



**Cleaner.
Greener.
Safer.
Smarter.**

CSL's Trillium Class self-unloading Panamax vessels set new standards in operational and energy efficiency, reliability, safety and environmental protection.

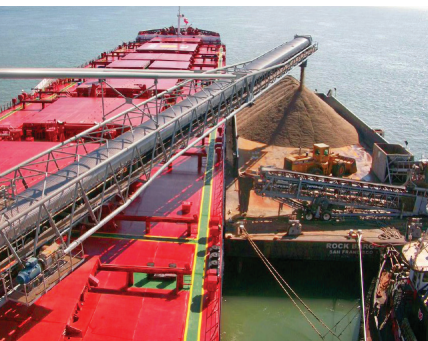
TRILLIUM  CLASS

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TRILLIUM PANAMAX The Next Generation of CSL Self-Unloaders

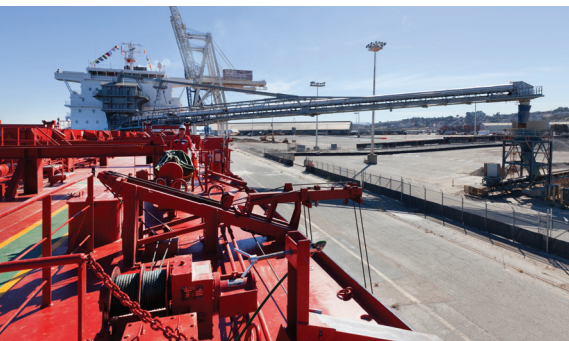


New Class. Optimal Performance.



TRILLIUM PANAMAX TRILLIUM CLASS

CSL'S TRILLIUM CLASS VESSELS ARE CURRENTLY THE MOST ADVANCED SELF-UNLOADING SHIPS IN THE WORLD. EQUIPPED TO MEET THE EVOLVING BUSINESS NEEDS AND HIGH ENVIRONMENTAL STANDARDS OF CUSTOMERS, OUR LATEST GENERATION VESSELS FEATURE THE MOST ADVANCED TECHNOLOGY AVAILABLE FOR BULK CARGO HANDLING AND TRANSPORTATION.



Cleaner.

- IMO Tier II main engines offer greater fuel efficiency, improved environmental performance and significant reductions in emissions such as NOx and particulate matter.
- Real-time exhaust gas and fuel monitoring systems provide optimum operating ranges and emissions control.
- Electronically controlled main engine and generators provide – better fuel efficiency.

**Simply the
Most Efficient
Mode of
Transporting
Bulk Cargo**

Fuel Economy Comparisons Ton-Mile per Gallon of Fuel

| | | | |
|-------|-----|----------------|-----|
| TRUCK | 155 | TRAIN | 413 |
| BARGE | 576 | TRILLIUM CLASS | 735 |



Greener.

- Variable frequency drives on thruster, pumps and fans increase operational and fuel efficiency.
- Power take-off on the main engine improves efficiency and reduces fuel oil consumption.
- Water lubricated stern tube bearings eliminate oil lubricant.
- Self-feeding gates, enclosed boom and dust suppression technology reduce dust and noise.
- Space for scrubbers is included in the Trillium design to accommodate future retrofits.
- TBT-free anti-fouling hull coatings, LED lighting and integrated bilge treatment system help reduce environmental footprint.

Safer.

- Bow thruster enhances maneuverability, saves time and reduces port costs, which lower the overall transportation costs.
- A fixed suppression system throughout the cargo handling spaces maximizes protection.
- Pulley protection grids provide safe environment for crews when operating machinery.
- Improved deck lighting improves overall safety.

Smarter.

- Custom hull design increases cargo lift.
- Remotely controlled self-unloading system increases efficiency and accuracy of discharge.
- Latest generation vessel performance monitoring instrumentation provides real-time information for achieving optimal propulsion efficiency.
- Closed circuit television facilitates cargo unloading and ISPS code application.

CSL's Self-Unloading Advantage

Like all CSL self-unloaders, the Trillium Class ships offer exceptional value, speed, versatility and efficiency resulting in reduced on shore infrastructure and labour requirements. When combined with quick turnaround in port, these attributes make this bulk cargo handling option an effective and competitive solution that helps reduce costs with minimum environmental impact.

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Fuel Efficiency, Operational Performance, Environmental Sustainability.

TRILLIUM CLASS TECHNICAL SPECIFICATIONS

| | |
|---------------------------------------|--|
| Main Engine | IMO Tier II Engine — Man B&W 5S65ME-C |
| Type of Engine | Electronically-controlled slow-speed diesel engine |
| Total Power | 10,430 KW |
| Cargo Carrying Capacity | 70,000 metric tons |
| Cargo Cubic Capacity | 75,125 cubic meters |
| Holds | 7 Holds / 7 Hatches |
| Variable speed dust-free discharge | 5,000 metric tons per hour |
| Boom Length | 80 meters |
| Length OA | 228.60 meters |
| Depth Moulded | 20.15 m |
| Breadth Moulded | 32.26 meters |
| Draft Summer | 13.48 meters |

Why Trillium?

Inspired by the three petals of its namesake flower, the Trillium Class represents the three tenets of CSL's sustainability philosophy and the three areas in which the new vessels excel: fuel efficiency, operational performance and environmental sustainability.



CSL Americas is a division of The CSL Group, the world's largest owner and operator of self-unloading vessels, and a global leader in marine dry bulk cargo handling and delivery services.