

Narada



Welcome to NARADA!

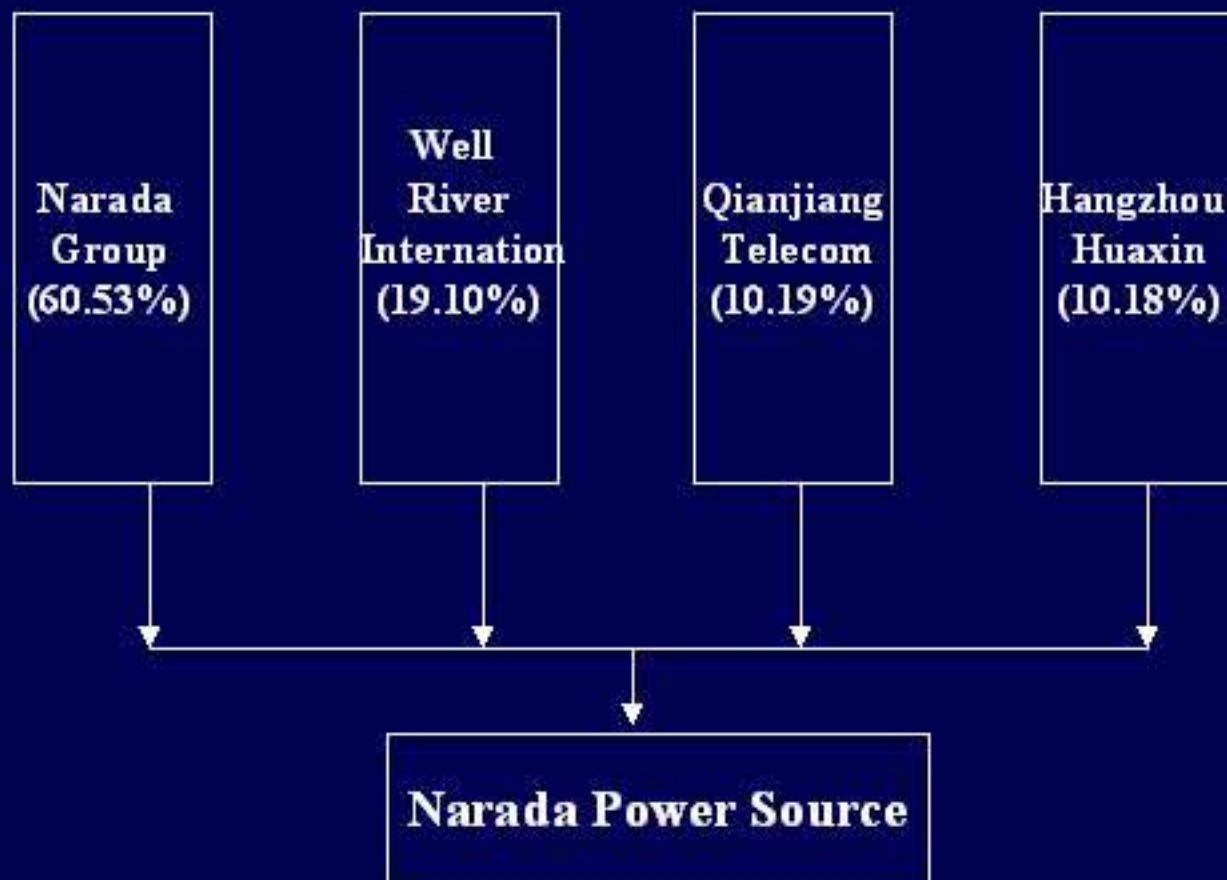
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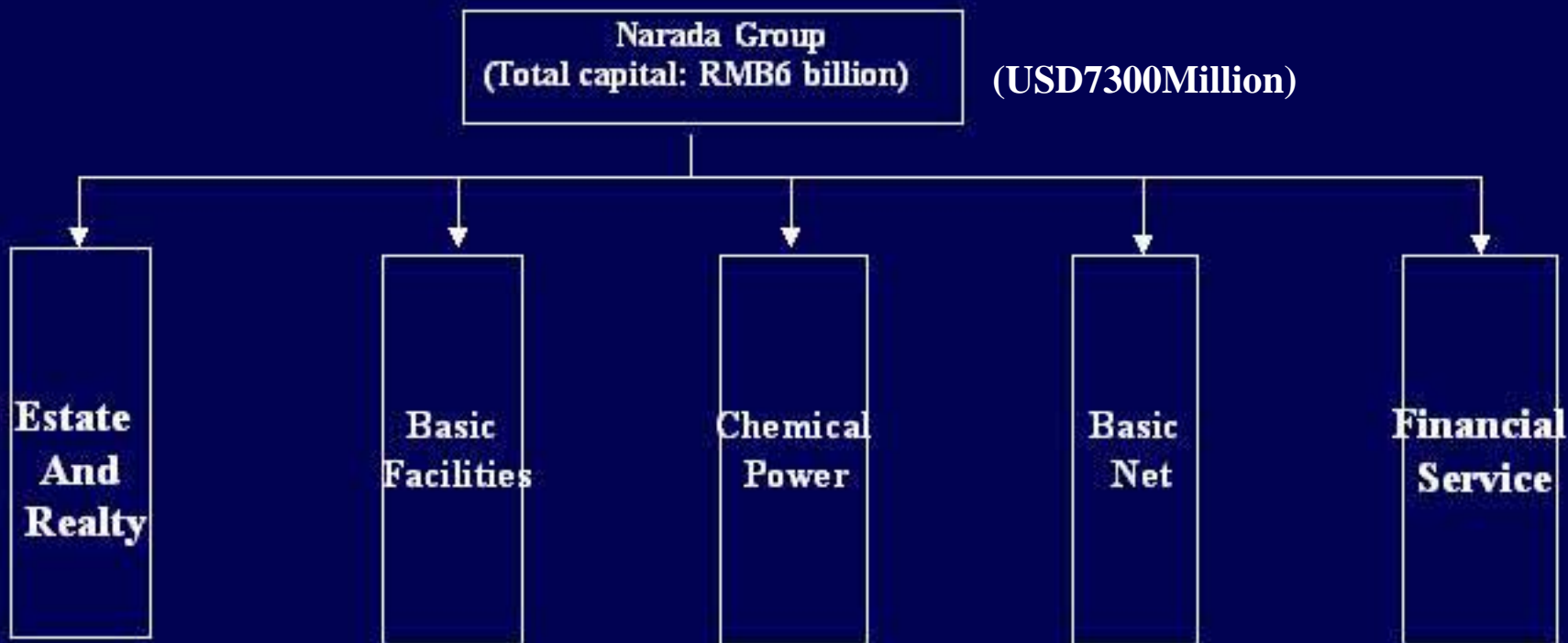
Narada Power Source/Brief Introduction

- Narada Power Source is a hi-tech group enterprise who devotes to research & develop, produce and sell VRLA battery
- Narada Power Source possesses the most modern production base of VRLA battery in China, and has taken a leading position in the chemistry power industry

Narada Power Source/Share Holders



Narada Power Source/Share holders' Estate



Narada Power Source/Share holders' Estate

- **Estate and Realty**
 - **Developed building area: more than 1 million square meters ;**
 - **Land for future development: more than 10000 Mu;**
 - **Items under construction or will be constructed: about 2 million square meter building area**
 - **Items in operation:**
 - **Zhejiang World Trade Center (5 star); Jinhua International Trade Hotel (4 star)**
- **Basic Facilities**
 - **Six Expressway**
- **Chemical Power—Narada Power Source**
 - **One of Largest Chemistry Power Manufacturers in China**
- **Basic Net**
 - **Cable TV Net and Transfer Net**

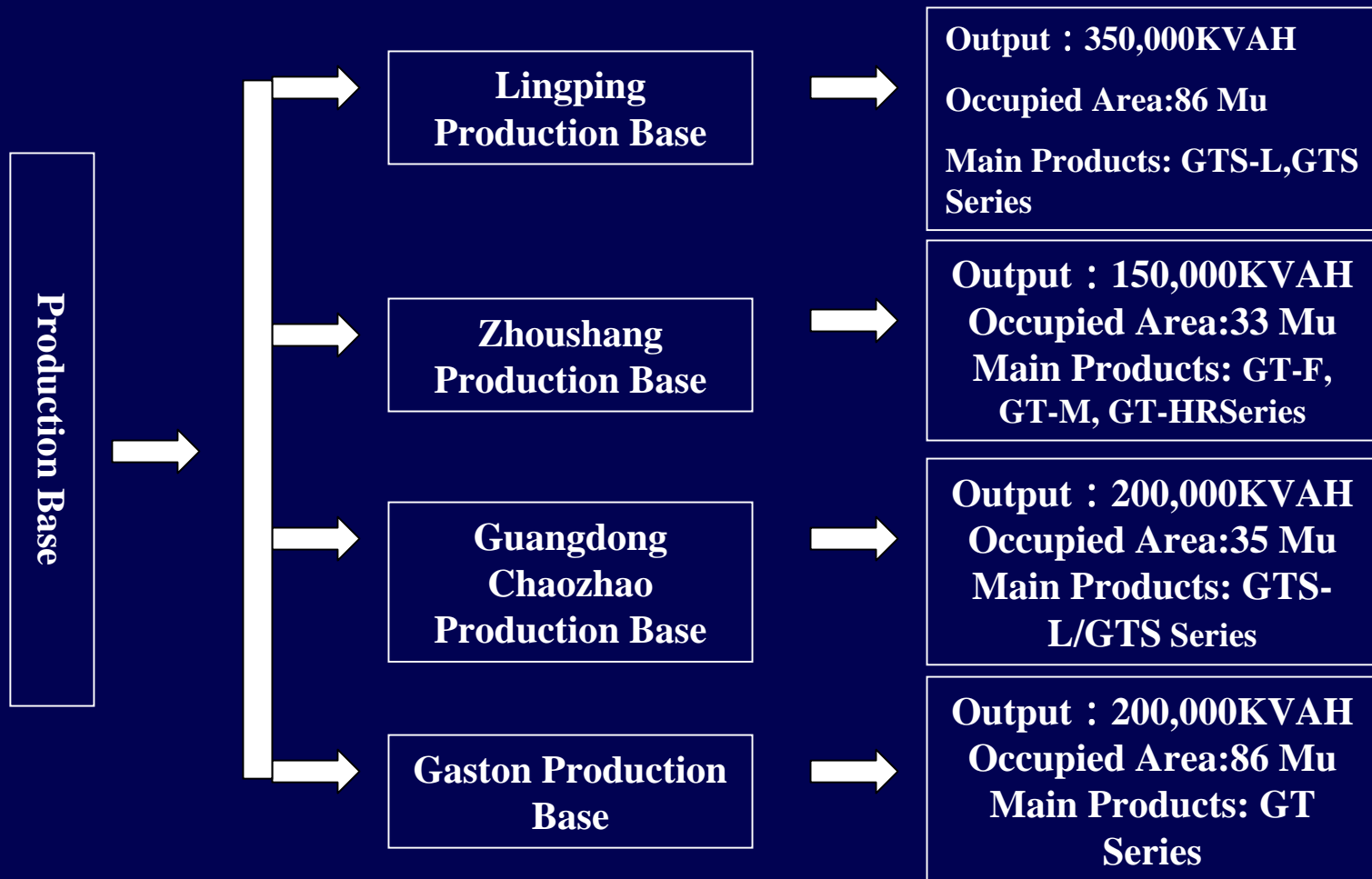
Narada Power Source/Construction



Narada Power Source/Output and Scale

- Narada Possesses the largest and most advanced production base in Asia with an annual output of 1 million KVAH(125 containers per month). Narada is equipped with the latest manufacturing and testing facilities and instruments. The company can supply five series of products with more than 20 models, and research and develop more than 10 new products and new design each year.

Narada Power Source/Production Base



Narada Power Source/Equipment

- Advanced key equipment:
 - Sovema ho-8 Oxide Mill (Italy)
 - WIRTZ 330 (40) Grid Caster(USA)
 - SMS55-III Mixer(USA)
 - SUPER “22” Double Side Paster(Italy)
 - FII Heat Sealer (USA)
 - Hadi TYPE AGM3/PS COS Machine (Germany)

Narada Power Source/Role in the Industry

- National Hi-tech Enterprise
- Provincial R&D Center of Hi-tech
- National Test Center for Communication Power Source
- Chinese Member of ALABC
- Chairman of sub-association of acid battery under China Industry Association of Power Source
- The Most Modernized and Largest Production Base for VRLA Battery

Narada Power Source/Technology and Products

- Narada's Technology and products is leading in China and advanced in international. After continuous innovation, Narada has made great improvement on float voltage, cycle life, energy density, seal performance, etc.

- Products Series
 - GT range
 - GTS range
 - GT-HR range
 - GTS-L range
 - GTS-G range
 - GT-F range

Narada Power Source/Domestic Market

- The sales expand to 30 provinces, cities and municipalities. The market share is above 25% in communication, power, railway, transportation, military, broadcasting and UPS industry.
- Key Project:
 - Lanzhou-Xining-Larsa optical line-national first-class backbone trunk line
 - DC operation and backup system in Huairan Palace of Zhongnanhai where Chinese Central Government is located.
 - Beijing “9950” project to celebrate the 50th anniversary of PRC
 - Qingshan nuclear power station
 - China high-speed Internet demonstration project
 - Shanghai-Wuhai SDH trunk line
 - National light PV project

Narada Power Source/International Market

- Narada has set up a sales and distribution net worldwide, and its products are exported to more than 50 countries.

Narada Power Source/International Market

- As the next step, Narada will make every effort to catch up with the development international market. Narada will focus on R&D and production speed to increase its competition ability and expand its sales volume.
- In year 2003, Narada and Gaston Battery Industry Ltd. have jointly set up an overseas sales base—Gaston Narada International Ltd.

Narada Power Source/Technical Cooperation

- Narada Power Source has close cooperation with many domestic and overseas Institutes in several trades and aspects.
 - Dalian Chemical and Physical Academe which belongs to China Science Institute
 - Domestic Famous University: Zhejiang University, Harbin Industrial University, Beijing Post & Telecommunication University, Nanjing Post & Telecommunication University.
 - Bulgarian Academy of Sciences
 - ALABC Organization

Narada Power Source/R&D Ability

- Has set up a provincial hi-tech R&D center which possesses a team of latent research and creative ability.
- 40% staff in R&D center is PHD and Master's degree owner.
- Import first-class lab and test instruments from Airbin、 Firing Circuits and BITRODE

- Above 30 Innovative Technology Patent
 - National Torch Project
 - New traction and motive battery
 - High Energy spiral valve regulated sealed battery
 - National New Product Project
 - Deep cycle motive battery
 - Access Network VRLA Battery
 - Railway Traction VRLA Battery

Narada Power Source/Goal and Program

- Goal : Become world first-class Supplier for Chemical Power Solution. Make customer value largest
- Three-year Program: The sales volume reaches US\$80 million, 50% is to international market. Become a leader in domestic VRLA battery trade

Thanks!

GT range

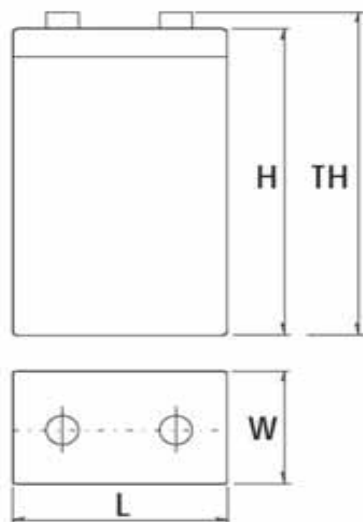
General Specifications

Type	Nominal Capacity(Ah)		Dimensions in millimeters and (inches)				Approx. Weight kg(Lb)
	Nominal Voltage(V)	Cap to 1.80Vpc	Length	Width	High	Total Height	
GT2-4.5	2	4.5	47.0 (1.85)	26.0 (1.02)	101 (3.98)	107 (4.21)	0.31 (0.70)
GT2-10	2	10	52.5 (2.07)	50.0 (1.97)	93.3(3.67)	99.3 (3.91)	0.73 (1.61)
GT4-4.5	4	4.5	48.0 (1.89)	48.0 (1.89)	102 (4.02)	108 (4.25)	0.62 (1.37)
GT4-9.5	4	9.5	102 (4.02)	44.0 (1.73)	95.0 (3.74)	101 (3.98)	1.15 (2.53)
GT6-1.3	6	1.3	97.0 (3.82)	24.0 (0.95)	52.0 (2.05)	58.0 (2.28)	0.31 (0.70)
GT6-2.8	6	2.8	66.0 (2.60)	33.0 (1.30)	97.0 (3.82)	104 (4.09)	0.61 (1.30)
GT6-3.4	6	3.4	134 (5.28)	35.0 (1.38)	61.0 (2.40)	67.0 (2.64)	0.65 (1.40)
GT6-4.2	6	4.2	70.0 (2.76)	47.0 (1.85)	101 (3.98)	107 (4.21)	0.85 (1.90)
GT6-4.2(S)	6	4.2	70.0 (2.76)	47.0 (1.85)	101 (3.98)	107 (4.21)	0.85 (1.90)
GT6-4.5	6	4.5	70.0 (2.76)	47.0 (1.85)	101 (3.98)	107 (4.21)	0.85 (1.90)
GT6-4.5(S)	6	4.5	70.0 (2.76)	47.0 (1.85)	101 (3.98)	107 (4.21)	0.85 (1.90)
GT6-5L	6	5	67.0 (2.64)	67.7 (2.65)	96.5 (3.80)	116 (4.56)	1.00 (1.98)
GT6-7	6	7	151 (5.95)	34.0 (1.34)	94.0 (3.70)	100 (3.94)	1.36 (3.00)
GT6-8.5	6	8.5	151 (5.95)	50.0 (1.97)	94.0 (3.70)	100 (3.94)	1.85 (4.10)
GT6-10	6	10	151 (5.95)	50.0 (1.97)	94.0 (3.70)	100 (3.94)	1.85 (4.10)
GT6-12	6	12	151 (5.95)	50.0 (1.97)	94.0 (3.70)	100 (3.94)	2.10 (4.60)
GT6-12I	6	12	108 (4.24)	70.8 (2.79)	140 (5.51)	140 (5.51)	2.50 (5.51)
GT6-200	6	200	320 (12.6)	175 (6.89)	226 (8.89)	231 (9.09)	31.0 (68.4)
GT8-3.3	8	3.3	67.0 (2.64)	48.0 (1.89)	90.0 (3.54)	90.0 (3.54)	0.78 (1.72)
GT12-0.8	12	0.8	96.0 (3.78)	25.0 (0.98)	61.5 (2.42)	61.5 (2.42)	0.36 (0.80)
GT12-1.3	12	1.3	97.0 (3.82)	43.0 (1.69)	62.0 (2.05)	68.0 (2.68)	0.61 (1.30)
GT12-2.2	12	2.2	103 (4.06)	46.0 (1.81)	70.0 (2.76)	70.0 (2.76)	0.98 (2.20)
GT12-3.4	12	3.4	134 (5.28)	67.0 (2.64)	61.0 (2.40)	67.0 (2.64)	1.40 (3.10)
GT12-4.2	12	4.2	90.0 (3.54)	70.0 (2.76)	101 (3.98)	107 (4.21)	1.72 (3.80)
GT12-4.5	12	4.5	90.0 (3.54)	70.0 (2.76)	101 (3.98)	107 (4.21)	1.72 (3.80)
GT12-7	12	7	151 (5.95)	65.0 (2.56)	95.0 (3.74)	101 (3.98)	2.30 (5.06)
GT12-7.2	12	7.2	151 (5.95)	65.0 (2.56)	95.0 (3.74)	101 (3.98)	2.66 (5.88)
GT12-8.5	12	8.5	151 (5.95)	65.0 (2.56)	95.0 (3.74)	101 (3.98)	2.82 (6.23)
GT12-10	12	10	151 (5.95)	98.0 (3.86)	95.0 (3.74)	101 (3.98)	4.20 (9.30)
GT12-12	12	12	151 (5.95)	98.0 (3.86)	95.0 (3.74)	101 (3.98)	4.20 (9.30)
GT12-18	12	18	181 (7.13)	77.0 (3.03)	167 (6.58)	167 (6.58)	5.70 (12.6)
GT12-26	12	26	166 (6.54)	175 (6.89)	125 (4.92)	125 (4.92)	9.20 (20.3)
GT12-35	12	35	195 (7.68)	130 (5.12)	159 (6.26)	180 (7.09)	10.0 (22.5)
GT12-40	12	40	197 (7.76)	165 (6.50)	170 (6.69)	170 (6.69)	13.5 (29.8)
GT12-55	12	55	230 (9.04)	138 (5.44)	206 (8.12)	210 (8.27)	18.0 (39.7)
GT12-65	12	65	335 (14.0)	167 (6.58)	179 (7.05)	183 (7.21)	22.0 (49.0)
GT12-70	12	70	256 (10.1)	168 (6.62)	208 (8.20)	212 (8.35)	22.0 (49.0)
GT12-80	12	80	305 (12.0)	168 (6.62)	208 (8.20)	212 (8.35)	24.0 (52.9)
GT12-90	12	90	305 (12.0)	168 (6.62)	208 (8.20)	212 (8.35)	32.0 (70.6)
GT12-100	12	100	330 (13.0)	171 (6.73)	220 (8.66)	227 (8.94)	32.0 (70.6)
GT12-120	12	120	410 (16.1)	175 (6.89)	227 (8.94)	227 (8.94)	38.0 (83.8)
GT12-150	12	150	485 (19.1)	172 (6.77)	240 (9.45)	240 (9.45)	47.0 (104)
GT12-200	12	200	522 (20.6)	238 (9.37)	218 (8.58)	236 (9.29)	65.0 (143)

GTS range

General Specifications

Type	Nominal Voltage(V)	Nominal Capacity(Ah)@ 20°C		Dimensions in millimeters and (inches)				Approx Weight (kg)
		C ₁₀ to 1.80Vpc	C ₅ to 1.80Vpc	Length	Width	High	Total Height	
GT S-200	2	200	150	105 (4.14)	183 (7.21)	359 (14.2)	371 (14.6)	16
GT S-300	2	300	225	146 (5.75)	183 (7.21)	359 (14.2)	371 (14.6)	23
GT S-400	2	400	300	186 (7.33)	183 (7.21)	359 (14.2)	371 (14.6)	29
GT S-500	2	500	375	227 (8.95)	183 (7.21)	359 (14.2)	371 (14.6)	37
GT S-600	2	600	450	268 (10.6)	183 (7.21)	359 (14.2)	371 (14.6)	44
GT S-800	2	800	600	169 (6.66)	229 (9.02)	600 (23.6)	612 (24.1)	62
GT S-1000	2	1000	750	204 (8.04)	229 (9.02)	600 (23.6)	612 (24.1)	76
GT S-1500	2	1500	1125	291 (11.5)	229 (9.02)	600 (23.6)	612 (24.1)	111
GT S-2000	2	2000	1500	382 (15.1)	233 (9.18)	602 (23.7)	612 (24.1)	111



24V modular

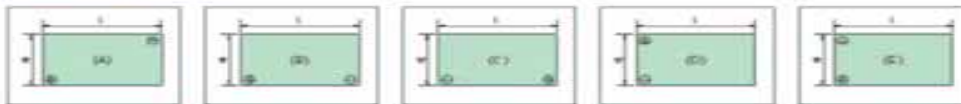
GR-HR range

Technical characteristics per cell

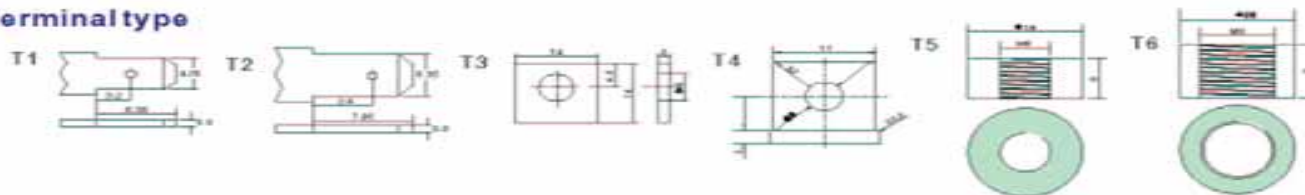
Type	Nominal Voltage(V)	Capacity(Ah)@ 20°C		Dimensions in millimeters			Typical Weight (kg)	Terminal type position	Terminal
		Power in watts per cell	Cuts to 1.75Vpc	Length	Width	Overall Height			
GT 6-5HR	6	16	5	70	47	106	0.9	A	T1,T2
GT 12-5HR	12	16	5	90	70	106	1.9	B	T1,T2
GT 12-7HR	12	28	8	151	65	101	2.8	D	T1,T2
GT 12-9HR	12	30	9	151	65	101	2.8	D	T1,T2
GT 12-12HR	12	43	12	151	98	101	4.0	D	T3
GT 12-18HR	12	68	18	181	76	167	6.1	C	T3
GT 12-26HR	12	109	26	188	175	125	9.8	C	T3
GT 12-33HR ¹⁰	12	140	33	197	132	187	12	B	T4,T5
GT 12-40HR	12	150	40	197	165	170	15	C	T3
GT 12-50HR ¹⁰	12	170	50	228	139	225	18	B	T4,T6
GT 12-55HR ¹⁰	12	200	55	228	139	225	18	B	T4,T5
GT 12-75HR ¹⁰	12	270	75	261	173	224	26	B	T4,T5
GT 12-90HR ¹⁰	12	310	90	306	173	230	30	B	T4,T6
GT 12-100HR ¹⁰	12	370	100	341	173	241	34	B	T4,T6
GT 12-100M ¹⁰	12	280	100	406	173	238	36	C	T4,T5
GT 12-200M ¹⁰	12	553	200	498	250	238	74.5	E	T4,T6

¹⁰ With strap handles ¹⁰ 10 year design life @25°C (77°F)

Terminal position



Terminal type



GTS-L range

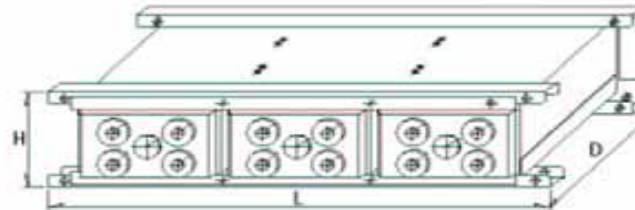
Model	Voltage	Nominal Capacity(Ah)@ 25C				Dimensions in millimeters					
		1hr rate to 1.80Vpc	3hr rate to 1.80Vpc	10hr rate to 1.80Vpc	20hr rate to 1.80Vpc	Length	Depth ¹	Height ²	Weight ³ (kg)	Short circuit current	Internal Resistance (mΩ)
GIS12-100L	12	56	78	100	118	437	330	218	66	1370	8.7
GIS12-200L	12	113	153	210	236	665	330	218	106	2746	4.37
GIS12-300L	12	169	231	310	354	893	330	218	153	3882	3.09
GIS6-400L	6	226	306	410	472	623	330	218	104	3985	1.50
GIS12-500L	12	282	384	520	590	957	516	218	275	5180	2.31
GIS12-600L	12	336	444	600	684	1071	516	218	234	6090	1.97
GIS6-800L	6	448	636	830	979	801	516	218	200	7980	0.75
GIS6-1000L	6	564	765	1030	1180	915	516	218	230	9275	0.64
GIS6-1100L	6	616	825	1110	1298	972	516	218	250	9673	0.62
GIS6-1500L	6	858	1242	1570	1770	1147	465	277	370	10345	0.58
GIS4-1500L	4	858	1242	1570	1770	793	465	277	265	10811	0.37

Notes:

¹ The depth shown in the table is for the module only.
Add 36mm to include the front panel.

² To calculate the total height of a battery stack multiply the module height by the number of modules in the stack and add 102mm for the support, except for the 1500, 3000/2 and 4700 modules where 125mm must be added.

³ The weight of the module excludes the cover, connectors, terminal plate/connector and base.



GTS-G range

Technical data

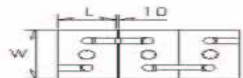
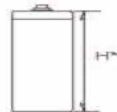
Model	C ₂₀ 1.80	Capacity (Ah)		C ₁₀₀ 1.67	Internal resistance (incl. connector charged) (mOhm/cell)	Short circuit current (incl. connector, charge)(A)	Dimensions (mm)			Weight (kg) cell
		C ₅ Attnal voltage U ₅ (V/c) 1.77	C ₁₀ 1.75				L	W	H*	
GTS-200G	200	174	150	109	0.92	2266	103	206	357	20.5
GTS-300G	300	260	225	163	0.63	3317	145	206	357	29.0
GTS-400G	400	380	320	242	0.49	4271	145	206	473	36.5
GTS-500G	500	445	370	283	0.63	3317	166	206	473	42.0
GTS-600G	600	530	450	351	0.63	3317	145	206	648	50.0
GTS-800G	800	710	600	468	0.63	3317	210	191	648	68.0
GTS-1000G	1000	890	750	585	0.63	3317	210	223	648	82.0
GTS-1500G	1500	1385	1120	867	0.63	3317	210	275	840	120
GTS-2000G	2000	1820	1490	1168	0.63	3317	210	399	815	160
GTS-3000G	3000	2730	2240	1752	0.63	3317	210	579	815	240

The electrical values shown in the table relate to loading from a fully charged condition at ambient temperature of +20°C.
*Height includes connectors.

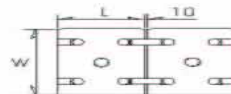
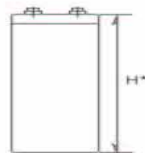
Installation

GASTON GTS-G batteries are mounted either in upright position on insulated floor stands or in horizontal position for space saving installation on tier stands for use in earthquake zones special stands are available. The safety requirements of EN 50272-2 must be applied.

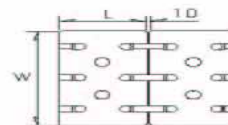
GTS-200G GTS-600G



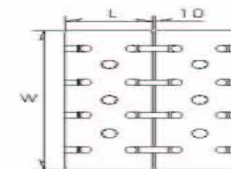
GTS-800G GTS-1500G



GTS-2000G



GTS-3000G



GT-F range

General Specifications

Type	Nominal Voltage(V)	Nominal Capacity(Ah)@ 20°C		Dimensions in millimeters and (inches)			Typical Weight (kg)
		C ₁₀ to 1.80Vpc	C ₅ to 1.80Vpc	Length	Width	Overall Height	
GT 12-50F	12	50	38	390(15.35)	105(4.13)	227(8.94)	21.5
GT 12-75F	12	78	56	558(21.96)	105(4.13)	227(8.94)	31
GT 12-100F	12	100	75	558(21.96)	125(4.92)	227(8.94)	39
GT 12-105F	12	105	78	511(20.12)	110(4.33)	238(9.38)	36
GT 12-125F	12	125	95	558(21.96)	125(4.92)	270(10.63)	49
GT 12-150F	12	150	113	558(21.96)	125(4.92)	310(12.20)	57
GT 12-155F	12	155	117	559(21.96)	124(4.88)	283(11.15)	54

