

# HRL 12-460 W

12V 90Ah

ASTERION HRL-W series batteries are high-tech lead-acid batteries for modern uninterruptible power supply systems intended for responsible consumers. These are maintenance-free batteries manufactured with the use of AGM technology with a gas recombination system (VRLA). The HRL-W series is characterized by increased current efficiency due to the use of thicker electrodes, as well as high-tech formulations with structural agents in the active mass during the manufacturing process. The HRL-W series belongs to the ASTERION Xpert product line, designed especially for use in "heavy" uninterruptible power supply systems of data centers, communication systems and other high-tech equipment.



## Battery construction

Element	Positive plate	Negative plate	Case	Lid	Valve	Terminal	Separator	Electrolyte
Material	Lead dioxide	Lead	ABS		Rubber	Copper	Fiberglass	Acid

## Specifications

Nominal voltage.....	12 V
Cell.....	6
Design life.....	12 years
Nominal capacity (25°C)	
10 min. disch. by const. power up to 1,8V/cell.....	460 W
20 hours rate (4,75 A; 1,75 V/cell).....	95 Ah
10 hours rate (9,35 A; 1,8 V/cell).....	93,5 Ah
Self-discharge.....	3% capacity per month 20°C
Internal resistance (25°C).....	4,4 mΩ

## Operating temperature range

Discharge.....	-20÷60°C
Charge.....	-10÷60°C
Storage.....	-20÷60°C
Maximum discharge current (25°C).....	810A (5sec)
Max.charge current.....	27 A
Cycle mode (2,35÷2,4 V/Cell)	
Temperature correction factor.....	30 mV/°C
Standby mode (2,27÷2,3 V/Cell)	
Temperature correction factor.....	20 mV/°C

## Application

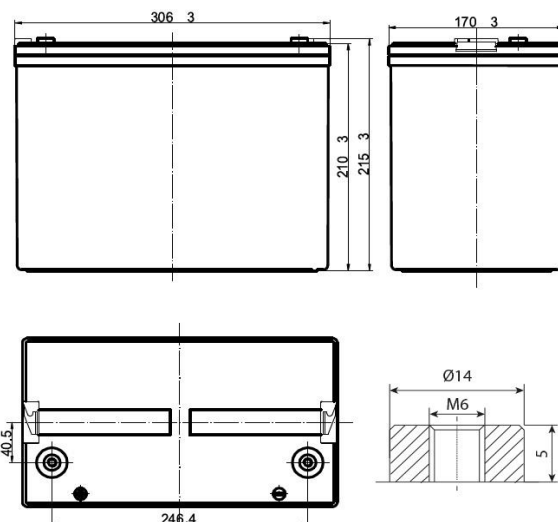
- Uninterruptible power supply units
- Standby power service units
- Medical equipment
- Various fields of instrument-making industry

## Performance & characteristics

- AGM technology allows to recombine 99% of the generated gas;
- No restrictions on air transportation;
- Compliance with the UL requirements;
- Lead plates, alloyed by calcium, provide high energy density;
- Maintenance-free. Do not require distillate topping;
- Long service life;
- The battery case is made of flame-retardant ABS plastic.

## Dimensions (±2mm)

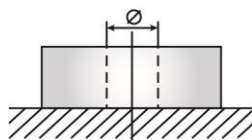
Length, mm.....	306
Width, mm.....	170
Height, mm.....	220
Height over terminals, mm.....	227
Weight (±3%), kg.....	28,5



Layout B



Terminal type Insert Ø6 mm



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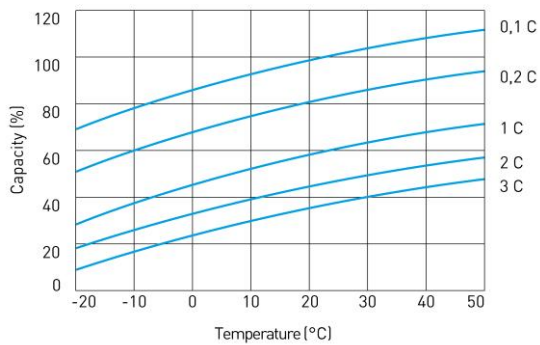
## Discharge Constant Current, A (25°C)

V/cell	5 min	10 min	15 min	20 min	25 min	30 min	35 min	45 min	1 h
1,60	392	298	229	189	161	137	119	94,5	72,8
1,65	382	266	219	180	154	134	116	92,3	71,3
1,70	362	257	213	175	150	129	112	88,6	68,6
1,75	347	251	206	169	145	124	108	85,6	65,6
1,80	325	240	200	163	139	119	103	82,3	63,2

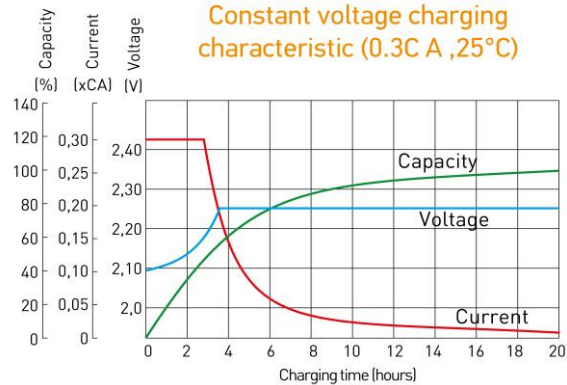
## Discharge Constant Power, W/cell (25°C)

V/cell	5 min	10 min	15 min	20 min	25 min	30 min	35 min	45 min	1 h
1,60	736	532	439	353	303	260	229	187	145
1,65	685	503	414	337	289	253	222	182	141
1,70	655	501	402	327	277	241	213	175	136
1,75	625	486	379	315	266	229	202	165	129
1,80	579	460	366	304	260	223	196	159	123

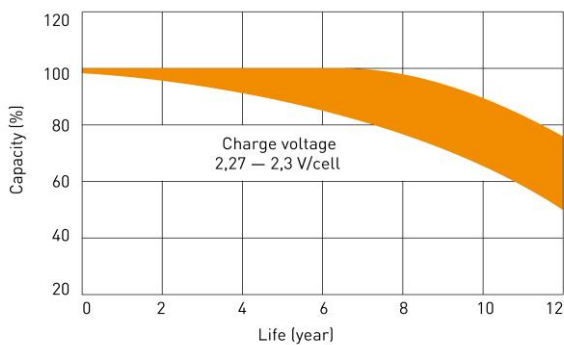
### Temperature effects on capacity



### Constant voltage charging characteristic (0.3C A, 25°C)



### Life characteristics of Standby use



### Cycle service life in relation to depth of discharge

