

stored energy solutions for a demanding world



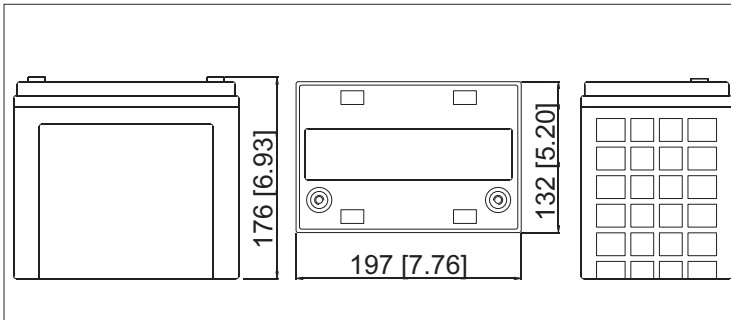
Model: **HR12V140**

HR Series

The HR range of VRLA batteries is perfectly suited to any application which requires a high rate current over a short period. In particular they are ideal for UPS systems thanks to their optimized performance and a patented post seal design. The rugged ABS container and flexible handles ensure that installation is also easily performed and trouble-free. A design life of 10 years completes the package.



Dimensions-mm [inch]



Specifications

Battery Model	HR12V140
Nominal Voltage	12V
Rated Capacity	140 Watts per cell at the 15 minute rate to 1.67 volts per cell @25°C(77°F)
Typical Weight	12.5kg
Internal Resistance	Approx 10mΩ
Temperature Ranges	Operation (maximum): -40°C to 55°C(-40°F to 131°F)
	Operation (recommended): 15°C to 25°C(59°F to 77°F)
	Storage: -20°C to 40°C(-4°F to 104°F)
Float Voltage	2.27V/cell@25°C(77°F)
Recommended Maximum Charging Current Limit	9.9A
Equalize and Cycle Service	2.35V~2.40V@25°C(77°F)
Self Discharge	The residual capacity is above 87% after 90 days storage(25°C/77°F)
Terminal	M6 Female
Terminal Hardware Torque	10 ± 1.0Nm
Container Material	ABS (V0 optional)

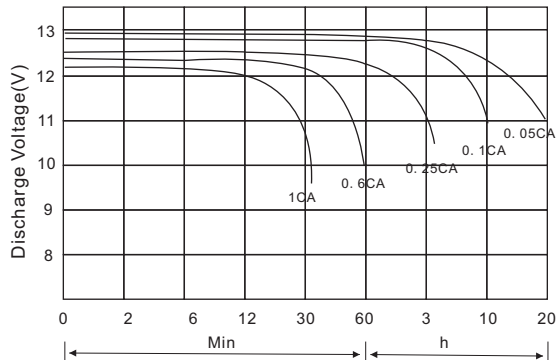
Constant Current Discharge Characteristics Units: Amperes (25°C, 77°F)

End voltage per cell	5min	10min	15min	20min	30min	40min	50min	1h	2h	3h	4h	5h	6h	8h	10h
1.60V	158	113	79.6	60.7	42.3	32.0	26.1	22.0	12.7	8.57	6.98	5.85	5.03	3.82	3.18
1.67V	150	107	75.4	58.9	41.2	31.3	25.3	21.7	12.6	8.49	6.89	5.82	4.98	3.76	3.14
1.70V	146	103	73.3	57.7	40.5	30.7	24.8	21.5	12.5	8.40	6.85	5.73	4.94	3.73	3.12
1.75V	121	87.8	68.1	55.8	38.4	30.1	24.3	21.3	12.4	8.33	6.79	5.67	4.85	3.67	3.08
1.80V	104	80.0	63.2	51.8	36.2	29.4	24.0	20.5	12.1	8.17	6.55	5.47	4.77	3.62	2.98
1.85V	87.2	70.2	57.2	48.0	33.6	28.9	23.5	20.0	11.5	8.01	6.41	5.22	4.52	3.47	2.86
1.90V	69.9	53.6	48.5	38.4	29.6	24.0	20.5	18.1	10.9	7.40	5.76	4.83	4.08	3.24	2.66

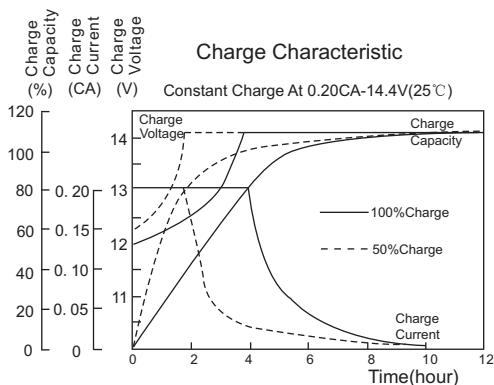
Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)

End voltage per cell	5min	10min	15min	20min	30min	40min	50min	1h	2h	3h	4h	5h	6h	8h	10h
1.60V	280	201	147	112	78.2	58.3	47.9	40.6	24.0	16.3	13.4	11.3	9.76	7.45	6.23
1.67V	267	194	140	110	77.5	57.7	47.1	40.7	23.9	16.2	13.3	11.3	9.71	7.37	6.19
1.70V	262	189	137	108	76.6	57.0	46.4	40.5	23.7	16.1	13.2	11.2	9.69	7.35	6.18
1.75V	220	163	127	105	72.9	56.3	45.9	40.7	24.0	16.3	13.2	11.1	9.56	7.27	6.13
1.80V	193	151	121	98.2	69.1	56.3	46.4	39.6	23.7	15.9	12.8	10.8	9.45	7.18	5.94
1.85V	166	134	110	92.6	64.6	55.7	45.6	39.0	22.5	15.7	12.6	10.3	8.95	6.91	5.71
1.90V	133	103	93.4	74.0	57.3	46.5	39.9	35.5	21.4	14.6	11.3	9.56	8.12	6.48	5.37

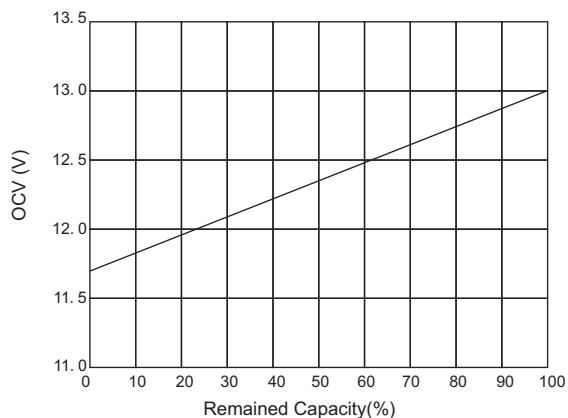
Terminal Voltage(V) Vs. Discharge Time (25°C, 77°F)



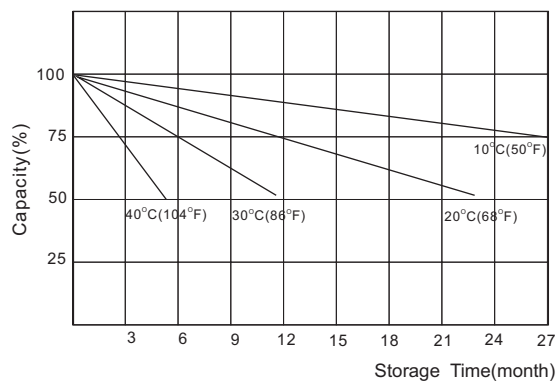
Battery Voltage Vs. Charge Time



Relationship of OCV Vs. State of Charge



Capacity Retention Characteristic



Charging Procedures

Application	Charge Voltage (V/Cell)			Max. Charge Current
	Temperature	Set Point	Allowable Range	
Cycle	25°C	2.40	2.35~2.45	8. 25A
Standby	25°C	2.27	2.25~2.29	

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/Cell	1.80	1.70	1.55	1.30
Discharge Current (A)	$6.6A \geq I$	$6.6A < I < 16.5A$	$16.5A < I < 33A$	$I > 33A$

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