 operating hours, or 12 months



nGen®-350-DD w/real time control



Fits into one hardcase

## nGen® technology makes the nGen®-300 series possible

Starfire Industries' nGen® Technology has 10x greater neutron utilization over existing generators of the same size. Patented biased RF ion source, ultra-compact HV power and grounded target technologies enable higher voltages and power in a small form factor combined with detector placement near the neutron source plane. Protected by US & international patents: 9008256, 9213112, 9607720, 9728376, 10110119, 10955582, and others.



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