



NevoLine™
Biomanufacturing System
Next Evolution of Viral Production



UNIVERCELLS

NevoLine™

NEXT EVOLUTION OF MANUFACTURING TECHNOLOGIES

INTENSIFIED & AUTOMATED VIRAL PRODUCTION SYSTEM IN 10M²

Containment & Safety

- » Low-footprint process enabling integration in biosafety cabinets or isolators
- » Automated process reducing manual operations
- » Closed system ensuring process and environment safety

Downstream Module

Intensified streamlined purification

- » Harvest clarification
- » In-line chromatography

Additional Modules for Inactivation, Aliquoting, etc

- Automated operations in a controlled environment
- » Based on process needs



Upstream Module

Intensified cell culture & viral production, delivering concentrated harvest

- » High-density scale-X™ fixed-bed bioreactor for cell culture & viral production
- » Chained with in-line product concentration

BENEFITS

Cost-effective Production

- » Reduced classified area footprint & simplified infrastructure
- » Low capital investment
- » Low operational expenditures

Automated Operations

- » Virus containment
- » Environment and operators safety

Rapid Deployment

- » Fast implementation in new or existing facility
- » Reduced time-to-market
- » Adaptable to epidemic preparedness approaches

FEATURES

Applications

- » Viral vaccines
- » Oncolytic viruses
- » Viral vectors
- » Pilot to commercial-scale production

Dimensions (L x W x H)

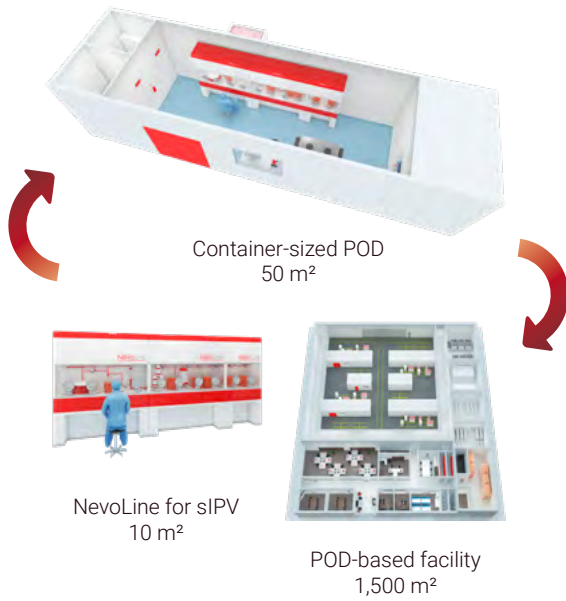
- » NevoLine: 6650 x 1610 x 2367 mm
- » Upstream & Downstream: 2158 x 1610 x 2367 mm
- » Additional: 1533 x 1610 x 2367 mm

Integration into:

- » Greenfield facility construction
- » Existing facility revamping
- » Container-size POD for rapid deployment

Case study: trivalent sIPV production in a NevoLine-based facility

4 NevoLine systems delivering over 50M doses of trivalent inactivated polio vaccine annually



Estimated CAPEX: \$ 20M

POD-based facility with 4 NevoLine systems

Estimated CoGs: < \$ 0.30/dose

Including upstream, downstream and viral inactivation

Estimated Capacity: 50M doses/y

Each NevoLine system delivers 577,000 doses/batch of trivalent sIPV, 22 batches/year

NevoLine reduces facility footprint & investment requirements

	NevoLine	Single-Use (SU)	Stainless Steel (SS)
	4x NevoLine (600 m ² bioreactors) 50M doses/y	5x750 L bioreactors 54M doses/y	6x750 L bioreactors 54M doses/y
CAPEX (USD M)	~ 20	~ 50	~ 200
Footprint (m ²)	1,500 m²	4,000 m ²	~ 10,000 m ²
Utilities (USD/run)	5,400	35,500	75,000
CoGs (/dose)	< \$ 0.30	\$ 0.6	\$ 1.2-1.5

Assumptions

Calculations : BioSolve. Facilities built from scratch, utilized at capacity.

Purifications yield : NevoLine 57%, SU & SS 45%.

Batches/year : NevoLine : 22, SU : 20, SS : 16.