

EV SERIES • VRLA AGM BATTERY • ELECTRIC VEHICLE SERIES

EV12-12 (12V 12Ah)

Specifications

Voltage Per Unit12Nominal Capacity12Ah@20hr-rate to 1.75V per cell @25°CWeightApprox. 4.20 Kg (Tolerance±5.0%)PersonalLength 151 mmDimensionsWidth 98 mmHeight 95 mmTotal Height 101 mmInternal ResistanceApprox. 13.0 mQLayout3Max. Discharge Current180A (5 sec)Cold Cranking Ampere (CCA)120AMax. Charging Current3.6ACold Cranking Ampere (CCA)120AReference CapacityC3Float Charging Voltage1.7 \\"1.3.9 V @ 25°CFloat Charging Temp. RangeDischarge: -20°C~60°COperating Temp. RangeDischarge: -20°C~60°CNominal Operating Temp. Range25°C±5°CValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.Container MaterialAS. UL94-HB, UL94-VO Optional	Cells Per Unit	6
WeightApprox. 4.20 Kg (Tolerance±5.0%)Length 151 mmLength 151 mmWidth 98 mmHeight 95 mmTotal Height 101 mmTotal Height 101 mmInternal ResistanceApprox. 13.0 mQTerminalT1Layout3Max. Discharge Current180A (5 sec)Cold Cranking Ampere (CCA)120AMax. Charging Current3.6AReference CapacityC5 10.3AHC10 11.3AHC20 12.0AHC20 12.0AH13.7 V~13.9 V @ 25°CFloat Charging Voltage13.7 V~13.9 V @ 25°CCycle Use VoltageTemperature Compensation: -3mV/°C/CellOperating Temp. RangeDischarge: -20°C~60°CNominal Operating Temp. RangeC5 sec 3 out then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Voltage Per Unit	12
DimensionsLength 151 mm Width 98 mm Height 95 mm Total Height 101 mmInternal ResistanceApprox. 13.0 mQTerminalT1Layout3Max. Discharge Current180A (5 sec)Cold Cranking Ampere (CCA)120AMax. Charging Current3.6AReference CapacityC5 10.3AH C5 10.3AH C20 12.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°C Temperature Compensation: -3mV/°C/CellFloat Charging Voltage14.6 V~14.8 V @ 25°C Temperature Compensation: -3mV/°C/CellOperating Temp. RangeDischarge: -20°C~60°C Volwa Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Nominal Capacity	12Ah@20hr-rate to 1.75V per cell @25°C
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TerminalT1Layout3Max. Discharge Current180A (5 sec)Cold Cranking Ampere (CCA)120AMax. Charging Current3.6AReference CapacityC3 9.36AHC5 10.3AHC10 11.3AHC20 12.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°CTemperature Compensation: -3mV/°C/CellCycle Use Voltage14.6 V~14.8 V @ 25°COperating Temp. RangeDischarge: -20°C~60°COperating Temp. Range25°C5°CNominal Operating Temp. Range25°C5°CSelf DischargeValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Dimensions	Width 98 mm Height 95 mm
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Max. Discharge Current180A (5 sec)Cold Cranking Ampere (CCA)120AMax. Charging Current3.6AReference CapacityC3C510.3AHC1011.3AHC2012.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°CTemperature Compensation: -3mV/°C/CellCycle Use Voltage14.6 V~14.8 V @ 25°COperating Temp. RangeCharge: 0°C~60°COperating Temp. RangeCharge: 0°C~60°CNominal Operating Temp. Range25°C±5°CSelf DischargeValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Terminal	T1
Cold Cranking Ampere (CCA)120AMax. Charging Current3.6AReference CapacityC3C39.36AHC510.3AHC1011.3AHC2012.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°CTemperature Compensation: -3mV/°C/CellCycle Use Voltage14.6 V~14.8 V @ 25°CTemperature Compensation: -4mV/°C/CellDischarge: -20°C~60°COperating Temp. RangeDischarge: -20°C~60°CNominal Operating Temp. Range25°C±5°CSelf DischargeValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Layout	3
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Reference CapacityC39.36AH C5Reference CapacityC39.36AH C5Reference CapacityC510.3AH C10Cl011.3AH C2012.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°C Temperature Compensation: -3mV/°C/CellCycle Use Voltage14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/CellOperating Temp. RangeDischarge: -20°C~60°C Charge: -20°C~60°COperating Temp. RangeCharge: 0°C~50°C Storage: -20°C~60°CNominal Operating Temp. Range25°C±5°C Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Cold Cranking Ampere (CCA)	120A
Reference CapacityC510.3AH C10C1011.3AH C2012.0AHFloat Charging Voltage13.7 V~13.9 V @ 25°C Temperature Compensation: -3mV/°C/CellCycle Use Voltage14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/CellOperating Temp. RangeDischarge: -20°C~60°C Charge: -20°C~60°COperating Temp. RangeCharge: 0°C~50°C Storage: -20°C~60°CNominal Operating Temp. Range25°C±5°CSelf DischargeValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Max. Charging Current	3.6A
Float Charging Voltage Temperature Compensation: -3mV/°C/Cell Cycle Use Voltage 14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/Cell Discharge: -20°C~60°C Operating Temp. Range Charge: 0°C~50°C Storage: -20°C~60°C Storage: -20°C~60°C Nominal Operating Temp. Range 25°C±5°C Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Reference Capacity	C5 10.3AH C10 11.3AH
Cycle Use Voltage Temperature Compensation: -4mV/°C/Cell Discharge: -20°C~60°C Discharge: -20°C~60°C Operating Temp. Range Charge: 0°C~50°C Nominal Operating Temp. Range 25°C±5°C Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Float Charging Voltage	-
Operating Temp. Range Charge: 0°C~50°C Storage: -20°C~60°C Nominal Operating Temp. Range 25°C±5°C Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Cycle Use Voltage	-
Self DischargeValve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Operating Temp. Range	Charge: 0°C~50°C
Self Dischargeto 6 months at 25°C and then recharging is recommended.Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.	Nominal Operating Temp. Range	25°C±5°C
Container Material A.B.S. UL94-HB, UL94-V0 Optional	Self Discharge	to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please
	Container Material	A.B.S. UL94-HB, UL94-V0 Optional

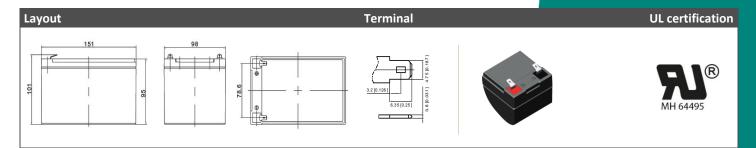


Description and Features

VRLA EV Series is specially designed for frequent discharge in deep cycle applications. EV batteries offer reliable performance in high load situations and have a high cycle durability due to the specially designed active material, strong grids and thick plate construction. The addition of carbon ensures faster full recharging of the battery and longer battery life. This stable and durable battery is completely sealed and maintenance free.

Features

- Absorbent Glass Mat technology
- Long service life 50% more cycles than VRLA AGM
- Faster full recharging quick use of application
- Suitable for (deep) cycle applications



Constant Current Discharge Characteristics: A (25°C)												
F.V/Time	5 Min	10 Min	15 Min	30 Min	1 Hr	2 Hr	3 Hr	4 Hr	5 Hr	8 Hr	10 Hr	20 Hr
1.60V	50.17	32.89	24.50	14.08	8.267	4.716	3.331	2.605	2.174	1.469	1.215	0.624
1.65V	48.31	31.80	23.77	13.79	8.111	4.636	3.280	2.569	2.147	1.453	1.203	0.618
1.70V	45.90	30.37	22.80	13.40	7.904	4.530	3.212	2.521	2.111	1.431	1.187	0.611
1.75V	42.69	28.45	21.51	12.87	7.622	4.384	3.120	2.455	2.062	1.400	1.164	0.600
1.80V	38.42	25.89	19.77	12.14	7.233	4.183	2.991	2.364	1.993	1.358	1.132	0.586
1.85V	32.65	22.40	17.37	11.10	6.679	3.895	2.805	2.232	1.893	1.297	1.086	0.564

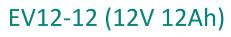
Constant Power Discharge Characteristics: Wpc (25°C)												
F.V/Time	5 Min	10 Min	15 Min	30 Min	1 Hr	2 Hr	3 Hr	4 Hr	5 Hr	8 Hr	10 Hr	20 Hr
1.60V	85.08	55.91	42.83	25.58	15.46	8.94	6.36	5.00	4.19	2.87	2.39	1.23
1.65V	84.10	55.48	42.42	25.42	15.33	8.85	6.30	4.96	4.16	2.85	2.37	1.22
1.70V	80.79	53.58	41.06	24.84	14.99	8.67	6.19	4.88	4.10	2.81	2.34	1.21
1.75V	76.49	51.11	39.29	24.10	14.52	8.43	6.04	4.77	4.02	2.75	2.30	1.19
1.80V	70.04	47.32	36.62	22.96	13.85	8.09	5.81	4.61	3.90	2.68	2.24	1.16
1.85V	60.59	41.66	32.63	21.22	12.88	7.57	5.47	4.37	3.71	2.56	2.15	1.12

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values. The battery must be fully charged before the capacity test. The C10 should reach 95% after the first cycle and 100% after the third cycle.

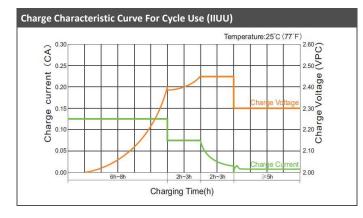
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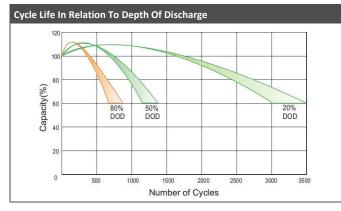
power on command

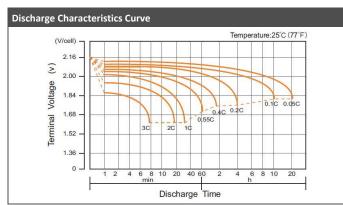
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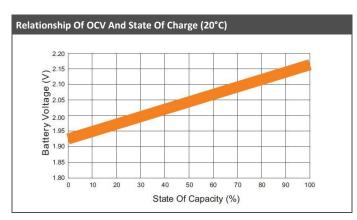




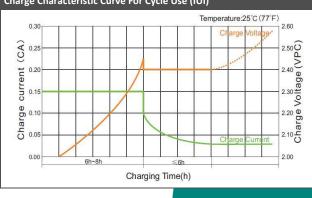


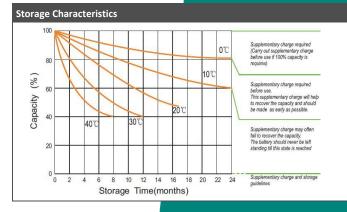




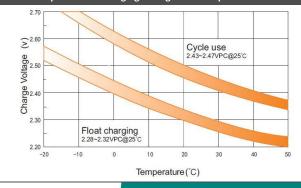


(Note) All above information shall be changed without prior notice, Landport Batteries reserves the right to explain and update the latest information.

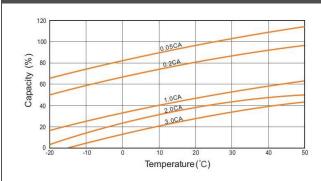




Relationship Between Charging Voltage And Temperature



Temperature Effects On Capacity



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