

# Delphi Freedom<sup>®</sup> Absorbent Glass Mat Heavy-Duty Battery

**Delphi** is a technology leader in energy storage chemistries, providing customers with systems capabilities, global engineering presence, and expertise in energy storage and electrical interfaces. Beyond the standard energy management functions of starting, lighting, and ignition, entirely new applications are emerging that demand improved fuel efficiency, lower environmental impact, and increased vehicle utility. Through ongoing development within its Freedom<sup>®</sup> family of maintenance-free batteries, Delphi is positioned to help original equipment manufacturers meet changing market needs for battery technology.



**Description** – The Delphi Freedom<sup>®</sup> absorbent glass mat heavy-duty battery incorporates gas-recombinant technology to provide superior power and performance for a wide range of commercial vehicles. It is completely sealed and maintenance-free, with a one-way pressure valve and a new, rugged, leak-free cover and case that provide superior durability, safety, and performance. In fact, the absorbent glass mat heavy-duty battery will last up to twice as long as conventional flooded lead-acid batteries.

**Typical Application** – The Freedom<sup>®</sup> absorbent glass mat heavy-duty battery is ideal for long- and short-haul delivery trucks, liftgate applications, refrigerated trucks, and off-road construction equipment.

**Performance Advantages** – The Freedom<sup>®</sup> absorbent glass mat heavy-duty battery offers reliable performance over a longer life span. Other benefits include: superior power, vibration resistance, lower life-cycle costs, improved safety, and packaging flexibility.

Features	Benefits
Gas-recombinant and absorbent glass mat technology	<ul style="list-style-type: none"> <li>– Provides up to twice the life of flooded lead-acid batteries</li> <li>– Maintenance-free operation</li> <li>– Leak- and spill-free design (no free electrolyte)</li> <li>– Deep-cycling capability</li> </ul>
Higher underhood operating temperature range (52°C improves to 62°C continuous; 75°C improves to 85°C excursion)	<ul style="list-style-type: none"> <li>– Longer life in high-temperature applications</li> </ul>
Leak-free case and cover with tongue-and-groove seal	<ul style="list-style-type: none"> <li>– May be shipped via any mode of transportation (e.g., air, UPS, FedEx, etc.)</li> <li>– Greater packaging flexibility</li> </ul>
Fine-grain, heavy-duty wrought grid plates	<ul style="list-style-type: none"> <li>– Reduces corrosion, improves life</li> </ul>
Rugged case holds plates under compression	<ul style="list-style-type: none"> <li>– Vibration resistance, improves life</li> </ul>
One-way pressure valve with flame arrestor	<ul style="list-style-type: none"> <li>– Controlled safety system</li> </ul>
Recyclable	<ul style="list-style-type: none"> <li>– Environmentally friendly</li> </ul>

# DELPHI

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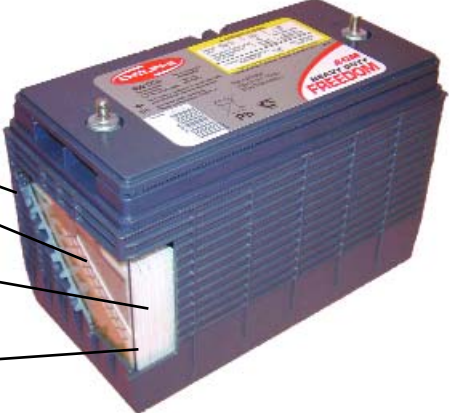
## Customer Benefits/Features

**Durability improvements**

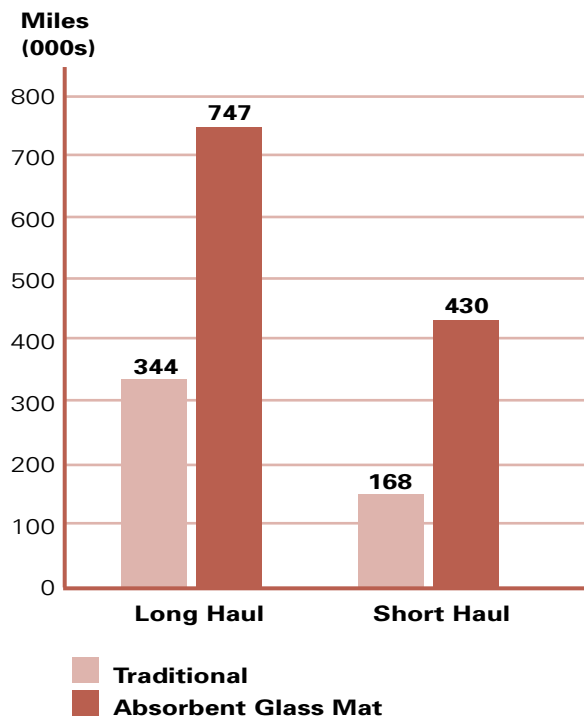
- Vibration resistance
  - Case keeps cells under compression
- Corrosion protection
  - Due to fine-grain, heavy-duty wrought grid plates
- High temperature endurance
  - Due to air gaps around plates

**Safety improvement**

- Spillage eliminated
  - Electrolyte contained by absorbent glass mat



## Freedom<sup>®</sup> Absorbent Glass Mat—Beyond Twice the Life of Traditional Batteries



## Battery Specifications

BCI Group Size	Dimensions, mm			CCA, Amps	RC, Minutes	Mass, lb
	L	W	H			
31	13	6 <sup>9</sup> / <sub>16</sub>	8 <sup>9</sup> / <sub>16</sub>	800	155	57.2
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## Service and Support

- Lab testing to specifications
- Verification of design criteria
- Tailored programs (service and support)
- Application support
- Packaging for export

## Standards—Tested to Meet

- BCI
- EN
- SAE
- JIS