

Starvo Polaris GB480-LC

480 kW DC Ultra-Fast Charger — Liquid-Cooled Dual GB/T Heavy-Duty Truck Specialist

Starvo Polaris GB480-LC is Starvo's flagship liquid-cooled DC ultra-fast charger, purpose-engineered for heavy-duty electric trucks and high-demand commercial charging hubs. Purpose-built for the most demanding environments including mining, plantation, and port operations, it features an oil-immersed liquid cooling system that eliminates fan noise and dramatically extends component life, the Polaris GB480-LC delivers sustained 480 kW output across dual GB/T guns — even in the harshest operating environments from -40°C to +75°C. Built to GB/T 18487-2023, it combines a 10.1" color touch-screen HMI, VIN-based smart start, multi-platform fleet management integration, and OCPP connectivity for seamless deployment at mining operations, palm oil and agricultural estates, port logistics centers, highway freight corridors, and fleet depots across Indonesia and the APAC region.

The Polaris GB480-LC's oil-immersed liquid cooling architecture sets it apart from conventional forced-air chargers: no exposed fans, no dust ingress, and near-silent operation — ideal for 24/7 freight depot environments. With a wide output voltage range of 200–1000 VDC and a maximum per-gun current of 400 A, it accommodates the full spectrum of heavy commercial vehicle battery architectures. The modular power module design simplifies field maintenance, while real-time monitoring of oil temperature, pressure, and flow ensures continuous safe operation.



480 kW Power

Dual GB/T DC fast charging with dynamic power sharing — up to 400 A per gun for ultra-fast heavy truck turnaround.



Liquid-Cooled

Oil-immersed liquid cooling system — silent, dust-free, and engineered for continuous 24/7 heavy-duty operation.



IP55 Rated

Industrial-grade enclosure rated for indoor and outdoor deployment across tropical and extreme-climate environments.



10.1" Touch HMI

Color touch screen with VIN recognition, QR code, RFID, Plug-and-Charge, and manual authentication modes.

Technical Excellence

Input Specifications

- **AC voltage:** 380 VAC ±20%
- **AC frequency:** 50 Hz ±10%
- **Power factor:** ≥ 0.99
- **Dielectric strength:** 2500 VAC, 1 min no-breakdown / no-flashover
- **Leakage current:** ≤ 20 mA
- **Insulation resistance:** ≥ 20 MΩ @ 1000 VDC

Environmental Resilience

- **Operating temperature:** -40°C to +75°C (auto-derate above 75°C)
- **Storage temperature:** -40°C to +80°C
- **Humidity range:** 5 – 95% RH (non-condensing)
- **Working altitude:** ≤ 2000 m
- **Cooling:** Oil-immersed liquid cooling (silent, dust-free)
- **Environment:** Indoor / Outdoor

Output Performance

- **DC voltage range:** 200 – 1000 VDC
- **Constant power range:** 300 – 1000 VDC
- **Output current range:** 8 – 800 A
- **Max DC current per gun:** 400 A
- **Total system power:** 480 kW (dynamic power sharing across both guns)
- **Peak system efficiency:** ≥ 95%
- **Voltage precision:** ≤ ±0.5%
- **Current precision:** ≤ ±1.0% (≥30 A); ≤ ±0.3 A (<30 A)
- **Voltage stability:** ≤ ±0.5%
- **Current stability:** ≤ ±1.0%
- **Output ripple coefficient:** ≤ 0.5%

Standards & Compliance

- **Design standard:** GB/T 18487-2023
- **Connector:** GB/T 20234.3 (Dual GB/T guns)
- **Protection rating:** IP55
- **Metering accuracy:** Class 1.0
- **EMC class:** Class II
- **Auxiliary power:** 12 VDC

Smart Features & Connectivity

1

Advanced HMI

10.1" color touch screen with multi-method authentication — VIN recognition, QR code scan, RFID card, Plug-and-Charge, and manual operation — with LED status indication for clear at-a-glance session status.

2

Precision Metering

Class 1.0 DC energy metering for accurate, billing-grade energy measurement on every session, compliant with GB/T standards.

3

Multi-Mode Charging

Flexible charging modes: Auto, Time, Amount, Energy, and SOC-based charging — adaptable to operator pricing strategies and fleet management requirements.

4

Network Ready

4G full-channel wireless connectivity with multi-platform cloud support. Supports VIN-based smart start, dual-gun simultaneous cross-platform charging, and real-time remote diagnostics.

Comprehensive Safety Systems

The Polaris GB480-LC incorporates multi-layer protection to ensure safe, reliable operation in all conditions. Built-in emergency stop functionality provides immediate shutdown capability, while continuous insulation monitoring, output contactor weld detection, and protective-earth connection monitoring safeguard against electrical faults. The system actively monitors oil temperature, pressure, and flow to protect the liquid cooling circuit, and guards against the full spectrum of fault modes from input grid disturbances through to gun-side anomalies.



Emergency Protection

Integrated emergency stop with continuous insulation detection and earth connection monitoring for immediate fault response — meeting GB/T 18487-2023 safety requirements.



Electrical Safeguards

Input overload, input short-circuit, input over/under-voltage, input phase-loss, output over-voltage, output current limit, output short-circuit, output reverse-polarity, and output contactor weld detection.



Thermal & Liquid Cooling Safety

Oil temperature, pressure, and flow monitoring for the liquid cooling circuit; gun-head over-temperature monitoring, gun-head locking mechanism, abnormal connection detection, and battery fault protection.



Site & Environmental Protection

Cabinet door access control, anti-reverse current (anti-backflow) protection, dedicated grounding system, and integrated lightning surge protection.

Physical Specifications

Dimensions

W × H × D:
1200 × 2190 × 1100 mm

Weight

Total:
~1200 kg (480 kW configuration)

Installation

Type:
Floor-standing cabinet, anchor-bolt mount



Power Modules

Modular high-efficiency power modules with oil-immersed liquid cooling. Modular design enables field replacement and simplified maintenance without taking the unit offline.



Cable Configuration

2 × GB/T charging cables rated 400 A continuous, 7 m length (configurable), with integrated gun-head holsters for safe cable management.

Typical Applications

The Polaris GB480-LC is purpose-built for ultra-high-power scenarios where charging speed, throughput, and reliability are non-negotiable. Its 480 kW output, liquid-cooled architecture, and dual-gun dynamic sharing make it the natural choice for operators serving heavy electric trucks, long-haul freight fleets, and high-throughput commercial charging hubs.

Mining Operations

Open-pit and underground mining sites requiring rugged, dust-resistant 480 kW charging for electric haul trucks and heavy mining equipment operating 24/7.

Palm Oil & Agricultural Estates

Large-scale plantation operations across Indonesia deploying electric transport fleets, requiring reliable high-power charging in remote, humid environments.

Port & Logistics Terminals

High-throughput container ports and freight terminals requiring continuous heavy-truck charging with minimal downtime and maximum bay utilization.

Commercial Fleet Depots

Logistics, e-commerce, and freight fleets with mixed heavy-vehicle battery architectures requiring fast opportunity charging between routes.

Industrial & Construction Sites

Heavy construction and industrial sites deploying electric excavators, dump trucks, and heavy machinery requiring on-site ultra-fast charging infrastructure.

Contact & Ordering Information

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Contact our sales team for detailed specifications, pricing, installation requirements, and customization options. We provide comprehensive support from site assessment through installation and ongoing maintenance — including grid impact studies, civil works coordination, and platform integration.

Specifications subject to continuous improvement. Final cabinet dimensions, module configuration, and accessory options confirmed at order placement.