



**braille**™

**BATTERY**  
LIGHTER • STRONGER • FASTER

LITHIUM BATTERY SYSTEMS



- MARINE •
- INDUSTRIAL •
- MEDICAL •
- SOLAR •
- STORAGE •
- GOLF •
- LSV •

**OASYS**  
ENERGY

**CRITICAL**  
SYSTEMS



### Lithium Battery Features

Braille Battery's Lithium Battery Systems offers extreme weight benefits and a longer service life. Up to 450 Volt Systems or 7735KW Stored Energy. A lithium product can be charged from depleted to full charge in less than 30 minutes, save over 70% on battery weight, and have three times the average life cycle.

- Drop-in Replacement Sizing
- Operating Temperature -20C - 60C MAX (some capacity loss below 0C)
- IP 56 Rating
- UN DOT Certified
- Patented Internal Design
- Cell and Module Balancing
- Low voltage and High Voltage protection
- RS 485 and CAN Enabled Available
- Battery State of Charge (SOC) monitoring
- Battery Run Time till Empty
- Battery Adjustable Alarm Function
- Battery Time to Full Charge
- Battery Life Cycle Monitoring
- Battery/Electrical Amp/Wattage usage monitor
- Optional Backlit Display (adjustable for time on/off)
- Optional PCB and/or BMU built inside to protect the battery.



## LITHIUM BATTERIES & MANAGEMENT UNITS

Up to 45 pounds Lighter. Up to 40% More Capacity. Faster Charging, No Maintenance. Sealed Safe Design, DOT Tested. Stable Voltage Output, Lowest Self-Discharge. RoHS Compliant Modular Design. Longer Cycle Life, 3 Year Warranty.



#### OS U1R

Model Name	OS U1R-1245
Weight	13.4 lbs / 6.1 kg
BCI Group	Group U1R
Length	7.6" / 195 mm
Width	5.1" / 130 mm
Height	7.1" / 182 mm
Polarity	Right Positive
Terminal Threads	M6 Female Thread
Voltage	12.8
Rated Capacity	45 Ah
Lithium Amp Hour	135 Ah
Impedance	<15 milliohm
Design Service Life	5,000 Cycles or 10 Years
Cycle Life @ 100% DOD	1,200
Cycle Life @ 80% DOD	2,500



#### OS GC

Model Name	OS GC-12112
Weight	33.5 lbs / 15.2 kg
BCI Group	Group GC2 (low profile height)
Length	10.20" / 259.08 mm
Width	6.36" / 161.54 mm
Height	9.83" / 249.68 mm
Polarity	Right Positive
Terminal Threads	M8 Female Thread
Voltage	12.8
Rated Capacity	112 Ah
Lithium Amp Hour	336 Ah
Impedance	<6 milliohm
Design Service Life	5,000 Cycles or 10 Years
Cycle Life @ 100% DOD	1,200
Cycle Life @ 80% DOD	2,500



#### OS BMU

Model Name	OS BMU
Minimum Weight (lbs)	.9 lbs / 15.2 kg
Length	6.25" / 158.75 mm
Width	6" / 152.39 mm
Height	1" / 25.4 mm

### BATTERY SYSTEMS

#### OS U1R-1245iB

Internal BMU	
Max Load 5 secs	120 Amps
Max Load 30 secs	80 Amps
Continuous Load	35 Amps
Rapid Charge Time	< 3.5 Hrs @ 20 Amps
Recommended Charge Current	20 Amps

#### OS U1R-1245

External BMU	
Max Load 5 secs	120 Amps
Max Load 30 secs	120 Amps
Continuous Load	80 Amps
Rapid Charge Time	< 2 Hrs @ 40 Amps
Recommended Charge Current	< 25 Amps

#### OS GC-12112iB

Internal BMU	
Max Load 5 secs	120 Amps
Max Load 30 secs	120 Amps
Continuous Load	35 Amps
Rapid Charge Time	< 3.5 Hrs @ 35 Amps
Recommended Charge Current	35 Amps

#### OS GC-12112

External BMU	
Max Load 5 secs	500 Amps
Max Load 30 secs	500 Amps
Continuous Load	200 Amps
Rapid Charge Time	< 1.5 Hrs @ 112 Amps
Recommended Charge Current	< 2.5 Hrs @ 55 Amps

#### OS BMU-150

12-150 Volt External BMU	
Batteries in Series	Recommend 1-11 in series
System Voltage	12-140 (12-153 Nominal)
Batteries in Parallel	Max 128, Recommended 100
System Capacity	40Ah-11850Ah
Max Energy	1668Kwh

#### OS BMU-450

150-450 Volt External BMU	
Batteries in Series	12-51
System Voltage	153-652v (12-793 Nominal)
Batteries in Parallel	1 - 100
System Capacity	40Ah-11850Ah
Max Energy	7735Kwh

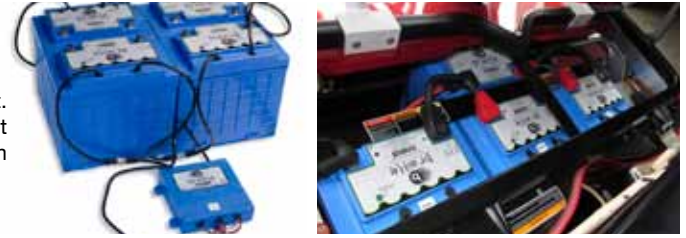
OASYS • SYSTEM

**OS GC-12112 U1R-1245 iB BMU-150 4S2P**

OASYS SYSTEM   GOLF CART   12 VOLT   112 AMP HR   GROUP SIZE   RIGHT POSITIVE   12 VOLT   45 AMP HR   INTERNAL BMU   BATTERY   MANAGEMENT   UNIT   VOLTS   UNITS IN SERIES   UNITS IN PARALLEL

## BRILLE LITHIUM BATTERY SYSTEMS

Batteries have always presented the same problems of weight, safety, and cost. In the advanced technology industries, weight and safety present the two biggest challenges. Braille Battery's solution is developing lighter, more powerful Lithium Battery Systems to suit the needs of these markets.



### iB BATTERY SYSTEM

Communication cables not connected.

#### OASYS SYSTEM- 4S1P

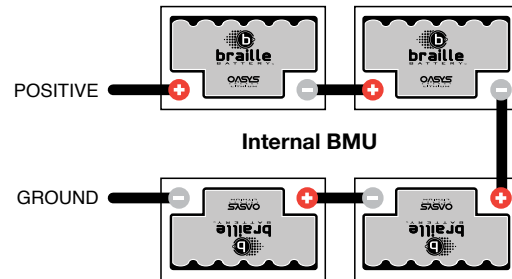


#### FEATURES

- Internal MOSFET electronic switching
- Short circuit, over and under voltage protection
- Able to be used as a single battery solution with safety and performance

#### APPLICATIONS

- Floor Scrubbers
- Personal Mobility Scooters
- Golf Trolley
- Single Battery Back-Up Power, Solar Lighting
- Medical Beds & Equipment
- Single "House" Battery for RV, Marine, or Commercial Vehicles



### iB / BMU SYSTEM

Communication cables connected.

#### OASYS SYSTEM- 4S1P

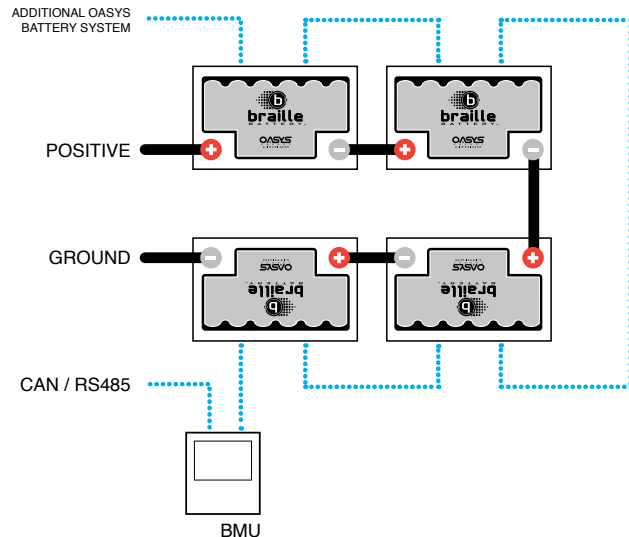


#### FEATURES

- Internal MOSFET electronic switching
- Short circuit, over and under voltage protection
- Able to be used as a single battery solution with safety and performance
- Connect 4 units in a series to make an intelligent 48 volt system
- Able to communicate with external systems, such as computers, controllers, etc.

#### APPLICATIONS

- Floor Scrubbers
- Single Battery Back-Up Power
- Medical Vehicles
- Single "House" Battery for RV, Marine, or Commercial Vehicles
- Medium Amperage Trolling Motos and Electric Drive Systems
- Golf Carts



### EXTERNAL BMU SYSTEM

Communication cables connected.

#### OASYS SYSTEM- 8S1P

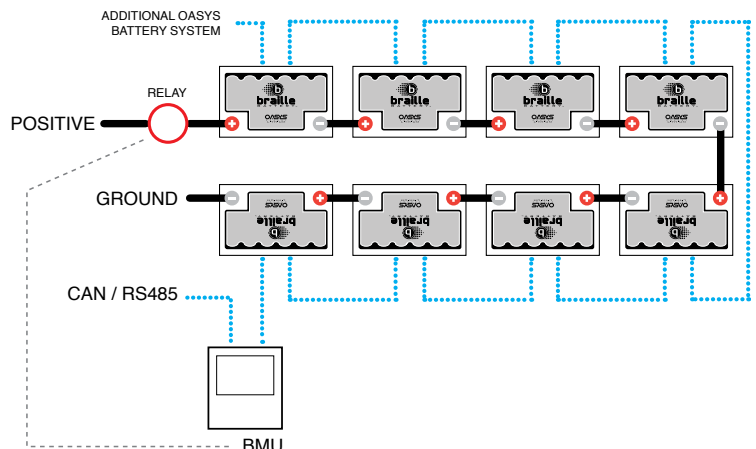


#### FEATURES

- High Amperage Designs
- External BMU For Large Scale Systems
- Up to 100 Units in Parallel or 450 volts
- Capable of up to 1668 KW (U1R-1245 Models)
- Capable of up to 7753 KW (GC-12112 Models)

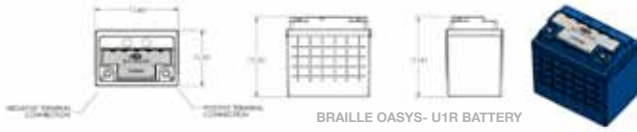
#### APPLICATIONS

- Golf Carts
- Low Speed Vehicles
- Peak Energy Storage
- Single "House" Battery for RV, Marine, or Commercial Vehicles
- Silent watch operations
- High Amperage Electric Systems
- Solar grid Storage
- Mining Operations





# CRITICAL SYSTEMS



BRAILLE OASYS- U1R BATTERY



BRAILLE OASYS- GC12112

Model Information	U1R-IB	U1R	GC-IB	GC
	Internal BMU	High Rate	Internal BMU	High Rate
Braille Part Number "+" Inserted for Clarity	OSU1R-1245IB	OSU1R-1245	OSGC-12112IB	OSGC-12112
Chemistry Type	LiFePO4	LiFePO4	LiFePO4	LiFePO4
Chemistry Name	Lithium-Ion Iron Phosphate	Lithium-Ion Iron Phosphate	Lithium-Ion Iron Phosphate	Lithium-Ion Iron Phosphate
Cell Type	18650EC - 1520 mAh	18650EC - 1520 mAh	18650EC - 1520 mAh	18650EC - 1520 mAh
Cell QTY	120	120	298	298
Battery Casing Type	ABS	ABS	ABS	ABS
Battery Casing Ratings - Not confirmed	UL-945VA	UL-945VA	UL-945VA	UL-945VA
L x W x H (mm)	195 x 130 x 182	195 x 130 x 182	260 x 158 x 250	260 x 158 x 250
L x W x H (inches)	7.67 x 5.11 x 7.16	7.67 x 5.11 x 7.16	10.23 x 6.22 x 9.84	10.23 x 6.22 x 9.84
Overall Weight	13.42 lbs /6.1 KG	13.42 lbs /6.1 KG	33lbs / 15kg	33lbs / 15kg
Specific Energy wh/kg	95 wh/kg	95 wh/kg	99 wh/kg	99 wh/kg
Energy Density wh/l	126 wh/l	126 wh/l	148 wh/l	148 wh/l

## STORAGE & OPERATIONAL TEMPERATURE & INFORMATION

Storage Temperature Range 1 year	0-25°C @ 40% SOC
Storage Temperature Range 3 Months	-5-35°C @ 40% SOC
Storage Temperature Range 1 Month	-15-45°C@40% SOC
Operational Temperature Range Discharging	-10-60°C
Operational Temperature Range Charging	0-50°C
Self Discharge - Chemistry	<5% /Month @25°C <5% /Month @25°C <5% /Month @25°C <5% /Month @25°C
Self Discharge - Circuits / Draw	0.72Ah/month@25°C 0.72Ah/month@25°C 0.72Ah/month@25°C 0.72Ah/month@25°C

## CHARGING

Charging Type	CC/CV	CC/CV	CC/CV	CC/CV
Recommend Charge Voltage	14.6 Volts	14.6 Volts	14.6 Volts	14.6 Volts
Max Charge Voltage	15.6 Volts	15.6 Volts	15.6 Volts	15.6 Volts
Float Voltage Recommended	13.6 Volts	13.6 Volts	13.6 Volts	13.6 Volts
Float Voltage Max	14.6 Volts	14.6 Volts	14.6 Volts	14.6 Volts

## SAFETY PROTECTION

Over Voltage Protection	15.6(adjustable)	15.6(adjustable)	15.6(adjustable)	15.6(adjustable)
Over Voltage Recovery	14.6(adjustable)	14.6(adjustable)	14.6(adjustable)	14.6(adjustable)
Under Voltage Protection	9.2(adjustable)	9.2(adjustable)	9.2(adjustable)	9.2(adjustable)
Under Voltage Recovery	10(adjustable)	10(adjustable)	10(adjustable)	10(adjustable)
Short Circuit Protection	YES(built-in fuse)	N/A	YES(built-in fuse)	N/A
Short Circuit Recover	replace FUSE	N/A	replace FUSE	N/A
Switching Type	MOSFET	External Relay	MOSFET	External Relay

## SHIPPING INFORMATION

Modules UN DOT T Tested	Yes	Yes	Yes	Yes
Shipping Classification	UN3480, Class 9	UN3480, Class 9	UN3480, Class 9	UN3480, Class 9

## MANUFACTURING INFO.

Braille Battery, Inc. is an American owned and operated company with Global customers and strategic partnerships around the world. Braille USA is an FDA registered and ISO Compliant facility with government approvals and ISO 9001, & ISO14001 quality control for the manufacturing of the Braille OASYS Battery Systems. Utilizing International Patent Protected Technology these batteries offer the world leading energy density and specific energy of any Lithium Ion Phosphate Chemistry battery systems in the World.

## OFFICIAL BATTERY OF 2012 INDY CAR SERIES



## CUSTOM APPLICATIONS

Braille is continuously developing new technologies, in which enhances the performance capabilities of its lithium ion and advanced technology batteries. With experience in various markets we can work with you to supply a custom solution or adapt current products which will be best suited for your application(s).

**braille**  
POWER by DESIGN

## ACCESSORIES

- Battery and System Monitors
- Data Cables
- Data Logging Equipment
- Battery System Relays
- Custom System Designs and Programming



**Braille Battery**  
6935 15TH St. East Bldg. 115  
Sarasota, FL 34243

Toll Free 800-764-4708  
Local 941-312-5047  
Fax 727-870-3381

Actual performance may vary. Pricing, specifications and features calculated from Pre-Production testing as of 1/19/2012 subject to change without notice.