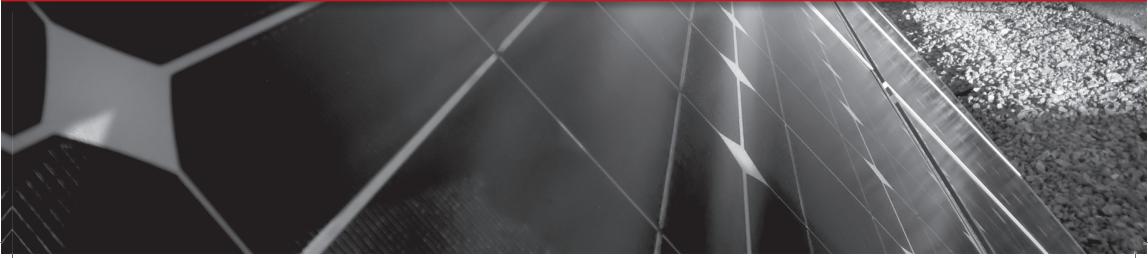




RENEWABLE ENERGY





RENEWABLE ENERGY SERIES

Rolls premium deep cycle batteries have been chosen as the best off-grid battery for over 25 years.



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4 KS 25P

S2 L16





12 CS IIP

S6-460AGM

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		/		

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- I0 Rolls Battery AGM-R
- I2 Rolls Battery Gel

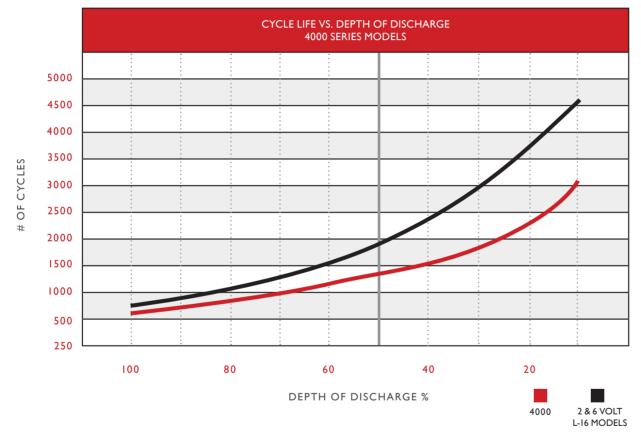
4000 SERIES

Rolls Battery 4000 Series product range offers a full range of voltage and capacity options. Our most popular models are based on the well recognized L-16, group 24 and 27 sizes with improved capacity, liquid reserve (up to 2.75") and cycle life.

MODEL	I0 HR RATE	20 HR RATE	I00 HR RATE	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG		
ROLLS BATTERY 4000 SERIES: 2 VOLT											
S2 L16	1052	1169	1344	L-16	LT	318mm	181mm	432mm	54.5kg		
S2 LI6-HC	1202	1335	1495	L-16	LT	318mm	181mm	432mm	57.5kg		
S2 LI6-SC	1353	1503	1683	L-16	LT	318mm	181mm	432mm	59kg		
	ROLLS BATTERY 4000 SERIES: 6 VOLT										
S6 GC2-HC	202	235	294	GC2	DT	259mm	181mm	279mm	31.5kg		
S6 145	220	250	320	GC2H	DT	259mm	181mm	290mm	32kg		
S6 L16	351	390	449	L-16	LT	318mm	181mm	425mm	51kg		
S6 LI6-HC	401	445	498	L-16	LT	318mm	181mm	425mm	55.5kg		
S6 LI6-SC	438	487	545	L-16	LT	318mm	181mm	425mm	56.5kg		
				ROLLS B	ATTERY 4000 S	ERIES: 12 VOLT					
SI2 24	72	85	106	24	DT	279mm	I7Imm	238mm	21.5kg		
SI2 27	89	105	140	27	DT	321mm	l71mm	238mm	24.5kg		
SI2 3I	Ш	130	173	31	DT	330mm	I7Imm	241mm	29.5kg		
SI2 GC	136	155	206	GCI2	UTL	333mm	182mm	274mm	37.5kg		
SI2 185	185	210	279	921	DT	391mm	I78mm	365mm	61kg		

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process, battery components & electrolyte levels.

02 Rolls | Renewable Energy





S6 LI6 S6 LI6-HC S6 GC2 S2 LI6-SC

4000 FEATURES

- Heavy plate construction
- Industry leading liquid reserves
- Unsurpassed cycling

*Cycle life may vary by application and is affected by frequency of cycling, operating temperature, depth of discharge (%DOD), adherence to manufacturer-recommended charging parameters and proper maintenance.

IEC Testing

International Electrotechnical Commission's (IEC) standard 61427-1:2013 outlines performance criteria used to measure all deep cycle secondary cells and batteries used in PV (Photovoltaic) off-grid energy storage applications. Independent IEC testing has demonstrated and confirmed that Rolls Battery 4000 Series 6-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt L-16 models, and 5000 Series 2-volt, 4-volt, 6-volt, 8-volt and 12-volt premium flooded deep cycle models meet and exceed the requirements of operation in conditions of Partial State of Charge (PSOC) as well as continuous heavy discharge & recharge.

Visit http://rollsbattery.com/rolls-battery-iec-testing for information on the independent IEC 61427-1:2013 testing performed by Dalhousie University Renewable Energy Storage Laboratory (RESL).

Renewable Energy | Rolls 03

4500 SERIES

Offered in 2 volt and 6 volt configurations, Rolls 4500 Series models provides the convenience of the popular L-16 case design with added durability and cycle life found in our heavy grade 5000 Series plate construction. The result, a versatile L-16 model with an impressive 3700 cycles @ 50% DOD,

NEW Adding to Rolls 4500 Series exceptional performance and added cycle life, these popular 2-volt & 6-volt L-16 models now feature enhanced negative plate construction with Rolls Battery proprietary Advanced NAM carbon blend.



MODEL	I0 HR RATE	20 HR RATE	IOO HR RATE	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
ROLLS BATTERY 4500 SERIES: 2 VOLT									
S-1400EX	926	1040	1342	L-16	LT	318mm	181mm	432mm	58kg
				ROLLS B	ATTERY 4500 S	ERIES: 6 VOLT			
S-500EX	330	371	479	L-16	LT	318mm	181mm	425mm	59kg

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process, battery components & electrolyte levels.



Contact your Rolls Battery Distributor or Dealer for more information.

- Quicker & More Efficient Charging
- Improved Cycle Life
- Higher Capacity
- Enhanced PSOC Performance

04 **Rolls** | Renewable Energy

CYCLE LIFE VS. DEPTH OF DISCHARGE 4500 SERIES 7500 7000 6500 6000 5500 OF CYCLES 5000 4500 # 4000 3500 3000 2500 2000 1500 1000 100 80 60 40 20 **DEPTH OF DISCHARGE %**



S6 LI6-EX S2 LI6-EX

4500 FEATURES

- Heavy plate construction
- Industry's leading liquid reserve
- Included Rolls R-Cap
- Extended cycling

*Cycle life may vary by application and is affected by frequency of cycling, operating temperature, depth of discharge (%DOD), adherence to manufacturer-recommended charging parameters and proper maintenance.

IEC Testing

International Electrotechnical Commission's (IEC) standard 61427-1:2013 outlines performance criteria used to measure all deep cycle secondary cells and batteries used in PV (Photovoltaic) off-grid energy storage applications. Independent IEC testing has demonstrated and confirmed that Rolls Battery 4000 Series 6-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt and 12-volt premium flooded deep cycle models meet and exceed the requirements of operation in conditions of Partial State of Charge (PSOC) as well as continuous heavy discharge & recharge.

Visit http://rollsbattery.com/rolls-battery-iec-testing for information on the independent IEC 61427-1:2013 testing performed by Dalhousie University Renewable Energy Storage Laboratory (RESL)



Renewable Energy | Rolls 05



5000 SERIES

Our unique battery design features dual container construction. Each cell is self contained in a high temperatureretardant, durable polypropylene case. The outer container is made of high-density unbreakable polyethylene, providing double protection from breakage and acid leakage. Cell replacement is clear and concise with bolt-on connectors, allowing the battery to be assembled or repaired on location.

NEW All Rolls 5000 Series Renewable Energy models now feature enhanced negative plate construction with Rolls Battery proprietary Advanced NAM carbon blend.



MODEL	I0 HR RATE	20 HR RATE	I00 HR RATE	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG		
ROLLS BATTERY 5000 SERIES: 2 VOLT											
2 KS 33P	1635	1837	2369	SPEC.	FLAG	392mm	211mm	630mm	94kg		
2 OS 33P	1740	1955	2522	SPEC.	FLAG	392mm	211mm	630mm	100.5kg		
2 YS 27P	1949	2190	2825	SPEC.	FLAG	356mm	229mm	803mm	III.5kg		
2 YS 31P	2249	2527	3260	SPEC.	FLAG	394mm	229mm	803mm	129kg		
2 YS 62P	4498	5054	6520	SPEC.	FLAG	695mm	229mm	803mm	258.5kg		
	ROLLS BATTERY 5000 SERIES: 4 VOLT										
4 CS 17P	505	568	733	SPEC.	FLAG	365mm	210mm	464mm	58kg		
4 KS 21P	1022	1148	1481	SPEC.	FLAG	400mm	238mm	629mm	121kg		
4 KS 25P	1250	1404	1811	SPEC.	FLAG	400mm	270mm	629mm	142.5kg		
4 KS 27P	1351	1518	1959	SPEC.	FLAG	400mm	270mm	629mm	153.5kg		
				ROLLS B	ATTERY 5000 S	ERIES: 6 VOLT					
6 CS 17P	505	568	733	SPEC.	FLAG	559mm	210mm	464mm	100kg		
6 CS 2IP	632	710	921	SPEC.	FLAG	559mm	248mm	464mm	122.5kg		
6 CS 25P	759	853	1100	SPEC.	FLAG	559mm	286mm	464mm	l44kg		
6 CS 27P	827	929	1198	SPEC.	FLAG	559mm	286mm	464mm	155kg		
				ROLLS BA	ATTERY 5000 SI	ERIES: 12 VOLT					
12 CS IIP	330	371	479	SPEC.	FLAG	559mm	286mm	464mm	123kg		

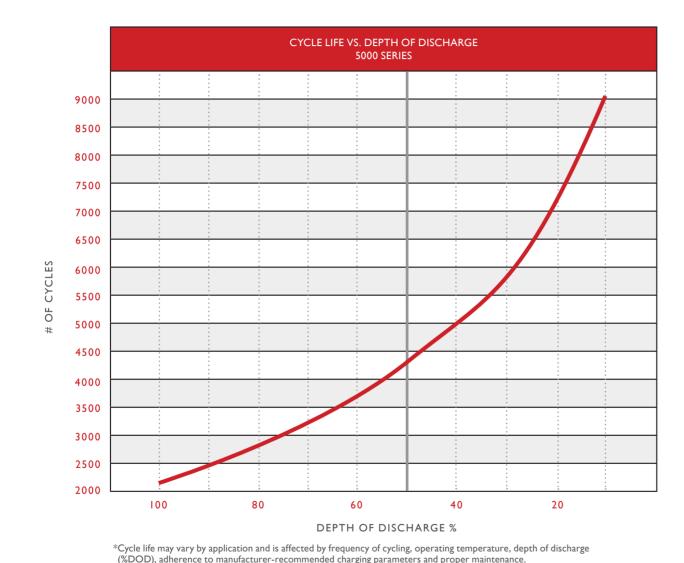
Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process,

• Quicker & More Efficient Charging

battery components & electrolyte levels.

- Improved Cycle Life
- Higher Capacity
- Enhanced PSOC Performance





International Electrotechnical Commission's (IEC) standard 61427-1:2013 outlines performance criteria used to measure all deep cycle secondary cells and batteries used in PV (Photovoltaic) off-grid energy storage applications. Independent IEC testing has demonstrated and confirmed that Rolls Battery 4000 Series 6-volt and 2-volt L-16 models, 4500 Series 6-volt and 2-volt L-16 models, and 5000 Series 2-volt, 4-volt, 6-volt, 8-volt and 12-volt premium flooded deep cycle models meet and exceed the requirements of operation in

Visit http://rollsbattery.com/rolls-battery-iec-testing for information on the independent IEC 61427-1:2013 testing performed by

conditions of Partial State of Charge (PSOC) as well as continuous heavy discharge & recharge.

Dalhousie University Renewable Energy Storage Laboratory (RESL)



ENHANCED PERFORMANCE & CYCLE LIFE

ADVANCED NAM

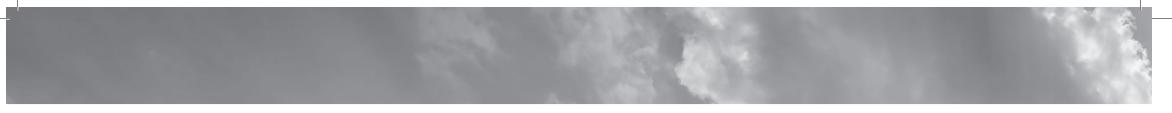
2 KS 33P 2 YS 31P

5000 FEATURES

- Advanced NAM additive for quicker & more efficient charging, increased capacity & improved cycle life
- Widest range of specifications available
- Modular dual container construction
- Computer controlled formation
- Robotically welded
- Included Rolls R-Cap
- Load and capacity tested prior to shipping

Renewable Energy | **Rolls** 07

IEC Testing



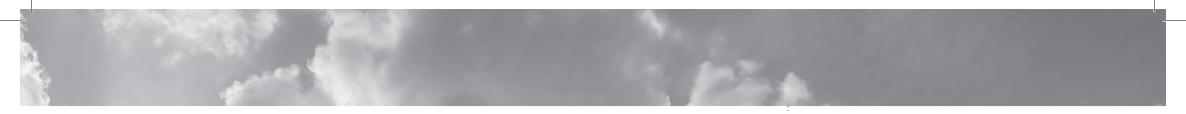
A G M - S

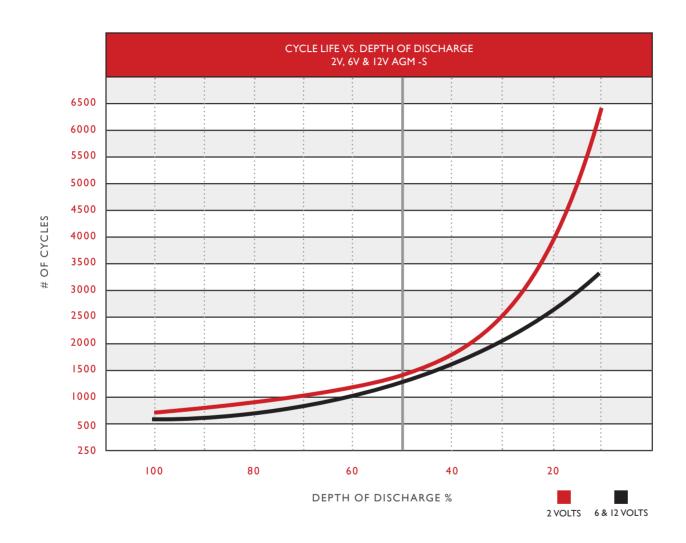
Rolls high quality AGM-S VRLA batteries offer true deep cycle performance, increased capacity and extended cycle life in a rugged, sealed, shock and vibration-resistant ABS case design for added durability, ideal for a variety of remote and confined off-grid, grid-tied and backup applications.

MODEL	VOLTAGE	I0 HR RATE	20 HR RATE	I00 HR RATE	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG		
ROLLS BATTERY AGM-S: 2 VOLT											
S2-1275AGM	2 V	1040	1150	1275	FIO	295mm	179mm	424mm	57kg		
	ROLLS BATTERY AGM-S: 6 VOLT										
S6-275AGM	6 V	229	250	275	M8-TP08	262mm	181mm	273mm	34.5kg		
S6-370AGM	6 V	300	335	370	DT	295mm	179mm	365mm	46.5kg		
S6-460AGM	6 V	374	415	460	FIO	295mm	1 79 mm	424mm	56kg		
				ROLLS	BATTERY AG	1-S: 8 VOLT					
S8-200AGM	8 V	162	170	200	DT	260mm	182mm	314mm	34.5kg		
S8-230AGM	8 V	190	200	230	DT	260mm	182mm	3I4mm	38kg		
				ROLLS	BATTERY AGM	1-S: 12 VOLT					
SI2-95AGM	12 V	77	85	95	M6-TP08	260mm	I72mm	237mm	25kg		
SI2-II6AGM	12 V	95	105	116	M8-TP08	307mm	I72mm	237mm	30.5kg		
SI2-128AGM	12 V	104	115	128	M8-TP08	328mm	I75mm	237mm	33kg		
SI2-160AGM	12 V	126	145	160	M8-TP08	341mm	I72mm	309mm	43.5kg		
SI2-230AGM	12 V	189	210	230	LT	530mm	209mm	239mm	60.5kg		
S12-240AGM	12 V	193	215	240	DT	381mm	l78mm	371mm	60kg		
S12-290AGM	12 V	234	260	290	LT	521mm	269mm	245mm	77.5kg		

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process, battery components & electrolyte levels.

08 Rolls | Renewable Energy





ROLLS AGM TERMINAL CONIGURATIONS										
	E.									
Post Terminal	DT (Dual Terminal)	LT (Lug Terminal)	M8 (Stud)	M8	TP08 (Brass Post)					

Terminal Connections for AGM Series 5 & AGM Series 2 models.

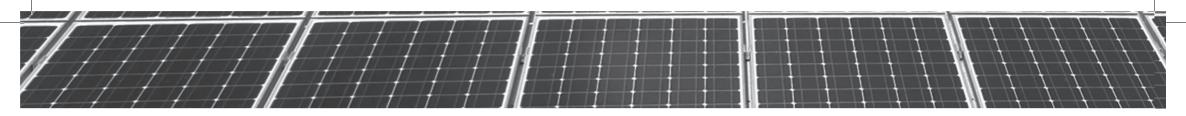


S2-1275AGM

A G M - S F E A T U R E S

- Sealed construction
- New high-density active paste
- Heavy duty thick plates
- ABS case and cover
- Superior corrosion resistance
- Maintenance free, spill-proof/leak-proof
- Self regulating pressure release valves
- Low self discharge rate, only 3%/month
- Faster recharging time

Renewable Energy | **Rolls** 09



AGM-R

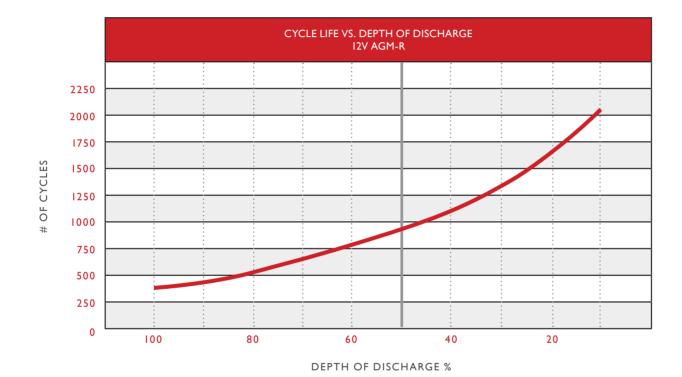
This range of dual purpose sealed maintenance-free 12 volt AGM batteries offering outstanding value and performance. The AGM-R line offers a lower self-discharge and an increased acceptance to charge current than conventional flooded wet batteries, allowing faster recharge. Incorporating all of the leading design features associated with Absorbed Glass Mat technology, the AGM-R line provides the perfect solution when looking to replace wet batteries or upgrade existing sealed batteries.

MODEL	VOLTAGE	I0 HR RATE	20 HR RATE	I00 HR RATE	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
ROLLS BATTERY AGM-R: 12 VOLT									
RI2-80AGM	12 V	68	80	90	M6-TP08	260mm	169mm	237mm	23kg
R12-100AGM	12 V	86	100	110	M8-TP08	306mm	169mm	237mm	27kg
R12-110AGM	12 V	90	110	120	M8-TP08	328mm	I72mm	220mm	30kg
R12-200AGM	12 V	162	200	220	F8	522mm	209mm	224mm	55.5kg
R12-260AGM	12 V	200	260	290	F8	522mm	268mm	224mm	73kg

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process, battery components & electrolyte levels.



10 Rolls | Renewable Energy



<image><image>

R12-100AGM

A G M - R F E A T U R E S

- Maintenance-free sealed construction
- Low internal resistance allowing faster recharge
- Shock and vibration-resistance ABS case
- 800 cycles at 50% DOD*
- Standard dimensions for easy retro-fit

Renewable Energy | Rolls 11

*Cycle life may vary by application and is affected by frequency of cycling, operating temperature, depth of discharge (%DOD), adherence to manufacturer-recommended charging parameters and proper maintenance.

GEL SERIES

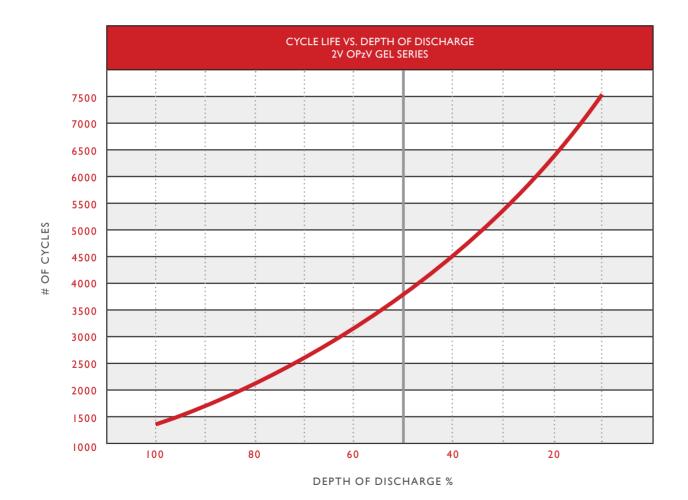
Rolls GEL OPzV range offers an immobilized GEL and Tubular plate technology, providing high reliability and performance. Each is designed and manufactured according to DIN standards, constructed with die-casting positive grid and a patent formula of active material. Rolls GEL OPzV 2 volt models offers high cyclic use even under extreme operating conditions and more than 20 years floating design life at 25°C / 77°F.

MODEL	I0 HR RATE	20 HR RATE	I00 HR RATE	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT (INCL. TERMINAL) MM	WEIGHT KG			
	ROLLS BATTERY GEL: 2 VOLT										
S2-224GEL	224	252	301	2 x Threaded Female MI0	103mm	206mm	382mm	18.5kg			
S2-280GEL	280	315	376	2 x Threaded Female MI0	I24mm	206mm	382mm	22kg			
S2-336GEL	336	378	452	2 x Threaded Female MI0	I45mm	206mm	382mm	26.5kg			
S2-405GEL	405	459	556	2 x Threaded Female MI0	I24mm	206mm	498mm	30kg			
S2-486GEL	486	551	668	2 x Threaded Female MI0	I45mm	206mm	498mm	35kg			
S2-567GEL	567	643	782	2 x Threaded Female MI0	l66mm	206mm	498mm	41kg			
S2-690GEL	690	785	968	2 x Threaded Female MI0	I45mm	206mm	673mm	48kg			
S2-920GEL	920	1046	1287	4 x Threaded Female MI0	l91mm	210mm	673mm	65.5kg			
S2-1150GEL	1150	1308	1610	4 x Threaded Female MI0	233mm	210mm	673mm	80kg			
S2-1380GEL	1380	1571	1938	4 x Threaded Female MI0	275mm	210mm	824mm	95kg			
S2-1620GEL	1620	1828	2197	4 x Threaded Female M10	275mm	210mm	824mm	ll0kg			
S2-2160GEL	2160	2437	2927	6 x Threaded Female MI0	399mm	214mm	799mm	156kg			
S2-2700GEL	2700	3044	3655	8 x Threaded Female MI0	487mm	212mm	799mm	195kg			
S2-3240GEL	3240	3660	4402	8 x Threaded Female MI0	576mm	212mm	799mm	231kg			
S2-3458GEL	3458	3936	4730	8 x Threaded Female MI0	576mm	212mm	799mm	241.5kg			

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process, battery components & electrolyte levels.

*Rolls OPzV GEL models must be installed vertically unless otherwise specified. Models compatible with horizontal installation are available upon request. Please contact your Rolls Battery distributor or dealer for more information.

12 **Rolls** | Renewable Energy





\$2-450GEL

GEL FEATURES

- Sealed maintenance-free construction
- Tubular plate technology for high cyclic use and float applications
- Durable ABS case
- Low self-discharge (less than 2% per month)
- Vertical or horizontal* mounting / installation
- Wide range of capacities & standard sizes
- * models compatible with horizontal installation are available by request. Contact your distributor or dealer for product information.

Renewable Energy | Rolls 13



USED IN SYSTEMS AROUND THE WORLD

Manufactured in Springhill, Nova Scotia, Canada since 1959, Rolls deep cycle batteries are sold via distribution around the world. Manufactured for use in wide range of markets, Rolls batteries are chosen to provide dependable power in a wide range of Renewable Energy applications. From residential off-grid, grid-tied or backup power installs to large-scale applications such as diesel generator replacement in developing countries and island mini-grid systems such as those installed at the Scottish isles of Eigg, Muck, and Rum, as well as the Shetland island of Foula.

- Mini-grid systems Isle of Eigg, Muck & Rum, Scotland
- Shetland Isle of Foula, Scotland
- Sioma High School Western Zambia
- Aloe D'Agafay Ecology Retreat, Marrakesh, Morocco



6 CS 27P





S2-1275



2 YS 62P

Renewable Energy | Rolls 14

OUR CONTACT DETAILS

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