



YUASA

Industrial Battery Range

VRLA, Li-ion & Accessories Range Overview



The world's leading battery manufacturer

a  **GSYUASA** brand

From the deep sea to outer space




The GS Yuasa Group consists of 65 subsidiaries and 33 affiliates in countries throughout the world.

For over 100 years, the GS Yuasa Group has continually contributed to economic development and the improvement of living standards through the development and manufacture of batteries, power supply systems and lighting equipment. We are a major force in the market as one of the world's leading manufacturers of industrial, automotive and motorcycle batteries. As a supplier of high performance power supply systems, we help ensure the reliability of social infrastructure.

Responding to today's increasingly sophisticated needs our extensive range of next generation energy system lithium-ion batteries encompasses not only vehicle use but also products in a wide range of fields, from deep sea to aerospace, to meet the ever more sophisticated needs of the times.

Throughout its long history, the GS Yuasa Group has worked to create innovative technology. This commitment serves as the foundation for our continuing efforts to explore new possibilities in the field of electrical energy under a corporate vision expressed in the words "Innovation and Growth".

GS Yuasa Europe

- 1 GS Yuasa Battery Europe Ltd.
Ebbw Vale
- 2 GS Yuasa Battery Sales UK Ltd.
Swindon
- 3 GS Yuasa Battery Germany GmbH.
Düsseldorf
- 4 GS Yuasa Battery France S.A.
Lyon
- 5 GS Yuasa Battery Italy Srl.
Milan
- 6 GS Yuasa Battery Iberia S.A.
Madrid
-  GS Yuasa Battery Manufacturing UK Ltd.
Ebbw Vale



For over 30 years, GS Yuasa Battery Europe Ltd have been Europe's leading battery supplier.

From sales and distribution centres in Swindon, Milan, Lyon, Madrid and Düsseldorf, GS Yuasa supply European markets with an extensive range of high-quality energy storage and network stabilisation solutions.

Supported by experienced Quality Assurance, Technical Support, Marketing and Customer Service teams, our industry leading service and distribution network continues to set new standards in customer care, choice and year-round availability.

Furthermore, GS Yuasa can design and project manage custom battery systems.

Whatever the application, GS Yuasa have a solution to suit any requirements.

UK Manufacturing

GS Yuasa Battery Manufacturing UK Ltd is a large state of the art manufacturing facility in Ebbw Vale, Wales, UK. Production began at the site in 1982 and since then well over 80 million batteries have been produced ranging in capacity from 0.8 to 540 ampere hours.

Over 60% of products are exported, mainly within Europe. The facility produces four main product ranges - NPL, EN, ENL and SWL.



Common applications

Uninterruptible Power Supply (UPS)



Ranging in size from desk top units to large plant room installations, UPS's are a no-break backup power supply for essential equipment. Yuasa batteries can be sized to give the autonomy and load required for any project.

Batteries typically used:

NP	NPW	SW	ENL	SLR
NPL	RE	SWL	ENL FT	
NPH	REW	EN	Lithium	



Telecoms



Broadband, land line and mobile providers have equipment that needs battery backup power in the event of a mains failure. Whether in central systems or remote cabinets Yuasa batteries are trusted by providers worldwide.

Batteries typically used:

NP	REW	EN	FXH
NPL	SW	ENL	SLR
RE	SWL	ENL FT	



Renewable Energy



Solar, wind and wave energy is not always produced at times of maximum requirement. Yuasa batteries allow energy to be stored at times of low demand and then released into the grid when demand is high.

Batteries typically used:

NP	REC	ENL FT	SLE	Lithium
NPC	ENL	FXH	SLR	

Fire & Security



Even the most advanced security systems are only as good as the backup batteries supporting them. When an emergency arises, Yuasa standby batteries can protect homes and businesses against crime and fire.

Batteries typically used:

NP	NPL	RE
----	-----	----



Golf & Mobility



Golf and mobility equipment requires batteries to be charged and then used to power the equipment. Yuasa produce specialised cyclic battery types to give maximum performance for hundreds of charge/discharge cycles.

Batteries typically used:

NPC REC

Emergency Lighting



Emergency lighting is required in commercial buildings. In the event of a mains failure, standby batteries provide light for safe evacuation. Yuasa NiCd, NiMH and VRLA batteries exceed common 3 hour run-time requirements.

Batteries typically used:

NP NPL NPC REC RE
ENL ENL FT

Energy Storage



Businesses are usually charged on peak power demand. Load-shedding allows large cost savings by charging batteries during low demand and injecting this stored energy back into business load at times of high demand.

Batteries typically used:

NPL REC ENL FT SLE Lithium
NPC ENL FXH SLR

Floor Cleaning & Aerial Access



Applications where deep discharges and harsh operating conditions are common, need a specialist battery solution. The Yuasa Pro-Spec range have excellent resilience against plate corrosion and deep discharge.

Batteries typically used:

Pro-Spec



Yuasa Industrial Batteries

To help with battery selection, and due to different application and operational requirements, every Yuasa industrial battery has been designated with a Eurobat classification or Yuasa cyclic life tag.

Eurobat is a European organisation that has produced a guide to VRLA batteries. Within this guide there are 4 design life categories. Yuasa has used the test methods as set out in an official standard, BS EN60896-21/21 to designate each battery range into one of the categories.



NP Series page 8

- Guaranteed capacity
- Yuasa quality assurance
- VDS approved
- 6 & 12 Volt types
- 0.8Ah to 65Ah
- Standby & light cyclic use

RE Series page 9

- Guaranteed capacity
- Yuasa quality assurance
- VDS approved
- Flame retardant case
- 12 Volt
- 5Ah to 12Ah
- Standby & light cyclic use

NPL Series page 10

- 6 & 12 Volt types
- 24Ah to 200Ah
- Standby use



SWL Series page 11

- 6 & 12 Volt types
- 24Ah to 180Ah
- Standby use



EN Series page 12

- 2, 4 & 6 Volt types
- 80Ah to 540Ah
- Standby use



ENL Series page 13

- 2, 4 & 6 Volt types
- 80Ah to 540Ah
- Standby use

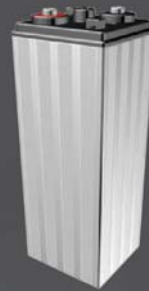




FXH Series

page 14

- 12 Volt
- 45Ah to 200Ah
- Standby use



SLE & SLR Series

page 15

- 2 Volt
- 500Ah to 1000Ah
- Heavy duty cyclic use



REC Series

page 16

- 12 Volt
- 10Ah to 80Ah
- Cyclic use



NPC Series

page 17

- 12 Volt
- 24Ah to 100Ah
- Cyclic use



Lithium Series

page 19

- 3.7 to 50.4 Volt
- 5Ah to 47.5Ah
- Standby & cyclic use



Accessories

page

- Racking & Site Services 21
- Yu-Power Chargers 22
- Temperature Monitoring 22



Pro-Spec

page 21

- 6, 8 & 12 Volt types
- 150Ah to 260Ah
- Deep cyclic use



Eurobat classification or Yuasa cyclic design life assumes that the battery is operated in normal conditions at 20°C and in accordance with Yuasa recommended operating guidelines.

Yuasa cyclic design life assuming 50% depth of discharge.

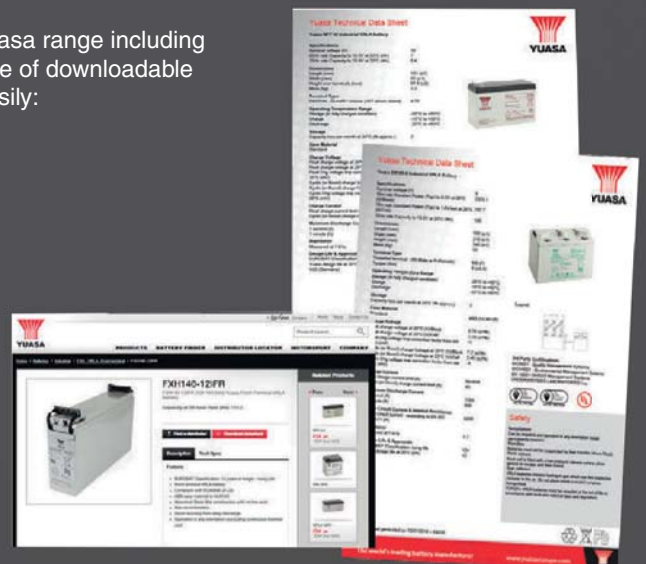


www.gs-yuasa.de

Yuasa's innovative website is mobile-ready and features the entire Yuasa range including specifications, part numbers and photographs. It also includes a range of downloadable brochures, resources, data sheets and guides and allows users to easily:

- Find the right battery and compare products
- Search for local distributors
- Access detailed technical information and guides
- Download dynamic technical data sheets
- Calculate UPS system size requirements
- Keep up to date with the latest from Yuasa

Features every Yuasa industrial, automotive and motorcycle product with full specifications and pictures.



NP Series

Valve Regulated Lead-Acid Batteries



Features

- Lead calcium grids for extended life
- Superb recovery from deep discharge
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency
- Multipurpose: Float or light cyclic use
- Can be used in any orientation excluding continuous inverted use
- Application specific designs

Applications

Ideal for standby and light cyclic applications including:

- Fire and security systems
- Emergency lighting
- Solar and wind
- UPS
- Toys



Model Name	Nominal Voltage (Volts)	20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±1)	Width (±1)	Overall Height (±2)	Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)
NP1-6	6	1.0	0.93	-	51.0	42.5	54.5	0.25	75.0	30.0	A	5
NP1.2-6	6	1.2	1.1	-	97.0	25.0	54.5	0.31	60.0	36.0	A	1
NP4-6	6	4.0	3.7	-	70.0	47.0	105.5	0.87	20.0	120	A	5
NP7-6	6	7.0	6.5	-	151	34.0	97.5	1.32	12.0	210	A	1
NP10-6	6	10.0	9.2	-	151	50.0	97.5	1.93	8.0	300	A	1
NP12-6	6	12.0	11.1	-	151	50.0	97.5	2.05	7.0	360	C	1
NP0.8-12	12	0.8	0.74	-	96.0	25.0	61.5	0.35	180	24.0	H	6
NP1.2-12	12	1.2	1.1	-	97.0	48.0	54.5	0.58	110	36.0	A	3
NP2-12	12	2.0	1.86	-	150	20.0	89.0	0.7	68.0	60.0	B	7
NP2.3-12	12	2.3	2.1	-	178	34.0	64.0	0.95	65.0	69.0	A	1
NP3.2-12	12	3.2	2.9	-	134	67.0	64.0	1.2	50.0	96.0	A	3
NP4-12	12	4.0	3.7	-	90.0	70.0	106	1.75	40.0	120	A	1
NP7-12(L)	12	7.0	6.4	-	151	65.0	97.5	2.2	23.0	210	A/C	4
NP12-12	12	12.0	11.1	-	151	98.0	97.5	4.05	16.0	360	C	4
NP17-12I	12	17.0	15.7	-	181	76.0	167	6.1	15.0	510	D	2
NP18-12B	12	17.2	16.0	-	180	76.0	167	6.2	15.0	540	G	2
NP24-12I	12	24.0	22.3	-	166	175	125	9	11.0	500	D	2
NP38-12I	12	38.0	35.3	-	197	165	170	14.2	9.0	500	D	2
NP65-12I	12	65.0	60.5	-	350	166	174	23.0	7.0	800	E	2



NPH & NPW Series

High Rate NP Batteries

NPH2-12FR	12	2.1	2.0	-	68.0	51.0	88.0	0.84	66.0	60.0	A	2
NPH5-12(FR)	12	5.0	4.8	34.0	90.0	70.0	106	1.85	25.0	150	C	1
NPH12-12	12	12.0	11.1	70.0	151	98.0	97.5	4.1	16.0	360	C	4
NPW45-12	12	8.5	7.42	40.0	151	65.0	97.5	2.7	24.0	105	C	4

RE Series

Valve Regulated Lead-Acid Batteries



Features

- Lead calcium grids for extended life
- Superb recovery from deep discharge
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency
- Multipurpose: Float or light cyclic use
- Can be used in any orientation excluding continuous inverted use
- Application specific designs

Applications

Ideal for standby and light cyclic applications including:

- Fire and security systems
- Emergency lighting
- Solar and wind
- UPS
- Toys



Model Name	Nominal Voltage (Volts)	Capacity		Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Length (±3)	Width (±3)	Overall Height (±3)					
RE5-12	12	5.0	4.6	90.0	70.0	106	1.96	42.0	120	A	1
RE7-12L(FR)	12	7.0	6.2	151	65.0	97.5	2.75	35.0	105	C	4
RE12-12	12	12.0	10.56	151	98.0	97.5	4.15	15.0	180	C	4



REW Series

High Rate RE Batteries

REW45-12	12	8.0	6.96	151	64.0	97.5	2.7	24.0	105	C	4
----------	----	-----	------	-----	------	------	-----	------	-----	---	---

Yuasa NP Series

Europe's leading standby batteries



- ✓ European market leader for over 30 years
- ✓ Proven track record of long-life performance
- ✓ The original and most reliable NP VRLA battery
- ✓ Dependable standby & light cyclic power
- ✓ Yuasa quality, reliability & performance

NPL Series

Valve Regulated Lead-Acid Batteries



Features

- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency
- Maintenance free
- Flame retardant to (UL94) HBØ
- FR option flame retardant to UL94:VØ (oxygen index 30)
- Manufactured in factories that comply with ISO 9001

- Complies with BS EN60896-21+22

Applications

- Security and Fire
- Emergency Lighting
- Telecoms
- UPS



Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±1)	Width (±1)	Overall Height (±2)						
NPL24-12I	12	24.0	21.1	93.2	166	175	125	9.0	9.5	500	D	2	2.5
NPL38-12I	12	38.0	33.4	147.5	197	165	170	14.0	7.5	500	D	2	2.5
NPL65-12I	12	65.0	57.2	252.4	350	166	174	23.0	5.0	800	E	2	4.8
NPL78-12IFR	12	78.0	68.6	302.9	380	166	174	27.5	4.5	800	F	2	6.0
NPL100-12	12	100	88.0	388.4	407	172	240	39.0	4.0	1000	I	1	16.5
NPL130-6IFR	6	130	114.4	504.9	350	166	174	23.0	2.5	500	E	5	4.8
NPL200-6	6	200	176	776.8	398	176	250	39.0	1.3	1500	I	5	16.5



SWL Series

Valve Regulated Lead-Acid Batteries



Features

- Excellent high rate discharge efficiency, typically 40% higher than equivalent standard product
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency
- Maintenance free
- Standard case material is flame retardant to (UL94) HBØ

- FR option flame retardant to UL94:VØ (oxygen index 30)
- Manufactured in factories that comply with ISO9001
- Complies with BS EN60896-21+22

Applications

- UPS
- All other high rate discharge applications



Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±2)	Width (±2)	Overall Height (±2)						
SW200	12	6.2	5.8	33.0	151	51.0	97.5	2.5	18.0	100	A+C	4	-
SW280	12	7.8	7.0	47.0	151	65.0	97.5	2.6	14.0	150	C	4	-
SWL750(FR)	12	25.0	22.9	128	166	175	125	9.8	8.5	500	D	2	2.5
SWL780V(FR)	12	28.8	24.5	130	166	125	175	10.1	8.5	500	D	2	2.5
SWL1100(FR)	12	40.6	39.6	200	197	165	170	14.5	7.5	500	D	2	2.5
SWL1800(FR)	12	57.6	55.0	329	216	168	223	23.0	6.0	800	E	1	4.8
SWL1850(FR)	12	74.0	66.0	319	350	166	174	23.8	4.4	800	E	2	4.8
SWL1850-6(FR)	6	148	132	-	350	166	174	23.8	1.8	500	E	5	4.8
SWL2250(FR)	12	86.0	76.0	375	380	166	174	28.0	3.6	800	F	2	6.0
SWL2300E(FR)	12	80.0	78.0	400	261	168	225	28.0	5.0	800	E	1	4.8
SWL2500E(FR)	12	93.6	91.4	417	305	168	225	32.0	4.0	1000	E	1	4.8
SWL2500TFR	12	93.6	91.4	417	305	173	223	32.0	4.0	1000	E	1	4.8
SWL2500-6(FR)	6	184	180	867	297	168	231.5	32.5	1.7	1500	E	5	6.0
SWL3300(FR)	12	110.2	102	550	350	168	225	37.5	3.5	1100	F	1	6.0
SWL3800(FR)	12	135	124	701	350	173	272	48.0	3.0	1200	F	1	6.0
SWL4250FR	12	150	140	708	341	173	281	49.0	2.7	1200	F	1	6.0



EN Series

Valve Regulated Lead-Acid Batteries



Features

- Unique mix and match parallel assembly allows extensive variations to network capacity
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency

- Maintenance free
- Fully compliant with BS EN60896-21+22
- Case material ABS flame retardant UL94:V0

Applications

- UPS
- Telecoms
- Emergency lighting



Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±2)	Width (±2)	Overall Height (±2)						
EN80-6	6	86.4	81.6	336.1	200	208	238	23.0	2.0	1000	F	8	6.0
EN100-4	4	108	102	420.1	200	208	238	17.5	1.5	1000	F	8	6.0
EN100-6	6	108	102	420.1	200	208	238	23.0	2.0	1000	F	8	6.0
EN160-4	4	172.8	163.2	672.2	206	210	240	24.0	1.0	1500	F	10	6.0
EN160-6	6	172.8	163.2	672.2	305	210	240	35.0	1.5	1500	F	9	6.0
EN180-6	6	193	181.4	767.7	305	210	240	38.0	0.5 (single cell)	1500	F	9	6.0
EN320-2	2	345.6	326.4	1344.4	206	210	240	24.0	0.5 (single cell)	3000	F	10	6.0
EN480-2	2	518.4	489.6	2016.7	305	210	240	35.0	0.5 (single cell)	4500	F	11	6.0
EN540-2	2	579	544.2	2303.1	305	210	240	38.0	0.5 (single cell)	4500	F	11	6.0



ENL Series

Valve Regulated Lead-Acid Batteries



Features

- 15 year design life version of the EN series
- Unique mix and match parallel assembly allows extensive variations to network capacity
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency

- Maintenance free
- Fully compliant with BS EN60896-21+22
- Case material ABS flame retardant UL94:V0

Applications

- UPS
- Telecoms
- Emergency lighting
- Renewable Energy



Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±1)	Width (±1)	Overall Height (±2)						
ENL100-6	6	108	102	399.1	200	208	238	23.0	2.0	1000	F	8	6.0
ENL160-6	6	172.8	163.2	638.6	305	210	240	35.0	1.5	1500	F	9	6.0
ENL320-2	2	345.6	326.4	1277.2	206	210	240	24.0	0.5 (single cell)	3000	F	10	6.0
ENL480-2	2	518.4	489.6	1915.8	305	210	240	35.0	0.5 (single cell)	4500	F	11	6.0
ENL100-12FT	12	108	102	N/A	558	125	235	41.0	7.5	500	F	3	6.0



FXH Series

Valve Regulated Lead-Acid Batteries



Features

- Front terminal connection for ease of installation and maintenance
- Low discharge rate for long shelf life
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency
- Maintenance free

- Case material ABS flame retardant UL94:V0
- BS EN60896-2 compliant

Applications

- UPS
- Telecoms
- Emergency lighting

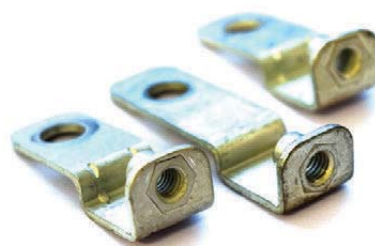


Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)				Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm) Terminal / Adaptor
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±3)	Width (±3)	Overall Height (±3)	Weight - typical (kg)					
FXH45-12IFR	12	46.4	44.6	184.3	278	103	197	15.0	4.7	400	E/D	3	5.4/3
FXH90-12IFR	12	96.8	89.8	335	395	105	255	30.0	3.4	540	F/E	3	11.9/5.4
FXH100-12IFR	12	101.2	98.4	396	508	106	236	34.9	3.5	540	E/E	3	5.4/5.4
FXH100S-12IFR	12	110.4	100	396	395	106	290	34.0	3.5	600	F/E	3	11.9/5.4
FXH140-12IFR	12	164.6	154	595.4	556	123	295	51.0	2.7	540	F/E	3	11.9/5.4
FXH155-12IFR	12	165.6	155	509	415	174	258	50.5	2.8	930	E	3	5.4/N/A
FXH165-12IFR	12	197	177	591	556	125	317	56.0	2.8	990	F/E	3	11.9/5.4
FXH185-12IFR	12	196	187	632.6	556	125	317	60.7	2.5	1000	F/E	3	11.9/5.4
FXH190-12IFR	12	210	200	782	604	123	320	67.0	2.5	1000	F/E	3	11.9/5.4
FXH200-12IFR	12	234.8	229	847	520	243	203	70.6	2.1	1000	F	3	11.9/N/A

90° FXH Terminal Adaptors

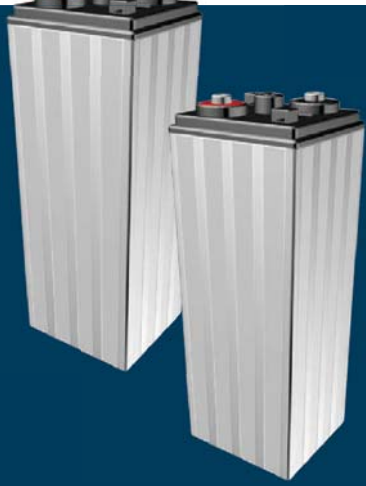
for telecoms use

	Battery Terminal	90° Adaptor
FXH45-12IFR	M6	M5
FXH90-12IFR	M8	M6
FXH100-12IFR	M6	M6
FXH100S-12IFR	M8	M6
FXH140-12IFR	M8	M6
FXH155-12IFR	M6	N/A
FXH165-12IFR	M8	M6
FXH185-12IFR	M8	M6
FXH190-12IFR	M8	M6
FXH200-12IFR	M8	N/A



SLE & SLR Series

Larger Cyclic Batteries



Features


- Easy installation and smaller footprint due to modular unit design
- Horizontal orientation
- Higher gas recombination facility due to silica gel/AGM construction
- Nano-Carbon negative plate for more efficient charging and less sulphation risk
- Higher capacity retention throughout service life

SLE Applications


- Large scale utility and commercial
- Renewable energy storage
- Load shedding
- Off grid

SLR Applications

- As SLE plus
- UPS
- Telecoms
- Emergency lighting



up to
3000
cyclic
design life



up to
5500
cyclic
design life

Model Name	Nominal Capacity 10-hr rate (Ah)	Nominal Voltage (Volts)	Cycle Life at Depth of Discharge (DoD)	
			50%	70%
SLE-500	500	2	3000	2000
SLE-1000	1000	2	3000	2000
SLR-1000	1000	2	5500	5000

Model Name	Length (mm)	Width (mm)	Total Height (mm)	Weight (kg)
SLE-500	156	171	492	34.0
SLE-1000	287	165	493	64.0
SLR-1000	287	165	493	67.0



REC Series

Premium VRLA Cyclic Batteries



Features

- Double cycle life when compared to standard VRLA
- Durability for deep discharge
- Modern construction to considerably prolong service life
- Low discharge rate for long shelf life
- Maintenance free
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency

Applications

- Golf and Mobility
- Solar and wind
- Renewable energy
- Professional tools
- Automatic guided vehicles
- Emergency lighting
- Measuring instruments



Model Name	Nominal Voltage (Volts)	Capacity			Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)	Torque (Nm)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Watts per cell 10 min to 1.6VPC at 20°C (watts)	Length (±3)	Width (±3)	Overall Height (±3)						
REC10-12	12	10.0	9.3	51.8	151	65.0	115.5	3.2	17.6	150	C	4	N/A
REC12-12	12	12.0	11.2	68.0	151	98.0	97.5	4.2	11.8	180	C	4	N/A
REC14-12	12	13.0	11.9	78.3	151	98.0	97.5	4.2	10.1	195	C	4	N/A
REC22-12B / I	12	22.0	19.7	120.8	181	76.2	167	6.2	8.2	330	G / D	2	2.0-3.0
REC26-12I	12	26.0	23.5	145	166	175	125	9.0	8.8	330	D	2	2.0-3.0
REC36-12I	12	36.0	32.0	166.7	196	130	169	11.2	8.7	360	D	1	2.0-3.0
REC50-12I	12	50.0	40.0	233	197	165	175	15.3	5.7	400	D	2	2.0-3.0
REC80-12I	12	80.0	74.0	404	259	168	212.5	27.0	4.7	480	E	1	3.9-5.4

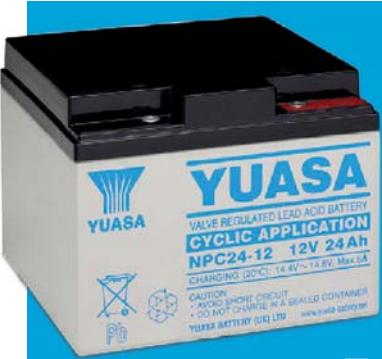
REC & NPC Carrying Cases

Model	Description
GB 12210	Carrying case for REC22-12B / I
GB 12260	Carrying case for REC26-12 & NPC24-12I
GB 12360	Carrying case for REC36



NPC

VRLA Cyclic Batteries





Features

- Double cycle life when compared to standard VRLA
- Durability for deep discharge
- Modern construction to considerably prolong service life
- Low discharge rate for long shelf life
- Maintenance free
- Absorbed glass mat (AGM) technology assures no free electrolyte
- High gas recombination efficiency

Applications

- Golf and Mobility
- Solar and wind
- Renewable energy
- Professional tools
- Automatic guided vehicles
- Emergency lighting
- Measuring instruments



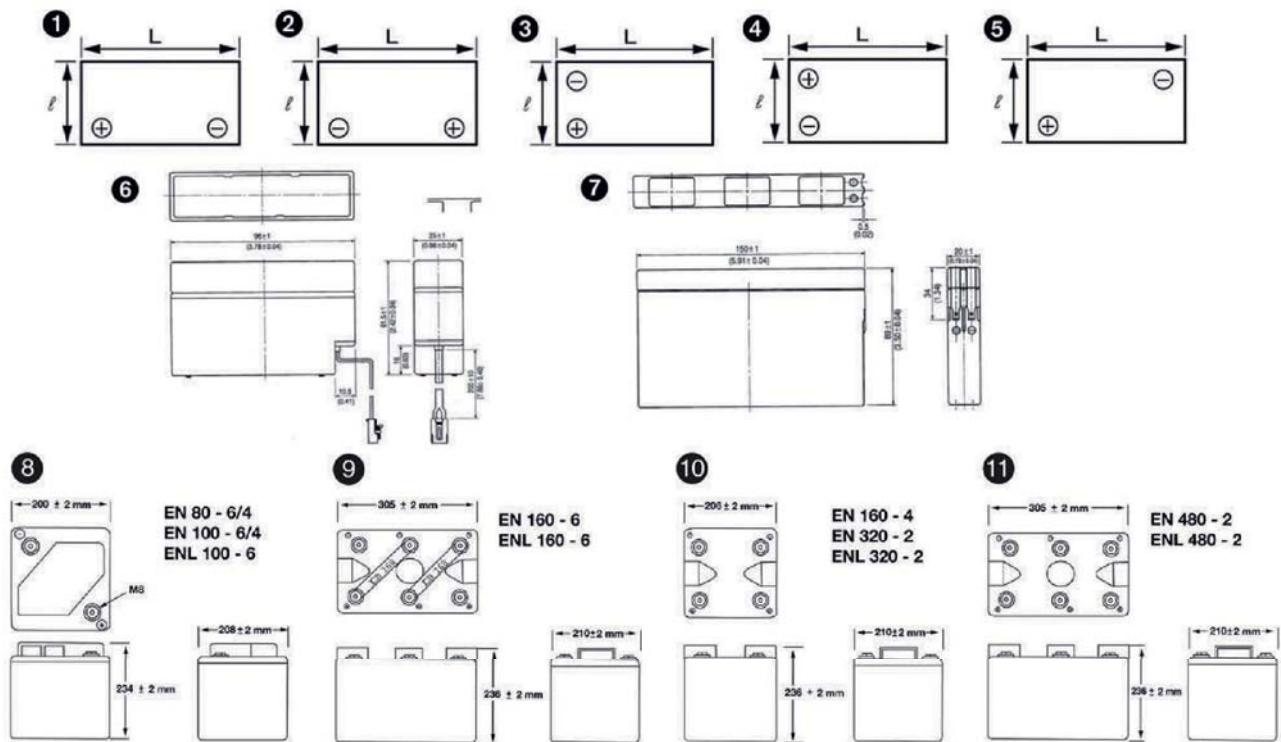


Model Name	Nominal Voltage (Volts)	Capacity		Dimensions (mm)			Weight - typical (kg)	Impedance at 1kHz mOhms	1 Second rate (Amps)	Terminal Type	Layout (see page 18)
		20-hr rate to 10.5V at 20°C (Ah)	10-hr rate to 10.8V at 20°C (Ah)	Length (±3)	Width (±3)	Overall Height (±3)					
NPC24-12I	12	24.0	21.1	166	175	125	9.0	9.5	500	D	2
NPC38-12I	12	38.0	33.4	197	165	170	14.2	7.5	500	D	2

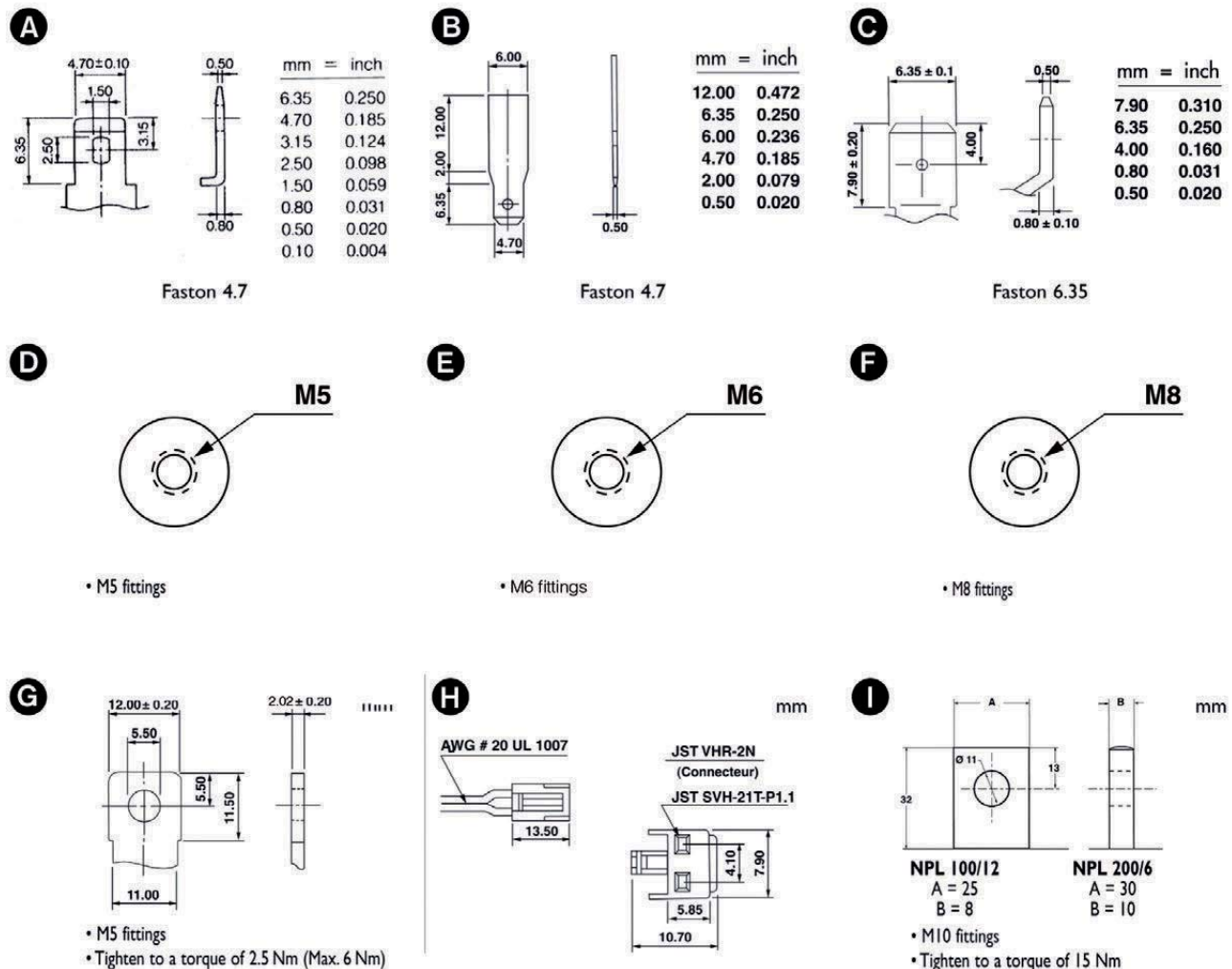


Layout & Terminal Diagrams

Layout



Terminals



Lithium Series

GS Yuasa LIM Li-ion Batteries



Features

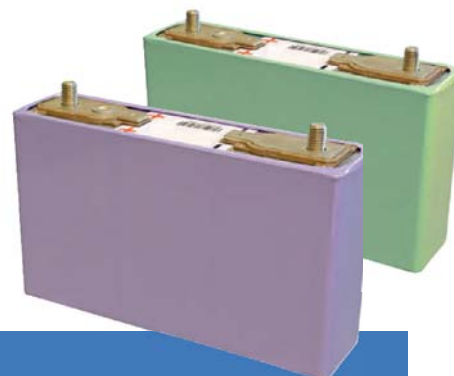
- Advanced maximum reliability system design
- Built in battery monitoring unit (ACS) constantly monitors the condition of each cell
- Outstanding cycle life of up to 5,000 cycles at 100% discharge
- High Charge-Discharge density capable of currents up to 600A
- Maintenance free
- Safe materials used in design and production

Applications

- High energy industrial systems
- UPS
- Energy storage
- Smart Grid
- AGV traction power



Model Name	Nominal Voltage (Volts)	Operating Voltage Range (Volts)	Capacity 1-hr rate to 22.0V @ 25° C (Ah)	Charge Current Continuous (Amps)	Maximum Current Continuous (Amps)	Discharge Current Continuous (Amps)	Maximum Discharge Current (Amps)	Dimensions (mm)			Weight (kg)	Cycles
								Length (±3)	Width (±3)	Height (±3)		
LIM25H-8S1-F1	28.8	22.0 - 33.6	25.0	100	600 (14s)	100	600 (14s)	440	219	128	17.5	20000
LIM25H-8S2-F2	28.8	22.0 - 33.6	25.0	100	600 (14s)	100	600 (14s)	440	219	128	17.5	20000
LIM25H-12S1-F1	43.2	33.0 - 50.4	25.0	100	600 (14s)	100	600 (14s)	620	219	128	28.0	20000
LIM25H-12S1-F2	43.2	33.0 - 50.4	25.0	100	600 (14s)	100	600 (14s)	617	219	128	27.5	20000
LIM5H-10P1-W1	36.0	24.0 - 42.0	5.0	50.0	200 (3s)	50	200 (3s)	245	131	110	4.5	20000
LIM40E-13T1	38.0	35.8 - 53.3	38.0	40.0	100 (60s)	40	600 (60s)	385	450	130	28.0	11000
LIM50EN-8S2-F2	29.6	22.0 - 32.8	47.5	50.0	125 (60s)	200	300 (60s)	440	219	128	17.0	11000
LIM50EN-12S2-F2	44.4	33.0 - 49.2	47.5	50.0	125 (60s)	200	300 (60s)	617	219	128	27.0	11000
LIM50E-7G-C1	25.9	19.3 - 28.7	47.5	50.0	125 (60s)	200	300 (60s)	412	180	135	15.0	7500




Li-ion Battery Control Modules (LiBM)

- Monitors and controls the operation of up to 26 lithium ion modules
- Multiple LiBMs can be networked for larger system integration
- Provides full access to all cell data via RS485 and CANbus 2.0b ports
- 16 cell and monitoring system functions are checked continuously
- Status thresholds are configurable for all monitored parameters
- Warning and alarm outputs configurable via relay and opto-isolated NO and NC contacts
- State of Charge measured by voltage and current analysis
- On-board data logging capability
- Low power consumption at 24Vdc

Pro-Spec

Multiple Purpose Deep Cycle Batteries




Features

- Deep cycle
- Vibration resistant
- Easy maintenance vent caps
- AGM/porous rubber separator construction to resist corrosion and reduce electrical resistance
- Enhanced life cycle compared to competitors
- Two terminal types available
- Extended service life

Applications

- Electric vehicles including:
- Golf carts
- Mobility vehicles
- Warehouse equipment including:
- Fork lifts
- Access platforms
- Floor cleaners



Type	Model Name	Capacity				Dimensions (mm)			Terminal Height	Weight (kg)
		@25A (Mins)	@75A (Mins)	5HR (Ah)	20HR (Ah)	Length	Width	Height		
Deep Cycle 6V	DCB605-6	383	105	175	210	259	179	245	273	27.0
	DCB105-6	447	115	185	225	259	179	245	273	28.6
	DCB125-6	488	132	195	240	259	179	245	273	30.7
	DCB145-6	530	145	215	260	259	179	264	292	33.0
Deep Cycle 8V	DCB875-8	295	75	145	170	262	181	245	273	29.0
	DCB890-8	340	90	155	190	262	181	245	273	31.6
	DCB8125-8	425	110	190	240	262	181	283	311	37.6
Deep Cycle 12V	DCB1275-12	290	70	125	150	329	181	245	276	37.5

Available terminal types:

DT -

Dual Terminal



ET -

Embedded Terminal



* Suggested cyclic life based on 0.25C: 3 hour discharge - 0.18C: 3 hour charge

Racking & Site Services

Yuasa Technical Department



The GS Yuasa Battery Germany GmbH Technical Department provides a full battery design and quotation service, including:

- **Battery sizing**
- **Open style or clad racks, cubical design & supply**
- **Gas & heat calculations**
- **AutoCAD drawings**
- **Battery system testing**

To discuss your project or requirements please contact us on +49 (0)211 41790-0 or info@gs-yuasa.de



Battery Sizing

Utilising Yuasa's range of VRLA batteries, the latest design software and extensive technical expertise, our engineers will find the best battery solution tailored to your requirements.

Battery Containment

GS Yuasa have a full complement of battery racking solutions available. Our popular open or clad steel flat pack racking can be built to specification. Options including colour, tier heights, leg extensions, seismic strengthening and many more.

Gas & Heat

We can provide full calculations relating to heat output and hydrogen gas emissions of any Yuasa battery system.

Drawings

Using AutoCAD software, our engineers can provide detailed rack and battery layout drawings for your project.

Install

GS Yuasa can quote for and arrange battery installation and commissioning. Our trained engineers and over 30 years of industrial battery experience will ensure your project goes smoothly.

System Testing

We offer a full battery testing service for battery installations of all sizes. Measuring every battery for impedance and voltage, a detailed report with findings and recommendations will be issued once completed.



Yu-Power®

Intelligent Chargers



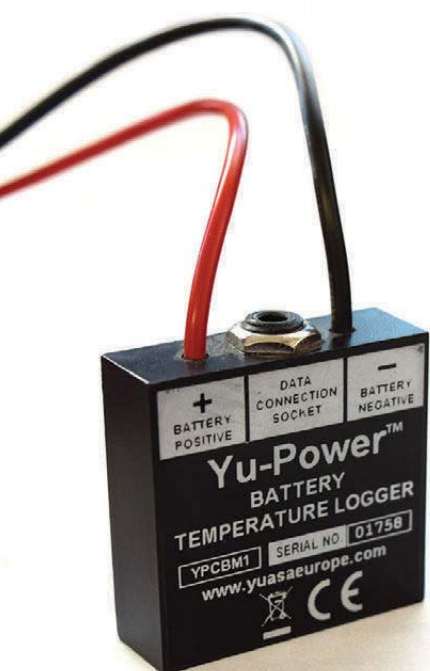
Yu-Power® intelligent chargers utilise multi-stage proportional timing technology to ensure safe and efficient lead acid battery charging. Proportional timing during the bulk charging mode ensures the best balance of maximum state of charge, without damaging the battery before switching to the float charging mode. Once in float charge mode the charger will charge the battery and maintain it at 100% state of charge whilst using an ECO mode to save power.

YPC2A12	Yu-Power 2A 12V Charger - UK/Euro Plug c/w YPCCLIPMC
YPC4A12	Yu-Power 4A 12V Charger - UK/Euro Plug c/w YPCCLIP
YPC4A24	Yu-Power 4A 24V Charger - UK/Euro plug c/w YPCCLIP
YPC8A12	Yu-Power 8A 12V charger - UK/Euro Plug c/w YPCCLIP
YPCTESTMC	Yu-Power LED Battery Tester (trailer plug c/w YPCRINGMC)



Yu-Power®

Battery Temperature Monitoring System YPCBM1

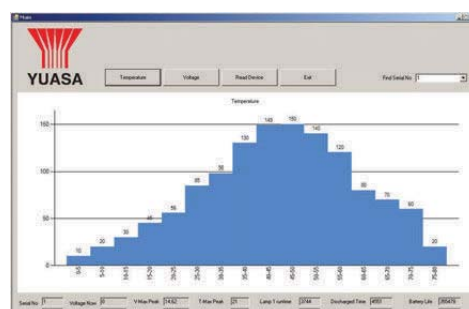


Hardware

- Continual monitoring with hourly logging of temperature and voltage
- 7.5 years of 1 hour rolling data storage
- Readable data set via 2.5mm output socket (lead available separately part code YPCBL1)
- Optional equipment available to allow for live working
- Unit dimensions: 40mm (±1) x 40mm (±1) x 14mm (±0.5)

Software

- Configurable to requirement
- Encoded against corruption
- Exportable to master documentation for further analysis
- Exportable to graphic displays
- Common file formats (.xls, .csv, plain text)





YUASA BATTERY

We power the world!



Reliability, quality & performance

Discover more at www.gs-yuasa.de

a  brand

Cat. No. YUA 4912 10/17

E. & O. E.



YUASA

www.gs-yuasa.de

Novitronic AG

Thurgauerstrasse 74 • 8050 Zürich • Switzerland

Telefon: +41 44 306 91 91 • Fax: +41 44 306 91 81

E-Mail: energietechnik@novitronic.ch

A  Group Company