



S28

28 Ah | 12 V | 20 h

Specifications

Voltage	12 V
Nominal Capacity	28 Ah @ 20 hour-rate
Number of Cells	6
Internal Resistance	Approx. 11 mΩ
Design Life	6 to 8 years (float charging)
Short Circuit Current	960 A
Self Discharge	Monthly rate < 3% @ 25 °C Recharge after 6 months Charge before using

Charging & Discharging

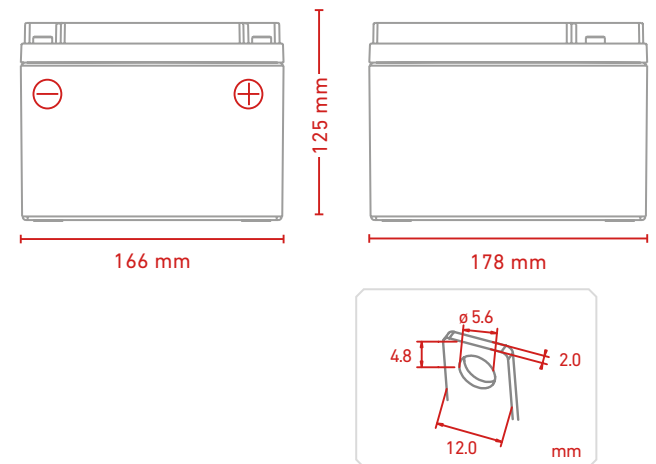
Max. Charging Current	8.4 A
Max. Discharge Current	280 A (5 sec)
Standby Use Voltage	13.7 V to 13.9 V @ 25 °C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V to 14.8 V @ 25 °C Temperature Compensation: -4mV/°C/Cell
Reference Capacity	C3 21.7 Ah C5 24.4 Ah C10 26.2 Ah C20 28.0 Ah

Temperature Ranges

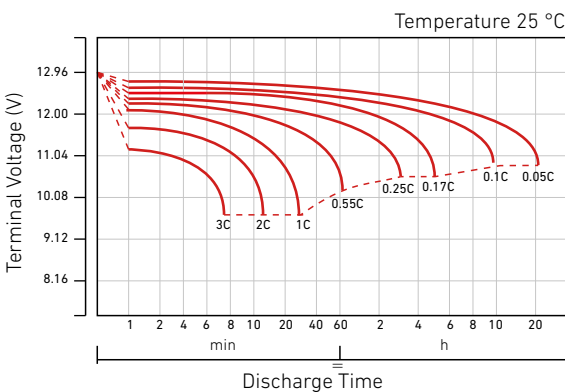
Normal Operation	25 °C ± 5 °C
Discharging	-20 °C to 60 °C
Charging	0 °C to 50 °C
Storage	-20 °C to 60 °C

Mechanical Specifications

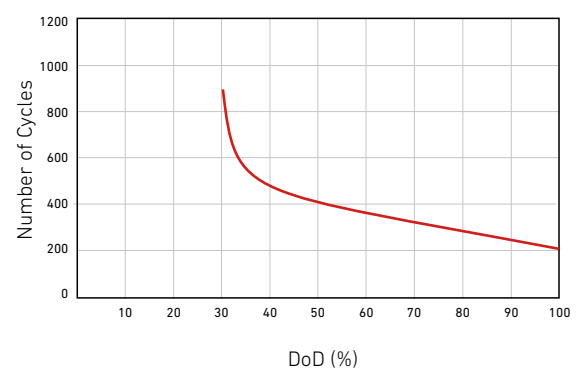
Measurements (L x W x H)	166 x 178 x 125 mm
Weight	Approx. 8.1 kg
Terminals	F3 (M5)
Case material	A.B.S. UL94-HB, UL94-V0 Optional



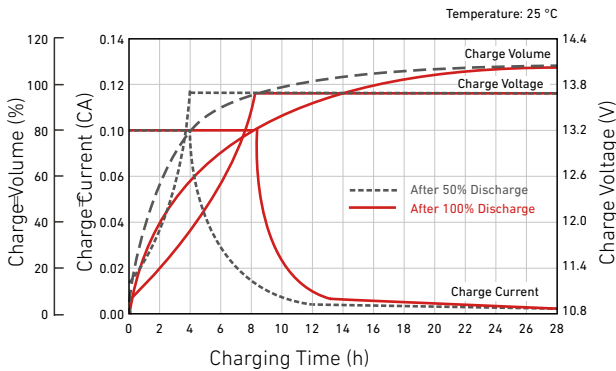
Discharge Characteristics Curve



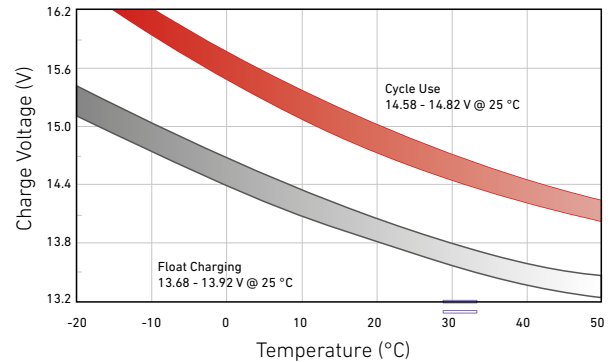
Cycle Life in Relation to Depth of Discharge



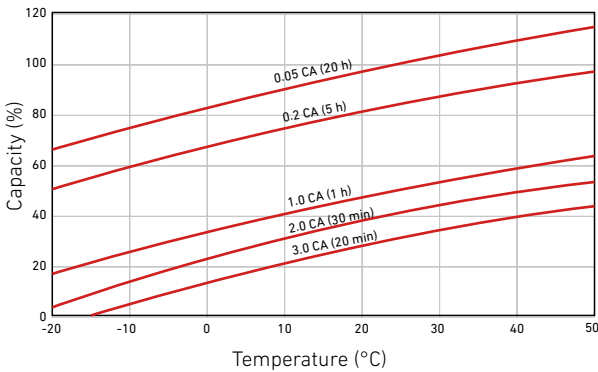
Discharge Characteristics Curve For Standby Use



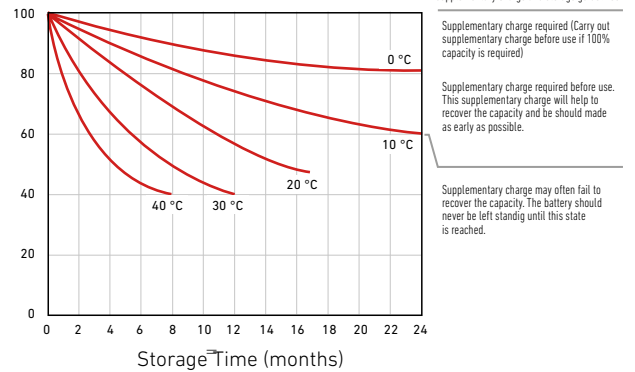
Relationship Between Charging Voltage and Temperature



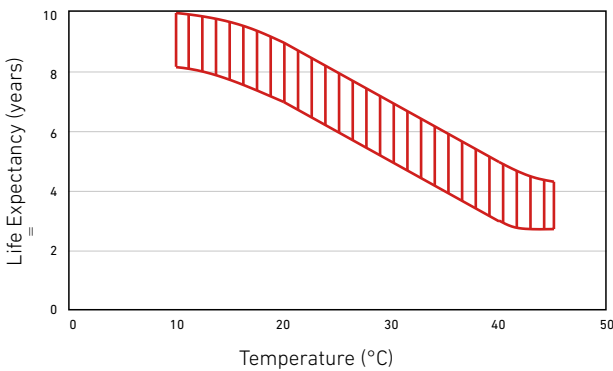
Temperature Effects on Capacity



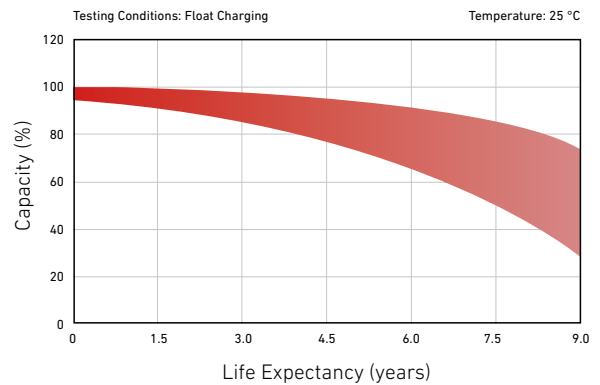
Storage Characteristics



Effect of Temperature on Long-Term Life



Life Characteristics of Standby Use



Constant Current Discharge Characteristics: A (25 °C)

F.V	Time												
	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h	
1.60 V	105,46	68,78	50,74	29,36	16,97	10,54	7,660	6,100	5,149	3,441	2,802	1,458	
1.65 V	101,65	66,73	49,41	28,72	16,65	10,38	7,559	6,024	5,090	3,406	2,776	1,446	
1.70 V	96,70	64,04	47,66	27,87	16,24	10,18	7,423	5,923	5,011	3,360	2,740	1,431	
1.75 V	90,33	60,56	45,39	26,75	15,69	9,907	7,243	5,789	4,906	3,298	2,693	1,410	
1.80 V	82,30	56,12	42,46	25,31	14,97	9,550	7,006	5,613	4,766	3,217	2,631	1,382	
1.85 V	72,42	50,56	38,77	23,46	14,05	9,086	6,697	5,382	4,584	3,109	2,548	1,346	

Constant Power Discharge Characteristics: WPC (25 °C)

F.V	Time												
	5 min	10 min	15 min	30 min	1 h	2 h	3 h	4 h	5 h	8 h	10 h	20 h	
1.60 V	181,5	118,7	90,04	54,14	32,20	20,27	14,85	11,89	10,07	6,82	5,59	2,91	
1.65 V	179,6	118,2	89,52	53,74	31,94	20,12	14,74	11,80	10,01	6,77	5,55	2,90	
1.70 V	172,8	114,7	87,11	52,44	31,25	19,78	14,51	11,63	9,87	6,69	5,48	2,87	
1.75 V	164,3	110,4	84,16	50,85	30,35	19,35	14,22	11,41	9,70	6,58	5,39	2,83	
1.80 V	152,3	104,1	79,84	48,59	29,10	18,74	13,81	11,10	9,46	6,43	5,28	2,78	
1.85 V	136,4	95,45	73,93	45,49	27,51	17,93	13,26	10,68	9,13	6,23	5,12	2,71	