



Battery Model: D31A
Part Number: 8051-160
Nominal Voltage: 12 volts
NSN: 6140 01 502 4973
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
Cover: "OPTIMA" Yellow
Group Size: BCI: 31

	Standard	Metric
Length:	12.774"	324.46 mm
Width:	6.529"	165.84 mm
Height:	9.355"	237.62 mm (Height at the top of terminals)
Weight:	59.8 lb	27.1 kg

Terminal Configuration: SAE / BCI automotive.

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0025 ohms
Capacity: 75 Ah (C/20)
Reserve Capacity: BCI: 155 minutes
(25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 900 amps
MCA (BCI 32°F): 1125 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D31A

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator: 13.65 to 15.0 volts
Battery Charger (Constant Voltage): 13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge: 13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
**Rapid Recharge:
(Constant voltage charger)** Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications: 14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 3 amp constant current for 1 hour.
All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	52 minutes
50 amps	112 minutes
25 amps	210 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D31A
December 2008



Battery Model: D31T
Part Number: 8050-160
Nominal Voltage: 12 volts
NSN: 6140 01 457 5469
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
Cover: "OPTIMA" Yellow
Group Size: BCI: 31

	Standard	Metric
Length:	12.774"	324.46 mm
Width:	6.529"	165.84 mm
Height:	9.355"	237.62 mm (Height at the top of terminals)
Weight:	59.8 lb	27.1 kg

Terminal Configuration: 3/8"-16UNC-2A stainless steel stud.

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0025 ohms
Capacity: 75 Ah (C/20)
Reserve Capacity: BCI: 155 minutes
(25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 900 amps
MCA (BCI 32°F): 1125 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D31T

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator:	13.65 to 15.0 volts
Battery Charger (Constant Voltage):	13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge:	13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
Rapid Recharge: (Constant voltage charger)	Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications:	14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 3 amp constant current for 1 hour.

All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	52 minutes
50 amps	112 minutes
25 amps	210 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D31T
December 2008



Battery Model: D34
Part Number: 8012-021
Nominal Voltage: 12 volts
NSN: 6140 01 457 5392
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
Cover: "OPTIMA" Yellow
Group Size: BCI: 34

	Standard	Metric
Length:	10.018"	254.46 mm
Width:	6.829"	173.46 mm
Height:	7.843"	199.21 mm (Height at the top of terminals)
Weight:	42.9 lb	19.5 kg

Terminal Configuration: SAE / BCI automotive.

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0028 ohms
Capacity: 55 Ah (C/20)
Reserve Capacity: BCI: 120 minutes
(25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 750 amps
MCA (BCI 32°F): 870 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D34

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator:	13.65 to 15.0 volts
Battery Charger (Constant Voltage):	13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge:	13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
Rapid Recharge: (Constant voltage charger)	Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications:	14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 2 amp constant current for 1 hour.

All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	35 minutes
50 amps	75 minutes
25 amps	140 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D34
December 2008



Battery Model: D34/78
Part Number: 8014-045
Nominal Voltage: 12 volts
NSN: 6140 01 457 4341
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
 Cover: "OPTIMA" Yellow
Group Size: BCI: 34

	Standard	Metric
Length:	10.018"	254.46 mm
Width:	6.886"	174.90 mm
Height:	7.841"	199.16 mm (Height at the top of terminals)
Weight:	43.5 lb	19.7 kg

Terminal Configuration: SAE / BCI automotive and GM style side terminal (3/8"-16UNC-2B threaded nut).

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0028 ohms
Capacity: 55 Ah (C/20)
Reserve Capacity: BCI: 120 minutes
 (25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 750 amps
MCA (BCI 32°F): 870 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D34/78

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator:	13.65 to 15.0 volts
Battery Charger (Constant Voltage):	13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge:	13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
Rapid Recharge: (Constant voltage charger)	Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications:	14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 2 amp constant current for 1 hour.

All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	35 minutes
50 amps	75 minutes
25 amps	140 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D34/78
December 2008



Battery Model: D35
Part Number: 8040-218
Nominal Voltage: 12 volts
NSN: Number applied for, product currently available
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
 Cover: "OPTIMA" Yellow
Group Size: BCI: 35

	Standard	Metric
Length:	9.340"	237.24 mm
Width:	6.700"	170.18 mm
Height:	7.685"	195.20 mm (Height at the top of terminals)
Weight:	36.4 lb	16.5 kg

Terminal Configuration: SAE / BCI automotive.

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0030 ohms
Capacity: 48 Ah (C/20)
Reserve Capacity: BCI: 100 minutes
 (25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 620 amps
MCA (BCI 32°F): 770 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D35

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator: 13.65 to 15.0 volts
Battery Charger (Constant Voltage): 13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge: 13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
**Rapid Recharge:
(Constant voltage charger)** Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications: 14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 2 amp constant current for 1 hour.
All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	35 minutes
50 amps	75 minutes
25 amps	140 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D35
December 2008



Battery Model: D51
Part Number: 8071-167
Nominal Voltage: 12 volts
NSN: 6140 01 523 6288
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery



Battery Model: D51R
Part Number: 8073-167
Nominal Voltage: 12 volts
NSN: Number applied for, product currently available
Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.
Electrolyte: Sulfuric acid, H₂SO₄
Case: Polypropylene
Color: Case: Light Gray
Cover: "OPTIMA" Yellow
Group Size: BCI: 51

	Standard	Metric
Length:	9.272"	235.51 mm
Width:	5.024"	127.61 mm
Height:	8.885"	225.68 mm (Height at the top of terminals)
Weight:	26.0 lb	11.8 kg

Terminal Configuration: SAE / BCI automotive.

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts
Internal Resistance (Fully charged): .0046 ohms
Capacity: 38 Ah (C/20)
Reserve Capacity: BCI: 66 minutes
(25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 450 amps
MCA (BCI 32°F): 575 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D51 and D51R

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator:	13.65 to 15.0 volts
Battery Charger (Constant Voltage):	13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge:	13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
Rapid Recharge: (Constant voltage charger)	Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications:	14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 2 amp constant current for 1 hour.
	All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	25 minutes
50 amps	65 minutes
25 amps	130 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries

Product Specifications: Model D51 and d51R

December 2008



Battery Model: D25/75

Part Number: 8042-218

Nominal Voltage: 12 volts

NSN: Number applied for, product currently available

Description: High power, dual purpose engine start and deep cycle, sealed lead acid battery

Physical Characteristics:

Plate Design: High purity lead-tin alloy. Wound cell configuration utilizing proprietary *SPIRALCELL*[®] technology.

Electrolyte: Sulfuric acid, H₂SO₄

Case: Polypropylene

Color: Case: Light Gray
Cover: "OPTIMA" Yellow

Group Size: BCI: 75/25

	Standard	Metric
Length:	9.340"	237.24 mm
Width:	6.772"	172.01 mm
Height:	7.697"	195.50 mm (Height at the top of terminals)
Weight:	37.8 lb	17.1 kg

Terminal Configuration: SAE / BCI automotive and GM style side terminal (3/8"-16UNC-2B threaded nut).

Performance Data:

Open Circuit Voltage (Fully charged): 13.1 volts

Internal Resistance (Fully charged): .0030 ohms

Capacity: 48 Ah (C/20)

Reserve Capacity: BCI: 100 minutes
(25 amp discharge, 80°F (26.7°C), to 10.5 volts cut-off)

Power:

CCA (BCI 0°F): 620 amps

MCA (BCI 32°F): 770 amps

Recommended Charging:

The following charging methods are recommended to ensure a long battery life: (Always use a voltage regulated charger with voltage limits set as described below.)

Model: D75/25

These batteries are designed for starting and deep cycle applications and for use in vehicles with large accessory loads.

Recommended Charging Information:

Alternator: 13.65 to 15.0 volts
Battery Charger (Constant Voltage): 13.8 to 15.0 volts; 10 amps maximum; 6-12 hours approximate
Float Charge: 13.2 to 13.8 volts; 1 amp maximum; (indefinite time at lower voltages)
**Rapid Recharge:
(Constant voltage charger)** Maximum voltage 15.6 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). Charge until current drops below 1 amp.
Cyclic or Series String Applications: 14.7 volts. No current limit as long as battery temperature remains below 125°F (51.7°C). When current falls below 1 amp, finish with 2 amp constant current for 1 hour.
All limits must be strictly adhered to.

Recharge Time: (example assuming 100% discharge – 10.5 volts)

Current	Approximate time to 90% charge
100 amps	35 minutes
50 amps	75 minutes
25 amps	140 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state of charge.

(All charge recommendations assume an average room temperature of 77°F (25°C).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature end of life. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

OPTIMA batteries can be shipped by AIR. The battery is nonspillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of Packing Instructions No. 806 and is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals must be protected from short circuit.

BCI = Battery Council International

OPTIMA Batteries
Product Specifications: Model D75/25
December 2008