



# OPzV12-140 (12V140Ah)

Ritar OPzV series is a Valve Regulated Lead Acid battery that adopts immobilized GEL and Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN standards and with die-casting positive grid and patent formula of active material. OPzV series exceeds DIN standard values with more than 20 years floating design life at 25°C and is even more suitable for cyclic use under extreme operating conditions.



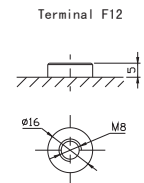
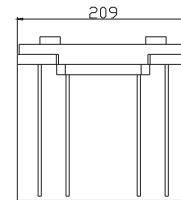
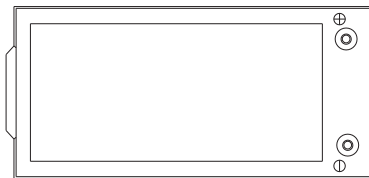
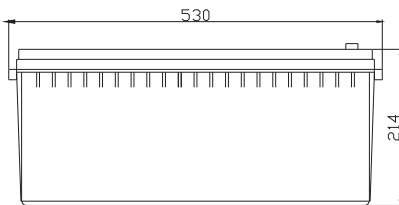
## Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	140Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 54.4 Kg(Tolerance ±2%)
Max. Discharge Current	1400 A (5 sec)
Internal Resistance	Approx. 6.0 mΩ
Operating Temperature Range	Discharge: -40°C~70°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	28A
Equalization and Cycle Service	14.2 to 14.4VDC/unit Average at 25°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



## Dimensions

Unit: mm Dimension: 530(L) × 209(W) × 214(H)



## Constant Current Discharge Characteristics: A (25°C)

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.4	68.88	54.60	38.50	29.20	23.94	20.69	18.62	14.53	12.46	6.542
11.2	77.00	60.20	41.30	30.96	25.27	21.76	19.74	15.21	13.02	6.836
11.0	88.20	67.20	44.80	33.00	26.60	22.70	20.44	15.89	13.58	7.130
10.8	98.00	72.80	46.48	33.95	27.13	23.24	21.00	16.30	14.00	7.350
10.5	109.2	77.98	48.58	35.31	27.58	23.80	21.42	16.57	14.28	7.497
10.2	120.4	80.50	49.98	35.99	28.06	24.08	21.70	16.70	14.42	7.571
9.90	124.2	85.54	51.66	36.96	28.46	24.36	21.98	16.84	14.56	7.644
9.60	129.5	88.48	53.62	38.50	29.26	24.78	22.26	16.98	14.70	7.718

## Constant Power Discharge Characteristics: W (25°C)

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.4	791.0	628.9	446.6	339.4	281.1	244.4	220.9	174.4	152.4	79.99
11.2	870.4	683.0	473.6	355.5	296.3	256.2	233.5	181.7	158.9	83.42
11.0	975.1	744.6	504.0	374.0	310.7	266.3	241.1	188.2	164.6	86.41
10.8	1065	794.4	520.9	382.4	316.6	272.2	247.0	192.3	168.7	88.55
10.5	1156	829.8	537.8	394.1	320.8	278.9	251.2	194.7	171.1	89.83
10.2	1239	838.3	551.3	400.8	325.9	281.4	253.7	196.4	172.7	90.69
9.90	1260	875.4	566.5	409.6	330.1	283.9	256.2	198.0	173.6	91.12
9.60	1276	902.4	580.0	423.0	338.5	286.4	257.9	198.8	174.4	91.54

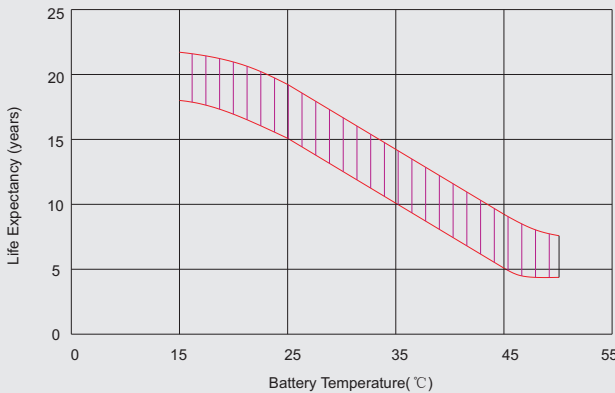
All mentioned values are average values (Tolerance ±2%).

# OPzV12-140

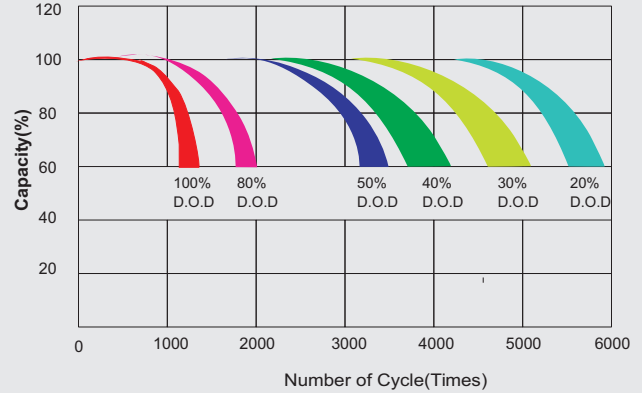
# 12V140Ah



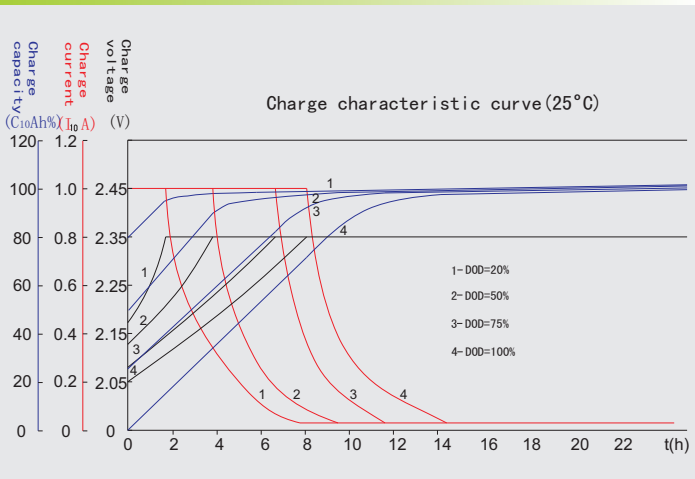
## Effect of temperature on long term float life



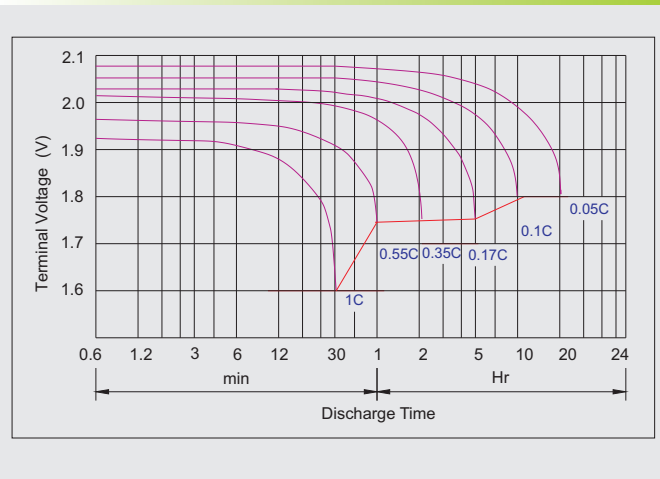
## Life characteristics of cyclic use



## Charge characteristic Curve for cyclic use



## Discharge characteristic Curve



### Long time discharge capacity for solar/wind application

Model	Capacity	C24 (Ah)	C48 (Ah)	C72 (Ah)	C100 (Ah)	C120 (Ah)	C240 (Ah)
		F.V=1.85VPC					
OPzV12-140		141.0	149.0	156.4	159.6	162.8	172.4

### Capacity factors vs temperature (OPzV series)

Temperature	-30°C	-20°C	-10°C	0°C	10°C	20°C	25°C	30°C	40°C	45°C	50°C
Capacity	60%	75%	83%	89%	92%	99%	100%	103%	105%	107%	109%

## Discharge Current VS. Final Voltage

Discharge current	Final voltage (V)
$I_{dis} \leq 0.1I_{10}$	1.90
$0.1I_{10} < I_{dis} \leq I_{10}$	1.85
$I_{10} < I_{dis} \leq 4I_{10}$	1.80
$4I_{10} < I_{dis} \leq 6I_{10}$	1.75
$6I_{10} < I_{dis} \leq 10I_{10}$	1.70
$I_{dis} > 15I_{10}$	1.60

Charge the batteries at least once every one year, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.2Cx2h+2.35~2.40V, 24h, Max. Current 0.2CA
Constant Current	-0.2Cx2h+0.1CAx12h

## Maintenance & Cautions

### Float Service:

※ Every month, recommend inspection every battery voltage.

※ Every three months, recommend equalization charge for one time.

Equalization charge method:

Discharge: 40~50% rate capacity discharge.

Charge: Max. current 0.2CA, constant voltage 2.35-2.40V/Cell charge 24h.

※ Effect of temperature on float charge voltage: -3mV/°C/Cell.

※ Service life will be directly affected by the number of discharge

cycles, depth of discharge, ambient temperature and charging method.