

PRODUCT DATASHEET

Dimension Vertical Lay System (DVLS-120)

Portable, modular VLS for the deployment and recovery of subsea power cables, umbilicals, flexible risers and flowlines through moonpool or over the vessel side.

120 Te MAX LAY TENSION	125 Te HANG-OFF CAPACITY	50 – 700 mm PRODUCT OD RANGE	5.0 m TOP CHUTE RADIUS	185 Te WEIGHT (EXCL. TENSIONER)
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Overview

The Dimension DVLS-120 is a portable vertical lay system that transitions flexible products from deck carousels, baskets or reel drive systems into the vertical plane for installation through the vessel moonpool or over the side. The system integrates a top 5 m radius chute, 4-track vertical tensioners (up to 2), hang-off clamp and work platform in a modular steel structure that breaks down for road and sea freight and is installed on the vessel deck with sea-fastening brackets for quick mob and de-mob.

Designed in-house by Dimension and fabricated by approved partner yards, the system is engineered to DNV-RP-0232 / DNV-ST-0378 and delivered with full documentation, load-test certification and offshore commissioning support.

Applications

- Submarine power cable installation – HV/EHV export and inter-array cables, single and three-core
- Dynamic and static umbilicals, flexible risers and flowlines (SURF)
- Deepwater lay to 500 – 750 m water depth via moonpool or side-lay
- Cable and flexible recovery / decommissioning campaigns
- Rental or sale; vessel-of-opportunity mobilisation.

Key Features

- Highly Customizable and Modular** – 1 × hang-off platform, 1 × work platform, 1 – 2 × 4-track tensioners each rated 60 Te.
- Fleeting top chute** – $\pm 15^\circ$ fleet and retract for varying product diameters; low-tension MBR control.
- Hang-off beam** – hydraulically retractable for mid-line connections, buoyancy installation and product hang-off.
- Work platform** – 30 m² deck area, 1.5 Te/m² rating, two 7.5 Te trolley hoists on runway beams, pad eyes for rigging.
- Ancillary winches** – 15 Te pull-through winch and 7.5 Te tugger winches for moonpool operations.
- Track pads** – polyurethane pads interchangeable for armoured cable, PP-yarn served cable and flexible pipe.
- Modular** – transportable components; maximum single lift 12 Te excluding tensioner.
- Integration** – compatible with Dimension tensioners, carousels, deck winches and third-party equipment.



TECHNICAL SPECIFICATION			
Capacity & Design		Dimensions & Weights	
System type	Dimension vertical lay system (DVLS)	Overall envelope (L × B × H)	14.2 m × 10.3 m × 29.4 m approx.
Maximum lay tension (dynamic)	120 Te	Total weight (excl. tensioner)	185 Te
Hang-off clamp capacity (dynamic)	125 Te	Tensioner weight	74 Te each
Tensioner configuration	2 × 4-track, 4 × 75 kW motors per tensioner	Maximum single component lift	12 Te (excl. tensioner)
Lay / recovery speed	0 – 1,200 m/hr	Work platform deck area / rating	30 m ² / 1.5 Te/m ²
Maximum squeeze force	150 Te (adjustable, load-cell controlled)	Work platform opening	3.6 m (adjustable)
Grip force / track contact length	3 – 30 Te/m / ≈5.5 m	Deck footprint / sea-fastening	Bolted to deck grillage / welded sea-fastening brackets
Design code / appraisal	DNV-RP-0232 / DNV-ST-0378 design appraisal	Power & Control	
Product Handling		Power supply	1 × 55 kW HPU; 2x 4 × 75 kW VFD panel; 3ph, 440 VAC, 60 Hz each
Product OD range	50 – 700 mm	Alternative supply	690 V / 50 Hz via transformer option
Top chute radius (low tension)	5.0 m @ 15 Te	Control system	PLC with HMI in control cabin; tension, speed, squeeze display and logging
Top chute movement	Fleeting ±15°; retractable	Control positions	Control cabin + local / radio remote
Departure chute option	20° off-lead; 10° fore / aft	Emergency	E-stop network; passive brake on power loss
Track pad type	Polyurethane flat / V-profile, 70-80 Shore A	Lifting & Ancillary Equipment	
Suitable product servings	PP-yarn (bitumen), PE sheath, steel wire armour, flexible pipe	Pull-through winch	15 Te
Environmental		Tugger winches	2 × 7.5 Te
Operating temperature	-10 °C to +50 °C	Trolley hoists	2 × 7.5 Te on runway beams
Survival temperature	-20 °C to +65 °C	Access	Integrated stairs, walkways and handrails
Humidity / atmosphere	Up to 100 % RH; marine, high salinity	Scope of Supply	
Hazardous area	Safe area / Zone 2 option	Standard	VLS structure, top chute, tensioner, hang-off clamp, HPU, control cabin, spares container
		Options	Departure chute; deck radius controller; heave compensation; A&R winch interface; additional track pad sets
		Documentation	GA drawings, load test certs, O&M manual, BV verification

Commercial & Mobilisation Available for rental or sale. Mobilisation from Singapore or China base; typical mob/demob 21 days. Technicians available for installation, commissioning and offshore operations. Contact anuj@dimension.sg for availability and day rates.

Specifications are indicative and subject to change without notice. Final performance is dependent on product properties, vessel interface and project-specific engineering.