

stored energy solutions for a demanding world

Narada

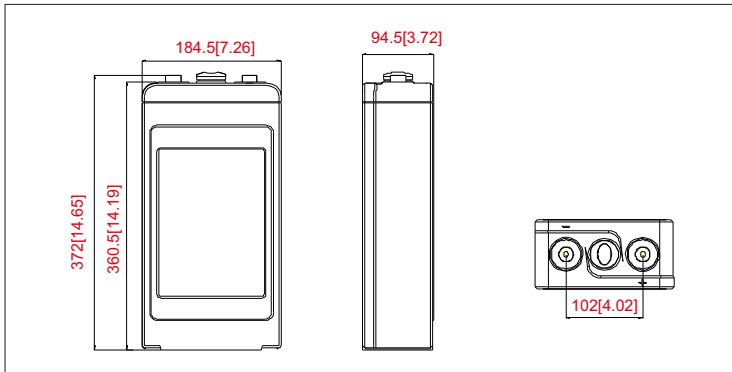
Model: **HRL650**

HRL Series

HRL series, name of High Rate Long life, is high rate VRLA battery. It is special designed for large data centers and UPS. With excellent high-power discharge performance, high reliability, 15 years long life design, wide operating temperature range, HRL series is ideal for high performance UPS batteries.



Dimensions—mm [inch]



Specifications

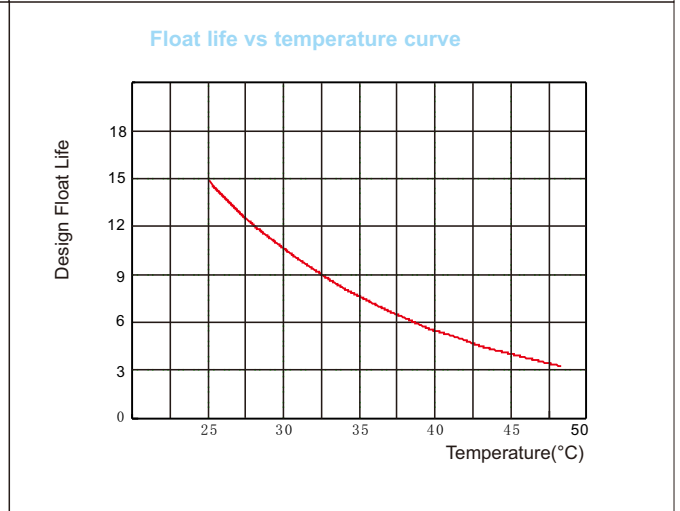
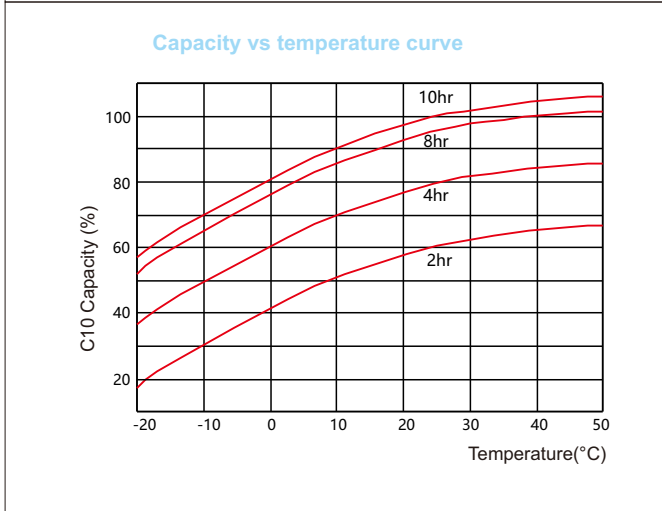
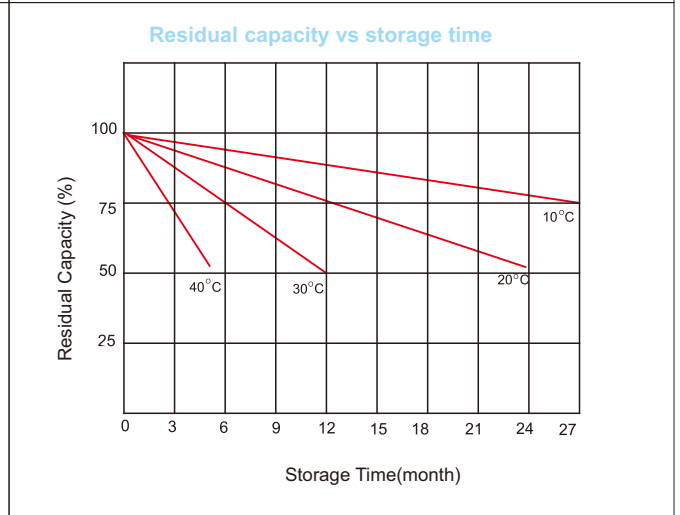
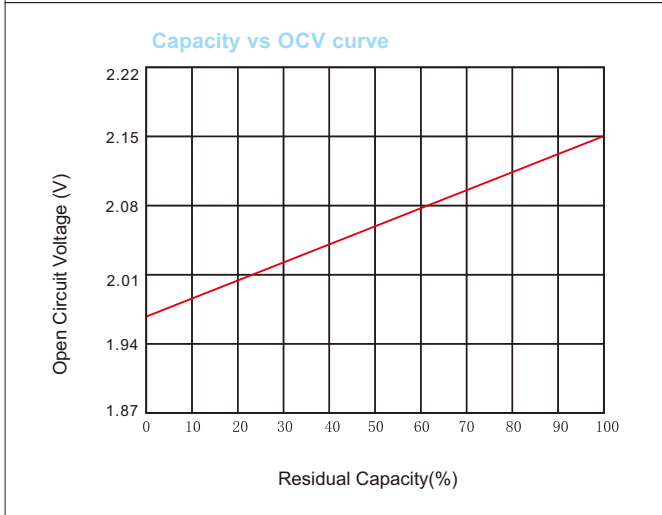
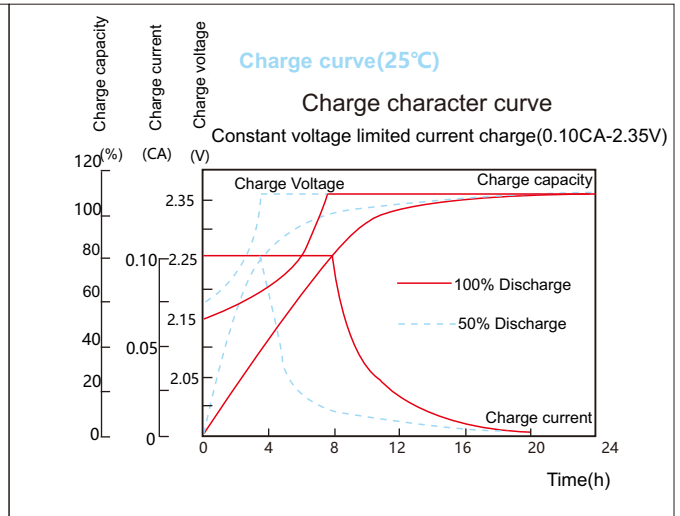
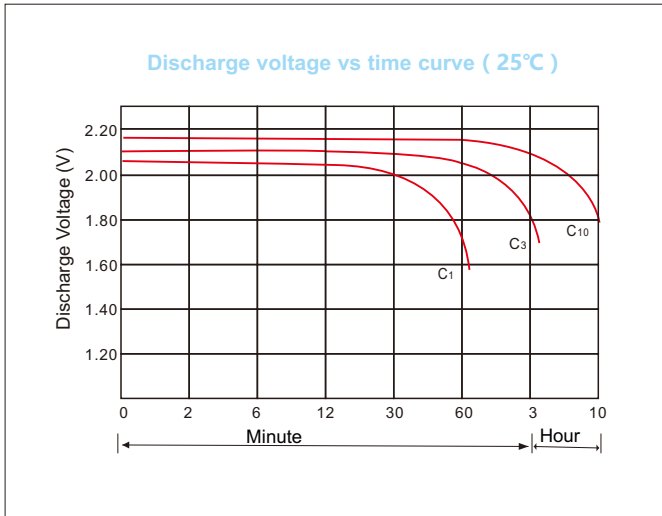
Battery Model	HRL650
Nominal Voltage	2V
Rated Capacity	650 W/cell(15 minute rate, 1.67 V/cell) and 220Ah(10 hr to 1.80V/cell) @25°C(77°F)
Typical Weight	14.0kg
Internal Resistance	Approx 0.55mΩ
Temperature Ranges	Operation (maximum): -20°C to 50°C(-4°F to 122°F)
	Operation (recommended): 15°C to 25°C(59°F to 77°F)
	Storage: -20°C to 40°C(-4°F to 104°F)
Float Voltage	2.25V/cell@25°C(77°F)
Recommended Maximum Charging Current Limit	55A
Equalize and Cycle Service	2.35V@25°C(77°F)
Self Discharge	The residual capacity is above 90% after 90 days storage(25°C/77°F)
Terminal	M8 Female
Terminal Hardware Torque	12~15 N.m
Container Material	ABS (V0 Optional)

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

End voltage per cell	5min	10min	15min	20min	30min	40min	45min	50min	1h	2h	3h	5h	8h	10h
1.60V	510	410	—	—	—	—	—	—	—	—	—	—	—	—
1.65V	440	370	320	285	215	190	175	165	130	80	62	45	28	27
1.67V	420	350	300	270	205	185	165	155	127	79	60	43	27	26
1.70V	410	330	280	265	195	180	160	150	125	78	59	42	26	25
1.75V	350	300	270	245	190	170	150	145	123	77	57	40	25	24
1.80V	270	260	248	205	180	145	140	135	122	75	56	38	24	22

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

End voltage per cell	5min	10min	15min	20min	30min	40min	45min	50min	1h	2h	3h	5h	10h
1.60V	890	750	—	—	—	—	—	—	—	—	—	—	—
1.65V	870	730	670	530	480	360	330	310	280	190	135	100	60
1.67V	850	720	650	520	470	350	320	300	270	185	130	95	55
1.70V	830	710	630	510	460	340	310	290	265	180	125	90	50
1.75V	720	620	570	450	410	330	300	285	260	170	120	85	48
1.80V	670	580	530	420	380	310	290	275	255	165	115	80	45



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