

Device Sales

Mk 0 | Available Now

18kW

1e8 n/s (DD)
1e10 n/s (DT)

or

1.8kW

1e7 n/s (DD)
1e9 n/s (DT)



3 months

Fast lead time

Single-system
delivery from order
(specification dependent).

25,000+ hrs

Lifetime operation



25,000+ hrs

Lifetime operation

Non-pulsed,
automated,
unattended operation
for industrial
applications.



>1,500 cm²

Large irradiation area

Fusion neutron
emission zone
concentrated along
central 350 mm of
reactor head.



5/10 yrs

Maintenance interval

Long refuel interval
of 5 (DT) to 10 (DD)
years with in-
situ head swap,
no SF₆ gas.

About us

Astral Systems develops compact multi-state fusion (MSF) reactors based on durable, industrialised technology.

Our high-flux neutron sources provide continuous irradiation capabilities for D-D (2.45 MeV) and D-T (14.1 MeV) applications, enabling organisations to generate real-world data, validate simulations, and reduce uncertainty.

We support innovation across fusion, fission, aerospace, defence, electronics, security, and advanced materials.



MULTI-STATE FUSION (MSF) NEUTRON GENERATORS

Irradiation Services

Device Sales

Strategic Partnerships

Contact Us



info@astralsystems.com



<https://www.astralsystems.com>

Offering

There are multiple ways to engage with us to tailor to your irradiation needs:

IRRADIATION SERVICES

- DD / 2.45 MeV
- DT / 14.1 MeV

DEVICE SALES

- Mk0 available now
- 1e8 n/s (DD)
- 1e10 n/s (DT)
- >25,000 hr lifetime

FACILITY PARTNERSHIPS

- Strategic facility partnerships
- Single to multi-module arrays

ISOTOPES

- Development of medical isotopes
- Future scale-manufacturing

Why Astral?

Fast, configurable access

High fluence, high-energy neutrons on demand

Large volumetric sample area

Line source provides large irradiation region for multi-sample tests

High DD/DT yield, flux & fluence

14.1 MeV & 2.45 MeV

Highly modular set-up

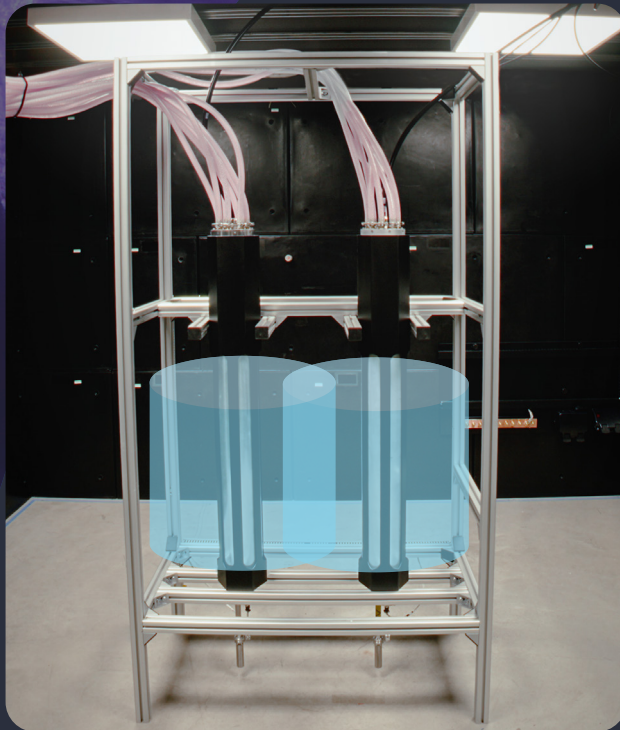
Configurable modular array to enable tailored flux and fluence zones for your campaign

Long, uninterrupted irradiations

Non-pulsed, continuous operation

Scalable

~3-month lead times for rapid array deployment, manufactured in the UK



Irradiation Services

We're rapidly scaling our facilities to deliver fast, configurable neutron access:

Boscombe	Skyline	Berkeley
UK · Q4 2026	UK · Q4 2026	UK · 2027
D-T NPR (n/s) 5×10 ⁹	D-T NPR (n/s) 3×10 ¹⁰	D-T NPR (n/s) 6×10 ¹¹
D-T Flux 1.7×10 ⁷	D-T Flux 1×10 ⁸	D-T Flux 2×10 ⁹
Modules 1-2	Modules 3	Modules 6
Campaign 100 hrs	Campaign 300 hrs	Campaign 500 hrs
Peak volume 7,000 cm ³	Peak volume 4,000+ cm ³	Peak volume 4,000+ cm ³
Available now	Coming soon	Coming soon

Available dosimetry:

- Live flux & spectra (CIVIDEC Diamond Detector)
- Live flux & spectra (EJ-309 Organic Liquid Scintillator)
- Flux & fluence (Activation Foils with HPGe in-house analysis)
- D-D flux (¹⁰B + ZnS:Ag PMT Tubular Detector)

A fusion-relevant test bed

We offer real-world validation to underpin predicted lifetime and performance of critical fusion technologies

- Shielding material testing & validation
- Structural material testing & validation
- Exploration of effects on:
 - HTS
 - Optics
 - Electronics
- Breeder Blanket development, including integrated tritium extraction & analysis through partner capabilities