Colorado Railcar

New DMU

Meets the FRA's newest CFR part 238 specifications

Built in the USA

Member of APTAS

Public Transportation Partnership for Tomorrow
Colorado Railcar’s All New Glass Domed Aero-DMU

Proposed For The Alaska Railroad

Powered By Twin 600 Horse Power Detroit Diesels With Voith Hydrodynamic Transmissions
Meets The FRA’s Newest CFR Part 238 Specifications
The New Highly Evolved DMU is Winning Acceptance

The DMUs (Diesel Multiple Unit) concept has always been a winner. Today, we are seeing a revival of the RDC/DMUs of the 50’s albeit in a sleeker, safer, environmentally friendlier and more powerful form. And DMUs are garnering favor now for the very same reasons they were popular then; cost advantages, operational flexibility, and reliability.

Colorado Railcar, a high-end custom railcar manufacturer, has developed the first and only DMU meeting all FRA, APTA, ADA and AMTRAK requirements. As moderate volume, inter-city, suburban and rural commuter services become more important, the DMU emerges as the most promising solution. Outperforming locomotive hauled consists in flexibility, acceleration, and deceleration, DMUs provide a favorable cost/benefit ratio that is starting to be recognized nationwide. Colorado Railcar’s FRA approved steel tube construction, state-of-the-art engine/drive train and freight compatible structure make it suitable for mixed use with existing freight rail, often a crucial factor in developing cost effective service.

Please review the following material on Colorado Railcar’s new DMU that is changing the way America looks at inter-city and suburban commuter rail.
The New DMU Meets FRA’s CFR Part 238 Structural Requirements

No Waivers Required

Meets or exceeds new structural safety specifications for:

- 800,000 Pounds of Compression Buff Load Strength
- 300,000 Pound Corner Post Strength
- 500,000 Pound Collision Post Strength Impact Spec
- Roof Structure Rollover Strength
- Static End Strength
- 200,000 Pound Anti-Climbing Mechanism

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Colorado Railcar’s DMU Prototype

Nose Assembly Built to Locomotive Specifications
Colorado Railcar’s DMU Prototype

Side and End of Car Framing of Heavy Corten Steel Tube in a Truss Configuration Meets the FRA’s CFR Part 238 Structural Safety Specifications
New DMU Uses Proven Components
The New DMU Is Powered by Twin Detroit Diesel Series 60 Engines

- 600+ Horsepower per Engine
- Electronic DDEC Engine Management System
- Overhead Cam, Fuel Injected
- Lay-Down Configuration
- Two Year Warranty
- Parts/Service Availability at 1300 Outlets Nationwide
- 600,000 Engines in Use Worldwide Running Over a Billion Miles per Week. Engines Are Durable and Easy to Maintain

DDEC - Detroit Diesel Electronic Controls

6 Cylinder - Low Clearance Configuration

Gross Power - 600+BHP (447kw) @1800/2100 RPM
New DMU Utilizes Proven Components (Cont.)

Voith T212 BR Turbo Hydrodynamic Transmission

- The “Mercedes” of Heavy Duty Transit Transmissions
- 2,300 Turbo Transmissions in Use Worldwide and 75,000 Total Transmissions in Use Worldwide
- Hydrodynamic Braking
- Three Speed Transmission
- Electronic Control Management System
- 750,000 Km Before First Major Overhaul
- No Special Tools Required to Overhaul Transmission in Agency’s Shops
New DMU Utilizes Proven Components (Cont.)

DMU Trucks

GSI Trucks Featured on Bi-Level and Single Level

- GSI Low Clearance Truck
  - Inside Swing Hanger
  - Primary and Secondary Springs
  - Inboard Disk Brakes
  - Used by METRA and Many Other Transit Agencies
  - Voith E20 Final-Drive Used in Each Truck

This truck has a proven track record and is currently in use by many commuter rail agencies.
Proposed

New Bi-Level DMU

185 Seats
B-Level DMU Commuter Car
185 Seats
Proposed

New Single Level DMU

98 Seats
Single Level DMU Commuter Car

98 Seats

08 SEATS
(94 SEATS + 4 JUMP SEATS OR 2 WHEELCHAIR)

SIDE ELEVATION
SECTION A-A
## New DMU Commuter Railcar Data

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Aero DMU Single Level</th>
<th>Double Deck DMU</th>
<th>Single Level Trailer</th>
<th>Double Deck Trailer</th>
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<tr>
<td>Overall Car Length</td>
<td>85’</td>
<td>85’</td>
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<td>Maximum Height</td>
<td>13’7”</td>
<td>18’</td>
<td>13’7”</td>
<td>18’</td>
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<td>Headroom (center aisle)</td>
<td>7’6”</td>
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<td>Door Threshold to Top of Rail</td>
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<td>Doorway width</td>
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<td>9’</td>
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<td>Acceleration 0 to 55 mph in sec.</td>
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<td>Seating Capacity</td>
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<td>102 seats</td>
<td>189 seats</td>
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<td></td>
<td>98 std. end seats + up to 125 standees</td>
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<td>Maximum Weight</td>
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<td>with KB 190 retarder</td>
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<td>Minimum vertical curve radius</td>
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The New DMUs Performance Matches EMU

- Acceleration and Braking Equal to Performance of EMU
- 1,240 Total Horsepower
- Bi-Level Performance: 8 Horsepower per Ton Ready-to-Run, — 49 Seconds to 55 mph
- Single Level Performance: 8.8 Horsepower per Ton Ready-to-Run — 38 Seconds to 55 mph

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<th>Seconds to 55mph</th>
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<th>33</th>
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</table>
New DMUs Custom Designed to Meet the Agency’s Needs

Colorado Railcar Will Build to the Agency’s Specific Requirements

- Boarding Door Location – Center or End of Car
- Trucks – GSI or Atchison Casting
- Seating – Type, Layout, Coverings, Color, Recliners, Seatback Trays
- Windows – Flat or Dome, Tint
- Exterior Paint and Graphics
- ADA Compliant Boarding Options
- Restroom Area Design
- Audio at Seat
- Service Bar

Seating Options from Basic Walkover Bench Commuter Seats to Individual Bucket Seats with Tray Tables, Audio and Reclining Seatbacks
Ordering the New DMU

- Minimum DMU Car Order – As Few As Four Cars
- Limited Non-Recoverable Costs
- Engineering Included in Pricing
- Cost Effective Custom Options
- Production Delivery Time: 12-14 Months

At Last, A Self-Propelled Commuter Car That Meets All of FRA’s CFR Part 238 Structural Requirements Without Waivers
Manufacturing Capabilities

- Complete new car fabrication
- Complete frame fabrication
- Truck & brake rebuild & modification
- Head end power (HEP)
- Electrical design & fabrication
- Auxiliary diesel power generators
- Air conditioning systems
- Galley design & fabrication
- Communication systems
- Full carpentry shop
- Interior design & fabrication
- Seating fabrication
- Full car painting
- Specialists in domed glass technology and glazing
- Self propelled DMU design build

Design and Engineering

The Colorado Railcar design and engineering department features current computer aided drafting (CAD) and design technologies and is supported by finite element analysis capabilities for structural design. These processes combine to enhance our ability to design railcars that meet the customer’s requirements and to ensure compliance with regulating railroad agencies. We meet all current safety, fire, and federal regulatory requirements including FRA’s CFR Part 238 Requirements.
Colorado Railcar’s Production Capabilities

The Facility

Colorado Railcar’s 75,000 square foot manufacturing facility is located in Ft. Lupton, 21 miles North of Denver, Colorado. The plant is adjacent to the Union Pacific mainline and has a spur running into the facility. A new 10,000 square foot state-of-the-art full car paint booth is located on the spur.
Colorado Railcar’s Manufacturing Plant

Royal Caribbean and Celebrity Cruise Lines Railcars Near Completion
Royal Caribbean and Celebrity Cruise Lines New Dome Car

Royal Caribbean and Celebrity Cruise Lines New Railcar Dome Level

Alaska Railroad’s Single Level Dome Car With Open Platform

Colorado Railcar - Princess Cruises and Tours Ultra Dome
For Further Information on Colorado Railcar’s DMU

**Contact Tom Janaky, Vice President of Sales**

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